Systematic Risk, Unsystematic Risk and the Other January Effect

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Comments are welcome. Please do not quote without the permission of the authors. We are grateful for the financial support of Harold A. Dulan Professorship for Capital Formation and Robert E. Kennedy Chair in Finance at the Sam M. Walton College of Business.

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Abstract

In this paper we examine whether the "other January effect" is widely spread across portfolios of all risk levels or whether it is only concentrated in a small group of firms with certain risk characteristics. We ranked firms traded in the NYSE by standard deviation of returns and beta and find that the calendar anomaly is evenly distributed among all the firms in the market regardless of risk levels. The results suggest that the sources behind the "other January effect" are more likely to be economic factors that affect the entire economy rather than specific factors that have impact only on a particular group of firms. We also find the effect has recently diminished, although it still exists in broad indices including the S&P index and the CRSP value weighted index. We also find that the "other January effect" cannot be explained by the Fama-French three-factor asset pricing model.

Keywords: January, systematic, unsystematic, risk, stock return

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1. Introduction

Rozeff and Kinney (1976) reported that monthly stock returns in January are higher than other months of the year. The interesting finding motivated many authors to explore explanations for the calendar anomaly. The explanations reported in the literature include the size of the firms (Bhardwaj and Brooks, 1992; Moller and Zilca, 2008), the standardized payment pattern in the U.S. (Odgen, 1990), and tax effect and window dressing (Poterba and Weisbenner, 2001; D'Mello, Ferris, and Hwang, 2003).

Cooper, McConnell and Ovtchinnikov (2006) followed a different approach to examine the returns in January and found the predictive power of January returns. They reported that *positive* January returns tend to be followed by *positive* returns for the rest of the year, and *negative* January returns tend to be followed by returns that are indifferent from zero for the rest of the year. In other words, January returns appear to have predictive power for the returns for the rest of the year. Cooper *et al* (2006) called this anomaly the "other January effect."

While the "other January effect" is well documented, the causes behind this calendar anomaly have not been well explored in the finance literature. Business cycles, short-horizon autocorrelations, the presidential cycles, and investor sentiments have been examined for potential explanations of the effect (Cooper, McConnell and Ovtchinnikov, 2006), but none of these causes can completely explain the calendar anomaly.

In this paper we further explore the reasons behind the "other January effect". We examine whether the anomaly can be explained by the systematic risk (beta) and the unsystematic risk (standard deviation) of stock returns. We also examine whether the three-factor model developed by Fama and French (1996) can help explain the calendar anomaly.

More precisely, in this study we first rank stock portfolios by their return standard deviations and beta coefficients and then investigate if the "other January effect" is widely distributed across the portfolios or the effect is only concentrated in certain portfolios with specific risk characteristics. In other words, in this paper we study if the predictive powers of January returns are associated with the systematic and unsystematic risks of the firms. If the predictive power of January returns exists in a large number of portfolios across all risk categories, then we may conclude that the reasons behind the effect are macroeconomic events that affect all the companies regardless of their risk levels. On the other hand, if the effect is only concentrated in a few risk-based portfolios, then we may argue that it is the risks associated with these portfolios that drives the calendar anomaly.

In this study, we also examine if the "other January effect" can be explained by Fama and French's (1996) three-factor asset pricing model. As Cooper, McConnell and Ovtchinnikov (2006) suggested, if the asset pricing model developed by Fama-French (1996) cannot explain the returns predicted by the "other January effect", then it may be necessary to include the "other January effect" into asset pricing models in evaluating portfolio managers' performance.

We believe the answers to these questions are relevant not only to academicians, but also to practitioners such as portfolio managers. Portfolio managers may find the predictive powers of January returns important in their trading on hedging strategies, just as academicians may find explanations for the new calendar anomaly important and interesting.

To achieve the goals, we rank the firms listed in the New York Stock Exchange by the level of systematic and unsystematic risks. We also examine broad indices including the Standard and Poor's Composite Index, the CRSP value weighted index *with* and *without* dividends and the CRSP equal weighted index *with* and *without* dividends.

The results of our study indicate that the "other January effect" detected in broad stock indexes is also observed across portfolios of *all* risk levels, and the magnitude of the effect has decreased after 1974. In addition, we also find that the excess returns predicted by the anomaly cannot be explained by the macroeconomic variables that have been recognized in the literature for having impact on stock returns. Furthermore, just as Fama and French (1993) reported that the *January effect* cannot be explained by their three-factor asset pricing model, we also find that the *"other January effect"* cannot be explained by the three-factor model either.

The remainder of the paper is structured as follows: In Section 2 we examine the "other January effect" in broad indices and in portfolios ranked by risk levels. In Section 3 we test the robustness of the findings in Section 2; In Section 4 we further investigate if the anomaly can be explained by the macroeconomic variables that have been recognized in the literature for having stock return predictive power; In Section 5 we further explore if the excess returns predicted by the "other January effect" can be explained by the Fama-French three-factor model; In Section 6 we summarize and conclude the paper.

2. The "Other January Effect" in Broad Indices and Portfolios Ranked by Risk Levels

To compare our results with previous studies in this area, we start our study by examining the existence of the "other January effect" in five broad stock indices: the Standard and Poor's Composite Index (S&P), the Center for Research in Security Prices (CRSP) Value Weighted Index *with* dividends (VWD), the CRSP Value Weighted Index *without* dividends (VWX), the CRSP Equally Weighted Index *with* dividends (EWD), and the CRSP Equally Weighted Index *without* dividends (EWX). The source of the data is the CRSP database and the period examined is from 1940 through 2008.

Following Cooper *et al* (2006), we calculate the excess holding period returns (HPR) by using the raw returns from February to December minus the risk free rate (Treasury bill securities rate)[1]. We calculate the excess returns for each index and then we sort these returns based on whether the returns on the previous January are positive or negative. The results for the analysis are presented in Table 1. Following Cooper *et al* (2006), we also calculate the spread, which is the difference in 11-month holding period returns between those that follow a *positive* January return and those that follow a *negative* January return. A significant spread indicates that January returns have the power to predict stock market returns over the following 11 months of the year and confirms the existence of the "other January effect."

The first section of Table 1 shows the results for broad indices. All the indices exhibit positive and statistically significant returns when the returns in January are *positive*. The indices also show negative or statistically insignificant returns when the

[1] The Treasury bill rates are taken from Kenneth French's website and produced by Ibbotson and Associates Inc.

returns in January are *negative*. Also, all the indices exhibit positive and statistically significant spreads. The results, consistent with Cooper *et al* (2006), show the ability of January returns in predicting stock returns for the rest of the year. The results confirm the existence of the "other January effect" in broad stock indices.

After documenting the existence of the effect in broad indices, we further examine whether this effect is widely distributed across the portfolios ranked by risk levels. We rank firms listed in the New York Stock Exchange by the annual standard deviation of daily returns (unsystematic risk) and by beta (systematic risk) respectively. The data are taken from CRSP databases and the period is from 1940 to 2008.[2] The second section of Table 1 shows the results for portfolios ranked by risk levels.

The results in the second section of Table 1 for portfolios ranked by risk levels are similar to the first section of Table 1 for broad stock indices. All the portfolios ranked by risk levels exhibit positive and statistically significant returns following *positive* January returns. Also, all the indices exhibit positive and statistically significant spreads. The results show the predictive ability of January returns over the following 11 months of the year for portfolios regardless of their risk levels.

In summary, the results in sections 1 and 2 of Table 1 provide the evidence that the "other January effect" not only exists in broad indices, but also exists across all the portfolios regardless the level of unsystematic or systematic risks. In other words, positive January returns have the ability to predict stock returns over the following 11 months of the year for broad indices and portfolios across all risk levels.

The "Other January Effect" by Sub-periods

[2] CRSP creates the risk-based deciles and labels the portfolio with the highest risk as Portfolio 1 and the portfolio with the lowest risk as Portfolio 10. For details see page 35 of the CRSP manual.

Stivers, Sun, and Sun (2008) show that the "other January effect" has diminished after the discovery of the anomaly in the mid-seventies. Following their conclusion, we examine if the "other January effect" observed in broad indices and in risk-ranked portfolios in the period 1940 – 2008 has also diminished after its discovery. To perform this analysis and following Cooper et al (2006), we divide our sample in two sub-samples: 1940-1972 and 1973-2008. The results of the analyses are presented in Table 2 for the subsample of 1940-1972 and in Table 3 for the subsample of 1973-2008.

The results for the sub-period 1940-1972 in Table 2 are very similar to those presented in Table 1 for the entire period. All the broad indices show statistically significant positive spreads including the S&P index (14.90%), the VWD index (15.60%), the VWX index (15.00%), the EWD index (24.50%), and the EWX (26.00%). Also, virtually all the portfolios ranked by risk levels show statistically significantly positive spreads. The only exception is the first portfolio based on the ranking of beta coefficient. In other words, the January returns of broad indices and risk-ranked portfolios both exhibit predictive abilities during the sub-period of 1940-1972, just as the January returns for the *entire* period.

The results in Table 3 for the sub-period 1973-2008 show a few differences from the sub-period 1940-1972. The first difference is that the effect is absent in some broad stock indices. For instance, although the S&P, the VWD, and the VWX indices still show statistically significantly positive spreads of 14.00%, 12.10%, and 11.00% respectively, the spread for the CRSP equally weighted indices with and without dividend are no longer significantly different than zero. The second difference between the two sub-periods is that during the first sub-period virtually all the risk-based portfolios have statistically significant positive spreads, while during the second sub-period virtually none of the portfolios have statistically significant spreads. The only exceptions are the 1^{st} and the 9^{th} portfolio of firms ranked by the standard deviation which still exhibit significant spreads.

In summary, the comparison of results in Table 2 and Table 3 suggests that the "other January effect" has diminished in broad stock indices; For risk-based portfolios the effect has virtually disappeared during the recent sub-period.

3. Robustness Test

To asses the robustness of the results, we further estimate the model developed by Cooper *et al* (2006):

$$R_t = \alpha + \beta\, Jan_t + \varepsilon_t \qquad (1)$$

where R_t is the 11-month excess return over February to December in year t for broad indices and risk-based portfolios; Jan_t is a dummy variable that equals one if the January excess return for the specific index is *positive* and zero otherwise. The coefficient β measures the impact of positive January returns on the following 11-months returns. If the coefficient is statistically significantly positive, the "other January effect" is confirmed. We run the robustness test for both broad indices and risk-ranked portfolios. The results for Equation (1) for the periods 1940-2008, 1940-1972, and 1973-2008 are presented in Table 4. Since the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the *t*-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix.

The results in Table 4 are consistent with the results in Tables 2 and 3. The β coefficients are statistically significantly positive for virtually all the broad stock indices and risk-ranked portfolios for the entire sample period 1940-2008 and for the first sub-period 1940-1972. Also consistent with the results in the previous section is the reduction in the level of significance of the β coefficients in equally weighted broad indexes and most risk-ranked portfolios in the recent sub-period of 1973-2008.

In summary, the results of the regression analysis confirm the results reported in the previous section and indicate that the "other January effect" is observed in both broad indices and risk-ranked portfolios. However, the magnitude of the effect has diminished recently after the discovery of the effect. We also find that the "other January effect" is an anomaly affecting all the firms in the market regardless of the level of systematic or unsystematic risks. In other words, when the magnitude of the anomaly is pronounced it is observed in all the broad indices and across all risk levels portfolios and when the magnitude of the anomaly diminishes it diminishes across all the portfolios regardless of risk levels.

4. The Other January Effect and Macroeconomic Variables

After showing the existence of the "other January effect" in broad indices and risk-ranked portfolios, we want to examine if the predictive powers of January returns are not subsumed by other macroeconomic variables which can also explain stock returns. Based on the studies of Keim and Stanmbugh (1986), Campbell and Shiller (1988), Fama and French (1988, 1989), and Pesaran and Timmermann (1995), several macroeconomic variables can forecast stock market returns. These variables include the dividend yields, the credit spread in interest rate, the term spread in interest rate, and the short-term Treasury interest rate. We want to examine whether or not the predictive power of January returns is only a new proxy for the macroeconomic variables that can forecast stock returns. If so, after controlling for these macroeconomic variables, we would expect the calendar anomaly to disappear. To perform this task, we estimate the following regression model:

$$R_t = \alpha + \beta_1 Jan_t + \beta_2 Div_{t-1} + \beta_3 Spread_{t-1} + \beta_4 Term_{t-1} + \beta_5 Detrend_{t-1} + \varepsilon_t \qquad (2)$$

where R_t is the 11-month excess return over February to December in year t; Jan_t is a dummy variable that equals one if the January excess return is *positive* and zero otherwise; Div_{t-1} is the dividend yield of the CRSP value-weighted index in year t_{-1}; $Spread_{t-1}$ is the yield spread between Baa-rated and Aaa-rated corporate bonds in year t_{-1}; $Term_{t-1}$ is the yield spread between the ten-year Treasury bond and the three-month Treasury bill in year t_{-1}; $Detrend_{t-1}$ is the de-trended yield of a Treasury bill with three month maturity, calculated as the monthly Treasury bill rate divided by the average of the previous 12 monthly rates in year t_{-1}. The coefficient β_1 measures whether the 11-months returns following a *positive* January return are statistically different from the 11-months returns following a *negative* January return. If the coefficient is statistically significant, then the "other January effect" is confirmed. The lagged variables are taken from the end of December prior to the year in which the 11-month returns are calculated. The macroeconomic variables are obtained from the *Federal Reserve Bulletin* and are the same variables used by Cooper *et al* (2006). The sample period is from January 1940 through December 2008. We estimate the regression Equation (2) for each of the risk-ranked portfolios and present the results in Table 5. Since the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the *t*-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix.

The results in Table 5 show that the coefficients associated with the January dummy variable (β_1) are positive and statistically significant for all the risk-ranked portfolios. The results indicate that the 11-months returns following a *positive* January return are different from the 11-months returns following a *negative* January return and the "other January effect" is still present even after controlling for the macroeconomic variables that have been shown in the literature to have predictive power for stock returns. The results again indicate that the calendar anomaly is observed in all the portfolios regardless the level of unsystematic or systematic risks. The conclusion is consistent with the results in the previous sections and the results in Table 5 support the argument that the "other January effect" is a calendar anomaly that exists across firms with different levels of risks and it is not limited to firms with certain risk characteristics.

To further examine the conclusion, we add a new variable to equation (2). This new variable is for capturing the predictive power of January returns for the *entire market* in addition to the January return of the specific portfolio. Similar to Stivers *et al* (2008) we use a dummy variable that equals one if the January excess return for the *entire market* is positive and zero otherwise to control for the predictive power of January returns for the *entire market*. We use the CRSP value weighted index to create this variable. Based on the previous results that all the risk-ranked portfolios exhibit a significant predictive power regardless of the risk levels, we expect that this variable representing the January returns of the entire market to be statistically significant. We also expect this variable will replace the explanatory power of the January returns of individual portfolios. To test this hypothesis, we estimate the following regression equation:

$$R_t = \alpha + \beta_1 Jan_t + \beta_2 Mkt_t + \beta_3 Div_{t-1} + \beta_4 Spread_{t-1} + \beta_5 Term_{t-1} + \beta_6 Detrend_{t-1} + \varepsilon_t \quad (3)$$

where R_t is the 11-month excess return over February to December in year t for risk-ranked portfolios; Jan_t is a dummy variable that equals one if the January excess return for the specific portfolio is *positive* and zero otherwise; Mkt_t is a dummy variable that equals one if the January excess return for the *entire market* is positive and zero otherwise. A positive and significant coefficient β_1 will show the predictive power of January returns of *individual portfolios*, while a positive and significant coefficient β_2 will indicate the predictive power of January returns of the *entire market*. Other variables have been defined and presented in the previous section. The sample period is from January 1940 through December 2008. Once again, the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the *t*-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix. The results for regression Equation (3) are presented in Table 6.

The results in Table 6 show that none of the β_1 coefficients are statistically significant any more once the variable Mkt_t is included in Equation (3). Instead, virtually all of the coefficients β_2 associated with the market return Mkt_t are statistically significant (except deciles 1, 9, and 10 ranked by the standard deviation of returns). The results show that the January returns for the *entire market* have replaced the January returns of *individual portfolios* in predicting the returns for the rest of the year. The results in Table 6 show that it is the January returns for the *entire market*, rather than the January returns of a particular group of firms with specific risk level, that has the predictive power of forecasting the following 11-month returns. The results in Table 6 are also consistent with the results presented in previous sections that the predictive abilities of January returns are over and above the predictive power of the macroeconomic variables.

5. The Other January Effect and Fama-French Three-Factor Asset Pricing Model

After showing that the "other January effect" is widely spread across portfolios of all risk levels, we further examine if predictive power of January returns could be explained by the Fama-French three-factor asset pricing model. The three-factor model has been useful in explaining the anomalies associated with earnings/price ratios, cash flow/price multiples, past sales growth, and the reversal in long-term stock returns. As Cooper, McConnell and Ovtchinnikov (2006) suggested, if the Fama-French model cannot explain the excess returns predicted by January returns, it may be reasonable to include the "other January effect" into the asset pricing model.[3] To perform this test we estimate the following regression equation:

$$R_t = \alpha + \beta_1 (RM_t - RF_t) + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_t \qquad (4)$$

where R_t is the excess return over the 11-month period from February to December in year t for risk-ranked portfolios; $(RM_t - RF_t)$ is the stock market excess return measured by the CRSP value weighted index minus the Treasury bill rate over the 11-month period from February to December in year t; SMB_t is the difference in returns between the portfolios of small stocks and large stocks over the 11-month period from February to December in year t; HML_t is the difference in returns between the portfolios of high book-to-market ratios and low book-to-market ratios over the 11-month period from February to December in year t. If the asset pricing model can explain the returns predicted by the "other January effect", we expect to find a statistically *insignificant* intercept α. The data for the independent variables are obtained from Kenneth French's

[3] We acknowledge that if the seasonal is due to sampling error the tests using asset pricing models can include a data snooping bias that cause the rejection of the model (Lo and Mackinlay (1990)).

web page,[4] and the sample period is from January 1940 through December 2008. Once again, the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the *t*-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix. The results for Equation (4) are presented in Table 7.

The results in Table 7 show that the intercept coefficient α is statistically significant for virtually all the portfolios (the only exceptions are the deciles 2, 3, 9 and 10 of the portfolios ranked by standard deviation of returns). The results suggest that the three-factor asset pricing model does not completely explain the excess returns predicted by January returns. To further explore this argument, we examine if the combined intercepts of the portfolios ranked by their standard deviation and beta are significantly different than zero using the F-statistic of Gibbons, Ross, and Shanken (1989) (*GRS statistic*) and the results are presented as follows:

Portfolios	**STD**	**Beta**
GRS statistic	3.78	9.09
p-value	< 0.001	< 0.001

The results show that the GRS statistics for β_0 are statistically significant. Therefore, just as Fama and French (1993) reported that the *January effect* cannot be explained by their three-factor asset pricing model, we also find that the *"other January effect"* cannot be explained by the three-factor model either.

[4] The web address is http://mba.tuck.dartmouth.edu/pages/faculty/ken.french.

6. Conclusions

In this paper we extend the study of the "other January effect" by examining whether the calendar anomaly is widely distributed across portfolios ranked by risk measures or the effect is only concentrated in a small group of firms with certain risk characteristics. To attain the goal, we ranked firms traded in the NYSE by their standard deviation of returns and the beta coefficient. We find that the "other January effect" is commonly distributed across all the firms in the market regardless of systematic or unsystematic risk levels. Although the effect has recently diminished, the anomaly still persists in broad indices including the S&P index and the CRSP value weighted indices. We also find that it is the January return of the *entire market*, rather than the January return of the *portfolio* ranked by risk levels, that has the predictive power of the next 11-month return of the *portfolio*. Moreover, we also find that the "other January effect" cannot completely be explained by the macroeconomic variables. Furthermore, we also find that the excess returns predicted by the "other January effect" cannot be explained by the Fama-French three-factor asset pricing model.

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Table 1: Broad Indices and Risk-Ranked Portfolios, 1940-2008

Excess holding-period returns (HPR) for the Standard and Poor's Composite Index (S&P), the CRSP Value Weighted Index with dividends (VWD), the CRSP Value Weighted Index without dividends (VWX), the CRSP Equally Weighted Index with dividends (EWD), the CRSP Equally Weighted Index without dividends (EWX) and risk-ranked portfolios. The risk-ranked portfolios are created from firms listed on the NYSE and ranked by standard deviation of daily returns and level of beta. Portfolio 1 has the highest risk and Portfolio 10 has the lowest risk. The spread is the difference in the 11-month holding period returns between those that follow a *positive* January returns and those that follow a *negative* January return. The source of the data is the CRSP database. The sample period is from January 1940 through December 2008.

		(+) Jan Ret			**(-) Jan Ret**			
	OBS.	**HPR**	**t-statistic**	**OBS.**	**HPR**	**t-statistic**	**Spread**	**t-statistic**
Indexes								
S&P	43	0.079 **	4.27	26	-0.067 **	-2.38	0.147 **	4.34
VWD	43	0.116 **	6.19	26	-0.024	-0.83	0.140 *	3.99
VWX	42	0.075 **	4.16	27	-0.056 **	-1.98	0.130 **	3.89
EWD	51	0.103 **	3.93	18	-0.059	-1.13	0.162 **	2.78
EWX	49	0.072 **	2.85	20	-0.095 **	-2.09	0.168 **	3.21
STD Portfolios								
1	59	0.410 **	5.06	10	0.090	0.53	0.320 *	1.69
2	50	0.149 **	3.88	19	-0.056	-0.79	0.205 **	2.54
3	48	0.134 **	4.06	21	-0.037	-0.64	0.172 **	2.53
4	46	0.139 **	4.48	23	-0.005	-0.12	0.145 **	2.45
5	45	0.138 **	4.84	24	0.012	0.27	0.126 **	2.40
6	45	0.135 **	5.18	24	0.003	0.10	0.132 **	2.88
7	45	0.130 **	5.51	24	0.009	0.28	0.121 **	2.85
8	47	0.118 **	5.50	22	0.013	0.43	0.104 **	2.70
9	49	0.101 **	5.27	20	-0.001	-0.04	0.102 **	2.71
10	53	0.073 **	4.33	16	-0.001	-0.01	0.073 **	2.06
Beta Portfolios								
1	45	0.245 **	4.56	24	0.011	0.17	0.233 **	2.69
2	47	0.190 **	4.86	22	-0.001	-0.03	0.192 **	2.72
3	48	0.183 **	5.26	21	-0.001	-0.02	0.184 **	2.89
4	49	0.180 **	5.82	20	-0.001	-0.03	0.182 **	2.98
5	46	0.175 **	5.53	23	0.039	0.83	0.136 **	2.39
6	49	0.165 **	5.59	20	0.042	0.87	0.122 **	2.13
7	51	0.161**	6.14	18	0.030	0.62	0.130 **	2.33
8	51	0.160 **	6.49	18	0.017	0.36	0.142 **	2.62
9	56	0.126 **	5.98	13	0.019	0.45	0.107 **	2.24
10	59	0.171**	7.10	10	0.029	0.60	0.141 **	2.54

** 5 % significance level, * 10% significance level

Table 2: Broad Indices and Risk-Ranked Portfolios, 1940-1972

Excess holding-period returns (HPR) for the Standard and Poor's Composite Index (S&P), the CRSP Value Weighted Index with dividends (VWD), the CRSP Value Weighted Index without dividends (VWX), the CRSP Equally Weighted Index with dividends (EWD), the CRSP Equally Weighted Index without dividends (EWX) and risk-ranked portfolios. The risk-ranked portfolios are created from firms listed in the NYSE and ranked by standard deviation of daily returns and level of beta. Portfolio 1 has the highest risk and Portfolio 10 has the lowest risk. The spread is the difference in the 11-month holding period returns between those that follow a *positive* January returns and those that follow a *negative* January return. The source of the data is the CRSP database. The sample period is from January 1940 through December 1972.

		Positive January Return			**Negative January Return**			
	OBS.	**HPR**	**t-statistic**	**OBS.**	**HPR**	**t-statistic**	**Spread**	**t-statistic**
Indexes								
S&P	22	0.099 **	3.51	11	-0.050 *	-1.86	0.149 **	3.83
VWD	22	0.146 **	5.02	11	-0.010	-0.37	0.156 **	3.88
VWX	22	0.097 **	3.57	11	-0.053 *	-1.92	0.150 **	3.88
EWD	25	0.156 **	3.65	8	-0.088 **	-2.08	0.245 **	4.06
EWX	24	0.124 **	3.04	9	-0.136 **	-3.85	0.260 **	4.82
STD Portfolios								
1	28	0.421 **	3.45	5	0.166	0.53	0.255	0.77
2	25	0.223 **	3.39	8	-0.098	-156	0.321**	3.62
3	23	0.203 **	3.68	10	-0.048	-0.71	0.251 **	2.88
4	23	0.197 **	4.01	10	-0.034	-0.54	0.231 **	2.89
5	22	0.191 **	4.15	11	0.009	0.15	0.183 **	2.46
6	22	0.181 **	4.45	11	-0.004	-0.09	0.185 **	3.10
7	22	0.171 **	4.83	11	0.004	0.08	0.167 **	2.99
8	24	0.147 **	4.69	9	0.010	0.30	0.138 **	3.09
9	23	0.121 **	4.31	10	0.035	0.88	0.085 *	1.74
10	25	0.104 **	4.65	8	0.009	0.23	0.095 **	2.08
Beta Portfolios								
1	23	0.346 **	3.78	10	0.015	0.17	0.331 **	2.59
2	23	0.272 **	4.14	10	-0.010	-0.14	0.282 **	2.92
3	24	0.239 **	4.06	9	0.000	0.00	0.239 **	2.57
4	25	0.236 **	4.65	8	-0.014	-0.20	0.251 **	2.88
5	23	0.237 **	4.78	10	0.041	0.64	0.196 **	2.41
6	25	0.208 **	4.26	8	0.066	0.96	0.142 *	1.70
7	25	0.208 **	4.99	8	0.005	0.10	0.203 **	3.32
8	24	0.211 **	5.43	9	0.011	0.27	0.200 **	3.51
9	26	0.168 **	5.41	7	0.011	0.24	0.157 **	2.85
10	27	0.177 **	4.52	6	0.029	1.09	0.147 **	3.11

** 5 % significance level, * 10% significance level

Table 3: Broad Indices and Risk-Ranked Portfolios, 1973-2008

Excess holding-period returns (HPR) for the Standard and Poor's Composite Index (S&P), the CRSP Value Weighted Index with dividends (VWD), the CRSP Value Weighted Index without dividends (VWX), the CRSP Equally Weighted Index with dividends (EWD), the CRSP Equally Weighted Index without dividends (EWX) and risk-ranked portfolios. The risk-ranked portfolios are created from firms listed in the NYSE and ranked by standard deviation of daily returns and level of beta. Portfolio 1 has the highest risk and Portfolio 10 has the lowest risk. The spread is the difference in the 11-month holding period returns between those that follow a *positive* January returns and those that follow a *negative* January return. The source of the data is the CRSP database. The sample period is from January 1973 through December 2008.

		Positive January Return			Negative January Return			
	OBS.	HPR	t-statistic	OBS.	HPR	t-statistic	Spread	t-statistic
Indexes								
S&P	21	0.060 **	2.47	15	-0.081 *	-1.76	0.140 **	2.71
VWD	21	0.085 **	3.83	15	-0.035	-0.73	0.121 **	2.26
VWX	20	0.050 **	2.24	16	-0.059	-1.31	0.110 **	2.17
EWD	26	0.052 *	1.84	10	-0.036	-0.40	0.088	0.94
EWX	25	0.024	0.82	11	-0.063	-0.80	0.087	1.03
STD Portfolios								
1	31	0.401 **	3.64	5	0.015	0.08	0.386 *	1.83
2	25	0.075 **	2.13	11	-0.026	-0.22	0.101	0.83
3	25	0.071 **	2.05	11	-0.029	-0.29	0.100	0.96
4	23	0.082 **	2.31	13	0.016	0.21	0.066	0.78
5	23	0.088 **	2.74	13	0.015	0.22	0.074	0.98
6	23	0.093 **	2.92	13	0.010	0.17	0.082	1.21
7	23	0.093 **	3.04	13	0.015	0.27	0.078	1.23
8	23	0.089 **	3.08	13	0.017	0.33	0.072	1.23
9	26	0.084 **	3.18	16	-0.038	-0.75	0.122 **	2.13
10	28	0.046 *	1.89	8	-0.009	-0.18	0.055	0.97
Beta Portfolios								
1	22	0.140 **	2.98	14	0.010	0.10	0.130	1.18
2	24	0.112 **	2.90	12	0.005	0.05	0.107	1.06
3	24	0.128 **	3.64	12	-0.002	-0.02	0.130	1.50
4	24	0.122 **	3.85	12	0.007	0.09	0.116	1.39
5	23	0.114 **	3.15	13	0.038	0.55	0.076	0.97
6	24	0.121 **	3.88	12	0.028	0.39	0.094	1.21
7	26	0.118 **	3.79	10	0.052	0.61	0.066	0.73
8	27	0.115 **	3.92	9	0.024	0.26	0.092	0.96
9	30	0.091 **	3.27	6	0.029	0.35	0.062	0.72
10	32	0.167 **	5.48	4	0.031	0.23	0.136	1.02

** 5 % significance level, * 10% significance level

Table 4: Robustness Test

Following Cooper et al (2006) we estimate the following regression equation:

$$R_t = \alpha + \beta\, Jan_t + \varepsilon_t \qquad (1)$$

Where R_t is the 11-month excess return over February to December in year t for broad indices and risk-based portfolios, Jan_t is a dummy variable that equals one if the January excess return for the specific index is positive and zero otherwise. The coefficient β measures whether the 11-months returns following a *positive* January return are statistically different from the 11-months returns following a *negative* January return. If the coefficient is positive and statistically significant, then the "other January effect" is confirmed. The sample periods are: 1940-2008, 1940-1972, and 1973-2008. Since the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the *t*-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix.

Periods:	**1940-2008**		**1940-1972**		**1973-2008**	
HPR	β	**t-statistics**	β	**t-statistics**	β	**t-statistics**
Indexes						
S&P	0.147**	4.43	0.148 **	3.88	0.140 **	2.68
VWD	0.141**	4.23	0.156 **	4.66	0.121 **	2.32
VWX	0.131**	4.00	0.150 **	4.71	0.109 **	2.16
EWD	0.162 **	2.87	0.244 **	4.37	0.088	1.05
EWX	0.168 **	3.27	0.259 **	5.64	0.086	1.16
STD Portfolios						
1	0.320 **	2.09	0.255	1.00	0.386 **	2.25
2	0.205 **	2.66	0.321 **	3.58	0.101	0.98
3	0.172 **	3.05	0.251 **	4.68	0.100	1.12
4	0.145 **	2.81	0.231 **	4.42	0.066	0.92
5	0.126 **	2.97	0.182 **	4.01	0.073	1.16
6	0.131 **	3.56	0.185 **	4.83	0.082	1.49
7	0.121 **	3.62	0.167 **	4.69	0.078	1.56
8	0.104 **	3.11	0.137 **	3.48	0.072	1.48
9	0.102 **	3.58	0.085 **	2.33	0.122 **	2.55
10	0.073 **	2.61	0.094 **	3.33	0.055	1.08
Beta Portfolios						
1	0.233 **	2.96	0.331 **	2.95	0.130	1.42
2	0.192 **	2.94	0.282 **	3.82	0.107	1.14
3	0.184 **	3.55	0.238 **	3.47	0.129 *	1.87
4	0.182 **	3.22	0.251 **	2.83	0.115 *	1.80
5	0.136 **	2.57	0.195 **	2.61	0.075	1.12
6	0.122 **	2.74	0.142 **	2.63	0.093	1.48
7	0.131 **	2.45	0.202 **	3.54	0.065	0.84
8	0.143 **	2.71	0.199 **	3.60	0.091	1.04
9	0.107 **	2.54	0.157 **	3.46	0.062	0.82
10	0.141 **	2.82	0.147 **	3.41	0.136	1.17

** 5 % significance level, * 10% significance level

Table 5: The Other January Effect and Macroeconomic Variables

To examine if the predictive powers of January returns are not subsumed by other macroeconomic variables, we estimate the following regression equation:

$$R_t = \alpha + \beta_1 Jan_t + \beta_2 Div_{t-1} + \beta_3 Spread_{t-1} + \beta_4 Term_{t-1} + \beta_5 Detrend_{t-1} + \varepsilon_t \qquad (2)$$

where R_t is the excess return over the 11-month period from February to December in year t for risk-ranked portfolios; Jan_t is a dummy variable that equals one if the January excess return for the specific index is *positive* and zero otherwise. The coefficient β_1 measures whether the 11-months returns following a *positive* January return are statistically different from the 11-months returns following a *negative* January return. If the coefficient is positive and statistically significant, then the "other January effect" is confirmed. Div_{t-1} is the dividend yield of the CRSP value-weighted index; $Spread_{t-1}$ is the yield spread between Baa-rated and Aaa-rated corporate bonds; $Term_{t-1}$ is the yield spread between the ten-year Treasury bond and the three-month Treasury bill; $Detrend_{t-1}$ is the detrended yield of a Treasury bill with three month maturity, and ε_t is the error term. The Detrend variable is the monthly Treasury bill rate divided by the average of the previous 12 monthly rates. The lagged variables are taken from the end of December prior to the year in which the 11-month returns are calculated. The macroeconomic variables are obtained from the Federal Reserve Bulletin. The sample period is from January 1940 through December 2008. Since the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the t-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix.

HPR	**α**	**t-stat**	β_1	**t-stat**	β_2	**t-stat**	β_3	**t-stat**	β_4	**t-stat**	β_5	**t-stat**
STD Portfolios												
1	-0.71 *	-1.86	0.27 **	1.96	76.02 *	1.83	42.85 *	1.76	4.59	0.76	0.11	0.63
2	-0.21 *	-1.87	0.19 **	2.49	36.20 **	1.96	9.42 *	1.79	1.41	0.53	-0.05	-0.85
3	-0.17 *	-1.67	0.15 **	2.64	31.42 **	2.25	4.71	1.08	0.73	0.35	-0.01	-0.17
4	-0.15	-1.57	0.11 **	2.29	28.86 **	2.32	6.16	1.48	1.61	0.86	-0.01	-0.11
5	-0.08	-0.96	0.10 **	2.35	23.82 **	2.03	3.24	0.81	1.43	0.89	-0.01	-0.15
6	-0.12	-1.58	0.11 **	3.07	22.18 **	2.18	4.79	1.38	1.69	1.15	0.01	0.06
7	-0.10	-1.36	0.09 **	2.91	22.14 **	2.37	4.02	1.02	2.00	1.55	-0.01	-0.18
8	-0.09	-1.25	0.09 **	2.46	18.82 **	2.34	3.67	1.09	1.99 *	1.82	-0.01	-0.15
9	-0.08	-1.23	0.08 **	2.91	17.29 **	2.43	3.66	1.04	1.67	1.61	-0.01	-0.53
10	-0.15 **	-2.73	0.08 **	3.19	18.21 **	3.06	4.38	1.17	1.87 *	1.89	0.02	0.74
Beta Portfolios												
1	-0.14	-1.08	0.17 **	2.48	72.25 **	2.36	6.72	0.76	0.38	0.14	-0.09	-1.05
2	-0.20 *	-1.76	0.15 **	2.34	49.29 **	2.58	6.89	1.41	0.78	0.34	-0.01	-0.14
3	0.15	-1.57	0.16 **	3.30	42.98 **	2.85	7.93 *	1.82	0.53	0.26	-0.04	-0.86
4	-0.14	-1.61	0.16 **	3.12	34.24 **	2.60	8.46 **	2.01	0.76	0.4	-0.04	-0.82
5	-0.07	-0.74	0.10 **	1.97	36.23 **	3.29	6.11	1.49	1.26	0.71	-0.05	-0.95
6	-0.14	-1.57	0.10 **	2.28	33.75 **	2.93	8.33 **	2.42	1.55	0.96	-0.01	-0.14
7	-0.17 **	-1.96	0.12 **	2.37	26.35 **	2.64	7.46 **	2.16	1.95	1.29	0.02	0.62
8	-0.12	-1.44	0.12 **	2.34	27.75 **	2.76	5.42 *	1.64	1.65	1.07	-0.01	-0.25
9	-0.09	-1.47	0.10 **	2.78	24.77 **	3.53	4.87	1.22	1.77	1.66	-0.02	-0.89
10	-0.07	-0.98	0.13 **	2.99	13.75	1.48	6.56	1.21	2.83 **	2.14	-0.02	-0.69

** 5 % significance level, * 10% significance level

Table 6: The Other January Effect, Market returns and Macroeconomic Variables

To examine if the predictive powers of January returns are not subsumed by January market returns and other macroeconomic variables, we estimate the following regression equation:

$$R_t = \alpha + \beta_1\, Jan_t + \beta_2\, Mkt_t + \beta_3\, Div_{t-1} + \beta_4\, Spread_{t-1} + \beta_5\, Term_{t-1} + \beta_6\, Detrend_{t-1} + \varepsilon_t \qquad (3)$$

where R_t is the excess return over the 11-month period from February to December in year t; Jan_t is a dummy variable that equals one if the January excess return for the portfolio is *positive* and is zero otherwise; Mkt_t is a dummy variable that equals one if the January excess return for the *entire market* is positive and zero otherwise. The coefficient β_1 measures the predictive power of January returns for *individual portfolios* while the coefficient β_2 measures the predictive power of January returns for the *entire market*; Div_{t-1} is the dividend yield of the CRSP value-weighted index; $Spread_{t-1}$ is the yield spread between Baa-rated and Aaa-rated corporate bonds; $Term_{t-1}$ is the yield spread between the ten-year Treasury bond and the three-month Treasury bill; $Detrend_{t-1}$ is the detrended yield of a Treasury bill with three month maturity, and ε_t is the error term. The Detrend variable is the monthly Treasury bill rate divided by the average of the previous 12 monthly rates. The lagged variables are taken from the end of December prior to the year in which the 11-month returns are calculated. The macroeconomic variables are obtained from the *Federal Reserve Bulletin*. The sample period is from January 1940 through December 2008. Since the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the t-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix

Portfolios	A	t-stat	β_1	t-stat	β_2	t-stat	β_3	t-stat	β_4	t-stat	β_5	t-stat	β_6	t-stat
STD														
1	-0.72*	-1.89	0.20	1.18	0.12	0.84	73.05*	1.70	43.36*	1.78	4.66	0.78	0.11	0.65
2	-0.21*	-1.79	0.07	0.53	0.16*	1.75	32.72*	1.83	8.71*	1.69	1.54	0.58	-0.05	-0.84
3	-0.18*	-1.81	-0.01	-0.08	0.20**	3.45	27.64**	2.08	5.13	1.26	1.30	0.58	-0.01	-0.19
4	-0.16*	-1.78	-0.06	-1.07	0.22**	4.93	27.01**	2.34	6.81*	1.73	2.13	1.13	-0.02	-0.44
5	-0.11	-1.24	-0.03	-0.72	0.19**	4.28	21.51**	2.03	4.34	1.17	1.76	1.09	-0.02	-0.41
6	-0.14*	-1.83	-0.02	-0.36	0.17**	2.81	19.83**	2.15	5.27	1.58	2.16	1.48	0.00	-0.02
7	-0.11*	-1.66	-0.03	-0.65	0.17**	3.07	20.55**	2.45	4.54	1.23	2.37*	1.86	-0.01	0.34
8	-0.10	-1.44	0.00	0.03	0.12**	2.01	16.69**	2.35	3.79	1.19	2.17**	1.99	-0.01	-0.17
9	-0.09	-1.37	0.04	0.70	0.07	1.37	15.19**	2.46	3.71	1.07	1.98*	1.80	-0.01	-0.38
10	-0.15**	-2.54	0.05	1.21	0.05	1.10	15.92**	2.81	4.32	1.18	1.96*	1.93	0.02	0.60
Beta														
1	-0.15	-0.74	-0.02	-0.13	0.24*	1.81	69.98**	3.33	7.24	0.79	-0.07	-0.02	-0.11	-0.89
2	-0.20	-1.37	-0.04	-0.35	0.23**	2.23	47.37**	2.93	6.96	0.98	1.66	0.61	-0.02	-0.20
3	-0.16	-1.19	0.01	0.13	0.19**	2.17	39.31**	2.72	7.33	1.15	1.06	0.43	-0.04	-0.50
4	-0.14	-1.09	0.05	0.55	0.14*	1.77	31.20**	2.29	8.08	1.34	0.98	0.43	-0.04	-0.51
5	-0.09	-0.71	-0.02	-0.21	0.16**	2.07	33.54**	2.53	6.50	1.12	1.58	0.71	-0.06	-0.71
6	-0.14	-1.24	-0.05	-0.69	0.20**	2.80	30.45**	2.47	7.84	1.44	2.27	1.10	-0.01	-0.12
7	-0.18*	-1.64	0.02	0.35	0.13**	2.18	22.35*	1.91	7.87	1.54	2.01	1.04	0.03	0.46
8	-0.14	-1.34	0.05	0.81	0.12**	2.18	23.67**	2.13	6.37	1.31	1.73	0.93	0.00	-0.07
9	-0.10	-1.08	0.05	0.88	0.08*	1.85	20.69**	2.16	5.48	1.31	1.90	1.19	-0.02	-0.40
10	-0.09	-0.84	0.07	1.00	0.12**	2.43	7.12	0.64	7.53	1.56	3.04*	1.65	-0.01	-0.22

** 5 % significance level, * 10% significance level

Table 7: The Other January Effect and Asset Pricing Model

To examine whether the excess stock returns predicted by January returns can be explained by the Fama-French (1996) three-factor model we estimate the following regression equation:

$$R_t = \alpha + \beta_1 (RM_t - RF_t) + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_t \qquad (4)$$

where R_t is the excess return over the 11-month period from February to December in year t; $(RM_t - RF_t)$ is the stock market excess return measured by the return on the CRSP value weighted index minus the Treasury bill rate over the 11-month period from February to December in year t; SMB_t is the difference in return between the portfolios of small stocks and large stocks over the 11-month period from February to December in year t; HML_t is the difference in return between the portfolios of high book-to-market ratio and low book-to-market ratio over the 11-month period from February to December in year t. If the asset pricing model can explain the returns predicted by the "other January effect", we expect to find a statistically insignificant intercept α. The data for the independent variables are obtained from Kenneth French's web page and the sample period is from January 1940 through December 2008. Since the residuals of all the regressions suffer from both autocorrelation and heteroskedasticity, the *t*-statistics are corrected using Newey-West's (1987) heteroskedasticity and autocorrelation consistent covariance matrix.

HPR	α	t-stat	β_1	t-stat	β_2	t-stat	β_3	t-stat	Adj. R^2
STD Portfolios									
1	0.259**	2.87	1.455 **	5.36	2.687 **	6.81	0.419	0.89	0.39
2	0.004	0.26	1.220 **	13.07	1.611 **	10.78	0.379 **	3.67	0.92
3	0.004	0.41	1.091 **	18.06	1.335 **	11.14	0.308 **	3.09	0.93
4	0.013 *	1.66	1.050 **	19.32	1.103 **	13.03	0.385 **	3.72	0.94
5	0.021**	2.59	0.947 **	17.07	0.974 **	9.78	0.442 **	3.68	0.94
6	0.020 **	2.64	0.901 **	15.26	0.769 **	8.89	0.406 **	3.62	0.93
7	0.021**	3.29	0.867 **	16.84	0.606 **	11.07	0.414 **	3.54	0.93
8	0.022 **	3.40	0.816 **	14.35	0.444 **	9.04	0.361 **	2.78	0.90
9	0.010	1.16	0.764 **	11.99	0.302 **	5.81	0.411 **	3.34	0.87
10	0.005	0.48	0.641 **	7.45	0.077	1.02	0.339 **	2.78	0.68
Beta Portfolios									
1	0.053 **	2.03	1.520 **	10.53	1.531 **	5.46	0.478 *	1.66	0.75
2	0.035 **	2.63	1.287 **	14.19	1.255 **	9.23	0.421 **	2.65	0.88
3	0.041 **	3.41	1.152 **	14.26	1.160 **	10.01	0.424 **	3.26	0.89
4	0.046 **	3.71	1.062 **	14.51	1.055 **	8.35	0.458 **	3.62	0.89
5	0.050 **	4.04	1.037 **	14.44	0.968 **	9.28	0.460 **	4.51	0.89
6	0.051 **	5.08	1.006 **	17.54	0.907 **	10.60	0.494 **	6.66	0.90
7	0.052 **	6.44	0.945 **	13.41	0.808 **	9.44	0.469 **	3.65	0.90
8	0.051 **	5.11	0.899 **	12.80	0.769 **	9.96	0.458 **	4.55	0.88
9	0.046 **	4.45	0.719 **	11.28	0.633 **	10.04	0.441 **	4.03	0.83
10	0.098 **	6.29	0.629 **	8.01	0.928 **	7.23	0.386 **	3.00	0.69

** 5 % significance level, * 10% significance level