J Econ Finan (2009) 33:273–287
DOI 10.1007/s12197-008-9059-x

US elections and monthly stock market returns

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Published online: 6 August 2008
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Abstract Using monthly market returns over a period of 104 years, we investigate possible relationships between stock market performance and various occurrences in American elections. Unlike most prior studies, we find little relationship between the two. In the relatively few cases where we do find statistically significant relationships, the degree of explanatory power is quite small. Specifically, market returns do not appear to vary based on partisan control of the government, a result that is robust to the inclusion or exclusion of macroeconomic control variables. Further, the often-discussed "second-half" effect, which predicts higher returns during the second half of a given presidential term, turns out to be both weaker and less straightforward than is commonly believed. Overall, neither election results nor the election cycle appears to offer much help in predicting stock market returns.

Keywords Market Returns · Election · Democratic · Republican

JEL CODES G10 · G18

1 Introduction and literature review

Prior literature regarding the relationship between political happenings and US stock returns can be broadly divided into three categories. First, there is the widespread belief that the stock market prefers Republican presidents to Democrats (the "party effect"). Prior research does not support this belief, and indeed often comes to

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exactly the opposite conclusion. Huang (1985) found that annual rates of return on stocks from 1929–1980 were better under Democratic presidents than under Republicans. Siegel (2002) found similar results over the 1888–2001 period. Johnson et al. (1999) studied the period of 1929–1996; they found no partisan difference in the returns of the Standard & Poor's 500 Index, but found a pronounced party effect in favor of the Democrats when examining an index of small stocks. In examining British elections, Hudson et al. (1998) found no difference in the performance of the Financial Times 30 Index between Tory and Labour governments.

The second effect, related to the first in that the subject of interest is the president's political party, tests the market's immediate reaction to the election of a Democratic or Republican president (the "election reaction"). Here, empirical results line up far more closely with the popular wisdom: the stock market, on average, reacts more positively to the election of a Republican president than to the election of a Democrat. Studies whose results are largely consistent with this hypothesis include Homaifar et al. (1988), Siegel (2002), Riley and Luksetich (1980), and Niederhoffer et al. (1970).

The third effect relates to the belief that stock market returns tend to be higher during the last 2 years of any given 4-year presidential term, as opposed to the first 2 years; this is known as the "second-half" effect. Previous evidence has mostly supported this belief. For example, Stovall (1992) examined the annual percentage change in the Dow Jones Industrial Average from 1901 to 1991, and found that equities performed best in the last 2 years of a president's term. Other studies with findings broadly supportive of the second-half effect include Siegel (2002), Allvine and O'Neill (1980), Huang (1985), and Johnson et al. (1999). The notion of a second-half effect apparently does not apply to England, where Hudson et al. (1998) reported no difference in stock returns over the terms of the various British governments.

This paper involves both an attempt to replicate the findings of prior studies, and an effort to look at a broader range of issues than most of these studies have considered. For instance, we test the relationship of market returns not only to which party holds the White House, but also to majority status in the two houses of Congress. In addition, we examine whether the results of our tests change when we control for two key macroeconomic variables: real GDP growth and inflation.

We also examine the potential impact of various combinations of control. For instance, does the stock market perform better under the combination of a Democratic President and a Republican Congress, or under the opposite combination? Regarding the issue of election cycles, we test the second-half effect, but also add tests regarding the number of terms that the same party has controlled the presidency.

The remainder of the paper is organized as follows. First, we provide details regarding our data and methodology. Second, we itemize the results of our various tests. A final section concludes the paper.

2 Data and methodology

2.1 Choices regarding data

Daily data regarding the level of the Dow Jones Industrial Average, provided by Dow Jones, is available back to May 26, 1896, which was in the last year of

Democratic President Grover Cleveland's second presidency. Political control of the White House shifted shortly thereafter, when Republican William McKinley was elected president.

Using the daily index level data, we have computed first daily, and then monthly, returns from the election of 1896 through the election of 2000. The election of 2000 marks a convenient ending point for the data, because it—like the election of 1896—marks a change in political party control of the presidency. Our choice of the Dow Jones Industrial Average as a returns index is driven primarily by the existence and availability of daily data extending back for many years.

We classify each date in the dataset based on which party has been elected to control the presidency, which party has been elected to majority status in the US Senate, and which party has been elected to majority status in the US House of Representatives, as of the most recent election. We also classify each date based on whether it falls into the period between a presidential election and a midterm election (the first half of a presidential election cycle), or the period between a midterm election and a presidential election (the second half of a presidential election cycle). Further, we perform tests based on how many consecutive presidential elections have been won by the same political party.

We should note two specific choices regarding our data. First, we ought to mark start and end dates based on elections. This would likely provide a better gauge of how the market reacts to information regarding partisan control of the US government.

First, consider the hypothetical election of 2016, in which President Pathetic of Party X is defeated for re-election by President Competent of Party Y. President Pathetic is, as the name implies, an economic and financial disaster, and is recognized as such by the financial markets. President Competent, as it turns out, is about average; however, at the time of her election the investment community is extremely enthusiastic about the effects of the policies that it believes she will pursue. Thus, there is a highly positive market reaction to President Competent's election. During President Competent's time in office, it becomes clear that while she is far more adept than her predecessor, she is not quite the economic wizard that she was originally believed to be. The market adjusts to that information by correcting for its overly optimistic initial reaction to her election. Thus, during the time that President Competent actually holds office, market returns are slightly below average.

For that reason, if returns are calculated during President Competent's actual time in office, we will understate the market's overall reaction to the changes that took place as a result of her defeating President Pathetic. Perhaps even worse, the high returns that occur between President Competent's election and her inauguration will actually be credited to the term of President Pathetic—even though this positive market reaction was a response to President Pathetic's impending departure!

A second reason is the fact that during much of the earlier part of our sample period, the Congress that was elected in Year Even was not actually seated until rather late during Year Odd. Suppose that a change in partisan control of Congress occurs due to a given election. It would not make sense, as of April of Year Odd, to act as though the party that was just defeated still controlled Congress; by that point in time, investors would have long since become aware of which party would be controlling Congress during its next session.

The second adjustment that we have made to our original tests has to do with the periods over which returns were measured. A review of the daily returns data over our sample period shows a coefficient of variation slightly above 57.5; the analogous statistic for yearly returns data over the same period is slightly below 3.8. Thus, the use of yearly rather than daily returns was considered likely to add more power to our tests for differences in the mean returns of sample subsets.

However, we soon discovered that using yearly returns presents problems of its own. Our test period is 104 years, which for our most basic tests provided an adequate (though not outstanding) sample size. However, when that sample is broken down into subsets for comparative testing, several of these subsets are very small. We therefore concluded that we would be likely to obtain more statistical power from monthly returns than from either yearly or daily returns. Of course, if it turns out that tests using daily, monthly, and yearly returns all fail to detect significant results in a particular area, one must strongly consider the possibility that the issue is not the choice of a measurement interval, but rather a simple lack of a meaningful statistical relationship.

2.2 Overview of tests performed

We regress market returns on term numbers (representing how long a given party has controlled the presidency), on a series of one-zero (dummy) variables representing partisan control of various branches of government, and on a one-zero "second-half" variable. We also perform tests on one-zero variables for various combinations of the above: for instance, a one-zero variable that takes on a value of one only during the second half of the current presidential party's first term in office, another that takes on a value of one only during the second half of the current presidential party's second consecutive term, etc.

We also test for the impact of various changes in partisan control; for instance, we test for differences in average returns based on whether a midterm election has resulted in a new majority party for at least one chamber of Congress. Further, we perform various comparative tests; for instance, we compare mean returns when the president is a Republican but the Democrats control Congress to mean returns when the opposite holds true.

3 Results

3.1 Initial tests of election cycles and political control

With the variable of interest being monthly returns, we first perform a series of tests involving various combinations of the following variables:

1. A one-zero "second-half" variable;
2. The number of consecutive presidential elections won by the same party;
3. A one–zero variable for whether the last presidential election produced a Republican president;

4. A one-zero variable for whether the last Congressional election produced a Republican majority in the US Senate; and,
5. A one-zero variable for whether the last Congressional election produced a Republican majority in the US House of Representatives.

Results of a multiple regression of market returns on these variables are displayed in Table 1. The regression coefficients are positive for the second-half variable and for Republican control of the House of Representatives. Regression coefficients are negative for term number, Republican presidents, and Republican control of the Senate. However, none of these regression coefficients are statistically significant, nor is the *F*-statistic for the regression equation as a whole significant.

As noted by an anonymous referee, one should also consider the impact of key macroeconomic variables on market returns, along with the possibility that omitting these variables may have affected the aforementioned results. Thus, the next two columns in Table 1 present our results when we also include real GDP growth and

Table 1 Regressions of monthly returns on issues of political control

Test variable	Initial regression	Using matched annual macroeconomic data	Using interpolated macroeconomic data
Intercept	0.0065	0.0065	0.0067
	(1.5668)	(1.3818)	(1.4258)
	[0.1198]	[0.1673]	[0.1542]
1/0 variable for second half of term	0.0039	0.0039	0.0040
	(1.2433)	(1.2159)	(1.2437)
	[0.2140]	[0.2243]	[0.2139]
Term number	−0.0019	−0.0016	−0.0018
	(−1.2743)	(−1.1099)	(−1.2198)
	[0.2028]	[0.2673]	[0.2228]
1/0 variable for Republican president	−0.0013	−0.0015	−0.0014
	(−0.3563)	(−0.4041)	(−0.3831)
	[0.7217]	[0.6862]	[0.7018]
1/0 variable for Republican Senate majority	−0.0060	−0.0060	−0.0059
	(−1.0017)	(−0.9771)	(−0.9654)
	[0.3167]	[0.3288]	[0.3346]
1/0 variable for Republican House majority	0.0090	0.0082	0.0087
	(1.5363)	(1.3983)	(1.4624)
	[0.1248]	[0.1623]	[0.1439]
Real GDP Growth		0.0435	0.0151
		(1.3750)	(0.4151)
		[0.1694]	[0.6782]
Inflation		−0.0545	−0.0247
		(−1.5631)	(−0.6549)
		[0.1183]	[0.5127]
Significance of *F*-statistic	0.3190	0.2097	0.4950
R-squared statistic	0.0047	0.0078	0.0051

Monthly stock returns are regressed on the test variables identified above. In each case, the first number shown is the regression coefficient. The corresponding *t*-statistic is shown immediately below, in parentheses, and the corresponding significance level is shown in brackets. Significant findings are designated with * (10% level), ** (5% level), and *** (1% level). After the final variable, we display the significance level of the regression *F*-statistic, along with the *R*-squared measure for the regression.

inflation (as estimated by the GDP deflator) as test variables. (Numbers for both of these data sets are taken from Johnston and Williamson 2005, at: http://www.eh.net/hmit/gdp/. Used with permission.) Because the numbers in this data set are annual, we display the results of performing our tests in two ways: using annual macroeconomic data that has been "matched" with the appropriate monthly returns, and using monthly macroeconomic data that has been estimated through interpolation.

While the addition of macroeconomic variables does not materially alter the previous findings, consideration of these macroeconomic variables nonetheless produces additional information that allows a far richer interpretation of the results.

For instance, a simple correlation matrix, omitted here for brevity, shows that market returns are positively correlated with real GDP growth, but negatively correlated with inflation. Real GDP growth is strongly positively correlated with inflation; so, not surprisingly, a simple regression of market returns on either variable fails to produce a statistically significant result. However, when market returns are regressed on both matched macroeconomic variables, real GDP growth is significant at the 10% level (p value=0.080), and inflation barely misses attaining statistical significance (p value=0.108). The results of an analogous test using interpolated macroeconomic variables are not significant.

The correlation matrix also indicates that Democrats are associated with the market's preferred outcome on real GDP growth (higher). Meanwhile, Republicans are associated with the market's preferred outcome on inflation (lower). Each of these two findings occurs regardless of whether one is looking at control of the Presidency, the Senate, or the House of Representatives, and regardless of whether we use the matched annual macroeconomic variables or the interpolated macroeconomic variables.

A series of separate regressions of market returns on each of the five original test variables—the second-half variable, term number, presidential control, Senate control, and House control—likewise fails to produce any statistically significant results. For each variable, this holds true whether we use a simple regression equation, or instead use a multiple regression equation in which we control for either the matched or interpolated macroeconomic variables. In the interest of brevity, these results are not displayed.

3.2 Examining differences with prior findings

These findings differ from the popular perception that the stock market performs better under Republican presidents; but, they also differ from most previous studies that have indicated exactly the opposite. This difference from previously reported results warrants further discussion. Siegel (2002), while presenting detailed numerical results (p. 223, Table 13-2, presents annual returns data), does not appear to test for statistical significance. When we test these numbers for statistical significance, we find a p value of 0.733, remarkably close to our own results.

Both the Huang (1985) study and the Johnson et al. (1999) study do test for statistical significance. Since the Huang study produces the results that most consistently favor the Democrats, we begin by testing our own data over his test period, which consists of presidents Hoover through Carter. Over that test period, we confirm the Huang finding that the market performs better under Democratic

presidents. We find results that are significant at the 5% level using monthly returns (p value=0.049) and at the 10% level using annual returns (p value=0.086).

Whereas our sample period covers 26 presidential terms, Huang's covers exactly half that many. Is this difference in test periods important? To help examine this question, we calculated cumulative returns for each of the 26 presidential terms covered in our study. During those Republican terms that were part of our time frame but not Huang's, the market's average cumulative return was 50.62%; during those that Huang does include, the market's average cumulative return was only 3.96%. There is no similar disparity among Democratic presidents; in fact, the market performed slightly better during those Democratic terms that were included in the Huang time frame than among those that were not (44.17% vs. 40.07%).

The Johnson et al. (1999) study also begins with Hoover, but includes an additional 16 years during which the market's overall performance was relatively strong: Reagan's two terms, George H.W. Bush's term, and Clinton's first term. Analyzing the Johnson et al. test period, we find that the over-performance of excluded versus included Republican presidents (50.22% vs. 21.75%) is a bit less dramatic than in the Huang test period, but that the under-performance of excluded versus included Democratic presidents is far larger (16.81% vs. 51.47%).

It is important to point out that none of these observations should be taken as a criticism of the sample period choices in either the Huang (1985) or Johnson et al. (1999) studies. Each of these studies ends with the most recently concluded presidency available as of that time, just as ours does. Further, it seems certain that in both studies the start date would have been chosen due to issues involving availability for the various data series being tested. Thus, we see no basis for arguing that either of these studies was based on incorrect decisions regarding test periods. However, the fact remains that both studies begin with a period (Hoover/F. Roosevelt) in which the market performed far better under Democratic than Republican presidents, and exclude the immediately preceding period (Wilson/Harding/Coolidge) in which the market performed far better under Republican than Democratic presidents. Our study—in large part because it goes back so much further—has the advantage of testing a longer historical period.

3.3 Impact of amount of time in office

While the term number variable in our initial tests appears to have little relevance, we further examine this issue through a series of tests involving dummy variables. In the first set of tests, we examine an independent variable that takes on a value of 1 if the most recent presidential election resulted in a change in partisan control of the White House, and 0 otherwise. This variable is tested by itself, controlling for the matched macroeconomic variables, and controlling for the interpolated macroeconomic variables. In the second set of tests, the variable of interest takes on a value of 1 if the same party has won exactly two consecutive presidential elections, and so on for third terms, etc. The results are displayed in Table 2.

Table 2 shows significantly negative results during third terms and marginally significant negative results when we look at third and later terms combined. Further, as shown in the last two columns of the table, these results continue to hold true when we control for the macroeconomic factors of real GDP growth and inflation.

Table 2 Regressions of monthly returns on term number dummy variables

Test variable	When used as sole test variable	When controlling for matched annual macroeconomic data	When controlling for interpolated macroeconomic data
1/0 variable for first term	0.0052	0.0044	0.0050
	(1.6019)	(1.3491)	(1.5373)
	[0.1095]	[0.1776]	[0.1245]
	{0.0021}	{0.0053}	{0.0027}
1/0 variable for second term	−0.0002	0.0006	−0.0000
	(−0.0749)	(0.1724)	(−0.0132)
	[0.9404]	[0.8632]	[0.9895]
	{0.0000}	{0.0038}	{0.0008}
1/0 variable for third term	−0.0093	−0.0105	−0.0101
	(−2.1175)	(−2.3740)	(−2.2722)
	[0.0345]**	[0.0178]**	[0.0233]**
	{0.0036}	{0.0083}	{0.0049}
1/0 variable for fourth term	−0.0011	0.0016	0.0003
	(−0.1834)	(0.2620)	(0.0499)
	[0.8546]	[0.7934]	[0.9602]
	{0.0000}	{0.0038}	{0.0008}
1/0 variable for fifth term	0.0030	0.0020	0.0026
	(0.3633)	(0.2436)	(0.3158)
	[0.7165]	[0.8076]	[0.7522]
	{0.0001}	{0.0038}	{0.0008}
1/0 variable for third and later terms combined	−0.0060	−0.0059	−0.0060
	(−1.6742)	(−1.6571)	(−1.6661)
	[0.0944]*	[0.0978]*	{0.0960]*
	{0.0022}	{0.0060}	{0.0030}

Monthly stock returns are regressed on the test variables identified above. Each row reports the results of a series of three regression equations on the test variable in question: when the variable is tested alone, when controlling for matched annual macroeconomic data, and when controlling for interpolated macroeconomic data. The first number shown for each variable is the regression coefficient. The corresponding t-statistic is shown immediately below, in parentheses, and the significance level is shown in brackets. Significant findings are designated with * (10% level), ** (5% level), and *** (1% level). Finally, for each equation the *R*-squared measure is shown in braces.

However, despite the statistical significance of the regression coefficient on the third-term variable, the R^2 measures are consistently below 0.01. Thus, very little of the variation in market returns during the overall sample period can actually be attributed to this variable.

We also should note that the aforementioned findings of statistical significance are not robust to the exclusive of one extreme outlier—the term of President Herbert Hoover. However, when we remove only the first year after Hoover's election—during which the famous crash of 1929 occurred—the test statistic on the third-term variable remains significant at the 5% level. The reason for this is that, despite the crash, overall percentage losses during this 12-month period were actually quite modest compared to those of each of the following three years. Thus, excluding only the year of the crash does not alter our finding regarding third terms; but, excluding President Hoover's entire term does. With the "third term or later" test variable, however, even the exclusion of this one year leads to a result that is no longer significant at the 10% level. (Detailed results of these tests for robustness are omitted

for brevity. However, all of the results of the tests for robustness described in this paragraph hold true regardless of whether we test the third-term dummy variable alone, or instead control for either the matched or interpolated macroeconomic variables.)

The only other result that approaches statistical significance is the positive regression coefficient on the first-term test variable; i.e., the stock market appears to perform slightly better during the first term that a given political party controls the presidency, but this finding does not quite rise to the level of statistical significance.

3.4 Testing the second-half effect

Having found some limited signs of statistically significant differences based on the number of consecutive terms that a given party has been elected to the presidency, we next undertake a somewhat more thorough investigation of the second-half effect. Here, rather than lumping together all the dates that occurred during the second half of any term, we separate dates that fell into the second half of a first term, second half of a second term, etc.

We test this in two separate ways. First, we compare returns during the second halves of first terms to those within the first halves of first terms. We do the same within second terms, within third terms, etc. As shown in Table 3, we find that within first terms, second-half returns exceed first-half returns; this result is significant at the 5% level, regardless of whether we control for macroeconomic data. However, the *R*-squared statistic shows that the actual level of explanatory power is quite low. We find no significant differences between first-half and second-half returns within second, third, fourth, or fifth terms.

Second, we compare the second halves of various term numbers to returns at all other times. Thus, for instance, we compare the returns during the second halves of first terms to those at all other times, then do the same with the returns that during the second halves of second terms, etc. We find that the second half of a given party's first term in the White House tends to be characterized by above-average returns, while the second half of a third term in the White House tends to be characterized by below-average returns. Both findings are significant at the 5% level, regardless of whether we control for the macroeconomic variables; yet again, however, the explanatory power is quite low. Results are summarized in Table 4.

Note that our findings, taken together, present a more complicated picture than that described in many previous studies. What we find regarding the second-half effect is essentially as follows. First, while the above-average returns during first terms as a whole are not quite statistically significant, the returns during the second halves of these terms are significantly greater than those during the first halves of these terms, and significantly greater than the returns at all other times combined. Second, recall that as noted above, returns during third terms as a whole are significantly below average. Returns during the second halves of third terms are slightly lower (though not even remotely to a significant extent) than those during the first halves of third terms, and are of course well below the returns at all other times combined. The above-average returns during the second half of first terms, and the below-average returns during the second half of third terms, largely cancel out, rendering the overall second-half effect statistically insignificant.

Table 3 Regressions of monthly returns on dummy variables for second halves versus first halves of the same term number

Test variable	When used as sole test variable	When controlling for matched annual macroeconomic data	When controlling for interpolated macroeconomic data
1/0 variable for second half within first term	0.0090	0.0096	0.0113
	(2.0605)	(2.0883)	(2.4319)
	[0.0399]**	[0.0374]**	[0.0154]**
	{0.0089}	{0.0202}	{0.0232}
1/0 variable for second half within second term	0.0040	0.0010	0.0003
	(0.7481)	(0.1777)	(0.0512)
	[0.4549]	[0.8591]	[0.9592]
	{0.0013}	{0.0250}	{0.0161}
1/0 variable for second half within third term	−0.0071	−0.0024	−0.0042
	(−0.6140)	(−0.1981)	(−0.3581)
	[0.5400]	[0.8433]	[0.7207]
	{0.0020}	{0.0228}	{0.0386}
1/0 variable for second half within fourth term	−0.0013	−0.0018	0.0015
	(−0.1567)	(−0.1873)	(0.1654)
	[0.8759]	[0.8519]	[0.8690]
	{0.0003}	{0.0085}	{0.0054}
1/0 variable for second half within fifth term	0.0015	0.0065	0.0175
	(0.1486)	(0.5164)	(1.0763)
	[0.8826]	[0.6082]	[0.2877]
	{0.0005}	{0.0246}	{0.1141}

Monthly stock returns are regressed on the test variables identified above. Each row reports the results of a series of three regression equations on the test variable in question: when the variable is tested alone, when controlling for matched annual macroeconomic data, and when controlling for interpolated macroeconomic data. The first number shown is the regression coefficient on the variable of interest. The corresponding t-statistic is shown immediately below in parentheses, and the significance level is shown in brackets. Significant findings are designated with * (10% level), ** (5% level), and *** (1% level). Finally, the *R*-squared measure for the regression equation as a whole is shown in braces.

Of course, recalling the earlier discussion of the increasingly poor returns during President Hoover's term of office, it is entirely possible that the overall finding of insignificance for the second-half variable results specifically from the effects of this one presidential term. To test for this, we again removed from our sample the 48-month period between President Hoover's election and his defeat at the hands of President Franklin D. Roosevelt. We then re-ran the initial regressions of market returns on the variables that were displayed in Table 1.

As shown in Table 5, the second-half variable is now significantly positive at the 10% level. Further, this result very nearly attains significance at the 5% level when we control for the matched macroeconomic variables, and does attain significance at the 5% level when we control for the interpolated macroeconomic variables. When the second-half dummy variable is tested by itself in a simple regression, the result is again positive, and again significant at the 10% level. (Details of this regression are omitted for brevity.)

Several other findings related to Table 5 are worth noting. After omitting the Hoover term, the intercept term becomes significant at the 5% level when we control for the macroeconomic variables. Real GDP growth remains insignificant, but inflation is now significant at the 1% level. (Inflation, like market returns, was

Table 4 Regressions of monthly returns on dummy variables for second halves of different term numbers compared to all other dates

Test variable	When used as sole test variable	When controlling for matched annual macroeconomic data	When controlling for interpolated macroeconomic data
1/0 variable for second half of first term	0.0095	0.0088	0.0093
	(2.3758)	(2.1690)	(2.2907)
	[0.0177]**	[0.0303]**	[0.0222]**
	{0.0045}	{0.0076}	{0.0050}
1/0 variable for second half of second term	0.0022	0.0027	0.0024
	(0.5368)	(0.6356)	(0.5743)
	[0.5916]	[0.5252]	[0.5659]
	{0.0002}	{0.0041}	{0.0010}
1/0 variable for second half of third term	−0.0123	−0.0130	−0.0127
	(−2.0819)	(−2.1353)	(−2.1247)
	[0.0376]**	[0.0330]**	[0.0339]**
	{0.0035}	{0.0074}	{0.0044}
1/0 variable for second half of fourth term	−0.0017	0.0004	0.0001
	(−0.2077)	(0.0497)	(−0.0136)
	[0.8355]	[0.9604]	[0.9892]
	{0.0000}	{0.0038}	{0.0008}
1/0 variable for second half of fifth term	0.0037	0.0030	0.0030
	(0.3189)	(0.2620)	(0.2600)
	[0.7499]	[0.7934]	[0.7950]
	{0.0001}	{0.0038}	{0.0008}

Monthly stock returns are regressed on the test variables identified above. Each row reports the results of a series of three regression equations on the test variable in question: when the variable is tested alone, when controlling for matched annual macroeconomic data, and when controlling for interpolated macroeconomic data. The first number shown is the regression coefficient on the variable of interest. The corresponding t-statistic is shown immediately below in parentheses, and the significance level is shown in brackets. Significant findings are designated with * (10% level), ** (5% level), and *** (1% level). Finally, the *R*-squared measure for the regression equation as a whole is shown in braces.

actually negative during most of Hoover's term, which weakens the inverse relationship observed between the two during the test period as a whole. Removing this 4-year period therefore leads to a statistically stronger inverse relationship between inflation and market returns.) The regression coefficients on various one–zero variables related to partisan control, and on the term number, remain insignificant.

Finally, it is worth noting that when we remove Hoover's term from the sample, and control for inflation and real GDP growth, the *F*-statistic for the regression as a whole is statistically significant. This stands in marked contrast to the results in Table 1, in which the *F*-statistic was never significant. At the same time, while the regression as a whole shows a statistically significant relationship between market returns and the set of test variables, the overall explanatory power remains weak. As shown by the *R*-squared statistics in Table 5, the test variables as a group consistently explain less than 2% of the variation in market returns.

3.5 Is there a fatigue factor?

It would be tempting, of course, to ascribe the relatively strong overall returns for first presidential terms, and the relatively weak overall returns for third terms, as

Table 5 Regressions of monthly returns on issues of political control, with presidency of Herbert Hoover removed

Test variable	Initial regression	Using matched annual macroeconomic data	Using interpolated macroeconomic data
Intercept	0.0038	0.0090	0.0088
	(1.0196)	(2.1378)	(2.1149)
	[0.3082]	[.0328]**	[0.0347]**
1/0 variable for second half of term	0.0049	0.0055	0.0057
	(1.7258)	(1.9440)	(1.9963)
	[0.0847]*	[0.0522]*	[0.0462]**
Term number	−0.0009	−0.0004	−0.0005
	(−0.6605)	(−0.3216)	(−0.3750)
	[0.5091]	[0.7479]	[0.7078]
1/0 variable for Republican president	−0.0006	−0.0023	−0.0021
	(−0.1818)	(−0.7279)	(−0.6544)
	[0.8558]	[0.4669]	[0.5131]
1/0 variable for Republican Senate majority	0.0039	0.0049	0.0050
	(0.6707)	(0.8576)	(0.8588)
	[0.5026]	[0.3913]	[0.3907]
1/0 variable for Republican House majority	−0.0002	−0.0038	−0.0031
	(−0.0403)	(−0.6721)	(−0.5319)
	[0.9679]	[0.5017]	[0.5950]
Real GDP Growth		−0.0045	−0.0370
		(−0.1498)	(−1.1054)
		[0.8810]	[0.2692]
Inflation		−0.1332	−0.1045
		(−3.9872)	(−2.9171)
		[0.0001]***	[0.0036]***
Significance of *F*-statistic	0.4125	0.0040***	0.0352**
R-squared statistic	0.0042	0.0174	0.0126

Monthly stock returns are regressed on the test variables identified above. In each case, the first number shown is the regression coefficient. The corresponding t-statistic is shown immediately below, in parentheses, and the corresponding significance level is shown in brackets. Significant findings are designated with * (10% level), ** (5% level), and *** (1% level). After the final variable, we display the significance level of the regression *F*-statistic, along with the *R*-squared measure for the regression.

simply reflecting a "fatigue factor" or an affinity for change for its own sake. However, further investigation of some issues that we do not recall having seen explored in prior studies produces results that would seem to contradict that interpretation.

Within first terms, second terms, and third terms, we tested whether second-half returns were better or worse when the midterm Congressional election had resulted in at least one chamber of Congress switching hands. (There has been only one fifth term, and both fourth-term midterms have resulted in at least one chamber of Congress switching hands; thus, the only way of including these elections in this set of tests is by having a separate test for the results of midterm elections in third and later terms combined.) Results are displayed in Table 6.

For first and second terms, second-half returns do not differ significantly based on whether the midterm elections produced a change in control of one or both chambers of Congress. However, for third terms, and for third and greater terms combined, the market actually performs worse when there has been a change in Congressional control than when there has been no such change. This relationship does, however,

Table 6 Regressions for difference in monthly returns during the second half of a presidential term, based on whether congressional control has shifted after midterm elections

Test variable	When used as sole test variable	When controlling for matched annual macroeconomic data	When controlling for interpolated macroeconomic data
1/0 variable for change in at least one chamber of Congress after first-term midterms	0.0056 (0.7707) [0.4417] {0.0025}	0.0073 (0.9634) [0.3364] {0.0095}	0.0081 (1.0705) [0.2855] {0.0076}
1/0 variable for change in at least one chamber of Congress after second-term midterms	−0.0051 (−0.5252) [0.6001] {0.0013}	−0.0019 (−0.1805) [0.8570] {0.0197}	−0.0073 (−0.6868) [0.4930] {0.0065}
1/0 variable for change in at least one chamber of Congress after third-term midterms	−0.0494 (−2.3759) [0.0196]** {0.0566}	−0.1275 (−1.8937) [0.0615]* {0.0737}	−0.0555 (−0.8182) [0.4154] {0.0572}
1/0 variable for change in at least one chamber of Congress after midterms of third and later terms combined	−0.0189 (−1.6988) [0.0913]* {0.0171}	−0.0133 (−1.0928) [0.2761] {0.0374}	−0.0094 (−0.6865) [0.4934] {0.0425}

Monthly stock returns are regressed on the test variables identified above. Each row reports the results of a series of three regression equations on the test variable in question: when the variable is tested alone, when controlling for matched annual macroeconomic data, and when controlling for interpolated macroeconomic data. The first number shown is the regression coefficient on the variable of interest. The corresponding *t*-statistic is shown immediately below in parentheses, and the significance level is shown in brackets. Significant findings are designated with * (10% level), ** (5% level), and *** (1% level). Finally, the *R*-squared measure for the regression equation as a whole is shown in braces.

weaken considerably when we control for the macroeconomic variables. Overall, while there is only mixed evidence for the notion that mid-term changes in Congressional control are associated with lower returns, there is no evidence that such changes are associated with higher returns. Thus, it would appear to be overly simplistic to say that the market simply likes change; other factors appear to be at work.

3.6 Combinations of partisan control

Our final tests involve comparisons of returns under different combinations of partisan control over the presidency and Congress. We utilize three different schemes for breaking down our data. Under the first scheme, there are four groups of outcomes:

1. Republican president with Republican majority in both chambers;
2. Republican president with Democratic majority in at least one chamber;
3. Democratic president with Republican majority in at least one chamber; and,
4. Democratic president with Democratic majority in both chambers.

Our analysis here requires a total of six paired comparisons, in which we perform *t* tests for significant differences of mean returns. For these tests, we do not assume equal variances among the different subsets. Detailed results are not displayed for the sake of brevity, but none were statistically significant.

This lack of significant findings was somewhat surprising to us. For instance, based on the eight years of Presidents Nixon and Ford, as compared to the last 6 years of the Clinton presidency, one might expect that average returns would be greater under a Democratic president with a Republican Congress, than under a Republican president with a Democratic Congress. However, while this difference did exist, and while the test statistic here was stronger than for any of the other comparisons, the result is not statistically significant (p value=0.1822).

In order to make sure that our lack of statistically significant findings is not a result of our decision as to how the data should be broken down, we utilize two other schemes. In one of these alternate schemes, the sample is again split into four groups:

1. Republican president with Republican majority in at least one chamber;
2. Republican president with Democratic majority in both chambers;
3. Democratic president with Republican majority in both chambers; and,
4. Democratic president with Democratic majority in at least one chamber.

In the final scheme, the sample is split into six groups:

1. Republican president with Republican majority in both chambers;
2. Republican president with Republican majority in exactly one chamber;
3. Republican president with Democratic majority in both chambers;
4. Democratic president with Republican majority in both chambers;
5. Democratic president with Democratic majority in exactly one chamber; and,
6. Democratic president with Democratic majority in both chambers.

(The fifth grouping is listed for completeness, but includes no observations. That is, in every case in which the Democratic Party has won the most recent presidential election, either the Democrats or the Republicans have won majority control in both houses of Congress in the most recent Congressional election.)

Yet again, we find no statistically significant differences. Thus, in addition to being unable to find evidence that the stock market prefers Republican or Democratic presidents, Senate majorities, or House majorities, we also are unable to find a statistically significant preference for any given combination of partisan control over any other.

4 Conclusion

The popular wisdom traditionally has held that the stock market prefers Republican presidents to Democrats. Most empirical research undertaken to date has indicated exactly the opposite, finding that the stock market instead performs better under Democratic presidents than under Republicans. Our tests show no significant differences in monthly stock market returns based on which party has won the most recent presidential election. We attribute the difference in findings to our use of a much longer sample period than those employed in studies that have found these differences to be statistically significant. We also find no evidence that returns differ based on partisan control of the Senate or the House, or based on various combinations of partisan control.

We do find that market returns are higher when real GDP growth is higher, and that higher GDP growth is correlated with Democratic control of government. At the same time, we find that market returns are higher when inflation is lower, and that lower inflation is correlated with Republican control of government. However, controlling for these two macroeconomic variables does not change the statistically insignificant relationship of market returns to issues of political control.

Our findings also differ from most previous studies in that we detect no statistically significant differences in market returns based on whether the current presidential term is in its first or second half, unless we eliminate the term of President Hoover from our sample. However, a more detailed breakdown shows above-average returns during the second half of the first term that a given party has held the presidency, and below-average returns during the second half of a party's third term in the White House. Further, third terms as a whole tend to be characterized by below-average returns.

In no way do our findings prove that the financial markets ignore either the government's economic policy decisions, or the elections that often influence the direction of those decisions. However, our results do suggest that some of the better-known "rules of thumb" may not be correct. We find very little evidence that there is a particular advantage to investing based on measures as simple as which political party the President belongs to, which party controls Congress, or the timing of election cycles. Few of the test results for these measures are statistically significant, and even those that are statistically significant explain only a tiny fraction of variations in returns.

References

Allvine FC, O'Neill DE (1980) Stock market returns and the presidential election cycle. Financ Anal J 36 (5):49–56 doi:10.2469/faj.v36.n5.49

Homaifar G, Randolph WL, Helms BP, Haddad M (1988) American presidential elections and returns of defence industry stocks. Appl Econ 20(7):985–993 doi:10.1080/00036848800000021

Huang RD (1985) Common stock returns and presidential elections. Financ Anal J 41(2):58–61 doi:10.2469/faj.v41.n2.58

Hudson R, Keasey K, Dempsey M (1998) Share prices under tory and labour governments in the UK since 1945. Appl Financ Econ 8(4):389–400 doi:10.1080/096031098332925

Johnson RR, Chittenden W, Jensen G (1999) Presidential politics, stocks, bonds, bills and inflation. J Portfol Manage 26(1):27–31

Johnston LD, Williamson SH (2005). The annual real and nominal GDP for the United States, 1790–present. *Economic History Services*, URL: http://www.eh.net/hmit/gdp/ (Used with permission)

Niederhoffer V, Gibbs S, Bullock J (1970) Presidential elections and the stock market. Financ Anal J 26:111–113 doi:10.2469/faj.v26.n1.111

Riley WB, Luksetich WA (1980) The market prefers republicans: myth or reality. J Financ Quant Anal 15 (3):541–560 doi:10.2307/2330399

Siegel JJ (2002) Stocks for the long run, 3rd edn. McGraw Hill, New York

Stovall RH (1992) Forecasting stock market performance via the presidential cycle. Financ Anal J 48:5–8