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Journal of Public Economics 90 (2006) 751–773

JOURNAL OF  
PUBLIC  
ECONOMICS

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# Are policy platforms capitalized into equity prices? Evidence from the Bush/Gore 2000 Presidential Election

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Received 15 January 2005; received in revised form 15 June 2005; accepted 20 June 2005

Available online 15 August 2005

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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% more and Gore-favored firms are worth 6% less, implying a statistically significant differential return of 9%. Estimates based on weekly returns are even stronger, suggesting a differential return of 16%. The most sensitive sectors include tobacco, worth 13% more under a favorable Bush administration, Microsoft competitors, worth 15% less under an unfavorable Bush administration, and alternative energy companies, worth 16% 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.

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*Keywords:* Elections; Political economy; Financial markets

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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.<sup>1</sup> Among these so-called Bush stocks, Pfizer rose 4.1%, Exxon rose 1.3%, and Philip Morris rose 6.5%. 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% more and Gore-favored firms are worth 6% less. Estimates based upon weekly results are even stronger, suggesting a differential return of 16%. The most sensitive sectors include tobacco, worth 13% more under a favorable Bush administration, Microsoft competitors, worth 15% less under an unfavorable Bush administration, and alternative energy companies, worth 16% 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 provide evidence for the existence of election-contingent security markets, 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 their feasibility.

## 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

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<sup>1</sup> See, for example, *The New York Times*, December 14, 2000.

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 Shackleford \(1997\)](#) 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 \(2004\)](#) 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 Suharto experienced large declines, relative to prices of lesser-connected firms, in reaction to news of Suharto's deteriorating health. One limitation of this study is that none of these health episodes forced Suharto from office, and one must thus interpret these results as a lower bound on the value of political connections.<sup>2</sup> [Jayachandran \(2002\)](#) studies the case of Senator James Jeffords' 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% of their market value in aggregate. [Roberts \(1990\)](#) studies the reaction of equity prices to the death of Senator Henry Scoop Jackson across various constituencies of Jackson and Senator Sam Nunn, Jackson's successor as ranking minority member on the Senate Armed Services Committee.

Several existing studies have related equity returns with prices from the Iowa Electronic Markets. [Herron et al. \(1992\)](#) use measures of candidate electoral prospects based upon the Iowa Electronic Market during the 1992 Presidential election and identify 15 sectors, out of the 74 examined, as politically sensitive. While using similar sources of variation, there are several differences between Herron et al. and my paper. First, 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. My study, by contrast, incorporates independent information on firms favored under Bush and Gore campaign platforms

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<sup>2</sup> 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.

and uses this information to uncover the significance of these platforms.<sup>3</sup> 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 \(2003\)](#). Second, as an attempt to address potential reverse causation, my paper develops several instruments for the prices from the Iowa Electronic Market. In a paper of which I became aware after writing the first draft of my paper, [Mattozzi \(2005\)](#) 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 declines.

This paper is also related to a broader literature on whether or not the release of new information moves stock market prices. [Cutler et al. \(1988\)](#) find that neither news associated with macroeconomic developments nor major world events fully explain movements in the S and P 500. [Elmendorf et al. \(1900\)](#) 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. [Wolfers and Zitzewitz \(2004\)](#) examine 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 the war raised oil prices \$10 per barrel and lowers the value of U.S. equities 15%.

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.<sup>4</sup> 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, a prediction 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

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<sup>3</sup> 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.

<sup>4</sup> See [Alesina \(1987, 1988\)](#), and [Alesina and Rosenthal \(1995\)](#).

contract, the market price can be interpreted as the probability of a Bush victory.<sup>5</sup> I have obtained closing prices from the Iowa Electronic Market as of 4 p.m. Eastern time, allowing for synchronization with the closing price data on equities from financial markets.

As shown in Fig. 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%.

While contracts based upon the electoral college, rather than the popular vote, would be preferable, I believe that the ex-post divergence between the 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.<sup>6</sup>

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.<sup>7</sup> 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., 2001).<sup>8</sup> Even given these limitations associated with polling data, Fig. 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 price demonstrates that this relationship is statistically significant, and this result is robust to a specification in first differences.

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<sup>5</sup> While researchers typically treat prices in prediction markets as probabilities that a contracted event will occur, Manski (2004) challenges this treatment. In a model with risk-neutral traders who have heterogeneous beliefs, he argues that prices in prediction markets only partially identify the central tendency of beliefs. In a reply, Wolfers and Zitzewitz (2005) provide sufficient conditions for the treatment of prices in prediction markets as event probabilities.

<sup>6</sup> New York Times, October 27, 2000.

<sup>7</sup> 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.

<sup>8</sup> See also Forsythe et al. (1992) and Rhode and Strumpf (2003) for a historical analysis of Presidential election betting markets.

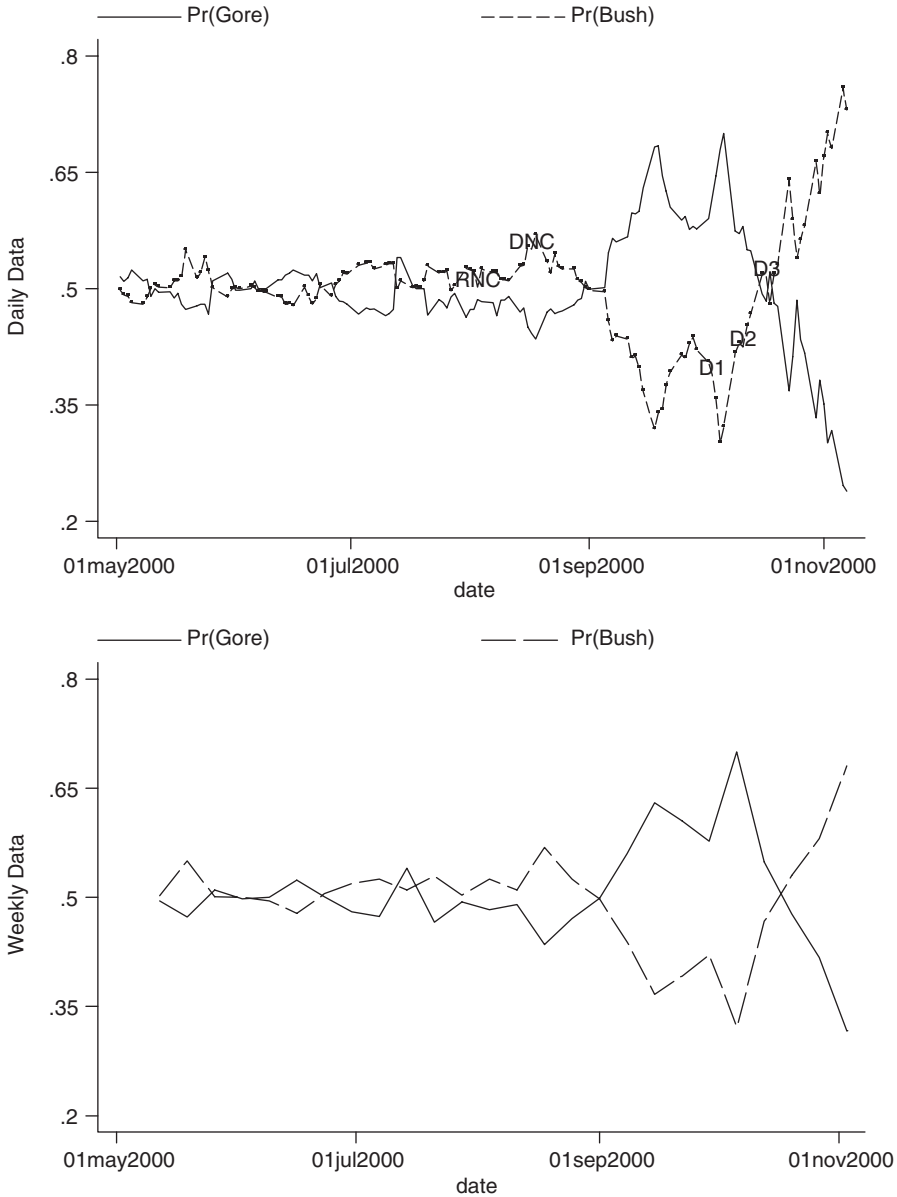


Fig. 1. Electoral probabilities from the Iowa Electronic Market.

### 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

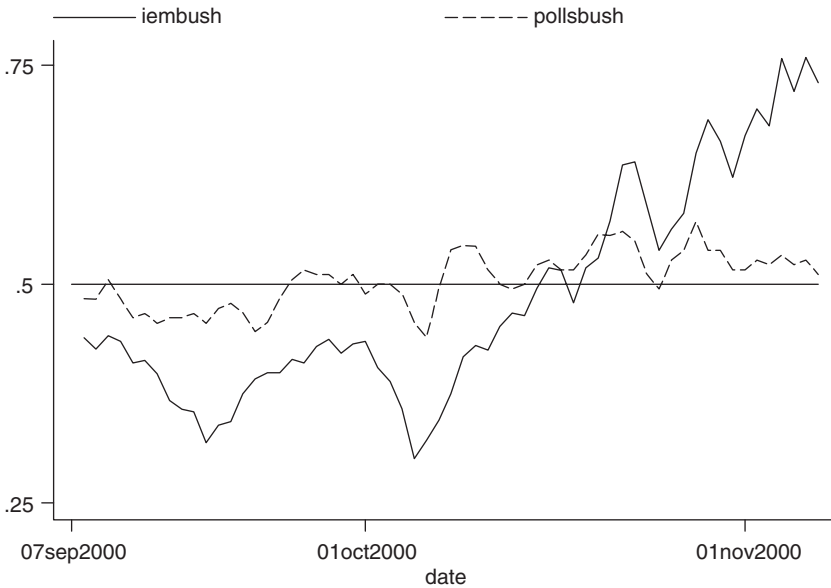


Fig. 2. Gallup tracking poll versus Iowa Electronic Market.

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 ( $\hat{\alpha}_i, \hat{\beta}_i$ ) from firm-specific regressions,

Table 1  
Iowa Electronic Market and Gallup tracking poll

Specification	(1)	(2)
	Levels <sup>a</sup>	First differences <sup>b</sup>
Constant	-0.8696** (0.1909)	0.0045 (0.0035)
Bush share of two-party vote	2.6832** (0.3775)	0.7522** (0.1873)
Obs	61	60
R-squared	0.4612	0.2175

OLS regression with standard errors in parentheses. \*\*denotes 95% significance, \*denotes 90% significance.

<sup>a</sup> Dependent variable is the Bush contract on the Iowa Electronic Market. The independent variable is Bush's share of the two-party vote in Gallup tracking poll data. Daily data cover the period September 7, 2000–November 6, 2000.

<sup>b</sup> Dependent variable is the change in the price of a Bush contract on the Iowa Electronic Market. The independent variable is the change in Bush's share of the two-party vote in Gallup tracking poll data. Daily data cover the period September 8, 2000–November 6, 2000.

Table 2

Firm	Ticker	Lehman	Prudential	ISI Group	Sector
<i>Firms favored under Bush platform</i>					
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
<i>Firms favored under gore platform</i>					
America Online	AOL		Yes	Yes	Microsoft case
American General Corporation	AGC		Yes		
American International Group	AIG		Yes		
Archer Daniels Midland	ADM		Yes		
AT and T	T	Yes			
AXA Financial	RAXF		Yes		



Table 2 (continued)

Firm	Ticker	Lehman	Prudential	ISI Group	Sector
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 and R Block	HRB		Yes		
Lincoln National	LNC		Yes		
Linux	LNEX			Yes	Microsoft case
Marsh and 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 Pharmaceutical	WPI	Yes			Pharmaceuticals

I then calculate daily abnormal returns ( $\tilde{r}_{it}$ ), which are net of market returns, for the period May 1, 2000 through November 6, 2000 as follows:

$$\tilde{r}_{it} = r_{it} - (\hat{\alpha}_i + \hat{\beta}_i r_{mt}) \quad (2)$$

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.<sup>9</sup> Key differences in these campaign platforms are listed below:

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

<sup>9</sup> One reader was surprised that H and R Block was listed as a Gore firm. With both candidates proposing significant changes in the tax code, one would expect H and R Block to do well in either case. It is important to note, however, that this firm is engaged in many lines of business unrelated to tax policy.

- (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 Fig. 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. Equity market returns, however, appear to be a leading indicator of the price of a Bush contract in the Iowa Electronic Market, suggesting that political news may be incorporated more quickly into financial markets than it is incorporated into the Iowa Electronic Market. The empirical analysis below will address this issue of potential market inefficiency in a variety of ways.

#### 4.1. Empirical model

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

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

where  $\text{Bush-favored}_i = 1 - \text{Gore-favored}_i$  indicates whether the firm is favored under the Bush platform,  $\Delta \text{Pr}(\text{Bush})_t$  indicates the daily change in the probability of a Bush victory,  $u_{it}$  captures unobserved factors affecting returns, and  $\alpha_i$ ,  $\beta_1$ , and  $\beta_2$  represent parameters to be estimated. The fixed effects ( $\alpha_i$ ) allow for firm-specific trends in equity prices during the sample period, while  $\beta_1$ , and  $\beta_2$  are the key parameters in the test for capitalization; these parameters can be interpreted as follows:

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

Thus, the parameter  $\beta_1$  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  $\beta_2$  captures a similar percentage difference for Gore-favored firms. The capitalization hypothesis predicts  $\beta_1 > 0$  and  $\beta_2 < 0$ .

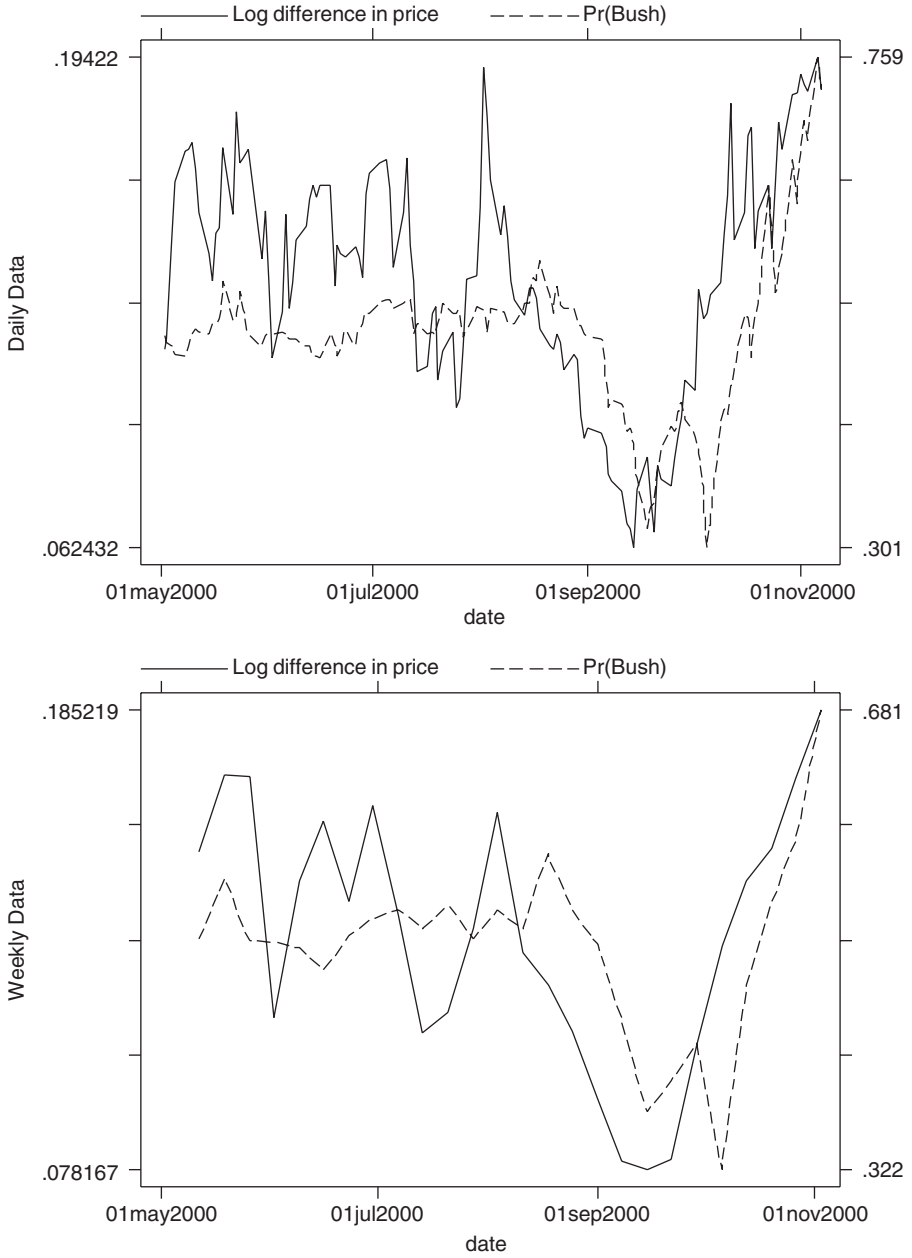


Fig. 3. Bush and Gore average stock prices.

#### 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% less under a Bush administration, relative to a friendlier Gore administration. Bush-favored firms, by contrast, are worth 3% 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

Table 3  
Capitalization of policy platforms: baseline estimates

Specification	(1)	(2)	(3)	(4)	(5)
	OLS <sup>a</sup>	OLS <sup>b</sup>	Polls IV <sup>c</sup>	Polls IV <sup>d</sup>	Weekend IV <sup>e</sup>
Frequency	Daily	Weekly	Daily	Weekly	Daily
$\Delta Pr(\text{Bush}) * \text{Gore-favored}$	-0.0554** (0.0210)	-0.1197** (0.0468)	-0.0954** (0.0483)	-0.0471 (0.0962)	-0.0125 (0.0377)
$\Delta r(\text{Bush}) * \text{Bush-favored}$	0.0308* (0.0177)	0.0410 (0.0394)	0.0446 (0.0406)	0.1474* (0.0809)	0.1278** (0.0317)
Obs	9310	1820	2940	560	1890
R-squared	0.0196	0.1320	0.0319	0.1964	0.0415
Equity fixed effects	yes	yes	yes	yes	yes
Differential return	0.0862** (0.0275)	0.1607** (0.0612)	0.1400** (0.0631)	0.1945 (0.1257)	0.1403** (0.0493)

Regressions with standard errors in parentheses. \*\*denotes 95% significance, \*denotes 90% significance.

<sup>a</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 6, 2000.

<sup>b</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Weekly data (Friday close to Friday close) cover the period May 1, 2000–November 6, 2000.

<sup>c</sup> IV regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Instrument is Bush's share of the 2-party vote in Gallup tracking poll data. Daily data cover the period September 1, 2000–November 6, 2000.

<sup>d</sup> IV regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Instrument is the Bush's share of the 2-party vote in Gallup tracking poll data. Weekly data (Friday close to Friday close) cover the period September 1, 2000–November 6, 2000.

<sup>e</sup> IV regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. The Friday to Sunday change in the price of a Bush contract serves as an instrument for the Friday to Monday change in the price of a Bush contract. In two cases, Memorial Day and Labor Day, financial markets were closed on Mondays. In this case, the Friday to Monday change in the price of a Bush contract serves as an instrument for the Friday to Tuesday change in the price of a Bush contract. Daily data cover the period May 1, 2000–November 6, 2000.

firms.<sup>10</sup> The differential return ( $\beta_1 - \beta_2$ ), as shown at the bottom of Table 3, is 9% and is statistically significant at conventional levels; this statistic provides a somewhat weaker test of the capitalization hypothesis and is more consistent with the evidence in Fig. 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 in my study provides additional statistical power.<sup>11</sup>

#### 4.3. Robustness checks

One concern over the use of prices from the Iowa Electronic Market is the relatively small market size; the median day during the sample period witnessed just 229 trades in the Bush contract. This small market volume could lead to several econometric problems. One possibility is classical measurement error: these prediction market prices may imprecisely measure the true probability of a Bush victory. While we cannot directly test for such measurement error, we do find evidence of negative serial correlation in the changes in the price of Bush contract.<sup>12</sup> This negative serial correlation in changes in the price of a Bush contract is consistent with measurement error in the price level of a Bush contract.<sup>13</sup>

Given the problems associated with such measurement error, namely a bias towards zero in the coefficients, we next estimate a model using weekly data (Friday close to Friday close), for which the high frequency movements will be less important, relative to analyses using daily data.<sup>14</sup> As shown in Column 2 of Table 3, the  $R$ -squared rises

<sup>10</sup> 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.

<sup>11</sup> For comparison purposes, I also conducted an event study analysis based upon the Florida recount. The results of this analysis, which are available upon request from the author, demonstrate that Bush-favored firms outperformed Gore-favored firms between November 8, the day after the election, and December 14, the day after Gore's concession, by roughly 2 percentage points.

<sup>12</sup> To test for this serial correlation, we estimated an AR(1) model for the daily series of changes in the price of a Bush contract; the estimated correlation is  $-0.18$ .

<sup>13</sup> To formalize this argument, suppose that the price of a Bush contract in the Iowa Electronic Market can be represented as the sum of the true probability and a random component:  $\text{Pr}(\text{Bush})_t^{\text{IEM}} = \text{Pr}(\text{Bush})_t^{\text{true}} + \varepsilon_t$ , where  $\varepsilon_t$  has mean zero and variance  $\sigma^2$  and is distributed independently across time. For simplicity, assume further that the true probability follows a random walk. In this case, there will be negative serial correlation in changes in the price of a Bush contract:  $\text{cov}(\Delta \text{Pr}(\text{Bush})_t^{\text{IEM}}, \Delta \text{Pr}(\text{Bush})_{t-1}^{\text{IEM}}) = -\sigma^2$ . To understand this result, consider a day with a positive measurement error ( $\varepsilon_t > 0$ ); this measurement error in the price level will tend to increase the contemporaneous change in the price of a Bush contract ( $\Delta \text{Pr}(\text{Bush})_t^{\text{IEM}}$ ) but will tend to decrease the following day's change ( $\Delta \text{Pr}(\text{Bush})_{t+1}^{\text{IEM}}$ ).

<sup>14</sup> Following the setup in Footnote 13, we have that the true probability of a Bush victory follows a random walk:  $\Delta \text{Pr}(\text{Bush})_t^{\text{true}} = \text{Pr}(\text{Bush})_{t-1}^{\text{true}} + u_t$ , where  $u_t$  is random. Then, it is straightforward to demonstrate that measurement error is relatively less important in lower frequency data:  $\text{var}(\text{Pr}(\text{Bush})_t^{\text{IEM}} - \text{Pr}(\text{Bush})_{t-k}^{\text{IEM}}) = k \text{var}(u_t) + 2\sigma^2$ . Thus, as  $k$  increases, relatively more true information is provided in price changes of a Bush contract. Intuitively, measurement error is independent of the frequency while the number of informative shocks is higher in lower frequency data.

significantly from 0.02 to 0.13, and the estimated value of favorable policies for Gore-favored firms rises substantially from 6% to 12%, 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%, 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%, a statistically significant result.

Another potential econometric problem with low volume in the IEM is that political news may be incorporated more quickly into financial markets. This lag in political news reaching prediction markets is consistent with the evidence in Fig. 3, in which financial market prices appear to lead prediction market prices. To the extent that political news is incorporated more quickly into financial markets, participants in prediction markets may use financial market data in order to forecast the probability of a Bush victory, providing a further complication. In particular, this forecasting by prediction market traders will tend to bias the coefficient on the price of a Bush contract away from zero (Wolfers and Zitowitz, 2004). Given our focus on firm-specific abnormal returns, which are net of broader financial market developments, we do not feel that this problem is a first-order concern in our empirical study. That is, our coefficients will only be biased if prediction market participants condition on sector-specific or firm-specific equity returns. For completeness, however, we empirically address these concerns of reverse causation in three ways.

The first approach to addressing reverse causation uses tracking polling data as an instrument for the price of a Bush contract. If prediction market participants condition on both polling data and financial data in forecasting the probability of a Bush victory, then the instrumental variables analysis will use only the variation in prediction market prices associated with this arguably exogenous polling data, and the IV estimator will consistently estimate the parameters of interest ( $\beta_1$ ,  $\beta_2$ ). As shown in the columns 3 and 4 of Table 3, the results of this instrumental variables analysis are qualitatively similar to those in the baseline analysis.<sup>15</sup>

As a second attempt at addressing possible reverse causation, we exploit the fact that the Iowa Electronic Market, but not financial markets, are open for trading on weekends. Thus, during the weekends, trading on the Iowa Electronic Market cannot be influenced by financial market developments. In particular, we use the weekend change (Friday close to Sunday close) in the price of a Bush contract as an instrument for the Friday close to Monday close change in the price of Bush contract.<sup>16</sup> The dependent variable in this case is the Friday close to Monday close rate of return in equity prices and we thus ignore financial market activity on the other four weekdays. As shown in column 5 of Table 3, these results suggest that Gore-favored firms are insensitive to changes in the probability of a Bush victory, while Bush-favored firms are worth 13% more under a Bush Administration.

<sup>15</sup> First-stage results are similar to those in column 2 of Table 1. The only difference is that the Table 1 results include both weekday and weekend days, while the IV analysis includes only weekdays given the lack of financial market data on weekends.

<sup>16</sup> In two cases, Memorial Day and Labor Day, financial markets were closed on Mondays. In this case, we use the Friday to Monday change in the price of a Bush contract as an instrument for the Friday to Tuesday change in the price of Bush contract.

The third approach directly addresses the potential problem of delays in political news reaching prediction markets. In particular, Table 4 presents the coefficients on the contemporaneous change in the price of a Bush contract after controlling for leads and lags

Table 4  
Capitalization of policy platforms: robustness checks controlling for IEM leads and lags

	(1)	(2)	(3)	(4)
Frequency	Daily <sup>a</sup>	Weekly <sup>b</sup>	Daily <sup>c</sup>	Weekly <sup>d</sup>
Lag/lead structure	4 lags	1 lag	4 leads	1 lead
$\Delta\text{Pr}(\text{Bush})_t$ * Gore-favored	−0.0586** (0.0210)	−0.1255** (0.0472)	−0.0550** (0.0222)	−0.0889* (0.0502)
$\Delta\text{Pr}(\text{Bush})_t$ * Bush-favored	0.0351** (0.0177)	0.0401 (0.0397)	0.0297 (0.0186)	0.0490 (0.0422)
$\Delta\text{Pr}(\text{Bush})_{t+/-1}$ * Gore-favored	0.0127 (0.0212)	−0.0599 (0.0504)	−0.0076 (0.0220)	−0.0119 (0.0469)
$\Delta\text{Pr}(\text{Bush})_{t+/-1}$ * Bush-favored	0.0144 (0.0178)	0.0757* (0.0424)	−0.0399** (0.0185)	−0.0308 (0.0395)
$\Delta\text{Pr}(\text{Bush})_{t+/-2}$ * Gore-favored	−0.0036 (0.0220)		−0.0087 (0.0220)	
$\Delta\text{Pr}(\text{Bush})_{t+/-2}$ * Bush-favored	0.1050** (0.0185)		0.0052 (0.0185)	
$\Delta\text{Pr}(\text{Bush})_{t+/-3}$ * Gore-favored	−0.0532** (0.0220)		−0.0197 (0.0212)	
$\Delta\text{Pr}(\text{Bush})_{t+/-3}$ * Bush-favored	−0.0512** (0.0185)		0.0516** (0.0178)	
$\Delta r(\text{Bush})_{t+/-4}$ * Gore-favored	0.0049 (0.0221)		−0.0485 (0.0211)	
$\Delta r(\text{Bush})_{t+/-4}$ * Bush-favored	−0.0223 (0.0186)		−0.0296* (0.0177)	
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** (0.0275)	0.1656** (0.0616)	0.0848** (0.0290)	0.1379** (0.0655)

Regressions with standard errors in parentheses. \*\*denotes 95% significance, \*denotes 90% significance.

<sup>a</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 5, 2000–November 6, 2000.

<sup>b</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Weekly data (Friday close to Friday close) cover the period May 8, 2000–November 6, 2000.

<sup>c</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 2, 2000.

<sup>d</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Weekly data (Friday close to Friday close) cover the period May 1, 2000–October 31, 2000.

in the change in the price of a Bush contract. Column 1 presents results controlling for 4 lags in the change in the price of a Bush contract. While several of these lag terms are statistically significant, the contemporaneous results are similar to those in the baseline results of Table 3 even after controlling for these lagged effects. 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 price of a Bush contract. If political news is incorporated into prediction markets with a lag, then the coefficients on these leads will measure the relationship of interest and the coefficient on the contemporaneous change in the price of a Bush contract will be zero. Again, although several of these coefficients on the lead terms are statistically significant, the coefficients on the contemporaneous change in the price of a Bush contract are similar to those in the baseline analysis.

As a further robustness check, Table 5 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

Table 5  
Capitalization of policy platforms: robustness checks with daily data

Subsample	(1)	(2)	(3)	(4)
	$\Delta\text{Pr}(\text{Bush})$ large <sup>a</sup>	$\Delta\text{Pr}(\text{Bush})$ small <sup>b</sup>	High volume <sup>c</sup>	Low volume <sup>d</sup>
$\Delta\text{Pr}(\text{Bush})$ * Gore-favored	-0.0569** (0.0220)	-0.2515* (0.1481)	-0.0532** (0.0214)	-0.0805 (0.0648)
$\Delta\text{Pr}(\text{Bush})$ * Bush-favored	0.0328* (0.0185)	-0.1249 (0.1246)	0.0184 (0.0180)	0.1134** (0.0545)
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** (0.0287)	0.1266 (0.1936)	0.0715** (0.0280)	0.1939** (0.0847)

Regressions with standard errors in parentheses. \*\*denotes 95% significance, \*denotes 90% significance.

<sup>a</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 6, 2000. Large changes are those days with changes in the price of a Bush contract greater than 1 percentage point.

<sup>b</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 6, 2000. Small changes are those days with changes in the price of a Bush contract of less than or equal to 1 percentage point.

<sup>c</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 6, 2000. High volume days are those with at least 229 trades in the Bush contract.

<sup>d</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 6, 2000. Low volume days are those with less than 229 trades in the Bush contract.



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. As mentioned above, on thinly traded days, market prices may not

Table 6  
Capitalization of policy platforms: sector analysis

Specification	(1) Daily <sup>a</sup>	(2) Weekly <sup>b</sup>
<i>Panel A: pharmaceutical</i>		
$\Delta\text{Pr}(\text{Bush}) * \text{Gore-favored}$	0.0145 (0.0536)	−0.2818** (0.1160)
$\Delta\text{Pr}(\text{Bush}) * \text{Bush-favored}$	0.0303 (0.0438)	0.0861 (0.0947)
Differential return	0.0159 (0.0692)	0.3679** (0.1497)
<i>Panel B: defense</i>		
$\Delta\text{Pr}(\text{Bush}) * \text{Bush-favored}$	0.0526 (0.0357)	0.0184 (0.0873)
<i>Panel C: energy</i>		
$\Delta\text{Pr}(\text{Bush}) * \text{Gore-favored}$	−0.1641** (0.0594)	−0.0756 (0.1196)
$\Delta\text{Pr}(\text{Bush}) * \text{Bush-favored}$	0.0094 (0.0470)	0.0734 (0.0945)
Differential return	0.1736** (0.0757)	0.1490 (0.1524)
<i>Panel D: microsoft versus competitors</i>		
$\Delta\text{Pr}(\text{Bush}) * \text{Gore-favored}$	−0.1480* (0.0782)	0.0427 (0.1761)
$\Delta\text{Pr}(\text{Bush}) * \text{Bush-favored}$	−0.0114 (0.1564)	0.2192 (0.3523)
Differential return	0.1366 (0.1749)	0.1765 (0.3939)
<i>Panel E: tobacco</i>		
$\Delta\text{Pr}(\text{Bush}) * \text{Bush-favored}$	0.1310** (0.0576)	0.0731 (0.1465)

Regressions with standard errors in parentheses. \*\*denotes 95% significance, \*denotes 90% significance.

<sup>a</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Daily data cover the period May 1, 2000–November 6, 2000.

<sup>b</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. 41 Bush-favored and 29 Gore-favored firms are those identified in reports of financial analysts associated with Lehman, Prudential, and ISI. Weekly data (Friday close to Friday close) cover the period May 1, 2000–November 6, 2000.

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.

#### 4.4. Sector analysis

The baseline 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% less under Bush, while conventional energy companies appear to be politically insensitive. Microsoft competitors are worth 15% 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% 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

As a robustness check on the reliance on the opinions of financial analysts in the baseline analysis, I next provide an alternative analysis using data on campaign contributions for this group of 70 politically sensitive firms. An additional benefit of this analysis is that it allows for heterogeneity in the importance of favorable policy platforms for firm value, which were implicitly assumed to be homogenous in the baseline analysis. To motivate the empirical specification, this section briefly analyzes a simple model of campaign contributions as corporate investments along the lines of Snyder (1990). In this model, firms contribute only in an effort to influence campaign platforms. Alternative models of campaign contributions, including one in which firms contribute in order to alter the probability that a given candidate is elected, will be described towards the end of this section.

Consider then a market for favorable policy platforms, which are offered by candidates to firms in exchange for campaign contributions. Favorable platforms under candidate  $j$ , which increase the value of firm  $i$  by the difference  $V_i^j - V_i^0$ , where  $V_i^0$  is firm value in the absence of favorable policy platforms, are realized only if candidate  $j$  is elected, which occurs with probability  $q^j$ . Thus, firm  $i$  will accept an offer from candidate  $j$  in exchange for a campaign contribution of  $C_i^j$  only if  $q^j[V_i^j - V_i^0] \geq RC_i^j$ , where  $R \geq 1$  is the gross return to an alternative investment and, for simplicity, is assumed homogenous across firms. In order to maximize campaign contributions,

candidates set this inequality to binding and we thus have the following firms values under Bush and Gore administrations:

$$V_i^{\text{Bush}} = V_i^0 + RC_i^{\text{Bush}}/q^{\text{Bush}} \tag{5}$$

$$V_i^{\text{Gore}} = V_i^0 + RC_i^{\text{Gore}}/(1 - q^{\text{Bush}}) \tag{6}$$

Next, note the following accounting identity for the value of firm *i* and time *t*:

$$V_{it} = \text{Pr}(\text{Bush})_t V_i^{\text{Bush}} + [1 - \text{Pr}(\text{Bush})_t] V_i^{\text{Gore}} \tag{7}$$

It is important to distinguish here between  $q^{\text{Bush}}$ , which is the probability of a Bush victory at the time of the agreement between the firm and the candidate and is unobserved by the econometrician, and  $\text{Pr}(\text{Bush})_t$ , which is the observed price of a Bush contract on the Iowa Electronic Market. Taking first differences of Eq. (7), substituting in Eqs. (5) and (6), and dividing both sides by  $V_{it-1}$ , we have the following regression equation:

$$r_{it} = \frac{R}{q^{\text{Bush}}} \Delta \text{Pr}(\text{Bush})_t \frac{C_i^{\text{Bush}}}{V_{it-1}} - \frac{R}{1 - q^{\text{Bush}}} \Delta \text{Pr}(\text{Bush})_t \frac{C_i^{\text{Gore}}}{V_{it-1}} \tag{8}$$

Thus, in the context of this simple model, a regression of firm rates of return on the change in the probability of a Bush victory, interacted with campaign contributions to Bush and Gore, which are scaled by the size of the firm, should yield a positive coefficient on the contributions to Bush interaction term with a magnitude of roughly  $R/q^{\text{Bush}}$ . The coefficient on the contributions to Gore interaction term, by contrast, should be negative and of magnitude  $R/(1 - q^{\text{Bush}})$ . Intuitively, firms should receive a larger return on their contributions to the underdog given that more favors have to be provided in exchange for these contributions. We next describe the construction of the new variable introduced here, campaign contributions from firms to candidates.

### 5.1. Data on campaign contributions

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 in measuring campaign contributions from firms to candidates.<sup>17</sup> The remainder of this section describes in more detail data on hard and soft money campaign 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 \$1000 with Bush-favored firms contributing slightly more.

<sup>17</sup> 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.

Table 7  
Average campaign contributions by favored candidate<sup>a</sup>

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	\$1118	\$852
Hard contributions to Gore	Firm PAC contributions to candidate	\$0	\$0

<sup>a</sup> Campaign contribution data taken from the Center for Responsive Politics. Hard money contributions are those from political action committees (PACs) associated with firms, and soft money contributions are those from corporate treasuries to the Democratic National Committee (DNC) and Republican National Committee (RNC) during the 2000 election.

The Gore campaign, by contrast, did not accept contributions from corporate political action committees.

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. 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.<sup>18</sup> 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. 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.<sup>19</sup>

## 5.2. Results and interpretation

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

<sup>18</sup> 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”.

<sup>19</sup> 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).

Table 8  
Campaign contribution analysis

	(1)	(2)
Frequency	Daily <sup>a</sup>	Weekly <sup>b</sup>
$\Delta \text{Pr}(\text{Bush}) * C^{\text{Gore}} / V_{t-1}$	-2099.03** (815.58)	975.82 (1801.65)
$\Delta \text{Pr}(\text{Bush}) * C^{\text{Bush}} / V_{t-1}$	1934.97* (1110.26)	1778.58 (2447.30)
Obs	9310	1820
R-squared	0.0192	0.1294
Equity fixed effects	yes	yes
Differential return	4034.00** (1759.43)	802.76 (3880.86)

Regressions with standard errors in parentheses. \*\*denotes 95% significance, \*denotes 90% significance.

<sup>a</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. Campaign contribution data reported by the Center for Responsive Politics and are scaled by the prior day's market capitalization. Campaign contribution data include hard-money contributions from PACs affiliated with firms to candidates, and soft money contributions from firms to the Democratic National Committee (DNC) and the Republican National Committee (RNC). Daily data cover the period May 1, 2000–November 6, 2000.

<sup>b</sup> OLS regression of the firm-specific abnormal rate of return on the change in the price of a Bush contract on the Iowa Electronic Market. Campaign contribution data reported by the Center for Responsive Politics and are scaled by the prior day's market capitalization. Campaign contribution data include hard-money contributions from PACs affiliated with firms to candidates, and soft money contributions from firms to the Democratic National Committee (DNC) and the Republican National Committee (RNC). Weekly data (Friday close to Friday close) cover the period May 1, 2000–November 6, 2000.

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.

While these coefficients have signs that are consistent with the theoretical model outlined above, their magnitude is much larger. Recall that the model predicts a coefficient on the Bush contributions interaction term, for example, of  $R/q^{\text{Bush}}$ . Given the close race and low interest rates during this period, which implies  $R \approx 1$ , the two coefficients should be about two, orders of magnitude lower than the reported coefficients. There are at least three explanations for this disparity.<sup>20</sup> The first explanation involves firm bargaining power. In the model described above, candidates make take-it-or-leave-it offers to firms and thus extract all gains from trade. In models with firm bargaining power, by contrast, firms may secure these favorable platforms with much smaller campaign contributions and hence the returns to these contributions may be much higher. The second explanation also involves the theoretical model, which incorporates only influence motives for campaign contributions. Grossman and Helpman (1996) consider models in which firms have both influence motives and electoral motives, under which firms contribute in order alter the probability that a given candidate is elected. If

<sup>20</sup> This disparity is related to the puzzle of why firms and others give so little given the large size of government and the associated potential rewards to firm giving (Ansolabehere et al., 2003).

firms only have electoral motives, they will contribute to only one candidate, and the coefficient on campaign contributions interacted with the change in the probability of a Bush victory will depend upon the mapping between campaign spending and electoral outcomes and is no longer expected to have a magnitude of two.<sup>21</sup> The third explanation is an empirical one, recognizing that campaign contributions are just one channel through which firms attempt to influence campaign platforms. If other forms of influence, such as lobbying, are positively correlated with campaign contributions, the estimated returns to contributions may be biased upwards.

## 6. 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% of a firm's total value. Estimates using weekly returns are even stronger, suggesting a differential return of 16%. The most sensitive sectors include tobacco, worth 13% more under Bush, Microsoft competitors, worth 15% less under Bush, and alternative energy companies, worth 16% less under Bush. An analysis of campaign contributions supports the baseline results.

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 incorporated into equity prices, and this relationship is economically and statistically significant.

## Acknowledgements

Thanks to Forrest Nelson at the Iowa Electronic Market for providing data used in this study. Thanks also to Gregory Besharov, Sean Campbell, James Poterba, and Howard Rosenthal for helpful comments and to participants at the Public Choice Society,

<sup>21</sup> In models with electoral motives, firms give to only one candidate. For firms giving to Bush, the contributions are described by the following first-order condition:  $(\partial q^{\text{Bush}} / \partial C_i^{\text{Bush}})(V_i^{\text{Bush}} - V_i^{\text{Gore}}) = R$ , and we can write the corresponding regression equation as follows:  $r_{it} = \frac{R}{(\partial q^{\text{Bush}} / \partial C_i^{\text{Bush}})} \Delta Pr(\text{Bush})_t \frac{C_i^{\text{Bush}}}{V_{t-1}}$ . Thus, in this alternative model, the coefficient depends upon the mapping between campaign spending and electoral outcomes.

Econometric Society, the Harvard University public economics seminar, the Stanford GSB political economy seminar, and the NBER Public Economics Meetings.

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