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Are Policy Platforms Capitalized into Equity Prices? Evidence from the Bush/Gore 2000 Presidential Election

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ABSTRACT

This paper tests for the capitalization of policy platforms into equity prices using a sample of 70 firms favored under Bush or Gore platforms during the 2000 U.S. Presidential Election. Two sources of daily data during the six months leading up to the election are incorporated: firm-specific equity returns and the probability of a Bush victory as implied by prices from the Iowa electronic market. For this group of politically-sensitive firms, the daily baseline estimates demonstrate that platforms are capitalized into equity prices: under a Bush administration, relative to a counterfactual Gore administration, Bush-favored firms are worth 3 percent more and Gore-favored firms are worth 6 percent less, implying a statistically significant differential return of 9 percent. The most sensitive sectors include tobacco, worth 13 percent more under a favorable Bush administration, Microsoft competitors, worth 15 percent less under an unfavorable Bush administration, and alternative energy companies, worth 16 percent less under an unfavorable Bush administration. A corresponding analysis of campaign contributions, which allows for heterogeneity in the importance of policy platforms to the firms, supports the baseline estimates. These results are then compared with results from a more traditional event study based upon the Florida recount.

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1 Introduction

On the day following the U.S. Supreme Court ruling that guaranteed a victory for George Bush in the 2000 Presidential Election, several media reports noted the increase in prices of equities favored under Bush's campaign platforms.[1] Among these so-called Bush stocks, Pfizer rose 4.1 percent, Exxon rose 1.3 percent, and Philip Morris rose 6.5 percent. While this anecdotal evidence is suggestive of the capitalization of campaign platforms into equity prices, other Bush stocks, such as Microsoft, fell in value on that day. Moreover, it is difficult to separate the reaction of equity prices to this political event from other economic and financial developments. A final complication of interpretation involves investor expectations; in particular, these returns can only be interpreted as a lower bound on the total value of favorable policies to these firms given that markets may have largely factored in a Bush victory prior to the Supreme Court's ruling.

Using evidence from the period preceding the 2000 U.S. Presidential Election, this paper attempts to overcome these complications in a test for the capitalization of public policies into equity prices using evidence from a sample of 70 firms favored under either Bush (41 firms) or Gore (29 firms) policy platforms. Two sources of daily data are incorporated: private equity returns and candidate electoral prospects as implied by prices of political future contracts from the Iowa Electronic Market. The daily baseline estimates provide strong evidence that platforms are capitalized into equity prices: under the Bush administration, relative to a counterfactual Gore administration, Bush-favored firms are worth 3 percent more and Gore-favored firms are worth 6 percent less. The most sensitive sectors include tobacco, worth 13 percent more under a favorable Bush administration, Microsoft competitors, worth 15 percent less under an unfavorable Bush administration, and alternative energy companies, worth 16 percent less under an unfavorable Bush administration. A corresponding analysis of campaign contributions, which allows for heterogeneity in the importance of policy platforms to these firms, supports the baseline estimates. These results are then compared with results from a more traditional event study based upon the Florida recount.

These results provide evidence for the existence of election-contingent security markets,

[1] See, for example, The New York Times, December 14, 2000.

as hypothesized by Musto and Yilmaz (2003); the authors demonstrate that, if such markets exist, consumers will purchase these securities as a hedge against wealth risk induced by differing candidate platforms over redistribution. In equilibrium, wealth considerations have no effect on voting but redistribution is the same regardless of the outcome of the election. In the context of the 2000 election, wealthy individuals could have purchased Gore-favored equities as a hedge against a loss by Bush, who proposed to significantly reduce federal income tax rates at the top end of the wealth and income distribution. Of course, this evidence does not prove that voters adopted such strategies but rather merely provides evidence on the feasibility of such strategies.

2 Related empirical literature

Several studies have tested for the capitalization of federal tax policies into equity prices by studying the response of equity prices to political developments during negotiations over tax legislation. Cutler (1988), in a study of the stock market's reaction to the passage of the Tax Reform Act of 1986, finds that the legislation's differential treatment of old and new capital is reflected in equity returns. However, the author finds no evidence of an overall market response to the passage of this legislation, suggesting that the news was not efficiently incorporated into equity prices. Lang and Shackelford (2000) find that stock prices moved inversely with dividend yields following a 1997 budget accord that reduced capital gains tax rates; this finding is consistent with the capitalization of capital gains taxes into equity prices. Sinai and Gyourko (2003) use the same natural experiment in a study of corporate-level investment subsidies and also conclude that the tax changes were capitalized into equity prices.

A related literature studies the effects of broader political events, such as elections and changes in the ruling party, on equity prices. Using evidence from the Iowa Electronic Market, Slemrod and Greimel (1999) demonstrate that the flat tax proposal put forth by candidate Steve Forbes during the 1996 Presidential primaries had predictable effects on the U.S. municipal bond market. Fisman's (2001) study of Indonesia reports that equity prices of firms closely connected to President Suharato experienced large declines, relative to prices of lesser-connected firms, in reaction to news of Suharato's deteriorating health. One limitation of this study is that none

of these health episodes forced Suharato from office, and one must thus interpret these results as a lower bound on the value of political connections.[2] Jayachandran (2002) studies the case of Senator James Jefford's party switch, which ended the Republican control of the U.S. Senate in 2001. She finds that firms that made campaign contributions to Republicans during the 2000 election cycle declined in value, although no corresponding increase was detected for firms that contributed to the Democratic party. Regarding the magnitude, the defection of Jeffords caused firms to lose or gain 0.8 percent of their market value in aggregate. A closely related study to my paper is Herron et. al (1999), who use measures of candidate electoral prospects based upon the Iowa electronic market during the 1992 Presidential election. While using similar sources of variation, there are several differences between Herron et al. and my paper. Most importantly, in their analysis of 74 economic sectors, the main focus of the paper, they attempt to measure sector-specific political sensitivity by regressing rates of return in equity markets on changes in electoral prospects separately for each of the sectors.[3] My study, by contrast, incorporates independent information on firms favored under Bush and Gore campaign platforms and uses this information to uncover the significance of these platforms. Note that this type of independent information is required in order to provide evidence for the existence of election-contingent securities as hypothesized in Musto and Yilmaz (2003). In a theoretically-focused paper of which I became aware after writing the first draft of my paper, Mattozzi (2003) independently constructs an index of equity prices for firms making significant campaign contributions to Bush and Gore; he finds that Bush stocks rose in value as the probability of a Bush victory increases, as implied by the Iowa Electronic Market, while firms contributing to Gore experienced corresponding decreases.

[2] Fisman does attempt to quantify the value of political connections by using the return on the Jakarta Stock Exchange Composite Index as a measure of the severity of the rumor. Based upon responses of investment bankers in Indonesia to the question "how much would the Index had dropped if Suharto had died suddenly?", the author attempts to estimate the value of political connections. While suggestive, this exercise rests on the subjective views of investment bankers and, as the author notes, involves an inference that is quite far out of sample.

[3] In a separate analysis, which is not the main focus of their paper, they do incorporate information from a First-Boston list of pro-Clinton sectors. This analysis, however, does not incorporate pro-Bush sectors and is limited to 16 sectors, only two of which are found to be statistically significant.

This paper is also related to a broader literature on whether or not the release of new information moves stock market prices. Cutler, Poterba, and Summers (1988) find that neither news associated with macroeconomic developments nor major world events fully explain movements in the S&P 500. Elmendorf, Hirschfeld, and Weil (1996) examine movements in bond prices in Britain resulting from events leading up to and including World War I; they find that the variance of returns is higher in weeks with important news than in other weeks. Leigh, Wolfers, and Zitzewitz (2003) predict the economic consequences of war in Iraq by correlating data from financial markets with the price from a futures contract that pays only if Saddam Hussein is ousted by a certain date. They conclude that a war raises oil prices $10 per barrel and lowers the value of U.S. equities 15 percent.

While this paper focuses on the electoral-induced redistribution of resources across industries, a much larger literature examines the aggregate macroeconomic implications of elections. With forward-looking voters, uncertain election outcomes, and Democrats, relative to Republicans, preferring higher inflation rates in return for lower unemployment rates, the resolution of electoral outcomes has macroeconomic implications. In particular, Democratic administrations should be associated with decreases in unemployment rates and increases in inflation rates, while the reverse should hold for Republican administrations.[4] Historical evidence from the U.S. generally supports these predictions; see Mueller (2003) for further information.

3 Sources of Daily Data

3.1 Probability of Bush victory

The first data source provides information on the relative electoral prospects of the two candidates. Beginning May 1, 2000, the Iowa Electronic Market was open for trading in the 2000 U.S. Presidential Market. Market participants traded futures contracts on the candidates; those purchasing the Republican contract, for example, were paid $1 in the event of a Bush victory in the popular vote. Given the structure of this contract, the market price can be interpreted as the probability of a Bush victory. I have obtained closing prices from the Iowa Electronic Market as of 4 p.m. Eastern time, allowing for synchronization with the closing price

[4] See Alesina (1987), Alesina (1988), and Alesina and Rosenthal (1995).

data on equities from financial markets.

As shown in Figure 1, the Iowa Electronic Market data demonstrate that the 2000 race was extremely close throughout the six months preceding the election, with Gore taking the lead following the Republican National Convention (labeled RNC) and the Democratic National Convention (labeled DNC), both held in August, before Bush pulled ahead during the three Presidential debates (labeled D1, D2, and D3), which were held during October. Bush extended this lead in early November, and, by November 6, the eve of the election and final day of the sample, the implied probability of a Bush victory had risen to just over 75 percent.

While contracts based upon the electoral college, rather than the popular vote, would be preferable, I believe that the ex-post divergence between electoral college and popular vote outcomes in the 2000 election was largely unexpected and thus electoral college contract prices would have been similar to those of the popular vote contracts. Such divergences are historically rare; the previous divergence occurred in 1888. In the 2000 election, neither candidate had a significant ex-ante electoral college advantage. Analysts expected, if anything, Gore to have a slight electoral college advantage.[5]

For several reasons, the Iowa Electronic Market data are preferred to tracking poll data. First, the latter data provide expected vote shares while the former data provide probabilities of victory. Such probabilities, as will be shown below, are required in order to quantify the value of favorable policies.[6] The second advantage of the Iowa Electronic Market data involves efficiency. According to an analysis of 15 elections, the market worked extremely well, dominating opinion polls on average in forecasting the outcome of the election (Berg et al, 2000).[7] Even given these limitations associated with polling data, Figure 2 demonstrates that Gallup tracking poll data, which are available on a daily basis beginning September 7, 2000, move in tandem with prices from the Iowa Electronic Market. As shown in Table 1, a regression of Bush's share of the two-party support in the Gallup poll on the IEM Bush contract

[5] New York Times, October 27, 2000.

[6] Of course, one could attempt to map vote shares into probabilities, but this relationship is likely to be non-linear and time dependent; movements in vote shares imply small swings in probabilities early in the campaign but the magnitude of such swings increases as election day approaches.

[7] See also Forsythe et al (1992) and Rhode and Strumpf (2003) for a historical analysis of Presidential election betting markets.

price demonstrates that this relationship is statistically significant, and this result is robust to a specification in first differences.

3.2 Equity Returns

Equity prices are taken from the Dow Jones Interactive Service and are adjusted for dividends and stock splits. To account for broader trends in equity markets during the sample period, I follow event study methodology outlined by MacKinlay (1997) and use abnormal returns in the analysis. In order to calculate these abnormal returns, I first estimate the following market model:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \varepsilon_{it} \tag{1}$$

where r_{it} is the daily rate of return of firm i on day t. As a measure of broad market returns (r_{mt}), I use the Wilshire 5000. The market model is estimated between May 1, 1999 and April 30, 2000, the one-year period preceding the opening of the Iowa Electronic Market on May 1, 2000. Based on the estimated parameters $(\widehat{\alpha}_i, \widehat{\beta}_i)$ from firm-specific regressions, I then calculate daily abnormal returns ($\widetilde{r}_{it}$), which are net of market returns, as follows for the period May 1, 2000 through November 6, 2000 as follows:

$$\widetilde{r}_{it} = r_{it} - (\widehat{\alpha}_i + \widehat{\beta}_i r_{mt}) \tag{2}$$

These abnormal returns are then used in the empirical analysis below.

4 Analysis of campaign platforms

As measures of Bush and Gore platforms, I use reports from financial analysts associated with Lehman Brothers, Prudential Securities, and International Strategy and Investment. These reports were produced during the campaign and identified firms likely to fare well under Bush and Gore administrations. As shown in Table 2, these three reports list 41 firms in total favored under Bush campaign platforms and 29 firms favored under Gore platforms. Key differences in these campaign platforms are listed below. Supporting evidence for these differences, including

candidate press releases and quotes from the three Presidential debates, is provided in Appendix A.

1) Pharmaceuticals: Gore favored price controls and promoted generic pharmaceuticals, while Bush defended large pharmaceuticals and opposed price controls.

2) Defense: Bush favored large spending increases, while Gore focused on improving technology.

3) Energy: Bush favored an expansion of domestic exploration of conventional energy sources, such as oil in the Arctic National Wildlife Refuge (ANWR), while Gore promoted the development of alternative energy sources.

4) Microsoft case: While neither candidate committed to a specific policy regarding Microsoft, Bush was seen by most analysts as more pro-Microsoft than was Gore. In September 2001, following Bush's inauguration, the Justice Department dropped efforts initiated by the Clinton Administration to break up Microsoft.

5) Tobacco: Gore favored allowing the FDA to regulate nicotine as an addictive substance, while Bush did not commit to a specific platform on this issue.

While these 70 firms represent a small fraction of the roughly 6000 publicly traded firms in the United States, these are some of the largest firms. As of May 1, 2000, the first day of the sample period, the aggregate market capitalization of these 70 firms totaled almost $3 trillion, representing almost one-fifth of the $16 trillion market capitalization of the Wilshire 5000, which includes nearly all publicly traded equities.

As shown in Figure 3, the probability of Bush victory is positively correlated with the log difference between Bush and Gore equity prices, especially in the three months preceding the election, suggesting that policy platforms matter for firm profitability. Perhaps somewhat surprisingly, equity market returns appear to be a leading indicator of the price of a Bush contract in the Iowa Electronic Market. The empirical analysis below will attempt to address this issue by estimating specifications that include both leads and lags of the probability of a Bush victory.

4.1 Empirical Model

Consider the following empirical model of firm i's rate of return at time t:

$$r_{it} = \alpha_i + \beta_1 \text{Bush-favored}_i \Delta \Pr(\text{Bush})_t + \beta_2 \text{Gore-favored}_i \Delta \Pr(\text{Bush})_t + u_{it} \tag{3}$$

where Bush-favored_i indicates whether the firm is favored under the Bush platform, $\Delta \Pr(\text{Bush})_t$ indicates the daily change in the probability of a Bush victory, u_{it} captures unobserved factors affecting returns, and α_i, β_1, and β_2 represent parameters to be estimated. The fixed effects (α_i) allow for firm-specific trends in equity prices during the sample period, while β_1 and β_2 are the key parameters in the test for capitalization; these parameters can be interpreted as follows:

$$\text{E}[r_{it}|\Pr(\text{Bush})_t = 1, \Pr(\text{Bush})_{t-1} = 0] - \text{E}[r_{it}|\Delta \Pr(\text{Bush})_t = 0] = \begin{cases} \beta_1 & \text{if} \quad \text{Bush-favored}_i = 1 \\ \beta_2 & \text{if} \quad \text{Bush-favored}_i = 0 \end{cases} \tag{4}$$

Thus, the parameter β_1 can be interpreted as the percentage difference in a Bush-favored firm's market value under a Bush administration, relative to a counterfactual Gore administration, while β_2 captures a similar percentage difference for Gore-favored firms. The capitalization hypothesis predicts $\beta_1 > 0$ and $\beta_2 < 0$.

4.2 Baseline Results

As shown in column 1 of Table 3, the preliminary results demonstrate that, for this group of politically-sensitive firms, campaign platforms matter for firm profitability, and this relationship is both economically and statistically significant. Gore-favored firms are worth 6 percent less under a Bush administration, relative to a friendlier Gore administration. Bush-favored firms, by contrast, are worth 3 percent more under a friendlier Bush Administration. In monetary terms, Bush's victory over Gore transferred over $100 billion in market capitalization from the 29 Gore-favored firms to the 41 Bush-favored firms.[8] The differential return ($\beta_1 - \beta_2$), as shown at the bottom of Table 3, is 9 percent and is statistically significant at conventional

[8] As of May 1, 2000, the first day of the sample period, the 29 Gore-favored firms had a total market capitalization of $1.1 trillion, while the 41 Bush-favored firms had a $1.9 trillion capitalization.

levels; this statistic provides a somewhat weaker test of the capitalization hypothesis and is more consistent with the evidence in Figure 3, which depicts returns for Bush-favored equities relative to Gore-favored equities.

As shown, the political measures have limited explanatory power as the R-squared is only 0.0196. While each of the 133 events has only limited explanatory power, this limitation must be balanced against two benefits. First, as noted above, event studies in the existing literature often measure only a lower bound on the value of favorable policies, while, by utilizing probability-based measures, my study provides a point estimate. Second, the large number of events provides additional statistical power. The relative strengths and weaknesses of these two approaches will be examined in more detail in Section 6, which, for comparison purposes, provides a companion event study based upon the Florida recount.

As was shown in Figure 3, daily movements in stock prices and candidate electoral prospects tend to exhibit high levels of variance. In an attempt to smooth through some of this daily variance, column 2 of Table 3 presents estimates using weekly data (Friday close to Friday close). As shown, the R-squared rises significantly from 0.02 to 0.13, and the estimated value of favorable policies for Gore-favored firms rises substantially from 6 to 12 percent, and this result is statistically significant at conventional levels. The estimated value of favorable policies for Bush-favored firms also rises from 3 to 4 percent, although this result is statistically insignificant, perhaps reflecting the loss in power from the reduced sample size. The differential return also rises from 9 to 16 percent, a statistically significant result.

4.3 Robustness Checks

As a first robustness check, Table 4 splits the daily sample in a variety of ways according to Iowa Electronic Market institutional details. The first institutional detail involves the size of price changes. Large changes in prices of futures contracts may represent real political news, while smaller changes may simply reflect noisy trading patterns. The first two columns support this hypothesis: the sample of days with large changes (greater than one percentage point in absolute value) in the price of a Bush contract supports a statistically significant result, while the sample of days with small changes (less than or equal to one percentage point), by contrast, provides statistically insignificant results for the Bush-favored firms. The second split of the

data involves trading volume. On thinly traded days, market prices may not incorporate all relevant information from the campaign, and columns 3 and 4 partially support this hypothesis. The high volume (at least 229 trades in Bush contracts) sample, unlike the low volume (less than 229 trades in Bush contracts) sample, supports a statistically significant estimated value of favorable policies for Gore-favored firms. For Bush-favored firms, by contrast, the result is statistically insignificant in the high-volume sample but significant in the low-volume sample.

As an additional robustness check, Table 5 presents the coefficients on the contemporaneous change in the probability of a Bush victory after controlling leads and lags in the change in the probability of a Bush victory. As shown in column 1, after controlling for 4 lags in the change in the probability of a Bush victory (coefficients not reported), the contemporaneous results are similar to those in the baseline results of Table 3. Incorporating a one-week lag into the weekly specification (column 2) again produces results similar to those in the baseline analysis. Columns 3 and 4 present results incorporating leads of changes in the probability of a Bush victory. Again, the coefficients on the contemporaneous change in the probability of a Bush victory are similar to those in the baseline analysis.

4.4 Sector Analysis

The above analysis incorporated the implicit assumption that policy platforms were equally important to all firms in the sample. This section relaxes that assumption in a sector-by-sector analysis. As shown in column 1 of Table 6, three out of the five sectors demonstrate statistically significant results using daily data. Alternative energy companies, which were favored under Gore's energy platforms, are worth 16 percent less under Bush, while conventional energy companies appear to be politically insensitive. Microsoft competitors are worth 15 percent more under a Bush administration; no relationship is detected for Microsoft itself, perhaps reflecting the sample size of a single firm. Finally, tobacco firms are worth 13 percent more under Bush, relative to Gore, who favored FDA regulation of nicotine as an addictive drug. Column 2 presents results using weekly data. As shown, only one sector, Gore-favored pharmaceuticals, is statistically significant, perhaps reflecting the loss in statistical power from the reduced sample size.

5 Campaign contribution analysis

I next provide an analysis of campaign contributions for this group of 70 politically sensitive firms. During the 2000 campaign, corporations made both hard money contributions to candidates, through their political action committees (PACs), and soft money contributions directly from their treasuries to political parties. In the results presented below, I simply sum together hard and soft money contributions.[9] The remainder of this section describes in more detail data on hard and soft money campaign contributions.

5.1 Hard money contributions

During the 2000 election cycle, corporate PACs were permitted to contribute up to $10,000 to a given candidate. According to data from the Center For Responsive Politics (CRP), 17 out of these 70 firms had political action committees that donated to the Bush campaign during the 2000 election cycle. As shown in Table 7, the average contribution across all firms was around $1,000 with Bush-favored firms contributing slightly more. The Gore campaign, by contrast, did not accept contributions from corporate political action committees.

5.2 Soft money contributions

While hard money contributions were capped at $10,000 per candidate during the 2000 election cycle, corporations could make unlimited soft money contributions directly to political parties, and these contributions have played an increasingly important role in recent Presidential elections.[10] As shown in Table 7, contributions, as measured by the CRP, from these firms to the RNC exceeded contributions to the DNC, and this effect is particularly noticeable among Bush-favored firms. Gore-favored firms, by contrast, gave similar amounts on average to the RNC and DNC.

[9] I have also estimated specifications that allow the coefficient to vary across hard and soft money contributions. The results were strongest for soft money contributions, an unsurprising result given their large magnitude, relative to hard money contributions, as shown in Table 7.

[10] According to an analysis of political television advertisements in the 75 largest markets in the United States during the 2000 campaign season, the Republican party sponsored 52 percent of pro-Bush advertisements while the Democratic Party sponsored 48 percent of pro-Gore advertisements (Wisconsin Advertising Project, 2002).

While political parties are restricted by law from sponsoring "express advocacy" advertisements, those designed to promote specific candidates, they may sponsor "issue advocacy" advertisements. In principle, issue advocacy is designed to promote specific policies but, in practice, such advertisements can promote specific candidates.[11] As shown in Appendix B, the text of two "issue advocacy" advertisements from the 2000 campaign clearly demonstrates that advertisements sponsored by political parties can promote specific candidates.

The primary drawback of using soft money contributions to political parties is that not all contributions to political parties were used to promote the two Presidential candidates. To address, at least in part, this data limitation, I exclude those contributions to parties designed to explicitly fund Congressional candidates.[12]

5.3 Empirical Model

Consider the following empirical model of firm i's rate of return at time t:

$$r_{it} = \alpha_i + \beta_1 \Delta \Pr(\text{Bush})_t \left(\frac{C_i^{Bush}}{V_{it-1}} \right) + \beta_2 \Delta \Pr(\text{Bush})_t \left(\frac{C_i^{Gore}}{V_{it-1}} \right) + u_{it} \tag{5}$$

where C_i^{Bush} and C_i^{Gore} represent firm i's campaign contribution to the two candidates and V_{it-1} represents yesterday's market capitalization and scales campaign contributions according to firm size. Multiplying both sides of this expression by V_{it-1} and noting that $r_{it} = (V_{it} - V_{it-1})/V_{it-1}$, one can derive the following expressions:

$$\frac{\partial \mathrm{E}[V_{it} - V_{it-1} | \Pr(\text{Bush})_t = 1, \Pr(\text{Bush})_{t-1} = 0]}{\partial C_i^{Bush}} = \beta_1 \tag{6}$$

$$\frac{\partial \mathrm{E}[V_{it} - V_{it-1} | \Pr(\text{Bush})_t = 1, \Pr(\text{Bush})_{t-1} = 0]}{\partial C_i^{Gore}} = \beta_2 \tag{7}$$

[11] Advertisements are considered issue advocacy so long as they do not contain what have become known as magic words, which include "vote for", "vote against", "support" or "defeat".

[12] More specifically, I include only contributions from corporations to the Democratic National Committee (DNC) and the Republican National Committee (RNC). I thus exclude soft money contributions to party committees established to fund campaigns of Congressional candidates, including the National Republican Congressional Committee (NRCC), National Republican Senatorial Committee (NRSC), Democratic Senatorial Campaign Committee (DSCC), and the Democratic Congressional Campaign Committee (DCCC).

Thus, the parameter β_1 captures the increase in market capitalization associated with an extra dollar in contributions to Bush in the event of a Bush victory. The parameter β_2 captures a similar relationship associated with contributions to Gore. The capitalization hypothesis predicts $\beta_1 > 0$ and $\beta_2 < 0$.

One caveat of this analysis involves motives for contributing to candidates. In particular, this analysis cannot distinguish between the two motives identified by Grossman and Helpman (1996): electoral motives (contributing in order to alter election outcomes) and influence motives (contributing in order to influence campaign platforms). The latter motive would be associated with a causal interpretation of campaign contributions, while, under the former motive, firms contribute to candidates with platforms favorable to their business interests, and the relationship is not necessarily causal. Under either motive, however, campaign contributions are positively correlated with the benefits of favorable policy platforms. Campaign contributions can thus be considered an alternative measure of the benefits firms receive from policy platforms. These contributions, although a less direct measure of policy platforms than that used in the baseline analysis, are a continuous measure and thus allow for heterogeneity in political sensitivity across firms.

As shown in column 1 of Table 8, contributions to Gore, conditional on contributions to Bush, are associated with a reduction in market value under a Bush administration in a statistically and economically significant manner. Conversely, contributions to Bush are associated with a significant increase in market value under a Bush administration. The weekly results, as shown in column 2, are statistically insignificant, perhaps reflecting the loss in power associated with the reduced sample size.

6 Florida recount analysis

This section provides a companion event study based upon the Florida recount. This analysis serves two purposes. First, it provides a cross validation of the baseline results, which used probabilities of candidate electoral success as implied by prices from the Iowa electronic market. Second, it allows for a comparison with event studies in the existing literature by highlighting

the relative advantages and disadvantages of the two approaches.

Following the November 7 election, the state of Florida, which was pivotal in the electoral college, was required by state law to conduct a recount of its initial results, which had provided Bush with a slim lead. On November 26, after several weeks of legal wrangling over the appropriate scope of the recount, Florida's Secretary of State Katherine Harris certified Bush the winner by a margin of 537 votes. On the following day, Gore officially contested the election results. On December 8, after several more weeks of legal and political developments, the Florida Supreme Court ordered further recounts. However, on the next day, Saturday, December 9, the U.S. Supreme Court halted further recounting and over-ruled the Florida Supreme Court's decision on December 12. The following evening, December 13, witnessed the concession of Gore and the declaration of victory by Bush.

For the purposes of this analysis, the Florida recount is considered as a single event, which is assumed to begin on November 8, the day after the election, and to end on December 14, the day following Gore's concession, which occurred after the close of markets on December 13.[13] Using the sample of 70 firms described in the baseline analysis above, a policy platform-based model, given below, is estimated:

$$r_i = \beta_1 \text{Bush-favored}_i + \beta_2 \text{Gore-favored}_i + u_i \tag{8}$$

As shown in Table 9, rates of returns for Bush-favored firms exceeded those of Gore-favored firms by about 4 percent, although this result is statistically insignificant. Regarding the magnitude, this estimate of the value of favorable policy platforms is smaller than are those in the baseline estimates, suggesting that markets had already factored in a Bush victory.

In addition, an event study using campaign contributions to the candidates is provided. The following model is estimated:

$$r_{it} = \gamma_0 + \gamma_1 \frac{C_i^{Bush}}{V_{it-1}} + \gamma_2 \frac{C_i^{Gore}}{V_{it-1}} \tag{9}$$

[13] Of course, one could analyze legal and developments during the recount as separate events. Unfortunately, it is difficult to identify days which were favorable for Gore. The most promising announcement for Gore, the Friday, December 8 order for further recounts, was issued after the close of equity markets, and the U.S. Supreme Court halted further recounting before markets opened again on Monday, December 11.

As shown in the second column of Table 9, contributions to Gore were associated with lower returns, a statistically significant relationship. No statistically significant relationship is detected for contributions to Bush. Again, these relationships are somewhat weaker in magnitude than are those in the baseline analysis.

7 Conclusion

Using evidence from the Bush / Gore 2000 Presidential Election, this paper has demonstrated that policy platforms are capitalized into equity prices for a sample of 70 politically sensitive firms in the United States. According to the daily platform-based estimates, favorable public policies account for 3-6 percent of a firm's total value. The most sensitive sectors include tobacco, worth 13 percent more under Bush, Microsoft competitors, worth 15 percent less under Bush, and alternative energy companies, worth 16 percent less under Bush. An analysis of campaign contributions supports the baseline results. These results are then compared with results from a more traditional event study based upon the Florida recount.

These results have several implications for the empirical literatures discussed above. While several studies have found that political developments during negotiations over tax legislation have expected effects on equity prices, my findings suggest that policies may be reflected in equity prices during the electoral process, which occurs long before the legislative enactment of policies. The second literature discussed above examines the response of equity prices to broader political events; my study demonstrates that such event analyses may only measure a lower bound on the value of favorable policies to firms and thus tend to understate the relationship between economic and political factors. Regarding the literature on the reflection of news in equity prices, while the electoral measures do not fully explain the variation in equity returns, my results demonstrate that news is efficiently incorporated into equity prices, and this relationship is economically and statistically significant. Finally, these results suggest that the most significant economic impact of elections may be on the distribution of resources across industries rather than upon aggregate measures of inflation and unemployment.

A Evidence on Campaign platforms[14]

A.1 Pharmaceuticals

Q: What about expensive prescription drugs?

BUSH: Step one is to reform the Medicare system. I want to call upon Republicans and Democrats to take care of a senior prescription drug program. I think it's important to have what's called Immediate Helping Hand, which is direct money to states so seniors don't have to chose between food and medicine.

GORE: I have never been afraid to take on the big drug companies. They are now spending more money on advertising than they are on research. They're trying to artificially extend the monopoly so they can keep charging high prices. I want to streamline the approval of generic drugs so that we bring the price down. I proposed a prescription drug benefit under Medicare. You pick your own doctor and the doctor chooses the prescription and nobody can overrule your doctor. You go to your own pharmacy and Medicare pays half. If you're poor, they pay all of it. If you have extraordinarily high costs, then they pay all over $4,000 out of pocket.

Source: St. Louis debate Oct 17, 2000

As a Congressman, Al Gore fought the pharmaceutical industry to bring lower-cost generic drugs to market faster. Now, he has issued a new plan to make high-cost prescription drugs more affordable for those who rely on them. As President, Gore will oppose all unwarranted patent extensions [that keep generics off the market]. He would vigorously enforce laws against collusion to prop up artificially high prices for drugs; and push legislation to discourage delaying the approval of generic drugs.

Source: Press Release Mar 31, 2000

A.2 Defense

Saying we have "asked our servicemen and women to do too much with too little," Bush

[14] All of the information in Appendix A was taken from the website www.issues-2002.org (accessed January 26, 2003).

today promoted his agenda for rebuilding America's military by improving troop morale and investing in research and development. "Even the highest morale is eventually undermined by back-to-back deployments, poor pay, shortages of spare parts and equipment, and rapidly declining readiness. I make this pledge to our men and women in arms: As President, I will preserve American power for American interests. And I will treat American soldiers with the dignity and respect they have earned." To improve America's military, Governor Bush will: Improve troop morale [via] better pay, better treatment and better training. [Bush would add] a billion dollars in salary increases, and renovate military housing that is sub-standard. Invest in research and development by at least $20 billion over the next five years, 20% [of which] must be spent for purchasing next generation weapons.

Source: Press Release, "Improving Troop Morale" May 31, 2000

Since World War II, there have been several build-downs that have strained America military readiness. In contrast, the current Administration's handling of the post-Cold War build-down has yielded a force that while smaller, is more agile, more powerful, and more effective at countering new strategic threats. The build-down can now be matched by a careful investment in further transforming the forces and endowing them with the cutting edge technology they will need to succeed in their missions.

Source: AlGore2000.com Press Release, "Strengthening" May 27, 2000

A.3 Energy

GORE: Governor Bush is proposing to open up some of our most precious environmental treasures, like the Arctic National Wildlife Refuge, to the big oil companies to go in and start producing oil there. I think that is the wrong choice. It would only give us a few months worth of oil, and the oil wouldn't start flowing for many years into the future. And I don't think it's a fair price to pay, to destroy precious parts of America's environment.

BUSH: We need an active exploration program in America. The only way to become less dependent on foreign sources of crude oil is to explore at home. And you bet I want to open up a small part of Alaska because when that field is online, it will produce a million barrels a day. Today we import a million barrels from Saddam Hussein. I would rather

that a million come from our own hemisphere, our own country, as opposed from Saddam Hussein.

Source: Presidential debate, Boston MA Oct 3, 2000

Q: What is your energy policy?

GORE [to Bush]: We have to free ourselves from big oil, from OPEC. We have to give new incentives for the development of resources, like deep gas in the western Gulf, but also renewable sources of energy and domestic sources that are cleaner and better. I'm proposing a plan that will give tax incentives for the rapid development of new kinds of cars, trucks, buses, factories, boilers, and furnaces that don't have as much pollution.

BUSH: I want to build pipelines to move natural gas. I want to develop coal resources. It's an issue I know a lot about. I was a small oil person for a while. This is an administration that's had no plan. And now, the results of having no plan have caught up with America. We've got abundant supplies of energy here, and we better start exploring it. There's an interesting issue up in the Northwest, as well. And that is whether or not we remove dams that propose hydroelectric energy. I'm against removing dams in the Northwest.

Source: Presidential debate, Boston MA Oct 3, 2000

A.4 Microsoft Case

While Gore has broken ranks with the president on several recent occasions, he and President Clinton have remained quiet on Microsoft. In November, at Microsoft headquarters, Gore said stern antitrust action sometimes is needed to break up "unhealthy concentrations of power" that snuffs out competition. Gore stressed, however, that he was speaking only of his belief in the "fundamental American value" of making sure that neither heavy-handed government for unfair business practices quash competition.

Source: Associated Press Apr 9, 2000

The government won the first round of the antitrust case against Microsoft, but with years of legal appeals anticipated, who the new president is could change how the case is resolved. Bush has signaled he would be more friendly to the company.

A law professor said, "Could the outcome of the election have an impact on the case? Yes. But less because of control over the Justice Dept. and more because of control over the Supreme Court." Judge Jackson could send the case directly to the Supreme Court.

Source: Associated Press Apr 9, 2000

A.5 Tobacco

There is no greater threat to the health and safety of our children than tobacco. Tobacco hooks 3,000 teens every day, and more than 1,000 will die from it. If our children don't start smoking by the time they turn 19, they're unlikely to start at all. The President's anti-tobacco plan will reduce teen smoking by 42% over the next five years. I call on Congress to pass comprehensive, bipartisan anti-tobacco legislation – and to do it now.

Source: Al Gore speech to National PTA, Jun 14, 1999

Gore said Congress should give the FDA power to regulate nicotine as an addictive drug. Gore has become a passionate opponent of the tobacco industry, but once bragged of working in tobacco fields on his family's farm and until 1990 accepted tobacco [PAC money]. In 1996, he moved many with an account of the death of his sister from lung cancer. Today Gore accused the cigarette companies of recruiting teenagers as "replacement smokers" for the 400,000 people who die each year of smoking-related illnesses.

Source: NyTimes.com Mar 22, 2000

Bush, in a statement issued by his campaign headquarters, called on Congress and state legislatures to pass laws to restrict access to tobacco by minors. Texas, he said, had already passed some of the toughest such laws in the nation.

Bush did not address the question that faced the Supreme Court today, whether the FDA should be empowered to regulate tobacco as a harmful and addictive drug. A spokeswoman said the governor had never answered that question and was not prepared to do so today.

The Bush statement said the governor "believes Congress should pass tough laws to keep tobacco out of the hands of kids similar to strict anti-teen smoking laws he advocated and signed in Texas."

Texas imposes fines on retailers who sell cigarettes to minors, prohibits cigarette vending machines in areas accessible to children and restricts tobacco advertising within 1,000 feet of schools and churches.

Source: NyTimes.com Mar 22, 2000

B Text of advertisements sponsored by political parties

Below is the text of "Really", a television advertisement produced by the Republican National Committee.

> Woman: "There's Al Gore reinventing himself on television again. Like I'm not going to notice. Who's he gonna be today? The Al Gore who raises campaign money at a Buddhist temple? Or the one who now promises campaign finance reform? Really. Al Gore . . . claiming credit for things he didn't even do."
>
> Gore: "I took the initiative in creating the Internet."
>
> Woman: "Yeah and I invented the remote control, too. Another round of this, and I'll sell my television."[15]

Below is the text of "Oil and Water", a television advertisement produced by the Democratic National Committee:

> Narrator: "They say oil and water don't mix. Nowhere is that more true than in Texas. After 17 years in the oil business, George W. Bush ran for governor, then passed laws to let big polluters regulate themselves. Today, Texas is number three in water pollution; number one in air pollution. For over 20 years, Al Gore has fought against polluters; and helped pass laws to clean up our air and water. America's environment is cleaner now. Do we really want it to look like Texas?"[16]

[15] Washington Post, August 31, 2000.
[16] Washington Post, October 10, 2000.

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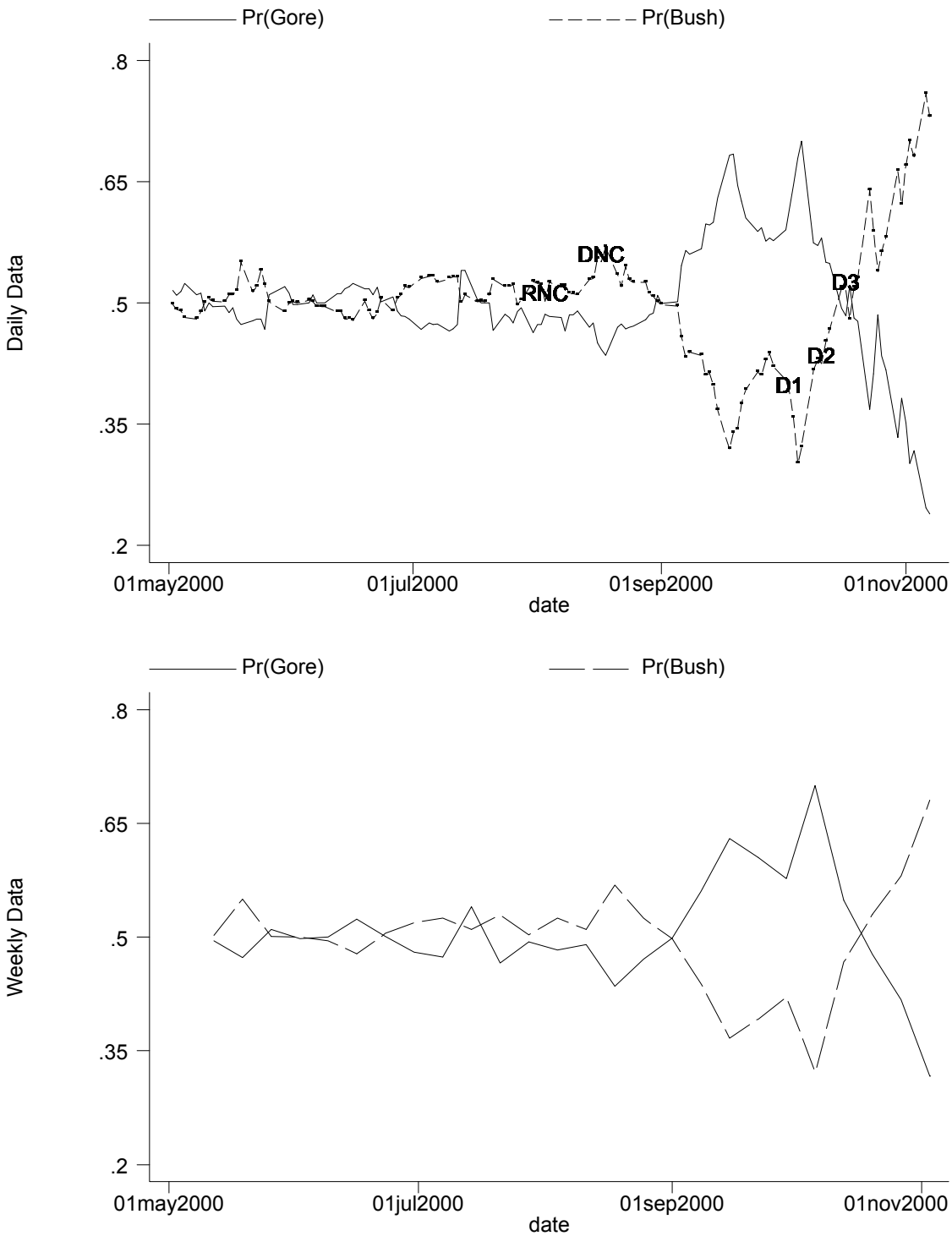


Figure 1: Electoral Probabilities from the Iowa Electronic Market

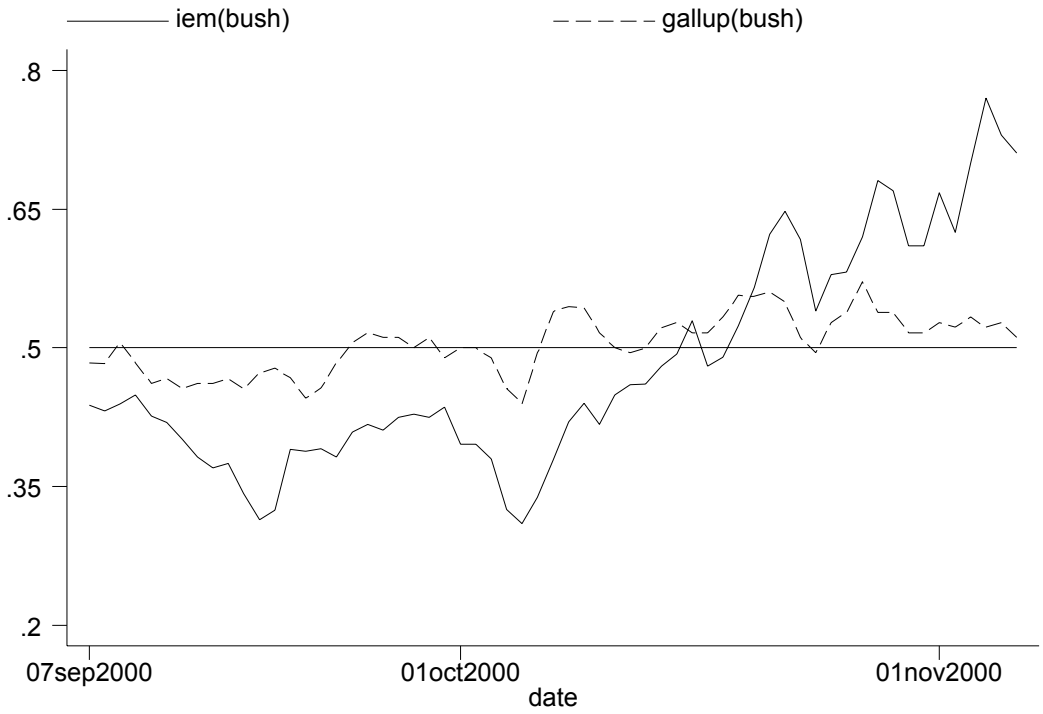
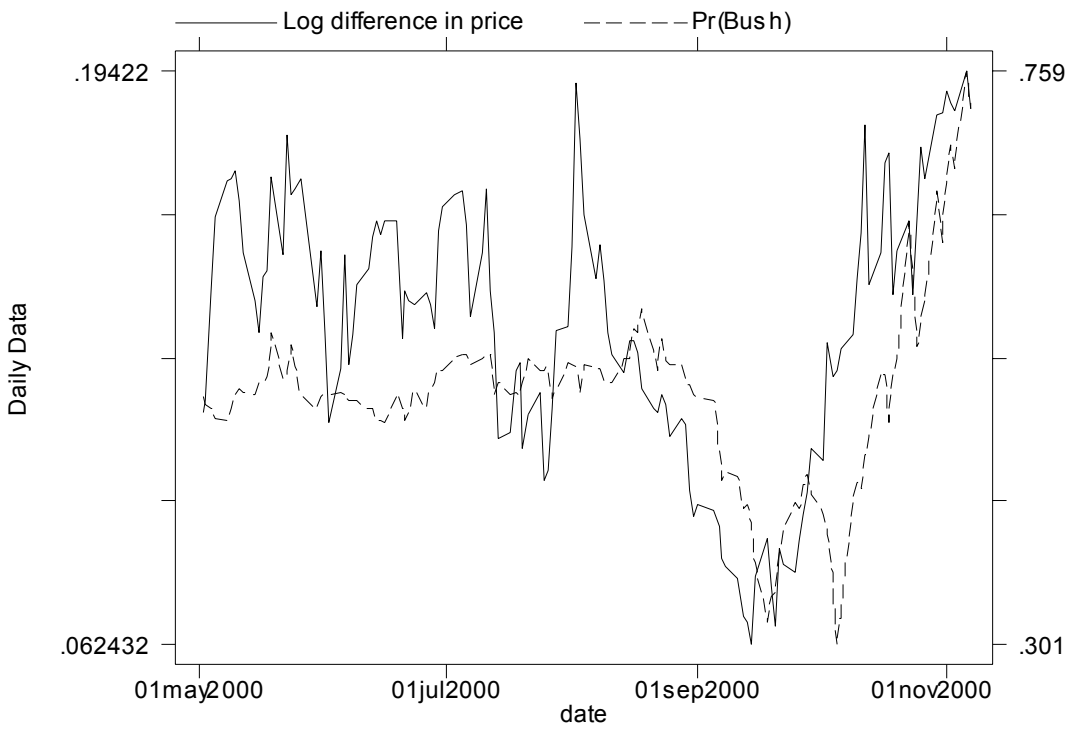


Figure 2: Gallup tracking poll versus Iowa Electronic Market



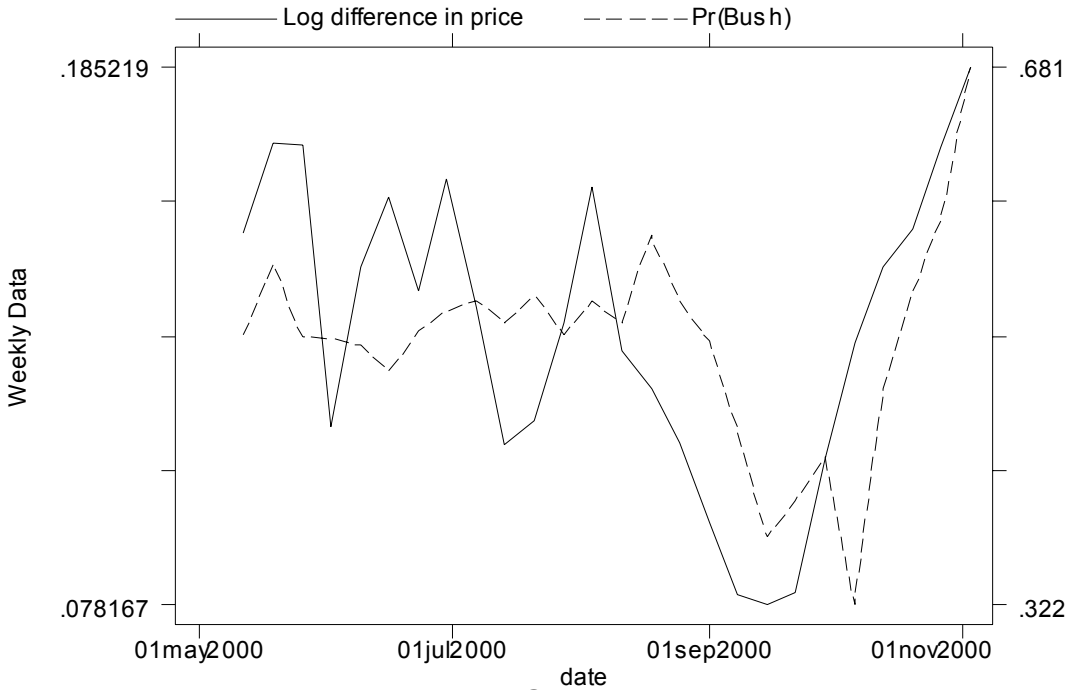


Figure 3: Bush and Gore average stock prices

Table 1

Iowa Electronic Market and Gallup Tracking Poll

	(1)	(2)
Specification	Levels	First differences
constant	-0.7788**	0.0043
	(0.1835)	(0.0041)
Bush share of two-party vote	2.4958**	0.5662**
in Gallup poll	(0.3629)	(0.2221)
Obs	61	60
R-squared	0.4450	0.1008

Notes: dependent variable is price of IEM Bush contract, standard errors in parentheses, ** denotes significance at 95% level, * at 90% level

Table 2a: Firms Favored Under Bush Platform

Firm	Ticker	Lehman	Prudential	ISI Group	Sector
Aetna	AET			yes	
Alliance Capital Management	AC		yes		
Ambac Financial Group	ABK		yes		
Baker Hughes	BHI		yes		Energy
Boeing	BA			yes	Defense
BP Amoco	BP		yes	yes	Energy
Bristol Meyers Squibb	BMY	yes		yes	Pharmaceuticals
Charles Schwab	SCH		yes		
Chevron	CVX	yes			Energy
El Paso Energy	EPG		yes		Energy
Eli Lilly	LLY	yes		yes	Pharmaceuticals
Enron	ENRN	yes			Energy
Genentech	DNA	yes			
General Dynamics	GD		yes	yes	Defense
Georgia-Pacific Group	GP		yes		Energy
Goldman Sachs Group	GS		yes		
Household International	HI		yes		
Lockheed Martin	LMT	yes	yes	yes	Defense
Loews	LTR			yes	Tobacco
MBIA	MBI		yes		
Merck	MRK		yes		Pharmaceuticals
Microsoft	MSFT	yes	yes	yes	Microsoft case
Nabors Industry	NBR		yes		Energy
Nationwide Financial	NFS		yes		
Northrop Grumman	NOC		yes		Defense
Pfizer	PFE		yes	yes	Pharmaceuticals
Pharmacia	PHA			yes	Pharmaceuticals
Philip Morris	MO		yes	yes	Tobacco
Providian Financial	PVN		yes		
Raytheon	RTN			yes	Defense
RJR Tobacco Holdings	RJR			yes	Tobacco
SBC Communications	SBC	yes			
Schering Plough	SGP			yes	Pharmaceuticals
SLM Holding	SLM		yes	yes	
State Street	STT		yes		
T.Rowe Price Associates	TROW		yes	yes	
United Health Group	UNH		yes	yes	
Verizon	VZ	yes			
WebMD	HLTH	yes			
Wellpoint Health Networks	WLP		yes		
Weyerhaeuser	WY		yes	yes	Energy

Table 2b: Firms Favored Under Gore Platform

Firm	Ticker	Lehman	Prudential	ISI Group	Sector
America Online	AOL		yes	yes	Microsoft case
American General Corporation	AGC		yes		
American International Group	AIG		yes		
Archer Daniels Midland	ADM		yes		
AT&T	T	yes			
AXA Financial	AXF		yes		
Bank One	ONE		yes		
Caremark RX	CMX			yes	Pharmaceuticals
Deere	DE		yes		
Exodus Communications	EXDSQ	yes			
Express Scripts	ESRX			yes	Pharmaceuticals
Fannie Mae	FNM	yes	yes	yes	
Fleet Boston Financial	FBF		yes		
Freddie Mac	FRE	yes	yes	yes	
H&R Block	HRB		yes		
Lincoln National	LNC		yes		
Linux	LNUX			yes	Microsoft case
Marsh & Mclennan	MMC		yes		
Oracle	ORCL	yes			Microsoft case
Plug Power	PLUG	yes			Energy
Roy F. Weston	WSTNA		yes		Energy
Sevenson Environmental	SEVN		yes	yes	Energy
Sun Microsystems	SUNW	yes	yes	yes	Microsoft case
Syntroleum	SYNM			yes	Energy
TEVA Pharmaceutical	TEVA	yes			Pharmaceuticals
The Chubb Corporation	CB		yes		
The Hartford Financial Services Group	HIG		yes		
Watson Phamaceutical	WPI	yes			Pharmaceuticals

Table 3

Capitalization of Policy Platforms: Baseline Estimates

	(1)	(2)
Specification	Daily	Weekly
ΔPr(Bush)*Gore-favored	-0.0554**	-0.1197**
	(0.0210)	(0.0468)
ΔPr(Bush)*Bush-favored	0.0308*	0.0410
	(0.0177)	(0.0394)
Obs	9310	1820
R-squared	0.0196	0.1320
Equity fixed effects	yes	yes
Differential return	0.0862**	0.1607**

Notes: dependent variable is abnormal rate of return, standard errors in parentheses, ** denotes significance at 95% level, * at 90% level
The coefficient reported in the specification with lags is the cumulative effect of change in Pr(Bush).

Table 4

Capitalization of Policy Platforms: Robustness Checks with Daily Data

	(1)	(2)	(3)	(4)
Subsample	ΔPr(Bush) large	ΔPr(Bush) small	High volume	Low volume
ΔPr(Bush)*Gore-favored	-0.0569**	-0.2515*	-0.0532**	-0.0805
	(0.0220)	(0.1481)	(0.0214)	(0.0648)
ΔPr(Bush)*Bush-favored	0.0328*	-0.1249	0.0184	0.1134**
	(0.0185)	(0.1246)	(0.0180)	(0.0545)
ΔGallup(Bush)*Gore-favored				
ΔGallup(Bush)*Bush-favored				
Obs	4690	4620	4690	4620
R-squared	0.0190	0.0315	0.0272	0.0190
Equity fixed effects	yes	yes	yes	yes
Differential return	0.0897**	0.1266	0.0715**	0.1939**

Notes: dependent variable is abnormal rate of return, standard errors in parentheses, ** denotes significance at 95% level, * at 90% level

Table 5

Capitalization of Policy Platforms: Robustness Checks Controlling for IEM Leads and Lags

	(1)	(2)	(3)	(4)
Specification	Daily (4 lags)	Weekly (1 lag)	Daily (4 leads)	Weekly (1 lead)
ΔPr(Bush)*Gore-favored	-0.0586**	-0.1255**	-0.0550**	-0.0889*
	(0.0210)	(0.0472)	(0.0222)	(0.0502)
ΔPr(Bush)*Bush-favored	0.0351**	0.0401	0.0297	0.0490
	(0.0177)	(0.0397)	(0.0186)	(0.0422)
Obs	9030	1750	9030	1750
R-squared	0.0242	0.1330	0.0229	0.1295
Equity fixed effects	yes	yes	yes	yes
Differential return	0.0938**	0.1656**	0.0848**	0.1379**

Notes: dependent variable is abnormal rate of return, standard errors in parentheses, ** denotes significance at 95% level, * at 90% level
The coefficient reported is the contemporaneous effect of change in Pr(Bush).

Table 6: Capitalization of Policy Platforms: Sector Analysis

Specification	(1) Daily	(2) Weekly
	Panel A: Pharmaceutical	
ΔPr(Bush)*Gore-favored	0.0145	-0.2818**
	(0.0536)	(0.1160)
ΔPr(Bush)*Bush-favored	0.0303	0.0861
	(0.0438)	(0.0947)
Differential return	0.0159	0.3679**
	Panel B: Defense	
ΔPr(Bush)*Bush-favored	0.0526	0.0184
	(0.0357)	(0.0873)
	Panel C: Energy	
ΔPr(Bush)*Gore-favored	-0.1641**	-0.0756
	(0.0594)	(0.1196)
ΔPr(Bush)*Bush-favored	0.0094	0.0734
	(0.0470)	(0.0945)
Differential return	0.1736**	0.1490
	Panel D: Microsoft versus Competitors	
ΔPr(Bush)*Gore-favored	-0.1480*	0.0427
	(0.0782)	(0.1761)
ΔPr(Bush)*Bush-favored	-0.0114	0.2192
	(0.1564)	(0.3523)
Differential return	0.1366	0.1765
	Panel E: Tobacco	
ΔPr(Bush)*Bush-favored	0.1310**	0.0731
	(0.0576)	(0.1465)

Table 7: Average Campaign Contributions by Favored Candidate

Variable	Description	Bush-favored	Gore-favored
Contributions to Bush	Firm Contributions to RNC plus PAC contributions to candidate	$163,667	$69,480
Contributions to Gore	Firm Contributions to DNC	$56,659	$56,345
Soft Contributions to Bush	Firm Contributions to RNC	$162,549	$68,628
Soft Contributions to Gore	Firm Contributions to DNC	$56,659	$56,344
Hard Contributions to Bush	Firm PAC contributions to candidate	$1,118	$852
Hard Contributions to Gore	Firm PAC contributions to candidate	$0	$0

Table 8

Campaign Contribution Analysis

	(1)	(2)
Frequency	Daily	Weekly
$\Delta Pr(Bush)*C^{Gore} / V_{t-1}$	-2099.03**	975.82
	(815.58)	(1801.65)
$\Delta Pr(Bush)*C^{Bush} / V_{t-1}$	1934.97*	1778.58
	(1110.26)	(2447.30)
Obs	9310	1820
R-squared	0.0192	0.1294
Equity fixed effects	yes	yes
Differential return	4034.00**	802.76

Notes: dependent variable is abnormal rate of return, standard errors in parentheses, ** denotes significance at 95% level, * at 90% level

The coefficient reported in the specification with lags is the cumulative effect of change in Pr(Bush).

Table 9

Florida Recount Event Study: November 8 through December 14, 2000

	(1) OLS	(2) OLS
Gore-favored	-0.0152	
	(0.0255)	
Bush-favored	0.0235	
	(0.0214)	
C^{Gore} / V_{t-1}		-1980.43*
		(1168.58)
C^{Bush} / V_{t-1}		1019.25
		(1563.11)
Obs	70	70
R-squared	0.0225	0.0444
Equity fixed effects	no	no
Differential return	0.0387	2999.68

Notes: dependent variable is abnormal rate of return, standard errors in parentheses, ** denotes significance at 95% level, * at 90% level