

# The Congressional Calendar and Stock Market Performance

Reinhold P. Lamb  
K.C. Ma  
R. Daniel Pace  
William F. Kennedy

*This study reports on the existence of a curious calendar effect—a relationship between stock market performance and the schedule of the U.S. Congress. Almost the entire advance in the market since 1897 corresponds to the periods when Congress is in recess. This is an impressive result, given that Congress is in recess about half as long as in session. Furthermore, average daily returns when Congress is not meeting are almost thirteen times greater than when Congress is in session. Throughout the year, cumulative returns during recess are eight times that experienced while Congress is in session.*

## I. INTRODUCTION

There exists an interesting calendar effect regarding stock market performance. Our research indicates that an overwhelming majority of positive returns in the stock market over the last century occur when the U.S. Congress (House of Representatives) is in recess (closed).

Several studies report calendar anomalies in stock market returns. For example, Rozeff and Kinney (1976) find that the average monthly return in January is significantly greater than the average return for the other months. Gultekin and Gultekin (1983) conclude that this seasonality is not limited to the U.S. market. Belgium, Netherlands, Italy, Japan, and several other countries exhibit returns in January that are larger than those during the rest of the year. Keim (1983), Roll (1983) and Reinganum (1983) find that this seasonality is present mainly in small firms and during the first five days of January.

A weekend effect is documented whereby the returns for Monday are significantly lower than those of the other days of the week (French, 1980; Keim & Stambaugh, 1984; Smirlock & Starks, 1986). Jaffe and Westerfield (1985) find a similar effect in Japan. Rogalski (1984) decomposes the Monday returns and finds that all of the weekend effect is due to the pure weekend return (close Friday to open Monday). The pure Monday effect (Monday open to Monday close) is positive.

Ariel (1987) determines that all of the market's cumulative increase during 1963-1981 occurs around the first half of the month. The second half contributes nothing to the cumulative advance in the market. Predominantly negative returns exist after the midpoint of the month.

Merrill (1984) reports that the market is usually up the day preceding a holiday, and the return for the day after a holiday is usually lower than that before the holiday. A notable exception is Thanksgiving; both days surrounding the holiday exhibit a similar positive market performance.

Another interesting calendar anomaly, called the Presidential Cycle, is traced back to the presidency of Andrew Jackson. The last two years (election year and pre-election year) of the 41 administrations since 1832 account for a total net market gain of 527%. The cumulative market gains during the first two years of those administrations produce only a 74% return (Hirsch, 1992). Furthermore, over the past 12 presidential elections, a market (S&P 500) advance during the election year occurs 10 times (83%). The market experiences only two declines. This behavior contrasts sharply with that of nonelection years whereby a market increase occurs only 65% of the time (Maturi, 1993).

An interesting study by Michelson (1993) reports that investors can expect high returns when Congress is in recess, and when a Democratic Congress and Democratic President are in power. Our paper expands on this curious congressional calendar effect and examines the behavior of the market during open and closed congressional sessions over the last 97 years. We find very different market performances while Congress is meeting as opposed to when it is in recess. The next sections describe the data and methodology that this study employs, followed by the results and the conclusions from the findings.

## II. DATA AND METHODOLOGY

The sample period for this study comprises 1897-1993. The dates that Congress is in session (open) and in recess (closed) during this 97-year period are collected from the Congressional Record. Since Congress is either in session or in recess during each year, a long sample period is necessary to provide statistically robust results. Data limitations on the Center for Research in Security Prices (CRSP) tape prevents extending the sample period much beyond 30 years. Using the CRSP data, therefore, limits our sample to about thirty open and thirty closed observations. Instead, ninety-seven years of daily Dow Jones Industrial Averages (DJIA) are collected to form as large a sample period as possible.

The open and closed session dates are compiled and then the corresponding returns and points are calculated for the DJIA. The DJIA point value for each session is the difference between the DJIA at the end of the session and the closing value on the day

immediately preceding the beginning of the session. Returns are calculated in a similar way. Both arithmetic average daily and annual returns are calculated for closed and open subsamples. The focus on the average returns is not on the return value for the closed and open sessions. Rather, the interesting characteristic is the degree of difference between the session returns. *T*-tests are performed to expose significant differences in returns. Other models are developed to provide additional insights into the behavior of the market during the Congressional calendar. These models test for (a) differences in return levels between open and closed periods, and (b) the relationship between session returns and the month of January.

### III. RESULTS: THE CONGRESSIONAL EFFECT

Table 1-Panel A indicates that during 1897-1993, open dates for Congress total 16,387 days. Closed dates are 9,950 days. Thus, Congress is typically open for about two-thirds of each year and closed for about one-third of each year. Overall, the duration Congress is open is almost twice as long as the closed period. The average number of closed and open days each year is about 105 and 173, respectively. This difference is significant at the 1% level. The range of open days is 59-301; the range for the closed period is 8-241.

Since the general trend of the stock market is upward over the long-term, the observation that Congress is open a substantially longer time than closed implies that returns

**TABLE 1**  
Descriptive Statistics Of Stock Market Performance  
Around Congressional Sessions 1897-1993

	<i>In Recess (closed)</i>	<i>In Session (open)</i>
Panel A: Session Duration		
# of Sessions	95	95
# of Days	9,950	16,387
Average # of days <sup>1</sup>	104.7	172.5
Minimum # of days	8	58
Maximum # of days	241	301
Standard deviation	58.9	61.7
Panel B: Session Returns		
Average daily return <sup>2</sup>	0.0541%	0.0042%
Average annual return	4.2379% <sup>3</sup>	0.5532% <sup>4</sup>

Notes: <sup>1</sup> *t*-value is 6.219 of a difference between closed and open.

<sup>2</sup> *t*-value is 2.500 of a difference between closed and open.

<sup>3</sup> *t*-value is 2.578 of a difference between closed return and zero.

<sup>4</sup> *t*-value is 0.372 of a difference between open return and zero.

should be higher for the open subperiod. Table 1-Panel B presents, however, that the average daily returns and average annual returns are actually higher for the closed session. The average daily return when Congress is closed is 0.0541%. When Congress is open, the average daily return is only 0.0042%. Closed session returns are, thus, almost

**TABLE 2**  
Regression Results of Relationship Between Annual Market Returns and the Congressional Calendar 1897-1993

Panel A: Relationship Between Market Return and if Congress is Open or Closed

$$\text{Ret}_m = a + \beta D + e$$

where D = 0 if Congress is in recess (closed), and  
D = 1 if Congress is in session (open)

$$\text{Ret}_m = 0.041 - 0.039D + 0.016$$

(3.323) (-2.500)

$$F\text{-value} = 6.254 \quad p\text{-value} = 0.012$$

Panel B: Relationship Between Annual Market Return and Closed Congress

$$\text{Ret}_m = a + \beta \text{Out} + e$$

where Out = market return when Congress is in recess (closed)

$$\text{Ret}_m = 0.447 + 1.025 \text{Out} + 1.545$$

(0.290) (10.990)

$$F\text{-value} = 120.783 \quad p\text{-value} = 0.001$$

Panel C: Relationship Between Annual Market Return and Open Congress

$$\text{Ret}_m = a + \beta \text{In} + e$$

where In = market return when Congress is in session (open)

$$\text{Ret}_m = 4.221 + 1.030 \text{In} + 1.653$$

(2.554) (0.372)

$$F\text{-value} = 0.104 \quad p\text{-value} = 0.901$$

thirteen times greater than for when Congress is in session. This difference is significant at the 5% level. Throughout the year, the closed return accumulates to about 4.24%; the open return is not significantly different from zero (0.5532%). The closed period produces returns almost eight times greater than experienced in open sessions. These observations provide evidence that the returns accumulated by the market may be concentrated in Congressional recesses.

To gain more insight into the relationship between market returns and the Congressional calendar, several regressions on the data are performed. Table 2-Panel A presents the results of regressing the market returns on a dummy variable representing the closed and open periods. The model indicates that the fact that Congress is either closed or open has a significant impact on market returns. Table 2-Panel B regresses annual market returns on the closed Congress returns and exhibits a significant relationship. The intercept term is not significant. The annual return is attributable to the closed period return. Table 2-Panel C performs a similar test on open period returns. No significant relationship is observed between the annual returns and the open period returns. The intercept term is significant. Something else (closed returns), therefore, explains the annual returns.

It appears that market behavior is sensitive to the Congressional calendar. The returns generated by the market during the sample period total 607%. Returns while Congress is closed total 538% (0.0541% \* 9,950 days). While Congress is open, returns accumulate to 69% (0.0042% \* 16,387 days). About 89% of the total returns are, therefore, obtained while Congress is closed. Only 11% of the total returns are produced while Congress is open. This is an impressive result given that Congress is open almost twice as long as it is closed. A disproportionate level of returns is, thus, earned while Congress is closed. That is, about 89% of the market returns are generated in only about one-third of the time.

A possible explanation for this interesting observation may be traced back to the well-known calendar anomalies described at the beginning of the paper. Since Congress is usually in recess in early January, and abnormally large returns accumulate in January, perhaps this Congressional effect is really a manifestation of the January Effect. We believe, however, that our results are not driven by such seasonalities. First, our market proxy, the DJIA, is comprised of large firms. Banz (1981), Keim (1983) and Reinganum (1983) show that large firms do not experience a significant January Effect. The seasonal is concentrated mainly among small firms. Since the DJIA does not include small firms, the returns we observe should bear little exposure to the January Effect and, consequently, the Congressional Effect should not be influenced by January returns. Second, we perform a regression analysis of the returns by controlling for January. Table 3 presents the results. The "J" variable, which represents January returns, is not significant. The "D" variable, which represents the Congressional

**TABLE 3**  
Results for Relationship Between Congressional Effect and January 1897-1993

---


$$Ret_m = a + \beta_1 D + \beta_2 J + e$$

where D = 0 if Congress is in recess (closed)  
 = 1 if Congress is in session (open)  
 J = 1 if January; 0 otherwise

<u>Variable</u>	<u>Parameter Estimate</u>	<u>t-value</u>	<u>p-value</u>
a	-0.066	-3.634	0.0003
D	-0.043	-2.685	0.0072
J	0.043	1.586	0.1127

---

Calendar, is still significant. These observations show that the Congressional Effect is not driven by January.

#### IV. RECENT EVIDENCE OF THE CONGRESSIONAL EFFECT

The dates that Congress is in and out of session during 1984-1993 are isolated to observe the recent record of the market around the open and closed schedule. Table 4-Panel A shows an open Congress for 1,652 days over the sample period and a Congress in recess for 930 days. During this time, the change in the DJIA is +2672.74 points. Table 4-Panel B shows that the majority of this market rise (2346.92 points) occurs while Congress is closed. The open sessions produce only 325.82 points. Despite Congress being in session almost 80% longer than in recess, over 87% of the market rise occurs during recess. This difference is significant at the .10 level. This result is similar to that for the entire sample period. Table 4-Panel C indicates an advance in the market in 73% of the periods in which Congress is closed, and about 60% of the time it is open. This is not surprising, given that the general trend of the market is to advance. Although the market moves upward a similar number of times in both sessions, the size of the movements is significantly different. As indicated in Table 1, open returns are very small; closed returns are about thirteen times larger.

The results are even more striking for the most recent six-year subperiod. Since 1988, the change in the DJIA is +1966.34 points; 1870.75 of which occur while Congress is closed. The market rise is only 95.59 points in the open period. Over 95% of the rise in the market between 1988 and 1993 occurs while Congress is in recess. This difference is significant at the .05 level. Furthermore, between 1988-1993, 83% of the sessions that Congress is closed accompany an increase in the DJIA. In only 49% of the sessions in which Congress is meeting does the DJIA advance. Perhaps the investing community is becoming even more skeptical when Congress is in session.

**TABLE 4**  
Relationship Between the Performance of the DJIA  
and the Congressional Calendar 1984-1993

Panel A: Number of Business Days in the Congressional Calendar		
	<i>In Session (open)</i>	<i>In Recess (closed)</i>
1984-1993	1,652	930
1988-1993	1,000	568
Panel B: Change in DJIA Points		
	<i>In Session (open)</i>	<i>In Recess (closed)</i>
1984-1993 <sup>1</sup>	+325.82	+2346.92
1988-1993 <sup>2</sup>	+ 95.59	+1870.75
Panel C: Number of Periods with a Gain in the DJIA		
	<i>In Session (open)</i>	<i>In Recess (closed)</i>
1984-1993	37/62 (60%)	45/62 (73%)
1988-1993	17/35 (49%)	29/35 (83%)

Notes: <sup>1</sup> *t*-value is 1.701 of a difference between closed and open.

<sup>2</sup> *t*-value is 2.196 of a difference between closed and open.

## V. CONCLUSIONS

The findings above provide evidence for the existence of a curious calendar effect: the relationship between stock market performance and whether or not the U.S. Congress is in session. The results indicate that almost the entire market rise since 1897 corresponds to the periods when Congress is closed. An open Congress sees only a small market rise. This behavior is amazing given that Congress is open almost twice as long as it is closed. Perhaps this observation is due to the uncertainty generated while Congress is debating policy, regulatory and procedural issues. The outcome of the various bills and items remains largely unresolved until passage of the pending legislation. It is, therefore, very difficult to predict the ramifications of possible Congressional decisions until the final votes. On the other hand, when Congress is in recess, no bills and regulatory matters are being formally debated or formulated. Perhaps the market enjoys the temporary certainty exhibited by the absence of Congressional decisions, and responds with positive movements.

## REFERENCES

- Ariel, R.A. (1987). A monthly effect in stock returns. *Journal of Financial Economics*, 18(1), 161-174.
- Banz, R.W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*, 9(1), 3-18.
- French, K.R. (1980). Stock returns and the weekend effect. *Journal of Financial Economics*, 8(1), 55-70.
- Gultekin, M.N., & Gultekin, N.B. (1983). Stock market seasonality: International evidence. *Journal of Financial Economics*, 12(4), 469-482.
- Hirsch, Y. (1992). *The stock trader's almanac*, 25th ed. New York: Penguin Books.
- Jaffe, J., & Westerfield, R. (1985). The week-end effect in common stock returns: The international evidenc. *Journal of Finance*, 40(2), 433-454.
- Keim, D.R. (1983). Size-related anomalies and stock return seasonality: Further empirical evidence. *Journal of Financial Economics*, 12(1), 13-32.
- Keim, D.R., & Stambaugh, R.F. (1984). A further investigation of the weekend effect in stock returns. *Journal of Finance*, 39(3), 819-835.
- Maturi, R.J. (1993). *Divining the dow*. Chicago, IL: Probus Publishing.
- Merrill, A.A. (1984). *Behavior of prices on Wall Street*. Chappaqua, NY: The Analysis Press.
- Michelson, S. (1993). Using Congressional sessions to predict the stock market. *Journal of Business and Economic Perspectives*, 9, 89-99.
- Reinganum, M.C. (1983). The anomalous stock market behavior of small firms in January: Empirical tests for tax-loss effects. *Journal of Financial Economics*, 12(1), 89-104.
- Rogalski, R.J. (1984). New findings regarding day of the week returns over trading and nontrading periods: A note. *Journal of Finance*, 39(5), 1603-1614.
- Roll, R. (1983). Vas ist das? *Journal of Portfolio Management*, 9(2), 18-28.
- Rozeff, M.S., & Kinney, W.R., Jr. (1976). Capital market seasonality: The case of stock returns. *Journal of Financial Economics*, 3(4), 379-402.
- Smirlock, M., & Starks, L. (1986). Day-of-the-week and intraday effects in stock returns. *Journal of Financial Economics*, 17(1), 197-210.