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US presidential elections and implied volatility: The role of political uncertainty

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ABSTRACT

This paper focuses on the effects of political uncertainty and the political process on implied stock market volatility during US presidential election cycles. Using monthly Iowa Electronic Markets data over five elections, we document that stock market uncertainty, as measured by the VIX volatility index, increases along with positive changes in the probability of success of the eventual winner. The association between implied volatility and the election probability of the eventual winner is positive even after controlling for changes in overall election uncertainty. These findings indicate that the presidential election process engenders market anxiety as investors form and revise their expectations regarding future macroeconomic policy.

1. Introduction

In this paper, we examine the effects of political uncertainty on stock market volatility during US presidential election cycles. Over the past few decades, a considerable body of literature has documented a negative association between financial asset valuations and the level of uncertainty regarding the economy (see e.g., Hirshleifer, 2001; Daniel et al., 1998; Ozoguz, 2009). Prior literature indicates that political factors in general, and political uncertainty in particular, may influence both the returns and the risk levels of financial assets (see e.g., Gemmill, 1992; Pantzalis et al., 2000; Nippani and Medlin, 2002; Li and Born, 2006; He et al., 2009; Jones and Banning, 2009; Sy and Al Zaman, 2011; Goodell and Bodey, 2012). Pantzalis et al. (2000), for instance, using a broad sample of countries, find that asset valuations generally rise during the two weeks prior to a general election. They argue that political uncertainty decreases during the two weeks prior to elections, and this resolution of uncertainty leads to an increase in stock prices, consistent with the uncertain information hypothesis of Brown et al. (1988).

Nippani and Medlin (2002), Nippani and Arize (2005), Li and Born (2006), He et al. (2009), and Goodell and Bodey (2012) focus on the influence of US presidential elections on stock markets, and document that the uncertainty caused by the elections is reflected in stock prices. Using polling data on the US presidential elections from 1964 through 2000, Li and Born (2006) find that stock prices increase before presidential elections when the outcome of the election is uncertain. Nippani and Medlin (2002), Nippani and Arize (2005), and He et al. (2009) examine the response of stock markets to the delayed result of the 2000 presidential election, and report that stock markets were negatively affected by the election uncertainty. Finally, Goodell and Bodey (2012) document that price-earnings ratios are negatively associated with the lessening of election uncertainty around US presidential elections, suggesting that decreasing uncertainty about the electoral outcome leads to a decrease in stock market valuations. While these papers generally present results that are consistent with changes in investor sentiment, it is also possible that the connection between stock returns and political uncertainty is driven by fundamentals. Julio and Yook (2012), for instance, document evidence that firms reduce expenditures during times of political uncertainty. It is plausible to expect that changes in firms' investment behavior will also affect investors' attitudes.

Previously, the impact of election induced uncertainty on stock market volatility has been studied in Gemmill (1992), Li and Born

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(2006) and Bialkowski et al. (2008). Gemmill (1992) focuses on the British parliamentary election of 1987, and documents that stock market volatility, as measured by the implied volatility of the FTSE 100 index, increased substantially before the election at the same time as opinion polls indicated with increasing probability a victory for the Conservative Party. Li and Born (2006) examine US presidential elections, and find that stock market volatility increases before elections when neither of the candidates has a dominant lead in the presidential preference polls. Bialkowski et al. (2008) use data on 27 OECD countries to investigate stock market uncertainty around national parliamentary and presidential elections. They document that national elections induce periods of increased stock market volatility, and argue that the increased volatility indicates that investors are generally surprised by election outcomes. In general, the empirical findings of Gemmill (1992), Li and Born (2006) and Bialkowski et al. (2008) demonstrate that political elections may engender uncertainty in financial markets.

The purpose of this paper is to examine the association between the political process, and political uncertainty, with option-implied stock market volatility during US presidential election cycles. We aim to extend the analysis of Gemmill (1992), Li and Born (2006) and Bialkowski et al. (2008) in several respects. First, to the best of our knowledge, this paper is the first attempt to address the effects of political uncertainty engendered by the US presidential elections on implied volatility.[1] In particular, we use the VIX implied volatility index calculated from the S&P 500 index options to measure stock market uncertainty around presidential elections. Given that volatilities implied by option prices should incorporate all the available information that is relevant for forming expectations about the future volatility, implied volatility is widely considered as the best available estimate of market uncertainty.

Second, in contrast to Gemmill (1992), Li and Born (2006) and Bialkowski et al. (2008), we utilize data from the Iowa Electronic Markets (IEM) to establish a monthly measure of uncertainty about the eventual election winner. The IEM presidential contracts are essentially futures contracts with the payoff based on the election outcome, and the market prices of these contracts reflect the market consensus of the probability of payoff. Therefore, we are able to assess the development of market expectations about the probabilities of alternative election outcomes starting months ahead of the US presidential elections. Furthermore, in contrast to the prior literature, our empirical analysis focuses beyond a simple relationship between election induced political uncertainty and volatility of stock markets. Most importantly, while examining the effects of elections on market volatility, we control for the level of uncertainty in the election by considering the deviations from a 50/50 probability split for the two Presidential candidates.

In brief, our empirical findings indicate that political uncertainty around US presidential elections affects option-implied stock market volatility. Using monthly data on the IEM presidential contracts over five elections from 1992 through 2008, we document that the implied volatility of the S&P 500 index increases along with positive changes in the probability of the eventual winner. The association between monthly changes in implied volatility and the election probability of the eventual winner is positive even after controlling for changes in overall election uncertainty. Hence, our results indicate that the presidential election process engenders market anxiety as investors form expectations regarding changes in macroeconomic policy. Overall, these findings provide important new information about the interactions between stock markets, and public policy, and the potential role of political uncertainty in financial markets.

The rest of this paper proceeds as follows. Section 2 reviews the related literature and presents our research hypotheses. Section 3 describes our data and the empirical setup. The empirical findings on the effects of political uncertainty on implied volatility during US presidential election cycles are reported in Section 4. Finally, Section 5 provides concluding remarks.

2. Background

2.1. Politics, elections, and the economy

It is widely acknowledged that economic conditions influence voting behavior in presidential and congressional elections (see e.g., Chappell and Keech, 1985; Lewis-Beck, 1988; Lynch, 1999, 2002; Fair, 2009) and that the policies of the elected presidents and administrations, in turn, affect fundamental macroeconomic factors (see e.g., Chappell and Keech, 1986; Alesina and Sachs, 1988; Grier, 2008). Lewis-Beck (1988) argues that if economic conditions influence the voting behavior and politicians want to be elected, then we should expect an opportunistic rising of stock markets during U.S. election cycles.

Given the significant differences between the views of Republicans and Democrats about economic policies, the prior research has focused on the implications of the two-party system of the US. Several studies have examined how particular administrations and/or candidates can affect economic and market conditions. The theory of political business cycles (PBC), as established by Nordhaus (1975) and Hibbs (1977), postulates that the growth rate of real gross domestic product rises during election seasons, followed by a period of inflation-curtailing contraction after the election. According to the PBC theory, this cycle is caused by opportunistic politicians who influence the growth of the economy to affect the sentiment of voters. Grier (2008) documents the presence of political business cycles in the United States for the period 1961–2004.

Some studies attribute political business cycles in the U.S. to partisan effects. Alesina (1987), for instance, puts forth a Rational Partisan Theory (RPT). As described by Berlemann and Markwardt (2006), RPT theorizes that expectations about future inflation can impact wage negotiations well before elections. It is expected that left-wing voters will support measures to promote growth (and generate higher inflation) because a larger part of their wealth consists of human capital. On the other hand, according to RPT, right-wing voters will prefer anti-inflation measures, as inflation creates uncertainty about the return on financial capital. However, whenever the election outcome has not been expected with certainty, the anticipated inflation rate turns out to be wrong. Thus, when a right-wing government wins the election, the anticipated inflation rate turns out to be too high, resulting in wage rates that are too high and consequently a post-electoral recession. On the other hand, an unexpected public vote for a left-wing government should cause a post-electoral economic boom as wage rates will be too low relative to the theoretical benchmark. Therefore, the sizes of recessions and booms are positively correlated with the degree of the electoral surprise.

As noted by Grier (2008), both the partisan model of Alesina (1987) and the PBC theory predict a post-election increase (decline) in economic growth following the election of a Democratic (Republican) president. Consistent with this prediction, the

[1] Li and Born (2006) apply GARCH modeling to examine volatility dynamics around the U.S. presidential elections. Nevertheless, the effects of political events and political decision-making on implied volatility have been previously assessed in Gemmill (1992), Bialkowski et al. (2008), and Vahamaa and Aijo (2011). Gemmill (1992) examines the relationship between opinion polls and implied volatility around the British parliamentary election of 1987, while Bialkowski et al. (2008) conduct a robustness check of their findings using implied volatilities from 11 OECD countries. Vahamaa and Aijo (2011) document that monetary policy decisions of the Federal Reserve affect implied volatility.