

Prediction Markets for the CFO

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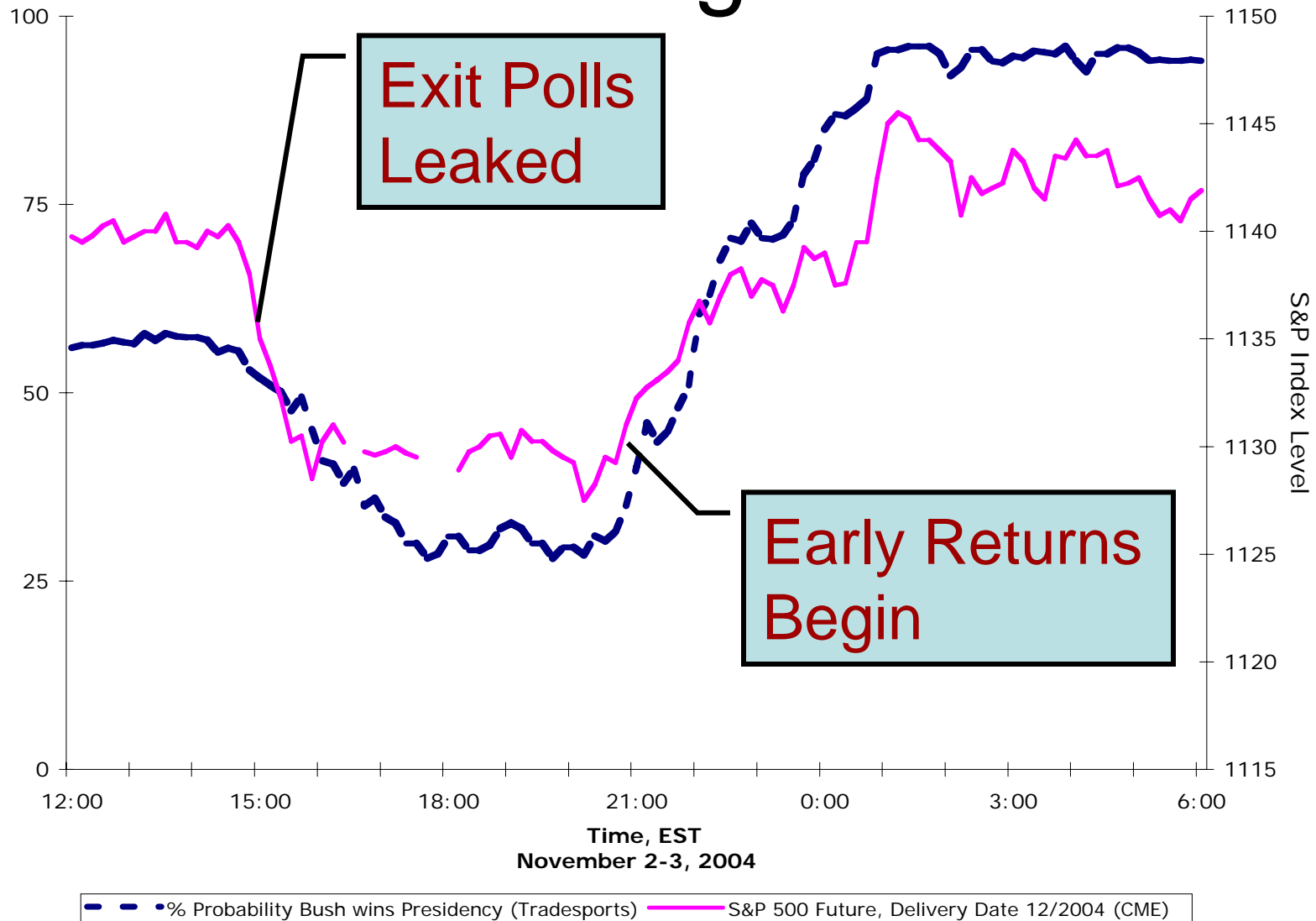
Financial uses of prediction markets

- Understanding one's own valuation => **Prediction Market Event Studies**
- Attempting to improve it by reducing asymmetric information => **Transparency Markets**

Prediction Market Event Studies

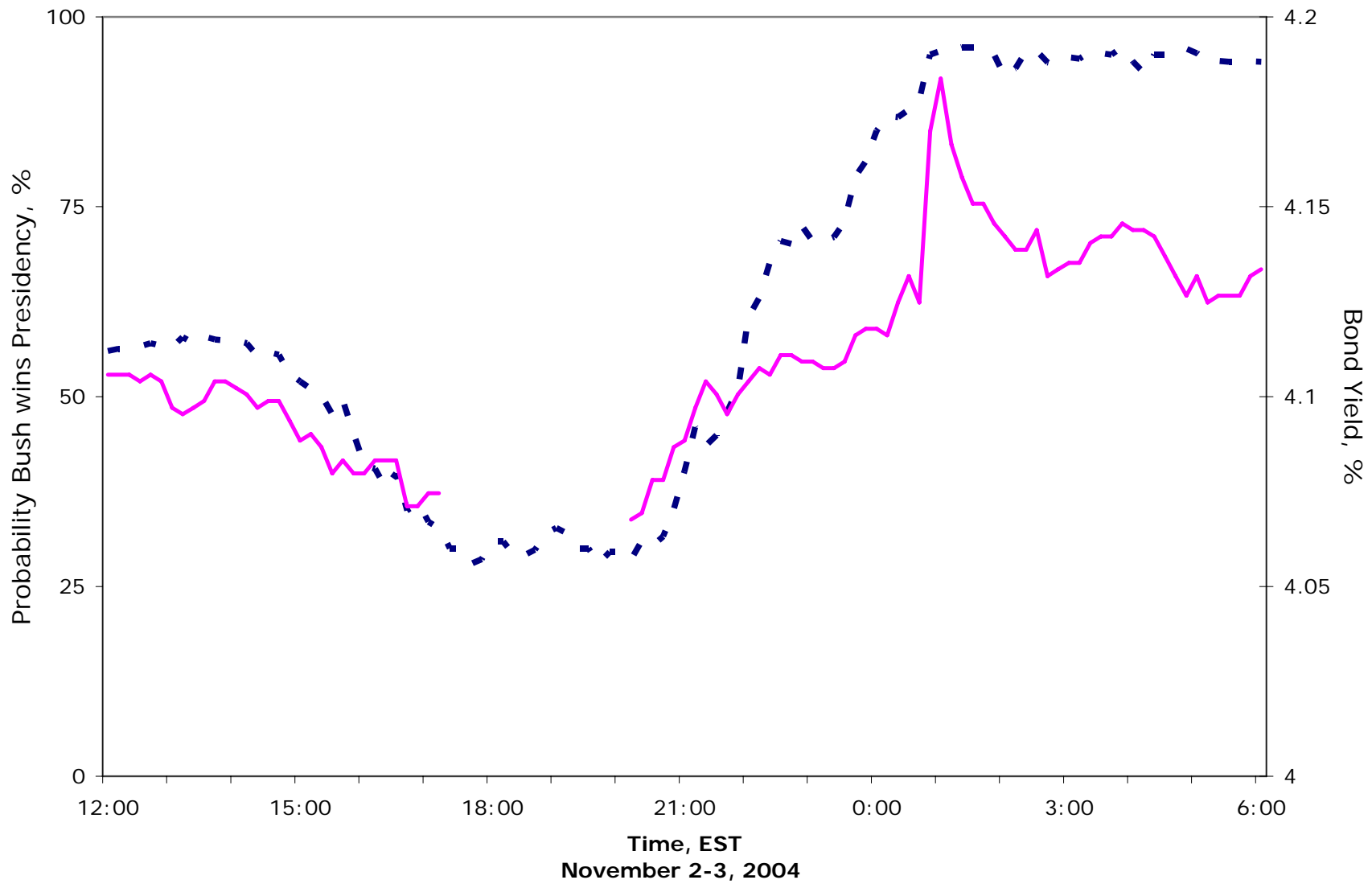
- Advantages:
 - Can measure pre-event probability
 - No guessing about event window length
 - Can control for other news released with event (e.g., impact of 2004 election on 2008)
 - Expands set of analyzable events (non-surprise events, events that never happen, events before they happen)
- But require even greater faith in efficient markets
- And provide new opportunities for correlation vs. causation confusion

Election Night 2004



Snowberg, Wolfers, and Zitzewitz, "Partisan Impacts on the Economy: Evidence From Prediction Markets and Close Elections," *QJE*, May 2007.

Bush and Treasury yields



■ % Probability Bush wins Presidency (Tradesports) — Implied Yield from 10-year Bond Future, Delivery Date 12/2004 (CBOT)

Results: 2004

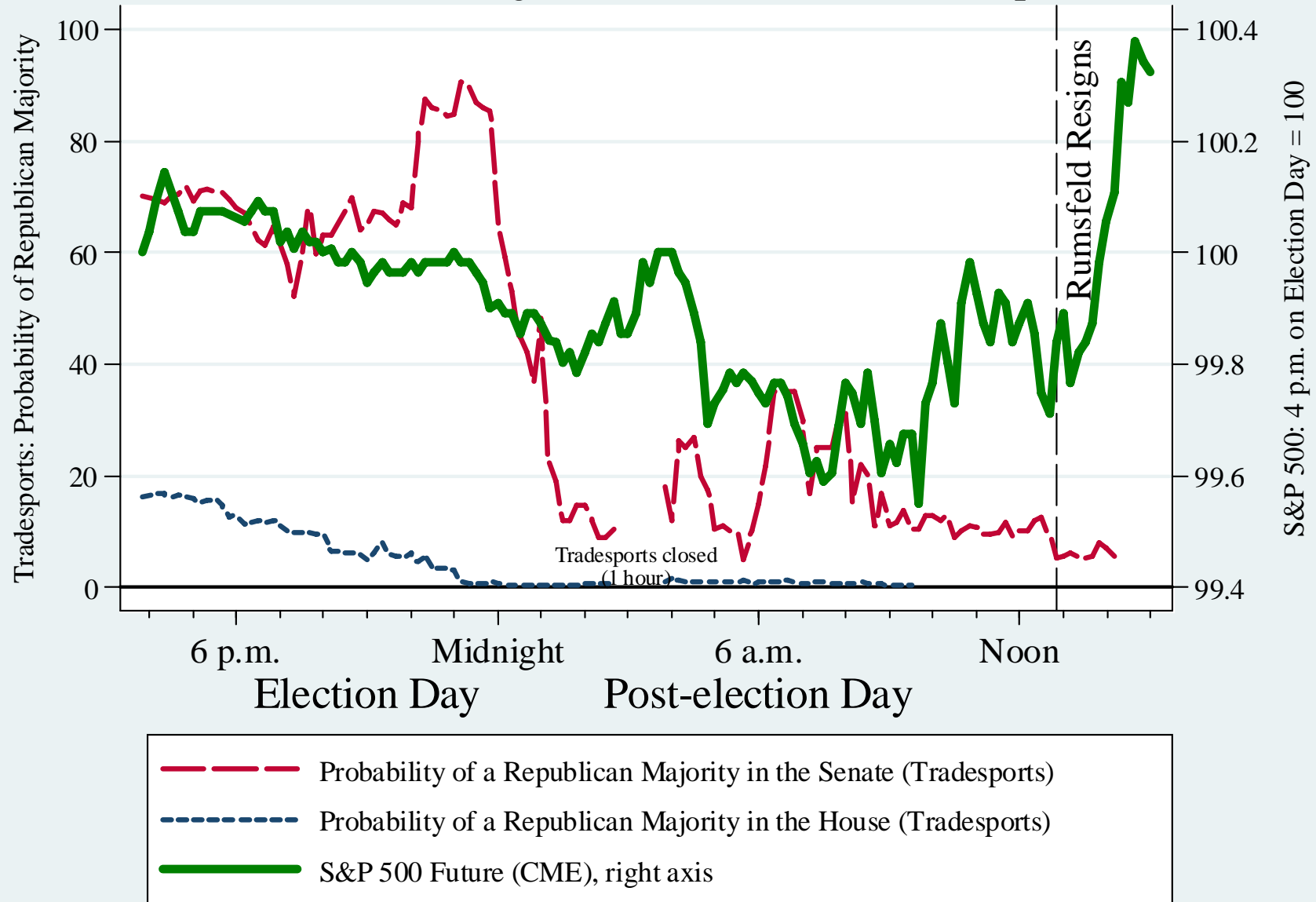
Financial Variable	10 Minute Intervals		30 Minute Intervals	
	Estimate	N	Estimate	N
	Dependent Variable: $\Delta \text{Log} (\text{Price Financial Variable})$			
S&P 500	0.016*** (0.004)	104	0.020*** (0.005)	35
Dow Jones Industrial Average	0.014*** (0.005)	84	0.016*** (0.005)	29
Nasdaq 100	0.019*** (0.005)	104	0.024*** (0.008)	35
Dollar (vs. Trade-Weighted Currency Portfolio)	0.004 (0.003)	84	0.005** (0.002)	34
	Dependent Variable: $\Delta (\text{Price})$			
Dec 04	1.068*** (0.350)	88	1.634*** (0.592)	29
Light Crude Oil Futures	0.642* (0.346)	85	1.032* (0.558)	28
Dec 06	-0.281 (0.751)	63	-0.901 (0.782)	21
	Dependent Variable: $\Delta (\text{Yield})$			
2 Year T-Note Future	0.095* (0.057)	84	0.105** (0.044)	30
10 Year T-Bill Future	0.108** (0.048)	91	0.116** (0.049)	31

How biased is the other method?

Financial Variable	Daily Differences	5-day Differences	20-day Differences
Dependent Variable: $\Delta \text{Log}(\text{Price})$			
S&P 500	0.087*** (0.034)	0.128** (0.062)	0.243*** (0.065)
Dow Jones Industrial Average	0.093*** (0.032)	0.145** (0.064)	0.275*** (0.090)
Nasdaq 100	0.143*** (0.062)	0.212** (0.098)	0.299*** (0.107)
Dollar (vs. Trade-Weighted Currency Portfolio)	0.040** (0.019)	0.017** (0.022)	0.021 (0.044)
Dependent Variable: $\Delta(\text{Price})$			
Light Crude Oil Futures (Near Month)	0.468 (4.210)	-7.269** (3.586)	-12.570*** (3.213)
Dependent Variable: $\Delta(\text{Yield})$			
10 Year T-Bill Yield	0.214 (0.299)	0.967* (0.523)	0.202 (0.598)

In this case, very.

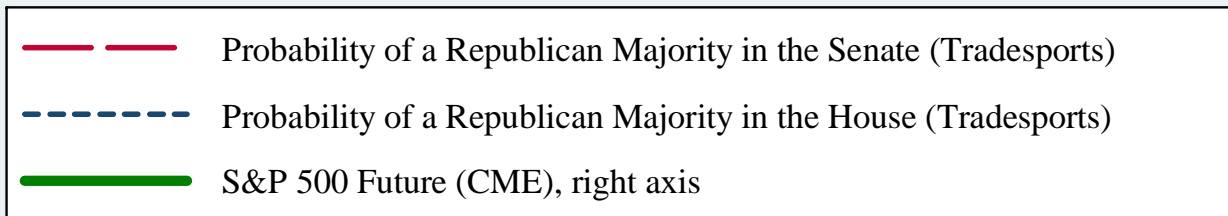
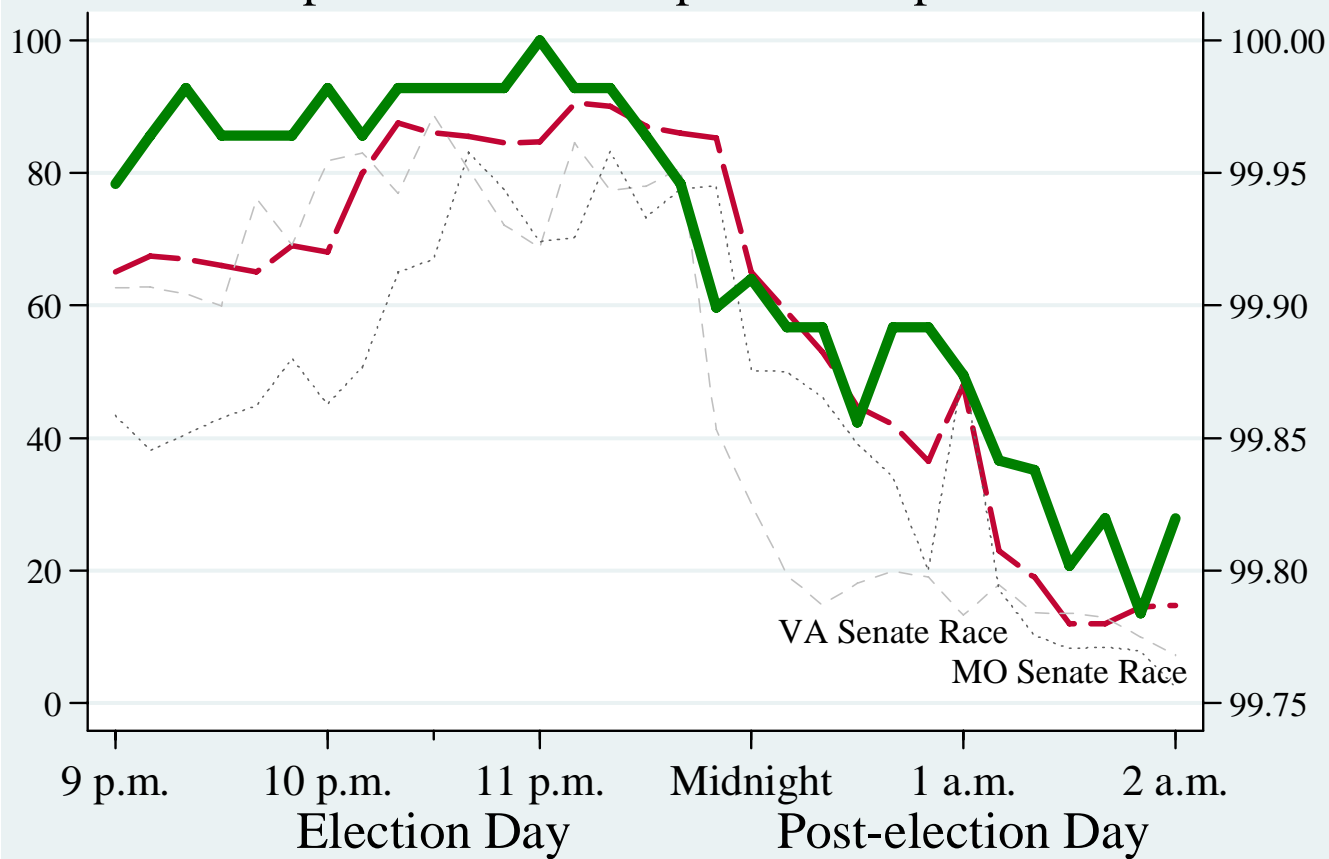
Election 2006: Congressional Control and US Equities



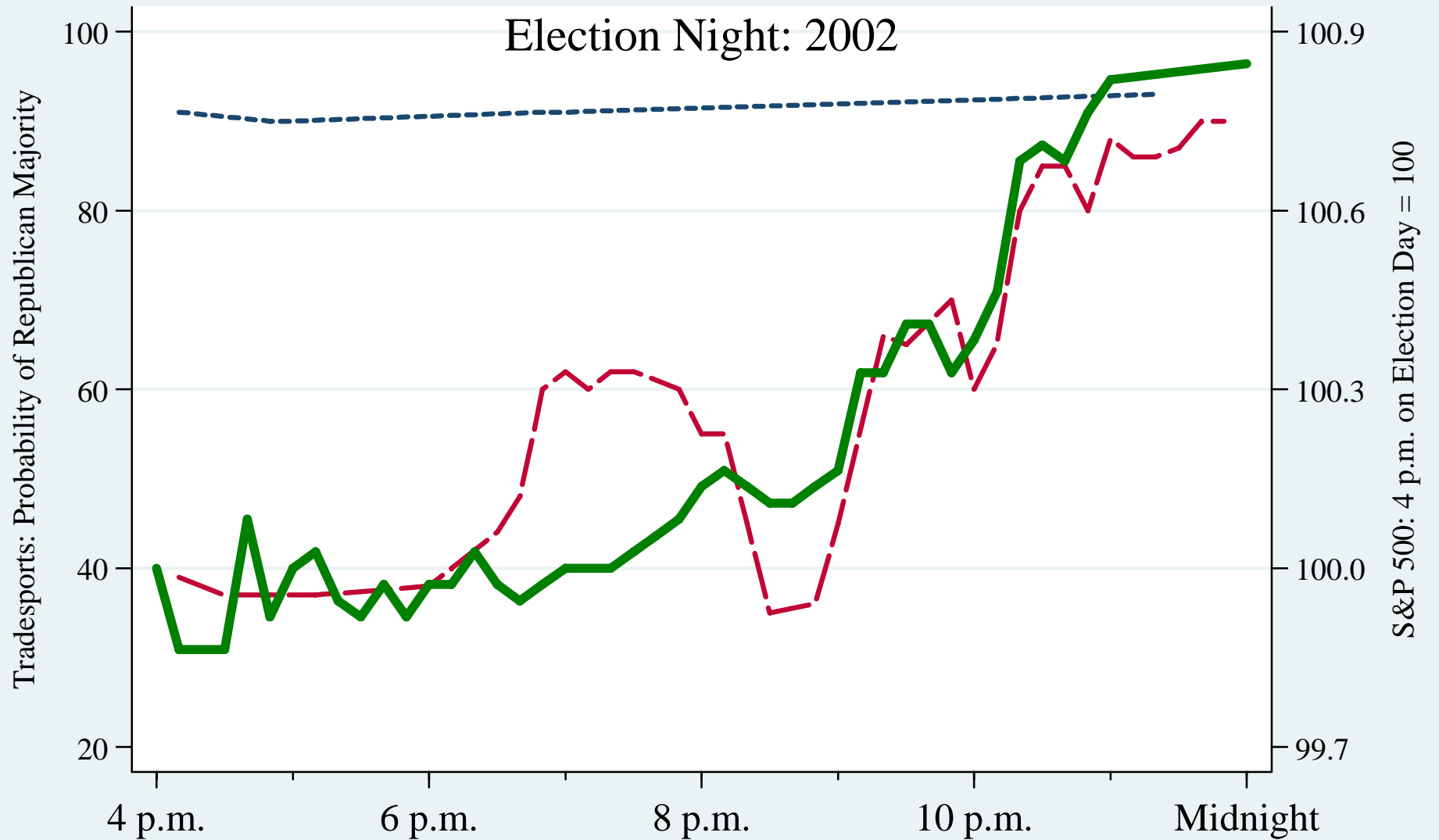
Snowberg, Wolfers, and Zitzewitz, "Party Influence in Congress and the Economy." NBER Working Paper No. 12751

2006 Election

Close-up: 2006 Senate experiment 9 p.m.-2 a.m.



Election Night: 2002



- Probability of a Republican Majority in the Senate (Tradesports)
- Probability of a Republican Majority in the House (Tradesports)
- S&P 500 Future (CME), right axis

Congress vs. Presidency effects

Table 1

Dependent Variable:	$\Delta \text{Log}(\text{Price})/100$				$\Delta \text{Price} (\$)$		$\Delta \text{Yield (bp)}$	
	S&P 500	Nasdaq 100	Japanese Yen	Euro	Canadian Dollar	Oil	2 Year T-Note	10 Year T-Note
Panel A: Congressional Elections, 2006								
$\Delta \text{Pr}(\text{Senate})$	0.174* (.089)	0.156 (.101)	0.025 (.045)	0.087 (.061)	0.022 (.045)	0.034 (.079)	0.918 (1.15)	0.701 (.693)
$\Delta \text{Pr}(\text{House})$	0.537 (.729)	-0.017 (1.11)	0.015 (.707)	-0.450 (.634)	0.553 (.687)	-0.209 (.893)	-1.31 (6.54)	-2.11 (6.09)
n	30	29	28	28	28	30	26	27
Panel B: Congressional Elections, 2002								
$\Delta \text{Pr}(\text{Senate})$	0.593** (.231)	0.728 (.419)	-0.196 (0.187)	0.011 (.127)	0.071 (.068)	0.148** (0.060)	4.51* (1.81)	2.21* (1.02)
n	13	12	13	13	12	14	7	7
Panel C: Presidential Elections, 2004								
$\Delta \text{Pr}(\text{President})$	2.05*** (.503)	2.40*** (.814)	-0.531* (.296)	-0.694* (.358)	-0.488** (.221)	1.706** (.659)	10.8*** (3.58)	12.0*** (4.65)
n	35	35	34	34	34	29	30	31

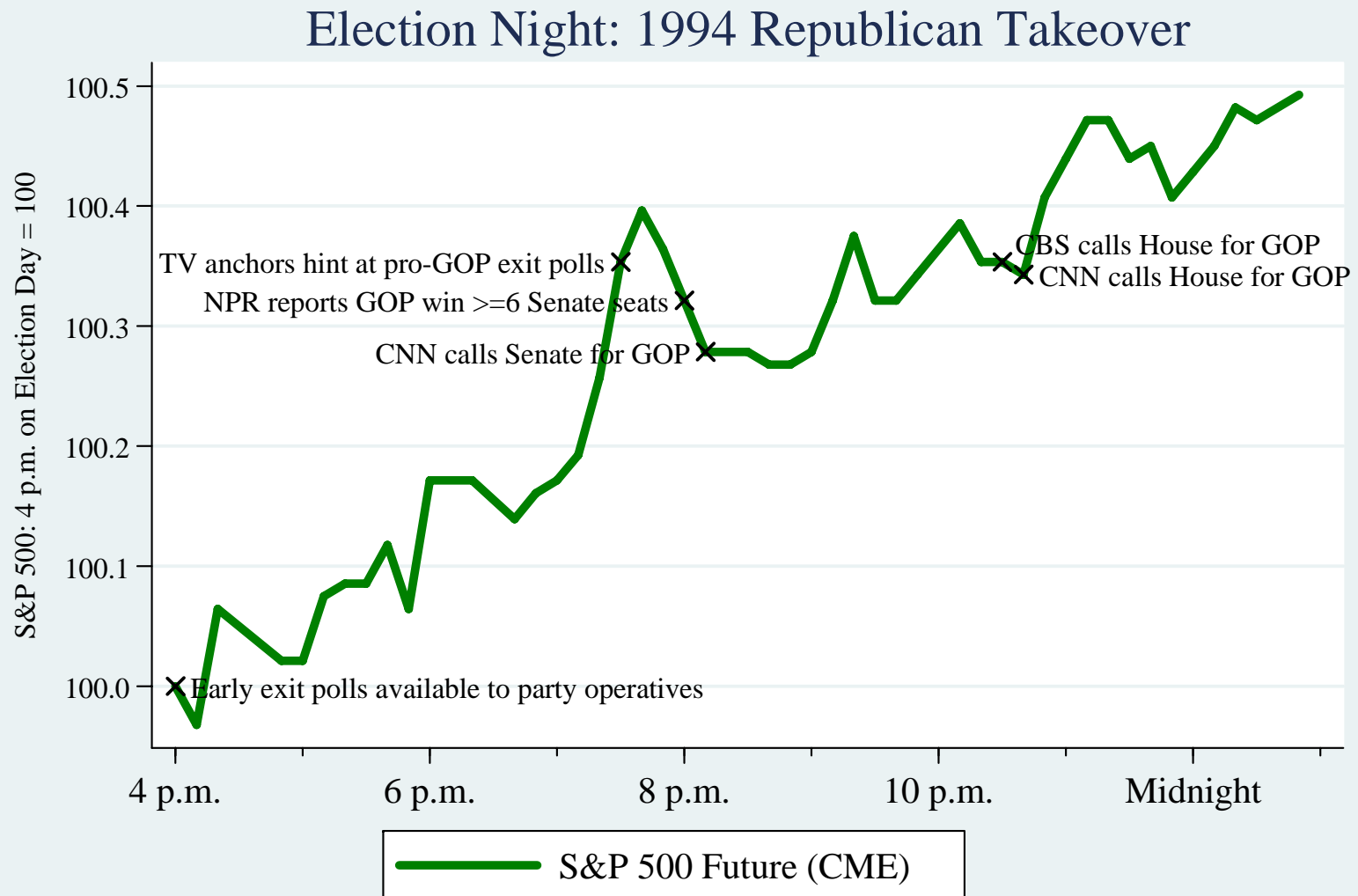
Notes: ***, **, * denote statistically significant at 1%, 5% and 10%, respectively. (White standard errors in parentheses.)

Sample period is 4 p.m. Eastern Time on 11/7/2006 to nine a.m. on 11/8/2006, for 2002 it is 4pm on 11/5/2002 to 12pm on 11/6/2002.

Election probabilities are the most recent transaction prices collected every thirty minutes from Tradesports.com. When there are missing observation, and the bid and ask prices are within 10 percentage points of each other, we use the bid-ask average.

All futures have delivery dates of December 2006, December 2004 and December 2002, respectively.

An earlier revolution



Note: Timing of info reflects press reports. (Intraday prediction markets were unavailable to track electoral shocks.)
Election eve: Prob. GOP House majority = 20%; Prob. GOP Senate majority = 70%

Conclusions

- Stock markets “prefer” GOP control
 - But Treasury markets prefer Democrats
- “Control” of a house of Congress has 10-30% as much influence on economic policy as the Presidency
 - positive effect of Rumsfeld resigning swamped negative effect of Dem Congressional control
- Effects of GOP control are monotonic (i.e., markets do not prefer divided rule)
- Prediction market event studies yield much more precise estimates than a traditional study

Corporate financial prediction markets

- Study effect of public policy decisions
 - E.g., 2003 NewsFutures markets on pharmaceutical policy
- Study effect of corporate policy
 - Board can run market on $\text{Prob}(\text{Buy Compaq})$ or $E(\text{HP}|\text{Buy Compaq})$
- Understand market view of value relevant issues
 - Run markets on earnings, product success, political risks

Transparency markets

- When government bonds are introduced in emerging markets, corporate bond liquidity improves and yields fall (Yuan, 2001)
 - Government bond aggregates information about country risk
 - Traders in corporate bonds have one less source of asymmetric info to worry about
- Companies can replicate this effect by running markets on value-relevant issues
 - Small effects on cost of equity have large valuation consequences