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The Fed Information Shocks and the Market for Corporate Control: Predictive and Causal Effects*

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Abstract

We show that contractionary monetary shocks, when reflecting a positive macroeconomic assessment by the Federal Reserve (hereafter "Fed"), predict an economic environment that is characterized by (a) a rise in M&A activity, (b) a higher likelihood of M&A completion, (c) higher bidder gains, (d) limited concerns about M&A overpayment, and (e) higher premia offered by foreign bidders to U.S. targets. Further, Fed information shocks have a standalone and direct causal effect on market expectations of M&A gains. That is, positive Fed information shocks trigger a positive revaluation of pending M&A. This revaluation effect, which holds after controlling for macroeconomic conditions and changes in economic forecasts, is more pronounced in deals that are relatively large, financed with stock, and have received a negative market reaction at the M&A announcement period. Overall, our results highlight the independent and credible signaling role of the Fed in the realm of M&A.

Keywords: Monetary Policy; Mergers and Acquisitions; Fed Information Shocks; Takeover Premium; Cumulative Abnormal Returns.

JEL Classification Codes: D83, E43, E44, E52, E58, G34.

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1. Introduction

The Federal Reserve (hereafter the 'Fed') is widely recognized as a strong influencer of both financial markets (Bernanke and Kuttner, 2005; Chen, 2007; Gürkaynak et al., 2019) and the real economy (Barakchian and Crowe, 2013; Gertler and Karadi, 2015). With political polarization limiting the scope and scale of fiscal interventions, monetary policy has gradually taken the driving seat in steering the U.S. economy (Bartels, 2013; Bernanke, 2015). A variety of studies have emerged to understand how the Fed's conventional monetary policy affects the macroeconomic and financial environment, as well as corporate investment. In particular, a tightening of monetary conditions by the Fed is shown to limit the availability of credit (Iacoviello and Minetti, 2008), reduce risk-taking behavior (Delis et al., 2017), and curb corporate investments (Ottonello and Winberry, 2020). While evidence on the channels of conventional monetary policy in the U.S. economy is well-established and largely convincing, research that uncovers the informational effects of Fed decisions requires more scrutiny.

Our paper emphasizes the relevance of the Fed's role as a credible assessor of the macroeconomic outlook by tracking the implications of Fed's information shocks on (a) predicting corporate decisions and outcomes, and (b) directly affecting revaluations of ongoing investments. The starting point in our argument is the recognition that the Fed, in addition to executing monetary policy, is a producer of market-moving macroeconomic insights (Cieslak and Schrimpf, 2019; Melosi, 2017; Nakamura and Steinsson, 2018). Along these lines, prior studies show that the forecasts released by the Fed outperform those produced by professional forecasters in terms of accuracy over long horizons (Romer and Romer, 2000).

Moreover, with market participants constantly searching for narratives that reconcile the ever-flowing and often conflicting economic data (Shiller, 2017), the Fed has become the primary focus for investors that aim to form a coherent view of the macroeconomic outlook (Cieslak and Schrimpf, 2019; El-Erian, 2016).[1] In the context of the Fed's informational role, relative monetary tightening (loosening) can be treated by investors as a positive (negative) signal about economic fundamentals. For instance, Campbell et al. (2017, 2012) show that monetary tightening can increase growth

[1] The Fed, as is the case of other major central banks, has become increasingly more verbose over the years as non-monetary-policy-related news and general assessments of the macroeconomic conditions occupy almost half of the Fed communications with the public (Cieslak and Schrimpf, 2019).

expectations and reduce unemployment forecasts. More recently, the perceived informational role of the Fed has been subject to criticism with several studies questioning the presence and effectiveness of Fed information shocks (Bauer and Swanson, 2023; Hoesch et al., 2023; Karnaukh and Vokata, 2022). Bauer and Swanson (2023) provide evidence suggesting that both the Fed and professional forecasters react to identical macroeconomic fundamentals. They also show that the Fed fails to deliver consistently superior forecasts. Karnaukh and Vokata (2022), in turn, demonstrate how anticipated Fed information shocks can be forecasted to some extent through revisions in GDP growth.

We aim to assess the Fed's presumed informational role in a major segment of the U.S. economy: the market for corporate control. Mergers and Acquisitions (M&A) are vital events in a given firm's lifecycle, as they morph into the primary vehicle for speeding up corporate expansion and achieving inorganic growth (Custodio, 2014; Harford et al., 2019; Renneboog and Vansteenkiste, 2019; Wu and Chung, 2021).[2] Extant research has examined the impact of the Fed on the M&A market through the conventional execution of monetary policy. For example, as monetary contraction tightens financing conditions (Gertler and Karadi, 2015), the overall M&A activity tends to decline and bidder synergy gains go down (Adra et al., 2020). It therefore remains to be investigated whether and how the Fed information shocks influence M&A expectations. Put simply, we aim to answer the following questions: how do the signals conveyed by the Fed about the future economic outlook influence firms' decisions to proceed with M&A? Do such signals affect the likelihood of M&A completion? Do equity investors adjust their expectations about the prospects of pending M&A in response to Fed signals? Lastly, considering the recent criticism of the Fed's informational role, do the predictive and causal effects remain robust when accounting for the current macroeconomic conditions and recent changes in economic forecasts? We provide thorough answers to all these questions and fill the gap in the literature on the effect of Fed information shocks on the M&A market.

The first part of our empirical analysis aims to validate the claim that monetary tightening (loosening) is not necessarily followed by a reduction (rise) in M&A activity and a deterioration (improvement) in M&A outcomes. We propose that if Fed

[2] At the peak of M&A-waves in 1999, 2006, 2015, the dollar value of total M&A transactions exceeded 15% of the U.S. Gross Domestic Product (GDP) in the same year. Moreover, during the last decade, the annual dollar value of M&A transactions has been consistently higher than 800 billion U.S. dollars (IMAA, 2021).

contractionary shocks, when reflecting confidence in the macroeconomic outlook, accurately predict future economic growth, they should predict more favorable environment for M&A activities. In such an environment, deals are more likely to be initiated and completed, and M&A wealth effects are significantly higher. This is because an improvement in economic conditions increases the prospects of companies identifying and exploiting valuable synergetic grounds from M&A (Akkus et al., 2016; Harford, 2005; Maksimovic et al., 2013). Along similar lines, we expect the opposite effect to hold when monetary expansion reflects the Fed's concerns about the macroeconomic outlook.

We provide a battery of initial time series and panel regression results pointing out to a significant growth in M&A activity in the aftermath of monetary contraction by the Fed that is interpreted as a positive information shock. Specifically, our time series analysis of a comprehensive sample of U.S. domestic M&A announced between 1990 and 2022 suggests that positive Fed information shocks are followed by a noticeable increase in M&A activity. In economic terms, a one-standard-deviation contractionary shock that conveys positive macroeconomic information leads to a cumulative rise of approximately one standard deviation in both the quantity and value of announced M&A over the ensuing year. The initial time series evidence is bolstered by a panel regression analysis covering 19,845 firms and nearly 700,000 firm-quarter observations. This analysis indicates that, even after controlling for key firm-related factors, economic conditions, and changes in the forecasts of relevant macroeconomic indicators, the average firm is 20% more likely to initiate an M&A in the aftermath of a positive Fed information shock. Yet, the effect of the Fed's negative information shocks on M&A activity is generally weak.

The aforementioned asymmetric effects of the Fed monetary shocks are also pronounced in our deal-level analysis. Our assessment of the bidder's Cumulative Abnormal Returns (CAR) suggests that M&A announced after contractionary shocks that convey a strong positive assessment of economic fundamentals by the Fed are generally associated with a positive market reaction. In economic terms, M&A announced in the period followed by a one-standard-deviation positive (negative) Fed information shock enjoy a rise (decline) in the bidder CAR by up to 1.30%. In dollar terms, such gains (losses) are equivalent to $80 million for the average bidder in our sample. By contrast, we find very limited influence of negative Fed information shocks on the acquirer's CAR.

The limited sensitivity of M&A activity to negative Fed information shocks can be better understood in the context of the post-WWII economic environment, characterized

by relatively low economic volatility (Stock and Watson, 2002). Several factors have contributed to this phenomenon, including technological advancements, improved inventory management (McCarthy and Zakrajšek, 2007), and financial innovations (Dynan et al., 2006). Importantly, monetary policy has also played a key role, with the Fed evolving to become more responsive to economic fluctuations, particularly in times of downturns (Barakchian and Crowe, 2013). Over the last few decades, the Fed's ability to swiftly intervene has helped mitigate economic disruptions, reducing the impact of negative shocks on economic activity and investment decisions (Ferrante, 2019; Kuttner, 2018).

One of the Fed's most crucial contributions has been its proactive stance in lowering interest rates during periods of economic uncertainty. This approach has not only stabilized expectations but also reduced overall economic uncertainty. By signaling a clear commitment to supporting the economy and ensuring the availability of credit, the Fed has alleviated concerns that might otherwise deter businesses and investors from making large-scale decisions, such as mergers and acquisitions (Adra and Menassa, 2023). In this sense, negative Fed information shocks, while reflecting concerns about the near-term economic outlook, also communicate the Fed's intention to soften the impact of anticipated downturns through credit supply. This dual message helps temper the potential negative effects of such shocks on investment activities.

The aftermath of the 2008 financial crisis offers a salient example of how the Fed's modern monetary policy framework has adapted. In response to the crisis, the Fed introduced unconventional monetary tools, including quantitative easing and forward guidance, which significantly expanded its influence over economic conditions beyond traditional interest rate adjustments (Campbell et al., 2017; Kuttner, 2018). These policies provided essential support during the crisis and have since become key components of the Fed's toolkit, helping to reduce tail risks and stabilize the economy even in challenging times (Hattori et al., 2016). Empirical evidence indicates that these unconventional policies have had economic effects similar to conventional monetary policy (Gambacorta et al., 2014), underscoring their importance in moderating the impact of negative economic shocks.

In the context of M&A, our findings suggest that the Fed's ability to provide credit during challenging economic times plays a critical role in reducing firms' and their advisors' hesitation to proceed with such transactions. Given the long-term nature of

M&A deals, the Fed's commitment to easing credit conditions helps offset concerns about short-term economic slowdowns. During downturns, companies often adopt a cautious stance, delaying or canceling large transactions due to uncertainty (Bulan, 2005). However, when the Fed acts swiftly to lower interest rates and provide liquidity, it reduces the cost of borrowing, making it more feasible for firms to finance acquisitions even during economic uncertainty. This reduced cost of financing is a pivotal factor in M&A decision-making, as it can encourage firms to move forward with transactions they might otherwise postpone.

Our analysis of the premium-CAR relationship further supports the view that M&A announced after positive Fed information shocks are expected to be more synergetic. Specifically, the well-established negative relation between the premium offered to the target and the bidder's CAR, which is generally perceived as an indicator of overpayment to the target's shareholders in the presence of reduced synergies (Alexandridis et al., 2013; Antoniou et al., 2008; Hambrick and Hayward, 1997; Mueller and Sirower, 2003), holds true in the aftermath of conventional monetary shocks. This relation flips sign in the group of deals announced in the aftermath of positive Fed information shocks. Moreover, highlighting the strong prospects of such M&A, we find that the likelihood of deal completion increases significantly in the aftermath of positive Fed information shocks.

We further find that our insights extend to the realm of cross-border acquisitions (CBA). Specifically, we examine the extent to which positive information shocks by the Fed predict a business environment by which U.S. targets can reap higher premia from foreign bidders. For this purpose, we exploit a separate monetary-shock dataset that is also produced by Jarociński and Karadi (2020). This dataset covers the information and conventional shocks by the European Central Bank (ECB) and allows us to calculate measures and differences in standardized information and conventional shocks between the Fed and the ECB. Our results show that large differences between the Fed's positive information shock and their ECB equivalent predict an economic environment where U.S. targets capitalize on relatively stronger growth prospects, ultimately reaping higher premia from European bidders.

The above results highlight the importance of explicitly disentangling the Fed's informational role from its conventional one as executor of monetary policy when assessing the impact of monetary shocks on M&A activity and outcomes. Conflating these

two roles leads to an underestimation of the role of monetary policy in the conventional sense in shaping M&A outcomes. This is highly relevant as the frequency and magnitude of Fed information shocks have been traditionally neglected. Indeed, almost a quarter of the Federal Open Market Committee (FOMC) announcements covered in our sample is characterized by an unconventional positive correlation between interest rate changes and stock market returns. Importantly, in absolute terms, the size of these shocks is roughly half the size of the conventional monetary shocks that are known to reduce investment activities.

The second part of our empirical analysis focuses on the direct effect of Fed information shocks in causing M&A revaluations. In this part we examine whether Fed followers respond to information shocks by adjusting the valuation of existing (i.e., they are not completed or withdrawn, or classified as "pending") M&A before the arrival of additional information about economic fundamentals. Put simply, we argue that, if the Fed information shocks offer a novel and credible positive assessment of the macroeconomic outlook (Hattori et al., 2016; Jarociński and Karadi, 2020; Nakamura and Steinsson, 2018), equity investors should reassess the prospects of pending M&A from a more positive perspective. Evidence suggesting that such revaluation occurs in the immediate period following the Fed announcements (even before the Fed's expectations are validated by the unfolding economic conditions) would add novel support to the growing informational role of the Fed in altering the equity investors' expectations in the realm of M&A.

To directly test the causal effects of the Fed's information shocks, we assess the extent to which such shocks influence the market's perception of pending M&A at the times of the FOMC announcements. We find the effects of the Fed's information shocks to be economically meaningful: the average bidder in pending deals earns up to 0.70% in CAR in the day following a one-standard-deviation contractionary shock that is positively interpreted (i.e., positive Fed information shock) by equity investors. Our analysis suggests that the revaluation of bidders in pending M&A is more pronounced in deals that are stock-financed, relatively large, and were perceived negatively by market participants at the announcement period. One common aspect among these deals is that their ability to deliver added shareholder wealth strongly depends on a positive economic environment. In the case of stock-financed acquisitions, a positive macroeconomic signal by the Fed causes investors to update their beliefs about acquirer valuations. In the case

of deals that are perceived by a significant value deterioration at the announcement period, reassurance by the Fed about the future macroeconomic outlook reduces left tail risk perceptions (Hattori et al., 2016), which partly offsets the equity investors' pessimism about these deals' prospects.

Our paper contributes to various strands of the literature. Our most direct contribution is that we present a new highly consequential factor that predicts both the M&A activity and bidders gains (Alexandridis et al., 2017; Custódio and Metzger, 2013). Prior research emphasizes the relevance of the macroeconomic environment and the Fed's conventional shocks in influencing the expected gains from M&A (Adra et al., 2020; Bonaime et al., 2018; Erel et al., 2021). Hence, we enhance this narrative by emphasizing the role of the Fed's information production function in predicting the level of M&A and their associated bidder gains.

Moreover, our paper is the first to document a direct causal effect of Fed information shocks on the bidding firms' (re)valuation. Prior research in M&A primarily focuses on the role of regulatory and firm-specific events in triggering post-announcement revaluation of merging firms (Malmendier and Tate, 2005; Savor and Lu, 2009). We extend these insights by showing that the Fed information shocks, as an unexpected non-deal and non-regulatory factor, have a significant impact on the size and magnitude of the bidder's post-announcement revaluation.

The robustness of our findings to the potential confounding effects of both the macroeconomic environment and the prevailing forecasts provide novel evidence from the realm of M&A on the stand-alone direct informational effect of the Fed. Our findings, particularly highlighting the more significant role played by positive Fed information shocks on M&A activity and bidder gains, indicate the importance of the reassurance offered by the Fed regarding current economic conditions for both corporate decision-making and the evaluation of these decisions by equity investors.

We also enhance the literature on the impact of macroeconomic announcements on equity returns (Savor and Wilson, 2014, 2013). Savor and Wilson (2014) show that investors are more attentive and engage in more rational pricing on days when critical information, such as FOMC announcements, are released. We complement this evidence by showing that the attention to the Fed's announcement is not only driven by concerns about news related to conventional monetary policy, but also due to the consequential role of the Fed's macroeconomic insights.

2. Background and Predictions: Predictive and Causal Effects

Several branches of the literature help us understand how Fed information shocks can impact merger outcomes, and the channels through which this effect occurs. Relevant are studies that investigate whether the Fed has an edge in forecasting macroeconomic data. We start by discussing the Fed's role as an information producer, and then concentrate on the relevance of this role in the realm of M&A. Earlier work by Romer and Romer (2000) shows that the Fed's inflation forecasts not only outperform the forecasts made by commercial forecasters but also guide the same forecasters in adjusting their assessments of the inflationary outlook. The same authors argue that the Fed's advantage in forecasting accuracy is not attributed to access of insider information or richer datasets, compared to commercial forecasters. Instead, the Fed's edge in forecasting arises from the commitment of more resources to economic forecasting than any individual commercial forecasters.

Along the same lines, it is worth noting that the Fed's assessment of the macroeconomic outlook can be viewed as equivalent to the production of a public good. While commercial forecasters are incentivized to invest time, effort, and resources up to the point of generating forecasts that are deemed satisfactory by their clients in specific business contexts, the Fed has a much larger and overreaching mandate. The Fed's explicit commitment to ensuring price stability, low unemployment, and low inflation motivates it to support its interest rate decisions with a thorough assessment. This assessment is comprehensive, convincing, and specialized, focusing on the future macroeconomic outlook. Indeed, the Fed's assessment is deemed credible to the point where market participants adjust their growth and inflation expectations. Therefore, a rich array of studies suggest that rising interest rates, when conveying a reassuring economic outlook, should be followed by a rise in both realized growth (Breitenlechner et al., 2021; Jarociński and Karadi, 2020) and future growth expectations (Nakamura and Steinsson, 2018).

It is worth noting a couple of examples that highlight the dynamics influencing this positive correlation. On 22 January 2008, the Fed cut the key rates by 75 basis points, the biggest cut since 1984. The S&P500 futures decreased by roughly 1% in the 30 minutes surrounding the announcement. The financial press interpreted the decline in stock returns as a sign of market concerns about the scope and magnitude of the challenges facing the U.S. economy (La Monica, 2008). In turn, on 16 December 2015, the Fed ended

the zero-low-rate era by raising its key rate by 25 basis points, citing "confidence that the economy will continue to strengthen" (Yellen, 2015, p.1). This move was treated as a bullish signal by equity investors, as the S&P500 closed at 1.45% higher by the end of the same trading day.

Our primary aim in this paper is therefore to extend the emphasis on the Fed's informational role to the realm of M&A. Our first emphasis is on the role of Fed information shocks as predictors of future M&A activity and outcomes. Conventional contractionary monetary shocks tighten credit conditions and reduce M&A activity and outcomes (Adra et al., 2020). However, we conjecture that if contractionary shocks are seen as conveying a positive assessment of the macroeconomic outlook by the Fed, they will lead to a rise in M&A activity and an improvement in M&A outcomes.

This initial effect is not causal *per se*. Rather, our main conjecture is that if the Fed's assessment of the macroeconomic outlook is validated by subsequent economic realities, positive information shocks will signal a future economic environment favorable to M&A activity. Conversely, negative information shocks will indicate an unfavorable environment for M&A activity. As a result, *we predict that contractionary shocks which convey a positive Fed macroeconomic assessment are followed by an economic environment where more M&A plans materialize, bidders enjoy higher announcement period returns, and a larger portion of deals are completed*.

To further highlight the consequential causal role of the Fed's information shocks, we assess these shocks' direct causal effect in influencing the market's valuation of pending M&A deals. In particular, we explore an interesting feature of M&A deals whereby they remain under consideration for a significant period of time (i.e., classified as pending) before they are finalized, i.e., before they are classified as completed or withdrawn. To directly assess the scope and magnitude of the Fed's informational role, we ask the following question: do equity investors directly react to Fed information shocks and reassess the valuation of pending M&A even before accessing further economic data that validate/contradict the Fed's insights?

Evidence that bidders react to positive (negative) Fed information shocks via a positive (negative) reassessment of recently announced, and yet pending M&A will present a strong indicator of increased trust in the Fed's macroeconomic insights. By contrast, a muted market response to the Fed's announcements suggests that equity

investors wait for the release of further economic indicators (e.g., unemployment, inflation) before revaluating the prospects of pending M&A.

It is also important to note that the Fed's presumed informational role is not unchallenged. Recent research studies by Bauer and Swanson (2023) and Hoesch et al. (2023) have criticized the enduring significance and reliability of the Fed's informational impact. Bauer and Swanson (2023) highlight that the traditional view of monetary contraction positively influences economic forecasts loses its strength when considering a larger information set that includes the effects of additional macroeconomic news. They support their findings based on evidence utilizing a comprehensive survey showing minimal revisions to forecasts by professional forecasters following Federal Open Market Committee (FOMC) announcements. Karnaukh and Vokata (2022) further demonstrate how anticipated Fed news shocks can be partly predicted from revisions in GDP growth, thereby diminishing the economic impact of these shocks once this predictability is added to the model.

Our M&A-based investigation offers a new avenue for assessing the extent to which the Fed maintains a strong and independent informational role. Accordingly, evidence from the realm of M&A showing that the Fed's predictive and causal effects remain statistically and economically meaningful, even after accounting for the prevailing economic news and recent adjustments in economic forecasts, would further validate the Fed's informational relevance. Evidence to the contrary, in turn, would suggest that the Fed's presumed informational role is not an independent force *per se*, but rather explained by changes in economic fundamentals and recent adjustments in economic forecasts.

3. Shock Identification, Time Series, and Panel Regression Evidence

To explicitly separate the unexpected conventional monetary shocks from Fed information shocks[3], we follow Jarociński and Karadi (2020) by relying on the sign of the correlation between stock market prices and treasury yields within the narrow window surrounding the Fed (FOMC) announcements. In this method, conventional monetary shocks occur when stock prices and treasury yields change in opposite directions. This reflects the conventional view in monetary literature that rising interest rates lead to

[3] Throughout the paper, the term 'unexpected is used to describe the monetary shocks (conventional and informational) that are not predicted by the lagged levels of economic indicators or M&A activity.

challenging economic conditions, while declining interest rates create favorable conditions (Barakchian and Crowe, 2013; Bernanke and Kuttner, 2005). In turn, the Fed information shocks occur when the changes in the stock market prices and treasury yields have the *same sign* at the time of the Fed announcement. This positive correlation suggests that rising (declining) interest rates are interpreted as a signal of a stronger (weaker) economic outlook (Jarociński and Karadi, 2020).

Figure 1 presents the changes in the rates on Fed funds futures and the S&P500 in the 30-minute (from 10 minutes before to 20 minutes after) window surrounding each FOMC announcement. The data covers the period from February 1990 to December 2022. Up to June 2019, the data is available from the online appendices of Jarociński and Karadi (2020) and the webpage of Professor Refet Gurkaynak (see Gürkaynak et al., 2019). We hand gather the rest of the data (from July 2019 to December 2022) from Bloomberg. The full dataset covers 290 FOMC announcements. While the overall pattern in Figure 1 depicts a negative association between interest rate changes and the S&P500 returns around FOMC announcements, it is worth noting that in about 26% of the meetings (76 in total) the correlation between interest rates and stock returns is positive. Jarociński and Karadi (2020) attribute the *wrong*-signed correlations to the new macroeconomic information conveyed by the FOMC announcements leading equity investors to update their beliefs.

(Insert Figures 1, 2 and 3 about here)

Both the conventional and Fed information shocks are aggregated at monthly levels and introduced alongside the aggregate M&A activity in a rich VAR with sign restrictions. As a proxy for the total M&A activity, we retrieve all the deals covered by Securities Data Corporation (SDC) over the 1990 to 2022 (inclusive) period. We impose the following restrictions on the obtained deals: (a) the deal value exceeds $1 million in 2015 prices (i.e., inflation-adjusted), and (b) the bidder is seeking to control at least 50% of the target's shares at the deal's completion. Figures 2 and 3 presents the time variation in the aggregate number and value of M&A, respectively, and highlight their corresponding pro-cyclical pattern. Aligned with the patterns documented by Alexandridis et al. (2017) and the comprehensive IMAA (2021) report, the peaks of this activity coincide with the peaks of the business cycle, with the highest level of M&A engagement recorded at the peak of the dot-com bubble.

In addition to the monthly differences in aggregate M&A activity, the VAR covers stationary variables reflecting stock and bond market returns, as well as economic output and inflation. We include the returns of the S&P500, the growth in Consumer Price Index (CPI) and industrial production, in addition to the one-year government bond returns retrieved from the FRED database of the Federal Reserve Bank of St Louis. The descriptive statistics of these variables are presented in Table 1.

(Insert Tables 1 and 2 about here)

The sign restrictions of Jarociński and Karadi (2020) are presented in Table 2. These restrictions decompose shocks in the Fed funds futures into conventional and informational components. Moreover, surprises are shown to be driven exclusively by these two types of shocks (conventional and informational). No restrictions about leading effects from the remaining variables on these surprises are imposed in the model.

The impulse response functions' results from the VAR with three-month lags, as presented in Figure 4, suggest that conventional and Fed information shocks are followed by different patterns in aggregate M&A activity. A one-standard-deviation conventional contractionary shock is followed by a decline in M&A activity that is reaching a total of up to one standard deviation in the subsequent 12-month period relative to its pre-shock level.[4] Consistent with our prediction, we find that the positive Fed information shocks are followed by a subsequent rise in M&A activity. In Figure 5, we reproduce impulse response functions using the dollar values of M&A deals. The pattern is equivalent to the patterns shown in Figure 4. In dollar terms, aggregating the dollar value of M&A deals over the 12-month period following the monetary shock, a one-standard-deviation positive Fed information shocks leads to rise in M&A activity by roughly $75m (in 2015 prices). Such level is close to the $85m level representing the monthly standard deviation in our time series sample.

(Insert Figures 4 and 5 about here)

We further understand the impact of Fed information shocks on M&A activity, alongside potential asymmetries therein, by extending our inquiry and incorporating panel regression analysis to examine the likelihood of M&A initiation at firm level. We gather data from COMPUSTAT encompassing quarterly asset values, leverage, and capital investment for all firms spanning from 1990 to 2022. By integrating this COMPUSTAT

[4] This effect is calculated by summing up the individual monthly increases over the 12-month horizon.

data with M&A data sourced from SDC, we ascertain whether a firm is listed as an acquirer in a given quarter. The resultant dataset encompasses 19,845 firms, comprising 687,156 firm-quarter observations, with 6% of firm-quarter observations linked to acquisition activity. The baseline Probit regression on our panel dataset is as follows:

$$Acquisition_{i,q+h} = \gamma_i^h + \beta_1^h Pos\_Info_q + \beta_2^h Neg\_Info_q + \beta_3^h SD\_Conv_q + \theta_{i,q} + \eta_{q-1} + \Delta\varphi_q + \epsilon_{i,q+h} \quad (1)$$

where $Acquisition_{i,q+h}$ is a dummy variable assigned the value of 1 if firm i initiated an acquisition h quarters after quarter q in which the monetary shock occurs. γ_i^h represents firm fixed effects at each horizon. To capture the potential asymmetries between positive (negative) Fed information shocks, Pos_Info_q (Neg_Info_q) is assigned the absolute value of the quarterly aggregate of Fed information shocks when such shocks are positive (negative), and 0 otherwise. In turn, SD_Conv_q is the aggregate level of conventional monetary shocks in a given quarter. In addition to firm-related factors such as bidder size, leverage, and capital investments (CAPX) (represented in Equation (1) by $\theta_{i,q}$), our Probit estimations also control for lagged key economic indicators such as inflation (CPI growth), unemployment, and industrial production growth (represented in Equation (1) by η_{q-1}). Building upon Karnaukh and Vokata's (2022) insights regarding the significance of adjustments in macroeconomic forecasts in elucidating the practical impacts of monetary policy, we incorporate controls for changes in GDP growth and inflation forecasts preceding the FOMC announcement (represented in Equation (1) by $\Delta\varphi_q$). To achieve this, we employ data from the Survey of Professional Forecasters to calculate adjustments in growth and inflation forecasts spanning from the current quarter up to three quarters ahead, employing a methodology akin to that utilized by Karnaukh and Vokata (2022). For example, the change in the three-quarter ahead GDP growth forecasts is determined by the disparity between the current three-quarter-ahead forecast and the forecasts for four quarters ahead that is released during the preceding quarter.

The findings presented in Table 3 strongly indicate a notable positive impact of positive Fed information shocks on the likelihood of initiating an M&A within the subsequent two quarters. Specifically, compared to the baseline odds of M&A initiation, a one-standard-deviation contractionary shock reflecting a favorable assessment of the macroeconomic outlook by the Fed is associated with a 20% increase in the likelihood of M&A initiation. Conversely, the effects of negative information shocks from the Fed are

largely inconsequential in both economic and statistical terms. This asymmetry can be attributed to the evolving nature of recessions and the growing confidence in policy responses to economic downturns, as discussed in the Introduction Section.

(Insert Table 3 about here)

While the baseline estimates suggest a limited effect of conventional monetary shocks on M&A activity, columns (2) and (4) demonstrate a more pronounced impact. Consistent with the emphasis on the Fed's influence on credit conditions, these models indicate that conventional monetary shocks have a significant effect on the M&A activity of financially constrained firms with leverage levels in the top quartile of our sample. Taken together, our panel regression analysis aligns with our time series insights (shown in our impulse response functions in Figures 4 and 5), highlighting distinct effects of the Fed's conventional and information shocks on M&A initiation. Our analysis extends to the deal-level examination in subsequent sections to ascertain whether the observed asymmetry between positive and negative Fed information shocks applies across various deal-specific outcomes.

Our panel regression findings also indicate that during periods of low unemployment and robust economic expansion, there is a heightened motivation for initiating M&A in the near term. Additionally, we observe that favorable adjustments in inflation and growth forecasts across a three-quarter period consistently fuel this activity. In essence, when economic conditions are favorable, there tends to be an uptick in M&A activity, illustrating the cyclical nature of such transactions.

4. Deal-Level Data

Our deal-level analysis is applied to a sample of domestic U.S. M&A announced between July 30th 1991 and December 31st 2022, available also from the SDC Database. The starting year is chosen to allow for the multivariate analysis to control for the cumulative conventional and Fed information shocks in the six-month period preceding the deal's announcement. The target firm is required to be either a public, private, or a divested subsidiary firm. In addition, we exclude restructurings, leveraged buyouts, liquidations, acquisitions in the government sector, bankruptcies, going-private deals, spin-offs, and reverse takeovers. We also require the payment method and deal value to be available, i.e., we exclude deals in which the payment method is classified as 100% unknown in SDC. Furthermore, the bidder (a) owns less than 10% of the target's shares six months before

the deal's announcement, and (b) expects to control more than 50% of the target's shares after the deal's completion. After requiring that the bidder's market valuation and stock returns be available from CRSP in the year preceding the M&A announcement, our sample consists 24,611 M&A.

The annual distribution of the sample is presented in Table 4. Panel A shows that 6% of the deals in our sample are withdrawn, which is roughly equal to the percentage reported by prior studies (Barbopoulos et al., 2020). Moreover, 28% of the deals are industry-diversifying. A third of the deals in our sample are fully settled in cash, while 38% of the deals are fully settled in stocks, and 29% are settled in mixed payments of cash, stock and other means. Panel B presents the annual distribution of our sampled deals based on the target firm's industrial sector. The largest fractions of M&A in our sample are in high-tech (23%), financials (17%), and healthcare (12%). On the contrary, the lowest fractions are in relatively less knowledge-intensive sectors such as real estate (1%) and consumer staples (3%).[5]

(Insert Table 4 about here)

Our main explanatory variables in the deal-level analysis are the standardized versions of the conventional and Fed information shocks that are identified from the VAR model of Jarociński and Karadi (2020). For each deal, we aggregate the levels of conventional and Fed information shocks in the six months preceding the deal's announcement. The six-month window is chosen as it covers the initial rise, and the subsequent reduction, of the effect of monetary shock on the M&A activity in the VAR model. It is also worth noting that our results do not change in the 8-, 10-, and 12-month windows that are chosen as robustness checks to confirm our main conclusions. In addition to the high-frequency shocks, the same model includes the natural logarithm of the S&P500, Real GDP, and GDP deflator (interpolated at the monthly level), the corporate excess bond premium, and the one-year government bond returns. These sums of conventional and information shocks, which are labeled as $Conventional$ ($Conv_i$) and $Information$ ($Info_i$), respectively, are then scaled by their corresponding standard deviations in our sample to create the SD_Conv_i and SD_Info_i. These variables are used

[5] The original version of the manuscript excluded deals in the financials and utilities (as part of Energy and Power) sectors. Based on the recommendation of the anonymous reviewer, such deals are added to our final analysis. It is also worth noting that our insights remain similar in both cases.

to represent the effect of one standard deviation conventional and information shock, respectively, on our key dependent variables.

Our main proxy for the market's assessment of the deal's wealth creation potential is the bidder's announcement period Cumulative Abnormal Returns (CAR). We construct the bidder CAR for deal i by first estimating bidders' risk-adjusted returns:

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \tag{2}$$

where $AR_{i,t}$, is the abnormal return to the bidder in deal i on day t, $R_{i,t}$ is this bidder's stock returns on day t, and $E(R_{i,t})$ is the expected return of this bidder on the same day, estimated based on the Carhart (1997) four-factor model (4FM). We estimate $\hat{\beta}_i$, $\hat{\beta}_i^{smb}$, $\hat{\beta}_i^{hml}$, and $\hat{\beta}_i^{mom}$ on the window covering days $t-250$ to $t-20$, with $t=0$ as the M&A announcement day, as outlined in Equation (3):

$$\begin{aligned}(R_i - R_f)_t = \alpha + \beta_i(R_m - R_f)_t + \beta_i^{smb} SMB_t + \beta_i^{hml} HML_t \\ + \beta_i^{mom} MOM_t + \varepsilon_{i,t}\end{aligned} \tag{3}$$

The bidder CAR in deal i is the sum of the risk-adjusted returns in the five-day window ($t-2$ to $t+2$) around the day of M&A announcement ($t=0$):

$$CAR_i = \sum_{t-2}^{t+2} AR_{i,t} \tag{4}$$

The descriptive statistics of bidder CAR that is reported in Table 5 suggest that the average M&A in our sample is value-creating, with an average CAR of 1.96%. However, the CAR is subject to considerable variation in our sample with a standard deviation of 14%. Accordingly, the positive average CAR is driven by M&A involving unlisted private or divested subsidiary target firms, as shown in prior studies (Fuller et al., 2002; Adra and Barbopoulos, 2019; Kohers and Ang, 2001).

(Insert Table 5 about here)

The descriptive statistics also cover a rich array of control variables commonly used in the literature such as the bidder's size (Alexandridis et al., 2017, 2013; Barbopoulos et al., 2018), the payment method (Adra and Barbopoulos, 2018; Golubov et al., 2015), and toeholds (Eckbo, 2009). As in many papers in the literature (e.g., Rau and Vermaelen (1998), Sudarsanam and Mahate (2003)), we also control for the bidder's market-to-book valuation and leverage on the subsample for which these variables are jointly available. Additionally, for the subsample of public target M&A for which the target's market valuation is available before the deal's announcement, we retrieve the

acquisition multiple, which is estimated as the ratio of the deal value to the target's pre-acquisition market valuation. The construction and source of all variables are covered in great detail in the variable definitions, in Appendix 1.

5. Results and Discussion

5.1. The predictive role of Fed information shocks on bidder value gains

We explore in a multivariate framework the variation in the bidder CAR in the aftermath of conventional and Fed information shocks. We proceed by estimating the following regression:

$$CAR_i = \alpha + \beta_1\, Pos\_Info_i + \beta_2\, Neg\_Info_i + \beta_3 SD\_Conv_i + \sum_{j=4}^{k} \beta_j X_{ji} + \tilde{\tau} + \tilde{\psi} + \varepsilon_i \qquad (5)$$

where Pos_Info_i represent the aggregate of positive information shocks over the six-months period preceding the deal i's announcement and Neg_Info_i represent the aggregate of negative information shocks over six-months period preceding the deal i's announcement. In turn, SD_Conv_i represents the aggregate of conventional monetary shocks over the six-months period preceding deal i's announcement. X_{ji} represent numerous control factors, such as firm and deal characteristics, as shown in Table 6. $\tilde{\tau}$ and $\tilde{\psi}$ represent year and sector fixed effects, respectively.

The CAR-based evidence from columns 1 to 4 in Table 6 suggests that the asymmetries characterizing the decisions to initiate M&A also influence the market's response to such transactions. In particular, we show that the positive Fed information shocks are the most impactful in shaping the market's assessment of M&A. A one-standard-deviation positive Fed information shock predicts up to 1.30% rise in bidder CAR in subsequent M&A announcements. In more economic terms, these gains are equivalent to up 80 million dollars, per the average bidder's market value in our sample.

The evidence reported in Table 6 is also indicative that the conventional and the Fed information shocks are associated with opposing market reactions around M&A announcements. Consistent with Adra et al. (2020), conventional monetary contraction is associated with a significant decline in the bidder CAR. In economic terms, a one-standard-deviation conventional contraction (expansion) is, on average, associated with a 0.25% decline (rise) in the bidder CAR. These results hold in columns (1), estimated on the original sample, and in column (2) which is estimated over the subsample for which data on the bidder pre-acquisition leverage and market-to-book valuation are jointly

available. These results also hold in columns 3 and 4 in which we control for the effects of macroeconomic indicators and adjustments in economic forecasts. The monetary policy literature presents robust evidence that conventional monetary shocks reduce economic output (Barakchian and Crowe, 2013; Gertler and Karadi, 2015), limit financing opportunities, and increase economic uncertainty. Accordingly, conventional monetary shocks create an unfavorable environment for the realization of M&A synergies (Adra et al., 2020). Results presented above are in line with this literature in the realm of M&A.

(Insert Table 6 about here)

We expand our analysis in columns 5 and 6 to assess the effect of conventional and Fed information shocks on the likelihood of deal withdrawal. Our main conjecture is that the insights from our prior analysis are also applicable to the analysis of deal withdrawal: we predict that M&A announced in the aftermath of positive Fed information shocks are less likely to be withdrawn. The dependent variable is assigned the value of 1 if the deal is withdrawn, and 0 otherwise. The evidence from columns (5) and (6) is that Fed's information shocks are more economically and statistically meaningful than conventional shocks in predicting the likelihood of deal withdrawal. Consistent with our prior insights, the positive Fed's information shocks are treated as reassuring signals for merging firms to proceed and finalize their deals. On average, a one-standard-deviation positive Fed information shock predicts a decrease in the odds of deal withdrawal by up to 20% relative to the baseline odds.

As discussed in Section 1, the limited sensitivity of M&A prospects to negative Fed information shocks must be interpreted in the context of the post-WWII era's relatively low economic volatility. Advances in technology, improved inventory management, and financial innovation have contributed to this stability, reducing the severity of economic downturns. Over recent decades, monetary policy has evolved to become more responsive to downturns, effectively shortening the troughs of business cycles and stabilizing economic activity. This responsiveness is primarily achieved through the Fed's proactive approach in lowering interest rates, which stabilizes expectations, reduces uncertainty, and sustains both investment and consumption.

While negative Fed information shocks often signal concerns about the economic outlook, they simultaneously convey the Fed's commitment to supporting the economy by ensuring ample credit availability. This dual signal became particularly evident following the 2008 financial crisis, when the Fed adopted unconventional monetary tools

like quantitative easing and forward guidance to reinforce its commitment to stabilizing markets. Such tools expanded the central bank's ability to mitigate economic downturns beyond traditional interest rate adjustments, contributing to a more resilient economic environment.

Our M&A-based findings suggest that this Fed-driven credit support significantly mitigates the adverse effects of economic uncertainty on M&A activities. With lower borrowing costs due to reduced interest rates, firms are more inclined to proceed with acquisitions even during periods of economic uncertainty. The ease of financing these transactions helps offset concerns about short-term economic declines, reducing firms' and equity investors' worries about the potential loss of synergies. This dynamic underscores the critical role of monetary policy in sustaining M&A activity by lowering the cost of capital and fostering confidence in future growth opportunities, despite prevailing economic challenges.

To further emphasize how the market's assessment of the deal varies in the aftermath of conventional and Fed information shocks, we analyze the dynamics of the premium-CAR relationship. We proceed by estimating the following regression:

$$\begin{aligned} CAR_i = \alpha &+ \beta_1 Acquisition\ Multiple_i + \beta_2 Acquisition\ Multiple_i \times Pos\_Info_i \\ &+ \beta_3 Acquisition\ Multiple_i \times Neg\_Info_i \\ &+ \beta_4 Acquisition\ Multiple_i \times SD\_Conv_i + \sum_{j=5}^{k} \beta_j X_{ji} + \tilde{\tau} + \tilde{\psi} + \varepsilon_i \end{aligned} \quad (6)$$

where $Acquisition\ Multiple_i$ is the ratio of deal value to target size in deal i, Pos_Info_i represent the aggregate of positive information shocks over the six-months period preceding the deal i's announcement and Neg_Info_i represent the aggregate of negative information shocks over six-months period preceding the deal i's announcement. In turn, SD_Conv_i represents the aggregate of conventional monetary shocks over the six months preceding deal i's announcement. X_{ji} represent numerous control factors, such as firm and deal characteristics, as shown in Table 7. $\tilde{\tau}$ and $\tilde{\psi}$ represent year and sector fixed effects, respectively.

A positive premium-CAR relationship is treated as evidence of higher expected synergies from the deal (Barbopoulos and Adra, 2016; Hambrick and Hayward, 1997). By contrast, a negative premium-CAR relationship reflects the market's concern about overconfident managers paying excessively high premia (Antoniou et al., 2008; Díaz et al., 2009). In Table 7 we present two columns examining how the premium-CAR

relationship varies under positive/negative Fed information shocks, in addition to the level of conventional shocks.

(Insert Table 7 about here)

Put it simply, the overall evidence from columns (1) and (2) is consistent with the notion that equity investors treat rising premia in the aftermath of positive Fed's information shocks as an indicator of higher expected deal synergies. On average, an increase in the takeover premium in the aftermath of positive Fed information shocks triggers a rise in the acquirer's CAR, contrary to the case of monetary contraction in the conventional sense. Along with our initial insights, the asymmetry characterizing the influence of Fed information shocks is also pronounced in our analysis of the premium-*CAR* relationship.

5.2. How do Fed and ECB information shocks predict cross-border takeover premia?

We extend our insights into the realm of cross-border acquisitions (CBA) to examine whether the premia received by U.S. targets from foreign bidders vary in the aftermath of Fed information shocks. Our main prediction is that rising interest rates in the U.S. that convey a positive economic outlook by the Fed predict a business environment where U.S. targets capitalize on stronger growth prospects, enjoy a stronger bargaining power, and reap higher premia from foreign bidders. To test this prediction, we turn our focus to acquisitions announced by European bidders of U.S. listed targets. Subsequently, we employ a dataset of conventional and information shocks that is also developed by Jarociński and Karadi (2020) using the reactions to ECB announcements. The identification of the ECB shock series is based on the correlation between the three-month yield on the Euro Over-Night Index Average (EONIA) interest rate swaps and the returns of EURO STOXX 50 index which covers the returns of 50 large blue-chip stocks in 11 Eurozone countries.

To perform this analysis, we estimate the following regression:

$$\begin{aligned} Acquisition\ Multiple_i &= \alpha + \beta_1 Pos\_\Delta Info_i + \beta_2 Neg\_\Delta Info_i + \beta_3 \Delta SD\_Conv_i \\ &+ \beta_4 Public\ Foreign\ Bidder_i + \sum_{j=5}^{k} \beta_j X_{ji} + \tilde{\tau} + \tilde{\psi} + \varepsilon_i \end{aligned} \quad (7)$$

where $Pos\_\Delta Info_i$ and $Neg\_\Delta Info_i$, represent the absolute value of the standardized positive and negative differences between the Fed and ECB information shocks,

respectively, over the six-months period preceding the deal i's announcement.[6] Along similar lines, ΔSD_Conv_i represents the standardized difference between the Fed and ECB's conventional shocks over the same period. X_{ji} represent the control factors used in Table 6, in addition to the acquirer's listing status. $\tilde{\tau}$ and $\tilde{\psi}$ represent year and sector fixed effects, respectively.

The results are reported in Table 8. The two columns reported in Table 8 examine the variation in the takeover premia received by U.S. public targets in 414 deals initiated by European bidders between 2001 and 2022. The target- and deal- related sample selection criteria are the same as the ones used in Section 4 while allowing for the inclusion of unlisted bidders (private and subsidiary firms). In both columns, we control for the same target- and deal-related factors used in column (1) of Table 6. We also introduce a dummy variable to account for the foreign bidder's listing status.

(Insert Table 8 about here)

These findings corroborate our previous results, indicating a significant influence of positive central bank information shocks on M&A outcomes. Specifically, a one-unit increase in the standardized difference between the Fed's and ECB's information shocks is associated with nearly doubling the takeover premium received by US acquirers.

6. The Causal Role of Fed Shocks on Expectations

To directly test the causal effect of the Fed information shocks on bidders' revaluations, we rearrange our sample as follows: for each FOMC meeting, we assemble the deals that are already announced but not yet completed/withdrawn at the time of the FOMC meeting, i.e., classified as pending deals. This approach allows each deal to be used more than once (i.e., if there is more than one FOMC announcement during the period a deal is classified as pending). For the bidder in each deal, we estimate the Monetary Policy CAR, defined as $MPCAR$ in the aftermath of the FOMC announcement. These estimations are performed over two windows. The first window covers one day after the FOMC announcement (MPCAR(+1)). The second window extends from day 1 to day 5 after this announcement (MPCAR(+1,+5)). Table 9 (Panels A and B) presents our results.

Evidence reported in both panels A and B of Table 9 (column 1), for the one- and five-day widows respectively, suggests that positive Fed information shocks have a

[6] The reader can consult Jarociński and Karadi (2020) for a detailed description of the shock identification process, which is generally similar to the identification of the U.S. shock series.

strong positive effect on the bidder's revaluation in the aftermath of the FOMC announcement. In pending M&A, a one-standard-deviation positive Fed information shock triggers an increase in the bidder's valuation by roughly 0.34%. By contrast, conventional economic contraction is associated with a negative revaluation of the acquirer's shares: on average, a one-standard-deviation conventional contractionary shock triggers a decrease in the bidder's valuation by up to 0.20%.

(Insert Table 9 about here)

We expand our analysis to examine how the impact of monetary shocks on the bidder's revaluation varies with deal characteristics. We focus on characteristics that render the deal's prospects highly dependent on the expected future macroeconomic environment that is inferred from the Fed information shocks. The first consequential deal characteristic that we focus on is the deal's relative size. There is rich evidence suggesting that bidders struggle to create value from relatively large deals due to the decreasing marginal returns and the organizational challenges arising from integrating the merging firms (Alexandridis et al., 2013; Barbopoulos et al., 2020). In this context, the stabilization or improvement in macroeconomic conditions offers bidders a better economic environment to identify more synergies that partly offset the losses arising from the challenges of integrating large enterprises. The evidence presented in column (2) of Panels A and B in Table 9 strongly supports this view by showing that the positive revaluation effect of Fed information shocks increases with the target's relative size. For deals in which the target's market valuation exceeds 50% of the acquirer's, a one-standard-deviation positive Fed information shock triggers an increase in the bidder's valuation by roughly 0.70%. The equivalent effect in the case of relatively small target is statistically insignificant.

The second characteristic that we consider is the M&A's payment method. There is wide theoretical and empirical evidence suggesting that bidders attempt to settle deals in overvalued stocks before the stock market corrects it (Myers and Majluf, 1984; Rhodes-Kropf et al., 2005; Rhodes–Kropf and Viswanathan, 2004; Shleifer and Vishny, 2003). Such concerns are particularly relevant in transactions involving public target firms. The widespread ownership structure of the target company makes it less feasible to thoroughly evaluate the acquirer's valuation or to form an effective blockholding group aimed at enhancing value post-deal (Chang, 1998; Kohers, 2001, Draper and Paudyal, 2006). Indeed, our earlier findings in Table 6 indicate that the negative market reaction

to deals with a substantial stock payment component is primarily observed in transactions involving non-private targets. Such overvaluation is one of the main reasons for the market's negative reaction to the deal announcement (Golubov et al., 2015).

Accordingly, we conjecture that, by signaling stronger economic fundamentals, positive Fed information shocks reduce concerns about the acquirer's stock overvaluation. Empirically, we expect acquirers to experience a positive revaluation in stock-financed acquisitions, especially as such deals trigger initial declines in the acquirer's stock returns due to overvaluation concerns. Our results presented in column (4) of Panels A and B in Table 9 show that the revaluation effects of Fed information shocks are more pronounced in deals that include a significant fraction of stock payment (higher than 33%). In such deals, a one-standard-deviation positive Fed information shock triggers an increase in the bidder CAR by roughly 0.60%. In untabulated results (yet available from the authors upon request), we further examine the market's reassessment of stock-financed M&A activity, distinguishing between private and public target acquisitions. As anticipated, our findings indicate that the positive revaluation effect is primarily attributable to stock-financed M&A involving public target deals.

Our third and final characteristic is the market reaction of the deal's announcement period (CAR). Hattori et al. (2016) show that the risk reduction effects of such announcements are highly asymmetric, as they are strongly manifested in the reduction in tail risk perceptions. A natural extension of these insights is to examine whether this asymmetry applies to the realm of the Fed's information shocks. In particular, we test whether the revaluation effects of the Fed information shocks are more pronounced in deals that perceived as wealth destroying at the announcement period.

We explicitly separate deals with initial (at the announcement period) positive market reactions from negative ones. The results presented in column (6) of Panels A and B in Table 9 strongly support the view that the Fed's positive information shocks lead to a positive reassessment of deals with initial negative market reaction. Therefore, bidders in these deals recover, on average, 0.50% of valuation in terms of CAR in response to one-standard-deviation positive Fed information shock.

7. Conclusion

We highlight the conditions under which an unexpected monetary contraction – when treated as a positive assessment of macroeconomic fundamentals by the Fed – is

followed by an increase in the Mergers and Acquisitions (M&A) activity and a higher likelihood of M&A completion. The results from our deal-level analysis suggest that positive Fed information shocks are associated with higher bidder Cumulative Abnormal Returns (CAR) and a positive premium-CAR relationship. The higher takeover premia received by U.S. targets in acquisitions announced by European bidders further validate the role of positive Fed information shocks in influencing the target shareholders' gains. Understanding the reduced severity of downturns since WWII and the Fed's role in mitigating this severity is essential to grasp the asymmetric sensitivity of M&A to Fed information shocks. In recent decades, monetary policy has become more responsive to downturns, effectively shortening business cycle troughs. The Fed's proactive approach in lowering interest rates stabilizes expectations and reduces uncertainty, and ensures credit access to maintain a robust investment environment. Our M&A-based findings suggest that the Fed's commitment to lowering credit costs offsets the short-term concerns about economic downturn, hence ensuring continued value creation from M&A.

The second part of our analysis presents robust evidence suggesting that the Fed's information shocks have a significant role in altering the market's view about previously announced, and yet not finalized deals, i.e., deals that are classified as pending. We find that positive Fed information shocks lead equity investors to reassess from a positive angle pending deals that had received a strong negative market reaction at the announcement period. This is more pronounced in large deals where the realization of synergies is challenging, and stock-financed deals that are suspected to be settled using overvalued equity.

Lastly, in addition to enhancing our understanding of key aspects of the M&A activity that have been the focus of a rich array of corporate finance studies, we provide novel evidence on the consequential role of information shocks associated with the Fed's decisions. Demonstrating the independence of the Fed's informational effect, we provide evidence that this effect remains robust, even when accounting for the impact of current economic conditions and fluctuations in economic forecasts. We also contribute to the wider literature by enhancing our understanding of monetary policy shocks on corporate activities and in particular M&A.

Appendix 1. Variables' definitions

Variable	Description	Source
$CAR_i(\%)$	Bidder 5-day (-2,+2) announcement period Cumulative Abnormal Returns in deal *i* based on Carhart (1997) four-factor model.	CRSP + Authors' Estimations
$MPCAR_i(+1)$	The bidder's abnormal return in deal *i* one day after the FOMC announcement day.	CRSP + Authors' Estimations
$MPCAR_i(+1,+5)$	The bidder's cumulative abnormal returns in deal *i* from one day after the FOMC announcement day to five days.	CRSP + Authors' Estimations
$Acquisition\ Multiple_i$	The ratio of $\left(\frac{Deal\ Value_i}{Target\ Size_i}\right)$	SDC + Compustat
$Withdrawn_i$	Dummy=1 if the deal *i* is withdrawn, and 0 otherwise (=completed).	SDC
Conventional ($Conv_i$)	The conventional information shocks imputed from the VAR model of Jarociński and Karadi (2020). These shocks are identified using the sign restrictions where the change in the S&P 500 and the Fed funds futures have opposing signs. These shocks are aggregated for the 6 months preceding the month of the deal *i*'s announcement.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
Information ($Info_i$)	The Fed information shocks imputed from the VAR model of Jarociński and Karadi (2020). These shocks are identified using the sign restrictions where the change in the S&P500 and the Fed funds futures have the same sign. These shocks are aggregated for the 6 months preceding the month of the deal *i*'s announcement.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
SD_Conv_i	The variable *Conventional* scaled by its monthly standard deviation.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
SD_Info_i	The variable *Information* scaled by its monthly standard deviation.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
Pos_Info_i	Assigned the value of the variable SD_Info_i when this value is positive, and 0 otherwise.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
Neg_Info_i	Assigned the absolute value of the variable SD_Info_i when this value is negative, and 0 otherwise.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
ΔSD_Conv_i	The difference between the conventional monetary shocks by the Fed and their equivalent by the ECB. These variables are aggregated for the 6 months preceding the month of the deal *i*'s announcement. This variable is standardized through division by its standard deviation.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
ΔSD_Info_i	The difference between the information shocks by the Federal reserves and their equivalent by the European Central Banks. These variables are aggregated for the 6 months preceding the month of the deal *i*'s announcement. This variable is standardized through division by its standard deviation.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
$Pos\_\Delta SD\_Info_i$	The value of ΔSD_Info_i when it is positive, and 0 otherwise.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
$Neg\_\Delta SD\_Info_i$	The absolute value of ΔSD_Info_i when it is negative, and 0 otherwise.	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg

Continued

Continued

Variable	Description	Source
$Bidder\ Debt_i$	Bidder's debt ratio in the calendar year before the year of deal *i*.	Compustat
$Bidder\ MTBV_i$	The market value of the bidder 21 days before deal *i*, divided by its book value of equity from the most recent accounting statement before deal *i*'s announcement.	Compustat
$Bidder\ Size_i$ ($m)	The bidder's market value of equity 21 days before deal *i*'s announcement, in millions of dollars.	Compustat
$Public\ Foreign\ Bidder_i$	Dummy=1 if the foreign bidder in deal *i* is a publicly listed firm, and 0 otherwise.	SDC
$Deal\ Value_i$ ($m)	The total value of the deal *i*'s payment.	SDC
$Diversified_i$	Dummy=1 if the bidder and the target in deal *i* have different macro-industries, and 0 otherwise (=Focused).	SDC
$Number\ of\ Bidders_i$	The number of bidders expressing interest in the target in deal *i* at the time of the bid announcement.	SDC
$Private_i$	Dummy=1 if the target in deal *i* is a private firm, and 0 otherwise.	SDC
$Public_i$	Dummy=1 if the target in deal *i* is a publicly listed firm, and 0 otherwise.	SDC
$Relative\ Size_i$ (RS)	Deal *i*'s value divided by the bidder's pre-acquisition market valuation.	SDC
$High\ RS_i$	Dummy=1 if RS in deal *i* is above the 25th percentile, and 0 otherwise.	SDC + Compustat
$HighDebt_i$	Dummy = 1 if the acquirer's debt level in deal *i* is above the 75th percentile in the corresponding sample, and 0 otherwise.	SDC + Compustat
$\Delta InflationForecasts_i(q+n)$	The latest adjustment in the inflation forecasts prior to deal *i*'s announcement for quarter $q+n$. n is assigned the value of 0 for the adjustments in the current quarter's forecasts.	The Survey of Professional Forecasters
$\Delta GrowthForecasts_i(q+n)$	The latest adjustment in the real GDP growth forecasts prior to deal *i*'s announcement for quarter $q+n$. n is assigned the value of 0 for the adjustments in the current quarter's forecasts.	The Survey of Professional Forecasters
$Share\ Control_i$	The percentage of the target's shares that the bidder aims to control through deal *i*.	SDC
$Stock_i$	Dummy=1 if more than a third of the payment in deal *i* is settled in stocks, and 0 otherwise.	SDC
$Stock\ Percentage_i$ (%)	The percentage of deal *i*'s payment that is settled in stock.	SDC
$Subsidiary_i$	Dummy=1 if the target in deal *i* is a subsidiary firm, and 0 otherwise.	SDC
$Target\ Size_i$ ($m)	The public target's market value of equity 21 days before deal *i*'s announcement, in millions of dollars.	Compustat
$Toehold_i$	The percentage of the target's shares held by the bidder before deal *i*'s announcement.	SDC

Continued

Continued

Variable	Description	Source
$LaggedGDPGrowth_i$	The one-quarter lag in real GDP growth at the time of deal *i*'s announcement.	U.S. Bureau of Economic Analysis, Real Gross Domestic Product [GDPC1], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/GDPC1
$LaggedInflation_i$	The two-month lag in year-to-year CPI growth at the time of deal *i*'s announcement.	U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CPIAUCSL], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CPIAUCSL
$LaggedUnemployment_i$	The two-month lag in the unemployment rate at the time of deal *i*'s announcement.	U.S. Bureau of Labor Statistics, Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/UNRATE
$LaggedIP_i$	The two-month lag in industrial production at the time of deal *i*'s announcement.	Board of Governors of the Federal Reserve System (US), Industrial Production: Total Index [INDPRO], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/INDPRO

References

Adra, S., Barbopoulos, L., Saunders, A., 2020. The Impact of Monetary Policy on M&A Outcomes. J. Corp. Financ. 62, 101529.

Adra, S., Barbopoulos, L.G., 2019. Liquidity and information asymmetry considerations in corporate takeovers. Eur. J. Financ. 25. https://doi.org/10.1080/1351847X.2018.1543202

Adra, S., Barbopoulos, L.G., 2018. The Valuation Effects of Investor Attention in Stock-Financed Acquisitions. J. Empir. Financ. 45, 108–125.

Adra, S., Menassa, E., 2023. Uncertainty and Corporate Investments in Response to the Fed's Dual Shocks. Financial Review 58, 463–484.

Akkus, O., Cookson, J.A., Hortaçsu, A., 2016. The Determinants of Bank Mergers: A Revealed Preference Analysis. Manage. Sci. 62, 2241–2258.

Alexandridis, G., Antypas, N., Travlos, N., 2017. Value Creation from M&As: New Evidence. J. Corp. Financ. 45, 632–650.

Alexandridis, G., Fuller, K.P., Terhaar, L., Travlos, N.G., 2013. Deal Size, Acquisition Premia and Shareholder Gains. J. Corp. Financ. 20, 1–13. https://doi.org/10.1016/j.jcorpfin.2012.10.006

Antoniou, A., Arbour, P., Zhao, H., 2008. How Much is Too Much: Are Merger Premiums Too High? Eur. Financ. Manag. 14, 268–287. https://doi.org/10.1111/j.1468-036X.2007.00404.x

Barakchian, S.M., Crowe, C., 2013. Monetary Policy Matters: Evidence from New Shocks Data. J. Monet. Econ. 60, 950–966.

Barbopoulos, L., Adra, S., 2016. The Earnout Structure Matters: Takeover Premia and Acquirer Gains in Earnout Financed M&As. Int. Rev. Financ. Anal. 45, 283–294. https://doi.org/10.1016/j.irfa.2016.04.007

Barbopoulos, L.G., Paudyal, K., Sudarsanam, S., 2018. Earnout Deals: Method of Initial Payment and Acquirers' Gains. European Financial Management 24, 792–828.

Barbopoulos, L.G., Adra, S., Saunders, A., 2020. Macroeconomic News and Acquirer Returns in M&As: The impact of Investor Alertness. J. Corp. Financ. 64, 101583.

Bartels, L.M., 2013. Political Effects of the Great Recession. Ann. Am. Acad. Pol. Soc. Sci. 650, 47–76.

Bauer, M.D., Swanson, E.T., 2023. An Alternative Explanation for the "Fed Information Effect." American Economic Review 113, 664–700.

Bernanke, B., Kuttner, K.N., 2005. What Explains the Stock Market's Reaction to Federal Reserve Policy? J. Finance 60, 1221–1257.

Bernanke, B.S., 2015. The courage to Act: A Memoir of a Crisis and its Aftermath. WW Norton & Company.

Bonaime, A.A., Gulen, H., Ion, M., 2018. Does Policy Uncertainty Affect Mergers and Acquisitions? J. financ. econ. 129, 531–558.

Boone, A.L., Mulherin, J.H., 2007. How Are Firms Sold? J. Finance 62, 847–875.

Bulan, L.T., 2005. Real Options, Irreversible Investment and Firm Uncertainty: New Evidence from U.S. Firms. Review of Financial Economics 14, 255–279.

Breitenlechner, M., Gründler, D., Scharler, J., 2021. Unconventional Monetary Policy Announcements and Information Shocks in the US. J. Macroecon. 67.

Campbell, J.R., Evans, C.L., Fisher, J.D., Justiniano, A., Calomiris, C.W., Woodford, M., 2012. Macroeconomic Effects of Federal Reserve Forward Guidance [with Comments and Discussion]. Brookings Pap. Econ. Act. 1–80.

Campbell, J.R., Fisher, J.D., Justiniano, A., Melosi, L., 2017. Forward Guidance and Macroeconomic Outcomes since the Financial Crisis. NBER Macroecon. Annu. 31, 283–357.

Chang, S., 1998. Takeovers of Privately Held Targets, Methods of Payment, and Bidder Returns. J Finance 53, 773–784. https://doi.org/10.1111/0022-1082.315138

Chen, S.-S., 2007. Does Monetary Policy Have Asymmetric Effects on Stock Returns? J. Money, Credit Banking, 39, 667–688.

Cieslak, A., Schrimpf, A., 2019. Non-Monetary News in Central Bank Communication. J. Int. Econ. 118, 293–315.

Custodio, C., 2014. Mergers and Acquisitions Accounting and the Diversification Discount. J. Finance 19, 219–240.

Custódio, C., Metzger, D., 2013. How Do CEOs Matter? The Effect of Industry Expertise on Acquisition Returns. Rev. Financ. Stud. 26, 2008–2047.

Delis, M.D., Hasan, I., Mylonidis, N., 2017. The Risk-Taking Channel of Monetary Policy in the U.S.: Evidence from Corporate Loan Data. J. Money, Credit Bank. 49, 187–213.

Díaz, K.B.D., Azofra, S.S., Gutiérrez, C.L., 2009. Are M&A Premiums Too High? Analysis of a Quadratic Relationship between Premiums and Returns. Q. J. Financ. Account. 48, 5–21.

Draper, P., Paudyal, K., 2006. Acquisitions: Private versus Public. European Financial Management 12, 57–80. https://doi.org/10.1111/j.1354-7798.2006.00310.x

Dynan, K.E., Elmendorf, D.W., Sichel, D.E., 2006. Can Financial Innovation Help to Explain the Reduced Volatility of Economic Activity? J Monet Econ 53, 123–150.

Eckbo, B.E., 2009. Bidding Strategies and Takeover Premiums: A Review. J. Corp. Financ. 15, 149–178. https://doi.org/10.1016/j.jcorpfin.2008.09.016

El-Erian, M.A., 2016. The Only Game in Town: Central Banks, Instability, and Avoiding the Next Collapse. Random House, New York, NY.

Erel, I., Jang, Y., Minton, B.A., Weisbach, M.S., 2021. Corporate Liquidity, Acquisitions, and Macroeconomic Conditions. J. Financ. Quant. Anal. 56, 443–474.

Ferrante, F., 2019. Risky Lending, Bank Leverage and Unconventional Monetary Policy. J Monet Econ 101, 100–127.

Gambacorta, L., Hofmann, B., Peersman, G., 2014. Monetary Policy at the Zero Lower Bound: A Cross-Country Analysis. J Money Credit Bank 46, 615–642.

Gertler, M., Karadi, P., 2015. Monetary Policy Surprises, Credit Costs, and Economic Activity. Am. Econ. J. Macroecon. 7, 44–76.

Golubov, A., Petmezas, D., Travlos, N.G., 2015. Do Stock-Financed Acquisitions Destroy Value? New Methods and Evidence. Rev. Financ. 1–40.

Gürkaynak, R.S., Karasoy-Can, H.G., Lee, S.S., 2019. Stock Market's Assessment of Monetary Policy Transmission: The Cash Flow Effect. CFS Work. Pap. 628.

Hambrick, M., Hayward, D., 1997. Explaining the Premiums Paid for Large Acquisitions: Evidence of CEO Hubris. Adm. Sci. Q. 42, 103–127.

Harford, J., 2005. What Drives Merger Waves? J. financ. econ. 77, 529–560.

Harford, J., Schonlau, R., Stanfield, J., 2019. Trade Relationships, Indirect Economic Links, and Mergers. Manage. Sci. 65, 3085–3110.

Hattori, M., Schrimpf, A., Sushko, V., 2016. The Response of Tail Risk Perceptions to Unconventional Monetary Policy. Am. Econ. J. Macroecon. 8, 111–136.

Hoesch, L., Rossi, B., Sekhposyan, T., 2023. Has the Information Channel of Monetary Policy Disappeared? Revisiting the Empirical Evidence. American Economic Journal: Macroeconomics 15, 355–387.

Iacoviello, M., Minetti, R., 2008. The Credit Channel of Monetary Policy: Evidence from the Housing Market. J. Macroecon. 30, 69–96.

IMAA, 2021. United States - M&A Statistics.

Jarociński, M., Karadi, P., 2020. Deconstructing Monetary Policy Surprises—The Role of Information Shocks. Am. Econ. J. Macroecon. 12, 1–43.

Jurado, K., Ludvigson, S.C., Ng, S., 2015. Measuring Uncertainty. Am. Econ. Rev. 103, 1177–1216.

Karnaukh, N., Vokata, P., 2022. Growth Forecasts and News about Monetary Policy. J financ econ 146, 55–70.

Kohers, N., Ang, J., 2001. The Take-over Market for Privately Held Companies: the US Experience. Cambridge J. Econ. 25, 723–748. https://doi.org/10.1093/cje/25.6.723

Kuttner, K.N., 2018. Outside the Box: Unconventional Monetary Policy in the Great Recession and Beyond. Journal of Economic Perspectives 32, 121–146.

La Monica, P.R., 2008. Fed Slashes Key Rate to 3.5% [WWW Document]. CNNMoney.com.

Maksimovic, V., Phillips, G., Yang, L., 2013. Private and Public Merger Waves. J. Finance 68, 2177–2217.

Malmendier, U., Tate, G., 2005. CEO Overconfidence and Corporate Investment. J. Finance 60, 2661–2700.

McCarthy, J., Zakrajšek, E., 2007. Inventory Dynamics and Business Cycles: What Has Changed? J Money Credit Bank 39, 591–613.

Melosi, L., 2017. Signalling Effects of Monetary Policy. Rev. Econ. Stud. 24, 853–884.

Mueller, D.C., Sirower, M.L., 2003. The Causes of Mergers: Tests Based on the Gains to Acquiring Firms' Shareholders and the Size of Premia. Manag. Decis. Econ. 24, 373–391. https://doi.org/10.1002/mde.1103

Nakamura, E., Steinsson, J., 2018. High-Frequency Identification of Monetary Non-Neutrality: the Information Effect. Q. J. Econ. 133, 1283–1330.

Officer, M.S., Poulsen, A.B., Stegemoller, M., 2009. Target-Firm Information Asymmetry and Acquirer Returns. Rev. Financ. 13, 467–493. https://doi.org/10.1093/rof/rfn017

Ottonello, P., Winberry, T., 2020. Financial Heterogeneity and the Investment Channel of Monetary Policy. Econometrica 88, 2473–2502.

Rau, P.R., Vermaelen, T., 1998. Glamour, value and the post-acquisition performance of acquiring firms. J. financ. econ., Lecture Notes in Electrical Engineering 49, 223–253. https://doi.org/10.1007/978-90-481-8768-3

Renneboog, L., Vansteenkiste, C., 2019. Failure and Success in Mergers and Acquisitions. J. Corp. Financ. 58, 650–699.

Rhodes-Kropf, M., Robinson, D.T., Viswanathan, S., 2005. Valuation Waves and Merger Activity: The Empirical Evidence. J. financ. econ. 77, 561–603.

Rhodes–Kropf, M., Viswanathan, S., 2004. Market Valuation and Merger Waves. J. Finance 59, 2685–2718.

Romer, C.D., Romer, D.H., 2000. Federal Reserve Information and the Behavior of Interest Rates. Am. Econ. Rev. 90, 429–457.

Savor, P., Wilson, M., 2014. Asset Pricing: A Tale of Two Days. J. financ. econ. 113, 171–201.

Savor, P., Wilson, M., 2013. How Much Do Investors Care About Macroeconomic Risk? Evidence From Scheduled Economic Announcements. J. Financ. Quant. Anal. 48, 343–375.

Savor, P.G., Lu, Q., 2009. Do Stock Mergers Create Value for Acquirers? J. Finance 64, 1061–1097.

Shiller, R.J., 2017. Narrative Economics. Am. Econ. Rev. 107, 967–1004.

Shleifer, A., Vishny, R.W., 2003. Stock Market Driven Acquisitions. J. financ. econ. 70, 295–311.

Stock, J.H., Watson, M.W., 2002. Has the Business Cycle Changed and Why? NBER Macroecon Annu 17, 159–218.

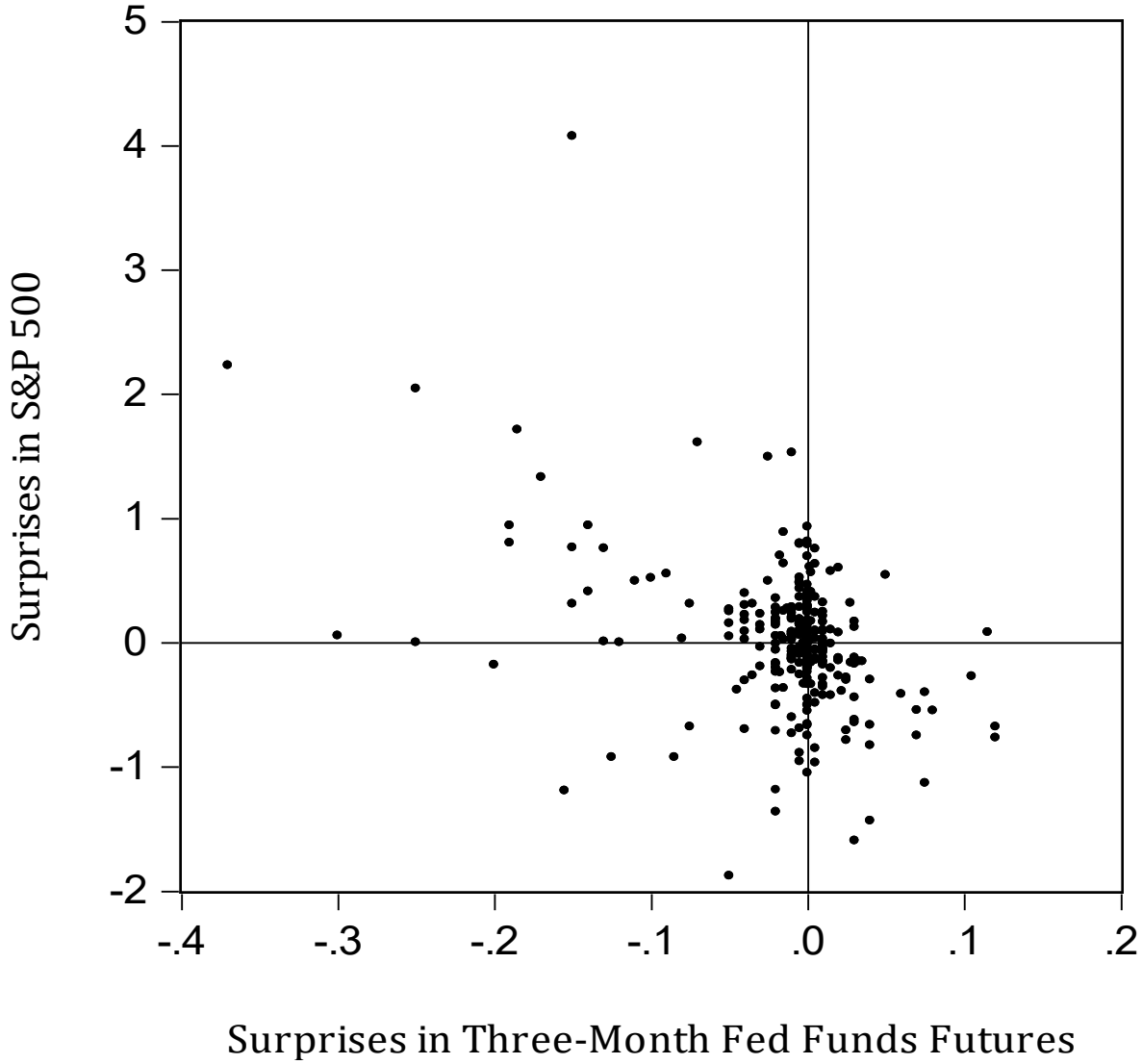
Sudarsanam, S., Mahate, A.A., 2003. Glamour Acquirers, Method of Payment and Post-Acquisition Performance: The UK Evidence. J. Bus. Financ. Account. 30, 299–342.

White, H., 1980. A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. Econometrica 3, 216–227.

Wu, S.-Y., Chung, K.H., 2021. Hedge Fund Activism and Corporate M&A Decisions. Manage. Sci. Forthcomin.

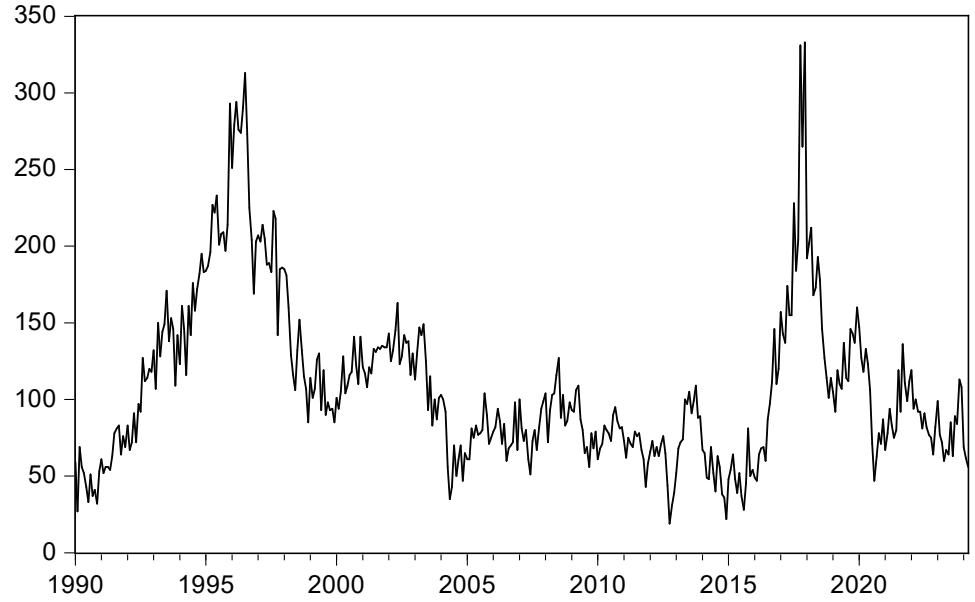
Yellen, J., 2015. Transcript of Chair Yellen's Press Conference December 16, 2015.

Figure 1. The correlation between Fed fund futures and the S&P 500 at FOMC meetings



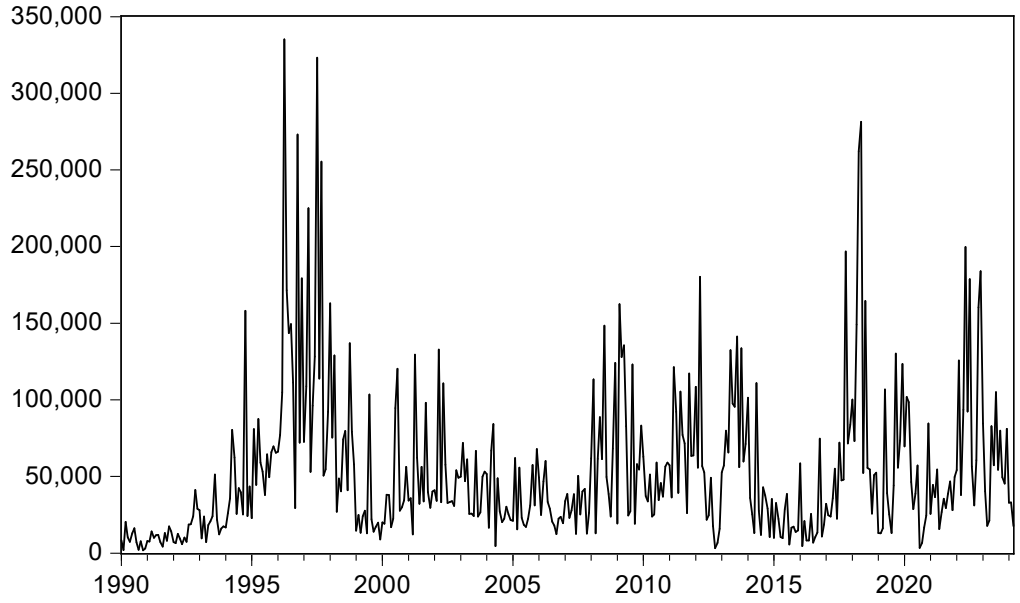
This figure displays the correlation between Fed fund futures and the S&P 500 at 30 minutes around the FOMC meetings (from 10 mins before the meeting to 20 minutes after the meeting). Each dot in this figure presents a separate FOMC announcement between February 1990 and December 2022. The *x*-axis presents the 30-minute change in the three-month Fed funds futures and the *y*-axis presents the returns of the S&P 500 over the same window.

Figure 2. Time variation on overall M&A activity



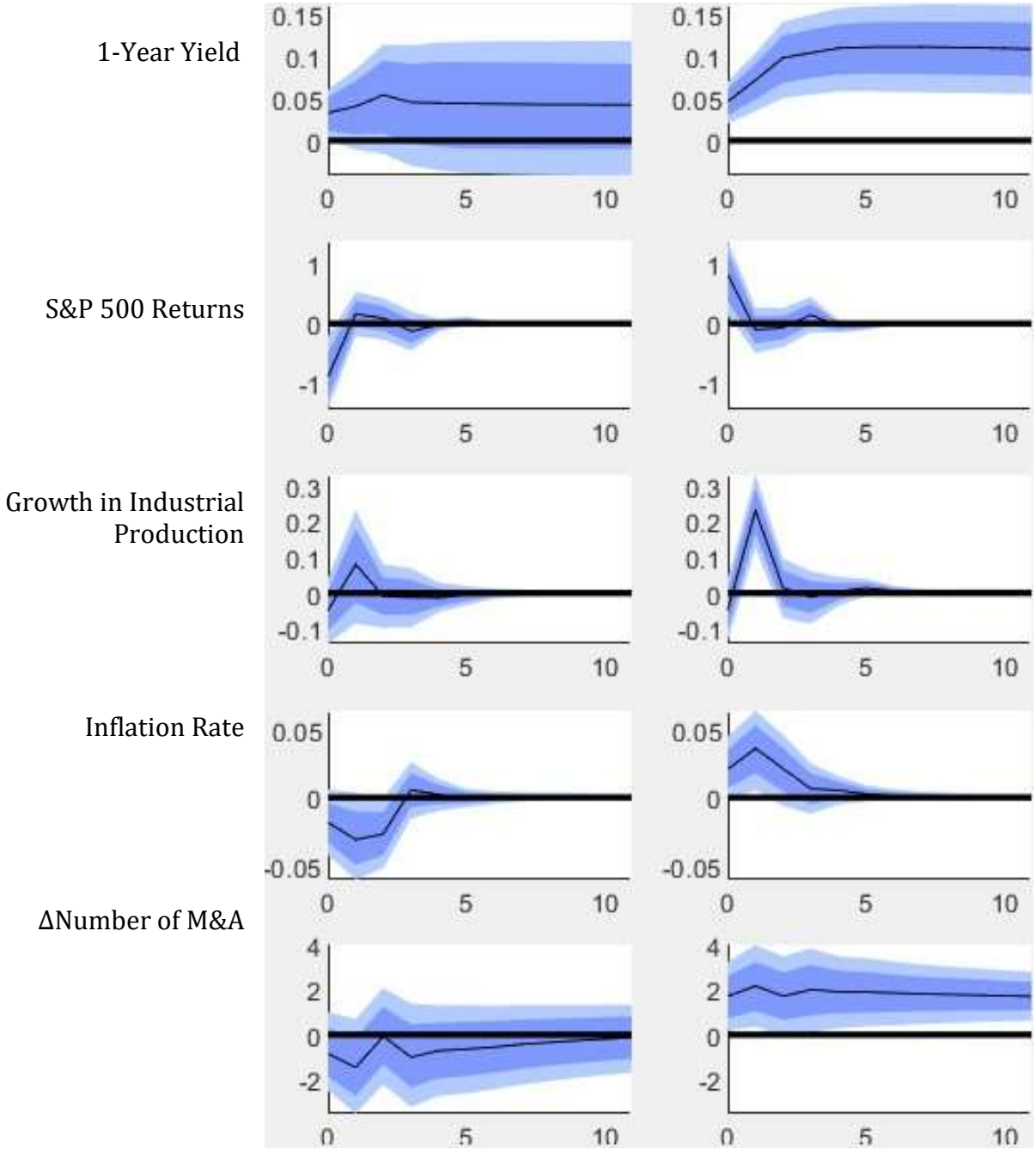
This figure presents the monthly M&A activity (number of M&A deals) with a minimum value of $1m from January 1990 to December 2022.

Figure 3. Time variation in the dollar value of the overall M&A activity



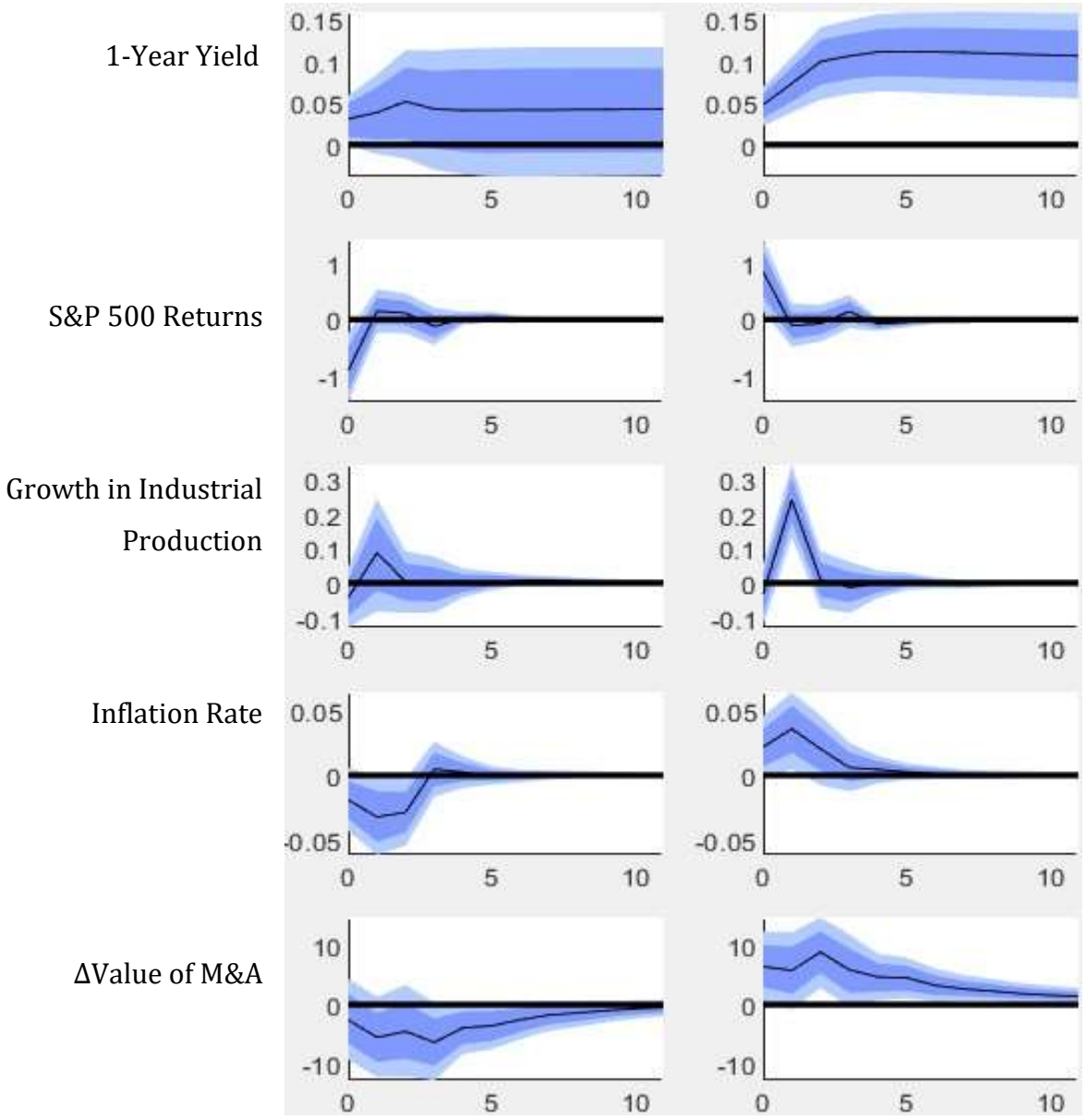
This figure presents the monthly aggregate value (in 2015 dollars) M&A deals from January 1990 to December 2022.

Figure 4. Impulse response results where the size of M&A activity is represented by the number of deals



This figure presents the leading effect of a standard deviation conventional (left impulse responses-panel) and information (right impulse responses-panel) shock on M&A activity (change in the number of M&A) in addition to remaining variables described in Table 1 (1 year yield, S&P 500 returns, growth in industrial production, and inflation rate). The dataset of M&A deals covers transactions with a minimum value of $1m. The line presents the median effect; the darker band represents the interval between the 16th and 84th percentiles, and the lighter band represents the interval between the 5th and 95th percentiles.

Figure 5. Impulse response results where the size of M&A activity is represented by the value of deals



This figure presents the leading effect of a standard deviation conventional (left impulse responses-panel) and information (right impulse responses-panel) shock on the change in the value of M&A in addition to remaining variables described in Table 1 (1 year yield, S&P 500 returns, growth in industrial production, and inflation rate). The dataset of M&A deals covers transactions with a minimum value of $1m. The line presents the median effect; the darker band represents the interval between the 16th and 84th percentiles, and the lighter band represents the interval between the 5th and 95th percentiles.

Table 1. Descriptive statistics of the variables in the VAR

Variable	Mean	SD	Source
ΔNumber of M&A	0.00	21.59	SDC
ΔValue of M&A ($m)	-0.09	84.88	SDC
Conventional Shock (%)	0.00	0.04	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
Information Shock (%)	0.00	0.02	Jarociński and Karadi (2020) + Gürkaynak et al. (2019) + Bloomberg
S&P 500 Returns (%)	0.90	4.43	CRSP
Growth in Industrial Production (%)	0.12	1.07	Board of Governors of the Federal Reserve System (US), Industrial Production: Total Index [INDPRO], retrieved from FRED, Federal Reserve Bank of St. Louis
Inflation Rate (%)	0.22	0.25	U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CPIAUCSL], retrieved from FRED, Federal Reserve Bank of St. Louis
1-Year Yield (%)	2.86	2.32	Board of Governors of the Federal Reserve System (US), 1-Year Treasury Constant Maturity Rate [GS1], retrieved from FRED, Federal Reserve Bank of St. Louis

This table presents the mean, standard deviation, and source of each variable used in the VAR model.

Table 2. Identification restrictions in the VAR model

	Shock		
Variables	**Conventional**	**Information (Unconventional)**	**Other**
High-Freq. Variables			
Interest Rate	+	+	0
Stock Returns	-	+	0
Low-Freq. Variables	None	None	None

This table presents the sign restrictions of the VAR model in Jarociński and Karadi (2020). +/– refer to sign restrictions, while 0 and None refer to zero restrictions and unrestricted responses, respectively.

Table 3. Predicting the odds of M&A initiation

Model	(1)	(2)	(3)	(4)
Dependent/Independent Variables	$Acquisition_{i,q+1}$	$Acquisition_{i,q+1}$	$Acquisition_{i,q+2}$	$Acquisition_{i,q+2}$
Intercept	-1.507***	-1.504***	-1.116***	-1.113***
	(0.208)	(0.208)	(0.187)	(0.187)
Pos_Info_q	0.055***	0.054***	0.032**	0.031**
	(0.019)	(0.019)	(0.015)	(0.015)
Neg_Info_q	-0.004	-0.004	0.000	0.000
	(0.004)	(0.004)	(0.003)	(0.003)
SD_Conv_q	0.003	0.009***	-0.003	0.004
	(0.003)	(0.003)	(0.003)	(0.003)
$SD\_Conv_q \times HighDebt_{i,q}$		-0.030***		-0.032***
		(0.006)		(0.005)
ln $(Assets_{i,q})$	0.015***	0.015***	-0.013***	-0.013***
	(0.001)	(0.001)	(0.001)	(0.001)
$CAPX_{i,q}$	-0.003***	-0.003***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
$HighDebt_{i,q}$	0.028***	0.022***	0.143***	0.137***
	(0.006)	(0.006)	(0.005)	(0.005)
$Unemployment_{q-1}$	-0.021***	-0.021***	-0.006	-0.006
	(0.008)	(0.008)	(0.007)	(0.007)
$Inflation_{q-1}$	-0.014***	-0.014***	0.002	0.002
	(0.005)	(0.005)	(0.004)	(0.004)
$IPGrowth_{q-1}$	-0.003	-0.003	-0.006***	-0.006***
	(0.002)	(0.002)	(0.002)	(0.002)
$GDPGrowth_{q-1}$	0.029***	0.029***	0.002	0.002
	(0.006)	(0.006)	(0.005)	(0.005)
$\Delta GrowthForecasts_q(q)$	-0.009***	-0.009***	0.004*	0.004*
	(0.003)	(0.003)	(0.002)	(0.002)
$\Delta GrowthForecasts_q(q+1)$	0.000	0.001	-0.012*	-0.011*
	(0.007)	(0.007)	(0.007)	(0.007)
$\Delta GrowthForecasts_q(q+2)$	0.016	0.015	0.001	0.001
	(0.015)	(0.015)	(0.014)	(0.014)
$\Delta GrowthForecasts_q(q+3)$	0.026*	0.026*	0.059***	0.059***
	(0.015)	(0.015)	(0.014)	(0.014)
$\Delta InflationForecasts_q(q)$	-0.005*	-0.005*	-0.011***	-0.011***
	(0.003)	(0.003)	(0.003)	(0.003)
$\Delta InflationForecasts_q(q+1)$	0.011*	0.011*	-0.009	-0.009*
	(0.006)	(0.006)	(0.005)	(0.005)
$\Delta InflationForecasts_q(q+2)$	-0.039**	-0.039*	-0.028	-0.027
	(0.020)	(0.020)	(0.019)	(0.019)
$\Delta InflationForecasts_q(q+3)$	0.097***	0.095***	0.075***	0.074***
	(0.026)	(0.026)	(0.024)	(0.024)
Firm Effects	Yes	Yes	Yes	Yes
NObs	687,150	687,150	687,150	687,150
Pseudo R-sq.	0.01	0.01	0.01	0.01

This table displays four Probit models that predict the probability of firm i initiating an M&A deal n the first quarter (Models 1 and 2), as well as in the second quarter (Models 3 and 4) following monetary shocks. A key feature of Models 2 and 4 is their emphasis on the role of the firm's leverage in mediating the effects of conventional monetary shocks on M&A initiation. Pos_Info_q (Neg_Info_q) is assigned the absolute value of the quarterly aggregate of Fed information shocks when such shocks are positive (negative), and 0 otherwise. SD_Conv_q is the aggregate level of conventional monetary shocks in a given quarter. For variables representing the change in forecasts, the subscript q represents the quarter q when the changes in forecasts occur, and n=1,2,3 represent the horizon of such forecasts. All variables are discussed in detail in the main text (Section 3). NObs is the number of observations. Pseudo R-sq. is the McFadden R-Square. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

Table 4. Annual distribution of the sample

Panel A										Panel B											
Year	All	Private	Subsidiary	public	Full Cash	Full Stock	Mixed	Diversi-fying	Withd-rawn	High Tech	Real Estate	Media	Industrials	Energy and Power	Healthcare	Financials	Consumer Products	Consumer Staples	materials	Telecom	Retail
1991	401	185	106	110	89	215	97	86	40	45	1	14	25	50	64	92	34	18	29	18	11
1992	587	306	159	122	121	318	148	137	49	82	2	21	66	35	95	143	38	29	28	23	25
1993	818	429	232	157	203	421	194	205	56	111	8	45	81	54	100	216	71	24	34	34	40
1994	1040	534	239	267	270	498	272	261	77	144	9	60	119	70	125	245	85	32	44	56	51
1995	1098	554	255	289	283	572	243	279	76	184	8	72	102	67	152	209	92	37	59	56	60
1996	1324	733	292	299	334	706	284	370	74	249	14	93	137	77	182	199	131	35	71	67	69
1997	1657	894	367	396	391	840	426	457	92	288	16	105	170	116	185	298	189	45	76	87	82
1998	1649	884	335	430	412	783	454	445	85	373	12	91	181	107	129	304	182	49	80	60	81
1999	1414	713	272	429	370	719	325	399	86	404	8	89	118	83	99	228	156	27	49	88	65
2000	1277	695	239	343	311	659	307	385	71	476	6	68	99	49	85	169	111	36	46	85	47
2001	832	358	212	262	270	322	240	228	47	260	4	37	66	44	75	147	75	28	21	50	25
2002	734	330	239	165	317	183	234	211	32	216	3	31	65	44	81	106	76	24	30	30	28
2003	699	322	190	187	308	149	242	154	23	184	2	15	54	31	96	138	70	24	22	38	25
2004	822	422	217	183	400	155	267	193	26	249	7	45	58	37	107	148	62	23	26	30	30
2005	866	465	230	171	435	122	309	229	20	244	8	29	63	46	126	144	87	25	28	35	31
2006	864	442	237	185	466	102	296	220	24	209	8	44	77	70	116	156	75	30	21	33	25
2007	824	440	196	188	426	101	297	218	41	205	5	35	75	50	125	126	80	26	28	35	34
2008	576	306	144	126	304	85	187	164	45	154	3	21	56	56	81	70	52	16	23	23	21
2009	385	171	111	103	178	77	130	109	23	120	4	14	34	26	60	39	36	12	12	20	8
2010	450	204	136	110	256	52	142	128	20	136	2	15	41	41	65	46	46	15	14	22	7
2011	464	241	140	83	241	59	164	145	18	114	2	22	44	36	73	47	39	24	36	18	9
2012	498	241	155	102	281	60	157	140	13	117	8	23	63	37	64	71	33	13	26	28	15
2013	460	217	142	101	254	55	151	111	12	92	0	22	57	26	63	91	33	25	20	12	19
2014	583	309	148	126	267	103	213	139	18	130	6	31	61	46	76	125	38	19	24	13	14
2015	624	309	179	136	171	236	217	169	19	128	2	39	62	35	90	132	47	21	27	9	32
2016	514	226	173	115	126	243	145	146	10	94	4	27	52	44	86	92	32	19	30	14	20
2017	538	261	173	104	124	265	149	151	11	92	13	34	56	35	73	106	40	25	29	12	23
2018	555	266	168	121	127	255	173	155	18	117	7	45	71	52	65	102	36	15	18	12	15
2019	437	227	115	95	83	229	125	135	7	94	13	14	57	33	64	84	30	17	15	2	14
2020	444	273	114	57	86	235	123	190	9	110	11	16	59	40	66	54	22	14	22	13	17
2021	739	450	186	103	174	333	232	318	37	182	10	34	103	47	111	120	48	15	32	10	27
2022	438	244	112	82	93	228	117	180	25	84	6	21	53	52	83	57	32	14	13	7	16
NObs	24,611	12,651	6,213	5,747	8,171	9,380	7,060	6,857	1,204	5,687	212	1,272	2,425	1,636	3,062	4,304	2,178	776	1,033	1,040	986
%	100	51	25	23	33	38	29	28	5	23	1	5	10	7	12	17	9	3	4	4	4

This table presents the annual distribution of the sample and the related deal characteristics. Panel A presents the annual number of aggregate deals. Panel A also presents the annual distribution of deals based on the target's listing status (public, private, and subsidiary), the method of payment (full settlement in cash, stock, or mix of both), scope of diversification (bidder and target in different industries), in addition to the deal's eventual fate. Panel B presents the annual distribution of the deals based on the target's sector. The sectors covered include: Industrials, Healthcare, Consumer Staples, Materials, Media and Entertainment, Retail, Consumer Products, High Technology, Financials, Energy and Power, Telecommunications, and Real Estate. NObs is the number of deals in each category and (%) is the percentage of deals in this category relative to the total number of deals.

Table 5. Descriptive statistics

Variable	NObs	Mean	25th Percentile	Median	75th Percentile	Std. Dev.
$CAR_i(-2,+2)$	24,611	1.96	-2.89	0.66	5.22	13.73
SD_Info_i	24,611	-0.30	-0.25	0.00	0.05	1.04
SD_Conv_i	24,611	-0.17	-0.22	0.03	0.33	1.01
$Number\ of\ Bidders_i$	24,611	1.02	1.00	1.00	1.00	0.17
$Bidder\ Size_i$	24,611	6,313.60	143.21	579.65	2392.69	23,117.52
$Deal\ Value_i$	24,611	587.80	12.80	45.00	189.35	3725.22
$Acquisition\ Multiple_i$	24,611	2.89	1.23	1.45	1.80	27.99
$Relative\ Size_i$	24,611	0.48	0.03	0.09	0.28	9.41
$High\ RS_i$	24,611	0.76	1.00	1.00	1.00	0.43
$Share\ Control_i$	24,611	99.43	100.00	100.00	100.00	4.53
$Bidder\ Debt_i$	24,611	56.10	35.08	55.11	75.92	34.24
$Toehold_i$	24,611	0.02	0.00	0.00	0.00	0.40
$Withdrawn_i$	24,611	0.05	0.00	0.00	0.00	0.22
$Diversified_i$	24,611	0.28	0.00	0.00	1.00	0.45
$Stock\ Percentage_i$	24,611	51.92	0.00	54.30	100.00	44.57
$Target\ Size_i$	19,363	1476.49	39.93	148.57	682.98	5960.67
$Bidder\ MTBV_i$	19,363	3.59	1.41	2.33	4.00	8.17
$LaggedUnemployment_i$	24,611	5.54	5.20	6.10	1.47	5.54
$LaggedInflation_i$	24,611	2.55	2.55	3.06	1.30	2.55
$LaggedIPGrowth_i$	24,611	88.13	90.99	98.67	12.01	88.13
$LaggedGDPGrowth_i$	24,611	0.75	0.79	1.08	0.99	0.75
$\Delta GrowthForecasts_i(q)$	24,611	-0.26	-0.07	0.40	2.67	-0.26
$\Delta GrowthForecasts_i(q+1)$	24,611	0.01	0.00	0.25	0.78	0.01
$\Delta GrowthForecasts_i(q+2)$	24,611	-0.01	-0.03	0.14	0.48	-0.01
$\Delta GrowthForecasts_i(q+3)$	24,611	0.01	-0.02	0.19	0.39	0.01
$\Delta InflationForecasts_i(q)$	24,611	0.05	-0.04	0.65	1.24	0.05
$InflationForecasts_i(q+1)$	24,611	0.02	-0.08	0.36	0.90	0.02
$InflationForecasts_i(q+2)$	24,611	-0.05	-0.07	0.05	0.29	-0.05
$InflationForecasts_i(q+3)$	24,611	-0.06	-0.04	0.05	0.21	-0.06

This table presents the descriptive statistics of the variables used in the deal-level analysis. $CAR_i(-2,+2)$ is the bidder cumulative abnormal returns over 5 days (from $t-2$ to $t+2$, where $t=0$ is the deal *i*'s announcement day), SD_Info_i is the variable *information* scaled by its monthly standard deviation, SD_Conv_i is the variable *conventional* scaled by its monthly standard deviation, $Number\ of\ Bidders_i$ is the number of bidders expressing interest in the target in deal i at the time of the bid announcement, $Bidder\ Size_i$ is the bidder's market value of equity 21 days before deal *i*'s announcement (in millions of dollars), $Deal\ Value_i$ is the total value of the deal *i*'s payment in millions of dollars, $Acquisition\ Multiple_i$ is the ratio of deal value to target size, $Relative\ Size_i$is the deal *i*'s value divided by the bidder's pre-acquisition market valuation, $High\ RS_i$ is a dummy=1 if relative size in deal *i* is above the 25th percentile, and 0 otherwise, $Share\ Control_i$ is the percentage of the target's shares that the bidder aims to control through deal *i*, $Bidder\ Debt_i$is the bidder's debt ratio in the calendar year before the year of deal *i*, $Toehold_i$ is the percentage of the target's shares held by the bidder before deal *i*'s announcement, $Withdrawn_i$ is a dummy=1 if the deal *i* is withdrawn, and 0 otherwise (=completed), $Diversified_i$ is a dummy=1 if the bidder and the target in deal *i* have different macro-industries, and 0 otherwise (=Focused), $Stock\ Percentage_i$ is the percentage of deal *i*'s payment that is settled in stock, $Target\ Size_i$ is the public target's market value of equity 21 days before deal *i*'s announcement (in millions of dollars), and $Bidder\ MTBV_i$ is the market value of the bidder 21 days before deal *i*, divided by its book value of equity from the most recent accounting statement before deal *i*'s announcement. Please refer to Appendix 1 for a detailed description of these variables, in addition to the variables representing the macroeconomic environment. For each variable, we report the number of available observations, the mean, 25th, 50th, 75th percentiles, in addition to the standard deviation.

Table 6. Multivariate analysis of the bidders' CAR and the likelihood of deal withdrawal

Model	(1)	(2)	(3)	(4)	(5)	(6)
Dependent/ Independent Variables	$CAR_i(-2,+2)$	$CAR_i(-2,+2)$	$CAR_i(-2,+2)$	$CAR_i(-2,+2)$	Withdrawn=1 Completed=0	Withdrawn=1 Completed=0
Intercept	14.347***	13.166***	16.683**	16.052*	0.435	0.688
	(2.198)	(2.575)	(7.550)	(9.056)	(1.460)	(1.724)
Pos_Info_i	1.078***	1.285***	1.216**	1.273**	-0.154**	-0.158**
	(0.303)	(0.416)	(0.516)	(0.632)	(0.058)	(0.073)
Neg_Info_i	0.231	0.345	0.068	0.126	-0.006	-0.038
	(0.159)	(0.192)	(0.144)	(0.170)	(0.022)	(0.026)
SD_Conv_i	-0.242**	-0.225**	-0.230**	-0.221**	-0.026	-0.024
	(0.116)	(0.110)	(0.120)	(0.115)	(0.020)	(0.023)
$ln(Bidder\ Size_i)$	-0.971***	-1.070***	-0.970***	-1.064***	-0.089***	-0.092***
	(0.048)	(0.059)	(0.048)	(0.059)	(0.008)	(0.010)
$High\ RS_i$	0.477**	0.634**	0.466**	0.616**	0.331***	0.410***
	(0.221)	(0.265)	(0.221)	(0.265)	(0.053)	(0.066)
$Stock_i$	-1.354***	-1.353***	-1.371***	-1.374***	0.113***	0.159***
	(0.260)	(0.314)	(0.260)	(0.314)	(0.042)	(0.048)
$(Stock\ \times\ Private)_i$	2.076***	2.121***	2.111***	2.156***	0.209***	0.131
	(0.351)	(0.419)	(0.351)	(0.419)	(0.072)	(0.083)
$Share\ Control_i$	-0.006	0.005	-0.007	0.003	0.006*	0.006
	(0.019)	(0.022)	(0.019)	(0.022)	(0.003)	(0.004)
$Diversified_i$	0.036	0.007	0.023	-0.004	0.176***	0.091**
	(0.195)	(0.225)	(0.195)	(0.225)	(0.035)	(0.040)
$Toehold_i$	-0.080	-0.105	-0.080	-0.092	0.095***	0.073***
	(0.211)	(0.258)	(0.211)	(0.258)	(0.025)	(0.028)
$Private_i$	0.711**	0.920**	0.679**	0.903**	-0.938***	-1.081***
	(0.325)	(0.392)	(0.325)	(0.392)	(0.066)	(0.075)
$Subsidiary_i$	2.451***	2.541***	2.448***	2.555***	-0.705***	-0.840***
	(0.269)	(0.328)	(0.268)	(0.328)	(0.045)	(0.050)
$Number\ of\ Bidders_i$	-0.899*	-0.768	-0.914*	-0.812	1.086***	1.052***
	(0.513)	(0.611)	(0.513)	(0.611)	(0.055)	(0.062)
$Bidder\ Debt_i$		0.009***		0.010***		0.001***
		(0.003)		(0.003)		(0.000)
$Bidder\ MTBV_i$		0.052***		0.053***		0.001
		(0.013)		(0.013)		(0.002)
$LaggedUnemployment_i$			0.623**	0.775***	-0.191***	-0.184**
			(0.268)	(0.318)	(0.066)	(0.079)
$LaggedInflation_i$			-0.539***	-0.543***	0.060*	0.036
			(0.173)	(0.208)	(0.034)	(0.041)
$LaggedIPGrowth_i$			-0.057	-0.078	-0.024	-0.024
			(0.095)	(0.114)	(0.017)	(0.020)
$LaggedGDPGrowth_i$			-0.001	-0.029	0.059	0.074
			(0.193)	(0.230)	(0.040)	(0.046)
$\Delta GrowthForecasts_i(q)$			-0.068	-0.080	-0.034*	-0.030
			(0.085)	(0.101)	(0.018)	(0.021)
$\Delta GrowthForecasts_i(q+1)$			-0.403	-0.354	0.069	0.081
			(0.254)	(0.303)	(0.048)	(0.057)
$\Delta GrowthForecasts_i(q+2)$			0.159	0.041	-0.102	-0.074
			(0.538)	(0.654)	(0.095)	(0.114)
$\Delta GrowthForecasts_i(q+3)$			0.266	0.189	0.046	0.056
			(0.530)	(0.644)	(0.093)	(0.111)
$\Delta InflationForecasts_i(q)$			0.043	0.118	0.006	0.008
			(0.111)	(0.134)	(0.021)	(0.025)
$\Delta InflationForecasts_i(q+1)$			-0.063	-0.154	0.014	-0.013
			(0.208)	(0.252)	(0.040)	(0.048)
$\Delta InflationForecasts_i(q+2)$			0.420	0.453	0.097	0.131
			(0.778)	(0.937)	(0.143)	(0.171)
$\Delta InflationForecasts_i(q+3)$			0.358	0.416	-0.021	-0.034
			(0.937)	(1.132)	(0.174)	(0.207)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Sector Effects	Yes	Yes	Yes	Yes	Yes	Yes
NObs	24,611	19,363	24,611	19,363	24,611	19,363
Adj. R-sq	0.039	0.039	0.040	0.040	0.18	0.22

This table presents four regression outputs that aim to explain the variance in the bidder's 5-day Cumulative Abnormal Returns (CAR), along with two Probit models forecasting the probability of deal withdrawal (dummy=1 if the deal *i* is withdrawn, and 0 otherwise (=completed)). Column (1) does not account for industry effects, while columns (2) and (3) do. Columns (2), (4), and (6) are estimated using a subsample where the acquirer's MTBV and leverage levels are available. Pos_Info_i is assigned the value of the variable SD_Info_i when this value is positive, and 0 otherwise, Neg_Info_i is assigned the absolute value of the variable SD_Info_i when this value is negative, and 0 otherwise, SD_Info_i is the variable *Information* scaled by its monthly standard deviation, SD_Conv_i is the variable *conventional* scaled by its monthly standard deviation, $Bidder\ Size_i$ is the bidder's market value of equity 21 days before deal *i*'s announcement (in millions of dollars), $High\ RS_i$ is a dummy=1 if relative size in deal *i* is above the 25th percentile, and 0 otherwise, $Stock_i$ is a dummy=1 if more than a third of the payment in deal *i* is settled in stocks, and 0 otherwise, $Share\ Control_i$ is the percentage of the target's shares that the bidder aims to control through deal *i*, $Diversified_i$ is a dummy=1 if the bidder and the target in deal *i* have different macro-industries, and 0 otherwise (=Focused), $Toehold_i$ is the percentage of the target's shares held by the bidder before deal *i*'s announcement, $Private_i$ is a dummy=1 if the target in deal *i* is a private firm, and 0 otherwise, $Subsidiary_i$ is a dummy=1 if the target in deal *i* is a subsidiary firm, and 0 otherwise, $Number\ of\ Bidders_i$ is the number of bidders expressing interest in the target in deal *i* at the time of the bid announcement, $Bidder\ Debt_i$ is the bidder's debt ratio in the calendar year before the year of deal *i*, and $Bidder\ MTBV_i$ is the market value of the bidder 21 days before deal *i*, divided by its book value of equity from the most recent accounting statement before deal *i*'s announcement. Please refer to Appendix 1 for a detailed description of these variables, in addition to the variables representing the macroeconomic environment. Standard errors reported in parentheses are corrected for heteroskedasticity using the White (1980) heteroskedasticity-consistent standard errors. NObs is the number of observations. Adj. R-sq. is the adjusted R-squared value. ***, **, and * represent significance at the 1%, 5% and 10% levels respectively.

Table 7. Multivariate analysis of the premium-CAR relationship

Model	(1)	(2)
Dependent/Independent Variables	$CAR_i(-2,+2)$	$CAR_i(-2,+2)$
Intercept	11.998***	2.070
	(3.348)	(15.641)
Pos_Info_i	0.859	1.067
	(1.252)	(1.278)
Neg_Info_i	0.395	0.202
	(0.256)	(0.285)
$Acquisition\ Multiple_i$	-0.001	-0.002
	(0.003)	(0.003)
$Acquisition\ Multiple_i \times Pos\_Info_i$	0.385***	0.367***
	(0.131)	(0.131)
$Acquisition\ Multiple_i \times Neg\_Info_i$	0.005	0.005
	(0.008)	(0.008)
$Acquisition\ Multiple_i \times SD\_Conv_i$	-0.080***	-0.080***
	(0.022)	(0.022)
SD_Conv_i	-0.408*	-0.481**
	(0.219)	(0.228)
$ln(Bidder\ Size_i)$	-0.363***	-0.390***
	(0.089)	(0.090)
$High\ RS_i$	-1.107**	-1.162**
	(0.558)	(0.558)
$Stock_i$	-3.226***	-3.227***
	(0.391)	(0.391)
$(Stock\ \times\ Private)_i$	-0.051*	-0.048*
	(0.027)	(0.027)
$Share\ Control_i$	-0.865**	-0.890**
	(0.416)	(0.416)
$Diversified_i$	-0.159	-0.137
	(0.229)	(0.229)
$Toehold_i$	-0.344	-0.341
	(0.506)	(0.507)
$Private_i$	0.006	0.008
	(0.007)	(0.007)
$Subsidiary_i$	0.025	0.020
	(0.023)	(0.024)
$LaggedUnemployment_i$		1.073*
		(0.636)
$LaggedInflation_i$		-0.676*
		(0.371)
$LaggedIPGrowth_i$		0.108
		(0.197)
$LaggedGDPGrowth_i$		0.050
		(0.419)
$\Delta GrowthForecasts_i(q)$		0.091
		(0.188)
$\Delta GrowthForecasts_i(q+1)$		-1.051**
		(0.525)
$\Delta GrowthForecasts_i(q+2)$		2.969***
		(1.145)
$\Delta GrowthForecasts_i(q+3)$		-0.357
		(1.131)
$\Delta InflationForecasts_i(q)$		0.069
		(0.224)
$\Delta InflationForecasts_i(q+1)$		0.120
		(0.433)
$\Delta InflationForecasts_i(q+2)$		-0.060
		(1.580)
$\Delta InflationForecasts_i(q+3)$		0.559
		(1.984)
Year Effects	Yes	Yes
Sector Effects	Yes	Yes
NObs	3,334	3,334
Adj. R-sq.	0.048	0.052

This table presents two regressions highlighting the role of conventional and information shocks in moderating the relationship between the takeover premium and the bidder CAR on the subsample of public target acquisitions for which pre-acquisition valuation data is available. Column (2) controls for additional macroeconomic factors and forecast changes relative to column (1). Pos_Info_i is assigned the value of the variable SD_Info_i when this value is positive, and 0 otherwise, Neg_Info_i is assigned the absolute value of the variable SD_Info_i when this value is negative, and 0 otherwise, SD_Info_i is the variable *Information* scaled by its monthly standard deviation, SD_Conv_i is the

variable *conventional* scaled by its monthly standard deviation, $Acquisition\ Multiple_i$ is the ratio of deal value to target size, $Bidder\ Size_i$ is the bidder's market value of equity 21 days before deal *i*'s announcement (in millions of dollars), $High\ RS_i$ is a dummy=1 if relative size in deal *i* is above the 25th percentile, and 0 otherwise, $Stock_i$ is a dummy=1 if more than a third of the payment in deal *i* is settled in stocks, and 0 otherwise, $Share\ Control_i$ is the percentage of the target's shares that the bidder aims to control through deal *i*, $Diversified_i$ is a dummy=1 if the bidder and the target in deal *i* have different macro-industries, and 0 otherwise (=Focused), $Toehold_i$ is the percentage of the target's shares held by the bidder before deal *i*'s announcement, $Private_i$ is a dummy=1 if the target in deal *i* is a private firm, and 0 otherwise, and $Subsidiary_i$ is a dummy=1 if the target in deal *i* is a subsidiary firm, and 0 otherwise. Please refer to Appendix 1 for a detailed description of these variables, in addition to the variables representing the macroeconomic environment. Standard errors reported in parentheses are corrected for heteroskedasticity using the White (1980) heteroskedasticity-consistent standard errors. NObs is the number of observations. Adj. R-sq. is the adjusted R-squared value. ***, **, and * represent significance at the 1%, 5% and 10% levels respectively.

Table 8. The effects of the differences between Fed and ECB shocks on the takeover premium

Model	(1)	(2)
Dependent/Independent Variables	$Acquisition\ Multiple_i$	$Acquisition\ Multiple_i$
Intercept	1.749***	2.004***
	(0.113)	(0.179)
$Pos\_\Delta Info_i$	0.936***	0.915***
	(0.312)	(0.311)
$Neg\_\Delta Info_i$	-0.012	-0.001
	(0.130)	(0.130)
ΔSD_Conv_i	-0.026	-0.014
	(0.118)	(0.118)
$Public\ Foreign\ Bidder_i$		0.345*
		(0.188)
Control Factors	No	Yes
Sector Effects	Yes	Yes
NObs	414	414
Adj. R-sq.	0.010	0.015

This table reports two regressions examining the influence of the standardized differences between the Fed and ECB monetary shocks (conventional and information) on the premia offered to U.S. public target firms in deals announced by public, private, and subsidiary European bidders between 2000 and 2022. Column (1) does not include firm- and deal-related control factors, compared to Column (2) where these factors are added to the model. $Pos\_\Delta Info_i$ is the value of ΔSD_Info_i when it is positive, and 0 otherwise, $Neg\_\Delta Info_i$ is the absolute value of ΔSD_Info_i when it is negative, and 0 otherwise, ΔSD_Conv_i is the difference between the information shocks by the Fed and their equivalent by the European Central Banks. These variables are aggregated for the six months preceding the month of the deal *i*'s announcement. This variable is standardized through division by its standard deviation. Column (2) also controls for the bidder's listing status using the dummy variable labelled as *Public Foreign Bidder* which is assigned the value of 1 if the bidder is a publicly listed firm, and 0 otherwise. The control variables in column (2) include: $Target\ Size_i$, $High\ RS_i$, $Stock_i$, $Share\ Control_i$, $Diversified_i$, $Toehold_i$, $Number\ of\ Bidders_i$, $Target\ Debt_i$, and $Target\ MTBV_i$. Please refer to Appendix 1 for a detailed description of these variables, in addition to the variables representing the macroeconomic environment. Standard errors reported in parentheses are corrected for heteroskedasticity. NObs is the number of observations. Adj. R-sq. is the adjusted R-squared value. ***, **, and * represent significance at the 1%, 5% and 10% levels respectively.

Table 9. The immediate effects of monetary surprises on the acquirer's valuation in pending deals

Sample	All	$Relative\ Size_i \geq 0.50$	$Relative\ Size_i < 0.50$	$Stock\ Percentage_i \geq 33\%$	$Stock\ Percentage_i < 33\%$	$CAR_i(-2,+2) < 0$	$CAR_i(-2,+2) > 0$
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Panel A: $MPCAR_i(+1)$						
Intercept	-0.198	-1.050	0.497	0.428	0.390	0.005	-0.125
	(0.446)	(0.841)	(0.583)	(0.923)	(0.498)	(0.756)	(0.612)
$Pos\_Info\_Surprise_i$	0.338***	0.789***	0.199*	0.419***	0.164	0.460***	0.232
	(0.111)	(0.272)	(0.117)	(0.147)	(0.156)	(0.150)	(0.162)
$Neg\_Info\_Surprise_i$	-0.094**	-0.040	-0.115***	-0.136**	-0.019	-0.067	-0.119**
	(0.042)	(0.091)	(0.046)	(0.058)	(0.054)	(0.056)	(0.061)
$Conv\_Surprise_i$	-0.068***	-0.055	-0.074***	-0.096***	-0.005	-0.078***	-0.059**
	(0.018)	(0.041)	(0.019)	(0.023)	(0.025)	(0.023)	(0.027)
$CAR_i(-2,+2)$	0.007***	0.005**	0.014***	0.008***	0.002	0.012***	0.005***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.005)	(0.002)
NObs	41,321	11,104	30,217	26,988	14,333	19,452	21,869
Adj. R-sq.	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	Panel B: $MPCAR_i(+1,+5)$						
Intercept	-1.979***	-2.101**	-1.239	-3.453**	-0.264	-4.066***	-1.025
	(0.776)	(1.021)	(1.015)	(1.595)	(0.888)	(1.382)	(1.026)
$Pos\_Info\_Surprise_i$	0.300**	0.708***	0.172	0.560**	-0.244	0.458**	0.139
	(0.153)	(0.274)	(0.203)	(0.254)	(0.278)	(0.224)	(0.272)
$Neg\_Info\_Surprise_i$	-0.204***	-0.421***	-0.116	-0.230**	-0.170*	-0.159	-0.255***
	(0.072)	(0.158)	(0.080)	(0.100)	(0.096)	(0.102)	(0.102)
$Conv\_Surprise_i$	-0.170***	-0.233***	-0.149***	-0.174***	-0.161***	-0.218***	-0.128***
	(0.031)	(0.071)	(0.033)	(0.040)	(0.045)	(0.043)	(0.044)
$CAR_i(-2,+2)$	0.010***	0.005	0.022***	0.012***	0.001	0.035***	0.007**
	(0.002)	(0.004)	(0.004)	(0.003)	(0.004)	(0.008)	(0.003)
NObs	41,321	11,104	30,217	26,988	14,333	19,452	21,869
Adj. R-sq.	0.01	0.01	0.01	0.01	0.01	0.01	0.01

This table reports seven regressions assessing the impact of monetary surprises on the valuation of acquirer in pending deals. (i.e., recently announced deals that are not completed/withdrawn by the time of the FOMC announcement). In Panel A the dependent variable $MPCAR_i(+1)$ is the bidder's abnormal return in deal *i* one day after the FOMC announcement day. In Panel B the dependent variable $MPCAR_i(+1,+5)$ is the bidder's cumulative abnormal returns in deal *i* from one day after the FOMC announcement day to five days. $Pos\_Info\_Surprise_i$ is the absolute value of the standardized positive differences between the Fed and ECB information shocks over the six months preceding the deal *i*'s announcement., $Neg\_Info\_Surprise_i$ is the absolute value of the standardized negative differences between the Fed and ECB information shocks over the six months preceding the deal *i*'s announcement., $Conv\_Surprise_i$ is the sum of standardized differences in conventional monetary shocks between the Fed and the ECB, and $CAR_i(-2,+2)$ is the bidder cumulative abnormal return over 5-days (from $t-2$ to $t+2$, where $t=0$ is the deal *i*'s announcement day). Column (1) is estimated on the overall sample of pending deals, allowing each deal to be covered more than once if it spans multiple FOMC meetings before its completion/withdrawal. The remaining models (in the remaining columns) are estimated on subsamples defined by the deal's relative size, payment method, and initial market reaction. Standard errors reported in parentheses are corrected for heteroskedasticity. NObs is the

number of observations. Adj. R-sq. is the adjusted R-squared value. ***, **, and * represent significance at the 1%, 5% and 10% levels respectively. Please refer to Appendix 1 for an accurate description of the variables.