The Market Value of Fed Independence: High-Frequency Evidence from a Natural Experiment *

Jérôme P. Taillard† Linghang Zeng‡

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Abstract

We quantify the market value of Federal Reserve independence by exploiting a natural experiment combined with minute-by-minute prediction market and TAQ trade data. On July 16, 2025, reports that President Trump was exploring ways to dismiss Chair Jerome Powell led to a sharp rise in the perceived probability of dismissal. Within two hours, Trump publicly dispelled these concerns, and probabilities quickly reverted. Equities reacted negatively to the increase in dismissal probabilities, with the episode reducing aggregate market value by an estimated $170–200 billion, before recovering as probabilities normalized. A linear extrapolation to full certainty implies potential losses exceeding $1 trillion. Cross-sectional evidence shows stronger negative effects for financial firms, highly leveraged firms, and those facing tighter debt constraints. Bond prices rose for short-to-intermediate maturities but fell for long maturities, resulting in a steepening of the yield curve. Concurrently, the dollar weakened against major currencies. All three markets subsequently retraced as dismissal probabilities reverted to pre-crisis levels.

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†Babson College, jtaillard1@babson.edu

‡Babson College, lzeng@babson.edu

The credibility of central bank independence is widely regarded as a cornerstone of modern monetary policy. Since Kydland and Prescott (1977) time-inconsistency critique, economists have emphasized that insulating monetary authorities from short-term political pressures helps anchor expectations and sustain low inflation Barro and Gordon (1983). In the United States, the Federal Reserve's independence is safeguarded by statute. Recently, however, the Federal Reserve has faced sustained political pressure to lower interest rates. While a vast literature documents the macroeconomic benefits of central bank independence, we know little about its market value. This gap is largely because threats to Fed independence are typically gradual and empirically difficult to identify and measure both the timing and intensity of such threats. In this paper, we exploit a natural experiment combined with minute-by-minute prediction market and TAQ trade data to cleanly identify the market reaction to a significant contemporaneous threat to Fed independence.

Conceptually, the sign of the financial market reaction to such a threat is ambiguous. For equities, stock prices could rise if investors anticipate that heightened political pressure on the Federal Reserve would lead to lower interest rates. However, concerns about policy uncertainty and higher long-run inflation expectations could raise risk premia and push stock prices lower. For Treasury bonds, short-maturity securities are expected to rally in anticipation of monetary easing, while the effect on longer maturities is ambiguous: yields could decline if investors expect lower policy rates to persist, or rise if they anticipate higher long-term inflation. Finally, the U.S. dollar is expected to weaken due to the erosion of the Fed's credibility.

To empirically test these hypotheses, we exploit a recent unexpected event that posed a serious threat to Fed independence. On the morning of July 26, 2025, reports that President Trump was seeking ways to dismiss Federal Reserve Chair Jerome Powell led to a sharp spike in the perceived probability of dismissal and a brief market panic. Within two hours, President Trump publicly denied any imminent threat during a televised press Q&A at the White House, and probabilities quickly reverted to their pre-crisis levels. We use data

from prediction markets, Polymarket and Kalshi, to measure minute-by-minute changes in the market-implied probability of Powell's dismissal, and trace these shifts to intraday movements in equity, bond, and currency markets obtained from TAQ. This design captures both the run-up in perceived risk during the crisis and the rapid reversal once the threat was dismissed, allowing us to isolate and measure the effect of a credible challenge to the Fed's independence.

This event receives extensive national news coverage and sparks a broader debate about Federal Reserve independence. To more formally gauge public attention, we use Google Trends indices for searches of "Jerome Powell," the current Chair of the Federal Reserve, and "Fed Independence" over the period from June 18 to July 18, 2025. We find that search activity surges on July 16. For example, the search intensity for "Jerome Powell" increases by nearly 400% from the week before the event to the event day, while searches for "Fed Independence" rise by more than 900%.

Using Bloomberg's alert system, we link the probability surge, which rises from below 25 percent to above 40 percent in less than 90 minutes, to a CBS News article published at 10:53 a.m. on July 16, 2025 entitled "Trump asked GOP lawmakers if he should fire Fed Chair Jerome Powell." The timing of this report coincides precisely with the onset of the spike. Minutes before noon, the dismissal probability collapses back to early morning levels after Trump denied that he was planning to fire Powell during a Q&A with journalists at the White House. The two-hour window is also marked by sharp increases in trading volume and the VIX, underscoring the significance of this event for financial markets.

We begin our empirical analysis with the stock market reaction. Our findings reveal a near mirror image between the probability of Powell's dismissal and the S&P 500 index performance: dismissal probabilities rise as the market declines and fall as the market rebounds. To formalize this relationship, we regress 2-, 3-, and 5-minute SPY returns on contemporaneous changes in dismissal probabilities. The estimates indicate that moving the probability from 0 to 1 (full certainty of dismissal) reduces SPDR S&P 500 ETF (SPY) levels by 1.3%

to 2.4%. Scaled by market capitalization, this corresponds to losses of approximately $0.88 to $1.51 trillion. We then extend the analysis to all individual stocks. The estimated coefficients range from –2.5% to –3.3%, somewhat larger in magnitude than the SPY results. This difference arises because regressions at the individual stock level are akin to analyzing an equal-weighted portfolio, in contrast to the value-weighted S&P 500 index.

Next, we examine heterogeneity in individual stock reactions. We find that financial firms exhibit larger responses than non-financial firms, consistent with their direct exposure through interest rate margins, balance sheet structures, and regulatory oversight. This result aligns with prior research showing that financial institutions are especially sensitive to monetary policy surprises (Flannery and James, 1984; English, Van den Heuvel, and Zakrajšek, 2018). We also find that high-beta firms respond more strongly, reflecting their greater exposure to aggregate risk. Finally, debt-constrained and highly leveraged firms experience disproportionately larger declines in value, consistent with their heightened vulnerability to policy-induced higher financing costs.

Next, we examine the response of U.S. Treasury bond ETFs spanning different maturities alongside prediction market probabilities of Powell's potential dismissal. We find little movement at the very short end of the curve (0–3 months). Bond prices increase at short-to-intermediate maturities (1–3 years and 3–7 years), consistent with lower yields in response to heightened dismissal risk. Yields in the 7–10 year segment remain broadly stable. At longer maturities (10–20 years and 20+ years), bond prices fall, indicating rising yields. Overall, the response increases monotonically with maturity, resulting in a steepening of the yield curve in response to the heightened risk of Powell's dismissal.

Based on our back-of-the envelope calculation, scaling up to a unit change in probability (from 0 to 1) yields a gain of approximately $60 billion in the short-to-intermediate maturity segment and losses of roughly $105 to $175 billion in the long end, for a net market value decline of around $100 billion. These computations highlight that while the equity market response is economically larger, the bond market adjustments are also meaningful,

and operate through the steepening of the yield curve.

Finally, we examine the response of major currencies to the heightened risk of Powell's dismissal using currency ETFs alongside prediction market probabilities. We find that the increase in Fed Chair dismissal probability is accompanied by a weakening of the dollar relative to all major currencies. Conversely, as the probability subsides, the dollar rebounds. Under a full certainty counterfactual in which the probability rises from zero to one, the implied depreciation of 3–4% would correspond to revaluation effects of about $200–250 billion in daily FX turnover and more than $1 trillion in valuation changes to the outstanding stock of U.S. securities held by foreigners. These back-of-the-envelope computations isolate the exchange rate channel and are therefore on top of the bond or equity value adjustments documented above.

Our results suggest that threats to Federal Reserve independence increase expectations of near-term rate cuts, raising prices for short-term bonds. At the same time, such threats undermine confidence in the Fed's ability to contain inflation over the long run, leading to higher inflation expectations and lower prices for long-term bonds. Elevated inflation expectations, combined with heightened policy uncertainty, also contribute to higher risk premia. Given the observed decline in equity valuations, the evidence points to the dominance of rising risk premia as the net effect.

Our findings add to the literature on central bank independence and monetary policy transmission in three ways. First, we provide the first high-frequency estimates of how threats to Federal Reserve independence are capitalized into asset prices, complementing prior work that focuses on inflation and macroeconomic outcomes. Second, by leveraging prediction markets, we introduce a novel empirical tool to measure institutional credibility in real time. Third, we document that credibility shocks amplify cross-sectional vulnerabilities, disproportionately affecting financial firms and leveraged companies, while simultaneously reshaping bond and currency markets. Taken together, these results suggest that markets respond not only to the expected path of policy rates but also to the credibility of Fed-

eral Reserve, underscoring the broader financial stability costs of political interference with monetary policy.

Our findings diverge from those in the existing literature in important ways. Bernanke and Kuttner (2005) document that equity valuations increase in response to an unexpected cut in interest rates, while Bianchi et al. (2023) show that markets reacted positively to President Trump's tweets pressuring the Fed to pursue more accommodative monetary policy through a lowering of expected federal funds rates. In sharp contrast, we find that equity markets fall in response to the heightened threat of removing Fed Chair Jerome Powell, even though any successor would likely face similar, if not greater, pressure to lower interest rates. Our findings suggest that, rather than responding solely to the expected path of policy rates, markets price in information about the credibility of Federal Reserve. Our findings can be interpreted in the context of heightened policy uncertainty, as the threat to Federal Reserve credibility increases uncertainty about the future conduct of monetary policy (Baker, Bloom, and Davis, 2016).

1 Background

1.1 Benefits of central bank independence

Insulating monetary policy from short-term political pressures is widely viewed as a mechanism to enhance the credibility of low-inflation commitments (Kydland and Prescott, 1977; Barro and Gordon, 1983). Institutional independence strengthens a central bank's capacity to credibly commit to policies that are optimal ex ante, even when they may be politically costly ex post. Over time, a consistent track record reinforces reputation and anchors inflation expectations, further enhancing policy credibility.

The prevailing consensus in the literature is that central bank independence yields substantial benefits, most notably by fostering lower and more stable inflation, while leaving real economic activity largely unaffected (e.g., Alesina and Summers, 1993; Grilli, Masciandaro,

and Tabellini, 1991).

In the United States, the Federal Reserve's early decades were marked by close coordination with, and at times subordination to, the Treasury, particularly during periods of war financing. Its autonomy was decisively strengthened following the 1951 Treasury–Federal Reserve Accord, which established a lasting separation between monetary policy and the Treasury's debt-management objectives (Hetzel and Leach, 2001; Moe, 2014). Following setbacks during the Johnson and Nixon administrations, the Fed's independent conduct of monetary policy, with an emphasis on price stability, was solidified and proved effective, most notably during the Volcker disinflation of the early 1980s (Goodfriend and King, 2005).

1.2 Threats to central bank independence

Despite the consensus on the benefits of central bank independence, threats to the Fed's autonomy have been a recurring feature and have taken multiple forms over the years.

Even after the 1951 Treasury–Federal Reserve Accord, there are well-documented cases of direct presidential pressure on Fed officials. A prominent example is the Nixon–Burns episode, when President Nixon pressed Chairman Arthur Burns to pursue aggressive monetary easing in 1971 ahead of the 1972 election. Such interventions have been shown to contribute to higher long-run inflation (e.g., Romer and Romer, 2004; Drechsel, 2024).

In addition to direct pressure, political alignment between FOMC members and sitting U.S. Presidents matters (see Pagliuca, 2025), and Presidents can shape monetary policy indirectly through appointments (see Chappell Jr, Havrilesky, and McGregor, 1993). Although long and staggered terms are designed to insulate the institution from political interference, each new Presidential appointee has the capacity to alter the Committee's political alignment.

Political pressure can also be exercised through public channels such as the media. In this context, Bianchi et al. (2023) examine how President Trump sought to influence the Fed through Tweets during his first term.

The post-pandemic era of higher inflation has further intensified political scrutiny of central banks (see Afrouzi et al., 2024). Despite these mounting threats, Engelberg et al. (2023) show that among financial regulators, namely SEC Commissioners and Fed Governors, the Fed continues to exhibit comparatively strong traits of independence.

2 Data

2.1 High-frequency trade data

We use NYSE Trade and Quote (TAQ) records to construct intraday observations and compute returns over 2, 3, and 5 minute intervals on July 16, 2025.

2.1.1 Stock data

To capture high-frequency variation in the aggregate U.S. market, we proxy the S&P 500 with the SPDR S&P 500 ETF (SPY). We also use data on the 11 SPDR sector ETFs that comprise the S&P 500: (1) Materials (XLB), (2) Energy (XLE), (3) Financials (XLF), (4) Industrials (XLI), (5) Technology (XLK), (6) Consumer Staples (XLP), (7) Utilities (XLU), (8) Healthcare (XLV), (9) Consumer Discretionary (XLY), (10) Communication Services (XLC), and (11) Real Estate (XLRE). These funds are highly liquid, with assets under management (AUM) ranging from $5 billion (XLB) to $83 billion (XLK), while the SPDR S&P 500 ETF (SPY) itself has an AUM of $651 billion as of August 20, 2025.

We augment the ETF-level data with stock-level data. From the universe of all publicly listed U.S. equities, we apply the following standard filters: (1) share codes 10 or 11, (2) exchange codes 1, 2, or 3, and (3) an opening price greater than or equal to $5 on July 16, 2025. We further winsorize 2-, 3-, and 5-minute returns at the 0.1% and 99.9% levels. This stock-level dataset allows us to examine market reactions at the individual firm level and to capture potential heterogeneity across industries (e.g., financial versus non-financial firms), as well as across firm-level characteristics such as market exposures (beta), leverage, and

financial constraints.

2.1.2 Treasury bond data

To capture high-frequency variation in the U.S. Treasury bond market, we use six iShares ETFs from BlackRock that span different portions of the yield curve: (1) 0–3 Month (SGOV), (2) 1–3 Year (SHY), (3) 3–7 Year (IEI), (4) 7–10 Year (IEF), (5) 10–20 Year (TLH), and (6) 20+ Year (TLT). They are highly liquid, with assets under management (AUM) ranging from $11 billion to $55 billion as of August 20, 2025.

2.1.3 Currency data

To capture high-frequency variation in currency movements, we use a series of Invesco CurrencyShares ETFs, each tracking an individual currency relative to the U.S. dollar: (1) Euro (FXE), (2) Swiss Franc (FXF), (3) Japanese Yen (FXY), (4) British Pound (FXB), (5) Canadian Dollar (FXC), and (6) Australian Dollar (FXA). We also use the Invesco DB US Dollar Index Bearish Fund (UDN), which tracks the performance of the U.S. dollar against a basket of six major world currencies: the Euro, Japanese Yen, British Pound, Canadian Dollar, Swedish Krona, and Swiss Franc. These ETF funds are relatively smaller than their equity and bond counterparts but remain liquid enough for our purposes, with assets under management (AUM) ranging from approximately $0.08 billion (FXA, FXB) to $0.57 billion (FXY), while UDN itself has an AUM of $0.146 billion as of August 20, 2025.

2.2 Intraday prediction market data

We use data from prediction markets to measure shifts in market-implied expectations of Federal Reserve Chair Jerome Powell's tenure. Specifically, we rely on contracts that predict whether Powell will leave office before the end of 2025 on both Polymarket and Kalshi (see Figure IA1).[1]

[1] Swanson, Renxuan, and Wu (2025) use Kalshi contracts tied to monetary policy and key macroeconomic announcements (e.g., federal funds rate decisions, CPI, GDP, and unemployment releases) to study how

Each platform has advantages and limitations. Polymarket benefits from higher trading volume, which enhances liquidity; for our contract of interest, cumulative trading volume on Polymarket reached $8,668,013 compared to $5,578,953 on Kalshi as of August 16, 2025. However, Polymarket operates in the decentralized finance space and is not subject to the same level of regulatory oversight, which may raise concerns about data reliability. By contrast, Kalshi is a CFTC-regulated exchange, offering stronger institutional legitimacy and clearer rules of operation, though at the cost of somewhat lower trading activity and narrower participation.

3 Natural experiment

On the morning of July 26, 2025, reports that President Trump was seeking ways to dismiss Federal Reserve Chair Jerome Powell led to a sharp increase in the perceived probability of dismissal. Within two hours, President Trump dispelled these concerns during a televised Q&A with the press at the White House, and the probability returned to its pre-crisis level. As such, this design captures both the run-up in perceived risk during the crisis and the rapid reversal to pre-crisis levels once the threat was dispelled.

Our empirical strategy, which focuses on this short-lived event, relies on the assumption that within such a brief time interval no other systematic news arrives that could materially influence U.S. equity prices. A systematic search for events on that day, and in particular during the two-hour window we focus on, reveals no other major concurrent developments or macroeconomic news releases that could plausibly account for the patterns observed in equity, bond, and currency markets that reflect the Fed dismissal probability changes.[2] As such,

policy surprises shape short-run macroeconomic expectations.

[2]The only scheduled macroeconomic data release on July 16, 2025, was the Producer Price Index (PPI) at 8:30 a.m., as reported by the Bureau of Labor Statistics. See U.S. Bureau of Labor Statistics, Producer Price Index News Release, July 16, 2025, available at: `https://www.bls.gov/news.release/archives/ppi_07162025.htm`. This release occurred well before the event window analyzed in this paper. The movements we study occur between 10:30 a.m. and 12:30 p.m. and therefore cannot be attributed to that release. We note that an earlier episode in April 2025 is also associated with significant, though more modest, changes in dismissal probabilities. However, that episode spans a three-day period and coincides

this design allows us to isolate the effect of President Trump's credible threat to the Fed's independence. More broadly, the episode provides a high-frequency natural experiment: the dismissal probability evolves minute by minute during the crisis window, and we can trace these changes contemporaneously to intraday changes in equity, bond, and currency prices.

3.1 Public attention to the event

Media attention on Jerome Powell and Federal Reserve independence surges on July 16th 2025, as the dismissal threat receives major national news coverage. To gauge more formally public attention, we use Google Trends indices for searches of "Jerome Powell," the current Chair of the Federal Reserve, and "Fed Independence" over the period from June 18 to July 18, 2025. In Figure 1, the vertical line on July 16, 2025 marks the event of interest, allowing us to compare search intensity on that day with activity in the surrounding days.

[Insert Figure 1 here]

We observe a sharp spike in searches for "Jerome Powell" coinciding with July 16, followed by a significant decline on July 17 and a return to baseline levels by July 18. By contrast, searches for "Fed Independence" begin rising earlier, with a gradual build-up on July 14, reaching about 60 percent of peak levels on July 16, peaking on July 17, before dropping markedly on July 18.

The build-up in searches is consistent with media reporting in the days before July 16th. For instance, on July 11th, the Washington Post coverage highlighted Trump's criticism of Powell and his insistence that rates should be "three percentage points lower," even as he denied at the time that he would seek Powell's removal.[3] By July 13th, there is broader media coverage mentioning that Trump allies have been laying the groundwork for a possible dismissal by seizing on the rising costs of the Fed's headquarters renovation.[4]

with a major confounding event related to tariff policy.

[3] https://www.washingtonpost.com/business/2025/07/11/trump-powell-federal-reserve-buildings-fhfa/

[4] https://www.reuters.com/world/us/hassett-says-white-house-probing-fed-renovation-costs-authority-fire-powell-2025-07-13/

The culmination of attention occurs on July 16, 2025. An article in the Washington Post on July 16 described the episode as going "beyond any of [Trump's] prior threats."[5] The immediate spark was the reporting by mainstream media outlets on the possibility of Powell's dismissal, with a pivotal moment occurring when CBS News reported that 'Trump asked GOP lawmakers if he should fire Fed Chair Jerome Powell.' The release of that story marked the onset of the spike in public attention. Later in the day, during a Q&A with journalists at the White House, Trump tells reporters that he is "unlikely" to fire Powell.

Overall, the Google Trends data indicate little advance anticipation of this crisis; the short-lived nature of the crisis is consistent with Trump's statement that he would not dismiss Jerome Powell being viewed as credible at the time. While there was some build-up in searches in the preceding days, consistent with the coverage described above, public attention to Powell centers overwhelmingly on July 16, 2025.

3.2 Intraday probability of Fed Chair dismissal

Figure 2 traces how prediction markets reassessed the probability of Powell's dismissal on July 16, 2025. Using intraday data from Polymarket and Kalshi, the figure captures in real time how market participants respond to evolving news reports over the course of the trading day.

[Insert Figure 2 here]

In the evening of July 15th, Congresswoman Anna Paulina Luna posted on social media: "Hearing Jerome Powell is getting fired! From a very serious source"[6] The news that GOP Congress members had been approached by the administration led to the sharp repricing of dismissal risk on July 16th, the next morning when mainstream outlets begin covering the story.

Using Bloomberg's alert system, we link the probability surge, which rises from below

[5] https://www.washingtonpost.com/business/2025/07/16/president-trump-is-preparing-fire-fed-chair/

[6] See: https://x.com/realannapaulina/highlights

25 percent to above 40 percent in less than 90 minutes, to a CBS News article published at 10:53 a.m. on July 16, 2025 entitled "Trump asked GOP lawmakers if he should fire Fed Chair Jerome Powell."[7] The timing of this report coincides precisely with the onset of the spike.

Minutes before noon, the dismissal probability collapses back to early morning levels after Trump denied that he was planning to fire Powell during a Q&A with journalists at the White House. He stated: "*We're not planning on doing anything. I don't rule out anything, but I think it's highly unlikely — unless he has to leave for fraud.*".[8]

A notable feature from Figure 2 is that Polymarket and Kalshi track each other very closely throughout the day, especially during the 10:30 a.m. to 12:30 p.m crisis window.[9] We observe a very high degree of correlation between prices on the two platforms with little evidence of arbitrage opportunities, suggesting that probabilities in both markets capture a consensus view among market participants. We use Polymarket as our baseline and report quantitatively very similar results from Kalshi in the Internet Appendix.

3.3 Impact of the event on market activity

Figure 3 illustrates how aggregate market activity, proxied by intraday trading volume of the SPDR S&P 500 ETF (SPY), and probabilities from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 evolve during trading hours on July 16, 2025.

[Insert Figure 3 here]

We observe three distinct spikes in SPY trading volume, each coinciding with sharp

[7] See: `https://www.cbsnews.com/news/trump-asked-gop-lawmakers-if-he-should-fire-fed-chair-jerome-powell/`

[8] Video of the exchange available at: `https://www.bloomberg.com/news/videos/2025-07-16/trump-now-says-firing-powell-unlikely-full-q-a-video`

[9] Throughout the analysis that follows, we refer to this two-hour interval as the "tight window," as it represents the period when changes in dismissal probabilities were most significant. While the core of the crisis arguably spans closer to ninety minutes within this interval, using the full two hours ensures that all relevant market reactions surrounding the event are captured.

movements in dismissal probabilities. The first spike occurs at 10:53 a.m., corresponding to the CBS article reporting that "Trump asked GOP lawmakers if he should fire Fed Chair Jerome Powell." The final spike follows President Trump's exchange with reporters in which he stated he was unlikely to fire Powell, marking the end of the price response. Trading volumes during these intraday spikes approach, and in some instances exceed, the magnitudes observed at the market open and close.

Figure 4 illustrates how market volatility, proxied by the VIX index, and probabilities from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025, evolve during trading hours on July 16, 2025.

[Insert Figure 4 here]

The VIX generally tracks the changes in dismissal probabilities throughout the event window but with a muted response at the onset. Specifically, the first probability surge at 10:53 a.m. is not accompanied by a commensurate increase in the VIX. Volatility rises more sharply only at the height of the crisis, coinciding with the peak in dismissal probabilities, and then begins to decline as probabilities recede following Trump's Q&A exchange with the press. Unlike probabilities, however, the VIX remains somewhat elevated and requires several hours to return to early-morning levels, suggesting a more persistent effect on perceived market risk.

4 Stock market reaction

4.1 Aggregate market reaction

Figure 5 highlights how the sharp increase in dismissal probability coincided with a pronounced intraday decline in the S&P 500, suggesting that markets reacted negatively to the perceived risk of an erosion of the Federal Reserve's independence and policy credibility.

[Insert Figure 5 here]

The figure highlights a quasi-perfect mirror image between the probability of Powell's dismissal and S&P 500 index performance, with probabilities rising as the market declines and falling as the market rebounds.

This figure motivates the regression framework that follows, whereby 2, 3, and 5 minute returns are regressed on changes in probabilities. The clear concentration of market movements and probability changes in the window from 10:30 a.m. to 12:30 p.m., visible in the figure, further justifies the focus on this tighter event window in the regression analysis.

Figure IA2 mirrors the dynamics observed in Figure 5, showing a near-perfect inverse relationship between the Kalshi-based dismissal probability and S&P 500 performance. The timing of the sharp rise and fall in dismissal probability on Kalshi aligns precisely with the intraday decline and rebound in the S&P 500, reinforcing the market's sensitivity to perceived threats to Fed independence. As with the Polymarket data, the clearest movements are concentrated in the 10:30 a.m. to 12:30 p.m. window, providing further support for the event window used in the regression analysis. The strong similarity between Kalshi and Polymarket responses adds robustness to our baseline results and suggests that market reactions are not platform-specific, but broadly reflect investor concerns over institutional credibility.

Table 2 reports regressions of SPDR S&P 500 ETF (SPY) returns on changes in Powell dismissal probabilities, estimated as

$$r_t = \alpha + \beta \, \Delta Polymarket_t + \varepsilon_t,$$

using 2-, 3-, and 5-minute intervals. We use multiple return horizons to assess robustness, ensuring that the results are not sensitive to a particular slicing of the intraday data but instead reflect consistent patterns across alternative specifications.

[Insert Table 2 here]

Consistent with Figure 5, higher dismissal risk is associated with significant declines

in stock prices. These results provide support for the hypothesis that markets value the inflation-fighting credibility and independence of Federal Reserve leadership.The effect is statistically and economically significant across both the full trading day and the tight 10:30–12:30 event window, with larger magnitudes during the latter. Coefficients range from –0.013 to –0.024, with t-statistics often exceeding 3 in absolute value and R^2 values reaching up to 0.39 in the tight window, underscoring the strength of the estimated relationship.

Table IA1 replicates the SPY regressions using Kalshi-implied dismissal probabilities as the explanatory variable, rather than Polymarket. Estimated coefficients range from –0.014 to –0.026, with t-statistics up to 5, and R^2 values rising to 0.51 in the tight 10:30–12:30 event window. Results strongly corroborate those obtained with Polymarket data: stock returns decline significantly as dismissal probabilities increase, with effects more pronounced in the tight window. The consistency across platforms provides robustness to alternative measures of dismissal probabilities, underscoring that both prediction markets are capturing the same underlying shock to Federal Reserve independence.

Table 3 extends the analysis to all individual stocks, regressing returns on dismissal probability changes with firm fixed effects, as well as double clustering of standard errors at the firm and time level. In line with the aggregate market results, individual stock returns fall significantly as dismissal probabilities rise, supporting the view that threats to Fed independence depress equity valuations more broadly. The effect is robust across 2-, 3-, and 5-minute intervals and particularly pronounced during the tight event window.

[Insert Table 3 here]

Running the regression at the individual stock level is akin to analyzing an equal-weighted portfolio, in contrast to the value-weighted S&P 500 index in Table 2. Since smaller firms tend to be riskier and more financially constrained, one would expect somewhat larger coefficients here than in the previous table. Average coefficients range between –0.025 and –0.033, with highly significant t-statistics (up to –5.5) and explanatory power that increases with longer return horizons. In economic terms, a 10 percentage point increase in dismissal

probability corresponds to an average stock return decline of roughly 0.25 to 0.33 percent. Relative to the SPY coefficients of –0.013 to –0.024 reported in Table 2, these estimates are somewhat larger, consistent with the greater risk exposure of smaller firms.

4.2 Estimates of market value loss

In terms of economic magnitudes, using estimates from Table 2, and the market capitalizations as of June 30, 2025 (S&P 500 ≈ $52.5 trillion; total U.S. market ≈ $62.8 trillion), the observed increase in dismissal probability from 23 to 40 percent implies an aggregate equity loss of $125 to $214 billion for the S&P 500 and $150 to $256 billion for the total U.S. market, with midpoints near $170 and $203 billion, respectively.[10] Per 10 percentage points of dismissal risk, the implied loss is $74 to $126 billion for the S&P 500 and $88 to $151 billion for the total market. Under a full certainty counterfactual in which the probability rises from zero to one, the range is $0.74 to $1.26 trillion for the S&P 500 and $0.88 to $1.51 trillion for the total market. Between 10:30 a.m. and 11:33 a.m., as dismissal risk rose and peaked twice over a short window, SPY fell from 623 to 621.38 at 11:18 and to 619.82 at 11:33. These levels correspond to declines of about 0.26 percent to 0.51 percent from the pre-crisis level, consistent with the regression implied effect.[11]

These figures are back-of-the-envelope translations of high frequency event window regressions and, as such, should be interpreted with care. In settings where information diffuses over time, expanding the event window can reveal persistence and larger cumulative effects as markets assimilate news. In our episode the shock and its price impact were short lived: following the presidential press conference, SPY and the S&P 500 returned to pre-crisis levels by about 12:30 p.m., which supports the use of a short window in gauging economic

[10] Computation details: for $\Delta p = 0.17$, the two minute, three minute, and five minute coefficients imply returns of $-0.019 \times 0.17 \approx -0.323$ percent, $-0.014 \times 0.17 \approx -0.238$ percent, and $-0.024 \times 0.17 \approx -0.408$ percent, respectively. Multiplying by $52.501 trillion and $62.825 trillion yields the S&P 500 and total market ranges. For a 10 percentage point change, set $\Delta p = 0.10$. For the full certainty counterfactual, $\Delta p = 1$, the implied returns are -1.9 percent, -1.4 percent, and -2.4 percent.

[11] By comparison, with the two minute specification, we have $-0.019 \times 0.17 \approx -0.32$ percent; the three minute and five minute specifications imply about -0.24 percent and -0.41 percent, respectively.

significance here. In addition, the conversions to dollar values assume a linear relation between returns and probability changes as we extrapolate further and they do not adjust for microstructure noise, or concurrent announcements.

4.3 Heterogeneity in stock market reaction

4.3.1 Industry

Figure IA3 plots the intraday return paths of SPDR sector ETFs alongside the Polymarket-based dismissal probability, illustrating how price movements across industries align closely with changes in perceived Fed independence risk.

As with the broader market, the most pronounced reactions occur during the 10:30 a.m. to 12:30 p.m. window, when dismissal probabilities surge and subsequently recede. Sector returns move in near lockstep with these probability shifts, confirming the immediacy and pervasiveness of the shock. Healthcare (XLV) appears to be the least affected sector, exhibiting relatively muted price reactions throughout the event window.

Table 4 disaggregates individual stock regressions across the Fama–French 12 industries. Specifically, we run the same specification as in Table 3 on the subset of firms that belong to each industry separately.

[Insert Table 4 here]

The results show broad-based negative reactions across nearly all sectors, with coefficients typically in the range of –0.02 to –0.07. Most estimates are highly significant at the 1% level, while the utility sector stands out as an exception, showing a negative but weaker and less consistent response. Consistent with the evidence from Figure IA3, industries more exposed to credit and policy risk, such as financials and energy, exhibit the strongest reactions in terms of coefficient magnitudes. This industry-level analysis did not begin with strong priors about cross-industry patterns. The more theory-driven tests of heterogeneity, focusing on beta exposure, financial constraints, and sectoral sensitivity to policy, follow next.

Table IA2 provides a robustness check by estimating the same regression specification as in Table 4, but using the 11 SPDR sector ETFs that comprise the S&P 500 rather than Fama–French 12 (FF-12) industry portfolios. Sector ETFs offer liquid, tradable instruments that reflect intraday pricing in real time, thereby providing a complementary measure of industry-level responses.

Results strongly parallel those obtained with FF-12 industries. Coefficients are uniformly negative across all sectors, indicating broad-based declines in equity values when Powell dismissal probabilities rise. As in the FF-12 results, financials (XLF) and energy (XLE) stand out with the largest magnitudes, consistent with their direct exposure to credit conditions, interest rate margins, and policy risk.

Magnitudes range from about –0.013 to –0.026, with most estimates statistically significant at the 1% level. R^2 values are modest in the full-day specification (0.07–0.21), but increase substantially in the tighter event window (0.17–0.34), reinforcing that the sharpest movements occur during the 10:30–12:30 crisis period.

Taken together, the ETF-based evidence corroborates the main FF-12 industry results: dismissal risk is associated with broad-based but heterogeneous industry effects, with financials and energy consistently showing the strongest sensitivity. This finding reinforces our interpretation that policy-dependent sectors bear disproportionate exposure to the erosion of Fed independence.

4.3.2 Financials vs. non-financials

Table 5 examines whether the stock market response to rising Fed Chair dismissal probabilities differs between financial firms and non-financial firms. The specification augments the baseline regression with an interaction term between the probability change and a financial-sector indicator. Specifically, we estimate regressions of the form

$$r_{i,t} = \alpha_i + \beta_1 \Delta Polymarket_t + \beta_2(\text{Finance}_i \times \Delta Polymarket_t) + \varepsilon_{i,t},$$

Results indicate that financial firms experience significantly larger losses than non-financial firms when dismissal probabilities rise. This is consistent with the hypothesis that financial firms are especially sensitive to threats against Federal Reserve independence, given their direct exposure to monetary policy, interest rate margins, and regulatory oversight.

[Insert Table 5 here]

The coefficient on the interaction term ($Finance \times \Delta Polymarket$) ranges from –0.013 to –0.016, statistically significant at the 5% level. Interpreted in levels, this implies that if Fed Chair dismissal risk were to rise from zero to certainty, financial firms would lose an additional 1.3–1.6% in value relative to non-financial firms. This reinforces the interpretation that credibility shocks to the central bank have disproportionate consequences for the financial sector.

4.4 Market beta

Table 6 examines whether firms with higher market betas respond more strongly to Fed Chair dismissal risk. We estimate regressions of the form

$$r_{i,t} = \alpha_i + \beta_1 \Delta Polymarket_t + \beta_2(\text{High_Beta}_i \times \Delta Polymarket_t) + \varepsilon_{i,t},$$

where $r_{i,t}$ is the return of firm i in interval t, $\Delta Polymarket_t$ is the change in dismissal probability, and High_Beta_i is an indicator equal to one for firms with a market beta above the cross-sectional median. Betas are estimated using the Fama–French three-factor model with daily returns up to 12/31/2024, using a 252-day estimation window (minimum 126 observations) from the WRDS beta suite. The resulting cross-sectional median beta is 0.8576.[12]

[Insert Table 6 here]

Results support the hypothesis that high-beta firms experience disproportionately larger

[12]Following standard practice in cross-sectional asset pricing, financials and utilities are excluded from this test.

negative returns when dismissal probabilities rise, consistent with their greater exposure to aggregate risk. The interaction term β_2 ranges from –0.009 to –0.011, statistically significant at the 1% level. This implies that if dismissal risk moved from zero to certainty, high-beta firms would suffer an additional decline of about one percent in returns, over and above the baseline effect. This pattern highlights how systemic shocks to Federal Reserve independence are amplified in firms that are more sensitive to aggregate risk, with explanatory power (R^2) roughly doubling when the interaction term is included.

4.5 Financial constraints

Table 7 tests whether financially constrained firms react more strongly to Fed Chair dismissal risk, by interacting $\Delta Polymarket_t$ with indicators for equity constraints, debt constraints, and highly leveraged, which serve as three alternative proxies for financial constraints. The regression specification parallels those in Table 3–Table 6, with firm fixed effects and double clustering of standard errors at both the firm and time level.

[Insert Table 7 here]

For the equity and debt constraint measures, we define an indicator that equals one for firms above the sample median of the respective constraint index. These indices are drawn from Linn and Weagley (2024), who extend the Hoberg and Maksimovic (2015) text-based methodology by training a random forest on accounting variables.[13] Leverage is measured as the book value of debt divided by total assets, a common practice in the literature (e.g., Rajan and Zingales (1995)). We again construct a high-leverage indicator that equals one for firms above the sample median leverage ratio.

The evidence is mixed. Equity-constrained firms do not show differential effects, but

[13] Linn and Weagley (2024) demonstrate that their approach substantially expands cross-sectional and time-series coverage while preserving informativeness. Their measures outperform traditional accounting-based indices in standard validation tests and address concerns raised by Bodnaruk, Loughran, and McDonald (2015), Farre-Mensa and Ljungqvist (2016), and others regarding the reliability of earlier constraint measures. We use the dataset made available by Daniel Weagley (`https://www.danielweagley.com/data`), matched at year-end 2024 to be consistent with all other firm-level variables in our analysis.

debt-constrained and highly leveraged firms exhibit significantly larger declines in response to rising dismissal risk. These results support the view that threats to Federal Reserve independence are especially costly for firms with greater external financing needs. Interaction coefficients for high-debt and high-leverage firms are consistently negative (–0.004 to –0.005) and statistically significant at conventional levels, implying an amplified adverse effect over and above the baseline effect. Under the full-certainty counterfactual (a rise in probability from 0 to 1), this corresponds to an additional return decline of about one-half percentage point for firms with above-median debt constraints or leverage.

5 Bond market reaction

In Figure 6, we examine the response of U.S. Treasury bond ETFs spanning different maturities alongside prediction market probabilities of Powell's potential dismissal. We find little movement at the very short end of the curve (0–3 months). Bond prices increase at short-to-intermediate maturities (1–3 years and 3–7 years), consistent with lower yields in response to heightened dismissal risk. Yields in the 7–10 year segment remain broadly stable. At longer maturities (10–20 years and 20+ years), bond prices fall, indicating rising yields. Overall, the response increases monotonically with maturity, resulting in a steepening of the yield curve in response to the heightened risk of Powell's dismissal.

[Insert Figure 6 here]

These figures also motivate the regression analysis that follows, where iShares bond ETF returns are regressed on changes in probabilities using 2-minute intervals. As with the stock market regressions, we present results for both the full trading day from 9:30 a.m. to 4:00 p.m. and the narrower event window from 10:30 a.m. to 12:30 p.m. Specifically, it estimates

$$r_{m,t} = \alpha_m + \beta_1 \Delta Polymarket_t + \varepsilon_{m,t},$$

for each bond ETF m, capturing different segments of the yield curve.

Table 8 reports regressions of Treasury bond ETF returns across maturities on changes in Powell dismissal probabilities, providing a direct test of whether political threats to Federal Reserve independence are reflected in the term structure of interest rates.

[Insert Table 8 here]

Consistent with Figure 6, the results reveal heterogeneous responses across the yield curve. Short-to-intermediate maturities (1–7 years, proxied by SHY and IEI) exhibit positive and significant coefficients (up to 0.004), consistent with bond prices rising and yields falling when Fed Chair dismissal risk increases. By contrast, long maturities (10–20 years and 20+ years, proxied by TLH and TLT) show negative and significant coefficients (–0.021 to –0.035, with t-statistics below –3.5), indicating declines in bond prices and rising long-term yields. The 7–10 year segment (IEF) shows no statistically significant effect, consistent with the transition between short-term and long-term responses. Overall, the pattern implies a steepening of the yield curve in response to heightened Fed Chair dismissal risk, consistent with expectations of politically motivated short-term easing but inflationary pressures and credibility loss at longer horizons (Gürkaynak, Sack, and Swanson, 2005).

Table 9 provides a back-of-the-envelope calculation of the aggregate market value implications of these coefficients, using the outstanding stock of Treasury securities by maturity category as of June 2025 (SIFMA).[14] We map ETFs to Treasury categories as follows: SHY/IEI to Notes ($\approx$ 15.1 trillion), TLH to Bonds ($\approx$ 5.0 trillion), and TLT to the long end of Bonds. Bills ($\approx$ 5.8 trillion) and the 7–10 year range (IEF) are treated as unaffected given the lack of statistical significance for those maturity ranges.

[Insert Table 9 here]

Applying the regression coefficients to a 10 percentage point increase in dismissal probability implies losses of about $10 billion in Treasury market value. Scaling up to a unit

[14]Source: `https://www.sifma.org/resources/research/statistics/us-treasury-securities-statistics/`

change in probability (from 0 to 1) yields a gain of approximately $60 billion in the short-to-intermediate maturity segment and losses of roughly $105 to $175 billion in the long end, for a net market value decline of around $100 billion. These computations highlight that while the equity market response is economically larger, the bond market adjustments are also meaningful, and operate through the steepening of the yield curve.

6 Currency market reaction

In Figure 7, we examine the response of major currencies to the heightened risk of Powell's dismissal using currency ETFs alongside prediction market probabilities. The figure shows intraday performance for six individual currencies against the U.S. dollar as well as a broad dollar index. We find that the increase in Fed Chair dismissal probability is accompanied by a weakening of the dollar relative to all major currencies. Conversely, as the probability subsides, the dollar rebounds.

[Insert Figure 7 here]

These figures also motivate the regression analysis that follows, where currency ETF returns are regressed on changes in probabilities using 2-minute intervals. As with the stock and bond market regressions, we present results for both the full trading day from 9:30 a.m. to 4:00 p.m. and the narrower event window from 10:30 a.m. to 12:30 p.m.

Table 10 reports regressions of major currency ETF returns on changes in Powell dismissal probabilities. Specifically, we estimate

$$r_{i,t}^{FX} = \alpha_i + \beta \, \Delta Polymarket_t + \varepsilon_{i,t},$$

where $r_{i,t}^{FX}$ denotes the return on currency ETF i at time t, and $\Delta Polymarket_t$ is the change in Polymarket-implied dismissal probability.

[Insert Table 10 here]

We use Invesco CurrencyShares ETFs to proxy for the intraday value of individual currencies against the U.S. dollar: FXE (Euro), FXY (Japanese Yen), FXF (Swiss Franc), FXC (Canadian Dollar), and FXA (Australian Dollar). We also examine the Invesco UDN, which captures a broad basket of currencies relative to the dollar. These instruments provide liquid, tradable proxies that closely track underlying spot exchange rates.

In line with Figure 7, the U.S. dollar weakens significantly relative to all major counterparts when Fed Chair dismissal risk rises, and subsequently recovers as the risk subsides. The broad dollar index also declines, underscoring the global perception that Federal Reserve independence underpins the credibility of U.S. monetary policy and, by extension, the strength of the dollar.

Estimated coefficients are strongly positive for the Euro, Swiss franc and Yen ETFs (0.030–0.039) with t-statistics near 4, and R^2 values of 0.40–0.56 indicate that a substantial share of intraday variation is explained by changes in Fed Chair dismissal probabilities. Other major currencies display consistent though somewhat smaller effects.

Applying the regression coefficients to a 10 percentage point increase in dismissal probability implies a 0.3–0.4% depreciation of the U.S. dollar. Using BIS 2022 data, with global FX turnover averaging $7.5 trillion per day and the dollar involved in 88% of trades, this corresponds to revaluation effects of about $20–25 billion across USD-linked trades.[15] From a stock perspective, total foreign holdings of U.S. securities (including both equities and debt) amounted to $30.88 trillion as of June 30, 2024.[16] A 0.3–0.4% depreciation translates into valuation changes for foreign holders of roughly $90–125 billion.

Scaling to the observed 17 percentage point increase in dismissal probability during the event window implies a 0.5–0.7% depreciation of the U.S. dollar, corresponding to revaluation effects of roughly $35–45 billion across USD-linked trades and valuation changes for

[15] See the Bank for International Settlements (BIS), "Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Markets." Source: `https://www.bis.org/statistics/rpfx22_fx.htm`

[16] See U.S. Department of the Treasury, "Report on Foreign Portfolio Holdings of U.S. Securities as of June 30, 2024." Source: `https://ticdata.treasury.gov/resource-center/data-chart-center/tic/Documents/shl2024r.pdf`

foreign holders of U.S. securities on the order of $150–220 billion. Under a full certainty counterfactual in which the probability rises from zero to one, the implied depreciation of 3–4% would correspond to revaluation effects of about $200–250 billion in daily FX turnover and more than $1 trillion in valuation changes to the outstanding stock of U.S. securities held by foreigners. These back-of-the-envelope computations isolate the exchange rate channel and are therefore on top of the bond or equity value adjustments documented in earlier tables.

These back-of-the-envelope computations show that the currency channel represents very large global revaluation effects, ranging from tens of billions to close to a trillion dollars depending on the horizon and measure. In fact, depending on the metric, the magnitudes can rival those observed in the equity market. This result also underscores the international spillovers of threats to Federal Reserve independence.

These results suggest that even modest increases in dismissal risk are quickly transmitted into measurable depreciation of the dollar relative to major currencies. This finding is consistent with the broader literature showing that monetary policy shocks are rapidly incorporated into exchange rates (see Eichenbaum and Evans (1995)).

7 Conclusion

This paper quantifies the market value of Federal Reserve independence by exploiting a natural experiment combined with high-frequency financial data. Using prediction market contracts and TAQ transactions, we trace in real time how equities, bonds, and currencies responded to a short-lived but credible threat to Chair Jerome Powell's tenure on July 16, 2025.

We find that equity markets fell sharply, with aggregate losses of $170–200 billion and implied losses exceeding $1 trillion under a full-certainty scenario. Losses are concentrated among financial firms, high-beta firms, and firms facing tighter debt constraints. In Treasury

bond markets, short- and intermediate-maturity bonds rallied, while long bonds declined, producing a steepening of the yield curve. The U.S. dollar depreciated broadly against major currencies. These results highlight that markets view the Fed's independence as a valuable attribute, with credibility shocks rapidly transmitted across financial markets.

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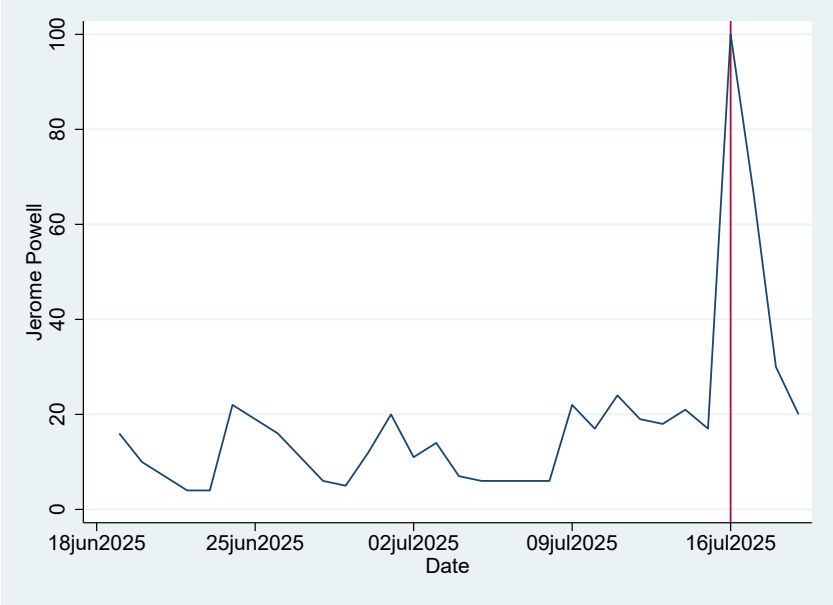
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Figure 1: Google Trends

This figure shows Google Trends indices for searches conducted in the United States between June 18 and July 18, 2025. Panel A displays searches for "Jerome Powell," the current Chair of the Federal Reserve, while Panel B displays searches for "Fed Independence." The vertical line marks July 16, 2025, the date of the event of interest. The series are normalized on a 0–100 scale, where 100 represents the peak search intensity during the sample period.

Panel A: Jerome Powell



Panel B: Fed Independence

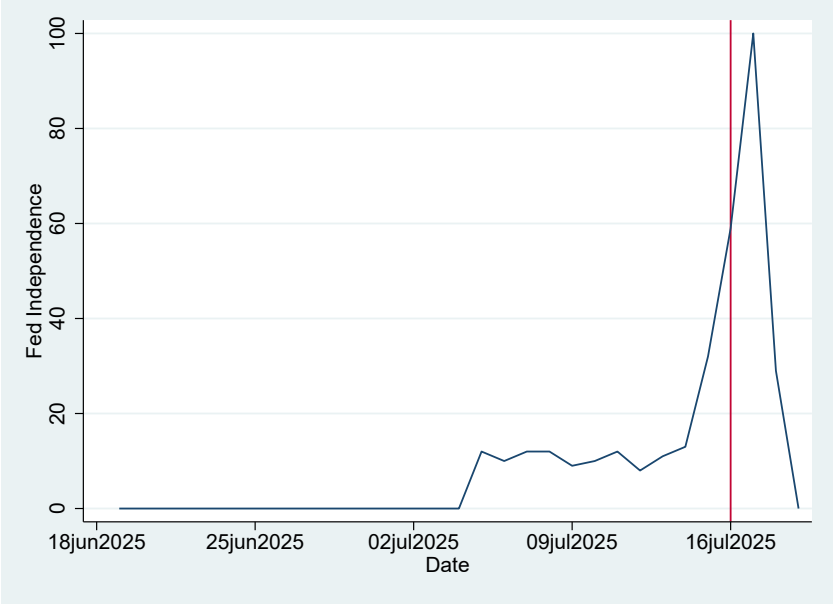


Figure 2: Prediction Market Probabilities of Powell's Dismissal

This figure shows intraday prediction market probabilities of Federal Reserve Chair Jerome Powell leaving office before the end of 2025. The data are from Polymarket and Kalshi on July 16, 2025, covering U.S. trading hours from 9:30 a.m. to 4:00 p.m. EST. The x-axis reports time of day, and the y-axis reports the probability implied by market prices. On both platforms, contract prices range from 0 to 1 and directly correspond to the probability of the event occurring (e.g., a price of 0.35 reflects a 35 percent implied probability).

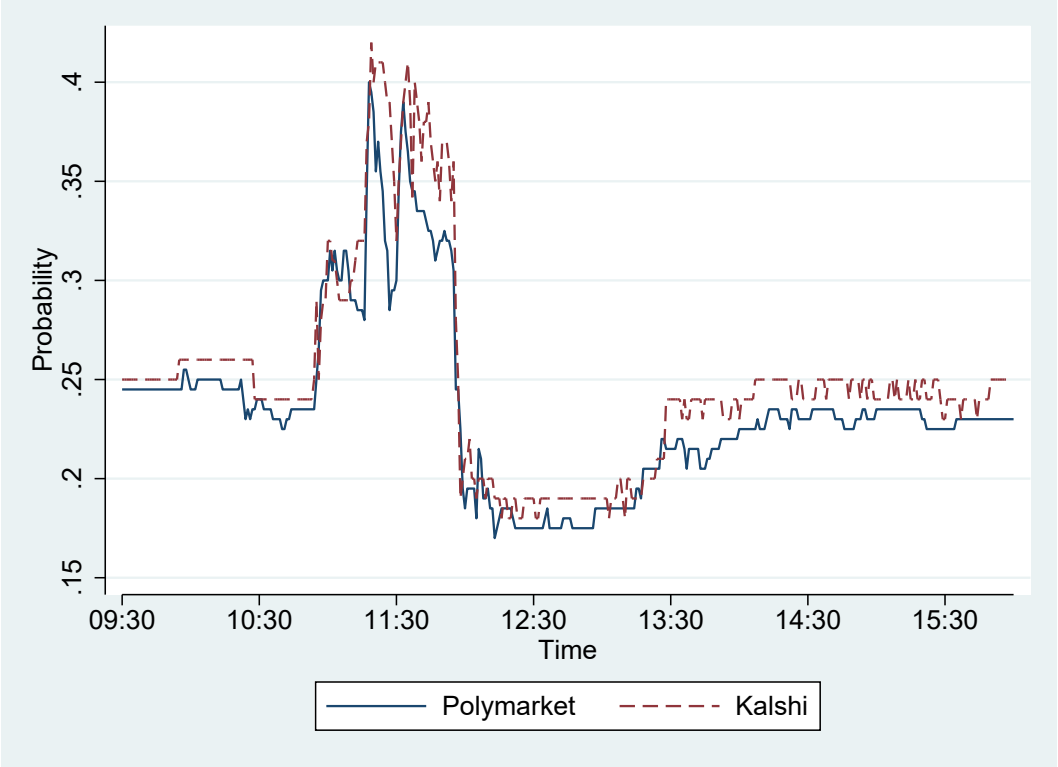


Figure 3: Market Activity and Prediction Market Probabilities

This figure shows intraday stock market activity together with prediction market probabilities on July 16, 2025. Trading volume for the SPDR S&P 500 ETF (SPY), which we use as a proxy for the S&P 500 index, is shown as a solid line (scale on left axis), while the implied probability from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 is shown as a dotted line (scale on right axis). The x-axis spans U.S. trading hours from 9:30 a.m. to 4:00 p.m. EST.

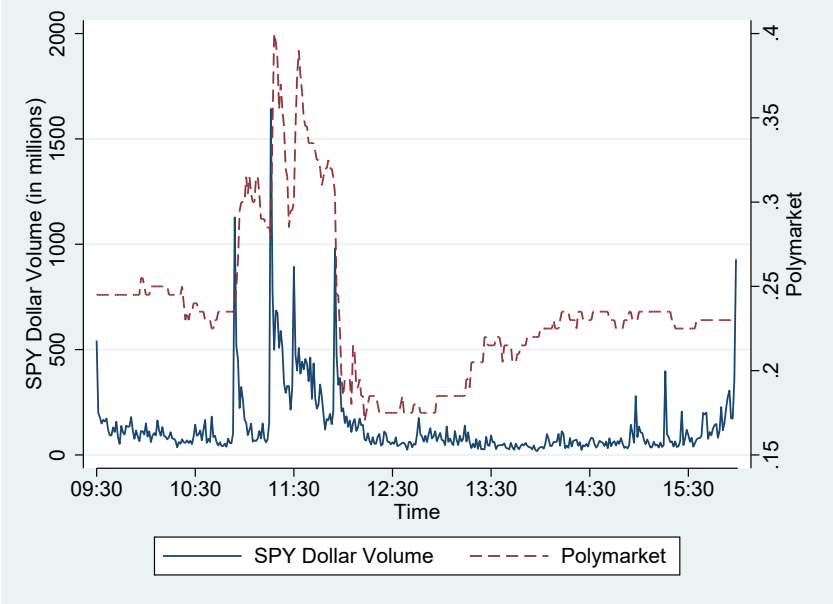


Figure 4: Market Volatility and Prediction Market Probabilities

This figure shows intraday market volatility together with prediction market probabilities on July 16, 2025. The VIX index, a standard measure of market volatility, is shown as a solid line (scale on left axis), while the implied probability from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 is shown as a dotted line (scale on right axis). The x-axis spans U.S. trading hours from 9:30 a.m. to 4:00 p.m. EST.

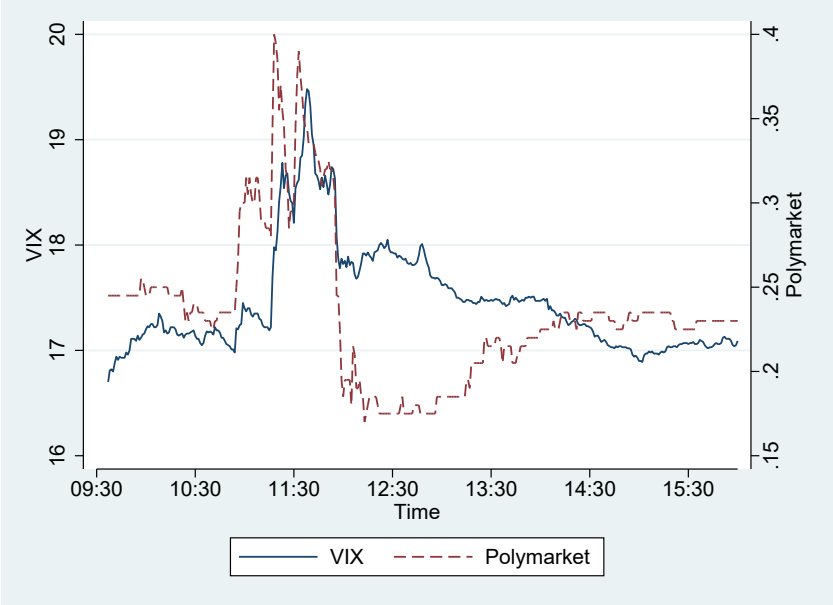
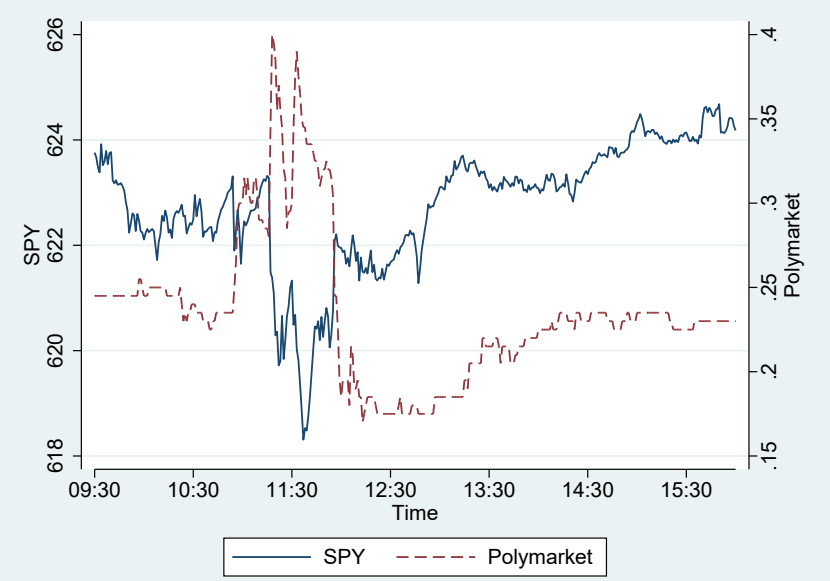


Figure 5: Stock Market Performance and Prediction Market Probabilities

This figure shows intraday stock market performance together with prediction market probabilities on July 16, 2025. The level of the S&P 500 index, proxied by the SPDR S&P 500 ETF (SPY), is shown as a solid line (scale on left axis). The implied probability from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 is shown as a dotted line (scale on right axis). Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. EST.

Panel A: Full day



Panel B: Tight window

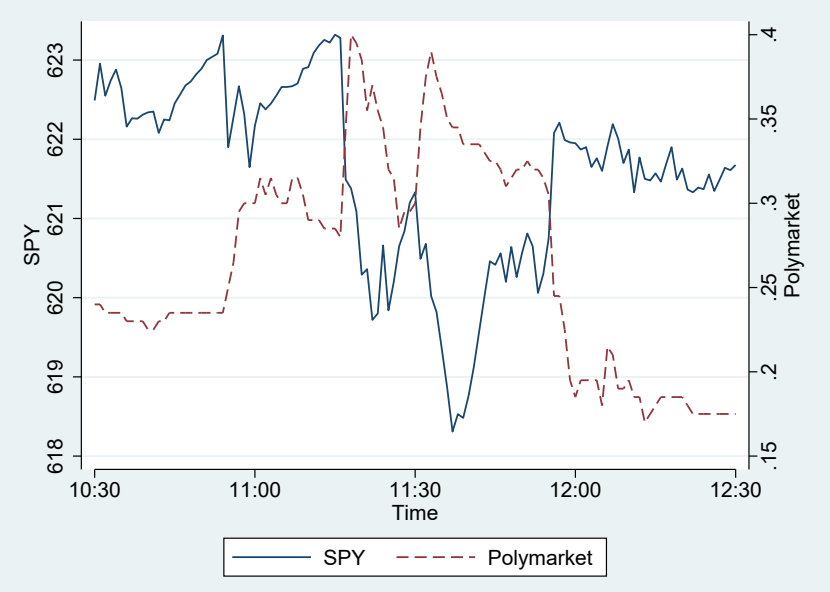


Figure 6: Bond Market Performance and Prediction Market Probabilities

This figure shows intraday bond market performance together with prediction market probabilities on July 16, 2025. We use six iShares Treasury bond ETFs that span different portions of the yield curve: SGOV (0–3 month), SHY (1–3 year), IEI (3–7 year), IEF (7–10 year), TLH (10–20 year), and TLT (20+ year). Each panel plots the price of the corresponding ETF as a solid line (scale on left axis) and the implied probability from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 as a dotted line (scale on right axis). The x-axis spans U.S. trading hours from 9:30 a.m. to 4:00 p.m. EST.

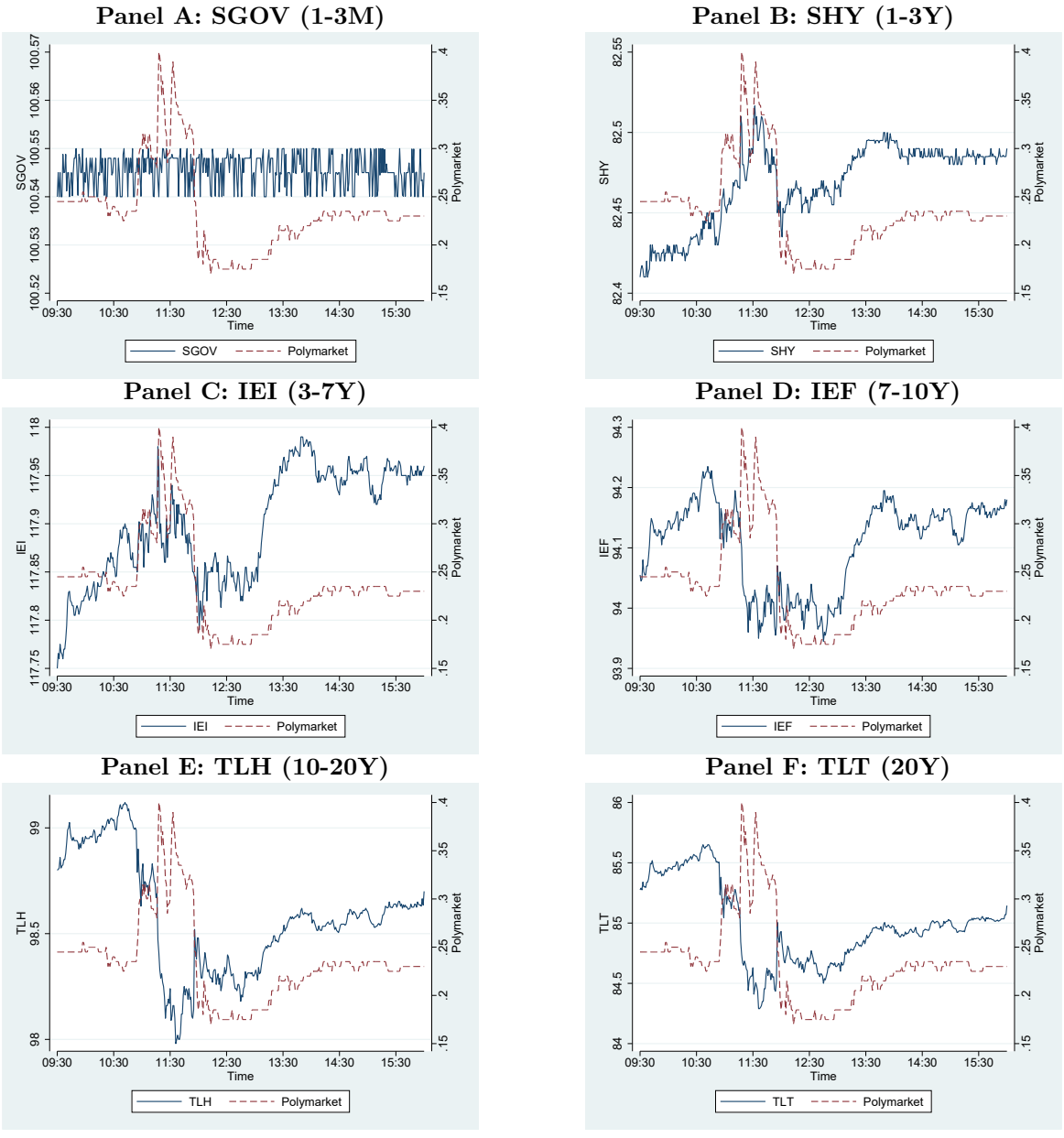
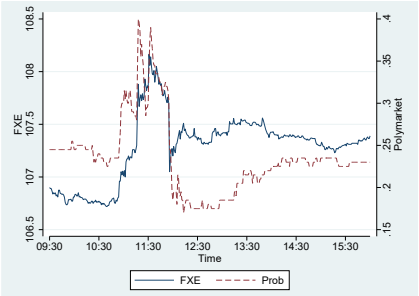


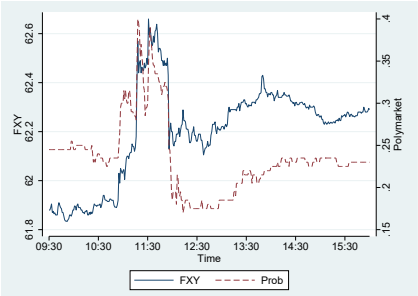
Figure 7: Currency Market Performance and Prediction Market Probabilities

This figure shows intraday currency market performance together with prediction market probabilities on July 16, 2025. We use a set of Invesco CurrencyShares® ETFs tracking individual currencies relative to the U.S. dollar: FXE (Euro), FXY (Japanese Yen), FXB (British Pound), FXC (Canadian Dollar), FXF (Swiss Franc), and FXA (Australian Dollar). We also use the Invesco DB US Dollar Index Bearish Fund (UDN), which tracks the performance of the U.S. dollar against a basket of six major world currencies. Each panel plots the price of the corresponding currency ETF as a solid line (scale on left axis) and the implied probability from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 as a dotted line (scale on right axis). The x-axis spans U.S. trading hours from 9:30 a.m. to 4:00 p.m. EST.

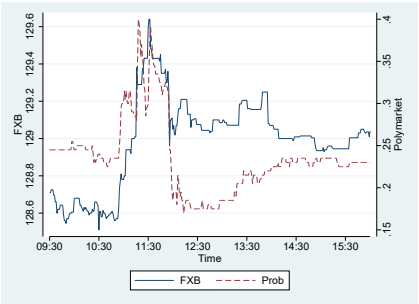
Panel A: FXE (Euro)



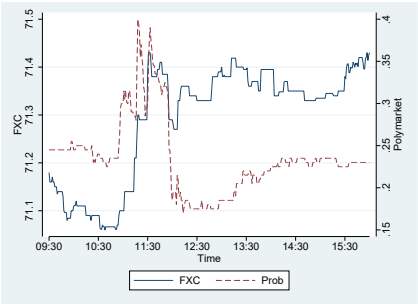
Panel B: FXY (Japanese Yen)



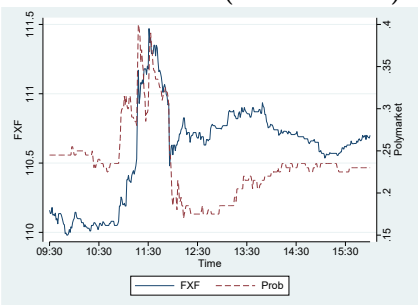
Panel C: FXB (British Pound)



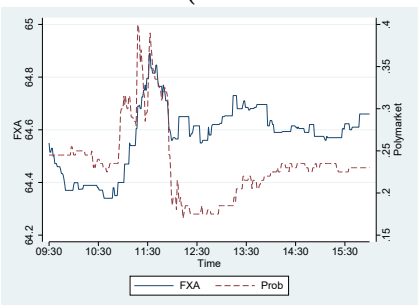
Panel D: FXC (Canadian Dollar)



Panel E: FXF (Swiss Franc)



Panel F: FXA (Australian Dollar)



Panel G: UDN (Dollar Index Bearish)

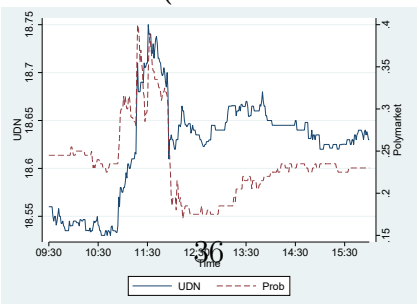


Table 1: Summary statistics

This table presents summary statistics for the main variables in the 2-minute frequency analysis. Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. EST.

Panel A: Full day

	N	25%	50%	75%	Mean	Std.
Polymarket	196	21.5	23.0	24.5	23.56	4.46
$\Delta Polymarket$	195	0.0000	0.0000	0.0000	-0.0077	1.3871
SPY	195	-0.0161	0.0056	0.0225	0.0004	0.0535
SGOV	195	-0.0037	0.0000	0.0038	0.0000	0.0049
SHY	195	-0.0042	0.0000	0.0061	0.0005	0.0084
IEI	195	-0.0043	0.0000	0.0084	0.0009	0.0120
IEF	195	-0.0106	0.0001	0.0106	0.0007	0.0209
TLH	195	-0.0202	0.0000	0.0203	-0.0005	0.0558
TLT	195	-0.0235	0.0000	0.0254	-0.0007	0.0813
FXE	195	-0.0140	0.0000	0.0140	0.0024	0.0745
FXY	195	-0.0160	0.0000	0.0161	0.0034	0.0743
FXB	195	-0.0026	0.0000	0.0043	0.0013	0.0431
FXC	195	0.0000	0.0000	0.0000	0.0018	0.0253
FXF	195	-0.0181	0.0000	0.0162	0.0025	0.0637
FXA	195	0.0000	0.0000	0.0000	0.0009	0.0395
UDN	195	-0.0214	0.0000	0.0204	0.0020	0.0642
Stocks	494,425	-0.0683	0.0000	0.0751	-0.0053	1.1572

Panel B: Tight window

	N	25%	50%	75%	Mean	Std.
Polymarket	61	21.5	24.5	31.5	26.47	6.45
$\Delta Polymarket$	60	-1.00	0.00	0.00	-0.108	2.434
SPY	60	-0.0329	0.0084	0.0303	-0.0021	0.0858
SGOV	60	-0.0030	0.0000	0.0030	0.0000	0.0048
SHY	60	-0.0061	0.0000	0.0069	0.0003	0.0133
IEI	60	-0.0127	0.0000	0.0096	-0.0002	0.0176
IEF	60	-0.0212	-0.0025	0.0106	-0.0031	0.0317
TLH	60	-0.0516	-0.0101	0.0330	-0.0119	0.0935
TLT	60	-0.0681	-0.0117	0.0471	-0.0166	0.1373
FXE	60	-0.0277	-0.0047	0.0465	0.0091	0.1306
FXY	60	-0.0309	0.0000	0.0402	0.0071	0.1276
FXB	60	-0.0097	0.0000	0.0310	0.0073	0.0703
FXC	60	0.0000	0.0000	0.0000	0.0056	0.0381
FXF	60	-0.0316	0.0002	0.0361	0.0097	0.1092
FXA	60	-0.0148	0.0000	0.0155	0.0061	0.0577
UDN	60	-0.0267	0.0000	0.0400	0.0085	0.1081
Stocks	152,127	-0.0944	0.0000	0.0925	-0.0100	1.1486

Table 2: Stock market reaction

This table reports the results of regressing SPDR S&P 500 ETF (SPY) returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket. The analysis is conducted using 2-, 3-, and 5-minute windows. Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. EST. Standard errors are robust to heteroskedasticity. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	2 minutes	3 minutes	5 minutes
	(1)	(2)	(3)
ΔPolymarket	-0.017***	-0.013*	-0.023**
	(-3.29)	(-1.95)	(-2.58)
Observations	195	130	78
R^2	0.198	0.137	0.317

Panel B: Tight window

	2 minutes	3 minutes	5 minutes
	(1)	(2)	(3)
ΔPolymarket	-0.019***	-0.014**	-0.024**
	(-3.64)	(-2.13)	(-2.67)
Observations	60	40	24
R^2	0.278	0.201	0.387

Table 3: Individual stock reaction

This table reports the results of regressing individual stock returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket. The analysis is conducted using 2-, 3-, and 5-minute windows. Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. EST. Firm fixed effects are included. Standard errors are clustered at both the firm and time levels. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	2 min	3 min	5 min
	(1)	(2)	(3)
ΔPolymarket	-0.025***	-0.024**	-0.033***
	(-3.50)	(-2.23)	(-5.54)
Firm FE	✓	✓	✓
Observations	494,425	329,614	195,791
R^2	0.0028	0.0012	0.0164

Panel B: Tight window

	2 min	3 min	5 min
	(1)	(2)	(3)
ΔPolymarket	-0.028***	-0.026**	-0.028***
	(-4.31)	(-2.46)	(-4.45)
Firm FE	✓	✓	✓
Observations	152,127	101,418	59,466
R^2	0.0057	0.0029	0.0528

Table 4: Individual stock reaction by industry

This table reports the results of regressing individual stock returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket, across the Fama-French 12 industries. The analysis is conducted using 2-minute windows. Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. EST. Firm fixed effects are included. Standard errors are clustered at both the firm and time levels. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	NoDur	Durbl	Manuf	Enrgy	Chems	BusEq	Telcm	Utils	Shops	Hlth	Money	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ΔPolymarket	-0.019***	-0.023***	-0.024***	-0.030***	-0.039***	-0.023***	-0.069***	-0.006	-0.023***	-0.023***	-0.041***	-0.026***
	(-3.19)	(-3.52)	(-3.05)	(-5.65)	(-4.64)	(-2.73)	(-2.81)	(-0.75)	(-3.64)	(-3.45)	(-5.47)	(-2.80)
Firm FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	5,940	3,360	13,380	4,740	3,600	26,520	2,160	4,320	12,540	23,100	32,031	20,436
R^2	0.045	0.029	0.005	0.007	0.023	0.007	0.014	0.001	0.016	0.009	0.005	0.006

Panel B: Tight window

	NoDur	Durbl	Manuf	Enrgy	Chems	BusEq	Telcm	Utils	Shops	Hlth	Money	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ΔPolymarket	-0.021***	-0.024***	-0.027***	-0.027***	-0.034***	-0.026***	-0.044***	-0.010**	-0.024***	-0.025***	-0.035***	-0.025***
	(-3.29)	(-3.23)	(-3.45)	(-3.93)	(-5.06)	(-3.07)	(-3.36)	(-2.65)	(-3.57)	(-3.32)	(-4.92)	(-3.22)
Firm FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	5,520	3,240	12,180	4,440	3,480	25,260	1,980	4,260	11,700	21,000	27,120	19,140
R^2	0.062	0.033	0.019	0.015	0.055	0.019	0.020	0.002	0.062	0.021	0.008	0.019

Table 5: Heterogeneity: Financials vs. Non-Financials

This table reports the results of examining differences in reactions to changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket between finance firms and non-finance firms. The analysis is conducted using 2-minute windows. Column (1) covers the full trading day from 9:30 am to 4:00 pm, while Column (2) focuses on a narrower window around the event from 10:30 am to 12:30 pm EST. Firm fixed effects are included. Standard errors are clustered at both the firm and time levels. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Full day	Tight window
	(1)	(2)
ΔPolymarket	-0.022***	-0.024***
	(-3.08)	(-3.54)
ΔPolymarket $\times$ Finance	-0.013**	-0.016**
	(-2.03)	(-2.41)
Firm FE	✓	✓
Observations	494,425	152,127
R^2	0.003	0.006

Table 6: Heterogeneity: Market beta

This table reports the results of examining differences in reactions to changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket between high-beta and low-beta firms. The analysis is conducted using 2-minute windows. Column (1) covers the full trading day from 9:30 am to 4:00 pm, while Column (2) focuses on a narrower window around the event from 10:30 am to 12:30 pm EST. Firm fixed effects are included. Standard errors are clustered at both the firm and time levels. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Full day	Tight window
	(1)	(2)
ΔPolymarket	-0.018***	-0.019***
	(-2.83)	(-3.19)
ΔPolymarket × High_Beta	-0.009***	-0.011***
	(-2.88)	(-3.32)
Firm FE	✓	✓
Observations	370,396	113,976
R^2	0.003	0.008

Table 7: Heterogeneity: Financial constraints

This table reports the results of examining differences in reactions to changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket between highly financially constrained and less financially constrained firms. The analysis is conducted using 2-minute windows. Column (1) covers the full trading day from 9:30 am to 4:00 pm, while Column (2) focuses on a narrower window around the event from 10:30 am to 12:30 pm EST. Firm fixed effects are included. Standard errors are clustered at both the firm and time levels. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Equity constraint

	Full day	Tight window
	(1)	(2)
ΔPolymarket	-0.023***	-0.025***
	(-3.45)	(-3.94)
ΔPolymarket × High_EC	-0.000	-0.001
	(-0.01)	(-0.26)
Firm FE	✓	✓
Observations	348,827	107,340
R^2	0.003	0.008

Panel B: Debt constraint

	Full day	Tight window
	(1)	(2)
ΔPolymarket	-0.021***	-0.023***
	(-2.85)	(-3.17)
ΔPolymarket × High_DC	-0.004*	-0.005**
	(-1.95)	(-2.34)
Firm FE	✓	✓
Observations	348,827	107,340
R^2	0.003	0.008

Panel C: Leverage

	Full day	Tight window
	(1)	(2)
ΔPolymarket	-0.021***	-0.023***
	(-2.86)	(-3.30)
ΔPolymarket × High_Leverage	-0.004**	-0.005**
	(-2.15)	(-2.14)
Firm FE	✓	✓
Observations	369,475	113,700
R^2	0.003	0.008

Table 8: Bond market reaction

This table reports the results of regressing iShares bond ETF returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket. The analysis is conducted using 2-minute windows. Panel A covers the full trading day from 9:30 am to 4:00 pm, while Panel B focuses on a narrower window around the event from 10:30 am to 12:30 pm. Standard errors are robust to heteroskedasticity. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	SGOV (1-3M)	SHY (1-3Y)	IEI (3-7Y)	IEF (7-10Y)	TLH (10-20Y)	TLT (20Y)
	(1)	(2)	(3)	(4)	(5)	(6)
ΔPolymarket	-0.000	0.004***	0.003***	-0.004	-0.021***	-0.033***
	(-1.49)	(7.39)	(3.57)	(-1.63)	(-3.39)	(-3.56)
Observations	195	195	195	195	195	195
R-squared	0.007	0.346	0.099	0.056	0.264	0.318

Panel B: Tight window

	SGOV (1-3M)	SHY (1-3Y)	IEI (3-7Y)	IEF (7-10Y)	TLH (10-20Y)	TLT (20Y)
	(1)	(2)	(3)	(4)	(5)	(6)
ΔPolymarket	-0.000	0.004***	0.003***	-0.004	-0.022***	-0.035***
	(-0.88)	(8.03)	(3.82)	(-1.61)	(-3.39)	(-3.55)
Observations	60	60	60	60	60	60
R-squared	0.008	0.466	0.177	0.087	0.324	0.386

Table 9: Back-of-the-envelope bond price impact by maturity (June 2025, $ billions)

Maturity bucket (ETF proxy)	Outstanding ($T)	Coef.	Δp=10pp	Δp=17pp
0–1y Bills (SGOV)	5.78	0.000	0.00	0.00
1–3y Notes (SHY)	6.03	0.004	+2.41	+4.10
3–7y Notes (IEI)	6.03	0.003	+1.81	+3.08
7–10y Notes (IEF)	3.01	0.000	0.00	0.00
10–20y (seasoned) (TLH)	2.52	−0.022	−5.54	−9.42
20y+ Bonds (TLT)	2.52	−0.035	−8.82	−15.00
Net (covered buckets)			−10.14	−17.24

Notes: SIFMA June 2025 outstanding amounts (in $ trillions): Bills 5.784, Notes 15.074, Bonds 5.040. "Notes" are apportioned 40% to 1–3y, 40% to 3–7y, and 20% to 7–10y; "Bonds" split 50/50 between 10–20y (seasoned share) and 20y+. Coefficients are from Table 8, Panel B. The 7–10y coefficient is set to zero due to lack of statistical significance. Positive values indicate price gains (lower yields), negative values indicate price losses (higher yields). TIPS and FRNs are excluded.

Table 10: Currency market reaction

This table reports the results of regressing Invesco currency ETF returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket. The analysis is conducted using 2-minute windows. Column (1) covers the full trading day from 9:30 am to 4:00 pm, while Column (2) focuses on a narrower window around the event from 10:30 am to 12:30 pm. Standard errors are robust to heteroskedasticity. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	FXE (EURO)	FXY (JPY)	FXB (GBP)	FCX (CAD)	FXF (CHF)	FXA (AUD)	UDN (USD Bearish)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ΔPolymarket	0.034***	0.036***	0.004	0.008***	0.030***	0.011***	0.028***
	(3.51)	(3.90)	(0.58)	(3.93)	(3.49)	(3.84)	(3.49)
Observations	195	195	195	195	195	195	195
R-squared	0.401	0.464	0.016	0.189	0.417	0.138	0.379

Panel B: Tight window

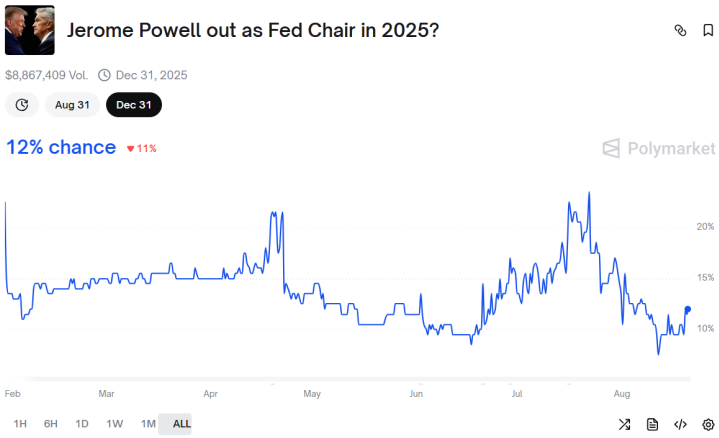
	FXE (EURO)	FXY (JPY)	FXB (GBP)	FCX (CAD)	FXF (CHF)	FXA (AUD)	UDN (USD Bearish)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ΔPolymarket	0.037***	0.039***	0.004	0.009***	0.032***	0.012***	0.031***
	(3.87)	(4.36)	(0.60)	(4.35)	(4.02)	(4.12)	(4.08)
Observations	60	60	60	60	60	60	60
R-squared	0.481	0.567	0.024	0.303	0.515	0.241	0.502

Internet Appendix
The Market Value of Fed Independence: High-Frequency Evidence from a Natural Experiment

Figure IA1: Contracts of Polymarket and Kalshi

This figure shows the full contract history of market-implied expectations of Federal Reserve Chair Jerome Powell leaving office before the end of 2025. Panel A plots the Polymarket contract, which has been trading since February 2025, while Panel B shows the corresponding Kalshi contract, launched in May 2024. In both markets, contract prices range from 0 to 1 and directly map into implied probabilities (e.g., a price of 0.35 corresponds to a 35 percent probability). Our main analysis relies on Polymarket data, but we also use Kalshi data for robustness and find quantitatively similar results throughout.

Panel A: Polymarket



Panel B: Kalshi

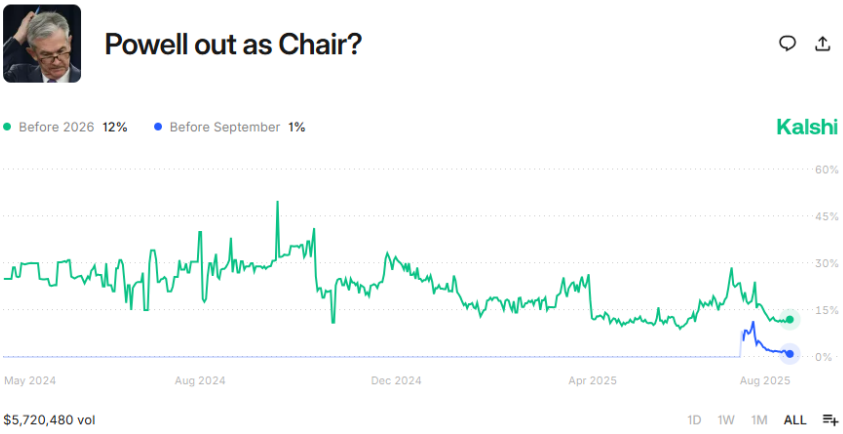
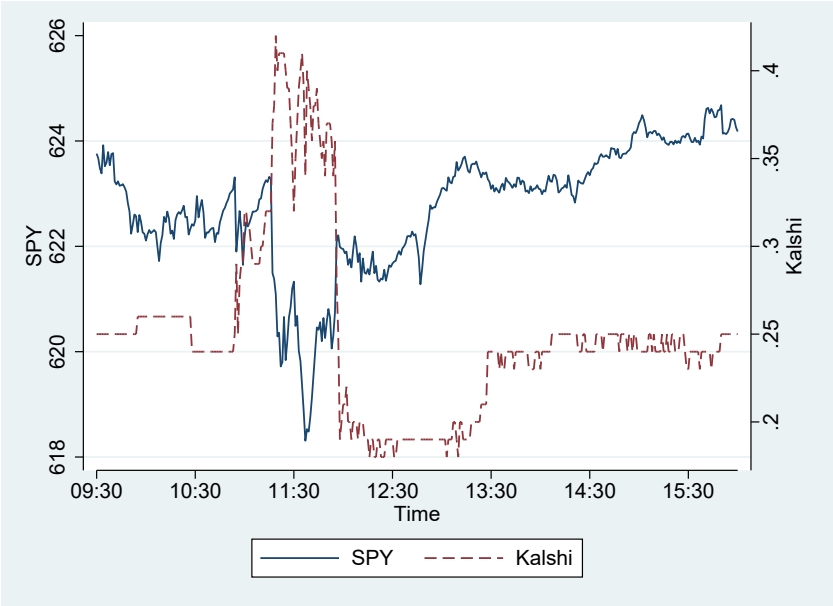


Figure IA2: Stock Market Performance (Kalshi)

This figure shows intraday stock market performance together with prediction market probabilities on July 16, 2025. The level of the S&P 500 index, proxied by the SPDR S&P 500 ETF (SPY), is shown as a solid line (scale on left axis). The implied probability from the Kalshi contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 is shown as a dotted line (scale on right axis). Kalshi is a regulated U.S.-based prediction market platform that provides market-implied probabilities of political and economic events and serves as a competitor to Polymarket. Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. EST.

Panel A: Full day



Tight window (10:30am - 12:30pm)

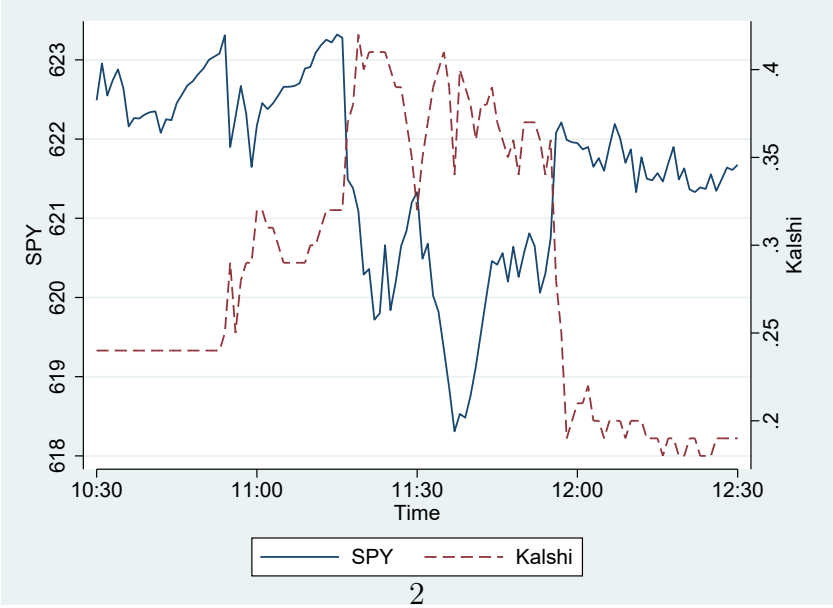


Figure IA3: Industry ETF Performance

This figure shows intraday performance of sector-specific equity ETFs together with prediction market probabilities on July 16, 2025. The figure uses the 11 SPDR sector ETFs that comprise the S&P 500. Each line plots the intraday price of the corresponding ETF (scale on the left axis) alongside the implied probability from the Polymarket contract predicting whether Federal Reserve Chair Jerome Powell will leave office before the end of 2025 (scale on the right axis). The x-axis spans U.S. trading hours from 9:30 a.m. to 4:00 p.m. EST.

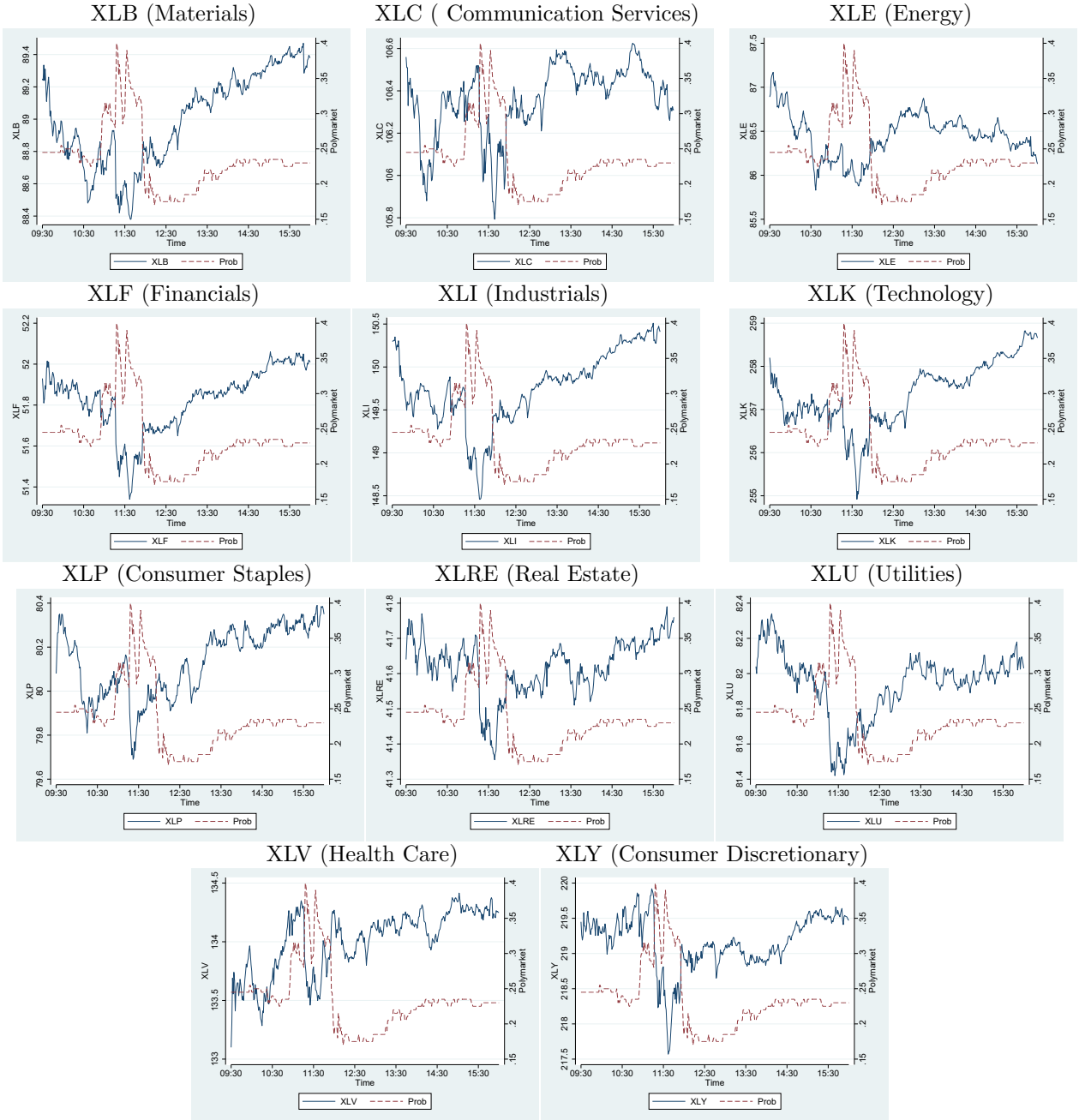


Table IA1: Stock market reaction: Kalshi

This table reports the results of regressing SPDR S&P 500 ETF (SPY) returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Kalshi. Kalshi is a regulated U.S.-based prediction market platform that competes with Polymarket in providing market-implied probabilities of political and economic events. The analysis is conducted using 2-, 3-, and 5-minute windows. Panel A covers the full trading day from 9:30 am to 4:00 pm, while Panel B focuses on a narrower window around the event from 10:30 am to 12:30 pm Standard errors are robust to heteroskedasticity. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	2 minutes	3 minutes	5 minutes
	(1)	(2)	(3)
ΔKalshi	-0.014**	-0.024***	-0.023***
	(-2.14)	(-4.87)	(-3.38)
Observations	195	130	78
R^2	0.126	0.339	0.435

Panel B: Tight window

	2 minutes	3 minutes	5 minutes
	(1)	(2)	(3)
ΔKalshi	-0.016**	-0.026***	-0.024***
	(-2.07)	(-5.00)	(-3.30)
Observations	60	40	24
R^2	0.182	0.454	0.512

Table IA2: Industry ETF reaction

This table reports the results of regressing SPDR industry ETF returns on changes in the probability of Powell being out as Fed Chair before the end of 2025 in Polymarket. Results are shown for the 11 SPDR sector ETFs that comprise the S&P 500. The analysis is conducted using 2-minute windows. Panel A covers the full trading day from 9:30 a.m. to 4:00 p.m., while Panel B focuses on a narrower window around the event from 10:30 a.m. to 12:30 p.m. Standard errors are robust to heteroskedasticity. t-statistics are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full day

	XLB	XLC	XLE	XLF	XLI	XLK	XLP	XLRE	XLU	XLV	XLY
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ΔPolymarket	-0.017**	-0.014***	-0.020***	-0.023**	-0.020***	-0.018***	-0.012***	-0.016**	-0.013***	-0.014**	-0.021***
	(-2.53)	(-2.76)	(-4.19)	(-2.50)	(-3.16)	(-3.15)	(-2.63)	(-2.48)	(-3.39)	(-2.16)	(-3.65)
Observations	195	195	195	195	195	195	195	195	195	195	195
R-squared	0.131	0.112	0.113	0.183	0.209	0.143	0.095	0.088	0.079	0.070	0.181

Panel B: Tight window

	XLB	XLC	XLE	XLF	XLI	XLK	XLP	XLRE	XLU	XLV	XLY
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ΔPolymarket	-0.019***	-0.015***	-0.021***	-0.026***	-0.022***	-0.020***	-0.013***	-0.016**	-0.013***	-0.016**	-0.022***
	(-2.77)	(-2.95)	(-4.32)	(-2.91)	(-3.54)	(-3.22)	(-2.99)	(-2.60)	(-3.37)	(-2.57)	(-4.05)
Observations	60	60	60	60	60	60	60	60	60	60	60
R-squared	0.258	0.193	0.227	0.324	0.339	0.224	0.262	0.226	0.173	0.201	0.276