The January Effect*

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The January Effect

1. Introduction

In a seminal article, Rozeff and Kinney (1976) reported evidence of a seasonal pattern in stock market returns using an equally-weighted index of New York Stock Exchange prices.[1] From 1904-74, the average stock market return during the month of January was 3.48 percent, compared with a monthly return of 0.42 percent during the remaining 11 months of the year. Thus, January returns appeared to be more than eight times higher than returns during a typical month. Because the equally-weighted NYSE index represents a simple average of the stock prices for all listed companies, the Rozeff and Kinney (1976) methodology gives smaller companies greater relative influence than would be true in value-weighted indices where large firms dominate. Subsequent research by Reinganum (1983) and Roll (1983), among others, confirms the fact that this January effect is a small cap phenomenon.

At the level of the institutional investor, various studies have suggested the January effect may be due to the prevalence of end-of-year "window dressing" by professional investors who seek to eliminate embarrassing losers from their portfolios prior to the end of important reporting periods. For example, Lakonishok, et al. (1988) argue that portfolio returns are noisy and sponsors look at actual portfolio holdings to get additional perspective on investment manager investment philosophy and execution. According to the window dressing hypothesis, institutional investors are evaluated both upon their investment results and the consistency of their investment philosophy. At the end of the calendar year or any important reporting period, such investors may be prone to sell losers and buy winners to improve perceived performance. Of course, it is reasonable to expect that window dressing by large institutional investors, if present, would be a large cap phenomenon. The window dressing hypothesis may have more limited relevance for explaining a January effect restricted to the small cap stocks favored by individual investors.

At the level of the individual investor, Ritter (1988) found that the end-of-year price movements of small firms tend to be related to the buying and selling habits of small investors. Ritter (1988) argues that individuals appear to sell stocks that have declined in price during December in order to realize tax losses. However, small investors appear to wait until January to reinvest in a broad cross section of small stocks because January buying can be augmented by cash infusions from year-end bonuses or from the sales of large-cap stocks on which long-term capital gains are being realized. By focusing on the abrupt switch to net buying by individual investors at the turn of the year, Ritter (1988) offers a "parking the proceeds hypothesis" explanation as to why the January effect is largely confined to small stocks, especially small stocks that have performed poorly during the prior year. Consistent with this hypothesis, D'Mello, Ferris and Hwang (2003) observe abnormal selling pressure prior to the year-end for stocks that have experienced large capital losses, and that individual investors postpone the sale of capital gain stocks until after the New Year. There also appears to be a significant decrease in the average trade size for stocks with large capital losses before the year-end and for stocks with capital gains in the New Year. This suggests that individuals, rather than institutional investors, are the major sellers around the year-end and that individual tax-loss selling is the fundamental explanation for abnormal January returns.

While tax effects have long presented a plausible explanation of the January effect in the United States, international evidence suggests a January seasonal in stock returns for countries with different tax years, and in countries with no capital gains tax. Moreover, in the United States, any seasonal tendency related to tax-motivated selling by institutional investors is sure to have been influenced by the Tax Reform Act of 1986 (see Bhabra, Dhillon, and Ramirez, 1999). Since passage of the Tax Reform Act of

1 This paper offers a necessarily brief review of papers on the January effect. For an extensive review and update on calendar anomalies in general see Keim and Ziemba (2000).

1986, mutual funds have been required to distribute at least 98 percent of realized capital gains and dividend income generated during the 12-month period ending October 31. Since 1986, net capital gains distributions to mutual fund shareholders are determined without regard to capital losses attributable to transactions occurring during the last two months of the calendar year. Capital losses incurred by mutual funds during the last two months of the year are carried over to the subsequent taxable year. Since passage of the Tax Reform Act of 1986, any seasonal tendencies related to tax-motivated selling by institutional investors should occur well before the end of the calendar year. Because many mutual funds retain a January-December reporting period despite a new November-October tax period, the potential exists to distinguish between window dressing (reporting) and tax-motivated seasonality caused by institutional investors during the 1987-2004 period. On the other hand, a persistent January effect during the 1987-2004 period that remains largely confined to small cap stocks would offer further support for Ritter's (1988) conjecture concerning anomalous buying and selling behavior of individual investors at the turn of the year.

This paper seeks to make a number of contributions: (1) We update evidence on the January effect among large-cap stocks with 202 years of evidence, using 1802-1926 data from Schwert (1990) and Center for Research on Stock Prices (*CRSP)* value-weighted portfolio returns from 1927-2004. The January effect in small-cap stock returns is shown using 78 years of *CRSP* equally-weighted portfolio returns from 1927-2004. (2) We find a persistent January effect for small cap stocks, even during the period following passage of the Tax Reform Act of 1986. Because the January effect largely remains a small cap phenomenon, and one that has been unaffected by the Tax Reform Act of 1986, we offer further support for behavioral explanations of the January effect that are tied to the anomalous buying and selling behavior of individual investors at the turn of the year. (3) We document the anomalous pattern of monthly returns for Fama and French (1993) size and book factors, and show that both size and book factors contribute to the January effect for small cap stocks. (4)We also show a persistently negative January effect for momentum stocks, as is suggested by Ritter's (1988) observation of an abrupt switch to net buying of small stocks by individual investors in January.

The paper is organized as follows. Section 2 documents the fact that value-weighted returns show little evidence of a January effect for large-cap stocks from 1802-2004. By way of contrast, Section 3 show the persistence of a consistently large and positive January effect for small cap stocks when using *CRSP* equally-weighted returns over the 1927-2004 period. Section 4 shows how the January effect is related to Fama and French's (1993) book and size-related factors, and to momentum. Section 5 considers how returns in the post-1986 era can be used as the basis for valid out-of-sample tests of the large cap "window dressing hypothesis" and the small cap "parking the proceeds hypothesis." Section 6 gives conclusions and implications for investment theory and practice.

2. Value-Weighted Returns

Lakonishok and Smidt (1988), for example, found no evidence of a January effect when studying monthly returns for the Dow Jones Industrial Average (DJIA), a popular price-weighted market index of 30 giant corporations.[2] Similarly, Schwert (1990) found little evidence of monthly seasonality in value-weighted indexes, such as *CRSP*, where small cap stocks get little weight. The absence of a January effect in large-cap returns supports the notion that the anomalous January effect is largely a small cap phenomenon. The absence of a January effect in large-cap returns is also consistent with the hypothesis that measurement

2 While DJIA index return data do not include dividends, Lakonishok and Schmidt (1988) and Schwert (1990) have shown that there is no evidence of seasonality in DJIA dividend income that would affect inferences drawn about any monthly seasonality in index returns. It is important to remember that DJIA data provide a useful basis for testing the monthly seasonal anomaly as it pertains to large cap stocks only. Studies of DJIA data can offer insight concerning large cap window dressing and tax-motivated trading by institutional investors, but cannot offer any insight concerning a monthly seasonal that might stem from trading by small cap stock investors.

errors, rather than inefficiencies in market pricing, are a root cause for the perception of abnormally high rates of return for small cap stocks during the month of January. Lakonishok and Smidt (1988) argue that small trading volumes and large bid-ask spreads among small cap stocks make it difficult to profitably trade on the January effect phenomenon. Without such profitable trading opportunities, the January effect becomes more of a statistical oddity rather than compelling evidence of market inefficiency.[3]

A related statistical explanation for the January effect is commonly referred to as the "data snooping hypothesis" (Lo and MacKinlay, 1990; Sullivan, Timmerman, and White, 1999). It is conceivable that much, if not all, of the January effect can be explained in terms of investment period selection problems, or difficulties tied to data-mining. Over the past century in the United States, there have been notable periods of outstanding relative performance for large cap stocks during the month of January, such as during the 1980s. There have been other time frames where January returns on large cap stocks were unremarkable, such as during the 1990s. Such deviations may be well within the realm of typical statistical variation. Historically brief advantages for investing during January may simply represent the type of inexplicable pattern in stock-market returns that can be uncovered by diligent data snooping. Unfortunately for those seeking risk-free arbitrage opportunities tied to the calendar, anomalous evidence of above-average January returns may be both inexplicable and inherently fragile. In a vigorously competitive equity market, positive (or negative) abnormal January returns would tend to be reversible over a reasonably brief time frame (see Fama, 1998; Malkiel, 2003).

Figure 1a and Table 1 show value-weighted portfolio returns for the 202-year period from 1802-2004, and for various important sub-periods.[4] Monthly returns are calculated based upon Schwert's (1990) indexes of U. S. stock prices from 1802-1925, and on *CRSP* value-weighted portfolio returns for 1926-2004. Schwert's (1990) early stock return data give a long historical record of stock-price behavior that is consistent with more recent returns for the *CRSP* value-weighted portfolios. This long-term perspective becomes useful when considering the possibility of a January seasonal in stock returns given the potential for unpredictable and transitory influences. Sullivan, Timmerman, and White (2001) argue that the stability of returns across various sub-samples provides important information about the robustness of January effects. For example, if abnormally high January returns are observed across a range of important sub-periods, it would suggest that such anomalous returns could form the basis for successful trading rules that would outperform market benchmarks. Such consistency would also suggest that investors could have adopted a recursive decision rule to generate genuinely superior out-of-sample performance.

Figure 1a shows relative value-weighted return premiums for the month of January, defined as the value-weighted monthly rate of return earned during January minus the average rate of return earned in the eleven other months of the year, by decade. This figure illustrates the fact that value-weighted portfolio return premiums for the month of January have been at various points in time both sharply negative and robustly positive. The worst decade for value-weighted January return premiums occurred prior to the start of the Civil War during the 1840s (-3.54 percent); the best-performing decade for January return premiums occurred during the 1890s, just prior to the start of the twentieth century (+3.34 percent). In terms of these relative value-weighted returns, there is only a modest discernable advantage for January returns during recent years.

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3 Trading costs are often cited impediments to the full exploitation and elimination of calendar anomalies. With even modest transactions costs, portfolio managers and individual investors may not be able to take full advantage of calendar anomalies tied to the turn of the year because the size of bid-ask spreads and illiquidity among smaller stocks inhibits large-scale trading activity. Nevertheless, if calendar-related anomalies were indeed present, planned trades could be scheduled to take advantage of calendar-based return patterns. Long-term investors would be wise to take advantage of true calendar anomalies in making buy-sell decisions. Even modest calendar effects could be relevant to traders (see Chen and Singal, 2003).

4 Schwert's value–weighted returns begin with January 1802, so there is no January return for January 1802.

Table 1 shows sample statistics for January return premiums over the entire 1802-2004 period, and for a variety of important sample sub-periods. Results for the 1802-1926 and 1927-2004 sub-periods show the amount of return consistency between return premiums estimated using Schwert's (1990) indexes of U.S. stock prices and more recent *CRSP* value-weighted portfolios. *CRSP* value-weighted portfolio results for the 1927-1952 (May) and 1952(June)-2004 sample sub-periods show the amount of January return premium consistency between the pre-modern era when Saturday trading was allowed, and the modern era when the five-day trading week was adopted. *CRSP* value-weighted portfolio results for the 1952 (June)-1986 and 1987-2004 sample sub-periods allow for potential effects caused by the Tax Reform Act of 1986. Since passage of the Tax Reform Act of 1986, any seasonal tendencies related to tax-motivated selling by institutional investors should occur well before the end of the calendar year. This removes one plausible explanation for the January effect in the post-1986 period, and provides the basis for a natural experiment that can be used to distinguish between window dressing (reporting) and tax-motivated seasonality caused by institutional investors during the 1987-2004 period.

Over the entire 1802-2004 period, Table 1 shows that value-weighted January return premiums averaged 1.10 percent. High volatility is evident, with a standard deviation of 4.09 percent. The median value-weighted return premium during the month of January was 0.55 percent; January return premiums were positive 60.9 percent of the time. A sign test for value-weighted January return premiums is statistically significant using conventional criteria ($z = 3.10$). Of course, stocks usually go up, so the typically positive value-weighted January returns should not be surprising. It is interesting that January return premiums for large-cap stocks are more uniformly positive over the 1927-2004 time frame for which *CRSP* value-weighted portfolio returns are available. The fact that value-weighted return premiums remain unusually positive during January in the period following the Tax Reform Act of 1986 offers some support for the window dressing hypothesis. Beginning in 1987, institutional investors have no tax motivation for selling losers at the turn of the year. The persistence of abnormally higher January returns for large cap stocks since 1987 is consistent with the notion that professional investors seek to eliminate embarrassing losers from their portfolios prior to the end of important reporting periods.

3. Equally-Weighted Returns

Figure 1b shows equally-weighted January returns minus the average rate of return earned in the other eleven months of the year, by decade. This figure documents abnormally high equally-weighted January return premiums over the entire1927-2004 period. The worst decade for equally-weighted January return premiums occurred during the 1950s (2.47 percent); the best-performing decade for January return premiums occurred during the 1970s (8.77 percent). It is interesting to note that the explosion of research in financial economics concerning calendar anomalies in general, and the January effect in particular, coincides with the best performing decade for January return premiums. When measured using equally-weighted returns, it is interesting to note that the January effect has remained persistently positive despite the enormous amount of attention focused upon the issue during the past 30 years.

Over the entire 1927-2004 period, Table 1 shows that equally-weighted January return premiums averaged a whopping 6.05 percent. High volatility is evident, with a standard deviation of 7.18 percent. The median value-weighted return premium during the month of January was 4.47 percent; January returns were positive 82.1 percent of the time. A sign test for equally-weighted January return premiums is statistically significant using conventional criteria ($z = 5.66$). Again, because stocks usually go up, the positive equally-weighted January returns should not be surprising. However, it is surprising that neither Wall Street attention nor popular press coverage has been able to create sufficient interest in January effect arbitrage opportunities to eliminate the anomaly. Equally-weighted January return premiums are uniformly above average throughout the entire 1927-2004 time frame for which *CRSP* equally-weighted portfolio returns are available.

In particular, notice that equally-weighted January return premiums remain unusually positive during the period following enactment of the Tax Reform Act of 1986. With that change in law, the

persistence of the January effect during the 1987-2004 period cannot be attributed to seasonally motivated tax selling by institutional investors. The persistence of abnormally high January return premiums for small cap stocks since 1987 is consistent with the notion that professional investors seek to eliminate embarrassing small cap losers from their portfolios prior to the end of important reporting periods, as suggested by the "window dressing hypothesis." The persistence of the January effect during the 1987-2004 period, and the fact that the January effect remains largely a small cap stock phenomenon, also lends support to Ritter's (1988) conjecture concerning anomalous buying and selling behavior of individual investors at the turn of the year.

4. Fama-French Results

4.1 Factor Returns

Value-weighted portfolio returns track the performance of large cap stocks whereas equally-weighted portfolio returns closely reflect the performance of small cap stocks. As such, data presented in Figure 1 and Table 1 confirms that the January effect is a small cap phenomenon. That notion can be tested directly using Fama and French (1993) firm size and book value factors over the 1927-2004 period.

Fama-French benchmark factors summarize the performance of small stocks relative to big stocks (SMB, Small Minus Big), and the performance of value stocks relative to growth stocks (HML, High Minus Low). Fama-French benchmark portfolios are rebalanced quarterly using independent sorts on size (market equity) and the ratio of book equity to market equity. Book-to-market ratios are high for value stocks and low for growth stocks. The Fama-French benchmark factors are constructed from six size/book-to-market benchmark portfolios that do not incur transaction costs. SMB (Small Minus Big) is the average return on three small-cap portfolios minus the average return on three large-cap (big) portfolios:

$$SMB = 1/3\,(Small\ Value + Small\ Neutral + Small\ Growth) - 1/3\,(Big\ Value + Big\ Neutral + Big\ Growth) \quad (1)$$

HML (High Minus Low) is the average return on two value-stock portfolios minus the average return on two growth-stock portfolios:

$$HML = 1/2\,(Small\ Value + Big\ Value) - 1/2\,(Small\ Growth + Big\ Growth) \quad (2)$$

The size breakpoint used to determine the buy range for the Fama-French small and big portfolios is the median NYSE market equity. Book-to-market equity breakpoints used to determine the buy range for the growth, neutral, and value portfolios are the 30th and 70th NYSE percentiles, respectively.[5]

Fama-French also use six value-weighted portfolios formed on the basis of size and prior two to twelve month returns to construct an UMD (Up Minus Down) momentum factor. UMD is the average return on the two high prior return portfolios minus the average return on the two low prior return portfolios. These portfolios are formed monthly and reflect the intersection of two portfolios formed on the basis of size (market equity) and three portfolios formed on the basis of prior two to twelve month

5 . Market equity (size) is price times shares outstanding. Price is from *CRSP*, shares outstanding are from *Compustat* (if available) or *CRSP*. Book equity is constructed from *Compustat* data or collected from the Moody's Industrial, Financial, and Utilities manuals. Book equity the book value of stockholders' equity, plus balance sheet deferred taxes and investment tax credit (if available), minus the book value of preferred stock. Depending on availability, Fama-French use the redemption, liquidation, or par value (in that order) to estimate the book value of preferred stock. Stockholders' equity is the value reported by Moody's or *Compustat*, if it is available. If not, Fama-French measure stockholders' equity as the book value of common equity plus the par value of preferred stock, or the book value of assets minus total liabilities (in that order). See Davis, Fama, and French (2000) and Fama and French (1993) for complete details.

returns. The monthly size breakpoint is the median NYSE market equity. The monthly prior two to twelve month return breakpoints are the 30th and 70th NYSE percentiles.

$$UMD = 1/2\ (Small\ High + Big\ High) - 1/2(Small\ Low + Big\ Low) \quad (3)$$

The six portfolios used to construct UMD each month include NYSE, AMEX, and NASDAQ stocks with prior return data. To be included in a portfolio for month t (formed at the end of the month t-1), a stock must have a price for the end of month t-13 and a return for t-2. Each included stock also must have market value of equity data for the end of t-1.

We find that the strong seasonal in January returns is consistently related to both the SMB and HML factors, and inversely related to momentum (UMD). Over the entire 1927-2004 period, the average January SMB factor return was 2.56 percent more than in the other 11 months of the year with a standard deviation of 3.23 percent. The median January SMB factor return premium was 2.25 percent; January SMB factor return premiums were positive 76.9 percent of the time (z = 4.76). January SMB factor return premiums are of the same sign and order of magnitude as January HML factor return premiums. Over this period, the average January HML factor return premium was 2.54 percent with a standard deviation of 4.01 percent. The median January HML factor return premium was 1.98 percent; January HML factor return premiums were positive 75.6 percent of the time (z = 4.53). These findings strongly suggest that abnormally high January returns can be attributed to both firm size and book-to-market effects. Figure 2 depicts Fama-French SMB and HML factor return premiums for January relative to the eleven other months of the year. Notice that the positive premium for January SMB factor returns is quite variable over time. The positive premium for January HML factor returns is also variable, and appears to have diminished during recent years.

The positive relation evident between January returns and Fama-French SMB and HML factors is in stark contrast with the consistently negative influence of momentum. Over the 1927-2004 period, the average January UMD factor return was -1.72 percent lower than in the other 11 months of the year with a standard deviation of 4.82 percent. The median January UMD factor return discount was -1.26 percent; January UMD factor return premiums were positive only 41.0 percent of the time (z = -1.59). Figure 2 shows UMD factor return discounts for January relative to the eleven other months of the year. Here the negative influence of momentum (UMD) on January returns appears quite consistent over time. These findings confirm the fact that superior January returns remain highest for smaller firms with negative annual returns in the prior period, and that the January effect is not observed for small cap "winners," as discovered Reinganum (1983). Like findings reported by D'Mello, Ferris and Hwang (2003), these results are consistent with tax-loss selling by small investors at the turn of the year. These findings also support Ritter's (1988) "parking the proceeds hypothesis" explanation as to why the January effect is largely confined to small stocks, especially small stocks that have performed poorly during the prior year.

4.2 Portfolio Return Comparison

Additional perspective on the relative importance of Fama-French risk factors on January returns can be gained by considering typical differences between January returns and returns for the eleven other months of the year for various size and market-to-book portfolios. Figure 3 shows the average rate of return for January minus the average return earned over the eleven other months of the year for six Fama-French portfolios.

As shown in Figure 3, over the entire 1927-2004 period, the average January return premium was 2.94 percent for small stocks with low book-price ratios (the small growth portfolio). The typical January return premium grew to 3.21 percent for small stocks with middle book-price ratios (the small neutral portfolio), and 5.22 percent for small stocks with high book-price ratios (the small value portfolio). For "big" (large cap) stocks with low book-price ratios, the average January return premium was only 0.17 percent (the big growth portfolio). The typical January return premium grew to 1.07 percent for big

stocks with middle book-price ratios (the big neutral portfolio), and 2.62 percent for big stocks with high book-price ratios (the big value portfolio). Both size and book-to-market effects appear to be at work, but size effects appear to predominate. The January effect remains largely a small-cap phenomenon.

5. Post-Tax Reform Act of 1986 Results

The January effect is a classic example of what Sullivan, Timmerman and White (2001) refer to as a data-driven discovery. No *a priori* theory caused researchers to look for anomalous turn-of-the-year trading behavior by institutional and individual investors. Rather, it was the discovery of anomalous turn-of-the year stock market returns that caused researchers to hypothesize tax-loss selling or various behavioral theories to explain the January effect. This creates an empirical problem because we cannot typically test data-driven hypotheses on information that is independent of the data that was used to derive them. The common practice of using the same data set to formulate and test hypotheses introduces data-mining biases that, if not accounted for, invalidate the assumptions underlying classical statistical inference. For example, Sullivan, Timmerman and White (2001) argue that after accounting for the distortions to statistical inference caused by data mining the January effect no longer remains significant.

In considering the relevance of the data snooping problem to tests of the January effect hypothesis it is important to keep two points in mind: (1) Sullivan, Timmerman and White (2001) study Lakonishok and Schmidt's (1990) sample of DJIA (large cap) returns to evaluate the January effect, an influence long-recognized to primarily affect the returns on small cap stocks. Results presented here document that the January effect remains largely a small-cap phenomenon. Tests based upon equally-weighted portfolios are uniformly more suggestive of a January effect that similar tests based upon value-weighted (or DJIA) portfolios. (2) New and interesting data are now available to test the January effect hypothesis. Rozeff and Kinney's (1976) seminal evidence of a January effect was based upon equally-weighted portfolio evidence from1904-74. More recent evidence gives an independent basis for evaluating the statistical importance of a January effect in small cap returns. In particular, the 1987-2004 period following passage of the Tax Reform Act of 1986 gives an independent basis for evaluating the importance of the January effect that has both statistical merit and economic content.

Since passage of the Tax Reform Act of 1986, mutual funds have been required to distribute at least 98 percent of the realized capital gain income generated during the 12-month period ending October 31. Since 1986, net capital gains distributions to mutual fund shareholders are determined without regard to capital losses attributable to transactions occurring during the last two months of the calendar year. Capital losses incurred by mutual funds during the last two months of the year are carried over to the subsequent taxable year. In the period since passage of the Tax Reform Act of 1986, any seasonal tendencies related to tax-motivated selling by institutional investors should occur well before the end of the calendar year. Because many mutual funds retain a January-December reporting period despite a new November-October tax period, the potential exists to distinguish between window dressing (reporting) and tax-motivated seasonality caused by institutional investors during the 1987-2004 period. A persistent January effect over the 1987-2004 period that remains largely confined to small cap stocks would also offer further support for Ritter's (1988) conjecture concerning anomalous buying and selling behavior of individual investors at the turn of the year.

To establish the statistical significance of a January effect in the period following enactment of the Tax Reform Act of 1986, we believe it most reasonable to test on a year-by-year basis and to evaluate the totality of the cumulative evidence at any point in time.6 We consider "decision cones" that permit us to reject the "no January effect" hypothesis if the January cumulative return for any year, R_{Ci}, is greater

6 Szakmary and Kiefer (2004) examine relative returns on cash indices and futures tracking smaller stocks around the turn of the year. Over a more limited time frame than the 1987-2004 period we consider, Szakmary and Kiefer (2004) find evidence that the traditional turn of the year effect in both cash and futures is confined to the pre-1993 period.

than the critical value $R_{Ci}>\theta$, where $\theta \cong e^{\Phi\left(\exp(\ln(1-\alpha)/n),\ \mu_{n\bar{y}},\ \sigma\sqrt{n}\right)} - 1$. For value-weighted portfolio returns, we calibrate μ and σ on the 184 January returns from 1802-1986. For equally-weighted portfolio returns, we calibrate μ and σ on the 60 January returns from 1927-1986. When cumulative January returns rise above the decision cones shown in Figure 4, we can reject the "no January effect" hypothesis with 95 percent confidence ($\alpha = 0.05$).

Figure 4 shows that cumulative value-weighted portfolio returns for January tend to fall inside the decision cone calibrated using all value-weighted monthly returns from 1802-1986. Independent statistical evidence generated using value-weighted portfolio returns since the passage of the Tax Reform Act of 1986 equivocally rejects the "no January effect" hypothesis with 95 percent confidence ($\alpha = 0.05$). Year 3, 1989, is likely to be an anomalous outlier as further cumulative evidence fails to support a finding of the "January effect" for value-weighted portfolio returns. As suggested by Sullivan, Timmerman and White (2001) and Lakonishok and Schmidt (1990), among others, there is no robust support for the January effect hypothesis based upon value-weighted portfolio returns. Starkly different robust support for the January effect hypothesis emerges when equally-weighted portfolio returns are considered. As shown in Figure 4, cumulative equally-weighted portfolio returns for January rise far above the decision cone calibrated using all equally-weighted monthly returns from 1927-1986. This independent evidence generated using equally-weighted portfolio returns since the passage of the Tax Reform Act of 1986 allows rejection of the "no January effect" hypothesis with 95 percent confidence ($\alpha = 0.05$). A January effect in equally-weighted returns remains today that is both statistically significant and economically meaningful.

6. Summary and Conclusions

In this study, we update evidence on the January effect in value-weighted returns for large-cap stocks from 1802-2004, and equally-weighted returns for small cap stocks from 1927-2004. We find a persistent January effect for small cap stocks, even during the period following passage of the Tax Reform Act of 1986. We also document the anomalous pattern of monthly returns for Fama and French (1993) size and book factors, and show that both size and book factors contribute to a continuing January effect for small cap stocks. A persistently negative January effect for momentum stocks is also suggested. We conclude that the January effect remains largely a small cap phenomenon, and one that has been unaffected by the Tax Reform Act of 1986. The January effect is a real and continuing anomaly in stock-market returns, and one that defies easy explanation.

While tax effects have long been offered as a plausible explanation for a January effect in the United States, the continuing presence of a January effect since 1987 appears to weaken that argument. Since passage of the Tax Reform Act of 1986, any seasonal tendencies related to tax-motivated selling by institutional investors should occur well before the end of the calendar year. Because many institutions retain a January-December reporting period despite the new November-October tax period, window dressing rather than tax-motivated selling by institutions may contribute to a January effect during the 1987-2004 period. Tax-motivated selling by individual investors, and the anomalous buying and selling behavior of individual investors at the turn of the year, also remain a plausible contributing explanations. In any event, more than 30 years after its discovery, the January effect remains a compelling riddle.

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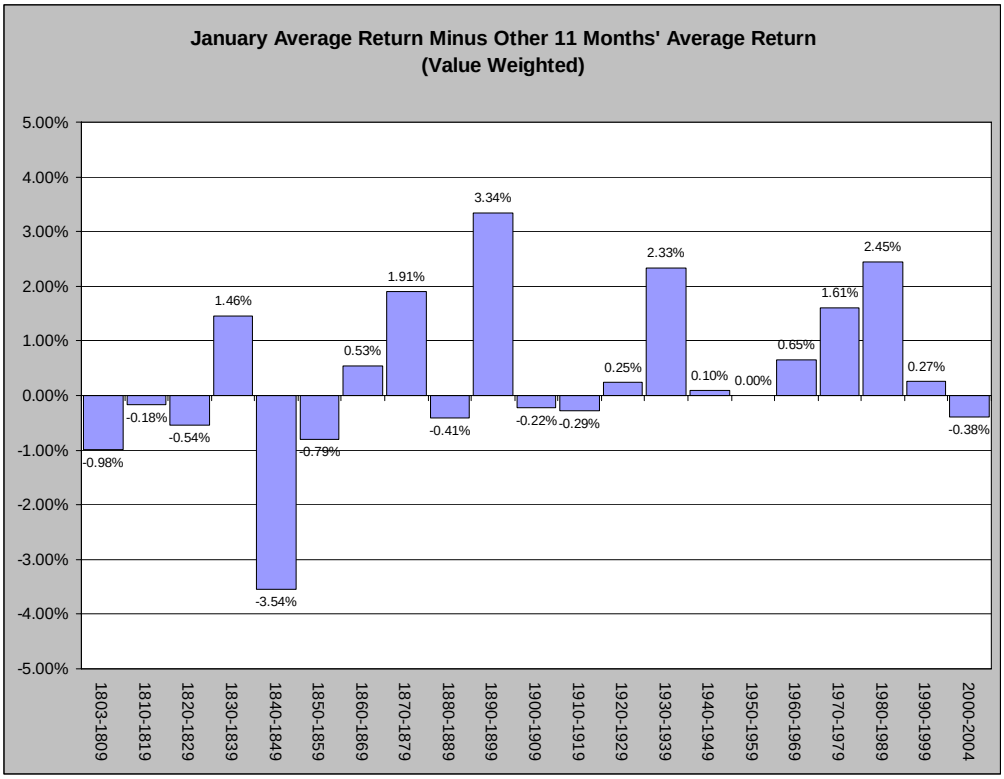
Figure 1
January Return Premiums for Value-weighted (1802-2004)
and Equally-weighted Portfolios (1927-2004)



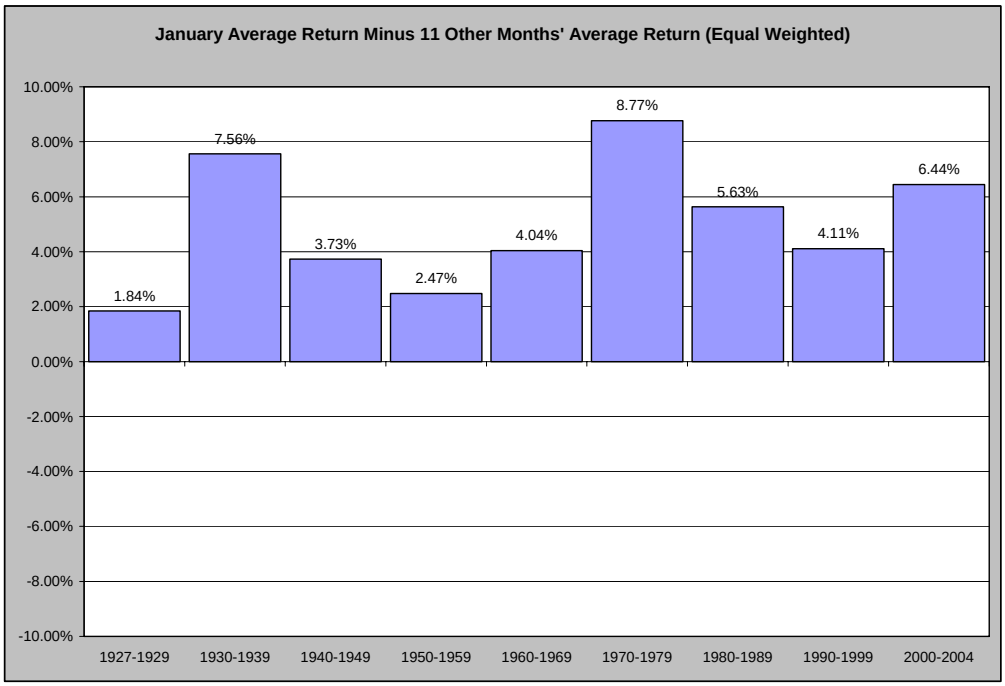
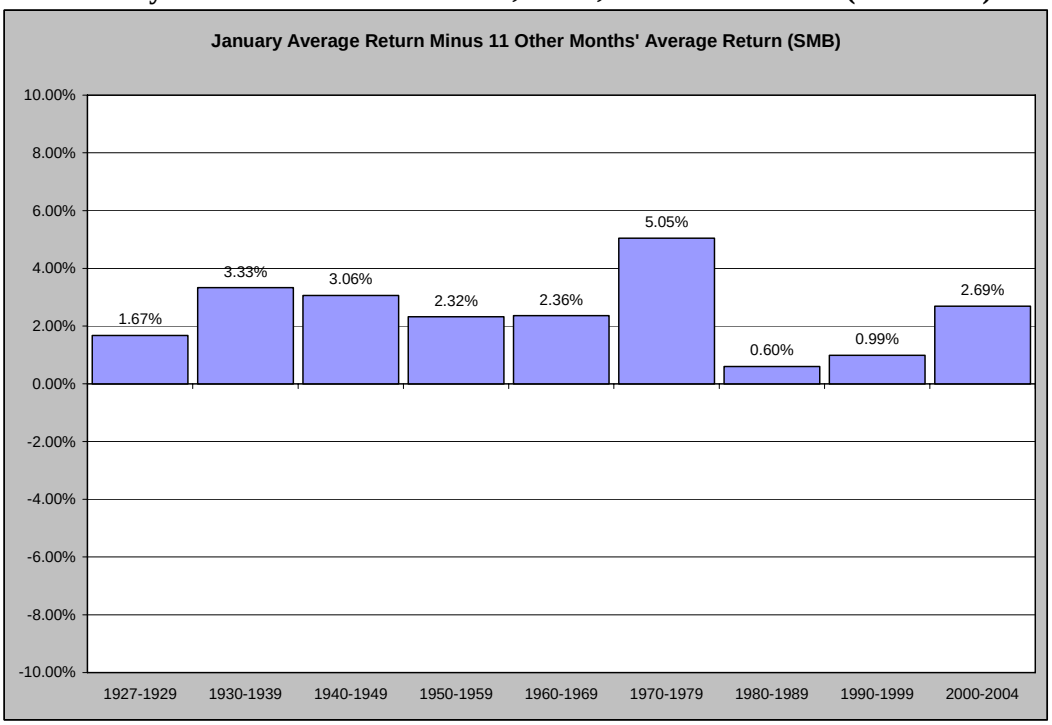
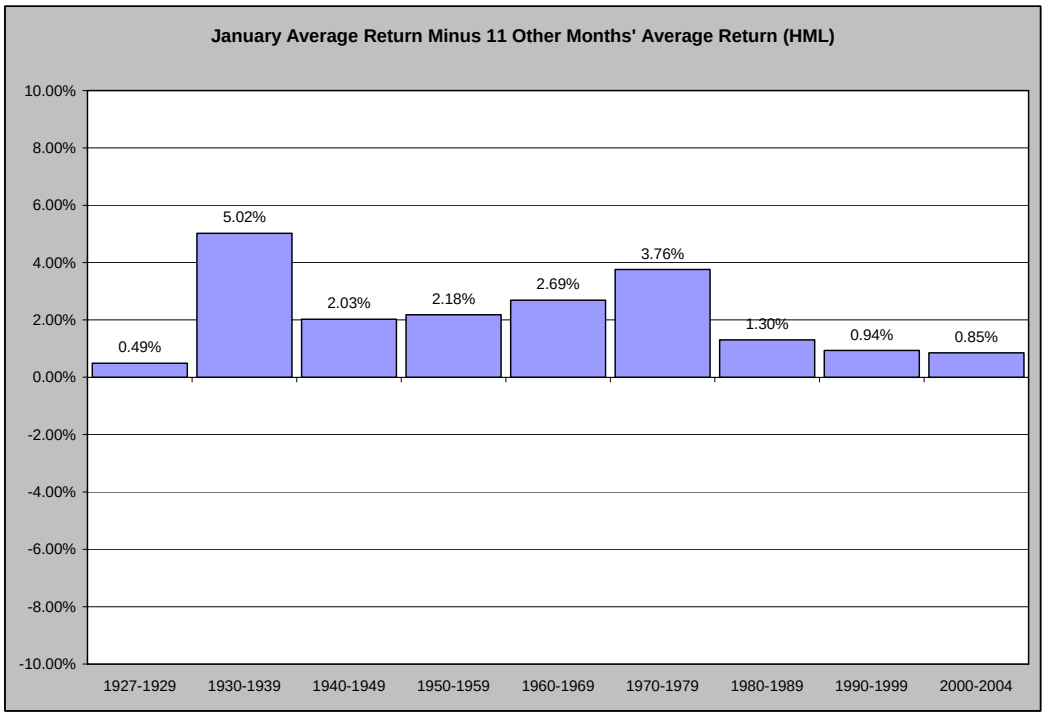


Figure 2
January Return Premiums for SMB, HML, and UMD Factors (1927-2004)





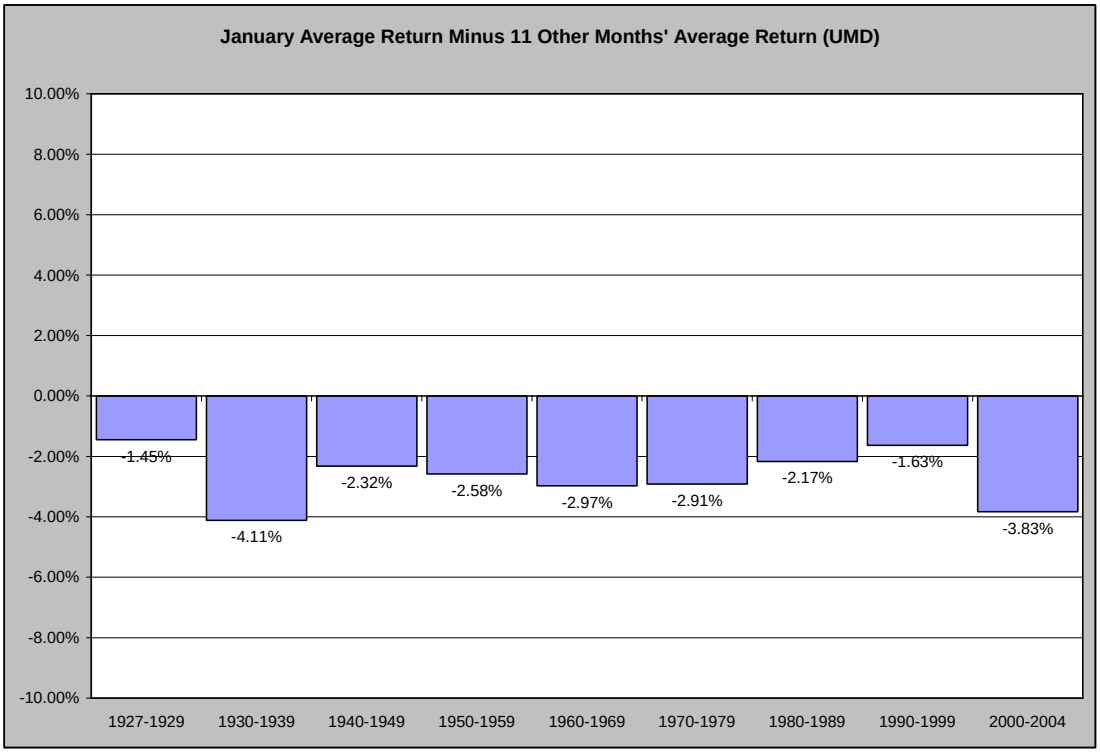

January Average Return Minus 11 Other Months' Average Return (UMD)
10.00%
8.00%
6.00%
4.00%
2.00%
0.00%
-2.00%
-4.00%
-6.00%
-8.00%
-10.00%
-1.45%
-4.11%
-2.32%
-2.58%
-2.97%
-2.91%
-2.17%
-1.63%
-3.83%
1927-1929
1930-1939
1940-1949
1950-1959
1960-1969
1970-1979
1980-1989
1990-1999
2000-2004

Figure 3
January Return Premiums for Six Fama-French Portfolios

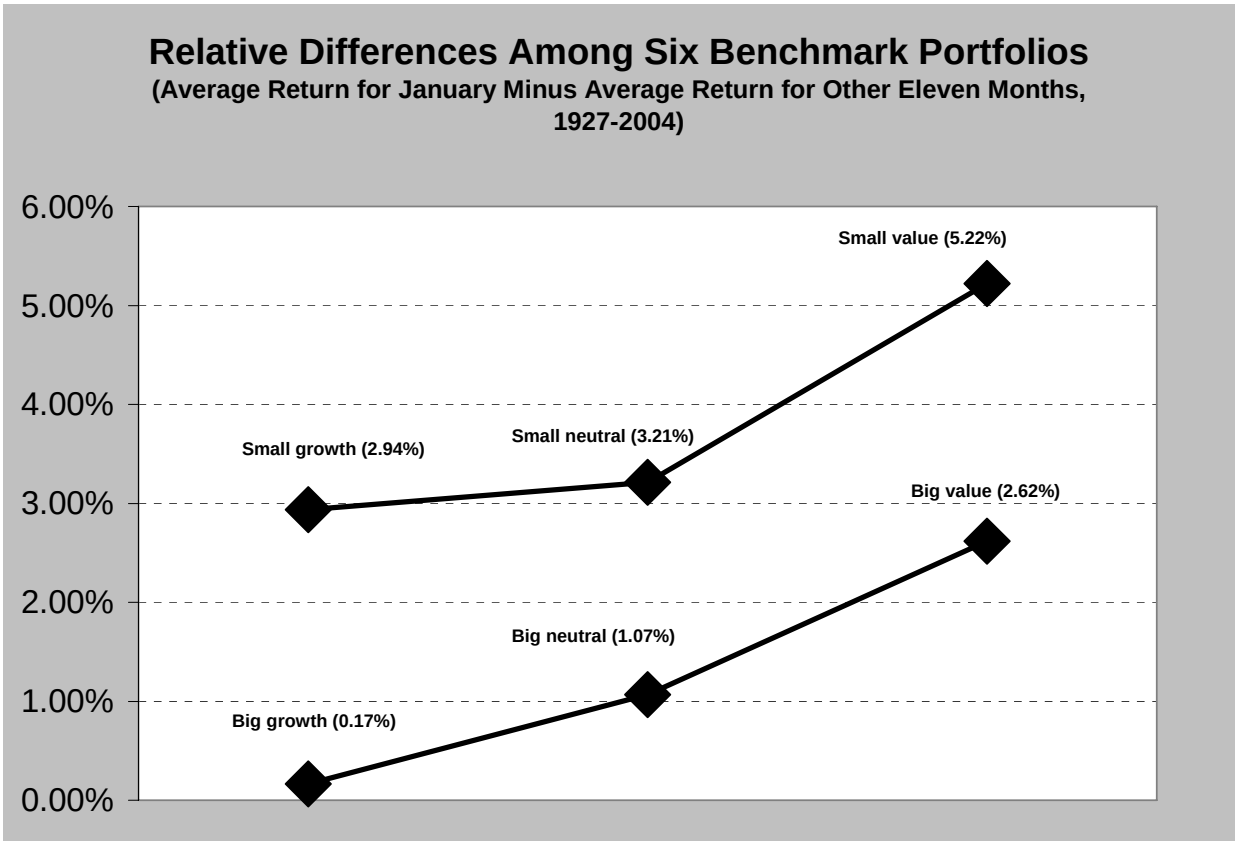


Figure 4
Decision Cones That Permit Rejection of the
"No January Effect" Hypothesis (1987-2004)