Equity premiums in the Presidential cycle: The midterm election resolution of uncertainty*

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Abstract:

We analyze shifts in political uncertainty and equity premiums over the U.S. Presidential election cycle. Somewhat ironically, it is midterm elections that turn out to be associated with the highest pre-election increases in uncertainty, leading to higher equity premiums post-midterm as the policy uncertainty and ex ante risk premiums decrease. We show this to have been the case for federal elections held over the past two centuries. We argue that the political uncertainty, which we measure primarily by the Economic Policy Uncertainty index, tends to be a tail risk that has previously been found to be compensated by higher premiums. We also find that the "lost CAPM" for expected equity returns reappears to fit returns amidst the post-midterm flood of public information, but not at other times in the Presidential cycle. We further show that the idiosyncratic volatility and lottery-demand puzzles disappear in post-midterm months.

Keywords: Political uncertainty; Midterm election; Presidential cycle; Lost CAPM; Idiosyncratic volatility

JEL Classifications: E5; G11; G14.

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1. Introduction

In this study, we show that U.S. equity premiums over the past two centuries have been significantly higher on average in months following *midterm* Congressional elections but not at other times in the Presidential cycle.[1,2] In contrast, average Treasury premiums are significantly lower in those same post-midterm months. We explain our finding in terms of shifts in political uncertainty around the November midterms which are pre-scheduled. Once the importance of midterms is recognized, the results also shed additional light on some recent and now well-documented asset pricing puzzles: the "lost" capital asset pricing model (CAPM) and the negative cross-sectional relation between average equity premiums and idiosyncratic volatility (IVOL) and lottery-like outlier returns (MAX). We find that the "lost" CAPM reveals itself as a good fit for post-midterm excess returns while IVOL and MAX become insignificant.

The post-midterm months are also winter months, suggesting a possible connection with the winter anomaly of Bouman and Jacobsen (2002) and Kamstra et al. (2003), where equity excess returns are on average higher from November to the following April. We confirm this connection, with the proviso that the "winter effect" on equity premiums actually doesn't recur every winter; rather it is concentrated in only one (i.e., post-midterm) winter in the four-year Presidential cycle.

< Insert Figures 1 and 2 here >

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[1] Most recent financial studies on the U.S. political scene focus on Presidential and gubernatorial elections. For example, Julio and Yook (2012, 2016), Belo et al. (2013), Pasquariello and Zafeiridou (2014), Kelly et al. (2016) and Waisman et al. (2015) examine U.S. Presidential elections and Gao and Qi (2013), Atanassov et al. (2016), Colak et al. (2017) and Jens (2017) analyze gubernatorial elections.

[2] Unlike the quadrennial November Presidential election, the November Congressional election is a biennial event in which one-third of the Senate (who have a six-year term) and all House of Representatives (who have a two-year term) are elected. As such, of the 100 Congressional elections considered in this study, half coincide with Presidential elections and the other half are held at the midpoint of the Presidential four-year cycle. To facilitate the exposition, we refer the Presidential elections that coincide with Congressional elections as "Presidential elections" and the standalone Congressional elections as "midterm elections".

1

Figure 1 shows the strength of the midterm cycle effect: Between 1815 and 2015, $100 invested in equities after midterm elections and liquidated at the end of April the following year (i.e. "sold in May") would have yielded an effective annual return (EAR) that is 2.5–4.0 times the EAR of other strategies. We also find that equity prices have either risen (fallen) more quickly (slowly) in months following midterms than they did after Presidential elections for two-thirds of the last 50 four-year Presidential cycles. Indeed, almost 98% of the average monthly equity premium over our two-century sample period is earned in months following the midterms, while these months constitute merely one-tenth of the sample period.

Figure 2 Panel A displays two security market lines (SMLs) that "differ night and day" in their behaviour in different intervals of the Presidential cycle. Specifically, using a methodology similar to Savor and Wilson (2014), we plot the average monthly realized excess returns on Fama-French 25 size- and book-to-market- and 49 industry-sorted portfolios against their respective estimated betas in two different intervals: from November after the midterm to April the following year ("midterm follow-up months") and in the remaining "non-midterm-follow-up months." It is apparent that the relation between the average excess returns and beta in the latter non-midterm-follow-up months is flat, as frequently reported in the literature going back to at least Black et al. (1972). In contrast, the CAPM holds almost perfectly in midterm follow-up months, with an increase in beta of one is significantly related to an increase in average monthly excess returns of 2.76% (*t*-statistic = 9.22).[3]

The post-midterm emergence of the CAPM also turns out to be accompanied by the disappearance of two other well-known anomalies – idiosyncratic risk and lottery-like outlier stock returns or MAX – that show up in many earlier papers (see, e.g., Ang et al., 2006, 2009;

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[3] Later, we increase the granularity of the plots to show the November midterm election month alongside the 5 months preceding and 5 months following the November midterm. We show that in months before the midterm, the SML plot is flat, but undergoes a pronounced steepening in the November midterm month and continues to be positive thereafter.

2

Bali et al., 2011, 2017; Hou and Loh, 2016). As can be seen in Figure 2 Panels B and C, these anomalies (i.e., negative relations between equity excess returns and IVOL, and MAX) vanish in the months following midterm elections.[4]

We argue that our findings can be explained in terms of shifts in political uncertainty around the pre-scheduled midterms without appealing to market sentiment, seasonal affective disorder (e.g., Kamstra et al., 2003) or the like. Our reasoning is consistent with Andrei et al.'s (2018) conjecture that the CAPM is "lost" when there are gaps in information amongst groups of investors and empiricists – gaps and information asymmetries that are most likely to exist when information uncertainty is high. Alesina and Rosenthal (1996, p. 1334) stress that this high uncertainty environment is typical in the period between the Presidential election and the subsequent midterm election: "…the Presidential election resolves only the uncertainty about the President's identity. In the two years between the presidential election and the midterm election, the voters acquire further information about Presidential competency, personality, and policies… This makes the midterm election a *key* event in the Presidential cycle, and empirical studies have confirmed its importance and the uncertainty attached to it."

Following the midterm, investor information heterogeneity is plausibly lower (Hong and Sraer, 2016) and substantial uncertainty about White House influence on Congress and thus on likely cooperation and legislative prospects is resolved.[5] In addition to the midterm resolution of uncertainty, there is a near-simultaneous commencement of pre-primary activities for the next Presidential election. We argue that as these pre-Presidential-primary activities build on the midterm electoral resolution of uncertainty and reinforce it, an average decrease in risk

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[4] In Section 5, we detail the construction of the plots and formalize the analysis using the standard Fama and MacBeth (1977) two-pass regression.

[5] Nonetheless, we would reasonably not expect the election to magically and instantly expunge *all* political uncertainty going forward.

premiums on equities and associated increase in equity prices occurs. At the same time, the observed and true SMLs align, and in that state, the "lost CAPM" fits the *ex ante* risk premiums.

To extend the lost CAPM results just described, we examine the cross-section of the aforementioned seventy-four Fama-French portfolios and find that the sensitivity of their excess returns to political uncertainty is strongly associated with subsequent average excess returns, but only in months following the midterm elections and not in other months. In this respect, the results are also in broad agreement with Kim et. al. (2014) who show that the average excess return differences between high and low PAI (Political Alignment Index) firms are greater after midterm elections than after Presidential elections.

We measure political uncertainty primarily using the Baker, Bloom and Davis (2016, henceforth BBD) Economic Policy Uncertainty (EPU) Index, arguing that it tends to be associated with tail risk – literally a risk of adverse "regime" change in our context. Given the evidence that such tail risk commands a risk premium and that *expected* return on equity increases (decreases) when policy uncertainty increases (decreases), it is not surprising that equity prices on average fall substantially prior to elections and increase thereafter as the political uncertainty is resolved. We show that the cyclicality in political uncertainty is also generally present in measures of tail risk such as the Chicago Board Options Exchange (CBOE) SKEW Index and the Kelly and Jiang (2014) measure of the common component in firm-level tail risk, as well as in variance risk premiums (which are an *ex ante* measure of risk), and corporate bond spreads.[6]

If there are systematic changes in uncertainty due to federal elections, we might also expect to see a concomitant "real option" impact on real investment and economic growth. We show that such a real economic effect does indeed seem to exist. For example, annual gross domestic

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[6] Pástor and Veronesi (2017) propose a model of political uncertainty involving differences in party positions on high or low corporate tax rates whereby an equity premium arises to compensate for the uncertainty.

product (GDP) grows by almost 1% more in the two quarters post midterm than in that same period after Presidential elections. This growth is in turn consistent with a higher growth rate in industrial production, and real government and private spending, following post-midterm resolution of uncertainty.

There also appears to be some "quantity side" investor reallocation that aligns with the cyclicality in uncertainty and equity premiums: Equity mutual fund outflows signal retail investor anticipation of the systematic changes in tail risk in the months leading up to elections, particularly midterm elections.[7] A reversal occurs in flows in the months following the midterm and net inflows tend to turn positive. This fund flow pattern is similar to that reported in Kamstra et al. (2003, 2017), though they attribute it to a seasonal affective disorder (SAD) effect on investors while we explain it in terms of the cycle we find in political uncertainty.

Our findings are robust to data snooping, a January anomaly, outliers and different sub-periods – if anything, the results are more pronounced in the last century. They are also robust to the Democratic Presidential effect of Santa-Clara and Valkanov (2003) and different proxies for the U.S. aggregate equity market, and we confirm them by fitting a cross-section of over 8,000 individual stocks in the Center for Research in Security Prices (CRSP) value-weighted index. Our significance tests also meet threshold adjustments put forward by Harvey et al. (2016), Ross (2017) and Chordia et al. (2018) to help guard against "*p*-hacking", and the long-shot "99–to–1/0.01" Minimum Bayes Factors threshold (Harvey, 2017). We also find no strong evidence that "good" macroeconomic news is released disproportionately more in the post-midterm months than in other periods, making it unlikely that the post-midterm equity premiums are systematically higher due to macroeconomic news announcements as in Savor and Wilson (2013, 2014), Lucca and Moench (2015) and Cieslak et al. (2016). We also argue

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[7] Chalmers et al (2013, p.3318) provide evidence suggesting that: "…periods of turmoil lead [mutual fund] investors to direct flow away from risky equity funds and towards lower-risk money market funds."

that the post-midterm equity premiums are not due to a coincidence with recessionary or non-recessionary times; nor are they due to the efforts of incumbent politicians to stimulate the macro economy *à la* Nordhaus's (1975) political business cycle theory.

The remainder of this paper is organized as follows. Section 2 describes the data. Section 3 presents preliminary analysis showing that over the last two hundred years, much higher equity premiums and other real economic indicators have been realized on average after midterm elections compared to Presidential elections. At the same time, the BBD EPU index, Treasury premiums, and other political uncertainty measures move in the opposite direction, falling substantially after midterm elections compared to Presidential elections. In Section 4, we document more formally the behaviour of equity premiums and BBD's EPU over the midterm and Presidential election cycle; we do this for both the aggregate equity index and the cross-section of individual stocks.

In Section 5, we investigate several implications of the results in terms of asset pricing and asset allocation. First, we show that the "lost CAPM" as labelled by Andrei et al. (2018) shows up in post-midterm periods where substantial new public information becomes available, just as it does on macro-announcement days (Savor and Wilson 2014). We also investigate the political uncertainty-expected return trade-off, together with the disappearance of the idiosyncratic volatility puzzle of Ang et al. (2006) and the disappearance of higher pricing for stocks with a high MAX measure of lottery demand, in the post- versus pre-midterm election regimes. Given the "event" nature of elections, we then analyze Sharpe ratios for various dynamic allocation strategies that move into stocks at the beginning of post-election winters to help assess longer-run risk and return implications.

In Section 6, we check the robustness of the results, including whether the significantly higher post-midterm equity premiums are systematically attributable to a winter effect, Democratic Presidential effect, or macroeconomic news announcements. In Section 7, we

discuss the à priori importance of midterm elections within the U.S. "balance of branches" of power. Section 8 concludes.

2. Data

2.1. Excess and real returns on equity securities

The main empirical analysis in this study uses two centuries of U.S. monthly equity index data from 1815:01 to 2015:12. We splice the 1926–2015 CRSP value-weighted index (with distributions) with the 1815–1925 price-weighted index data (with distributions) of Goetzmann et al. (2001); the latter index is sourced from https://som.yale.edu/faculty-research/our-centers-initiatives/international-center-finance. Recent studies which have used Goetzmann et al.'s 19-century data include Geczy and Samonov (2016). We show in Section 5.2 that our qualitative findings are virtually identical when we explore alternate proxies for the U.S aggregate equity market.

We study both excess and real equity returns. To calculate monthly equity returns in excess of risk-free rate (i.e., equity premiums), we require a proxy for the latter. We rely on the commonly used one-month Ibbotson Treasury rate which is available from 1926 onwards. Prior to 1926, we splice the Ibbotson data with the 1871-1925 risk-free rate estimated by Welch and Goyal (2008), and we follow Welch and Goyal (2008) and Golez and Koudijs (2017) and use the Commercial Paper rates for New York City and New England to instrument the pre-1871 risk-free rate (see online Appendix A). Our conservative approach actually downplays the positive average equity premium estimated post-midterms, which would otherwise be even higher had we assumed a zero risk-free rate prior to 1926. To calculate real equity returns, we take the difference between monthly equity returns and monthly inflation rates estimated using the growth rates on the consumer price index. Dictated by data availability, the real returns analysis begins from 1871.

Figure 3 Panel A provides anecdotal evidence on pre- and post-election effects with a plot of the average of biannual changes in U.S. equity prices estimated from year two to year three of the Presidential cycle (solid line) lining up with the plot estimated from year four to year one (dashed line), with November federal elections are at the center of the plots. The biannual price change is analogous to the return on a buy-and-hold strategy for six months. The panel shows a pattern of decreasing equity returns prior to midterm elections before a distinct monotonic increase (with a considerably large magnitude) in the months following the midterms. Indeed, the chart peaks in April/May in year three of the Presidential cycle (for example, the red diamond marker in Panel A implies that equities had increased significantly by nearly 8.4%, on average, from early November midterm election month to the end of April the following year) before slowly reverting to normal levels. Perhaps surprisingly, however, is the finding that the biannual post-Presidential election drift is *modest*. Our result is robust to different sub-periods; in fact, the online Appendix B shows that the downward-followed by-extreme-upward shift in equity prices post-midterms is more discernible in the second half of the sample period i.e., from 1915 to 2015. Another interesting finding that readily emerges from the panel pertains to the "sell-in-May"/winter effect: over the last two centuries, the effect has primarily occurred in only one out of four winters over the quadrennial cycle, i.e., the winter following the midterm election.

2.2. Excess returns on Treasury securities

We also examine the excess returns on U.S. Treasury securities with different maturities – 5 years, 10 years, 20 years and 30 years – with the bond's holding-period returns sourced from CRSP Monthly Treasury Fixed Term Indexes File. Note that these bond returns merely reflect the performance of hypothetical Treasury securities with the aforementioned fixed maturities.

Unlike equity, the starting sample period for Treasury bonds is more recent, beginning in 1942:01. To save space, we only report the results for the 30-year Treasury bond, and the online Appendix contains the results for the Treasuries with the remaining maturities.

Figure 2 Panel B superimposes the biannual price changes in 30-year Treasury security (indexed at 100 on 1942:01) on the equivalent plots for the equity market over the common 1942–2015 sample period. The panel reveals a discernible counter-cyclicality between equities and Treasuries, especially in the months before and after the midterms.

2.3. Data on political uncertainty

We use the popular historical monthly news-based EPU index of BBD (2016) as our principal measure of political uncertainty associated with elections. BBD's historical news-based EPU index, which begins in 1900, comprises article searches in six key newspapers for the term 'uncertainty' or 'uncertain', the terms 'economic', 'economy', 'business', 'commerce', 'industry', and 'industrial' and one or more of the following terms: 'congress', 'legislation', 'White House', 'regulation', 'Federal Reserve', 'deficit', 'tariff', or 'war'. As we document below, the EPU index varies substantially in months prior to, during and following the respective November midterm and Presidential elections, especially the former. Our main result continues to hold after controlling for macroeconomic uncertainty (reported as a robustness test in Section 4), and after using, for example, BBD's aggregated and news-based uncertainty policy indices that begin in 1985 (unreported to save space).[8]

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[8] BBD's 1985 EPU index is an aggregate time-series composite that weights four components related to news, tax code changes, and two measures of economic forecaster disagreement with respect to monetary and fiscal policies. The news-based policy uncertainty index is constructed from an extensive search in 10 newspapers of articles containing the term 'uncertainty' or 'uncertain', the terms 'economic' or 'economy' and one or more of the terms 'Congress', 'legislation', 'White House', 'regulation', 'Federal Reserve' or 'deficit'. The tax-based uncertainty index is estimated based on reports by the Congressional Budget Office, whereas the last two components of the BBD's EPU index capture forecaster disagreement about future monetary and fiscal policies based on the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters. We refer interested readers to Baker et al. (2016) or their website (http://www.policyuncertainty.com) for further details. Note that BBD's 1900 historical news-based uncertainty index is highly correlated (with correlation coefficient = 0.98) with their 1985 version of news-based uncertainty index between 1985:01 and 2014:10 in which the sample periods for both time-series data

2.4. Other data and variables

We also investigate whether U.S. mutual fund excess returns behave differently around elections. We obtain the U.S. Equity All Funds and U.S. Taxable Money Market Funds from Morningstar. Other variables used include real GDP, dividend yield, term spread, relative interest rate, corporate bond spreads, the news-implied volatility index (NVIX) of Manela and Moreira (2017) and the partisan conflict index (PCI) of Azzimonti (2017). The online Appendix A describes these variables in detail.

3. Shifts in Equity and Treasury Premiums, and Other Indicators Surrounding Elections

3.1. Excess and real equity returns

Table 1 Panel A shows that the sample mean of the realized equity premium from 1815 to 2015 is 1.72% p.a. Over these same past two centuries, however, the annualized equity premiums have averaged 13.24% (strongly significant, statistically, using clustered standard errors) from December to April following midterm elections. This substantial post-midterm election premium contrasts sharply with a statistically insignificant 0.64% p.a. mean estimate over the same December-to-April months following Presidential elections. The annualized 12.60% difference, which we label as the "Midterm-Presidential (M-P) post-election gap",[9] is

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coincide. Since the BBD's 1900 historical EPU index ends in 2014:10, we splice the 1900 data with their 1985 news-based uncertainty index over the remaining 14 months from 2014:11 to 2015:12.

[9] Midterm and Presidential elections are held in early of November. As such, we exclude November from our pre- and post-election calculations in the analysis so as to eliminate any potential post-election abnormal behavior being associated with the November election month. This thus gives a "clean analysis" on the pre- and post-election premium. In a robustness test reported in online Appendix D, we include the November election months in estimating the M-P post-election gap and the result barely changes.

strongly significant with *p*-value = 0.007.[10,11] When we compute the same statistics for real

returns, the M-P post-election gap is 10.60% p.a. (*p*-value = 0.07).

< Insert Table 1 here >

< Insert Figure 4 here >

Figure 4 Panel A plots the annualized mean of monthly equity premium over post-election

months, i.e. from December through the following April, for each Presidential term from 1815

to 2015. The bars refer to equity premiums following midterm elections, while the dotted line

is for the premiums following Presidential elections. The horizontal-axis is labelled with

Presidential election years, and the post-midterm bar is labelled for midterm elections held two

years after the Presidential elections (for example, the rightmost dotted line and bar correspond

to the 2012 Presidential election and 2014 midterm election, respectively). Panel B is a plot of

the term-by-term M-P post-election gap, i.e., the difference between the average equity

premium in post-midterm election months (i.e., Panel A bar plot) and the equity premium

averaged over the same months in the preceding Presidential election (i.e., Panel A dotted

line).[12] The positive bars in Panel B outnumber negative bars by 2 to 1. That is, equity prices

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[10] We assess the statistical significance by clustering the standard errors by post-election terms, as the clustering procedure allows arbitrary correlation within a term but zero correlation across terms. We also use a nonparametric test à la Blinder and Watson (2016) to assess the statistical significance by randomly assigning 50 post Presidential election and 50 post midterm election labels to the equity premium and then compute the M-P gap under the null hypothesis that midterm-vs-presidential post-election period and equity premium are independent (because the post-election labels are randomly assigned to each post-election period). The *p*-value of the significance test obtained under this nonparametric approach is almost identical to that estimated using clustered standard errors.

[11] One might argue that the M-P gap reported herein is inflated because equities could rise even higher in the second half of year one, since policy uncertainty over this period could be further reduced after the elected President has appointed secretaries and other senior officials to fill in important positions the inauguration ceremony in early of year one. To address this concern, we re-calculate the M-P gap by taking the difference between the averaged equity premium post midterms and equity premium averaged from May to September in year one of the Presidential cycle. The M-P gap is largely unaltered (14.05% p.a., *p*-value < 0.01).

[12] The term-by-term M-P visual analysis presented herein (of the average equity premium in the months following midterm elections versus those in the *preceding* Presidential election) is motivated by the notion that the midterm election is oft-regarded as a referendum on the sitting President's and/or his party's performance following his election 24 months prior (Tufte, 1975). The analysis barely changes if we use the averaged equity premium in post-midterm election months minus the averaged equity premium in *post*-Presidential election months for the succeeding Presidential election. The online Appendix E plots the term-by-term M-P gap according to this ordering of election periods.

have either risen more quickly or fallen more slowly in post midterm election periods than they did in post Presidential election periods for 33 out of 50 four-year Presidential cycles (two-third rate of occurrences, with the Binomial test's p-value = 0.03). The online Appendix C, which plots the cumulated wealth of two different strategies similar to that displayed in Figure 1 Panel A, further emphasizes our finding. Moreover, our M-P post-election gap is not attributable to outliers: for example, if we adopt a conservative approach and downplay the post midterm effect by excluding the three most positive post-midterm premiums (these correspond to the midterm elections in 1862, 1942 and 1974; see Figure 4 Panel A) and the most negative premium post Presidential election, the M-P post-election gap is still very large and significant (8.71% p.a., p-value= 0.05).

The annualized 13.24% p.a. mean equity premium in post-midterm periods is also striking as equity premiums in months *beyond* December-to-April following the midterms have averaged only 0.31% p.a. These figures suggest that, over the past two centuries, almost 13.24/(13.24+0.31) = 98% of the average equity premium is earned in post-midterm months which form one-tenth of the sample period, as there are 254 post-midterm monthly observations out of 2412 months over the 1815-2015 sample period.

To probe further, Figure 4 Panel C shows the results of a bootstrap test. Specifically, for each four-year Presidential cycle, we randomly sample, with replacement and for 5,000 repetitions, blocks of five consecutive monthly equity premiums (the simulation result hardly changes if we use non-block sampling, or if we shorten/lengthen the sampling interval). We ensure that each randomly drawn block does not overlap with the actual December-to-April post-midterm period. We then calculate the term-by-term "midterm-bootstrap gap", defined as the mean difference in equity premiums between December-to-April following midterms and the bootstrapped sample. The outcome mirrors that for the term-by-term M-P post-election gap presented in Panel B.

Further analysis also reveals that, relative to post Presidential election periods, the months following midterm Congressional elections are associated with positive equity premiums that are not only large in magnitude, but also frequent in occurrence. Specifically, 61% of the monthly equity premiums realized from December to April following midterms are positive, and this 61% rate of occurrence is significantly different from 50%–50% random chance (the Binomial test's *p*-value = 0.0003). In sharp contrast, positive equity premiums occur only 51% of the time in the five-month period post Presidential elections, and this 51% rate of occurrence is clearly not statistically distinguishable from 50%-50% random chance.

Finally, we analyze the M-P gap in months *prior to* elections; indeed, the pre-election price behaviour is a crucial factor in understanding what leads to the M-P post-election gap. The annualized equity premiums have averaged −1.73% (statistically indistinguishable from zero) from June through October prior to midterm elections versus 5.69% over the same months prior to Presidential elections. The −7.42% annualized M-P pre-election gap, although statistically insignificant, is large.[13] In other words, compared to Presidential elections, equity markets have on average underperformed in months *prior* to midterm elections, but this trend reverses sharply to the positive region after the election, leading to a significantly positive M-P *post*-election gap.

3.2. Excess returns on Treasury securities

Table 1 Panel B provides an analysis for returns on Treasury securities around the same elections albeit with a later start date due to data availability. The panel reveals that in months prior to midterm elections, the average holding-period excess return on the 30-year bond is almost 7% p.a. (statistically significant), which is 5% p.a. higher relative to the sample mean

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[13] The M-P pre-election gap hardly changes if we look at three months (August through October) instead of five months preceding elections; or if we use real equity returns.

of 2.03% p.a., but this estimate drops to –1.72% p.a. in months following the midterms (i.e., the difference is –8.7%). When we compare the pre- and post-Presidential election periods, the negative mean estimate for the difference drops slightly to –7% p.a. The evidence presented here, together with Figure 3 Panel B, is consistent with the notion that equities complement Treasury securities in different states of the market, with investors attempting to shift from equities to Treasuries in times of heightened political uncertainty, especially prior to midterm elections, and reversing their desired allocation to equities in times when election-related political uncertainty is resolved – of course with the supply of equities and Treasuries fixed, the only change in aggregate allocations occurs in the prices.

3.3. Mutual fund flows and excess returns

Given the above strong counter-cyclical effect between equity and Treasury premiums around elections, we next ask whether they have any counterpart footprint on the "quantity side," i.e., on investor asset allocation and trading. Indeed, Kamstra et al. (2017) document a strong seasonality in U.S. mutual fund flows, with significant net flows from money market funds into equity funds over the winter months, with the trend reversed in the summer interval. We surmise that the mutual fund flows are co-incident with counter-cyclicality in excess returns between equity and Treasury mutual funds in months surrounding midterm elections, given an aggregate retail fund investor aversion to the higher electoral uncertainty.

Table 1 Panel C provides some empirical support for our hypothesis.[14,15] The excess returns to holding equity funds in months following midterm elections average 17.23% p.a.

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[14] In addition, the online Appendix F shows that the counter-cyclicality between equity and Treasury fund premiums extend to the net flows of funds. In particular, the figure shows a discernible decrease in equity fund inflows (and increase in money market fund outflows) as the midterm and Presidential elections approach. This pre-election drop in equity fund inflows (and rise in money market fund outflows) then reverses sharply post-election.

[15] We leave the analysis of the precise "all else equal" model of fund flows for future research. It is well-known that mutual fund net inflows typically depend in some form on past returns, and they partly reflect institutional features in the market that neither we nor Kamstra et al. (2017) are able to fully take into account. For example,

(statistically significant), and this estimate is nearly double the 8.61% p.a. (statistically insignificant) average excess returns earned post Presidential elections, and is 16.54% higher than the premium earned before midterm elections.[16] On the other hand, the mean returns in excess of the risk-free rate to holding money market funds is merely around 1% after midterms and 16% after Presidential elections. Note that our Morningstar mutual fund dataset covers a relatively narrow sample period that only begins in 1993. In Section 4, we show that our findings continue to hold when we use the longer 1962-2015 CRSP U.S. mutual equity fund data in place of the Morningstar data.

3.4. Other economic indicators

Julio and Yook (2012, 2016) provide empirical evidence that electoral uncertainty has an immediate negative "real option" impact on real investment. Akey and Lewellen (2017) show that shocks to more politically-sensitive firms induce larger subsequent reactions in these firms' investment, leverage and operating performance. Beaudry and Portier (2006) offer a simple model in which news shocks to uncertainty have a real impact on cash flow expectations and hence share prices, with a distributed lag effect on total factor productivity and output.[17] The investment model of Bloom (2009) also predicts large negative real impacts (such as sharp

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October 31 is the fiscal year closing date for all U.S. mutual funds. Funds must make income and capital gains distributions by that date, and in particular they must realize capital losses on what are disproportionately smaller more volatile losers by that date. Mutual funds are also widely considered to "window dress" by selling off poor performing (and typically riskier) stocks toward year-end. Financial advisors are seen as making decisions for late-year redemptions from mutual funds with either large taxable distributions or funds with losses for the year. At the same time, early in the new calendar year, when there is a peak in mutual fund equity inflows in Kamstra et al. (2017, Figure 2), there is typically a substantial inflow into equities in retirement plans from bonuses and once-a-year employer contributions. We believe that a careful "horse race" between our model and a SAD model like Kamstra et al. (2017) is warranted in future research. We are indebted to Charles McNally for pointing out the institutional features to us.

[16] We follow Kamstra et al. (2017) and define the excess return to holding a fund in month t as $(TNA_t - TNA_{t-1} - NF_t)/TNA_{t-1}$ minus the risk-free rate, where NF_t refers to the estimated net flows of funds and TNA_t is the fund's total net assets.

[17] On the other hand, Berger et al. (2017) fail to find any impact on the economy attributable to news-driven shocks to future uncertainty; instead, shocks to realized equity volatility do seem to have real effects.

drops in hiring and productivity) prior to elections when there is a significant *increase* in political uncertainty. When taken together, evidence of real sector effects of political uncertainty would suggest that our finding for resolution (and thus *decrease*) in political uncertainty post-election, particularly post-midterm election, likely has some *real* economy counterpart if it is "for real." In the following, we show that there is indeed evidence of such a "real economy" effect.

In particular, Table 1 Panel D reports that between 1947 (the earliest release date of the official GDP data by the U.S. Bureau of Economic Analysis) and 2015, the real GDP growth rate has averaged 3.92% p.a. in the two quarters post-midterm but only 3.00% in the two quarters following Presidential elections. Although statistically insignificant, the 0.92% p.a. M-P post-election gap in GDP growth rate is economically large relative to its sample mean of 3.24% p.a.[18] We also checked the robustness to an extension of the GDP sample period where the official 1947-2015 GDP data is spliced with the 1875-1946 GDP data constructed by Owyang et al. (2013). The 1875-2015 GDP M-P post-election gap is even higher at nearly 2% p.a. (see online Appendix D).

We then look at the investment expenditures in both private and public sectors. To measure the former, we use the quarterly Real Gross Private Domestic Fixed Investment (PDFI) in Non-Residential. This metric, which "measures spending by private businesses and non-profit institutions in the U.S. … on structures, equipment and software that are used in the production of goods and services" (NIPA handbook, Chapter 6),[19] is an ideal indicator of private businesses expanding/reducing their production and investment capacity. Table 1 Panel D shows that private businesses have on average expanded their production and investment by

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[18] We follow Blinder and Watson (2016) and assume a one-quarter lag in calculating the average GDP growth rates for a given period. The GDP M-P post-election gap increases monotonically to almost 2% p.a. if we use lags up to three quarters.

[19] Concepts and Methods of the U.S. National Income and Product Accounts (NIPA): Chapters 1-10 and 13, 2014.

nearly sixfold from 1.05% p.a. prior to midterms to 6.57% p.a. in the two-quarters post-midterm, and the 5.52% difference is statistically significant. We also reach a similar conclusion when we scrutinize the individual components that make up the aggregate PDFI in Non-Residential, and also PDFI in Residential (see online Appendix D). On the other hand, those same private businesses actually decrease their productivity and investment capacity by 2.20% p.a. following Presidential elections.

Table 1 Panel D also shows that monthly industrial production has grown considerably faster post-midterms (4.53% p.a., statistically significant) than post Presidential elections (1.72% p.a., statistically insignificant), and hiring/employment activities seem to pick up slightly more in months following midterms than following Presidential elections. As for *un*employment and Federal Funds rates, they fell, on average, in post midterm election months but rose following Presidential elections; this finding is consistent with the prediction of a negative relationship between these two measures and the equity market. Results using other measures such as term spread are qualitatively similar (albeit with more modest insignificant estimates), as evidenced in the online Appendix D.

Finally, we utilize the quarterly Real Government Consumption Expenditures and Gross Investment series to examine public investment expenditures in periods surrounding elections. As in the case of the private sector, Table 1 Panel D shows that the government has considerably increased its spending in two quarters post midterm to nearly 5.5% p.a.; this estimate is nearly 2.0%−2.5% higher than before midterms, post-Presidential elections and its sample mean level. We also get a similar qualitative finding when we analyze Federal general spending, and Federal defense and nondefense spending (see online Appendix D).

We have presented the above evidence as being induced effects of pre- and post-election shifts in political uncertainty on the real economy (with its own implications for equity return behaviour). A political business cycle (PBC) adherent might argue that at least some of the

17

same post-election economic behaviour, particularly government expenditures, support a PBC-like explanation. We can't entirely rule out some PBC effect, but we have found that many of the economic measures (including fiscal expenditures) drop off considerably during the second half of year three of the cycle, which would presumably not be a PBC prediction given the still-impending Presidential election. We return to more discussion of the PBC, along with other candidate explanations for the equity premium behaviour, in Section 6.

3.5. *Measures of political uncertainty*

Given the difference in excess return and real option behaviour pre- and post-election, it is natural to hypothesize that it is related to the change in political uncertainty attributable to the election. This hypothesis is all the more plausible given the evidence in Goodell and Vähämaa (2013) and Kelly et al. (2016) that the options implied volatility increases in *the days* preceding the election. We begin the analysis of this hypothesis by using BBD's EPU Index to measure the variations in political uncertainty associated with elections, especially midterm elections.

Figure 5 Panel A plots the six-month moving averages of year-to-year percentage changes in BBD's historical EPU (%ΔEPU). This %ΔEPU plot covers the period 1900 to 2015 for which the news-based historical EPU is available, and we also plot the %ΔEPU in post-World War II period from 1947 to 2015. Furthermore, we plot the %ΔEPU based on the "aggregated" EPU index which is available only from 1985 (see footnote 8); this starting point, however, is arguably too short for examining the four-year presidential cycles.

< Insert Figure 5 here >

It is apparent from Panel A that political uncertainty increases considerably on average in months leading up to and including November elections in year two and, to a lesser extent, year four, of the Presidential cycle. Following the elections, the moving average %ΔEPU falls, and

that decline is more discernible after the midterms and, as we would expect, occurs slowly over a number of months. In fact, the relative magnitude of the post-midterm decrease was foreshadowed in Table 1 Panel E which shows that monthly changes in EPU have declined after midterm elections (from the beginning of December through end of next April) by an extra 65 basis points, on average, compared to its decline following Presidential elections.

Pástor and Veronesi (2012) find that the EPU index is negatively correlated with economic conditions. Assuming that all else is equal (in particular nominal interest rates and expectations about future corporate cash flows), this finding is consistent with a world in which investment opportunity risk decreases along with the political uncertainty following the midterm, and equilibrium *ex ante* premiums also decrease in concert with the decrease in investment risk (and equity prices increase). A popular measure of *ex ante* risk premium is the variance risk premium (VRP), which is the difference between option-implied and expected volatilities. Figure 5 Panel B plots the six-month moving averages of monthly VRPs over the four-year Presidential cycle. We use the monthly VRP provided by Hao Zhou through his website (https://sites.google.com/site/haozhouspersonalhomepage/), with the end-of-the-month CBOE VIX used to proxy for implied volatility and the lagged one-month realized variance (i.e., 22-day summation of squared five-minute intraday S&P 500 index returns) is used to proxy for expected volatility. Dictated by sample availability, the monthly VRP sample points cover 1990 to 2015. We focus on the one-month volatility as Dew-Becker et al. (2017) find that investors pay large premiums to hedge shocks to one-month realized variance, but essentially pay no premium to hedge uncertainty about the longer-term future.

In addition, we superimpose a plot of monthly corporate bond spread in Panel B over a substantially longer sample period from 1919 to 2015, as Block and Vaaler (2004), Waisman et al. (2004) and Kaviani et al. (2017) show that bond spreads increase before U.S. Presidential

elections and vice versa.[20] It can be seen that the spread generally covaries with the VRP and %ΔEPU over the Presidential cycle, and in particular, it experiences a pronounced increase prior to elections, followed by a sharp decline thereafter (and hence a significant decrease pre-election followed by an increase in equity price/realized return premiums).

Colak et al. (2017) also present noteworthy evidence on the pricing of equity market risk using initial public offering (IPO) pricing as a proxy for *ex ante* premiums that adds support to our results. In particular, they find lower average IPO prices (and thus higher cost of capital) in states holding gubernatorial elections compared to non-election neighboring states. Moreover, the IPO price is lower in the two years leading up to the gubernatorial elections, and the largest decrease in IPOs relative to the previous year of the election cycle occurs *in year* 3 of the election cycle (see their Figure 1B).

<center>**< Insert Figure 6 here >**</center>

Election uncertainty may be well-modelled as a potential tail risk: Lobo (1999, p.149), for example, reported that "…midterm elections are a more important source of uncertainty [for stock returns] compared to presidential elections. Jump risk increases by 10 and 20 percent for small and large-cap stocks, respectively, in midterm election years." Baker et al. (2016, p.15) also find that their newspaper-based index of political uncertainty tends to spike around major events and that "…higher policy uncertainty leads to a greater frequency of large equity moves triggered by policy-related news." Given this evidence, we looked at the pre- and post-midterm behavior of two key measures of tail risk: the CBOE SKEW Index, and the Kelly and Jiang (2014, henceforth KJ) measure of the common component in firm-level tail risk. We describe the estimation procedure underlying the KJ tail risk measure (estimated between 1926 and 2015) in the online Appendix G. Unfortunately, the SKEW index is available only from 1990, giving us only a short sample in four-year Presidential cycle time units. As shown in Figure 6,

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[20] We define the corporate bond spread as the difference between Moody's BAA and AAA index.

<center>20</center>

the SKEW Index and KJ tail risk tend to move together over the Presidential cycle, and tail risk increases, on average, coming into the election. The measures then decrease after the election, though that decrease doesn't occur until after December.

4. Empirical results

4.1. Empirical estimates for equity index and Treasury securities

To more formally analyze the equity premium behaviour surrounding elections, we fit the following dummy-variable regression from 1815 to 2015:

$$r_t = \alpha + \beta_1 ME_{t-5:t-1} + \beta_2 ME_t + \beta_3 ME_{t+1:t+5}$$

$$+ \gamma_1 PE_{t-5:t-1} + \gamma_2 PE_t + \gamma_3 PE_{t+1:t+5} + e_t, \qquad (1)$$

where r_t refers to the monthly equity premium expressed in annualized percentage points, $ME_{t-5:t-1}=1$ for June through October prior to the midterm and zero otherwise, $ME_t=1$ for the November midterm election and zero otherwise, $ME_{t+1:t+5}=1$ for December through April after the midterm and zero otherwise, and $PE_{t-5:t-1}$, PE_t and $PE_{t+1:t+5}$ are analogous dummy variables for the Presidential election.

< Insert Table 2 here >

Table 2 reports the results. In each of the first four columns in the table, the first (sixth) row reports the dummy variable coefficient as an incremental equity return estimate in five months prior to (following) a November "election". The second through fifth row are alternative "what-if" timings of the November election in each year of the presidential cycle; for example, column (1)–row (2) contains the incremental equity return response to a thought-experiment-election in which the November election were counterfactually held in year one of the election cycle, and so on. It can be seen from the sixth row that the sizable and statistically significant post-election drift is limited to months following the midterm election that occurs in actuality in November in year two of the presidential cycle, whereas the post-election

21

response coefficients to the Presidential election that occurs in actuality in year four and the what-if 'placebo' elections in year one or year three, respectively, are insignificant.

Column (5) reports the estimates for Equation (1). The impact of post-midterm timing is sizable (13.91% p.a.) with Newey-West t-statistic = 4.12. This t-statistic substantially exceeds the stringent threshold values of 3–5 advocated separately by Harvey et al. (2016), Ross (2017) and Chordia et al. (2018) as a guard against "p-hacking", and it also matches the long-shot "99–to–1/0.01" Minimum Bayes Factors threshold statistic of 4.3 provided by Harvey (2017, Table III). In fact, the β_3= 13.91% incremental post-midterm equity premium dwarfs the γ_3 =1.19% marginal equity premium estimated in post-Presidential election months, with the Wald restriction test strongly rejecting the null that $\beta_3 = \gamma_3$ (p-value = 0.005).

We then check whether the sizable β_3 estimate is in part a manifestation of the January anomaly of Keim (1983) – the $ME_{t+1:t+5}$ dummy variable, after all, includes January. To do so, we follow Bouman and Jacobsen (2002) and modify Equation (1) as:

$$r_t = \alpha + \beta_1 ME_{t-5:t-1} + \beta_2 ME_t + \beta_3 ME^{adj}_{t+1:t+5}$$

$$+\gamma_1 PE_{t-5:t-1} + \gamma_2 PE_t + \gamma_3 PE^{adj}_{t+1:t+5} + \theta Jan_t + e_t \text{ , (2)}$$

where $ME^{adj}_{t+1:t+5}$=1 ($PE^{adj}_{t+1:t+5}$=1) for December through April after a midterm (Presidential) election but excluding January, and zero otherwise, Jan_t is the January 0/1 dummy variable and all other variables are as defined earlier. Table 2 Column (6) reports the key estimates and shows that the marginal response coefficient of the post midterm dummy is still economically and statistically significant (β_3= 12.46%, t-statistic = 3.65), and the Wald test strongly rejects $\beta_3 = \gamma_3$ (p-value = 0.02).

Even with two centuries of data, sceptics might question whether our results are plagued by small-sample biases because the post-midterm dummy variable only constitutes 254/2412=10.5% of the sample size. To address this concern, we re-assess the statistical significance of the regression coefficients reported in Column (6) using a bootstrapping

procedure. Specifically, we randomly sample (with replacement) the stock index time-series monthly returns for 5000 runs. For each ith run, we estimate Equation (2) on the bootstrapped stock returns in excess of the risk-free rate (i.e., the pseudo equity premiums).[21] We then evaluate the Newey-West t-statistic for the actual data relative to the critical values derived from the bootstrapped t-statistics. The bootstrapping confirms that the statistical significance of the regression coefficients estimated from the actual data match that of the simulations and more importantly, the $\beta_3 = 12.46$ estimate vastly exceeds the 99% optimal cut-off of 10.2 estimated from the bootstrap method.

Next, we extend Equation (2) by supplementing it with three variables – log of dividend yield (DY), term spread (TS) and relative interest rate (RREL) – that prior studies have shown to explain time-variation in expected equity returns (see, e.g., Fama and French, 1988; 1989):

$$r_t = \alpha + \beta_1 \text{ME}_{t-5:t-1} + \beta_2 \text{ME}_t + \beta_3 \text{ME}_{t+1:t+5}^{\text{adj}}$$

$$+ \gamma_1 \text{PE}_{t-5:t-1} + \gamma_2 \text{PE}_t + \gamma_3 \text{PE}_{t+1:t+5}^{\text{adj}} + \theta \text{Jan}_t + \mu F_t + e_t \text{ , (3)}$$

where $F_t = \{\text{DY, TS, RREL}\}$ are defined in online Appendix A. These exogenous variables are specifically chosen because their data span a relatively long sample period from 1872. Table 2 Column (7) contains the results for equity excess returns and Column (8) is a repeat for real equity returns. The main takeaway from both columns is that well-known "suspects" for expected return proxies do not explain away the excess and real equity returns in post midterm election months. We also re-estimate Equation (3) using the robust M-estimation regression of Huber (1964) to guard against potential extreme outliers and reach a similar finding (unreported to save space).

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[21] We also experimented by bootstrapping the equity premiums (i.e., stock index excess returns) instead of bootstrapping the stock returns. In addition, we follow Kräussl et al. (2014) and bootstrap blocks of 48 consecutive monthly equity premiums when resampling the pseudo equity premiums; this procedure preserves the Presidential cycle. This bootstrapping leaves the results largely unaltered, both qualitatively and quantitatively.

We now consider the joint behavior of equity returns and political uncertainty while improving the efficiency of estimates of the coefficients on the potential explanatory variables by accounting for the likely correlation in the residuals of both series. Doing this is important as Brogaard and Detzel (2015) find that changes in EPU and equity premiums have strong negative contemporaneous correlation. We fit the following seemingly unrelated regression (SUR) on both equity premiums and BBD's EPU over the common 1900-2015 sample period:

$$r_t = \alpha_r + \beta_{1,r}\text{ME}_{t-5:t-1} + \beta_{2,r}\text{ME}_t + \beta_{3,r}\text{ME}^{\text{adj}}_{t+1:t+5}$$

$$+\gamma_{1,r}\text{PE}_{t-5:t-1} + \gamma_{2,r}\text{PE}_t + \gamma_{3,r}\text{PE}^{\text{adj}}_{t+1:t+5} + \theta_r\text{Jan}_t + \mu_r\text{F}_t + e_{t,r} , \quad (4)$$

$$U_t = \alpha_U + \beta_{1,U}\text{ME}_{t-5:t-1} + \beta_{2,U}\text{ME}_t + \beta_{3,U}\text{ME}^{\text{adj}}_{t+1:t+5}$$

$$+\gamma_{1,U}\text{PE}_{t-5:t-1} + \gamma_{2,U}\text{PE}_t + \gamma_{3,U}\text{PE}^{\text{adj}}_{t+1:t+5} + \theta_U\text{Jan}_t + e_{t,U} , \quad (5)$$

where Equation (4) is effectively the system of equations analogue to Equation (3), and all other variables are as defined earlier.[22] Unlike prior studies which typically examine the level of EPU, we follow Francis et al. (2014) and analyze the relative monthly percent changes in EPU (i.e., U_t) in Equation (5). This specification is more appropriate in the current context as our primary focus is on the incremental resolution in uncertainty in months following midterm elections.

< Insert Table 3 here >

Table 3 Panel A reports the results. Adjacent to the SUR estimates, we also report the results for Equation (5) estimated using ordinary least squares with Newey-West adjusted standard errors. The panel shows that monthly changes in the EPU tend to be counter to those in realized equity premiums in months prior to and following elections. This finding is

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[22]It is plausible that political uncertainty is partly endogenous before and after elections, with post-election, lobbying and political contributions depend on the election results but pre-election, campaign financing and uncertainty as to candidates and policies are determined jointly with expectations as to the effect of those policies on corporations (e.g., the financial industry after the 2016 Trump election).

consistent with the notion that the heightening (resolution) of uncertainty in months before (after) elections are associated with negative (positive) realized equity returns. The November election coefficient response – β_2 and γ_2 – however share the same sign: returns and uncertainty seem to move in the same direction in the election month. It is possible that the equity market reacts positively to the election outcome once it is known (i.e., positive β_2) and yet election-related news is still reported primarily in November, resulting in positive changes in EPU (i.e., positive γ_2). The latter would not be surprising as the BBD's EPU, after all, relies primarily on news-text. Of particular interest here is the post-election response coefficient for the EPU uncertainty index, with both $\beta_{3,U}$ and $\gamma_{3,U}$ significant and negative, suggesting a sharp decrease (and thus resolution) in the political uncertainty index post-election.[23]

Critics might question whether the BBD's EPU index is (unwittingly) capturing uncertainty pertaining to general/macro economy other than political uncertainty. This is a real possibility, since the historical EPU index is closely correlated with the news implied volatility (NVIX) index of Manela and Moreira (2017) with $\rho = 0.29$ between 1990 and 2015, and this correlation coefficient increases sharply to 0.60 in the recent 1970-2015 sample period. Manela and Moreira (2017) apply machine learning techniques to front-page articles of *The Wall Street Journal* and extend the CBOE VIX option implied volatility measure back to end of the 19th century. As such, the resulting measure, the NVIX index, is arguably the only implied volatility estimate with a long history and we now make use of it.

In a spirit similar to Akey and Lewellen (2017) and Bonaime et al. (2017), we orthogonalize BBD's EPU index with respect to four variables: NVIX, DY, TS and RREL. This procedure allows us to isolate the effect of policy uncertainty from that associated with

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[23] The observant reader may notice that the coefficients on post-midterm and presidential election dummies for the uncertainty equation are both roughly similar in magnitude and sign (-4.82 and 4.64 respectively). This reflects the use of monthly changes in EPU as the measure of uncertainty change in Table 3 (note that the post-midterm realized equity return still dominates). Our hypothesis is that the monthly changes don't fully capture the "regime" shift nature of the post-election decrease in uncertainty.

economic uncertainty so that the resulting regression residuals (ε_t) capture only the former. We then replace the dependent variable U_t in Equation (5) with the standardized changes in ε_t i.e., we examine seasonality in the standardized changes in ε_t.

Our next analysis involves replacing U_t with the relative percentage changes in another monthly measure of policy-related uncertainty – the Partisan Conflict Index (PCI) of Azzimonti (2017). In a spirit similar to BBD, Azzimonti (2017) constructs the PCI by performing a semantic search on newspaper articles reporting political disagreement about government policy. She finds that short-term increases in partisan conflicts occur around federal elections and fiscal policy debates. The sample length for the monthly PCI is nonetheless relatively short, covering from 1981 to 2015.

As shown in Panels B and C of Table 4, these alternate proxies produce no qualitative differences in the core result, although the $\beta_{3,r}$ and $\beta_{3,U}$ coefficient estimates are less statistically significant when tested on the more recent 1982-2015 PCI data.

Turning back to the analysis of Equation (3), we repeat the regression for excess returns on 30-year maturity Treasury securities controlling for the first five macro factors of Ludvigson and Ng (2009). Ludvigson and Ng (2009) employ a dynamic factor analysis to summarize the information from a comprehensive set of macroeconomic variables into a parsimonious set of factors, and we use their first five factors (which include "real" and "inflation") as F_t in regression Equation (3) to explain the monthly Treasury premium. Constrained by the data availability of Ludvigson and Ng's macro factors, the Treasury regression analysis begins from 1960, but the qualitative findings of our estimation are reasonably similar (albeit with more modest significance levels) if we examine a longer 1942-2015 sample period *sans* Ludvigson and Ng's control factors.

Table 2 Column (9) reports the results. Consistent with the exploratory statistics reported earlier, the incremental Treasury premium is strongly negative ($\beta_3 = -8.42$, *p*-value = 0.05) at

times when incremental equity premium is significantly positive i.e., in months after midterm elections. On the other hand, the γ_3 post-Presidential response coefficient estimate is not statistically distinguishable from zero; this finding mirrors the insignificant estimate of γ_3 for the equity premium in months after Presidential elections. In an untabulated robustness analysis, we find that the results are largely qualitatively invariant to how we estimate the regressions for both equity and Treasury bond premiums. Specifically, when we jointly estimate Equation (3) for both equity and 30-year Treasury bond premiums as a system of equations over the common 1960-2015 sample period, the β_3 coefficient estimate for equity premium is significantly positively with p-value $= 0.02$ whereas the same coefficient estimate for Treasury premium is negative with a modest p-value $= 0.10$.

Finally, we follow up the summary evidence in Section 3 suggesting that the post-midterm positive drift in equity returns is mirrored in equity mutual fund returns. Here, we formalize this finding using a Total Net Assets (TNA)-weighted index constructed based on funds obtained from the CRSP Survivor Bias-Free Mutual Fund Database. This database complements the Morningstar mutual fund database (described earlier in Section 3) in that it contains equity funds over a relatively longer sample period from 1962 (i.e., 30 years longer than the Morningstar database), and the sample extension is crucial in the regression analysis. We follow prior studies (see, e.g., Doshi et al., 2015) and restrict the analysis to domestic actively managed equity mutual funds. We omit funds with TNA less than $15 million to address the upward bias in the returns on small CRSP funds documented by Elton et al. (2001), and we also exclude funds with missing names as suggested by Cremers and Petajisto (2009). Our final sample consists of 402,641 fund-month observations covering 3,846 equity funds. We weight the funds according to their TNA and combine them into a single index.

Column (10) reports the results for the monthly excess returns on our constructed equity fund index for regression Equation (3). The results are qualitatively identical to those reported

in Column (7) for the CRSP value-weighted equity index. In an unreported experiment, we also explore an equal-weighted fund index, and we further re-estimate the regression for the excess returns of both TNA- and equal-weighted fund indices over a narrower sample period from 1983 to 2015 in view of Fama and French's (2010) point that prior to 1983, about 15% of the CRSP mutual funds report only annual and quarterly returns. The results of these robustness checks are virtually identical to those reported here.

4.2. Empirical estimates for excess returns on cross-section of individual stocks

We verify that the results reported above continue to hold for the cross-section of individual stocks making up the CRSP value-weighted equity index.[24] Specifically, we fit the following generalized pooled regression:

$$r_{it} = \alpha_i + \delta_t + \beta_1 \text{ME}_{t-5:t-1} + \beta_2 \text{ME}_t + \beta_3 \text{ME}^{\text{adj}}_{t+1:t+5}$$

$$+ \gamma_1 \text{PE}_{t-5:t-1} + \gamma_2 \text{PE}_t + \gamma_3 \text{PE}^{\text{adj}}_{t+1:t+5} + \theta \text{Jan}_t + \mu_1 X_{it} + \mu_2 F_t + e_{i,t} , \qquad (6)$$

where r_{it} refers to the return in excess of the risk-free rate on stock i in month t, α_i and δ_t represent firm and year fixed-effects to control for unobserved time invariant firm characteristics and macro level shocks, respectively (Francis et al., 2014; Pasquariello and Zafeiridou, 2014), ME_t and PE_t are the respective midterm and Presidential November election dichotomous variables defined earlier, Jan_t is the January dummy variable, and X_{it} and F_t refer to firm characteristic control variables and factor returns that are discussed below. Throughout, we compute the standard errors clustered by firms.

A few remarks are in order regarding the cross-section dataset. Following convention, to be included in the sample, a firm's stock must be listed either on NYSE, AMEX or NASDAQ

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[24] We wouldn't expect the M-P gap estimates across the individual stocks to aggregate to exactly the same aggregate analysis estimate reported earlier, since the universe and weighting of stocks, and period, for example, are different.

in the CRSP files, must have a Standard Industrial Classification (SIC) code and must be an ordinary share (CRSP share code is 10 or 11). This last filter effectively rules out American depository receipts (ADRs) and closed-end funds. We also exclude "penny stocks" with share prices less than \$5. Altogether, we have 1,160,443 firm-month observations covering 8,165 firms over the 1927-2015 sample period.

< Insert Table 4 here >

Table 4 reports the results. Column (1) presents the estimates for the parsimonious specification with year fixed-effects but without firm fixed-effects, and a January dummy as well as X_{it} and F_t factors. As such, the $ME_{t+1:t+5}$ ($PE_{t+1:t+5}$) dichotomous variable in this parsimonious specification is equal to $ME^{adj}_{t+1:t+5} + Jan_t$ ($PE^{adj}_{t+1:t+5} + Jan_t$) in months following midterm elections (Presidential elections). The average across stocks of the key coefficient of interest, β_3, which is the coefficient response to the dummy variable that takes a value of one from December following a midterm election through April in the subsequent year of the Presidential cycle, and zero otherwise, is highly statistically significant and is several magnitudes higher than the average estimated γ_3 coefficient response to post-Presidential election (β_3=21.12 versus γ_3=0.50).

Column (2) adds in firm fixed-effects.[25] The estimates of both β_3 and γ_3 hardly change relative to Column (1) and remain significant. Column (3) includes the January dummy variable but excludes X_{it} and F_t factors. Clearly the inclusion of the January dummy variable does not alter the qualitative finding. In fact, the average post Presidential election dummy estimate is negative but insignificant (γ_3= –0.17, p-value = 0.70) and the average post midterm election dummy estimate is significantly positive (β_3 =14.79, p-value < 0.01). The average β_3 coefficient estimate is also significant economically: the average equity premium across the

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[25] We also perform additional tests by alternating the firm fixed-effects with sector (at the SIC 2-digit level) fixed-effects and then with industry (using the Fama-French 49 industries classification) fixed-effects. The results, which are not reported here to save space, are robust.

8,165 firms in post-midterm months from the November election to April the following year (but excluding January) is nearly 15% p.a. higher than in "non-election" periods, and in the equivalent months post-Presidential elections.

Finally, Column (4) reports the findings for the generalized specification Equation (3) which includes the X_{it} and F_t factors. Specifically, X_{it} is the log of market capitalization of firm i to control for its size and F_t contains the standard Fama-French three factors: market risk premium (MRP), small-minus-big (SMB) and high-minus-low (HML). As can be seen, the inclusion of X_{it} and F_t does not explain away the post-midterm election impact, as the β_3 coefficient estimate is still significantly positive whereas the γ_3 coefficient estimate is not significantly different from zero. That is, the exposure to variations in political uncertainty that we put forward below as an explanation for the post-election premiums does not align cross-sectionally with Fama-French three factors after controlling for the firm's size characteristic.

5. Implications for asset pricing and asset allocation

In this section, we explore a number of implications of our results with respect to asset pricing and asset allocation. First, we show that the "lost CAPM," in Andrei et al.'s (2018) terminology, emerges in the months following midterm elections, but it continues to be lost in other months. We attribute this CAPM resurrection to a surge of public information and resolution of uncertainty in post-midterm months. In addition, we look into the political uncertainty-expected return trade-off in periods surrounding the elections. We also re-examine the idiosyncratic volatility puzzle highlighted by Ang et al. (2006, 2009) and find that it "disappears" in the months following midterm elections as the CAPM emerges. Finally, we analyze whether the lottery-demand effect on stock prices discussed by Kumar (2009), Bali et al. (2011) and Bali et al. (2017) similarly disappears in post-midterm months – we show that it does. In terms of implications for asset allocation, we show that a substantially-higher-than-

buy-and-hold Sharpe ratio can be achieved for a market timing strategy that invests exclusively in equities in months post midterms and in the risk-free asset in other months.

5.1. The resurrection of the "lost CAPM"

Figure 7 Panel A plots the security market line (SML) for the Fama-French 25 size-and book-to-market- (B/M) and 49 industry-sorted portfolios estimated over the full sample period.[26] Following convention (see, e.g., Fama and French, 1992), we estimate the beta of portfolio i, β_i^{OLS}, as the sum of slopes in a regression of the portfolios' monthly excess returns on the current and previous month's market excess returns. We use a rolling window of 60 months in estimating β_i^{OLS}, so that the first estimated β_i^{OLS} is for 1931:06 in most cases (some of the industry portfolios have missing observations in the 1920s – 1930s). We then shrink the time-series beta estimate using Equation (7) as has become a common practice in both industry (see, e.g., Bodie et al., 2011) and the academic literature (Levi and Welch, 2017):

$$\hat{\beta}_i = \tfrac{2}{3} \times \hat{\beta}_i^{OLS} + \tfrac{1}{3} \times 1. \tag{7}$$

< Insert Figure 7 here >

Figure 7 Panel A shows that the full-sample slope of the SML against beta as estimated in (7) appears flat and economically small (0.42%). This result is consistent with the finding of Black et al. (1972) and many other subsequent studies which demonstrate that the SML is too flat relative to the standard CAPM prediction. Panel B plots the least squares best fitted SMLs for various periods surrounding midterm elections. We follow the methodology of Savor and Wilson (2014) and plot the SMLs against the same full-sample betas, though the results (untabulated to save space) are not affected if we estimate the betas separately for months of different regimes. The panel shows that the SML estimated in months other than November-

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[26] We source the portfolio returns data from Kenneth French's online data library (http://mba.tuck.dartmouth.edu /pages/faculty/ken.french/).

through-April following the midterm election has a nondescript implied risk premium equal to 0.08% (*t*-statistic = 0.48). Indeed, in the months leading up to midterm elections, the implied risk premium is negative (–2.28% with *t*-statistic = –6.48); the negative premium result here can be viewed as a counterpart to Hendershott, Livdan and Rosch's (2018) finding that beta is negatively related to returns when the market is open.

In contrast to the non-midterm-follow-up periods, by the end of the November midterm election month, the CAPM fits almost perfectly with a significantly positive relationship between average excess returns and beta (the SML slope is 4.53% with *t*-statistic = 4.42). As per Roll (1977), our finding suggests that our market portfolio tends to be *ex post* efficient *after* the midterm election outcome in known. This positive and steeper slope continues to hold from December through April the following year, but it becomes increasingly less pronounced as time passes after the November midterm. Specifically, in the aftermath of the November midterms, the SML has an insignificant intercept of –0.18% (*t*-statistic= –0.54) and a significant slope of 2.40% (*t*-statistic exceeding 7). This suggests that an increase in beta of one is associated with an average monthly excess return of 2.22%, which figure matches the monthly aggregate equity premium estimated at 2.10% in months following the midterm elections.[27] Furthermore, the regression R^2 is 0.46, suggesting that the stock market beta accounts for almost half of the variation in the excess returns of the 74 equity portfolios considered.

Consistent with our earlier results, however, the SML in key periods surrounding Presidential (rather than midterm) elections is an unremarkable fit: as can be seen in Figure 7 Panel C, the before- and after-Presidential election SMLs are flat, and the SML for the November election month is, if anything, downward sloping.

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[27] Between 1931:06 and 2015:12, the annualized average equity premium on the CRSP market index in months after the midterms is 25.20% or 2.10% per month.

Next, we follow Savor and Wilson (2014) and formalize the above CAPM-asset pricing analysis by performing a standard Fama and MacBeth (1973) two-pass test which involves estimating the cross-section regression separately in different states:

$$R_{i\tau+1}^{s} = \lambda_0 + \lambda_1 K_{i\tau}, \qquad (8)$$

where $R_{i\tau+1}^{s}$ is the monthly excess return of portfolio i in month $\tau+1$ of state s, and $K_{i\tau}$ is the CAPM-β_i estimate from Equation (7) in month τ. We consider several states, but in the interest of brevity, Table 5 only reports the findings for s = November-through-April after the midterm election (state II, Panel B), November-through-April after the Presidential election (state III, Panel C) and all other months, i.e. months other than November-through-April after the midterm election (state I, Panel A).

<center>**< Insert Table 5 here >**</center>

The result is a zero (negative but statistically insignificant) equity risk premium in state I (state III). But again, and consistent with the prediction of the CAPM, the equity risk premium is strongly positive (2.31%, t-statistic = 3.09) in state II which is the post-midterm election period. Table 5 Panel D reports the difference in means of the implied risk premium between states II and I, which is estimated at 2.30%, and a simple test for the difference in means, allowing for unequal variances, has a t-statistic = 3.15.

Our findings could be explained as follows: Andrei et al. (2018) develop a model in which they predict that because the market portfolio is unobservable (Roll, 1977), there exists an information gap between investors who collectively hold the market portfolio and empiricists who do not observe it. This information gap distorts the empiricist's perception of unconditional betas, resulting in a "lost" CAPM. It is plausible that large information gaps exist in months preceding midterm elections as investors predict election outcomes and the ways in which equity prices could respond to the election outcomes. Since higher electoral uncertainty translates to higher uncertainty about future (real) cash flows (Julio and Yook, 2012), investors

require a higher risk premium in months leading to midterms (Andrei et al., 2018; p.32 and see also their Equation (56)).

In the post-midterm announcement month, the previously higher risk premium *required* by investors morphs into a higher *realized* premium as soon as the midterm election outcome is known and the information gap (and thus uncertainty) is considerably reduced, leading to a pronounced steepening of SML. Thereafter, the SML slope continues to be positive but it is not as pronounced as before. Andrei et al. (2018) predict that the CAPM fits "announcement days" better because differences between private and public information amongst investors tend to "wash away" on days dominated by public announcements. Since the midterm election outcome and its follow-up generate a wave of public information about future likely policy moves in Congress, and between Congress and the White House, our result is thus consistent with this hypothesis.

5.2. Political uncertainty as a risk factor cross-sectionally?

We now present evidence that the stock's sensitivity to political uncertainty is a priced cross-sectional risk factor, but (again) only in months following midterm elections. To do this, we repeat the Fama-MacBeth two-pass procedure outlined above. Specifically, we use a rolling window of 60 months and regress the monthly excess returns of each of the 74 Fama-French portfolios on the current and lagged-one standardized EPU monthly index. We then obtain the portfolio's sensitivity to political uncertainty, PU-$\beta_{i\tau}$, measured as the absolute value of the sum of slopes of the rolling regression. Finally, we employ Equation (8) and cross-sectionally regress the average one-month-ahead portfolio excess returns on $K_{i\tau} = $ PU-$\beta_{i\tau}$.

Table 5 reports the findings. We are especially interested in the slope coefficient λ_1, which should be positive if the portfolio's sensitivity to political uncertainty is a priced risk factor. Surprisingly, the evidence reported for non-post-midterm election months is that this is not the

case: the slope coefficient is indistinguishable from zero (-2.55, t-statistic = -0.62). However, just as does the "lost CAPM", the hidden political uncertainty risk factor pricing reveals itself in the aftermath of the midterm election, as the slope coefficient is positive (19.32) and significant at a 10% confidence level. In other words, a stock's sensitivity to political uncertainty is strongly associated with subsequent stock returns in months following midterm elections but not in other months.

5.3. The idiosyncratic volatility puzzle

Ang et al. (2006) and follow-up studies (see, e.g., Hou and Loh, 2016) show that IVOL negatively predicts U.S. stock returns, and Ang et al. (2009) extend their finding to global equity markets. The result is a puzzle insofar as standard financial theories predict no relation between IVOL and expected returns if the market is complete and frictionless (Sharpe, 1964). If anything, Merton (1987) argues that the price of idiosyncratic risk would be positive if the market is incomplete and investors are faced with a high cost to diversify. We show here that the zero-IVOL–expected return relation isn't "lost" in months succeeding the midterms, just as the "lost CAPM" isn't.

We follow prior related studies (Ang et al., 2006, 2009; Fu, 2016) and adopt a cross-sectional version of the Fama and MacBeth (1973) methodology to test the IVOL–expected return relationship. In particular, we first regress the within-month daily excess returns of portfolio i on the Fama-French three-factor model. The $IVOL_{i\tau}$ for portfolio i in month τ is measured as the standard deviation of the regression residuals, scaled by the square root of the number of trading days within that month to obtain the monthly $IVOL_{i\tau}$ estimate. We then run regression Equation (8), replacing $K_{i\tau}$ with the $IVOL_{i\tau}$ estimate.

Table 5 shows a strong negative relation between lagged-one IVOL and average future excess returns in months other than in post-midterms (state I), with a point estimate of –4.79

and *t*-statistic = −2.62. This strong negative relationship, however, vanishes in post-midterm election months (state II), with a positive implied idiosyncratic risk premium of 3.96 but an insignificant *t*-statistic. Stambaugh et al. (2015) argue persuasively that the IVOL effect is attributable to arbitrage buy-sell asymmetries, particularly to constraints on the short-selling of over-priced (high IVOL) stocks. Given our results, this would imply that the homogeneity of information across investors is higher, and short-selling opportunities and constraints lower, post-midterms.

5.4. The lottery-demand risk factor

Bali et al. (2011, 2017) propose that investor demand for lottery-like stocks plays an important role in explaining the low-beta anomaly, a counterpart of the "lost CAPM." They demonstrate that neutralizing a portfolio's exposure to a cross-sectional characteristic of stocks called MAX, which is the average of the five highest daily returns of the portfolio in a given month, eliminates the anomaly. We now show that the lost CAPM "works" post-midterm-election, and the low-beta anomaly and MAX "disappear", much as happens with IVOL.

We follow Bali et al. (2011, 2017) and regress the one-month-ahead portfolio excess returns on a combination of lagged predictor variables via the following specification:

$$R^s_{i\tau+1} = \lambda_0 + \lambda_1\beta_{i\tau} + \lambda_2 PU\beta_{i\tau} + \lambda_3 IVOL_{i\tau} + \lambda_4 MAX_{i\tau}, \quad (9)$$

where $\beta_{i\tau}$ is the CAPM-β_i estimate and $K_{i\tau}$ = { PU-$\beta_{i\tau}$, *IVOL*$_{i\tau}$ and *MAX*$_{i\tau}$ } are the other risk factors. The results from fitting Equation (9) are given in the last row of Table 5. Note that the average coefficient on the CAPM-β_i estimate is still positive and statistically significant post-midterm elections but not at other times, including post-Presidential elections. In other words, the relation between systematic market risk (as captured by beta) and expected cross-sectional returns is positive as predicted by the CAPM, while IVOL and MAX coefficients become insignificant, in months following midterm elections.

5.5. A dynamic asset allocation strategy

A practical metric commonly used to assess the economic value of perceived variations in equity premiums is the Sharpe Ratio (SR) for a strategy that rebalances the equity-to-fixed-income allocation in concert with those variations through time. To the extent that increases in political uncertainty around elections are associated with higher equity return risk, the higher average volatility of the strategy's return distribution over time is accounted for in the SR.

< Insert Table 6 here >

Table 6 reports the SR results, excluding transaction costs, for various strategies implemented over the period from 1815 to 2015. Our primary focus is the market timing Strategy 1, which targets the post-midterm effect by investing in equities from the beginning of December after midterms through April the following year and in the risk-free asset in other months. For brevity, we describe the other strategies in Table 6 Panel A. Panel B shows that Strategy 1 achieves the highest annualized SR =0.28 (*t*-statistic= 4.03). This SR estimate beats its nearest challenger – a "winter-focused" Strategy 3 – by 33% and it is also nearly three times what one would have earned under the benchmark "buy-and-hold" Strategy 0. Note that the benchmark 0.11 SR over the two centuries is substantially lower than a SR around 0.3–0.4 which investors are used to seeing in recent decades. In an unreported experiment, we repeat the strategies on the investable S&P500 Futures from 1982 (the earliest date when the S&P500 futures contracts were traded) to 2015. We reach a similar qualitative finding, albeit with a much higher SR estimates in all strategies (e.g., SR = 0.37, *t*-statistic = 2.17 for Strategy 0 versus SR = 0.53, *t*-statistic = 3.06 for Strategy 1).

We then check the significance of the SR estimate calculated from the actual data by comparing that estimate to the SR statistic of a bootstrapping procedure similar to that described in Section 4.1 (see also the explanation in Table 6 caption). Panel B shows that the

actual 0.28 SR estimate (and its *t*-statistic = 4.03) of Strategy 1 comfortably exceeds the 95%

optimal cut-offs estimated from the bootstrap method. Taking the analysis one step further,

Table 6 Panel C reports Harvey and Liu's (2014, 2015) Sharpe ratios adjusted using

Bonferroni, Holm and BHY methods. The round parentheses contain the SR "haircuts", defined

as the percentage changes in Harvey and Liu's adjusted SRs and the conventional SRs reported

in Panel B. Panel C shows that the Bonferroni, Holm and BHY methods only haircut the

conventional SR of Strategy 1 by one-third or less, so that the adjusted SR estimates are

approximately 0.25 (versus a buy-and-hold monthly benchmark for the period of about 0.11).

In stark contrast, the SRs of other strategies, including the winter-focused Strategy 2, are

haircut mostly by 100%.

6. Other potential (standard) explanations and robustness tests

Section 4 establishes that the post-midterm equity premium is negatively associated with

political uncertainty. Here, we investigate whether those premiums could be due to the "usual

suspects" that prior literature in finance has documented to be associated with equity premium

anomalies. The answer is: *unlikely*.

6.1. Standard equity premium anomalies

We begin by asking whether the significantly higher post-midterm premium is driven by

the January effect, winter effect, second-half-of-the-Presidential-cycle effect or the Presidential

Democratic puzzle. We have shown in Section 4 that the post-midterm premium still exists

after controlling for the January anomaly. Here, we check the remaining three "suspects."

Bouman and Jacobsen (2002), Andrade et al. (2013), Zhang and Jacobsen (2013) and

Kamstra et al. (2017) find that the average excess returns on equity funds and market indices

are higher during the November-through-April winter season which they attribute to a "winter

effect" of one kind or another. If the large equity premium does have something to do with winter, it would be reasonable to argue that the average equity premium should be consistently higher during winter seasons *unconditional* on the Presidential cycle. Contrary to this stipulation, however, the mean estimate of equity premiums during the December-through-April winter months in years 1, 2 and 4 of the Presidential cycle over the 1815–2015 sample period is statistically insignificant at 1.85% p.a. versus the 13.24% p.a. in post midterm (year 3) months.[28] The difference, 11.4% p.a., is statistically significant with *t*-statistic =3.0.

Other studies, such as Kräussl et al. (2014), show that the U.S. economy has typically outperformed in the second half of the presidential cycle compared to the first two years. An oft-referenced candidate explanation for this second-half-outperformance is the political business cycle (PBC) theory of Nordhaus (1975), MacRae (1977) and Grantham (Authers, 2016). The PBC theory posits that opportunistic incumbent politicians or beholden institutions (deliberately or unconsciously) employ favorable investment and economic policies to stimulate the economy prior to elections in order to increase their chances of winning.[29] Rogoff (1990) advances an alternate political budget cycle theory that suggests that incumbent governments are incentivized to increase money supply growth in the election year, and this temporarily increases economic output and employment coming into the presidential election. Fair (1978, 1982) develops a general framework that suggests that voters look back *no more* than a year or two in assessing the economic performance of the (incumbent) government.

The PBC theory, together with Rogoff's political budget cycle theory and Fair's limited voter-look-back model, could explain a higher equity premium *as an election approaches*.

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[28] In the interest of consistency, we assume that the winter effect extends from December through April the following year, but our results barely change if we follow the convention of assuming that the winter effect begins in November instead of December – since midterms can be as late as November 8, there is the risk that defining "winter" to start on November 1 partly includes the pre-election period and election day.

[29] Frey and Schneider (1978) and Haynes and Stones (1989) provide empirical evidence in favor of the PBC theory whereas Kräussl et al. (2014) reject the theory.

However, we find the equity premium to be highest after the midterm, and we see little evidence of increased premiums heading toward the Presidential elections. Moreover, insofar as equity premiums are concerned, it is not clear why behaviour like the PBC would not be built into market expectations, while our political uncertainty cycle is consistent with expectations. Moreover, the annualized 13.24% average equity premium found in December-through-April after the midterms is particularly large and positive relative to the −1.32% p.a. average equity premium from May to December of year three in the Presidential cycle (the mean difference of 14.56% is statistically significant with *t*-statistic =3.4). Indeed, the weak equity premium outcome in the second half of year three is also mirrored in other economic measures particularly the quarterly GDP and government spending (unreported results are available upon request from the authors). In short, economic performance beyond the year three winter doesn't display the hoped-for crescendo as voters head for the ballot box.

Santa-Clara and Valkanov (2003), Novy-Marx (2014) and Blinder and Watson (2016) provide strong evidence of a Presidential-Democratic puzzle where the U.S. economy has performed much better during Democratic regimes than during Republican times. At the same time, we find that the annualized equity premium partisan gap in post-midterm election months over the sample period 1856 to 2015 has been only 2.1 percentage points (i.e., the average annualized equity premium in post midterm election months is 14.9% when a Democrat is the U.S. President versus 12.8% p.a. for a Republican), a difference that is never going to be statistically significant.[30]

6.2. Subsample periods, different proxies for equities and a recessionary factor

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[30] The Republican party was formed only after 1856. As such, we use a narrower sample period from 1856 to 2015 to calculate the partisan gap in post midterm election premium.

The positive M-P post-election equity premium gap is not a recent phenomenon, as one can quickly check by looking back at the two equal sub-periods, 1815-1914 and 1915-2015 (see online Appendices B and D). We also repeat the analysis using various proxies of the U.S. equity market: First, we replace the CRSP value-weighted index with its equal-weighted counterpart. Then, we consider the Dow Jones Industrial Average (DJIA) from its earliest date available in 1897. Next, we examine a relatively longer sample data by splicing Schwert's (1990) 1802–1925 data with the CRSP 1926–2015 value-weighted index. Geczy and Samonov (2016) note that Schwert's historical dataset was spliced from various sources and hence the index was weighted differently over time (i.e., equally weighted prior to 1862, value weighted between 1863 and 1885 and price weighted from 1886 to 1925). On the other hand, Goeztmann et al.'s data, which is the subject of this study, was price weighted over the entire sample period and this alleviates issues related to a large bid-ask bounce effect that typically afflicts equally weighted index data. In addition, we analyze total returns on investable S&P 500 funds and on the front S&P 500 futures contract (these data series begin in the 1980s), addressing Dichtl and Drobetz's (2014) conjecture that transaction costs might diminish Presidential-cycle types of apparent equity anomalies. None of the sensitivity analyses (reported in online Appendix D) leads to an explanation for our main empirical finding.

Finally, we confirm that the significantly positive M-P post-election equity premium gap is not driven by economic recession (or lack thereof). The NBER began dating U.S. business cycle expansions and contractions in 1854, with 610 months since then categorized as recessionary. The post-midterm and post-Presidential election periods coincide with these recessionary periods roughly equally, around 10% of the time in each case (62 coincidences for the December-to-April post midterm election period versus 57 coincidences for the December-to-April post Presidential election months). As such, there is nothing special, in

terms of economic expansion, in months following midterms relative to months after the Presidential elections.

6.3. Macroeconomic news announcements

Savor and Wilson (2013, 2014), Lucca and Moench (2015), Cieslak et al. (2016) and Chan and Marsh (2017) report significantly higher U.S. equity premiums on days when prescheduled macroeconomic news announcements related to interest rates, unemployment and inflation are released. Hence, one might question whether the significantly positive M-P post-election gap is attributable to "good economic news" announcements made disproportionately more frequently in post midterm months. To the contrary, though, we find that there is no conclusive evidence supporting this hypothesis: unexpectedly good macroeconomic news pertaining to the aforementioned variables account for 58% (46%) of all news surprises in months post midterm (Presidential) elections but this ratio is not statistically different from a random 50%-50% chance using the Binomial test. In the interest of brevity, we report the analysis in the online Appendix H.

7. The *à* priori importance of midterms within U.S. "balance of branches" of power

The timing of the higher market premiums after the midterm election that have been our focus above suggests that they are linked to the political process, and in particular the "change the rules of the game" rusk it spells for corporate investors. The uncertainty – the risk and opportunities for listed companies associated with the passage of legislation – depends not just on who wins the presidential election, but on Congress and expectations as to the "president's influence" during his term in office. Collier's (1997, p.13) study of presidential influence "…incorporates [Congressional] 'expectations' because of the prospective concerns of both [legislative and executive] branches … The president will enjoy influence when lawmakers

believe that the White House might be able to influence the next congressional election."

Alesina and Rosenthal (1996, p.1312) point to the basic U.S. political tenet that voters' "…uncertainty about the outcome of the presidential election leads them to prefer a 'hedged' congress. At midterm, once the identity of the president is known, voters move congress further in the direction opposite to that of the president in order to achieve better moderation." This makes the midterm election a key event in the presidential cycle, and empirical studies have confirmed its importance and the uncertainty attached to it: For example, Erikson (2010, p. 5) observes that "historically the variance of the two-party vote at midterm is almost twice as great at midterm than in presidential years (13.7 vs. 7.0 over postwar elections)." More generally, Alesina and Rosenthal (1996, p.1312) have shown "that [the] model of the midterm effect performs at least as well and often better than traditional empirical voting models that emphasize incumbency advantage and retrospective voting based on the state of the economy."[31]

Alesina and Rosenthal (1996, pp.1334-1335) further stress "…the very persistence of the midterm cycle. The presidential election resolves only the uncertainty about the president's identity. In the two years between the presidential election and the midterm election, the voters acquire further information about presidential competency, personality, and policies. These additional resolutions of uncertainty could, in principle, go either way and invert the midterm cycle. But the midterm cycle persists not only in the presence of these other sources of information but also in those cases, such as 1964, 1972, and 1984, when there was little uncertainty about who would win the presidency."

< **Insert Table 7 here** >

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[31] The mapping from votes to political uncertainty consequences for the stock market are complicated: Bafumi et al. (2010, p.636) simulated the outcomes for the 2010 midterm election and concluded that with "…wide dispersion of possible outcomes, … seemingly minor variation in the national vote can have major consequences for the distribution of seats." If the effectiveness of presidential action depends on Congressional make-up, the midterms become *per se* an element of political uncertainty.

We did a simple exploratory fit of a model for the M-P post-election gap as a function of whether the Presidency and Congress are governed by Democratic or Republican parties. Table 7 reports the results. In Panel A, for example, the returns are given for all post-elections in which the White House is governed by Democrat or Republican unconditional on Congressional make-up. Note that the average post-election equity premium is 15.88% p.a. and 14.42% p.a. for Democratic and Republican White Houses respectively, while the respective premium post the presidential elections is insignificant. Taken at face value, this result suggests that the presidential election is not resolving a lot more or a lot less uncertainty compared to the midterm (whether the president be a Democrat or a Republican). Note that post-election premiums are small for the pre- presidential (i.e. Year 3 or post-midterm) elections for *both* Democratic and Republican presidents − as such, the result does not support the Democrat presidential puzzle finding of significantly higher premiums in the second half of Democratic but not Republican presidential cycles (e.g. Chan and Marsh (2017)). Or, looking at Panel C, the two-way sort by White House and Congress, the midterm and presidential post-election premiums are not substantially different when Congress is governed by Republicans and the White House by Democrats. This result would be consistent with a story whereby the differing executive and legislative ruling parties lead to gridlock and legislative paralysis, with low uncertainty of significant legislation to be resolved irrespective of whether it is the midterm or presidential election. Arguably the partitioning in Appendix C may result in sample sizes that are two small, i.e. only 40 presidential cycles from 1857.

In addition to uncertainty regarding the "balance between the branches" that is partly resolved by the midterm outcome, pre-presidential-election primary events begin to occur in earnest soon after the midterms, the outcomes of which help serve to further reduce political uncertainty: "During the pre-primary period—the year following the mid-term elections—the field of presidential candidates takes shape. The race for campaign talent and money,

sometimes called 'the invisible primary' unfolds. The candidates make their pitches in a variety of venues and forums. Differences on issues between the candidates begin to crystallize. Ad campaigns start. Some candidates pull ahead, and a few make early exits." (Pre-Primary Period: Race for the White House, *Democracy in Action,* 2016; available at http://www.p2016.org/chrn/prep16.html). As a specific case, a *Washington Post* headline on August 13 1978, some two-plus years prior to the November 4 1980 presidential election, proclaimed: "Reagan Described as Ready to Campaign Hard and Early for the Presidency" (Lou Cannon). It is not *à priori* surprising, then, to find that the reduction in political uncertainty in year three of the presidential cycle is the most dramatic of any interval in the cycle.

There does not appear to be an agreed-upon structural model for how the election-related resolution of political uncertainty might be "mapped to" the observed calendar-dependency that we observe in U.S. equity premiums. Kenneth Rogoff, former chief economist of the International Monetary Fund, sums up the modeling difficulty in the current environment: "… post-2008 political divisiveness creates massive long-term policy uncertainty, as countries oscillate between governments of the left and the right. … politics is not, at least for now, impeding global growth nearly as much as one might have thought…[but] the long-run costs of political upheaval could be far more serious…potentially far more insidious is the erosion of public trust in core institutions in the advanced economies … Economists have endless debates about whether culture or institutions lie at the root of economic performance."[32]

8. Conclusion

In this study, we have shown that U.S. equity premiums over the last two centuries have been significantly higher in the winter months following midterm elections than in the same

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[32] "Giddy markets and grim politics," available at https://www.project-syndicate.org/.

winter months post-Presidential elections, and also significantly higher than in other months of the Presidential cycle. Here, "significantly higher" means with statistical significance levels suggested in the current literature to help guard against *p*-hacking. We show that our results are robust to the likes of a January seasonal, to sub-periods, to the timing of macro-announcements made during the year, and to the Democratic Presidential puzzle that U.S. equity premiums have historically been higher under Democratic Presidents. The results are virtually identical irrespective of whether we examine different equity indices, or if we fit a cross-section of individual stocks. We also find that the incremental premium on Treasuries is lower (and to a certain extent, negative) at times when the incremental equity premium is significantly positive i.e., in months after midterm elections – this timing contrasts with post-Presidential election times when both Treasury and equity premiums are insignificant. In addition, by fitting a cross-section of seventy-four Fama-French equity portfolios, we find that the sensitivity of their excess returns to political uncertainty is strongly associated with subsequent average excess returns, but only in months following the midterm elections and not in other months.

We find that *ex ante* premiums increase on average going into elections, particularly the midterm election, and decrease after the election. Variations in the Baker, Bloom and Davis (2015) Economic Policy Uncertainty index parallel the equity premium movements over the election cycle, as do other measures of tail-risk or "regime risk," *viz.* the CBOE's SKEW Index, the Kelly and Jiang (2014) measure of the common component of firm-level tail risk, and the Azzimonti (2017) Partisan Conflict Index; the caveat being that the sample period for these tail risk measures is short in number of Presidential cycles compared to the 50 Presidential cycles in our primary two-century sample.

We propose that the post-election decrease in political uncertainty leads, all else equal, to systematic increases in equity prices in the winter months of year three of the Presidential cycle.

As such, these higher average returns in winter relative to the subsequent summer generate higher average returns for "sell-in-May"-like strategies, albeit these sell-in-May average returns in the four-year cycle are earned primarily in one year out of four.

We also show that the "lost CAPM" of Andrei et al. (2018) is resurrected in the post-midterm election cross-section of premiums, just as it seems to fit macro-announcement day returns (Savor and Wilson, 2014). The well-known negative relation between idiosyncratic volatility (IVOL) and expected returns, and the apparent lottery demand for high beta stocks, also "disappear" (as the CAPM reappears) in the post-midterm cross-section of average returns. One explanation for the re-emergence of the CAPM and the disappearance of any effect of IVOL and lottery demand on average stock returns bears on the "flood" of public information as election results become clear. As Andrei et al. (2018) surmise, the CAPM fit is substantially improved when public (announcement) information is more dominant relative to private information signals.

It is well-established that increases in political uncertainty (i.e., uncertainty about legislation that might benefit or hurt corporate stakeholders) have "real option" effects on real investment, employment and economic growth. We find reasonable evidence of changing political uncertainty's "footprint" on these real variables, particularly around midterms compared to Presidential elections. We also show that the behaviour of equity premiums around election events are matched by inflows and outflows in equity and money-market mutual funds. At the same time, we argue that the political business cycle (PBC) theory does not fit as well as the cycle in political uncertainty in explaining equity return over Presidential cycles.

Finally, we review the supporting literature that speaks to the *à priori* importance and persistence of the midterm election cycle, the "balance of the branches of power," and the

importance of Presidential influence on Congress *via* competency, personality, and policies, in contrast to Presidential elections focused mainly on determining the identity of the President.

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Figure 1: Cumulative gains for different investment strategies

Panel A plots the cumulative wealth of an investor who adopts various mutually exclusive strategies by entering the equity market at the end of November in each Presidential year and hold for 12 months before exiting. Each strategy begins with a $100 investment. Panel B plots the corresponding effective annual rates (EAR) for each month. The sample period covers from 1815 to 2015.

Panel A: Cumulative wealth

Panel B: EAR

55
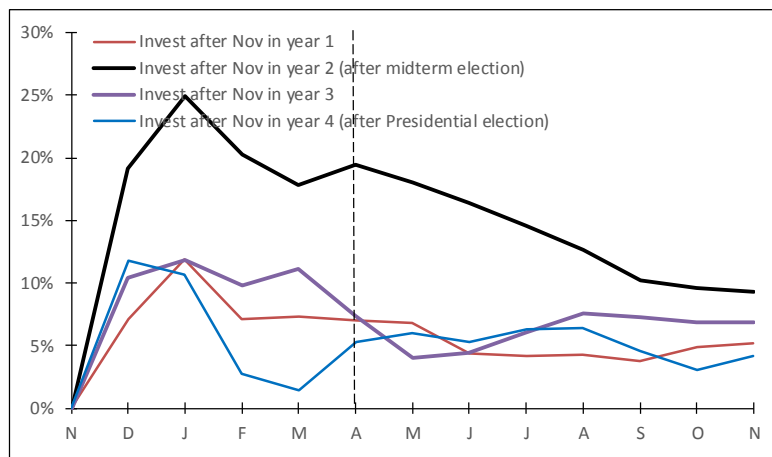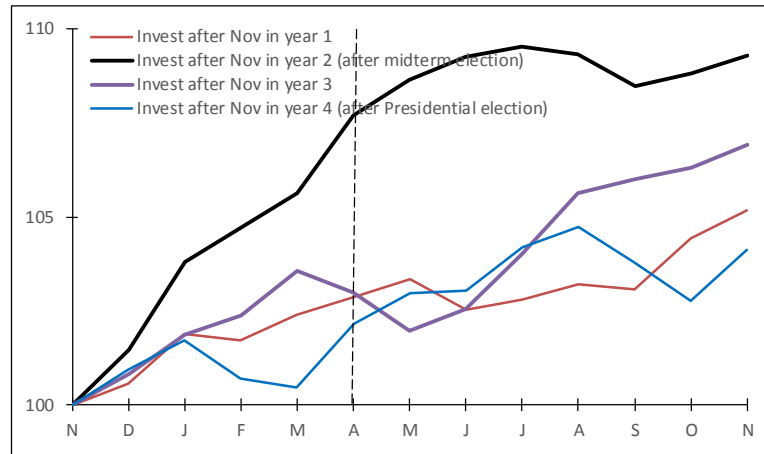
Figure 2: Average excess returns against CAPM-beta and idiosyncratic risk

Panel A plots the averaged excess returns against the CAPM betas for Fama-French 25 size- and book-to-market-sorted portfolio and 49 industry portfolios. The relationship is plotted in two separate occasions: (i) from November midterm election month to April the following year (midterm follow-up months), and (ii) in other remaining non-midterm follow-up months. We superimpose an ordinary least squared best fitted line for each plot, and we use the same full-sample beta estimates in both plots. Panel B (C) presents the analogous plots for the relation between averaged excess returns and idiosyncratic volatility (lottery-like outlier returns or MAX). The sample period covers from 1931:06 to 2015:12.
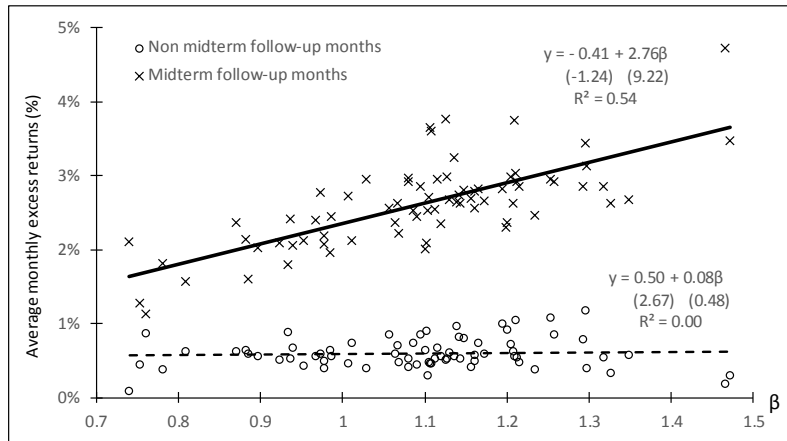
Panel A: CAPM-beta
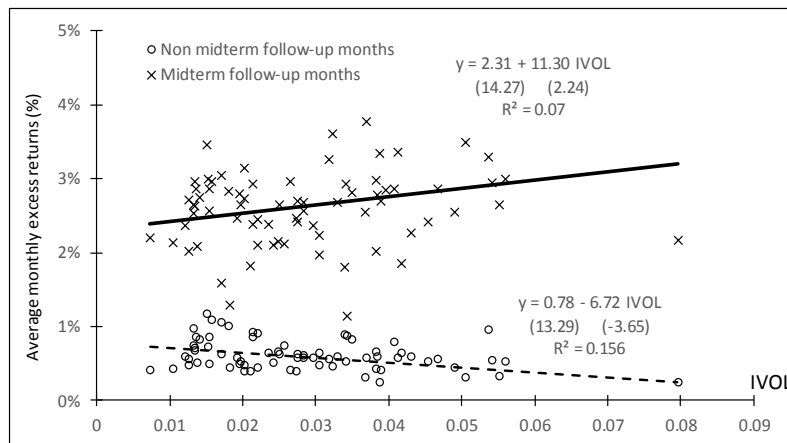
Panel B: Idiosyncratic risk
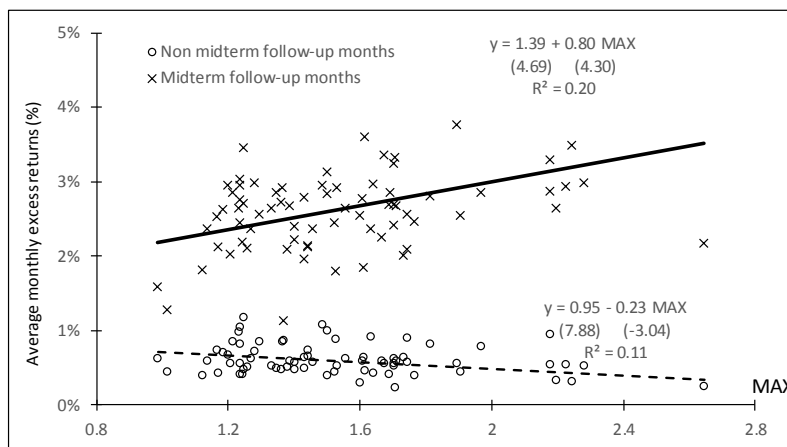
Panel C: Lottery-like effect

Figure 3: Biannual changes in U.S. equity and Treasury prices over the four-year cycle

Panel A plots the average of biannual changes in U.S. equity prices from years 2 to 3 (solid line) surrounding the midterm election, and from years 4 to year 1 (dashed line) surrounding the Presidential election. The federal November election months in years 2 and 4 are highlighted in dark grey whereas the five-month periods prior to and following the November elections are highlighted in light grey. The sample period covers from 1815 to 2015. Panel B plots the biannual changes in equity prices (black line) and Treasury prices (orange line) over the 4-year Presidential cycle covering common sample period from 1942 to 2015.
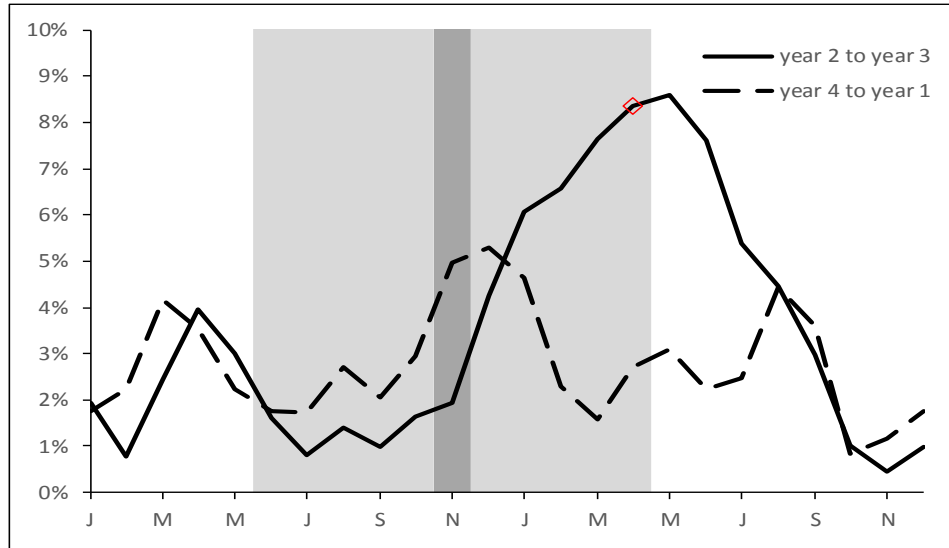
Panel A: Years 2 to 3 (solid line) vs. years 4 to 1 (dashed line) from 1815 to 2015
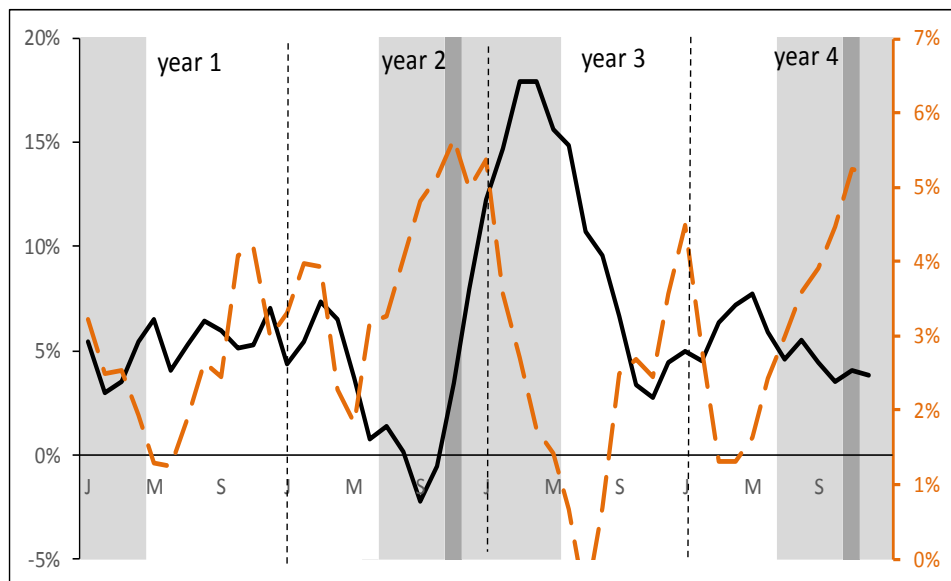
Panel B: Equities (black line) vs. Treasuries (orange line) from 1942 to 2015

Figure 4: M-P post-election gap

Panel A plots the annualized average equity premium from December following midterm election in year 2 through April in year 3 (bar plot) and the annualized average equity premium from December following Presidential elections in year 4 through April in the following year 1 (dotted line) for each Presidential 4-year term. The annualized equity premiums are expressed in percentage points. Panel B plots the annualized term-by-term "M-P post election gap", which is the difference between the post-midterm average equity premium (shown as bar plot in Panel A) and the post-Presidential average equity premium (shown as dotted line in Panel A) for each Presidential term. The rightmost black bar is the mean of the term-by-term M-P gap. The rightmost black bar is the mean of the term-by-term M-P gap. Panel C plots the term-by-term midterm-bootstrap gap explained in the text. The sample period covers 1815 through 2015.
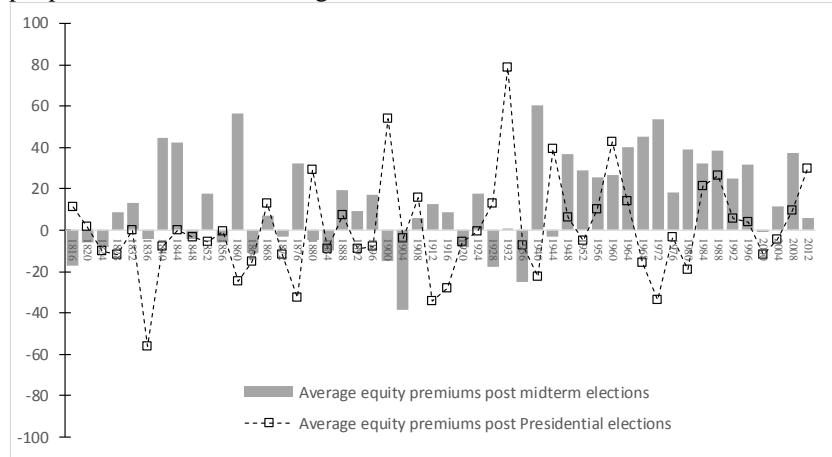
Panel A: Post-midterm and post-Presidential average equity premiums

Panel B: Term-by-term M-P post-election gap

Panel C: Term-by-term midterm-bootstrap gap

58

Figure 5: Plots of political uncertainty measures

Panel A plots the 6-month moving averages of year-to-year changes in BBD's news-based EPU from 1900 to 2015 (dashed line) and after the post-world war II period (solid line), as well as the BBD's aggregated EPU from 1985 to 2015 (dotted-diamond line). Panel B plots the averaged variance risk premium from 1990 to 2015, and corporate bond spreads (in basis points) from 1919 to 2015. The federal November election months in years 2 and 4 are highlighted in dark grey whereas the five-month period prior to and following the November elections is highlighted in light grey.
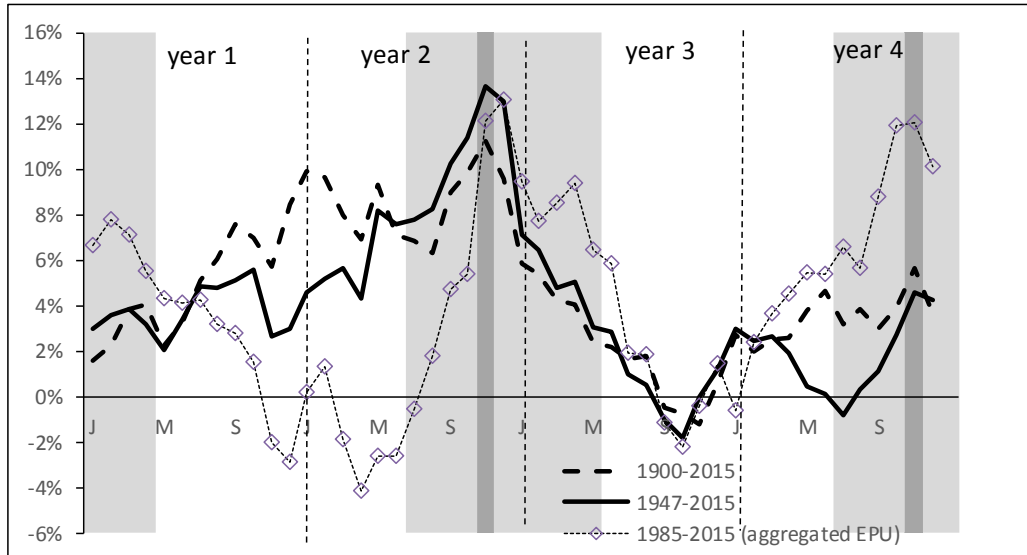
Panel A: EPU
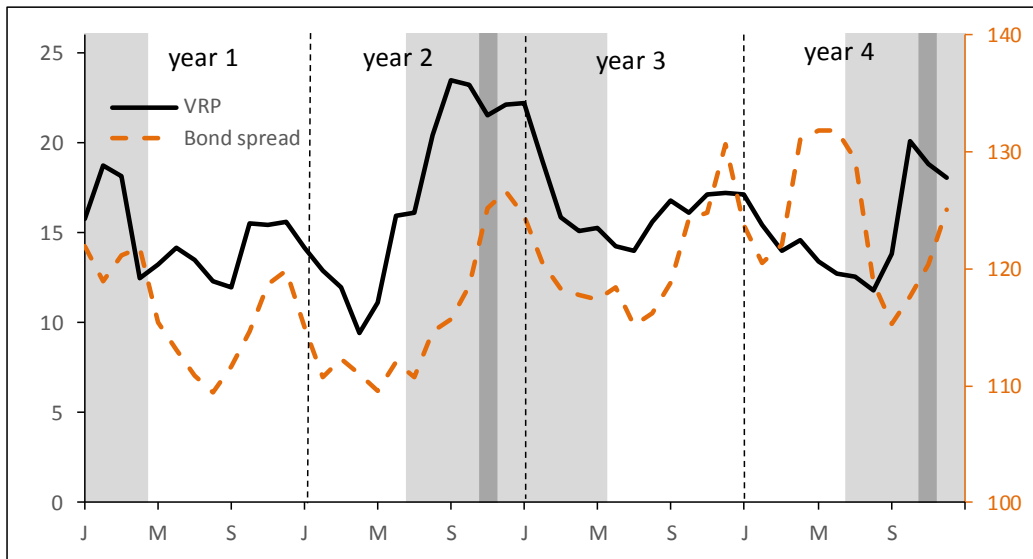
Panel B: VRP and bond spread

Figure 6: CBOE SKEW and Kelly-Jiang tail risk measure

This figure contains a plot of the CBOE SKEW Index (the black solid line) estimated over the 1990-2015 sample period, and the KJ tail risk measure estimated using observations from 1926 to 2015.
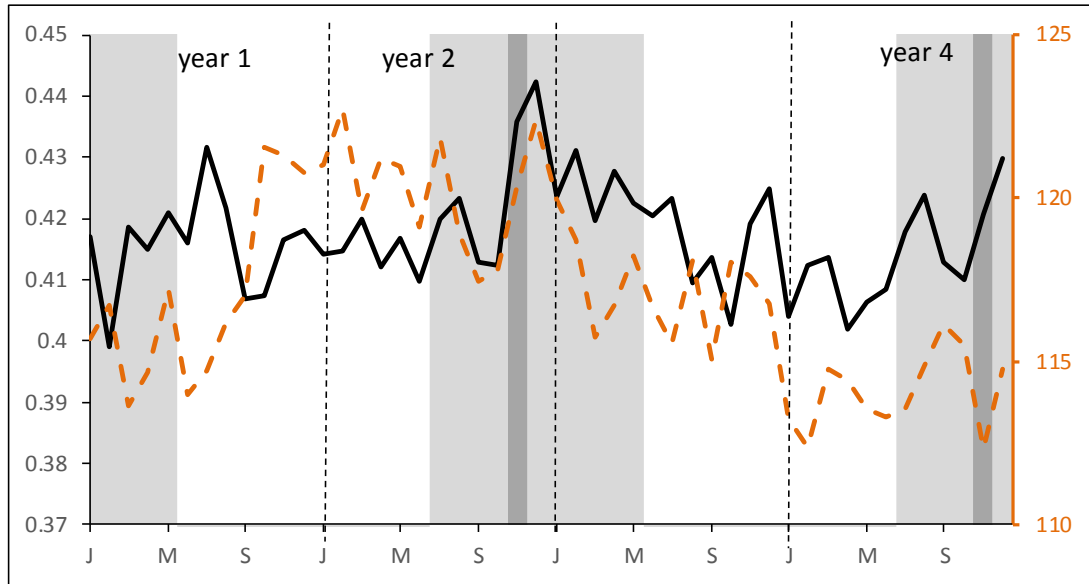
Figure 7: Averaged excess returns versus CAPM-betas for size-B/M and industry portfolios
Panel A plots the averaged excess returns against the market betas estimated for Fama-French 25 size-B/M and 49 industry-sorted portfolios, We superimpose an ordinary least squared best fitted line in the panel. Panel B plots SMLs for periods surrounding midterm elections and Panel C provides the SMLs for several key periods surrounding Presidential elections. We provide the regression estimates for several key SMLs in Panel B and we use the same full-sample beta estimate for each SML. We also use the same y-axis scale in all the panels to ease comparison. The sample period covers from 1931:06 to 2015:12.

Panel A: Full sample

Panel B: Periods surrounding midterm elections

Panel C: Periods surrounding Presidential elections
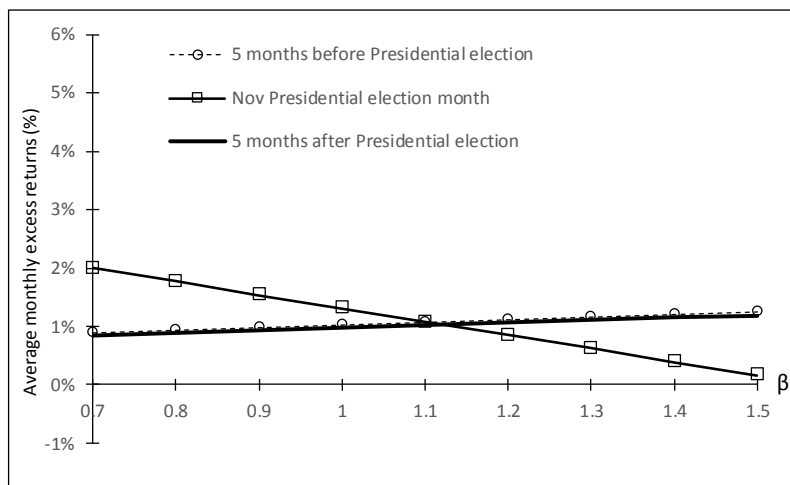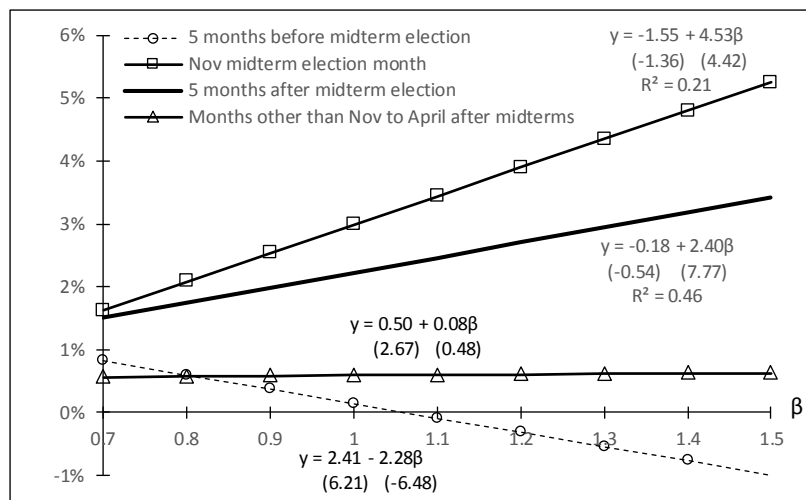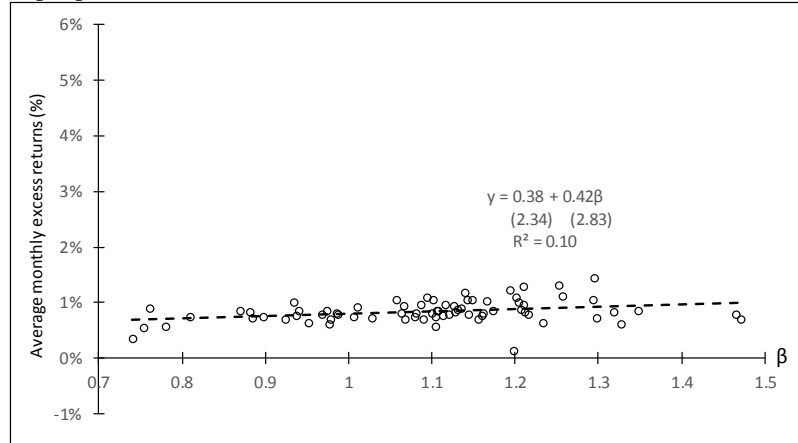
Table 1: Mean estimates for financial and economic indicators surrounding midterm and Presidential elections

Column (1) reports the sample mean estimates of various financial and economic indicators. Columns (2) and (3) report the mean estimates for months of June to October prior to midterm and Presidential elections whereas Column (4) reports their differences. Columns (5) to (7) report analogous statistics for post-election months from December to the following April. Column (8) reports the differences between Columns (2) and (5) whereas Column (9) reports the differences between Columns (3) and (6). The numbers in brackets are the corresponding *p*-values of the mean values derived from clustered standard errors. To ease readability, statistically significant estimates (i.e., with *p*-values < 0.10) are highlighted in bold. The "ann" acronym means "annualized". Dictated by data availability, the variables have different starting sample dates but they all end in 2015.

	Sample start	Sample mean	Pre-election (Jun – Oct)			Post-election (Dec – Apr)			Post minus pre	
		(1)	Midterm (2)	Presidential (3)	Diff (4)	Midterm (5)	Presidential (6)	Diff (7)	Midterm (8)	Presidential (9)
Panel A: Equity security										
Monthly excess returns (ann., %)	1815	1.72	-1.73 [0.67]	5.69 [0.15]	-7.42 [0.19]	**13.24 [0.00]**	0.64 [0.80]	**12.60 [0.00]**	**14.95 [0.00]**	-5.01 [0.33]
Monthly real returns (ann., %)	1871	5.69	-0.19 [0.97]	**12.08 [0.03]**	-12.67 [0.12]	**17.19 [0.00]**	6.58 [0.15]	**10.60 [0.07]**	**17.38 [0.01]**	-5.50 [0.43]
Panel B: Treasury security										
Monthly excess returns (ann., %)	1942	2.03	**6.97 [0.08]**	5.09 [0.17]	1.88 [0.72]	-1.72 [0.54]	-1.90 [0.54]	0.18 [0.96]	**-8.68 [0.07]**	-6.99 [0.15]
Panel C: Mutual funds										
Monthly excess returns on equity (ann., %)	1993	7.51	0.69 [0.95]	-12.25 [0.56]	12.94 [0.57]	**17.23 [0.03]**	8.61 [0.26]	8.62 [0.37]	16.54 [0.18]	20.86 [0.34]
Monthly excess returns on money market (ann., %)	1993	2.58	-2.87 [0.28]	8.20 [0.35]	-11.07 [0.21]	0.82 [0.62]	15.94 [0.28]	-15.12 [0.29]	3.70 [0.23]	7.74 [0.63]
Panel D: Other indicators										
Quarterly growth rates in real GDP (ann., %)	1947	3.24	**3.05 [0.00]**	**3.20 [0.00]**	-0.15 [0.89]	**3.92 [0.00]**	**3.00 [0.00]**	0.92 [0.27]	0.87 [0.38]	-0.20 [0.84]
Quarterly changes in real private spending (ann., %)	1947	4.66	1.05 [0.62]	**6.64 [0.00]**	**-5.59 [0.05]**	**6.57 [0.00]**	**4.43 [0.03]**	2.14 [0.42]	**5.52 [0.05]**	-2.20 [0.42]
Quarterly changes in real government spending (ann., %)	1947	2.89	3.49 [0.18]	**3.33 [0.01]**	0.16 [0.96]	**5.49 [0.10]**	**3.13 [0.00]**	2.36 [0.48]	2.00 [0.62]	-0.20 [0.90]
Monthly growth rates in industrial production (%)	1919	3.34	**6.53 [0.09]**	**4.38 [0.04]**	2.15 [0.61]	**4.53 [0.02]**	1.72 [0.54]	2.81 [0.44]	-2.00 [0.65]	-2.66 [0.44]
Monthly growth rates in civilian employment (%)	1947	1,41	**1.48 [0.00]**	**0.91 [0.01]**	0.57 [0.29]	**1.31 [0.02]**	**1.27 [0.08]**	0.04 [0.96]	-0.17 [0.79]	0.36 [0.64]
Monthly changes in unemployment rate (%)	1947	0.00	-0.01 [0.65]	0.01 [0.78]	-0.02 [0.59]	-0.02 [0.52]	0.03 [0.42]	-0.05 [0.31]	-0.01 [0.82]	0.02 [0.57]
Monthly changes in Federal Funds rate (basis points)	1954	-0.08	-5.18 [0.49]	1.29 [0.77]	-6.48 [0.45]	-8.83 [0.17]	3.12 [0.57]	-11.95 [0.15]	-3.64 [0.71]	1.82 [0.79]
Panel E: Political uncertainty										
Monthly changes in BBD's EPU index (in %)	1900	2.72	**2.85 [0.02]**	**4.25 [0.00]**	-1.41 [0.41]	0.09 [0.92]	0.74 [0.53]	-0.65 [0.66]	**-2.76 [0.06]**	**-3.52 [0.05]**

Table 2: Equity premiums in the months around midterm and presidential elections

The table reports the impact of midterm and presidential elections. The numbers in parentheses are the *t*-statistics of the regression coefficients obtained using Newey-West (1987) heteroscedasticity and autocorrelation corrected standard errors. Columns (2) and (4) are for midterm and presidential elections held in years 2 and 4, respectively, and Columns (1) and (3) are for pseudo-elections held in years 1 and 3, respectively. Column (5) is for the full regression equation (1) and Column (6) is for the adjusted equation (2) to account for the January effect. Columns (7) and (8) extend on the regression by including $\mathbf{X}$={DY, TS, RREL} as explanatory variables, with Column (7) regressing on equity returns in excess of the risk-free rate (annualized and expressed in percentages) and Column (8) repeats the regression for equity real returns. Finally, Column (9) reports the results for excess returns on CRSP TNA-weighted fund index, whereas Column (10) reports analogous results for excess returns on the 30-year Treasury security controlling for Ludvigson and Ng (2009) five factors. For brevity, the coefficient estimates for the January dummy and explanatory variables are suppressed. ". Dictated by data availability, the variables have different starting sample dates but they all end in 2015. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

	EQ–RF (1)	EQ–RF (2)	EQ–RF (3)	EQ–RF (4)	EQ–RF (5)	EQ–RF (6)	EQ–RF (7)	EQ–INF (8)	Treas-RF (9)	MF-RF (10)
$ME_{t-5:t-1}$	-7.42 (-1.58)	-2.26 (-0.55)	-6.36 (-1.70)*	4.37 (1.14)	-1.19 (-0.28)	-0.36 (-0.09)	-1.99 (-0.38)	-3.59 (-0.63)	6.10 (1.74)*	-10.17 (-1.46)
$ME_t^{\text{year 1}}$	8.31 (0.80)									
$ME_t^{\text{year 2}}$		3.81 (0.57)			4.87 (0.72)	5.70 (0.84)	14.12 (1.77)*	13.65 (1.55)	5.98 (0.73)	28.15 (2.50)**
$ME_t^{\text{year 3}}$			-2.36 (-0.40)							
$ME_t^{\text{year 4}}$				0.75 (0.09)						
$ME_{t+1:t+5}$	-0.03 (-0.01)	12.84 (3.91)***	0.19 (0.06)	-0.68 (-0.18)	13.91 (4.12)***					
$ME^{\text{adj}}_{t+1:t+5}$						12.46 (3.65)***	9.98 (2.60)***	10.15 (2.66)***	-8.42 (-1.96)**	15.41 (3.60)***
$PE_{t-5:t-1}$					6.24 (1.35)	7.06 (1.51)	8.01 (1.36)	8.76 (1.44)	6.62 (1.74)*	-3.47 (-0.45)
PE_t					2.61 (0.31)	3.44 (0.41)	10.47 (0.95)	10.83 (0.98)	11.97 (0.90)	5.07 (0.30)
$PE_{t+1:t+5}$					1.19 (0.33)					
$PE^{\text{adj}}_{t+1:t+5}$						1.06 (0.26)	2.37 (0.50)	3.54 (0.72)	1.69 (0.35)	-0.72 (-0.13)
Intercept	2.32 (1.67)*	0.52 (0.38)	2.41 (1.68)*	1.32 (1.00)	-0.55 (-0.33)	-1.37 (-0.79)	10.66 (0.69)	16.83 (1.08)	1.60 (0.93)	24.43 (1.40)
January dummy	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Explanatory vars	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Adj. R^2 (%)	0.09	0.40	-0.00	-0.07	0.38	0.44	1.52	1.53	19.8	2.74
Obs.	2412	2412	2412	2412	2412	2412	1728	1728	670	648
Sample starts	1815	1815	1815	1815	1815	1815	1872	1872	1960	1962

Table 3: Seemingly unrelated regression results

The table reports the impact of midterm and presidential elections on monthly equity premiums and EPU using regression Equations (4) and (5). The numbers in parentheses are the t-statistics of the regression coefficients. Corr(r_t , U_t) is the correlation estimate of the regression residuals. Dictated by data availability, the variables have different starting sample dates but they all end in 2015. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

	Panel A: EPU			Panel B: Orthogonalized EPU			Panel C: PCI		
	OLS	SUR		OLS	SUR		OLS	SUR	
	U_t	r_t	U_t	U_t	r_t	U_t	U_t	r_t	U_t
$ME_{t-5:t-1}$	0.67	-3.56	0.66	1.95	-3.49	1.95	2.76	-9.14	2.76
	(0.42)	(-0.66)	(0.29)	(0.48)	(-0.64)	(0.29)	(1.59)	(-1.06)	(1.15)
$ME_t^{\text{year 2}}$	9.27	17.42	9.27	11.69	17.47	11.69	-6.34	24.01	-6.34
	(0.10)*	(1.55)	(1.97)**	(0.70)	(1.56)	(0.85)	(-0.88)	(1.34)	(-1.28)
$ME^{\text{adj}}_{t+1:t+5}$	-4.82	10.90	-4.82	-12.70	11.04	-12.70	-3.26	15.33	-3.26
	(-2.76)**	(1.83)*	(-1.93)*	(-2.48)**	(1.86)*	(-1.74)*	(-1.86)*	(1.61)	(-1.24)
$PE_{t-5:t-1}$	2.07	8.16	2.07	2.91	8.26	2.91	1.77	-10.60	1.77
	(1.22)	(1.51)	(0.91)	(0.64)	(1.53)	(0.44)	(1.11)	(-1.16)	(0.70)
PE_t	9.46	12.65	9.46	11.28	12.59	11.28	-3.03	-20.11	-3.03
	(1.52)	(1.13)	(2.01)**	(0.64)	(1.12)	(0.82)	(-0.71)	(-1.06)	(-0.58)
$PE^{\text{adj}}_{t+1:t+5}$	-4.64	4.04	-4.64	-11.77	3.94	-11.77	-2.60	-1.73	-2.60
	(-2.21)**	(0.68)	(-1.86)*	(-2.21)**	(0.67)	(-1.62)	(-1.28)	(-0.18)	(-0.98)
Intercept	2.18	16.84	2.18	-0.84	15.63	-0.84	0.91	31.94	0.91
	(3.90)***	(1.45)	(2.32)**	(-0.51)	(1.34)	(-0.31)	(1.55)	(1.23)	(0.90)
January dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F = {DY, TS, RREL}	No	Yes	No	No	Yes	No	No	Yes	No
Adj. R^2 (%)	1.64	1.23	1.64	0.72	1.22	0.72	1.90	0.11	1.90
Obs.	1392	1392	1392	1392	1392	1392	420	420	420
Corr		-0.16			-0.11			0.02	

Table 4: Cross-section equity premiums in the months surrounding elections

The table reports the impact of midterm and presidential elections using generalized regression Equation (3). The numbers in parentheses are the t-statistics of the regression coefficients obtained using standard errors clustered at the firm level. The sample period covers from 1927:01 to 2015:12 for 1,160,443 observations (8,165 firms). *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

	(1)	(2)	(3)	(4)
$ME_{t-5:t-1}$	-9.74	-9.84	-7.93	0.07
	(-20.8)***	(-21.0)***	(-16.6)***	(0.17)
$ME_t^{\text{year 2}}$	28.53	28.40	30.30	3.69
	(32.0)***	(31.8)***	(33.7)***	(4.55)***
$ME_{t+5:t+1}$	21.12	21.12		
	(48.7)***	(48.8)***		
$ME^{\text{adj}}_{t+5:t+1}$			14.79	1.56
			(34.3)***	(3.82)***
$PE_{t-5:t-1}$	-4.17	-4.11	-1.24	-0.28
	(-8.02)***	(-7.87)***	(-2.31)**	(-0.62)
PE_t	5.85	5.86	8.72	5.05
	(6.45)***	(6.45)***	(9.49)***	(5.85)***
$PE_{t+5:t+1}$	0.50	0.55		
	(1.26)	(1.40)		
$PE^{\text{adj}}_{t+5:t+1}$			-0.17	-0.49
			(0.70)	(1.25)
January dummy	No	No	Yes	Yes
X_{it}	No	No	No	Yes
F_t	No	No	No	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	No	Yes	Yes	Yes
Adj. R^2 (%)	2.20	2.36	2.36	19.1

Table 5: Fama-MacBeth regressions

The top four rows in Panels A to C report the estimates from Fama-MacBeth regression Equation (7) when 1-month-ahead portfolio excess returns (expressed in percentages per month) are regressed on K, with K is either the CAPM beta (CAPM-β), political uncertainty beta (PU-β), idiosyncratic volatility (IVOL) or the MAX effect. We report the cross-sectional regressions for Fama-French 25 size-B/M and 49 industry-sorted portfolios. The bottom row in the panels reports the estimates of Fama-MacBeth regression Equation (8) when the 1-month-ahead portfolio excess returns are regressed on a combination of Ks. The numbers in parentheses are the *t*-statistics of the regression coefficients obtained using standard errors computed as the time-series standard deviation of the cross-sectional estimates divided by the square root of the sample lengths. Panel D reports the mean differences in implied risk premiums between states II (Panel B) and state I (Panel A). The sample period covers from 1931:06 to 2015:12. *, ** and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Panel A: Other months (state I)

Intercept	CAPM-β	PU-β	IVOL	MAX
0.56	0.01			
(3.03)***	(0.03)			
0.61		-2.55		
(3.12)***		(-0.62)		
0.69			-4.79	
(3.51)***			(-2.62)***	
0.63				-0.03
(3.54)***				(-0.39)
0.56	0.02	0.76	-9.17	0.23
(2.98)***	(0.09)	(0.44)	(-3.71)***	(2.66)***

Panel B: Post midterm (state II)

Intercept	CAPM-β	PU-β	IVOL	MAX
0.09	2.31			
(0.15)	(3.09)***			
2.03		19.32		
(4.64)***		(1.72)*		
2.48			3.96	
(5.55)***			(0.67)	
2.07				0.35
(4.83)***				(1.73)*
0.13	1.76	16.35	-4.76	0.19
(0.24)	(2.45)**	(1.50)	(-0.72)	(0.81)

Panel C: Post Presidential (state III)

Intercept	CAPM-β	PU-β	IVOL	MAX
1.40	-0.36			
(2.73)***	(-0.46)			
0.87		14.21		
(1.62)		(1.20)		
1.08			-2.57	
(1.77)*			(-0.52)	
1.07				-0.07
(1.86)*				(-0.39)
1.45	-0.63	17.62	-7.61	0.15
(2.89)***	(-0.84)	(1.51)	(-0.95)	(0.53)

Panel D: Differences in implied risk premiums between states II and I

CAPM-β	PU-β	IVOL	MAX
2.30	21.87	8.75	0.38
(3.15)***	(1.98)**	(1.53)	(1.91)*

Table 6: Sharpe ratio results

Panel A describes various strategies used to estimate the annualized Sharpe ratio (SR). Panel B reports the SR results for the respective strategies. Following convention, the SR is annualized by multiplying the monthly SR by $\sqrt{12}$. The t-statistic of the annualized Sharpe ratio is calculated by multiplying SR with the square root of $T/12$ where $T = 2412$ monthly observations. The middle of panel B reports the 95 percentile bootstrapped Sharpe ratios and the corresponding t-statistics. In particular, we randomly sample (with replacement) the stock index time-series monthly returns for 5000 times. For each ith time, we recalculate the SRs of the respective strategies. The bottom of panel B contains the annualized adjusted Sharpe ratios of Harvey and Liu (2014, 2015) calculated using Bonferroni, Holm and BHY methods, respectively. The adjacent parentheses report the haircuts (i.e., the percentage changes in the adjusted Sharpe ratios relative to the conventional Sharpe ratios). The sample period covers from 1815:01 to 2015:12.

Panel A

Strategy	Description
0	Buy and hold the equities
1	Invest in equities from December after midterm elections through April the following year and in the risk-free assets in other months
2	Invest in equities from December after President elections through April the following year and in the risk-free assets in other months
3	Invest in equities in winter months (November through April in the following year) and in the risk-free assets in summer months (May through October)
4	Invest in equities in year 3 of the Presidential cycle and in the risk-free assets in other years

Panel B

	Strategy 0	Strategy 1	Strategy 2	Strategy 3	Strategy 4
Summary statistics					
Mean monthly excess returns (%)	0.143	0.117	0.006	0.194	0.101
Std dev of monthly returns (%)	4.72	1.43	1.50	3.28	2.27
Annualized SR	0.11	0.28	0.01	0.21	0.15
t-stat of SR	1.49	4.03	0.18	2.91	2.18
Bootstrapped statistics					
95% bootstrapped SR	0.22	0.15	0.14	0.18	0.17
95% bootstrapped *t*-stat	3.16	2.14	2.05	2.61	2.47
Harvey-Liu statistics					
Bonferroni SR	0.00 (100%)	0.14 (53%)	0.00 (100%)	0.00 (100%)	0.00 (100%)
Holm SR	0.00 (100%)	0.14 (52%)	0.00 (100%)	0.00 (100%)	0.00 (100%)
BHY SR	0.00 (100%)	0.20 (30%)	0.00 (100%)	0.11 (46%)	0.00 (100%)

Table 7: Congress and White House effects

This table reports M-P gap under when the Congress and/or White House are governed by either the Democrats or Republicans. The numbers in brackets are the corresponding *p*-values of the mean values derived from clustered standard errors. In Panel D, the M-P gap of 35.05 suggests the average M-P gap if the White House-Democratic controlled administration is followed by a White House-Republican controlled administration. The sample period covers from 1857 to 2015. To ease readability, statistically significant estimates (with *p*-values < 0.10) are highlighted in bold.

|		Dem	Rep
Panel A: Sorted by WH			
Post midterm elections		**15.88 [0.01]**	**14.42 [0.01]**
Post Presidential elections		6.87 [0.33]	-0.12 [0.97]
M-P gap		9.01 [0.30]	**14.54 [0.04]**
Panel B: Sorted by Congress			
Post midterm elections		**20.36 [0.00]**	7.84 [0.17]
Post Presidential elections		1.78 [0.77]	4.16 [0.37]
M-P gap		**18.58 [0.02]**	3.68 [0.61]
Panel C: Sorted by WH & Congress		WH(D)	WH(R)
Post midterm elections	C(D)	**17.92 [0.08]**	**21.92 [0.00]**
Post Presidential elections		5.52 [0.48]	-6.23 [0.54]
M-P gap		12.41 [0.30]	**28.14 [0.02]**
Post midterm elections	C(R)	**13.58 [0.05]**	2.75 [0.76]
Post Presidential elections		17.05 [0.32]	2.55 [0.60]
M-P gap		-3.47 [0.81]	0.20 [0.98]
Panel D: WH (row) followed by WH (coln)		WH(D)	WH(R)
Post midterm elections	WH(D)	**19.45 [0.08]**	**24.64 [0.01]**
Post Presidential elections		4.53 [0.60]	**-10.41 [0.02]**
M-P gap		14.92 [0.26]	**35.05 [0.00]**
Post midterm elections	WH(R)	**15.01 [0.02]**	8.96 [0.18]
Post Presidential elections		10.12 [0.44]	5.37 [0.39]
M-P gap		4.89 [0.72]	3.59 [0.69]
Panel E: Congress (row) followed by Congress (coln)		C(D)	C(R)
Post midterm elections	C(D)	**26.76 [0.00]**	12.50 [0.19]
Post Presidential elections		3.22 [0.64]	0.81 [0.95]
M-P gap		**23.54 [0.01]**	11.69 [0.44]
Post midterm elections	C(R)	5.72 [0.37]	5.91 [0.41]
Post Presidential elections		3.03 [0.46]	2.91 [0.58]
M-P gap		2.68 [0.70]	3.00 [0.72]

Online Appendix

Appendix A: Variable descriptions, sample periods and data sources

This table describes the remaining variables used in the study, as well as the sample period and their data source. The acronyms shown in the 'data source' column are as follows: AER (https://www.aeaweb.org/articles?id=10.1257/aer.20140913), AG (Prof. Amit Goyal's website at http://www.hec.unil.ch/agoyal/), PHIL (https://www.philadelphiafed.org/research-and-data), DS (DataStream), FRED (https://fred.stlouisfed.org/), HS (Homer, S., and Sylla, R., (2005). *A history of interest rates*. John Wiley and Sons), LUD (Prof. Sydney Ludvigson's website at https://www.sydneyludvigson.com/), MM (Prof. Manela's website at http://apps.olin.wustl.edu/faculty/manela/), NB (NBER Macrohistory database) ,QDL (www.quandl.com), RS (Robert Shiller's website at http://www.econ.yale.edu/~shiller/) and SWT (Prof. William Schwert's website at http://schwert.ssb.rochester.edu/).

Variable	Sample period	Data source	Description
Risk-free rate	1926-2015	CRSP	Ibbotson one-month treasury rate
	1871-1925	AG	Instrumented based on commercial paper rates for New York City as defined in Welch and Goyal (2008)
	1815-1870	NB & HS	Following Golez and Koudijs (2017), we use the resulting coefficient estimates of Welch and Goyal (2008) to predict monthly risk-free rate from 1815 to 1870. The predicted risk-free rate (y) is obtained from the following equation: y = −0.004 + 0.886 x commercial paper rates (CPRs), where CPRs are sourced from NBER Macrohistory database and Homer and Sylla (2005, Table 44).
GDP	1947-2015	FRED	Quarterly GDP official rate released by U.S. Bureau Economic of Analysis (BEA)
	1875-1946	AER	Quarterly real GDP series constructed by Owyang et al. (2013)
Dividend yield	1872-2015	AG	Log of a 12-month moving sum of dividends minus the log of lagged stock prices; see Welch and Goyal (2008)
Term spread	1872-2015	AG	Long term 10-year government yield (obtained from RS) minus three-month Treasury rate
Relative real rate	1872-2015	AG	The difference between the 3-month T-Bill rate and its one-year moving average
NVIX	1900-2015	MM	Manela and Moreira (2017) news-implied volatility index
Bond macro factors	1960-2015	LUD	Ludvigson and Ng's (2009) top five macro factors to explain bond premium
Industrial production	1919-2015	FRED	Monthly industrial production rate
Unemployment	1948-2015	FRED	Monthly unemployment rate
Employment	1948-2015	FRED	Monthly civilian employment level (in thousands of persons)
PAYEMS	1939-2015	FRED	Monthly total nonfarm payrolls (in thousands of persons)
Federal Funds rate	1954-2015	FRED	Monthly effective Federal Funds rate
CPI	1871-2015	RS	Monthly consumer price index rate
S&P funds	1988-2015	DS	S&P 500 Composite Total Returns index
S&P futures	1982-2015	QDL	S&P 500 Continuous Futures contract
PCI	1981-2015	PHIL	Azzimonti's (2017) monthly Partisan Conflict Index
Government sector	1947-2015	FRED	Real Government Consumption Expenditures and Gross Investment, in Federal, in defense, and in nondefense
Private sector	1947-2015	FRED	Real Gross Private Domestic Investments and Fixed Investments in Residential, in Non-Residential, in Non-Residential (Structures) and in Non-Residential (Equipment)
Schwert's equity index	1802-1925	SWT	Schwert's 1802-1925 monthly equity index (purchased from William Schwert)

Appendix B: Biannual changes in U.S. equity prices over the four-year cycle

The figure plots the average of biannual changes in U.S. equity prices from years 2 to 3 (solid line) surrounding the midterm election, and from years 4 to year 1 (dashed line) surrounding the Presidential election. The federal November election months in years 2 and 4 are highlighted in dark grey whereas the five-month period prior to and following the November elections is highlighted in light grey. Panel A displays the plots in the first half of the sample period, whereas Panel B presents the analogous plots in the second half.

Panel A: 1815-1914

Panel B: 1915-2015

71
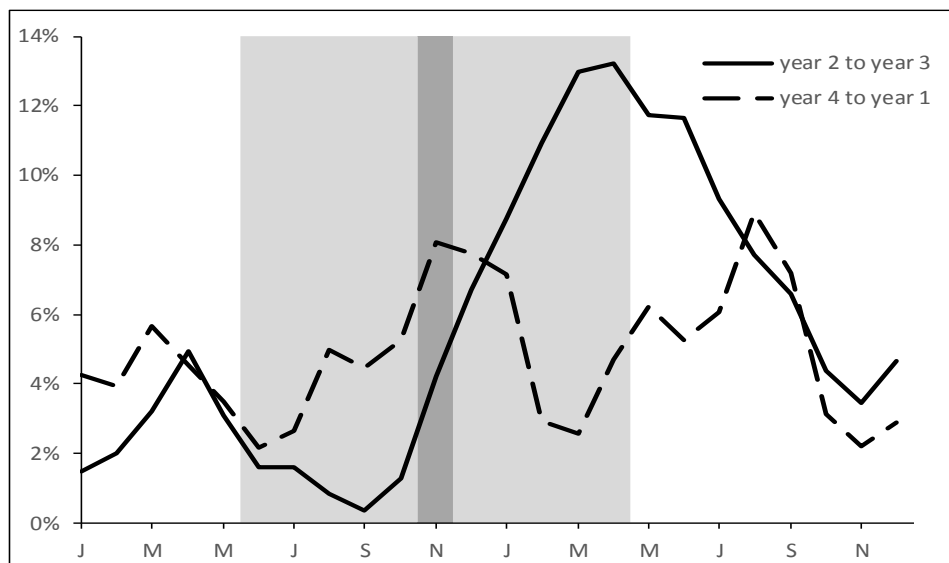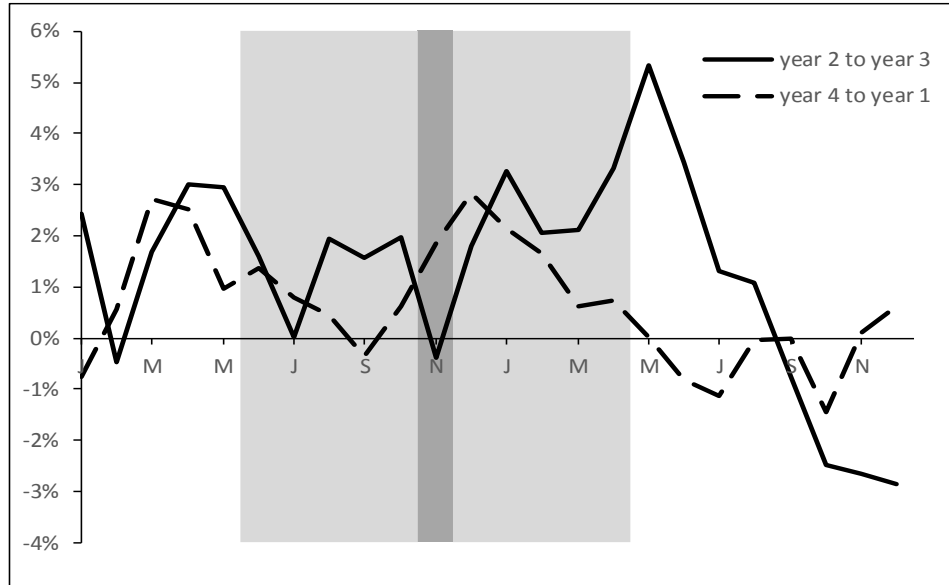
Appendix C: Cumulative wealth of investing in the U.S. equity market in each Presidential cycle

This figure plots the cumulative wealth of an investor who adopts two mutually exclusive strategies by entering the equity market at the end of November after Presidential election (blue line) and after the succeeding midterm election (black line) and buy-and-hold for 12 months before exiting. Each strategy begins with a $100 investment. The dotted line shows the terminal wealth of the strategies in April (i.e., five months after the initial investment). The main takeaway from the figure is that black line dominates the blue line when the investment reaches April the following year for nearly two-third of the past 50 Presidential cycles over the 1815-2015 sample period.
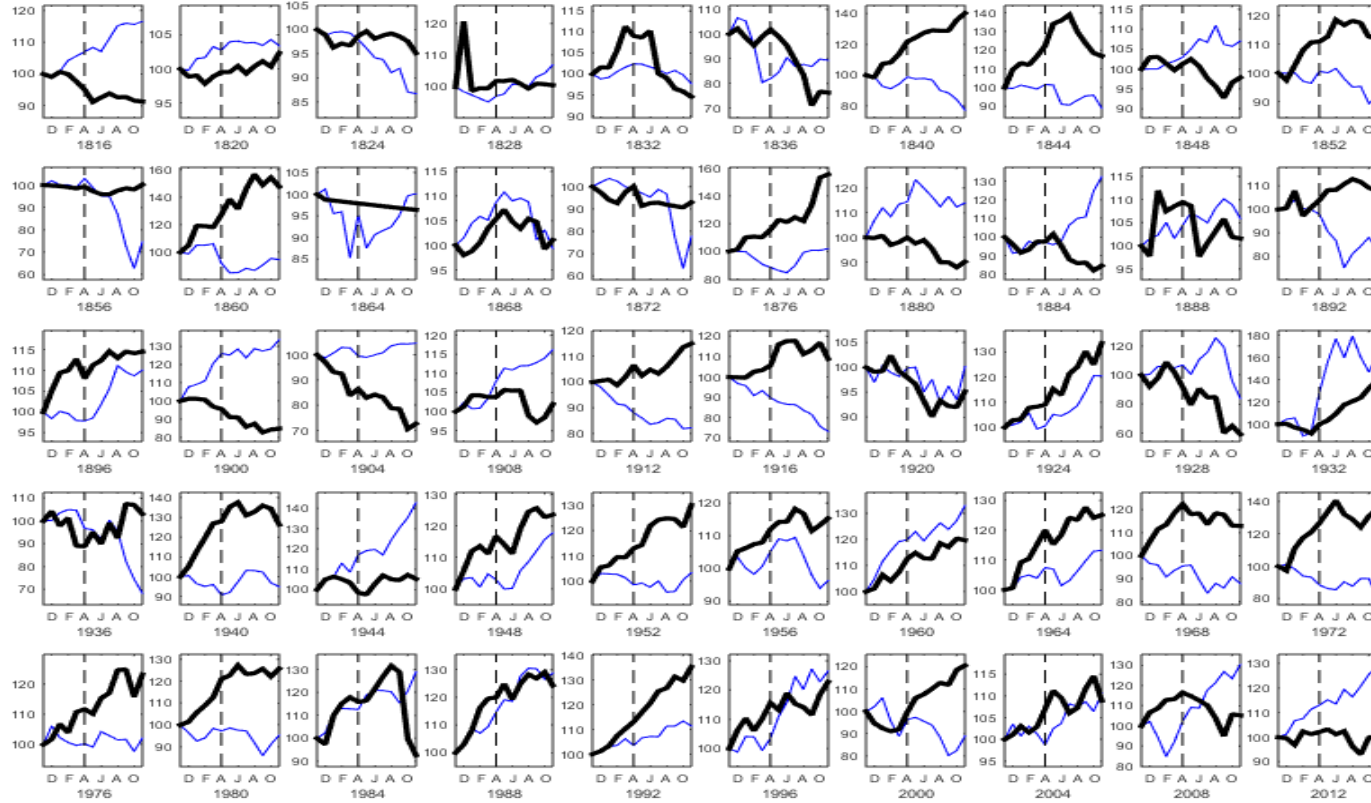
Appendix D: Mean estimates for financial and economic indicators surrounding midterm and Presidential elections

Column (1) reports the sample mean estimates of various financial and economic indicators. Columns (2) and (3) report the mean estimates for months of June to October prior to midterm and Presidential elections whereas Column (4) reports their differences. Columns (5) to (7) report analogous statistics for post-election months from December to the following April. Column (8) reports the differences between Columns (2) and (5) whereas Column (9) reports the differences between Columns (3) and (6). The numbers in brackets are the corresponding *p*-values of the mean values derived from clustered standard errors. To ease readability, statistically significant estimates (i.e., with *p*-values < 0.10) are highlighted in bold. The "ann" acronym means "annualized". Dictated by data availability, the variables have different starting and ending sample dates.

	Sample Period	Sample mean (1)	Pre-election (Jun – Oct) Midterm (2)	Pre-election (Jun – Oct) Presidential (3)	Pre-election (Jun – Oct) Diff (4)	Post-election (Dec – Apr) Midterm (5)	Post-election (Dec – Apr) Presidential (6)	Post-election (Dec – Apr) Diff (7)	Post minus pre Midterm (8)	Post minus pre Presidential (9)
Panel A: Equity securities										
A Monthly excess returns using 1926-2015 CRSP value-weighted index spliced with Goetzmann et al.'s 1815-1925 equity index but post election period includes November (ann., %)	1815-2015	1.72	-1.73 [0.67]	5.69 [0.15]	-7.42 [0.19]	**11.70 [0.00]**	0.88 [0.78]	**10.82 [0.02]**	**13.44 [0.01]**	-4.81 [0.34]
B Monthly excess returns using 1926-2015 CRSP value-weighted index spliced with Goetzmann et al.'s 1815-1925 equity index (ann., %)	1815-1914 (sub-period I)	-3.26	-3.71 [0.33]	-0.32 [0.92]	-3.39 [0.50]	5.60 [0.19]	-4.48 [0.30]	**10.08 [0.10]**	**9.93 [0.10]**	-4.16 [0.44]
C Monthly excess returns using 1926-2015 CRSP value-weighted index spliced with Goetzmann et al.'s 1815-1925 equity index (ann., %)	1915-2015 (sub-period II)	6.80	-0.54 [0.94]	**12.58 [0.08]**	-13.12 [0.19]	**20.86 [0.00]**	4.22 [0.41]	**16.64 [0.01]**	**21.40 [0.01]**	-8.37 [0.33]
D Monthly excess returns using 1926-2015 CRSP value-weighted index spliced with Schwert's 1802-1925 equity index (ann., %)	1802-2015	4.27	1.41 [0.72]	**8.55 [0.04]**	-7.14 [0.20]	**13.64 [0.00]**	2.06 [0.51]	**11.58 [0.01]**	**12.23 [0.01]**	-6.49 [0.20]
E Monthly excess returns using CRSP equal-weighted index (ann., %)	1926-2015	11.40	-7.15 [0.50]	13.69 [0.26]	-20.84 [0.19]	**32.94 [0.00]**	**16.86 [0.03]**	16.07 [0.13]	**40.08 [0.00]**	3.17 [0.82]
F Monthly excess returns using DJIA (ann., %)	1896-2015	3.54	-2.62 [0.67]	**10.15 [0.07]**	-12.77 [0.12]	**19.23 [0.00]**	3.65 [0.41]	**15.58 [0.02]**	**21.85 [0.01]**	-6.50 [0.35]
G Monthly excess returns using total returns on S&P500 funds (ann., %)	1988-2015	7.53	-3.07 [0.78]	-5.32 [0.70]	2.24 [0.90]	**20.38 [0.01]**	8.12 [0.23]	12.26 [0.18]	**23.45 [0.07]**	13.44 [0.37]
H Monthly excess returns using S&P500 Futures (ann., %)	1982-2015	5.70	0.03 [0.99]	-3.97 [0.74]	4.00 [0.79]	**21.74 [0.00]**	7.18 [0.23]	**14.56 [0.07]**	**21.70 [0.06]**	11.15 [0.41]
Panel B: Treasury securities										
I Monthly 5-year Treasury bond (ann., %)	1942-2015	1.60	**4.43 [0.06]**	3.52 [0.14]	0.92 [0.77]	0.63 [0.61]	0.50 [0.70]	0.13 [0.94]	-3.80 [0.14]	-3.01 [0.25]
J Monthly 10-year Treasury bond (ann., %)	1942-2015	1.69	**5.88 [0.08]**	4.19 [0.16]	1.69 [0.69]	0.06 [0.98]	0.56 [0.78]	-0.50 [0.88]	-5.82 [0.13]	-3.64 [0.29]

		Period	Mean								
K	Monthly 20-year Treasury bond (ann., %)	1942-2015	2.19	**7.31 [0.05]**	4.90 [0.19]	2.41 [0.63]	-0.79 [0.73]	-0.64 [0.81]	-0.15 [0.97]	**-8.10 [0.06]**	-5.55 [0.22]
	Panel C: Other indicators										
I	Quarterly growth rates in 1947-2015 real GDP spliced with Owyang et al's 1875-1946 GDP data (ann., %)	1875-2015	3.85	**4.92 [0.00]**	**5.91 [0.00]**	-0.99 [0.53]	**4.46 [0.01]**	**2.52 [0.09]**	1.95 [0.36]	-0.46 [0.81]	**-3.39 [0.07]**
J	Quarterly changes in real private spending in Non-residential: Structure (ann., %)	1947-2015	2.54	-2.00 [0.29]	**3.08 [0.08]**	**-5.07 [0.05]**	**4.89 [0.07]**	2.82 [0.30]	2.08 [0.58]	**6.89 [0.04]**	-0.26 [0.94]
K	Quarterly changes in real private spending in Non-residential: Equipment (ann., %)	1947-2015	5.67	1.85 [0.54]	**7.93 [0.01]**	-6.07 [0.15]	**8.35 [0.00]**	**5.31 [0.04]**	3.04 [0.38]	**6.50 [0.10]**	-2.62 [0.48]
L	Quarterly changes in real private spending in Residential (ann., %)	1947-2015	4.32	5.28 [0.42]	2.94 [0.38]	2.34 [0.75]	**10.43 [0.04]**	2.08 [0.47]	8.35 [0.14]	5.15 [0.52]	-0.86 [0.84]
M	Quarterly changes in real government spending: Federal (ann., %)	1947-2015	2.95	6.61 [0.36]	2.35 [0.20]	2.26 [0.67]	8.06 [0.14]	**3.17 [0.03]**	4.88 [0.37]	3.45 [0.63]	0.82 [0.72]
N	Quarterly changes in real government spending: Defense (ann., %)	1947-2015	2.74	4.88 [0.48]	0.88 [0.65]	4.00 [0.57]	8.84 [0.17]	**3.10 [0.08]**	5.74 [0.38]	3.96 [0.67]	2.12 [0.38]
O	Quarterly changes in real government spending: Nondefense (ann., %)	1947-2015	6.52	**5.49 [0.05]**	**7.52 [0.03]**	-2.03 [0.62]	**11.98 [0.04]**	5.11 [0.11]	6.87 [0.29]	6.48 [0.30]	-2.41 [0.59]
P	Quarterly changes in real government spending: Local and State (ann., %)	1947-2015	3.16	**2.56 [0.01]**	**4.17 [0.00]**	-1.61 [0.21]	**2.34 [0.00]**	**3.80 [0.01]**	-1.46 [0.31]	-0.21 [0.84]	-0.36 [0.82]
Q	Monthly growth rates in employment payroll (ann., %)	1939-2015	2.05	**2.53 [0.01]**	**2.05 [0.01]**	0.48 [0.67]	**2.00 [0.00]**	**1.83 [0.06]**	0.17 [0.87]	-0.53 [0.63]	-0.22 [0.84]
R	Monthly 10-year minus 3-mth Treasury term spread (%)	1871-2015	0.92	**0.98 [0.00]**	**1.06 [0.00]**	-0.08 [0.78]	**0.97 [0.00]**	**0.83 [0.00]**	0.14 [0.65]	-0.01 [0.97]	-0.23 [0.47]
S	Monthly Federal Funds rate (%)	1954-2015	5.00	5.01 [0.00]	4.86 [0.00]	0.14 [0.91]	4.46 [0.00]	5.19 [0.00]	-0.73 [0.58]	-0.55 [0.64]	0.33 [0.81]
T	Monthly 3-mth Treasury bill rate (ann., %)	1967-2015	3.69	**3.60 [0.00]**	**3.60 [0.00]**	0.00 [0.99]	**3.51 [0.00]**	**3.80 [0.00]**	-0.29 [0.63]	-0.09 [0.87]	0.20 [0.75]
U	Monthly changes in 3-mth Treasury bill rate (ann., %)	1967-2015	-0.00	0.03 [0.39]	**0.09 [0.01]**	-0.06 [0.24]	**-0.05 [0.04]**	-0.01 [0.60]	-0.04 [0.24]	**-0.08 [0.07]**	**-0.11 [0.01]**

Appendix E: M-P post-election gap (midterms versus succeeding Presidential elections)

Panel A plots the annualized average equity premium from December following midterm election in year 2 through April in year 3 (bar plot) and the annualized average equity premium over the same months post Presidential elections (dotted line) for each Presidential 4-year term. The annualized equity premiums are expressed in percentage points. Here, the midterms are compared to the succeeding Presidential elections. Panel B plots the annualized term-by-term "M-P post election gap", which is the difference between the post-midterm average equity premium (shown as bar plot in Panel A) and the post-Presidential average equity premium (shown as dotted line in Panel A) for each Presidential term. The rightmost black bar is the mean of the term-by-term M-P gap. The sample period covers 1816 through 2015.
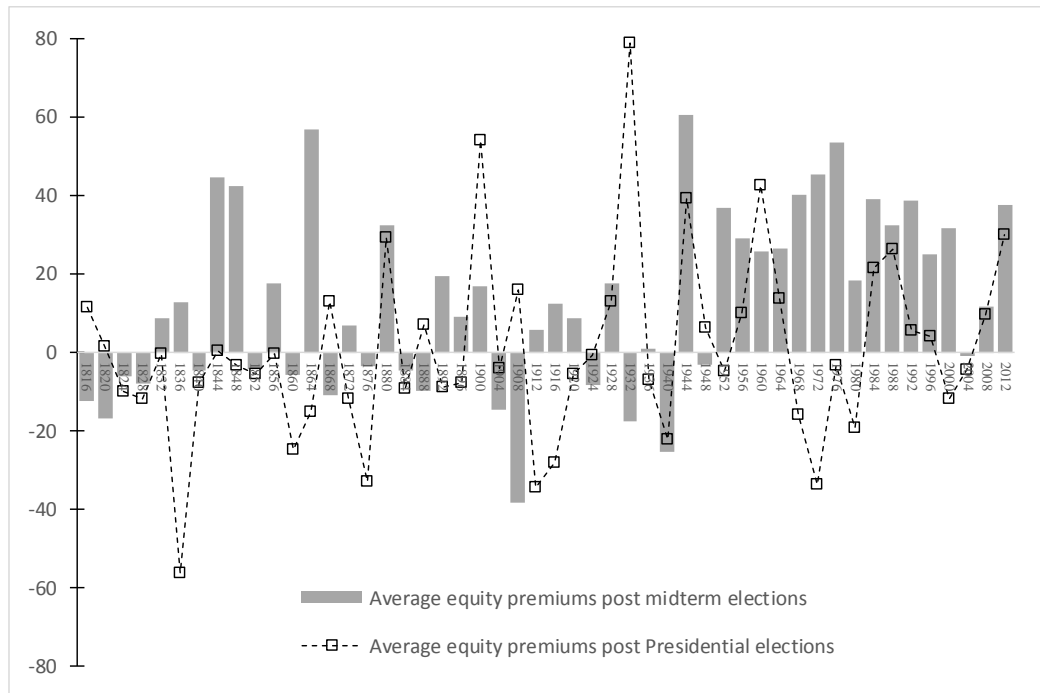

Panel A: Post-midterm and post-Presidential average equity premiums

Panel B: Term-by-term M-P post-election gap

Appendix F: U.S. equity and money market fund flows

This figure plots the monthly mean of six-month moving averages of U.S. mutual fund net flows (NF) as a percentage of prior-month total net assets (TNA) over the 4-year presidential cycle. The equity asset-class fund line is in black whereas the money market asset-class fund line is in orange. The federal November election months in years 2 and 4 are highlighted in dark grey whereas the five-month period prior to and following the November elections is highlighted in light grey. The sample period covers over five presidential cycles from 1993 to 2015.
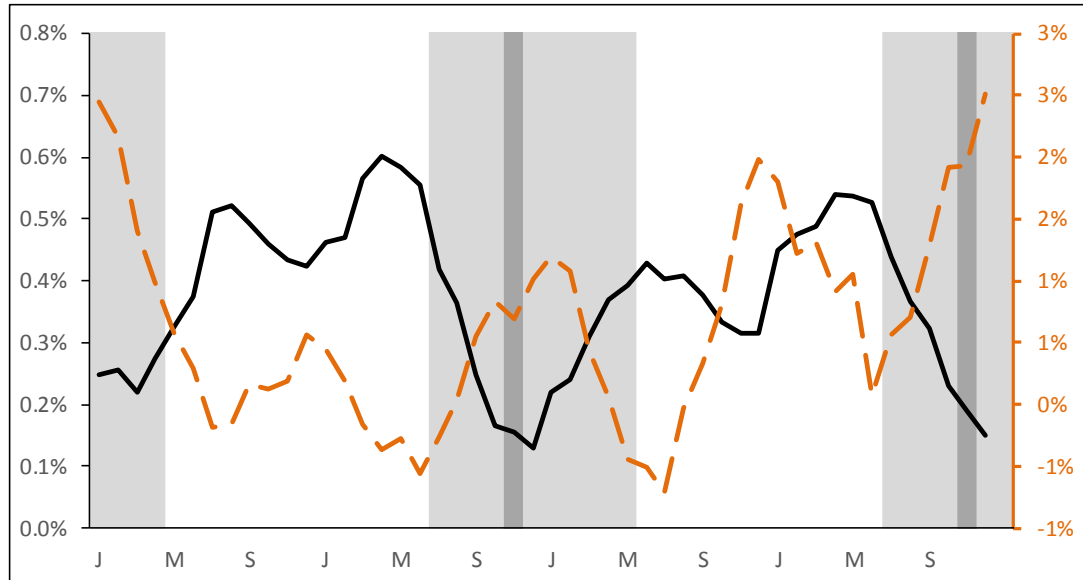
Appendix G: Kelly and Jiang's (2014) measure of tail risk

Kelly and Jiang (2014, KJ) employ a "dynamic power law" structure to capture the common variation in the tail risks of cross-section individual firms. Specifically, the lower tail of asset return i from time t to $t+1$, $R_{i,t+1}$, is specified as:

$$P\left(R_{i,t+1} < r | R_{i,t+1} < u_t \text{ and } \mathcal{F}_t\right) = \left(\frac{r}{u_t}\right)^{-a_i/\lambda_t}, \tag{G.1}$$

where $r < u_t < 0$ with u_t referring to the time-varying tail cutoff estimate, a_i is the firm-specific tail parameter and λ_t is KJ's tail risk measure at time t. Kelly and Jiang (2014, p.2842) note that "high values of λ_t correspond to "fat" tails and high probabilities of extreme returns".

We follow Kelly and Jiang (2014) and estimate λ_t from Equation (G.1) using all the NYSE/AMEX/NASDAQ stocks with share codes 10 and 11 over an extended sample period from 1926 to 2015. In particular, we estimate the λ_t tail exponent monthly by pooling all daily raw returns within the month, with u_t is assumed to represent the 5th percentile of the cross-section raw returns in the month.

Figure G below plots KJ's monthly standardized λ_t estimates from 1926 to 2015, whereas Figure 6 in the main text shows the average of KJ's unstandardized λ_t estimates over the four-year Presidential cycle. Note that the right-half of Figure G closely resembles the analogous plot given in Kelly and Jiang (2014, Figure 1).
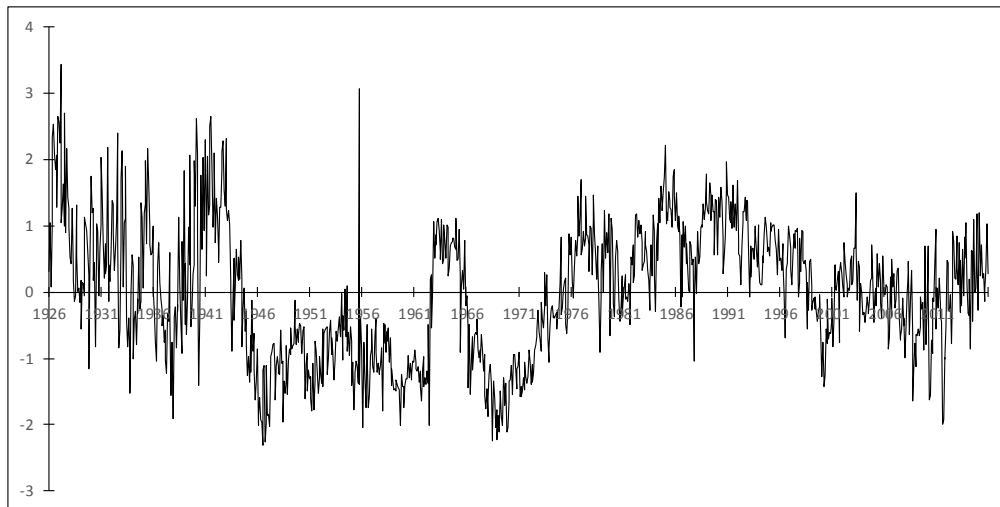

Figure G: Standardized monthly estimate of KJ tail exponent

Appendix H: Macroeconomic news announcements

This table represents descriptive statistics regarding good and bad economic news surprises reported in December after midterm and Presidential elections through April the following year. We only consider four key economic variables – FOMC Federal Funds target rates, unemployment rate, nonfarm payroll and produce price index (PPI) – that prior studies (see, e.g., Savor and Wilson, 2013; 2014) have shown to play a key role in affecting asset prices. The sample periods for the respective variables are dictated by the availability market consensus data. We source the FOMC surprises data from Kenneth Kuttner's personal website (http://econ.williams.edu/ people/knk1) and the market consensus data for the remaining variables from *Haver Analytics* and *Bloomberg*.

Panel A: Definitions

Variable	Good news	Bad news
FOMC Federal Funds rates	Expected rate > Realized rate	Expected rate < Realized rate
Unemployment rate	Expected rate > Realized rate	Expected rate < Realized rate
Nonfarm payroll	Expected number < Realized number	Expected number > Realized number
PPI	Expected number < Realized number	Expected number > Realized number

Panel B: Number of good news versus bad news

		Post midterm election		Post Presidential election	
Variable	Sample period	Good news	Bad news	Good news	Bad news
FOMC Federal Funds rates	1989-2008	8	3	5	5
Unemployment rate	1980-2015	23	11	16	16
16Nonfarm payroll	1985-2015	22	18	18	20
PPI	1982-2015	19	21	13	20
Total		72	53	52	61

Panel B: Proportion (p-values of the Binomial test are parenthesized)

Ratio	Post midterm election	Post Presidential election
Ratio of good news surprises	72/125 = 58% [0.11]	52/113 = 46% [0.45]

	Good news surprises	Bad news surprises
Post midterm election	53/124 = 58% [0.13]	53/114 = 46% [0.51]