

Congressional Calendar and Control Risks: Evidence from United States Mega-cap, Broad-based and Innovation-based Stock Market Performance

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Abstract

United States stock market returns are examined in the context of the Congressional calendar and the incidence of party control. A legislative calendar effect in returns is deemed possible when the Congress is in-session. Previously published studies report a strong negative calendar effect in historical returns for the mega-cap Dow Jones Industrial Average. In this study, similar though less pronounced results are observed for more recent periods. More pronounced negative calendar effects are observed in both the broader S&P 500 Index and the more innovation oriented NASDAQ. Finally, evidence is presented that performance of both the S&P and NASDAQ indices have been related to the incidence of party control in the U.S. Congress.

I. Introduction

Pundits have quipped that our citizenry is fortunate to consume less than one-half of the governmental services for which they are compelled to pay. It may be argued that such commentators have a free-market perspective and that they view with disdain, much of what passes as governmental regulation. The obvious corollary to this world view is that legislative activity raises the prospect for increasing governmental intrusion into society and that this perception retards business initiative. Innovators, the argument goes, will sit on their hands when rule-makers are active and will proceed more rapidly when the threat of legislative activism is perceived to be low. Since business initiatives are inherently bound in inertia, it is difficult discern innovators' reactions to periods of legislative trepidation and out-of-session confidence. The investment community is much less constrained. Market participants may very quickly express through their investment choices their collective assessments of the legislative climate for business innovation. Market returns are therefore an appropriate vehicle for detecting perceptions of legislative risk.

In this study, we revisit the effort of Lamb et.al. (1997) to investigate correlations between stock returns of the large capitalization firms that comprise the Dow Jones Industrial Average (DJIA) and the in-session incidence of the United States Congress. We find that recent experience through early 2008 mirrors the results that Lamb et.al. (1997) reported but that the phenomenon is now less pronounced than it had been historically. The DJIA component firms are 30 of the largest and most widely held U.S. public companies. As such they represent only a subset of the equity universe and notably underweight the innovative entrepreneurial sector. We also examine correlations between the Standard and Poor's 500 Index (S&P500) and the Congressional calendar. The S&P500 also gauges large-capitalization firms, but includes a much broader spectrum of the economy. The NASDAQ Composite index tracks the performance of over 3,000 public companies and has traditionally been viewed as a surrogate for

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the innovative technology sector. We find that the Congressional calendar effect has been more pronounced in the S&P500 and NASDAQ returns than in the DJIA arena and that in these venues, the phenomenon has persisted.

For all three market indices, we also tested for the presence of a January effect. Rozeff and Kinney (1976) identified January as a period of higher than normal stock returns, but Banz (1981), Keim (1983) and Reinganum (1983) found that significant January effects are not prominent in the returns data of larger firms. Like the Lamb et.al. (1997) analysis of the DJIA, we found that the calendar effect was sustained for all three markets while a hypothesized January effect did not attain statistical significance for any of the indices.

In both the S&P500 study and the NASDAQ study, we also find modest evidence that the incidence of Democratic Party control of the U.S. Senate has a negative correlation with market returns. No similar attribution was indicated for control of either the U.S. House of Representatives or the White House.

II. Data and Methodology

Daily closing levels for the DJIA were collected for the period from October 1, 1928, through January 16, 2008, or for nearly 80 years. There are 19,908 daily return levels determined as $\ln(p_t/p_{t-1})$ where p_t is the DJIA closing level for date t . Dates that the Congress was formally convened and control of the Senate and the House of Representatives were determined from the Congressional Record.

Daily closing levels for the NASDAQ were collected for the period from February 5, 1971, through January 16, 2008, or for nearly 37 years, from yahoo.finance.com. Daily closing levels for the S&P500 were also collected for the period from December 31, 1969 through January 16, 2008, or more than 38 years, from yahoo.finance.com.

For each market index, the daily returns series is regressed on an indicator variable, *InSession*, coded as 1 when Congress is convened and as 0 when Congress is recessed. The estimate of a model's *constant* represents the average daily return for the market when Congress is adjourned, while the *constant* plus the estimated value for *InSession* represents the average daily return when Congress is convened.

To assess potential January effects, for each model we defined an indicator variable, *Month-Jan*, coded as 1 for trading dates in January. Positive estimates for the *Month-Jan* parameter would indicate incremental daily returns to the stock index in January.

To assess the potential impact of party control of the legislative and executive branches, we defined the following indicators: *Senate-Dem* coded as 1 when the Senate has a majority of its members from the Democrat Party; *House-Dem* coded as 1 when the House of Representatives has a Democrat Party majority; and *Pres-Dem* coded as 1 when a Democrat occupies the White House as President. In each case, a positive parameter estimate would suggest an incremental return to the index when a Democrat majority or Democrat president was seated.

III. Discussion and Findings

Calendar Effects

The first regression examines DJIA returns from 1928 to 1993 and confirms the Lamb et al (1997) findings. The results are presented as Table I.

With approximately 250 trading days in a year, the coefficient estimates imply an average annualized rate of return of 11.76% when Congress is adjourned and a 2.53% annualized rate of return when Congress is in session. The *In-Session* effect is significant at a 0.05 level.

We repeated the regression on the DJIA data since January 1, 1994 to ascertain whether the Congressional calendar effect demonstrated by Lamb et.al. (1997) has persisted. The results presented as Table II suggest that for this mega-capitalization market index, the previously demonstrated Congressional Calendar effect, although still negative, no longer attains statistical significance.

The broader S&P data were examined for the period January 2, 1970 through January 16, 2008, with the result presented as Table III. The average annualized return when Congress is adjourned is 15.13% and the annualized return when the Congress is convened is 3.30%. For the 38 year period the calendar effect is significant at a 0.05 level.

We also evaluated the S & P data for the period subsequent to 1993 and again found that the Congressional calendar effect, although negative, had lost statistical significance. Table IV reports those results.

Returns data for the more innovation oriented NASDAQ were evaluated for calendar effects over the period from February 8, 1971 through January 16, 2008, and the negative correlation with Congressional activity was pronounced. The regression results are presented in Table V and suggest that annualized returns when Congress is adjourned have been 20.99% while the returns when Congress is in session are only 2.46%. The effect is significant at the 0.005 level.

Again, we repeated the analysis on the recent NASDAQ returns data since 1994 with results as reported in Table VI. The Congressional Calendar effect is significant at the 0.10 level. For this recent interval, annualized returns when Congress is adjourned average 23.96% and when Congress is in session, annualized returns average just 0.52%

January and Party Effects

None of our regressions revealed a significant January effect although collinearity with the Congressional calendar may very likely confound this factor. The evaluation of the NASDAQ data for the period 1971 to 2008 is illustrative and is presented as Table VII.

Our investigation of the relationship between market returns and the political control of the Congress yielded interesting results. When evaluated with a multiple variable model including parameters for calendar and January effects, the 1971-2008 NASDAQ data revealed a significant negative impact on market returns when the Democrat party had control of the United States Senate. Interestingly, the coincident estimates for Democrat control of the House of Representatives and the White House were positive, but not statistically significant. The results are presented in Table VIII.

To isolate the relationship between returns to the relatively innovative NASDAQ and a Senate that seats a majority from the Democrat Party, we examined a simple regression of returns on the Senate control variable and report the results in Table IX. The regression is significant at the .10 level and suggests that average annualized returns to the NASDAQ index have been 16.07% when Republicans control the United States Senate and 5.62% when Democrats are in control.

For the broader S&P 500 index, the effect is even more pronounced. Our regression is presented as Table X and is nearly significant at the .05 level. When Republicans control the Senate, the S&P 500 has returned an annualized 13.90%, while annualized returns were just 3.96% when Democrats were in control.

IV. Conclusion

Securities returns have been significantly correlated with the Congressional calendar for many decades. Market returns have been lower when Congress is in session. This phenomenon has been expressed in the mega-cap firms that constitute the Dow Jones Industrial Average, in the broad market of major U.S. firms constituting the Standard & Poor's 500 Index, and in the more innovative stocks that are prominently represented in the NASDAQ Index. A plausible explanation is that investors view the possibility of new legislative initiatives as an undesirable source of uncertainty. Even though they might reasonably expect businesses to continue their long-term innovative initiatives, investors may reserve for themselves the luxury of timing their investment decisions to periods of lower perceived legislative risk. Acting as a group, their collective aversion to legislative risk will plausibly explain a growing backlog of demand for equities while Congress is in session. Once the legislature is adjourned, the legislative risk is reduced, at least for a short period, and investors move to relax that backlog of demand for common stocks. Price response to this unleashed demand explains superior returns in periods of legislative recess. Our models did not confirm the existence of a January effect in the markets we examined, but did suggest that a significant negative impact on returns is experienced when Democrats control the U.S. Senate. An interesting extension of this analysis will be to consider legislative calendar effects on market returns in developing economies. Our previous research on emerging market efficiencies in New Zealand, Rayhorn et.al. (2007), provides a natural entry point for extending this study.

Table I - DJIA Calendar Effect 1928-1993

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00047	0.00015	3.13375	0.00173
InSession=1	(0.00037)	0.00019	(1.96384)	0.04957

Table II - DJIA Calendar Effect 1994-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00054	0.00025	2.13129	0.03313
InSession=1	(0.00028)	0.00035	(0.80332)	0.42184

Table III - S&P 500 Calendar Effect - 1970-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00061	0.00016	3.89690	0.00010
InSession=1	(0.00047)	0.00020	(2.32177)	0.02027

Table IV - S&P 500 Calendar Effect - 1994-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00056	0.00026	2.13707	0.03266
InSession=1	(0.00036)	0.00035	(1.02607)	0.30493

Table V - NASDAQ Calendar Effect - 1971-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00084	0.00019	4.44535	0.00001
InSession=1	(0.00074)	0.00025	(2.98473)	0.00285

Table VI - NASDAQ Calendar Effect - 1994-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00096	0.00040	2.38069	0.01733
InSession=1	(0.00094)	0.00055	(1.71634)	0.08619

Table VII - Calendar & January Effects - NASDAQ - 1971-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00090	0.00019	4.65748	0.00000
InSession=1	(0.00073)	0.00025	(2.93205)	0.00338
Month-Jan=1	(0.00061)	0.00040	(1.52996)	0.12606

Table VIII - Calendar, January & Party Effects - NASDAQ - 1971-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00107	0.00026	4.16510	0.00003
InSession=1	(0.00072)	0.00025	(2.89848)	0.00376
Month-Jan=1	(0.00059)	0.00040	(1.48062)	0.13874
Senate-Dem=1	(0.00055)	0.00032	(1.73842)	0.08217
House-Dem=1	0.00008	0.00033	0.25788	0.79650
Pres-Dem=1	0.00064	0.00042	1.54241	0.12301

Table IX - Senate Party Effects - NASDAQ - 1971-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00064	0.00018	3.49699	0.00047
Senate-Dem=1	(0.00042)	0.00025	(1.69378)	0.09034

Table X- Senate Control Effect - S&P500 - 1970-2008

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.00056	0.00015	3.63802	0.00028
Senate-Dem=1	(0.00040)	0.00020	(1.95997)	0.05003

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