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Macroeconomic News and Acquirer Returns in M&As: The Impact of Investor Alertness

Abstract

We investigate the extent to which the scheduled release of macroeconomic indicators affects the acquirer's value in Mergers and Acquisitions (M&As). We find that M&As announced on days of the release of key macroeconomic indicators (i.e. indicator days) realize higher announcement period risk-adjusted returns compared to counterparts announced on non-indicator days. The positive wealth effect is due to the higher market attention on indicator days, which is particularly relevant for smaller M&As that are not usually exposed to significant investor scrutiny. The results hold after addressing self-selection bias concerns. We also find that firms announcing M&As on indicator days are more likely to "listen" to the market's feedback.

Keywords: Macroeconomic indicators; Investor attention; Mergers and Acquisitions (M&As); Small deals; Risk-adjusted returns; Buy-and-hold abnormal returns.

JEL classifications: G12, G13, G14, G34.

1. Introduction

Mergers and Acquisitions (M&As) represent one of the most important forms of corporate investment that are valuation-complex, financially demanding and informationally intense (Moeller et al., 2005). They can have critical implications for the valuation and growth prospects of the merging firms and, undoubtedly, are of great importance to the economy as a whole (Alexandridis et al., 2017; Bao and Edmans, 2011).[1] M&As attract media attention and place merging firms in the spotlight of investors and financial analysts. Indeed, a large number of studies have investigated the extent to which M&As create or destroy value for merging firms and have shown that, on average, acquirers experience significant wealth losses that vary according to several firm- and deal-specific factors (see Eckbo (2009) and Alexandridis et al. (2017) for comprehensive reviews).

Prior studies have shown that the pricing effects of new information may vary with the level of investor attention in the marketplace (Barber and Odean, 2008; Da et al., 2011). Accordingly, a noisy or imperfect assessment of M&A announcements by equity investors raises significant challenges for acquirers. First, an imperfect market response means that a significant part of the value added from an acquisition may not be immediately and fully reflected in the acquirer's stock price. Second, an incomplete market assessment at the time of the M&A announcement prevents an acquirer's management team from extracting valuable information from market prices about the deal's synergy potential and the prospects of its completion. Evidence suggests that adverse market feedback to an M&A announcement incentivizes an acquirer's managers to re-examine a deal and possibly cancel it at a later stage (Kau et al., 2008; Luo, 2005). Thus, an inattentive market's assessment of an acquisition announcement can reduce the reliability of the feedback channel and hinder an acquirer's ability to "learn" from market price movements.

In this paper, we trace the investor-alerting impact of the release of macroeconomic indicators on the market's reaction to M&A announcements. There is ample evidence on the role of macroeconomic announcements as a "stimulus" that leads investors to reassess their overall equity valuations (Fiske and Taylor, 1991; Stern et al., 2010). On

[1] Bao and Edmans (2011) state that "The total value of M&A announced by a U.S. acquirer in 2007 was $2.1 trillion, around 15% of GDP" (p. 2286). Similarly, Alexandridis et al. (2017) demonstrate that "During the last 25 years mega-deals comprised more than 85% (94% in 2015) of our overall M&As sample's market value representing the bulk of inorganic corporate investment and an important part of the U.S. economy (more than 5% of GDP in 2015)" (p. 633).

such days, investors become more attentive to market events, as they await new macroeconomic data that will assist their decision-making on whether or not to re-balance their investment portfolios (Flannery and Protopapadakis, 2002). Along these lines, Chen et al. (2018) also find that equity investors become more attentive to firm-specific announcements when new macroeconomic data is released. Accordingly, in the realm of M&As, we expect the deals announced on indicator days to be subject to a stronger, and more complete, market reaction than the deals announced on other days.

We expect the consequential effect of investor attention to be more pronounced in small deals. Small companies have a limited shareholder base, low share turnover, and poor analyst coverage, which makes them subject to limited market scrutiny. These factors may complicate the forecasting of synergies (Da et al., 2011; Lang et al., 2004; Roll, 1988; Zhang, 2006). There is substantial theoretical and empirical evidence suggesting that, in general, equity investors focus on large events rather than small firm-specific ones (Barber and Odean, 2008; Peng and Xiong, 2006). Hence, a significant part of the value gains arising from small M&As might be overlooked by equity investors at the time of the deal's announcement unless the level of investor attention is high, as it is likely to be on indicator days. Moreover, the partial resolution of macroeconomic uncertainty within a highly attentive market is more consequential for small acquisitions due to the high sensitivity of small firms' business prospects to the aggregate economic conditions (Ghosal and Loungani, 2000; Kang et al., 2014; Morikawa, 2016).[2]

We provide strong support for the above predictions based on a comprehensive sample of 11,605 U.S. domestic M&As announced between 1986 and 2016. Acquirers in deals announced on indicator days realize 0.45% higher three-day Cumulative Abnormal Returns (CAR), on average, than acquirers in deals announced on non-indicator days.[3] We also find that this wealth effect is more pronounced in the case of smaller M&As. Smaller deals announced on indicator days yield, on average, 0.81% higher acquirer three-day CAR than smaller deals announced on non-indicator days. This effect is particularly evident in cases where the acquirer is also a small firm and subject to limited market attention.[4]

[2] Vuolteenaho (2002) and Petkova (2006) show that macroeconomic factors are key contributors to the variation in expected returns.

[3] In this paper the terms "indicator days" and "macro-indicator announcement days" are used interchangeably.

[4] In general, acquisitions of small companies have been widely documented to be value-enhancing investments for the acquiring firms' shareholders (Alexandridis et al., 2017; Faccio et al., 2006; Faccio and Masulis, 2005; Fuller et al., 2002). Due to their low profile, acquisitions of small companies are generally not driven by conflicting managerial

We also provide robust evidence suggesting that the post-acquisition drift in the valuation of small-target acquirers announcing their deals on indicator days is small relative to counterpart deals announced on non-indicator days. This result supports the view that high investor alertness on indicator days allows for a relatively accurate assessment of the potential wealth effects associated with small M&As.[5] Evidence from the choice of M&A announcement timing shows that acquirers that are capable of creating significant synergies from their acquisitions (Golubov et al., 2015) are generally likely to announce their small M&As on indicator days.

We demonstrate how increased attention to small M&As on indicator announcement days can be costly for acquirers when macroeconomic indicators fail to effectively reduce economic uncertainty (Amador and Weill, 2010; Kandel and Zilberfarb, 1999). In particular, the release of macroeconomic news can provide incomplete information and lead economic agents to struggle when making informed decisions based on public and private signals (Amador and Weill, 2010). Accordingly, M&As exposed to high market attention at times when the release of macroeconomic data is not successfully eliminating economic uncertainty – an outcome that cannot be accurately predicted ex-ante – can become subject to higher uncertainty discounts (see Vuolteenaho (2002) and Petkova, (2006)). Evidently, we show that the small M&As exposed to increased market attention on indicator announcement days are associated with significant acquirer losses when the release of new macroeconomic data does not effectively reduce economic uncertainty. Such losses can be as high as 2% in the announcement period CAR.

Further, we provide evidence from both switching regression analysis and Propensity Score Matching (PSM) which suggests that acquirers announcing small deals experience between a 0.50% to a 1% improvement in their announcement period CAR when the announcement is made on an indicator day rather than a non-indicator day. Moreover, we show that in cases where economic uncertainty remains high despite the

considerations, such as an acquirer's empire-building impulses (Moeller et al., 2004; Morck et al., 1990; Roll, 1986). Instead, they are driven by economic and strategic perspectives and are carefully chosen for their high-growth potential (Moeller et al., 2004).

[5] This fits within the context of an influential literature. Savor and Wilson (2013) show that indicator days play a significant explanatory role in the risk-return paradigm. The authors find that over 60% of the cumulative equity risk premium is earned on days when inflation rates, unemployment figures, and monetary policy decisions are released. Li et al. (2014) further demonstrate how adding macroeconomic factors to forecasting models offers superior forecasts of firm performance. In the Vuolteenaho (2002) model, macroeconomic factors can be as relevant as cash-flow projections in explaining stock returns. Our evidence, in turn, shows that the alerting impact of macroeconomic news has a consequential role in influencing the market's assessment of M&As, especially in the case of small target M&As.

release of new macroeconomic data, acquirers face significant losses of up to 1% in their announcement period CAR. These results suggest that exposing an acquirer to significant market scrutiny at the time of the release of key macro-indicators is subject to a trade-off. On the one hand, the increased market scrutiny can enable positive synergies associated with M&As to be reflected in an acquirer's CAR. On the other hand, the failure of macroeconomic news to reduce uncertainty can expose an acquirer's valuation to significant discounts.

Finally, in the spirit of Li and Tong's (2018) emphasis on the role of uncertainty in influencing the valuation of M&As, we examine how the market's reaction helps acquirers re-assess their commitment to a deal and reduce their valuation uncertainty. In particular, we test whether a significant negative market feedback to a deal around days of increased market attention (i.e. indicator days) increases the likelihood of its withdrawal. We provide evidence suggesting that acquirers of small companies "listen" to the market's feedback around M&As announced on indicator days. We find that small deals receiving significant negative initial market reaction on indicator days are twice as likely to be withdrawn compared to equivalent deals announced on non-indicator days. Furthermore, we find that this effect is only operative when the market does not experience significant spikes in volatility around indicator days.

Our paper contributes to three strands of literature. First, we provide novel evidence from the field of M&A on the alerting impact of macroeconomic news. Indeed, the effect of macroeconomic news on acquirer value in the market for corporate control has been ignored to date, despite M&As representing one of the most important forms of corporate investment.

Second, our findings offer evidence regarding the timing of M&A announcements. Prior studies have shown that companies take into account developments in the stock market when choosing the appropriate timing of earnings (DeHaan et al., 2015; Doyle and Magilke, 2009) and dividends announcements (see Michaely et al., 2016 for a review). Our results offer a new dimension to this literature by demonstrating how the scheduled release of macro-indicators motivates corporations to release their M&A-related news on indicator days. Moreover, our results highlight the trade-off that acquirers face between receiving higher levels of attention for their announcements and exposing themselves to the unresolved uncertainty that might accompany the release of macroeconomic indicators.

Third, we contribute to the literature on the relevance of market feedback in corporate decision-making. In particular, in the case of small M&As, the feedback channel described by Kau et al. (2008) and Luo (2005) is especially effective when the stock market's negative assessment of a deal coincides with the reaction to new macroeconomic data. This result supports the view that corporate managers can infer valuable information from equity markets (Dow and Gorton, 1997; Dye and Sridhar, 2002), provided that these markets are not experiencing volatility spikes.

The paper proceeds as follows: Section 2 presents the methodology used in our empirical analysis; Section 3 describes our datasets and sample statistics; Section 4 commences with a discussion of results obtained from univariate and multivariate tests and then proceeds to a discussion of results of endogeneity tests (that include propensity score matching and switching regressions), post-acquisition returns, and results referring to the likelihood of deal withdrawal. Finally, Section 5 concludes.

2. Methodology

In this section, we discuss our choice of the macro-indicators covered in this paper, in addition to the classification of deals based on their size. We present alternative approaches to estimating acquirers' announcement-period and post-acquisition risk-adjusted returns. We also present methods used to address selection bias concerns with regards to the potential endogeneity inherent in the choice of announcing a deal on an indicator day. Propensity Score Matching (PSM) is used to compare the market's reaction on indicator and non-indicator days based on observable factors. A switching regression approach is used to address selection bias due to unobservable factors (discussed in Appendix B). Finally, we describe the methods used in estimating any post-acquisition drift in an acquirer's risk-adjusted returns.

2.1. Classification of Indicator days and Small deals

We examine a large set of macroeconomic announcements. We rely on prior literature for guidance on the choice of macro-indicators. For example, Savor and Wilson (2013) employ macroeconomic announcements of inflation, employment, and interest rates in their analysis. They attribute their choice of these indicators primarily to data availability. Flannery and Protopapadakis (2002) use a diverse set of macroeconomic indicator announcements and find that indicators such as GNP and industrial production

have a limited pricing impact. To the best of our knowledge, Chen et al. (2018) provide the only scholarly contribution in which a comprehensive set of macroeconomic announcements is systematically chosen based on a specific criterion. In particular, they choose factors that have significant market influence based on Bloomberg's Relevance Index. They show that announcements of these indicators are associated with a significant increase in the level of market attention to corporate announcements.

Accordingly, we use the same list of influential indicators described by Chen et al. (2018). While they do not include the Producer Price Index (PPI) in their analysis, we add PPI to the list of indicators used in this study given the evidence presented by Savor and Wilson (2013) on the relevance of this factor. Table 1 presents a summary of the frequency and source of each macroeconomic indicator used in our analysis. Specifically, Table 1 covers the 13 indicators used by Chen et al. (2018), as well as PPI. As can be seen, the indicators covered in this paper are: (1) Initial Jobless Claims, (2) Change in Non-farm Payrolls, (3) FOMC Rate Decisions, (4) GDP Growth, (5) Consumer Confidence Index, (6) ISM Manufacturing Index, (7) Consumer Price Index, (8) University of Michigan Consumer Sentiment Index, (9) Durable Goods Orders, (10) New Home Sales, (11) Housing Starts, (12) Unemployment Rate, (13) Retail Sales, and (14) PPI.

(Insert Table 1 about here)

The dummy variable *Indicator Day* is assigned a value of one if the day of the deal's announcement coincides with the date of the release of at least one of the 14 macroeconomic indicators, and zero otherwise (i.e. non-indicator days).

In classifying deals as small, medium, or large, we consider deals that are in the bottom two quintiles in terms of dollar valuation as small, deals in the top two quintiles as large, and deals in the middle quintile as medium-sized. Hence, the dummy variable *Small Deal* is assigned a value of one if the deal is in the bottom two quintiles of valuations, and zero otherwise. It is important to note that our results remain unchanged if (a) we adopt a tercile-based approach by dividing the deal values into three groups of equal size, or (b) the threshold between large and small deals is endogenously estimated using the Bai and Perron (2003, 1998) approach. Further, our conclusions reported in this paper remain unchanged if the deals are sorted based on a scaled measure of the deal value. Our results also hold if we scale each deal value by the value of the total share price index for the U.S. market. This index is computed by the Organization for Economic Co-operation and Development and is reported on the Federal Reserve Bank of St Louis website. This

index captures the value of all prices of U.S. traded shares and is standardized at a value of 100 for the year 2015. For example, more than 90% of the deals that end up being classified as small using the scaled measure also end up in the same size group if the unscaled deal value is used as a proxy for the target's size.[6]

2.2. Estimation of acquirers' risk-adjusted returns

We estimate acquirers' risk-adjusted returns as follows:

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \quad (1)$$

where $AR_{i,t}$, is the abnormal return to acquirer i at day t, $R_{i,t}$ is the stock return of acquirer i at day t, and $E(R_{i,t})$ is the expected return of acquiring firm i at day t, estimated based on the Fama and French (1996) three-factor model (3FF) as in Equation (2) below:

$$E(R_{i,t}) = (1 - \hat{\beta}_i)R_{f,t} + \hat{\beta}_i E(R_{m,t}) + \hat{\beta}_i^{smb} E(SMB_t) + \hat{\beta}_i^{hml} E(HML_t) \quad (2)$$

The parameters $\hat{\beta}_i$, $\hat{\beta}_i^{smb}$, and $\hat{\beta}_i^{hml}$ are estimated over days $t - 250$ to $t-20$, with $t = 0$ as the M&A announcement day, as outlined in the Equation (3) below:

$$(R_i - R_f)_t = \alpha + \beta_i (R_m - R_f)_t + \beta_i^{smb} SMB_t + \beta_i^{hml} HML_t + \varepsilon_{i,t} \quad (3)$$

The announcement period Cumulative Abnormal Returns (CAR) for acquirer i is estimated as the sum of the risk-adjusted returns in the three-day window ($t - 1$ to $t + 1$) surrounding the M&A announcement day ($t = 0$), as outlined in Equation (4) below:

$$CAR_i = \sum_{t-1}^{t+1} AR_{i,t} \quad (4)$$

For robustness, in line with numerous studies with similar sample characteristics (Alexandridis et al., 2013; Barbopoulos and Sudarsanam, 2012; Barbopoulos et al., 2018a, 2018b; Fuller et al., 2002), the announcement period risk-adjusted returns for acquiring firm i are estimated using the market-adjusted model (MAM). Results based on CAR obtained from 3FF and MAM are qualitatively and quantitatively similar.

In our empirical analysis, the announcement period risk-adjusted returns of acquirers are examined in univariate tests that analyze M&As announced on indicator and non-indicator days on the full sample, as well as sub-samples classified by deal size, target firm's listing status, and the deal's payment method. This analysis considers differences in acquirer CAR between indicator and non-indicator deals, as well as differences in CAR between small and large M&As across all sub-samples.

[6] The results are available from the authors upon request.

2.3. Determinants of acquirers' risk-adjusted returns: A multivariate analysis

We next test for the presence and magnitude of the joint effect of indicator day and deal size on acquirers' CAR in a multivariate framework, controlling for the effects of several known factors. Thus, Equation (5) is estimated in a nested regression form:

$$CAR_i = \beta_1 + \beta_2 Indicator\ Day_i + \beta_3 Small\ Deal_i + \beta_4 (Indicator\ Day \times Small\ Deal)_i + \sum_{j=5}^{k} \beta_j X_{ij} + \tilde{d}_t + \tilde{c}_\lambda + \varepsilon_i \qquad i = 1 \ldots N \qquad (5)$$

where the dependent variable, CAR, is the three-day announcement period cumulative abnormal returns of acquirers calculated as in Equation (4). The intercept β_1 accounts for the average acquirer CAR in medium and large acquisitions after controlling for the effects of the explanatory variables that enter the matrix X_{ij}. β_2 accounts for the additional wealth effect arising from announcing acquisitions of medium and large deals on indicator days. β_3 accounts for the wealth effects arising from acquiring small companies relative to medium and large ones. β_4, in turn, represents the difference between the acquirer CAR realized from announcing small deals on indicator days and the CAR realized by announcing small deals on non-indicator days. If our main prediction regarding the impact of market attention holds, then we expect β_4 to reflect significant differential acquirer wealth effects. Specifically, given the overwhelming evidence on the positive wealth effects of small acquisitions, we expect these effects to be more pronounced on indicator days. The explanatory variables in the X_{ij} matrix are defined and discussed in the following paragraphs.

Existing literature provides ample evidence on the impact of a deal's payment method on acquirer risk-adjusted returns (Eckbo et al., 2018; Fuller et al., 2002; Travlos, 1987). To accommodate the effect of the method of payment in our tests we include two dummy variables in Equation (5). The first variable *Full Stock* is assigned a value of one if the deal is fully settled in stock, and zero otherwise. The second variable *Full Cash* is assigned a value of one if the deal is fully settled in cash, and zero otherwise. Schwert (2000) documents that acquirer risk-adjusted returns in the M&A announcement period are negatively related to takeover hostility. To control for the effect of hostile versus friendly acquisitions in our tests, a dummy variable is assigned a value of one when the deal is hostile, and zero otherwise (i.e. friendly).

If both the target and the acquirer belong to the same sector, their integration may be easier, and the synergy gains may end up being higher (Barbopoulos and Sudarsanam, 2012). Firms acquiring targets that operate in an unrelated business may also gain from diversification, thereby resulting in a reduction in the volatility of the combined firm's cash flows and the cost of capital. However, Morck et al. (1990) find that returns to shareholders of bidding firms are lower when a firm diversifies. To control for the effects of corporate diversification in our tests, we use a dummy variable that is assigned a value of one for diversifying deals (i.e. target and acquirer do not share the same two-digit Standard Industrial Classification (SIC) code), and zero otherwise (i.e. focused deals), which is included in Equation (5).

Moeller et al. (2004) demonstrate that acquiring firms' risk-adjusted returns during the announcement period of M&As are affected by their size. They show that shareholders of small acquirers enjoy, on average, significantly higher CAR in the short run. Therefore, to control for the effect of acquiring firm size in our tests, the natural logarithm of the acquirer's market capitalization 20 days prior to the M&A announcement day is included in Equation (5). The listing status of target firms has also been shown, in previous studies, to affect acquirer risk-adjusted returns (Chang, 1998; Draper and Paudyal, 2006; Faccio et al., 2006). Chang (1998) argues that private target acquisitions are more profitable investments for acquirers compared to public target ones, due to limited information and competition for private target firms, as well as the more effective monitoring offered by targets' managers/owners in the combined entity during the merger integration phase. Adra and Barbopoulos (2019) emphasize the role of liquidity considerations in influencing the acquirer CAR in both private and public target deals. Fuller et al. (2002) further argue that subsidiary target deals are value-increasing for the acquirer due to the significant discount arising from the immediate need for cash by the target's parent firm. To control for the effect of private and subsidiary target acquisitions in our tests, two dummy variables taking a value of one when the target is private or subsidiary, respectively, and zero otherwise, are included in Equation (5).

Prior research has shown that an acquiring firm's valuation can affect its risk-adjusted returns in the short run (Chemmanur et al., 2009; Moeller and Schlingemann, 2005). Rau and Vermaelen (1998) have also shown that an acquirer's risk-adjusted returns are sensitive to its market-to-book valuation. Thus, to account for this effect in

our analysis, the acquirer's market-to-book value 20 days prior to the M&A announcement day is included in Equation (5).

In addition to these effects, we control for the degree of economic uncertainty[7] using the Jurado et al. (2015) index during the calendar month preceding the acquisition announcement.[8] Moeller et al. (2007) examine the link between the theoretical predictions of the diversity of opinion and information asymmetry models in explaining acquirer risk-adjusted returns. The authors demonstrate the superiority of sigma as a proxy for the information asymmetry of a publicly traded firm and its importance in shaping the acquirer risk-adjusted returns. Therefore, to proxy for the extent of the acquiring firm's information asymmetry in our tests, the acquirer's sigma, measured by the standard deviation of the residuals in a market model over the period $t-252$ and $t-6$, where $t=0$ is the M&A announcement day, is included in Equation (5). Finally, to account for potential unobserved time-variant characteristics that are related to a given year in which an M&A deal is announced, as well as unobserved characteristics specific to the target's primary industrial sector, 'Year Effects' ($\tilde{d}_t$) and 'Industry Effects' ($\tilde{c}_\lambda$) are included in Equation (5).

2.4. Propensity Score Matching (PSM)

Observational studies differ from experimental ones in that randomization is not used to assign the treatment. The lack of explicit random assignment raises concerns as to whether selection bias reduces the reliability of the results, or their causal interpretation, in both univariate and multiple regression tests. To accommodate such concerns, we utilize Propensity Score Matching (PSM) in our analysis. More specifically, implementing the PSM method allows for a relatively unbiased causal inference by pairing treated deals (small deals announced on indicator days) and control deals (small

[7] A growing array of studies investigates the extent to which other policy-uncertainty indices, such as the monetary policy uncertainty index developed by Baker et al. (2016) affect merger outcomes (see Adra et al. (2019) for a comprehensive review).

[8] The authors use monthly economic series in a system of forecasting equations to estimate the implied forecast errors. First, for each month and for each series, a forecast is produced based on the combination of the past values of all the series in the dataset by using the diffusion index forecasting method of Stock and Watson (2002). Second, the forecast error for each series is constructed as the difference between the actual and the forecasted values. The volatility of the forecast error for each series is modelled as a linear function of its own past values, in addition to a stochastic component that allows for time-varying volatility. Based on this procedure the measures of uncertainty are computed by averaging the individual forecastable components of each series' volatility. While the authors present 1-, 2-, and 12-months-ahead levels of macroeconomic uncertainty, only the 12-month measure is used in our empirical analysis. Nevertheless, our results remain qualitatively similar to those reported when the uncertainty measures for the remaining horizons are used.

deals announced on non-indicator days) based on observable pre-treatment characteristics, and assessing differences between the two groups in the response variable (i.e. the announcement CAR) (see Dehejia and Wahba (2002) and Rosenbaum (2002)).

2.5. Buy-and-Hold abnormal returns

The post-acquisition acquirer performance is analyzed based on Buy-and-Hold abnormal returns (BHAR). This is one of the most commonly used method of evaluating the post-acquisition wealth effects of M&As (Barber and Lyon, 1997; Lyon et al., 1999). BHARs are derived as the difference between the buy-and-hold returns of an investor in the acquiring company and the buy-and-hold returns of a benchmark portfolio. The benchmark portfolio here is the CRSP value-weighted market index for the U.S. Equation (6) presents our BHAR estimations:

$$BHAR_i = \prod_{t=s}^{s+T}(1 + R_{i,t}) - \prod_{t=s}^{s+T}(1 + R_{m,t}) \quad (6)$$

Equation (6) calculates the BHAR for a period of up to six months following the month of the acquisition announcement. Subsequently, the acquirers' BHARs are regressed against a set of explanatory variables in a multivariate framework that aims to identify the factors influencing acquirer value in the post-merger-announcement period, hence testing the extent to which small deals announced on indicator days affect acquirer value after the acquisition's announcement:

$$BHAR_i = \beta_1 + \beta_2 Indicator\ Day_i + \beta_3 Small\ Deal_i + \beta_4 (Indicator\ Day \times Small\ Deal)_i + \sum_{j=5}^{k} \beta_j X_{ij} + \tilde{d}_t + \tilde{c}_\lambda + \varepsilon_i \qquad i = 1 \dots N \quad (7)$$

The intercept, β_1, accounts for the average risk-adjusted returns accrued to acquirers' shareholders after accounting for the effects of all the explanatory variables that enter the matrix X_{ij}. β_2, β_3, and β_4 have the same interpretation in the context of BHAR as described in Equation (5) for the announcement period CAR. If our main prediction holds regarding the impact of market attention during indicator days, then we expect β_3 to reflect a positive drift for the acquirers of small targets that announce their deals on non-indicator days. Furthermore, if the market's assessment of small deals announced on indicator days is accurate, then we expect β_4 to represent a negative effect that, at least

partially, offsets the positive drift in β_3. The impact of each of the explanatory variables entering the X_{ij} matrix is recorded in the vector β_j. The parameters in this vector reflect the impact of factors that have been proposed by previous studies, as well as those proposed by this study.

To ensure that the estimation of BHAR is robust, we adopt an alternative matching-based approach. To examine whether there is a positive drift in the returns of small deals announced on non-indicator days relative to the returns of small deals announced on indicator days, we apply the following matching exercise. We match each small deal announced on a non-indicator day with one announced on an indicator day. The matching is done by choosing the deal with the closest level (less than one standard deviation) of acquirer market capitalization and market-to-book value ratio to the treated deal. Then, we estimate the BHAR as in Equation (8) below.[9]

$$BHAR_{i,Non-Indicator\ Day} = \prod_{t=s}^{s+T}\left(1 + R_{No\ Indicator\ Day,t}\right) - \prod_{t=s}^{s+T}\left(1 + R_{Control\ Indicator\ Day,t}\right) \quad (8)$$

3. Sample and stylized facts

3.1. M&A sample criteria and annual distribution

Our sample covers domestic M&As of public, private, and subsidiary targets announced by U.S. domiciled public companies and recorded by the Securities Data Corporation (SDC) Thomson ONE Database between 1 January 1986 and 31 December 2016. We limit our analysis to domestic M&As to ensure that both merging firms operate within the same institutional framework and economic conditions. The end year of 2016 is chosen to ensure that we provide a comprehensive analysis of post-acquisition performance. Moreover, the following selection criteria are imposed when selecting our sample: (a) the deal has a disclosed value of at least $1m; (b) no M&As by the same company are announced within three trading days of each other (e.g. the short-run window of risk-adjusted returns that is analyzed in this paper); (c) the acquiring firm's pre-acquisition market capitalization and market-to-book value are available from Compustat and the acquirer has a market value of at least $1m measured 20 days prior

[9] If our empirical prediction that small deals announced on non-indicator days need an extended period to be assessed by the market relative to deals announced on indicator days, we expect $BHAR_{i,Non-Indicator\ Day}$ to reflect a significant positive post-acquisition drift.

to the M&A announcement day; (d) the acquirer's previous stake in the target does not exceed 10% of the total share; (e) the acquirer aims to control at least 50% of the target's shares upon deal completion, and (f) acquirer returns are available from CRSP. After excluding deals classified as spin-offs, recapitalizations, self-tenders, exchange offers, and repurchases, we are left with 11,605 M&As that satisfy the above sample selection criteria.

Table 2 presents the annual distribution of our sample according to (a) deal size, (b) M&A completion rate, (c) target firm's listing status, (d) the deal's timing with respect to the release of key macroeconomic indicators, (e) the deal's payment method, (f) the deal's diversification profile, and (g) the deal's attitude. As also discussed in Maksimovic et al. (2013), the variation in the number of M&As is cyclical, reaching peaks during periods of economic expansion (the late 1990s and mid-2000s) and troughs during periods of economic contraction (early 2000s and the period following the 2008 financial crisis). Most of the deals in our sample involve private target firms (51.96%), while public (23.70%) and subsidiary (24.34%) targets represent the rest. Similarly, most of the deals in our sample are settled in cash (50.87%), while full-stock (25.34%) and mixed (23.79%) payment deals represent the rest. About 6% of deals in our sample are withdrawn, which is in line with Kau et al. (2008). Finally, 36.88% of deals in our sample are diversifying. At the sector level, unreported statistics (available from the authors upon request) show that the largest share of deals is in the high technology sector (40%), while the lowest share is in the real estate sector (0.10%).

(Insert Table 2 about here)

3.2. Descriptive statistics

As discussed above, we employ a wide range of firm- and deal-specific variables in both our univariate and multivariate tests. Table 3 presents the descriptive statistics (i.e., averages) of (a) acquirer market capitalization, (b) deal value, (c) relative deal size, (d) acquirer market-to-book value, and (e) acquirer sigma for the full sample (Panel A) and sub-samples of deals announced on indicator days (Panel B) and non-indicator days (Panel C).

(Insert Table 3 about here)

We find that small deals announced on indicator days exhibit lower MTBV ratios relative to deals announced on non-indicator days. Moreover, we find that deals

announced on indicator days are in general smaller ($316m vs. $492m), and have smaller acquirers ($3,447m vs. $3,811m), than those announced on non-indicator days. Overall, the descriptive statistics suggest that deals announced on indicator rather than non-indicator days are, on average, different in a number of observable characteristics, which in turn implies that they are likely to yield significantly different gains to acquirers. As a result, we apply both a switching regression analysis and Propensity Score Matching (PSM) to address self-selection concerns.

Table 4 shows the correlation coefficients between all pairs of the independent variables used in our analysis. As can be seen, the correlation coefficients are low and alleviate concerns regarding multicollinearity issues.

(Insert Table 4 about here)

4. Results and discussion

4.1. Univariate tests of acquirer risk-adjusted returns

Results from our univariate tests on acquirer risk-adjusted returns are presented in Tables 5 and 6. They are organized by indicator day, deal size, target firm's listing status (Table 5), and deal's method of payment (Table 6). Consistent with prior studies (Fuller et al., 2002), Panel (A) of Table 5 shows that acquirers of private and subsidiary target firms enjoy significant gains of about 1.95% and 2.65%, respectively, whereas acquirers of public targets experience significant losses of 0.70%. Moreover, Panel (A) of Table 6 shows that around the M&A announcement day, acquirers enjoy significant gains of about 1.39% in cash-financed deals, 1.23% in stock-financed deals, and 2.00% in deals financed with a combination of cash and stock, which is in line with prior studies, such as Fuller et al. (2002) and Faccio and Masulis (2005).

Importantly, our univariate tests show that acquirers in M&As announced on indicator days enjoy on average about 0.45% higher returns compared to those in M&As announced on non-indicator days. This difference is significant at the 1% level and strongly suggests that acquirers in deals experiencing a higher degree of investor scrutiny, which is likely to be on indicator rather than non-indicator days (as in Chen et al. (2018) and Savor and Wilson (2013)), enjoy higher gains than acquirers in deals announced on non-indicator days.

Our univariate tests present some other interesting results. First, the positive and significant difference in the acquirer CAR between deals announced on indicator versus

non-indicator days is driven by small (0.81%) rather than large acquisitions (0.26%). Second, small deals announced on indicator days yield higher gains to acquirers (1.28%) compared to counterpart deals announced on non-indicator days (0.73%) (Panel E in both Tables 5 and 6). Therefore, it is the interaction between indicator days and small deal size that yields the highest benefits to acquirers.

(Insert Tables 5 and 6 about here)

Additional results reported in Table 5 (Panel B) suggest that acquirers' CAR from small target acquisitions is also shaped by private target deals that are announced on indicator days (2.52%) rather than on non-indicator days (1.67%). This finding is consistent with our attention-based argument, especially because private companies generally operate in an opaque informational environment and have limited investor coverage (Officer et al., 2009).[10] While the fraction of deals announced on indicator days is quite large in the three groups based on deal size, it is worth noting that this fraction shrinks as the deals become larger. The difference in the fraction of deals announced on indicator days becomes more noticeable when extremely small and extremely large deals are compared. In untabulated results, deals below 10 million dollars in valuation have a 52% probability of being announced on indicator days. By contrast, deals that exceed 1 billion dollars in valuation have a 44% probability of being announced on indicator days. Interestingly, we find the effect of investor attention on indicator days to be more pronounced in large public deals. One potential explanation for this result is that the complex nature of these deals (Alexandridis et al., 2013) allows acquirers to benefit from the reduction in economic uncertainty due to the release of new macroeconomic data.

In addition, Table 6 shows that the higher acquirer CAR in small deals announced on indicator days are mainly driven by deals settled, either fully or partially, using the acquirers' stocks.[11] These results hold true after we apply a series of robustness tests that include different measures of firm value and classifications of deal size (i.e. number of groups), as well as groupings into small, medium, and large based on different cut-off

[10] Evidence from multivariate tests (untabulated) shows that the positive wealth effect associated with deals announced on indicator days is significant in both private and subsidiary target deals. That is, acquirers in private (subsidiary) target acquisitions that are announced on indicator days realize, on average, 0.88% (1.04%) higher CAR than counterparts announcing deals on non-indicator days. We thank an anonymous reviewer for suggesting this analysis.

[11] Cash payments are generally used in deals characterized by limited valuation complexities. In contrast, the use of stock is a form of contingent payment in deals associated with significant valuation complexities (Reuer et al., 2004). Hence, a possible interpretation of our findings is that deals fully settled in cash are not sensitive to the effect of increased market attention, compared to the informationally demanding deals that require the use of a contingent payment method, such as stock.

levels. Put together, our univariate tests uncover an interesting source of M&A value creation which appears to be correlated with both the timing of M&A announcements (indicator vs. non-indicator day) and the size of the deal.[12]

Table 7 reports further evidence on the direction and magnitude of our estimated investor-alertness effect on acquirer CAR shown in Tables 5 and 6. Specifically, we expect the economic effects associated with the increased investor alertness to small acquisitions to be more pronounced in M&As involving also relatively small acquirers, for which such deals are economically consequential. In Table 7, we sort the group of small acquisitions into three groups based on the acquirer's pre-acquisition market value (i.e. market valuation at 20 trading days prior to the M&A announcement day). As expected, the results reported in this table suggest that the documented wealth effects of the increase in investor alertness to small deals on indicator days are exclusively driven by deals in which the acquirer is also small, i.e. in the bottom two quintiles of the sub-sample. Within this group of deals, the generally small acquisitions are economically meaningful for the small acquirers (a relative size of 38%), and the deals announced on indicator days realize, on average, 1.50% higher CAR than the deals announced on remaining days.

(Insert Table 7 about here)

4.2. Multivariate tests of acquirer risk-adjusted returns

In this section, we investigate whether the relationship between the announcement of deals on indicator days and acquirer CAR can be explained by other known characteristics. Table 8 reports estimates from OLS regressions where the acquirer CAR over a three-day window ($t-1, t+1$, where $t=0$ is the M&A announcement day) is the dependent variable across all specifications. Specifications (1) to (3) are applied on the full sample, while specification (4) is applied only on small deals, specification (5) only on medium-sized deals, and specification (6) only on large deals. Specifications (1) to (6) include industry fixed-effects, while time fixed-effects are included in specifications (3) to (6).

The main explanatory variables across all models are (a) a dummy variable representing deals announced on indicator days, (b) a dummy representing small deals

[12] Additional univariate results based on an alternative scaled measure of deal value, and different cut-off points in grouping the deals into small, medium, and large, yield the same conclusions. These results are available from the authors upon request.

(i.e. bottom two quintiles of deal values), and (c) the interaction dummy variable representing small deals announced on indicator days (Models (2) and (3)). The main control factors across all specifications are the dummy variables representing stock or cash financing, a dummy representing the presence of hostile takeovers, a dummy representing the presence of diversified deals, the natural logarithm of acquirer market value at 20 trading days prior to the M&A announcement day, dummy variables representing the presence of private or subsidiary target deals, the acquirer market-to-book value at 20 trading days prior to the M&A announcement day, the macroeconomic uncertainty in the U.S. in the month preceding the M&A announcement as measured by Jurado et al. (2015), and finally the acquirer's sigma, which is measured by the standard deviation of the residuals in a market model over the period $t-252$ and $t-6$, where $t=0$ is the M&A announcement day, as in Alexandridis et al. (2008), Moeller et al. (2007) and Alexakis and Barbopoulos (2019).

(Insert Table 8 about here)

Evidence reported in Model (1) is in line with the conclusions drawn from our univariate tests. That is, deals announced on indicator days are, on average, associated with a 0.45% higher acquirer CAR relative to deals announced on non-indicator days. Moreover, the significant wealth effect of the deal's announcement on indicator days is more pronounced in small M&As. Specifically, the coefficient of the interaction variable $Small\ Deal \times Indicator\ Day$ is positive and statistically significant at the 1% level. Moreover, including the interaction term $Small\ Deal \times Indicator\ Day$ renders the coefficient of $Indicator\ Day$ statistically insignificant. Models (2) and (3) suggest that small deals announced on indicator days yield on average 0.67% higher acquirer CAR relative to both small deals on non-indicator days and large deals overall. Models (4) to (6) reinforce our conclusions from univariate tests by showing that the wealth effects arising from the choice of an indicator day to make an M&A announcement are exclusively driven by small target acquisitions (Model (4)). That is, a small deal announced on an indicator day is, on average, associated with 0.81% higher acquirer CAR than a small deal announced on a non-indicator day.[13]

[13] In untabulated estimations, we examine the extent to which some indicators are more relevant than others in shaping our results. The evidence from this investigation suggests that our results are mainly influenced by unemployment, PPI, Durable Goods, and housing market indicators, in addition to leading indicators such as the ISM manufacturing index and the consumer confidence indices. The first three indicators have been highlighted in prior studies as important sources of stock market movements. The significant effect of the housing-related indicators is somewhat expected, especially given the role of the housing market during the 2008 financial crisis. The PMI and consumer

Our control variables depict similar effects to those reported in prior studies. Travlos (1987) documents that deals involving stock-swaps are associated with more negative abnormal returns for acquirers than cash-financed deals. In addition, as discussed by Alexandridis et al. (2013), "Controlling for the occurrence of stock-for-stock deals is particularly important because large deals are more likely paid for with stock…" (p. 10). Interestingly, and consistent with Alexandridis et al. (2013), we find that the coefficient of a full-stock indicator is negative and statistically significant at the 5% level in Model (6), in which only large deals are used in the test. Stock deals are associated with 1.00% lower acquirer CAR in specification (6). Moreover, Morck et al. (1990) find that returns to shareholders of bidding firms are lower when their firm diversifies, while Barbopoulos and Sudarsanam (2012) argue that if both target and acquiring firms belong to the same industry, their integration may be easier and the synergy gains are higher. Consistent with both studies, across Models (1) to (3) we find that acquirers in diversified M&As experience significant losses.

We also include the natural logarithm of the acquirer market value to control for the well-known result that small acquirers tend to outperform large ones (Moeller et al., 2004). Across all specifications, we find strong evidence suggesting that large acquirers engaged in M&As destroy value. Chang (1998) and Fuller et al. (2002) show that acquirers enjoy significant gains from M&As of private and subsidiary targets and argue that this is due to (a) the limited completion for private targets and hence lower price offered to the target, (b) liquidity considerations (also in Adra and Barbopoulos (2019)), (c) limited information availability about private targets, and (d) the higher discounts associated with subsidiary target M&As. Across all specifications, we find that private and subsidiary target M&As are associated with significantly higher acquirer CAR relative to listed target M&As.

We also control for the acquirer market valuation at the time of the deal announcement. Prior studies show that the acquiring firm's valuations can affect acquirer CAR (Chemmanur et al., 2009; Moeller et al., 2005). As a result, we include the market-to-book value of the acquirer at 20 trading days prior to the M&A announcement in our regressions. We find evidence of significantly higher CAR for high market-to-book acquirers around the deal announcement. We also include the macroeconomic

confidence indices, in turn, are classified by practitioners as "leading indicators" as they provide equity investors with new expectations about future production and consumption activities (Baumohl, 2008).

uncertainty in the month preceding the M&A announcement, as measured by Jurado et al. (2015). Its coefficient is negative and significant at the 1% level in specifications (1), (2), and (6), suggesting that the acquirers of M&As that take place in a highly uncertain economic environment are associated with significant losses. Finally, we control for the acquirer's sigma and find that high sigma acquirers enjoy significantly higher CAR when engaged in small target M&As.

In Table 9 we report additional evidence derived from three multivariate specifications aiming to identify the direction and magnitude of our estimated investor-alertness effect on acquirer CAR. In particular, the models are estimated on different sub-groups on the sample of small target acquisitions only, sorted by acquirer size. Therefore, Models (1) to (3) are estimated within the group of small, medium, and large acquirers, respectively. As in our prior analysis, we expect the economic effects associated with increased investor alertness to small acquisitions to be more pronounced in M&As involving relatively small acquirers. The reported evidence in Table 9 is in line with our results from our univariate tests reported in Table 7. They show that the positive effects of investor alertness on indicator days are shaped by M&As in which the acquirer is also small. Specifically, the coefficient associated with timing the deals on indicator days is only significant in the group of small acquirers in Model (1). Based on this model, M&As announced on indicator days enjoy, on average, 1.50% higher announcement period CAR than deals announced on non-indicator days.

(Insert Table 9 about here)

Overall, our evidence from the multivariate tests support the view that higher investor scrutiny of small deals announced on indicator days appears vital in explaining acquirer risk-adjusted returns in the M&A market.

4.3. The cost of attention

Our main finding in this paper is that small M&As announced on indicator days are associated with significant acquirer gains. These gains are consistent with the view that high level of investor alertness on indicator days allows for a reduction in the valuation uncertainty for deals that would otherwise receive limited scrutiny. If such exposure to market attention is riskless, we would expect almost all small target acquisitions to be announced on indicator days. Nevertheless, as discussed in Section 1, prior studies

suggest that the announcement of macroeconomic data can fail to reduce, and might even raise, economic uncertainty (Amador and Weill, 2010; Kandel and Zilberfarb, 1999).

As a result, the greater attention that acquirers of small targets enjoy on indicator days may come at the cost of greater exposure to high economic uncertainty, and consequently being subject to large uncertainty discounts (Vuolteenaho, 2002 and Petkova, 2006). In Table 10, we examine how the wealth effects of announcing deals on indicator days vary with the ability of macroeconomic news to reduce economic uncertainty. We consider relatively (high) low levels of the Jurado et al. (2015) uncertainty index at the end of each calendar month as a reflection of the (in)ability of the average macroeconomic indicator to reduce economic uncertainty. Hence, we construct the variable *High Uncertainty*, which is assigned the value of 1 if the value of the Jurado et al. (2015) macroeconomic uncertainty index by the end of the deal's announcement month remains considerably high (higher than the 80th percentile in the sample), and 0 otherwise. Evidence from Models (1) and (2), estimated on the full sample, suggests that the positive wealth effects of deal announcement on indicator days (i.e. 1% rise in acquirer CAR) flip sign in periods when the release of macroeconomic data does not reduce economic uncertainty (i.e. losses of 0.80%=1.00%-1.80%). These reversed effects are more pronounced for small acquirers who experience losses up to 2.00%, as suggested in Models (3) and (4) (i.e. losses of 2.00%=2.00%-4.00%).

Overall, our findings suggest that the increased attention to small acquisitions on indicator days can lead to significant acquirer losses in periods when the released macroeconomic data fail to effectively reduce economic uncertainty (i.e. economic uncertainty at the end of the announcement month remains considerably high). As such outcome cannot be known ex-ante, risk-neutral acquirers may limit their exposure to a highly attentive market. In the following subsection, we examine whether these findings hold after addressing endogeneity concerns.

(Insert Table 10 about here)

4.4. Robustness: Switching regressions and endogeneity

In this section, we apply an endogenous switching regression framework (Fang, 2005; Golubov et al., 2012; Heckman, 1979; Tucker, 2010) to assess the extent to which the market's short-run reaction to a deal's announcement is influenced by the endogenous choice of deal timing. In particular, a significant part of the positive market

reaction to small deals announced on indicator days might be attributed to the fact that such deals might be more synergetic than small M&As announced on non-indicator days.

The application of a switching regression approach (which is discussed in Appendix B) to the sample of small acquisitions requires the use of an exclusion restriction via which one variable significantly influences the choice of deal timing without affecting the outcome. Accordingly, we construct a variable that reflects the habitual tendency of firms to announce deals on indicator announcement days. The variable *Indicator Day Frequency* represents the number of times an acquiring firm announced a deal on an indicator day in the three calendar years prior to the current announcement. To ensure that the effect of this variable on the choice of deal timing is driven by announcement habits rather than synergies that the acquirer expects from the deal, we build on Golubov et al.'s (2015) findings that particular firms are extraordinary acquirers and hence capable of generating synergies irrespective of deal characteristics. Therefore, in explaining both the choice of deal timing and the acquirer CAR, we control for the acquirer's synergetic abilities, which are represented by the average CAR realized by the acquirer during the three calendar years preceding the announcement.

The evidence from the Probit selection equation in Table 11 (Panel A) suggests that the reduction in the acquirer's size and the increase in its synergetic abilities increases the likelihood of announcing the deal on indicator days. We also find that the larger the number of previous deals announced by the acquirer on indicator days, the higher the likelihood a new deal is announced on such days. Put together, these findings support the notion that acquirers who value the exposure to high market attention are aware of the alerting impact of macroeconomic announcements. Models (2) and (3) report the outcome equations for deals announced on indicator and non-indicator days, respectively. These equations are used, after controlling for the inverse Mills ratios (discussed in Appendix B) to construct the counterfactual outcomes used in the What-If analysis in Panels (C) and (D). The sigmas and correlation levels (rhos) reported in Panel (B) are used to construct the inverse Mills ratios discussed in Appendix B.

Panels (C) and (D) report the outcome of the What-If analysis in cases where the Jurado et al. (2015) macroeconomic uncertainty index is below and above the 80th percentile, respectively. For deals announced on indicator (non-indicator) days, we construct a counterfactual CAR for cases where such deals are announced on non-indicator (indicator) days, and we estimate the difference in CAR between the

counterfactual outcome and the realized CAR. Evidence from Panel (C) is generally consistent with the results from our multivariate tests. In particular, when the release of new macroeconomic data does not contribute to high uncertainty, acquirers announcing small deals on indicator days would have experienced a 0.53% lower announcement period CAR had they announced their deals on non-indicator days. Similarly, acquirers in small deals announced on non-indicator days could have enjoyed a 0.51% higher CAR had their deals been announced on indicator days.

Evidently, these effects flip sign under the high economic uncertainty regime in Panel (D). In particular, when the release of new macroeconomic data contributes to high economic uncertainty, acquirers announcing small deals on indicator days would have enjoyed a 1.16% higher gains had they announced their deals on non-indicator days. Likewise, acquirers who avoid announcing their deals on indicator days seem to realize positive gains (0.88%) relative to counterfactual cases in which their deals are announced on indicator days. Overall, these results emphasize the robust relation between the increased attention that acquirers of small companies receive on indicator days and the ability of release of macroeconomic data to reduce economic uncertainty. It is also worth noting that, as expected, the wealth effects estimated via the switching regression framework are smaller in magnitude than those estimated via the multivariate analysis. This difference is partly due to the control for any bias due to unobservable factors through the adjustments with the inverse Mills ratios.

(Insert Table 11 about here)

4.5. Robustness: Propensity score matching

In this section, we reinforce the findings obtained from both univariate and multivariate tests by further addressing the selection bias due to observable factors using PSM. Panel A (Table 12) presents the logistic regression model used to estimate the propensity scores. This model yields the same inferences as those derived from the Probit selection equation in Panel A of Table 11. Based on the estimated propensity scores, we apply a caliper matching algorithm via which deals announced on indicator days are matched to deals announced on non-indicator days that lie within 0.1 standard deviation of the estimated propensity scores. This ensures that deals without matches are dropped from the sample. Moreover, this matching approach ensures that the key observable

differences are balanced between treated and untreated (control) observations on the matched sample.

(Insert Table 12 about here)

The estimated Average Treatment Effect on the Treated (*ATT*) of 0.82% is statistically significant at the 1% level after adjusting the standard errors using the method provided by Abadie and Imbens (2008, 2006). This effect is consistent with the evidence from our univariate and multivariate tests. To emphasize how the estimated wealth effects of the deal timing change with the variation in economic uncertainty, we apply the approach advocated by Ho et al. (2007) which consists of estimating a parametric regression on the matched sample. In particular, we estimate a regression with the same specification as Model (2) (Table 10) and report the coefficients of *Indicator Day*, *Indicator Day × High Uncertainty*, and *High Uncertainty*. The overall evidence, which is consistent with our prior results, suggests that the benefits of increased market attention on indicator days (i.e. 1.10% increase in CAR) are only present in periods when macroeconomic announcements are associated with low economic uncertainty. By contrast, the failure of macroeconomic data to reduce economic uncertainty can lead acquirers to experience significant losses of up to 0.98% in acquirer CAR (=1.10%-2.08%).

Lastly, Panel C (Table 12) shows how the matching exercise successfully balances the propensity scores and the key covariates used in our test between the treated and control groups.[14]

4.6. Post-acquisition returns

We examine the alerting impact of economic indicators on the post-acquisition assessment of the deal via the acquirer's post-acquisition Buy-and-Hold Abnormal Returns (BHAR). If small deals announced on indicator days receive more accurate market scrutiny than equivalent deals announced on non-indicator days, then we should expect the latter group to be associated with a significant post-acquisition drift in the acquirer's valuation compared to the former.

[14] To determine whether the small deals announced on indicator and non-indicator days differ in terms of their effects on acquirer gains, an anonymous reviewer suggested that we follow an approach in the spirit of Savor and Lu (2009) by examining whether the market responds differently to the withdrawal of deals in both groups. We find no significant differences between the market's reaction to the withdrawal of indicator and non-indicator deals.

Table 13 presents the variation in the BHAR for up to six months after the acquisition's announcement.[15] While Models (1) and (2) (Panel A) do not highlight a significant drift in the acquirer's BHAR for small deals during the three-month post-acquisition period, Models (3) and (4) provide strong support for our prediction. In particular, small acquisitions announced on non-indicator days experience a significant post-acquisition drift of between 3% and 4%, suggesting that equity investors require a considerable period of time to assess the synergies of such deals. This drift, however, is not present in the case of small deals announced on indicator days. Specifically, the negative coefficient associated with $Indicator\ Day \times Small\ Deal\ \ Day$ offsets the positive coefficient associated with $Small\ Deal$. A Wald test of the restriction that the coefficient of $Indicator\ Day \times Small\ Deal$ is equal to the negative value of the coefficient of $Small\ Deal$ cannot be rejected (p-value of 0.79). Models (5) and (6) further reinforce this result by showing that the difference in post-acquisition returns emerges in the period between three and six months following the acquisition's announcement. We also estimate the variation in BHAR up to 12 months after the deal's announcement, with no significant effect of the timing. This suggests that the effect of deal timing on the acquirer's post-acquisition returns is focused in the six-month period following the M&A announcement. To conserve space, we do not tabulate the results.

(Insert Table 13 about here)

Panel (B) (Table 13) also shows that small deals announced on non-indicator days are associated with a positive and significant drift of more than 2% in the acquirer's post-acquisition returns relative to comparable small deals announced on indicator days. Put together, our results based on the analysis of post-acquisition BHARs validate the conclusion that the market's assessment of small deals announced on indicator days is more complete than that of small deals announced on non-indicator days.

4.7. Is the withdrawal rate of small acquisitions affected by the market's feedback?

Evidence suggests that the market's feedback to a deal's announcement significantly affects the likelihood of deal completion (Kau et al., 2008; Luo, 2005). In this section, we examine how the market's assessment of small M&As on indicator and non-

[15] There are 87 deals in which we do not find delisting returns in CRSP. We adopt two approaches: (a) we exclude these deals from the sample, and (b) we keep these deals in the sample and assign a return of -30% for the acquirer in line with the results presented by Shumway (1997). In both (a) and (b), our key findings suggest that small deals announced on indicator days experience smaller post-acquisition drifts than small deals announced on non-indicator days.

indicator days affects the rate of deal completion. In particular, we examine the extent to which acquirers of small companies respond to negative abnormal returns around the deal's announcement, and how this response differs between deals announced on indicator vs. non-indicator days. Results reported in Table 14 uncover how the likelihood of deal completion (withdrawal) changes with the announcement period CAR. For deals announced on indicator and non-indicator days, we present the number of withdrawn and completed deals, depending on the market's assessment and deal size. The withdrawal rates reported in Table 14 range between 3% and 12%, and are similar to the rates reported by Kau et al. (2008).

First, we find that the likelihood of deal withdrawal is considerably higher for large acquisitions than for small ones. This difference holds across all withdrawn deals (8.4%, Panel A). For example, while more than 12% of the large deals that receive a large negative and significant market response ($CAR_i < -3\%$) are unsuccessful (all deals, Panel D), only 4% of the small deals receiving a similar market reaction are withdrawn (small deals, Panels B). Hence, acquirers seem to proceed with small acquisitions, despite any negative market feedback.

Second, and interestingly, despite the general tendency of small target acquirers to complete their deals, Panel B (Table 14) shows that small deals receiving an extreme negative market reaction around indicator announcement days are almost twice as likely to be withdrawn relative to small deals that receive a similar market response on non-indicator days (5.7% vs. 2.8% withdrawal rates). Therefore, small deals that receive a negative market reaction around non-indicator days have a lower probability of withdrawal (2.8%) than any other group in Table 14.

(Insert Table 14 about here)

To shed further light of the impact of the market's reaction on the likelihood of a deal's completion, Table 15 presents findings from three logistic regression models estimated on the sample of small, medium, and large acquisitions, respectively. In all models, we introduce a dummy variable, labelled as *Negative Market Feedback*, which is assigned a value of one if the announcement period CAR is below -3%. We also introduce the interaction of this variable with *Indicator Day*. Evidence from Model (1) suggests that small-target acquirers experiencing a significant negative market feedback around the deal's announcement on indicator days are more likely to complete, rather than withdraw, the deal. One potential explanation for this result is that these acquirers do not

consider the adverse market reaction to be an accurate assessment of their deal's potentials. Accordingly, they become more incentivized to complete the deal and recover the temporary announcement period losses once the market fully assesses the deal's synergy prospects. In line with our findings in Table 14, negative market feedback to small target deals on indicator days (Model (1)) is associated with a higher likelihood of deal withdrawal than negative market feedback on non-indicator days. By contrast, Models (2) and (3) do not show similar effects in the case of medium and large acquisitions. Put together, these results reinforce the view that acquirers have a stronger propensity to "listen" to the market's feedback on indicator days compared to non-indicator ones.

(Insert Table 15 about here)

4.8. Do volatility spikes limit the effectiveness of the market's feedback?

The final step in our analysis consists of examining whether the withdrawal or cancellation channel discussed in Section 4.7 ceases to operate in the presence of excess volatility. In part, processing the causes of the market's negative feedback to an M&A announcement may not necessarily be a straightforward task for the acquirer's managers. This is especially relevant to cases when the negative feedback coincides with a highly volatile market whereby it becomes difficult to disentangle the rational pricing from noise or sentiment-driven trading (Audrino et al., 2019; Bender et al., 2013; Brown, 1999; Lee et al., 2002). This distracting effect is expected to be stronger on indicator days as macroeconomic announcements tend to attract noise traders (see Hautsch et al., 2011).

To test these effects, we introduce the dummy variable *High Cumulative VXO* to our analysis, which is assigned the value of 1 if the cumulative three-day returns of the VXO index (which captures the implied volatility in the S&P 100 options) exceeds the 80th percentile in the sample, and 0 otherwise. Model (1) (Table 16) suggests that the increased volatility at the time of the deal announcement around indicator days results in acquirers being reluctant to cancel small deals that receive negative market feedback.[16] This finding suggests that acquirers do not put unlimited trust in the market's feedback on indicator days, especially when the release of economic indicators triggers significant

[16] As predicted, these effects are not relevant for the less informationally demanding medium- and large-sized deals in Models (2) and (3), respectively.

rises in overall market volatility. Overall, these results show that acquirers are generally aware of both the opportunities and the challenges arising from the increased market attention on indicator days.

(Insert Table 16 about here)

5. Conclusions

We investigate the effect of the release of macroeconomic news on specific days, defined as "indicator days", on acquirers' shareholder gains both around and after the acquisition announcement. We argue that equity investors are highly alert on indicator days relative to non-indicator ones, which allows for a more accurate assessment of the acquisition synergies involving small targets in particular, which are otherwise subject to limited market scrutiny. Emphasizing the alerting role of indicator days, we find that acquirers of small targets are more likely to announce their acquisitions on indicator rather than non-indicator days.

Our main univariate and multivariate tests show that small M&As announced on indicator days realize higher announcement period cumulative abnormal returns (CAR) compared to counterparts announced on non-indicator days. We find these effects to be concentrated in cases where the acquirer is also considerably small (i.e. high relative deal size), and hence generally subject to limited market attention. Moreover, we show that the increased attention on indicator days does not necessarily guarantee positive gains for acquirers, especially as the inability of macroeconomic news to reduce economic uncertainty can erode most of the acquirer's attention-driven gains and even turn them to losses. The results hold after addressing self-selection bias concerns and remain strong after we apply a series of robustness tests, including different measures of firm value and classifications of deal size. Our tests further show that acquirers of small targets who announce deals on indicator days experience a relatively small post-acquisition drift. Finally, we find that, under moderate variation in volatility, small target acquirers that announce their deals on indicator days are more likely to "listen" to the market's feedback, and hence are more likely to withdraw deals that are adversely perceived by the market on indicator days.

Overall, acquirers appear to understand the alerting role of macroeconomic news. As proposed by Hayek (1945), Dye and Sridhar (2002), and Bond et al. (2012), stock markets can be a source of relevant information for corporate executives about the

potential of their own firms. However, as our M&A-based evidence shows, this relevant informative mechanism is trustworthy only when markets are highly attentive and subject to moderate levels of volatility. Further research on the alerting impact of the release of macro-indicator news is required to test its effect on corporate investment in general, as well as policies regarding liquidity, leverage, and cash management.

Appendix A

Definition of variables

Variable	Description	Source
Acquirer Market Value	Acquirer's market value of equity at 20 trading days prior to the M&A announcement day, in millions of dollars.	Compustat
Acquirer Market-to-Book Value	The market value of the acquirer at 20 trading days prior to the M&A announcement day, divided by its book-value of equity from the most recent accounting statement prior to the deal's announcement.	Compustat
CAR	The acquirer's 3-day $(-1, +1)$ announcement period cumulative abnormal returns, estimated using Equation (4).	CRSP
$BHAR_3$	The acquirer's buy-and-hold abnormal returns 3 months after the deal's completion.	CRSP
$BHAR_6$	The acquirer's buy-and-hold abnormal returns 6 months after the deal's completion.	CRSP
Full Cash	Dummy=1 if the consideration is 100% financed with cash, and 0 otherwise.	SDC
Diversified	Dummy=1 if the acquirer and the target have different two-digit SIC codes, and 0 otherwise (Focused Deal).	SDC
Full Stock	Dummy=1 if 100% of the deal consideration is financed with stock, and 0 otherwise.	SDC
% Stock	The percentage of the deal value that is financed with stock.	SDC
Mixed	Dummy=1 if the deal includes a mix of cash and stock financing, and 0 otherwise.	SDC
Negative Market Feedback	Dummy=1 if $CAR < -3\%$, and 0 otherwise.	Compustat
Deal Value	The value of the transaction as reported in SDC, in millions of dollars.	SDC
Relative Size	The deal value divided by the acquirer's pre-acquisition market value.	SDC
Public	Dummy=1 if the target is a public firm, and 0 otherwise.	SDC
Hostile	Dummy=1 if the deal is classified as hostile, and 0 otherwise [Friendly or Neutral].	
Private	Dummy=1 if the target is a private firm, and 0 otherwise.	SDC
Withdrawn	Dummy=1 if the deal is withdrawn, and 0 otherwise [Completed].	SDC
Subsidiary	Dummy=1 if the target is a divested subsidiary, and 0 otherwise.	SDC
Small Deal	Dummy=1 if the deal value is in the bottom two quintiles of the distribution, and 0 otherwise.	SDC
Medium Deal	Dummy=1 if the deal value is in the middle quintile of the distribution, and 0 otherwise.	SDC
Large Deal	Dummy=1 if the deal value is in the top two quintiles of the distribution, and 0 otherwise.	SDC
Indicator Day	Dummy=1 if the day during which the deal is announced also includes the release of an influential macroeconomic indicator, and 0 otherwise [Non-Indicator Day].	SDC + Bloomberg
Macroeconomic Uncertainty	The value of the Jurado et al. (2015) macroeconomic uncertainty index in the calendar month preceding the bid announcement.	Professor Sydney Ludvigson's website
Acquirer Sigma	The standard deviation of the residuals in a market model over the period $t - 252$ and $t - 6$, where $t = 0$ is the M&A announcement day.	Compustat
High Cumulative VXO	Dummy=1 if the 3-day sum of the daily returns on the VXO index around the time of the deal announcement exceeds the 80^{th} percentile in the sample, and 0 otherwise.	Bloomberg
High Uncertainty	Dummy=1 if the value of the Jurado et al. (2015) macroeconomic uncertainty index in the month of the bid announcement exceeds the 80^{th} percentile in the sample, and 0 otherwise.	Professor Sydney Ludvigson's website
Indicator Day Frequency	The number of deals announced by the acquirer on indicator days in the 3 calendar years preceding the deal's announcement.	SDC + Bloomberg
Synergetic Abilities	The average CAR of the acquirer for the deals announced in the 3 calendar years preceding the deal's announcement. If no deals are announced in this window, a value of 0 is assigned to this variable.	SDC + Compustat

Appendix B

Addressing Endogeneity: A Switching Regression Approach

The regressions reported in Table (8) can be presented using the following specification:

$$y_i = X_i'\beta + \gamma Indicator\ Day_i + \mu_i \quad \text{(B.1)}$$

where X_i' is the vector covering firm- and deal-specific characteristics. $Indicator\ Day_i$ is the main treatment variable assigned the value of 1 if the deal is announced at the time of the release of influential macroeconomic indicators, and 0 otherwise. μ_i is a white noise error term. The treatment variable, $Indicator\ Day_i$, might not be exogenous, which raises concerns about the consistency of our estimates that are based on the Ordinary Least Square (OLS) regression. Assuming $Indicator\ Day_i$ is endogenously determined, the choice of deal timing can be presented by the binary response model:

$$Indicator\ Day_i = Z_i'\delta + \varepsilon_i \quad \text{(B.2)}$$

where Z_i' is a vector of the factors that influence the choice of deal announcement timing and ε_i as an error term. This model can be estimated using a Probit regression. The binary choice of the deal announcement day can be modelled as:

$$Indicator\ Day_i = 1\ \ iff\ \ Z_i'\delta + \varepsilon_i > 0 \quad \text{(B.3)}$$

and

$$Indicator\ Day_i = 0\ \ iff\ \ Z_i'\delta + \varepsilon_i \leq 0 \quad \text{(B.4)}$$

with the assumption that ε_i and μ_i are uncorrelated. Building on the original contribution of Heckman (1979), a rich body of empirical research generalizes this framework to allow for switching regressions with endogenous switching. In the context of our analysis, the following two outcomes equations:

$$y_{1i} = X_i'\beta_1 + \mu_{1i} \quad \text{(B.5)}$$

$$y_{2i} = X_i'\beta_2 + \mu_{2i} \quad \text{(B.6)}$$

can be presented. Equation (B.5) presents the variation in the acquirer CAR for the deals announced on indicator days. Equation (B.6), in turn, presents the variation in the acquirer CAR for deals announced during other days. It is worth noting that, in observational studies, the researcher observes only one of the outcomes. In particular, for a deal announced on an indicator day, it is impossible to observe the counterfactual case in which this deal is announced on a non-indicator day. Thus:

$$y_i = y_{1i} \;\; iff \; Indicator \; Day_i = 1 \tag{B.7}$$

and

$$y_i = y_{2i} \;\; iff \; Indicator \; Day_i = 0 \tag{B.8}$$

The endogeneity is modelled by allowing the unobserved determinants of the choice of deal timing to influence the outcome variable (CAR). Hence, we allow for the presence of correlations between ε_i and μ_{1i} (μ_{2i}), which leads to the following non-diagonal matrix:

$$cov(\mu_{1i}, \mu_{2i}, \varepsilon_i) = \begin{pmatrix} \sigma_{11} & \sigma_{12} & \sigma_{1\varepsilon} \\ \sigma_{21} & \sigma_{22} & \sigma_{2\varepsilon} \\ \sigma_{1\varepsilon} & \sigma_{2\varepsilon} & 1 \end{pmatrix} \tag{B.9}$$

The counterfactual outcome can be estimated as:

$$E[y_{2i}|Indicator \; Day_i = 1] = E[X_i'\beta_2 + \mu_{2i}|Z_i'\delta + \varepsilon_i > 0] = E[X_i'\beta_2 + \mu_{2i} + \rho_{2\varepsilon}\sigma_2 \frac{\varphi(Z_i'\delta)}{\Phi(Z_i'\delta)}] \tag{B.10}$$

$\frac{\varphi(Z_i'\delta)}{\Phi(Z_i'\delta)}$ is known as the inverse Mills ratio. The What-If analysis consists of estimating the difference between the counterfactual and realized outcomes as

$$E[y_{2i}|Indicator \; Day_i = 1] - y_{1i} \tag{B.11}$$

and estimating its significance.[17]

[17] The inverse Mills ratio term in analyzing the counterfactual outcome to Equation (B.6) is: $IMR = -\left(\frac{\varphi(Z_i'\delta)}{1-\Phi(Z_i'\delta)}\right)$.

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Table 1 Description of macroeconomic indicators

Indicator	**Announcement Time**	**Source**
Initial Jobless Claims	Each Thursday	U.S. Employment and Training Administration
Change in Non-farm Payrolls	First Friday of the month	Bureau of Labor Statistics, Department of Labor
FOMC Rate Decision	Six to eight regularly scheduled meetings per year	Federal Reserves
GDP Growth	Around the 27th of January, April, and July, in addition to preliminary reports	U.S. Bureau of Economic Analysis
Consumer Confidence Index	Around the 25th of the month	The Conference Board
ISM Manufacturing Index	First business day of the month	Institute for Supply Management
Consumer Price Index	Around the 16th of the month	Bureau of Labor Statistics, Department of Labor
University of Michigan Consumer Sentiment Index	Second and fourth Friday (revised) of the month	University of Michigan
Durable Goods Orders	Around the 26th of the month	U.S. Census Bureau
New Home Sales	The 17th workday of the month	U.S. Department of Commerce
Housing starts	Two or three weeks after the reporting month	U.S. Census Bureau and U.S. Department of Housing and Urban Development
Unemployment Rate	First Friday of the month	Bureau of Labor Statistics, Department of Labor
Retail Sales	Around the 12th of the month	U.S. Census Bureau
Producer Price Index	Two to three weeks after the reporting month	Bureau of Labor Statistics, Department of Labor

The table describes the macroeconomic indicators used in this paper. For each indicator, we present a brief description of the reporting frequency and the organization responsible for its release. The sample of indicator days used in this study is retrieved from Bloomberg.

Table 2 Annual distribution of the sample

Year	All	Small	Medium	Large	Withdrawn	Private	Public	Subsidiary	Indicator Day	Full Cash	Full Stock	Mixed	Diversified	Friendly
1986	132	32	30	70	20	44	62	26	65	82	35	15	48	124
1987	152	53	30	69	22	49	76	27	82	88	40	24	70	149
1988	147	37	40	70	27	29	83	35	85	97	26	24	60	139
1989	237	107	54	76	33	84	85	68	118	118	82	37	96	232
1990	183	99	37	47	28	71	55	57	90	95	56	32	77	179
1991	215	138	27	50	23	94	58	63	120	84	79	52	76	215
1992	345	203	53	89	34	183	75	87	175	141	134	70	125	343
1993	464	261	77	126	34	240	99	125	223	200	167	97	169	462
1994	604	339	113	152	43	332	142	130	327	259	201	144	228	600
1995	643	307	132	204	38	324	167	152	309	282	233	128	229	639
1996	692	357	134	201	40	403	137	152	318	261	272	159	279	687
1997	932	423	190	319	58	503	202	227	445	364	334	234	378	924
1998	793	360	166	267	50	449	188	156	349	308	269	216	316	791
1999	677	278	146	253	37	388	168	121	327	251	256	170	261	675
2000	532	230	99	203	36	326	121	85	243	157	227	148	205	532
2001	270	106	59	105	19	121	81	68	123	97	88	85	106	270
2002	228	94	57	77	14	122	37	69	110	125	37	66	77	228
2003	189	73	40	76	8	90	49	50	80	80	38	71	62	188
2004	278	91	74	113	10	149	65	64	148	165	38	75	88	277
2005	372	127	101	144	8	202	67	103	213	238	36	98	126	372
2006	401	121	95	185	8	223	66	112	225	278	21	102	164	400
2007	413	137	75	201	25	231	89	93	236	272	33	108	140	413
2008	337	100	74	163	33	180	64	93	182	235	25	77	125	336
2009	221	81	47	93	16	100	61	60	119	144	33	44	68	221
2010	255	60	49	146	12	120	55	80	145	200	15	40	86	254
2011	259	62	66	131	11	140	51	68	132	191	20	48	84	258
2012	283	71	60	152	7	139	60	84	137	193	23	67	89	283
2013	244	70	44	130	3	124	49	71	119	165	27	52	69	244
2014	387	82	67	238	14	224	75	88	207	231	44	112	113	386
2015	399	88	72	239	11	200	88	111	200	269	29	101	146	399
2016	321	50	60	211	5	146	75	100	189	233	23	65	120	321
N	11,605	4,637	2,368	4,600	727	6,030	2,750	2,825	5,841	5,903	2,941	2,761	4,280	11,541
%	100.00	39.96	20.40	39.64	6.26	51.96	23.70	24.34	50.33	50.87	25.34	23.79	36.88	99.45

The table presents the annual distribution of our sample that consists of domestic M&As announced by U.S. domiciled publicly listed acquirers between 1 January 1986 and 31 December 2016. The annual distribution of the sample depicts the sum of the annual M&A activity. *Small* is a dummy variable assigned the value of 1 if the deal value is in the bottom two quintiles of the distribution, and 0 otherwise; *Large* is a dummy variable assigned the value of 1 if the deal value is in the top two quintiles of the distribution, and 0 otherwise; *Medium* is a dummy variable assigned the value of 1 if the deal value is in the middle 20% of the frequency distribution, and 0 otherwise; *Withdrawn* is a dummy variable assigned the value of 1 if the deal is unsuccessful, and 0 otherwise [*Completed*]; *Private* is a dummy variable assigned the value of 1 if the target is a private firm, and 0 otherwise; *Public* is a dummy variable assigned the value of 1 if the target is a public firm, and 0 otherwise; *Subsidiary* is a dummy variable assigned the value of 1 if the target is a subsidiary, and 0 otherwise; *Indicator Day* refers to the timing of the deal's announcement (i.e. whether it is announced on an indicator day in which at least one key macroeconomic indicator is released); *Full Cash* is a dummy variable assigned the value of 1 if the deal is fully settled in cash, and 0 otherwise; *Full Stock* is a dummy variable assigned the value of 1 if the deal is fully settled in stock, and 0 otherwise; *Mixed* is a dummy variable assigned the value of 1 if the deal is fully settled with a mix of cash and stock, and 0 otherwise; *Diversified* is a dummy variable assigned the value of 1 if the acquirer and the target do not share the same two-digit SIC code, and 0 otherwise [*Focused*]; *Friendly* is a dummy variable assigned the value of 1 if the deal is classified by SDC as friendly, and 0 otherwise [*Hostile*].

Table 3 Descriptive statistics

Variable	*N*	*Acquirer Market Value*	*Deal Value*	*Relative Size*	*Acquirer Market-to-Book*	*Acquirer Sigma*	*N*	*Acquirer Market Value*	*Deal Value*	*Relative Size*	*Acquirer Market-to-Book*	*Acquirer Sigma*	*N*	*Acquirer Market Value*	*Deal Value*	*Relative Size*	*Acquirer Market-to-Book*	*Acquirer Sigma*
Deal Group	**Panel A: All Deals**						**Panel B: Deals Announced on Indicator Days**						**Panel B: Deals Announced on Non-Indicator Days**					
All	11,605	3,628	403	0.34	3.23	3.16	5,841	3,447	316	0.35	3.18	3.08	5,764	3,811	492	0.33	3.28	3.25
Small	4,637	628	8	0.18	3.24	3.58	2,404	644	8	0.18	3.15	3.51	2,233	611	8	0.17	3.33	3.65
Medium	2,368	1,450	32	0.28	3.18	3.05	1,216	1,535	32	0.27	3.14	3.02	1,152	1,362	32	0.29	3.21	3.07
Large	4,600	7,772	992	0.53	3.25	2.80	2,221	7,527	804	0.57	3.23	2.64	2,379	8,001	1,168	0.50	3.27	2.95
Successful	10,881	3,692	344	0.29	3.25	3.15	5,467	3,517	286	0.29	3.20	3.06	5,414	3,869	403	0.28	3.31	3.23
Withdrawn	724	2,662	1,291	1.08	2.90	3.40	374	2,422	755	1.12	2.87	3.29	350	2,919	1,863	1.05	2.93	3.51
Private	5,971	2,166	76	0.26	3.55	3.33	3,056	1,987	80	0.27	3.48	3.32	2,915	2,353	73	0.26	3.62	3.33
Public	2,750	6,992	1,275	0.49	2.90	3.14	1,327	6,858	933	0.51	2.84	2.79	1,423	7,116	1,593	0.47	2.96	3.46
Subsidiary	2,884	3,446	248	0.35	2.88	2.84	1,458	3,400	248	0.37	2.86	2.83	1,426	3,492	248	0.33	2.91	2.86
Full Cash	5,903	5,031	254	0.23	2.81	2.78	3,040	4,816	228	0.24	2.79	2.71	2,863	5,260	282	0.22	2.83	2.86
Full Stock	2,941	2,340	525	0.44	4.09	3.66	1,403	2,002	327	0.45	4.01	3.63	1,538	2,648	706	0.43	4.17	3.69
Mixed	2,761	1,999	591	0.46	3.21	3.44	1,398	1,919	495	0.46	3.19	3.31	1,363	2,080	689	0.46	3.23	3.57
Focused	7,325	3,686	472	0.30	3.24	3.05	3,670	3,547	391	0.31	3.21	2.98	3,655	3,825	555	0.30	3.27	3.12
Diversifying	4,280	3,528	284	0.40	3.22	3.35	2,171	3,277	189	0.41	3.13	3.23	2,109	3,787	382	0.39	3.30	3.47
Friendly	11,541	3,636	396	0.33	3.23	3.17	5,807	3,461	312	0.34	3.19	3.08	5,734	3,813	482	0.33	3.29	3.25
Hostile	64	2,133	1,658	1.45	2.60	2.34	34	1,034	1,036	1.67	2.27	2.50	30	3,377	2,364	1.21	2.97	2.16

The table presents the mean levels of the key continuous independent variables used in this paper across the full sample (Panel A), the deals announced on indicator days (Panel B), and the deals announced on non-indicator days (Panel C). N refers to the number of deals within each group; *Acquirer Market Value* within each group refers to the acquirer market value of equity 20 trading days prior to the M&A announcement day; *Deal Value* within each group refers to the transaction value in millions of dollars, as reported by SDC; Relative Size within each group refers to the deal's relative size; *Acquirer Market to Book* within each group refers to the acquirer market-to-book ratio, which is the acquirer's market value of equity at 20 trading days prior to the M&A announcement day divided by the book-value of equity from the most recent financial statement before the acquisition; *Acquirer Sigma* within each group refers to the acquirer's Sigma, which is the standard deviation of the residuals in a market model over the period $t-252$ to $t-6$, where $t=0$ is the M&A announcement day; *Small* is a dummy variable assigned the value of 1 if the deal value is in the bottom two quintiles of the distribution, and 0 otherwise; Large is a dummy variable assigned the value of 1 if the deal value is in the top two quintiles of the distribution, and 0 otherwise; *Medium* is a dummy variable assigned the value of 1 if the deal value is in the middle 20% of the frequency distribution, and 0 otherwise; Successful is a dummy variable assigned the value of 1 if the deal is completed, and 0 otherwise [*Withdrawn*]; *Private* is a dummy variable assigned the value of 1 if the target is a private firm, and 0 otherwise; *Public* is a dummy variable assigned the value of 1 if the target is a public firm, and 0 otherwise; *Subsidiary* is a dummy variable assigned the value of 1 if the target is a subsidiary, and 0 otherwise; *Full Cash* is a dummy variable assigned the value of 1 if the deal is fully settled in cash, and 0 otherwise; *Full Stock* is a dummy variable assigned the value of 1 if the deal is fully settled in stock, and 0 otherwise; Mixed is a dummy variable assigned the value of 1 if the deal is fully settled with a mix of cash and stock, and 0 otherwise; Diversified is a dummy variable assigned the value of 1 if the acquirer and the target do not share the same two-digit SIC code, and 0 otherwise [*Focused*]; *Hostile* is a dummy variable assigned the value of 1 if the deal is classified by SDC as hostile, and 0 otherwise [*Friendly*].

Table 4 Correlation matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Acquirer Market Value	**(1)**	1																		
Deal Value	**(2)**	0.37	1																	
Relative Size	**(3)**	-0.04	0.05	1																
Acquirer Market-to-Book	**(4)**	0.02	0.00	-0.05	1															
Acquirer Sigma	**(5)**	-0.03	-0.01	0.03	0.06	1														
Macroeconomic Uncertainty	**(6)**	0.04	0.03	0.02	-0.05	0.04	1													
Indicator Day	**(7)**	-0.01	-0.03	0.01	-0.02	-0.02	0.02	1												
Small	**(8)**	-0.14	-0.10	-0.12	0.00	0.06	-0.07	0.02	1											
Medium	**(9)**	-0.06	-0.06	-0.03	-0.01	-0.01	0.02	0.01	-0.41	1										
Large	**(10)**	0.20	0.14	0.14	0.01	-0.05	0.06	-0.03	-0.66	-0.41	1									
Successful	**(11)**	0.01	-0.07	-0.17	0.03	-0.01	-0.03	-0.01	0.06	0.03	-0.08	1								
Private	**(12)**	-0.09	-0.10	-0.07	0.11	0.03	-0.04	0.02	0.23	0.07	-0.29	0.13	1							
Public	**(13)**	0.11	0.14	0.07	-0.06	0.00	0.03	-0.02	-0.24	-0.07	0.30	-0.21	-0.58	1						
Subsidiary	**(14)**	-0.01	-0.03	0.01	-0.07	-0.03	0.01	0.00	-0.03	-0.02	0.05	0.05	-0.59	-0.32	1					
Full Cash	**(15)**	0.08	-0.05	-0.10	-0.14	-0.07	0.09	0.02	-0.01	0.01	0.00	0.08	-0.10	-0.15	0.27	1				
Full Stock	**(16)**	-0.04	0.02	0.05	0.17	0.05	-0.10	-0.03	0.01	0.00	-0.01	-0.09	0.02	0.18	-0.21	-0.59	1			
Mixed	**(17)**	-0.05	0.03	0.06	0.00	0.03	0.00	0.00	0.00	-0.01	0.00	-0.01	0.09	-0.01	-0.10	-0.57	-0.33	1		
Diversified	**(18)**	0.00	-0.03	0.04	0.00	0.03	-0.01	0.01	0.07	-0.01	-0.06	0.00	0.05	-0.07	0.02	0.05	-0.04	-0.01	1	
Hostile	**(19)**	-0.01	0.03	0.07	-0.02	-0.01	0.00	0.00	-0.05	-0.01	0.06	-0.20	-0.08	0.13	-0.04	0.02	-0.01	-0.01	0.00	1

The table reports the Pearson correlation coefficients between the following independent variables used in our analysis: *Acquirer Market Value* is the market value of the acquirer's equity at 20 trading days prior to the M&A announcement day; *Deal Value* is the value of the transaction, in millions of dollars, as reported by SDC; *Relative Size* represents the relative size of the transaction to the acquirer's pre-acquisition market valuation; *Acquirer Market-to-Book* ratio is the acquirer's market value of equity at 20 trading days prior to the M&A announcement day divided by the book-value of equity from the most recent financial statement before the acquisition; *Acquirer Sigma* is the standard deviation of the residuals from a market model over the period $t - 252$ to $t - 6$, where $t = 0$ is the M&A announcement day; *Macroeconomic Uncertainty* is the value of the Jurado et al. (2015) macroeconomic uncertainty index in the month preceding the acquisition announcement; *Indicator Day* is a dummy variable assigned the value of 1 if the deal is announced on a day when macroeconomic indicators, as reported in Table 1, are announced, and 0 otherwise; *Small* is a dummy variable assigned the value of 1 if the deal value is in the bottom two quintiles of the distribution, and 0 otherwise; *Large* is a dummy variable assigned the value of 1 if the deal value is in the top two quintiles of the distribution, and 0 otherwise; *Medium* is a dummy variable assigned the value of 1 if the deal value is in the middle 20% of the frequency distribution, and 0 otherwise; *Successful* is a dummy variable assigned the value of 1 if the deal is completed, and 0 otherwise [*Withdrawn*]; *Private* is a dummy variable assigned the value of 1 if the target is a private firm, and 0 otherwise; *Public* is a dummy variable assigned the value of 1 if the target is a public firm, and 0 otherwise; *Subsidiary* is a dummy variable assigned the value of 1 if the target is a subsidiary, and 0 otherwise. *Full Cash* is a dummy variable assigned the value of 1 if the deal is fully settled in cash, and 0 otherwise; *Full Stock* is a dummy variable assigned the value of 1 if the deal is fully settled in stock, and 0 otherwise; *Mixed* is a dummy variable assigned the value of 1 if the deal is fully settled with a mix of cash and stock, and 0 otherwise; *Diversified* is a dummy variable assigned the value of 1 if the acquirer and the target do not share the same two-digit SIC code, and 0 otherwise [*Focused*]; *Hostile* is a dummy variable assigned the value of 1 if the deal is classified by SDC as hostile, and 0 otherwise [*Friendly*]. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 5 Univariate analysis of the acquirer risk-adjusted returns based on the target's listing status

Group	Statistic	All Deals	Deals on Indicator Days (1)	Deals on Non-Indicator Days (2)	Differential (1) – (2)	% of Deals on Indicator Days
Panel A: All Deals						
All deals	Mean	1.49***	1.72***	1.27***	0.45***	50.33%
	N	11,605	5,841	5,764		
Private	Mean	1.95***	2.16***	1.74***	0.42*	51.16%
	N	6,030	3,085	2,945		
Public	Mean	-0.70***	-0.36*	-1.01***	0.65**	48.25%
	N	2,750	1,327	1,423		
Subsidiary	Mean	2.65***	2.70***	2.60***	0.09	50.58%
	N	2,825	1,429	1,396		
Panel B: Small Deals (Bottom two quintiles)						
All deals	Mean	2.05***	2.44***	1.64***	0.81***	51.84%
	N	4,637	2,404	2,233		
Private	Mean	2.11***	2.52***	1.67***	0.85***	51.84%
	N	3,075	1,594	1,481		
Public	Mean	0.95***	1.19**	0.69	0.50	51.07%
	N	513	262	251		
Subsidiary	Mean	2.43***	2.81***	2.01***	0.80	52.24%
	N	1,049	548	501		
Panel C: Medium Deals (Middle quintile)						
All deals	Mean	1.30***	1.29***	1.30***	-0.01	51.35%
	N	2,368	1,216	1,152		
Private	Mean	1.41***	1.42***	1.40***	0.02	51.97%
	N	1,399	727	672		
Public	Mean	-0.38	-0.33	-0.43	0.10	51.54%
	N	423	218	205		
Subsidiary	Mean	2.29***	2.24***	2.34***	-0.11	49.63%
	N	546	271	275		
Panel D: Large Deals (Top two quintiles)						
All deals	Mean	1.03***	1.17***	0.91***	0.26	48.28%
	N	4,600	2,221	2,379		
Private	Mean	2.12***	2.10***	2.14***	-0.04	49.10%
	N	1,556	764	792		
Public	Mean	-1.24***	-0.85***	-1.57***	0.72**	46.69%
	N	1,814	847	967		
Subsidiary	Mean	3.00***	2.80***	3.20***	-0.40	49.59%
	N	1,230	610	620		
Panel E: Differentials – Small (Panel B) minus Large (Panel D)						
All	Mean	1.02***	1.28***	0.73***		
Private	Mean	-0.01	0.42	-0.47		
Public	Mean	2.18***	2.04***	2.26***		
Subsidiary	Mean	-0.57*	0.02	-1.19**		

The table presents the univariate analysis of the acquirer's 3-day Cumulative Abnormal Returns (CAR) for the sub-groups of acquisitions defined by the deal's size and the target's listing status (private, public, and subsidiary). For each group, we report the mean CAR for deals whose announcement coincides with the release of a macroeconomic indicator (Indicator Deals) and for deals whose announcement does not coincide with the release of macroeconomic indicators (No Indicator Deals). We also report the number of observations in each group, the difference between the mean acquirer CAR in indicator deals and non-indicator ones, and the percentage of indicator deals. Panel A applies the univariate analysis for the overall sample, while Panels B, C, and D apply this analysis on the group of small, medium, and large deals, respectively. In Panel E, we report the difference in each group between the acquirer's CAR in small deals and the acquirer's CAR in large deals. We also report the difference in the percentage of indicator deals. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 6 Univariate analysis of the acquirer risk-adjusted returns based on the payment method

Group	Statistic	All Deals	Deals on Indicator Days (1)	Deals on Non-Indicator Days (2)	Differential (1) – (2)	% of Deals on Indicator Days
Panel A: All Deals						
All deals	Mean	1.49***	1.72***	1.27***	0.45***	50.33%
	N	11,605	5,841	5,764		
Full Cash	Mean	1.39***	1.37***	1.40***	-0.04	51.50%
	N	5,903	3,040	2,863		
Full Stock	Mean	1.23***	1.89***	0.64**	1.25***	47.70%
	N	2,941	1,403	1,538		
Mixed	Mean	2.00***	2.31***	1.69***	0.62*	50.63%
	N	2,761	1,398	1,363		
Panel B: Small Deals (Bottom two quintiles)						
All deals	Mean	2.05***	2.44***	1.64***	0.81***	51.84%
	N	4,637	2,404	2,233		
Full Cash	Mean	1.32***	1.47***	1.14***	0.33	53.96%
	N	2,324	1,254	1,070		
Full Stock	Mean	2.87***	3.82***	2.02***	1.80***	47.17%
	N	1,202	567	635		
Mixed	Mean	2.72***	3.19***	2.19***	1.01*	52.48%
	N	1,111	583	528		
Panel C: Medium Deals (Middle quintile)						
All deals	Mean	1.30***	1.29***	1.30***	-0.01	51.35%
	N	2,368	1,216	1,152		
Full Cash	Mean	1.08***	1.02***	1.16***	-0.14	51.83%
	N	1,229	637	592		
Full Stock	Mean	0.96**	0.91*	1.01*	-0.09	50.92%
	N	595	303	292		
Mixed	Mean	2.14***	2.33***	1.94***	0.39	50.74%
	N	544	276	268		
Panel D: Large Deals (Top two quintiles)						
All deals	Mean	1.03***	1.17***	0.91***	0.26	48.28%
	N	4,600	2,221	2,379		
Full Cash	Mean	1.61***	1.45***	1.77***	-0.32	48.89%
	N	2,350	1,149	1201		
Full Stock	Mean	-0.34	0.38	-0.98**	1.36**	46.59%
	N	1,144	533	611		
Mixed	Mean	1.22***	1.34***	1.11***	0.23	48.73%
	N	1,106	539	567		
Panel E: Differentials – Small (Panel B) minus Large (Panel D)						
All	Mean	1.02***	1.28***	0.73***		
Full Cash	Mean	-0.29	0.02	-0.63**		
Full Stock	Mean	3.21***	3.44***	3.00***		
Mixed	Mean	1.49***	1.85***	1.07*		

The table presents the univariate analysis of the acquirer's 3-day Cumulative Abnormal Returns (CAR) for the sub-groups of acquisitions defined by the deal's size and the deal's payment method (cash, stock, or mixed). For each group, we report the mean CAR for deals whose announcement coincides with the release of a macroeconomic indicator (Indicator Deals) and for deals whose announcement does not with the release of macroeconomic indicators (No Indicator Deals). We also report the number of observations in each group, the difference between the mean acquirer CAR in indicator deals and non-indicator ones, and the percentage of indicator deals. Panel A applies the univariate analysis for the overall sample, while Panels B, C, and D apply this analysis on the group of small, medium, and large deals, respectively. In Panel E, we report the difference in each group between the acquirer's CAR in small deals and the acquirer's CAR in large deals. We also report the difference in the percentage of indicator deals. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 7 Univariate analysis of the acquirer risk-adjusted returns in small target acquisitions

Group	Statistic	All Deals	Deals on Indicator Days (1)	Deals on Non-Indicator Days (2)	Differential (1) – (2)	Average Relative Deal Size	% of Deals on Indicator Days
Small Acquirers	Mean	3.51***	4.25***	2.71***	1.54***	0.38	51.89%
	N	1,856	963	803			
Medium Acquirers	Mean	1.76***	2.14***	1.36***	0.78	0.08	51.79%
	N	925	479	446			
Large Acquirers	Mean	0.75***	0.80***	0.70***	0.10	0.03	51.83%
	N	1,856	962	894			

The table presents the univariate analysis of the acquirer CAR within the group of small acquisitions across different sub-groups determined by the market valuation of the acquiring firm. Within the group of small deals, we sort acquirers into three groups based on their pre-acquisition equity market valuation. Small (Large) acquirers are those classified in the bottom (top) two quintiles of market valuations. Medium acquirers are those in the middle quintile. For each group of deals, we report the mean CAR for deals whose announcement coincides with the release of a macroeconomic indicator (Indicator Deals) and for deals not coinciding with the release of macroeconomic indicators (No Indicator Deals). We also report the number of observations in each group, the difference between the mean acquirer CAR in indicator deals and non-indicator ones, the average relative deal size, and the percentage of indicator deals. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Table 8 Market reaction to deal timing: A multivariate analysis

Dependent Variable	**CAR**	**CAR**	**CAR**	**CAR**	**CAR**	**CAR**
Target Group	**All Deals**	**All Deals**	**All Deals**	**Small Deals**	**Medium Deals**	**Large Deals**
Explanatory Variable\Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Intercept	7.772***	7.861***	8.310***	8.387	-0.810	12.137***
	(1.982)	(1.983)	(2.689)	(5.293)	(5.124)	(3.656)
Indicator Day	0.392***	0.114	0.099	0.868***	0.087	0.101
	(0.160)	(0.199)	(0.199)	(0.270)	(0.331)	(0.250)
Small Deal	-0.674***	-1.029***	-1.127***			
	(0.202)	(0.267)	(0.267)			
Indicator Day × Small Deal		0.694**	0.688**			
		(0.337)	(0.366)			
Full Stock	-0.423	-0.416	-0.540**	0.234	-0.967	-1.135***
	(0.274)	(0.274)	(0.279)	(0.450)	(0.601)	(0.446)
Full Cash	-0.410*	-0.411**	-0.300	-0.502	-0.546	0.119
	(0.216)	(0.216)	(0.217)	(0.362)	(0.454)	(0.344)
Hostile	-0.462	-0.437	-0.428	0.902	1.667	-0.761
	(0.848)	(0.851)	(0.847)	(4.523)	(2.543)	(0.902)
Diversified	0.363**	0.365**	0.318*	0.339	0.146	0.281
	(0.179)	(0.179)	(0.178)	(0.292)	(0.368)	(0.282)
ln(Acquirer Market Value)	-0.549***	-0.549***	-0.392***	-0.566***	-0.395***	-0.379***
	(0.055)	(0.055)	(0.059)	(0.111)	(0.144)	(0.087)
Private	2.012***	2.021***	1.961***	0.771*	1.669***	2.726***
	(0.212)	(0.218)	(0.213)	(0.439)	(0.459)	(0.325)
Subsidiary	2.976***	2.985***	2.915***	1.477***	2.416***	3.643***
	(0.249)	(0.248)	(0.247)	(0.429)	(0.564)	(0.355)
Acquirer Market-to-Book Value	0.261***	0.262***	0.226***	0.183***	0.210***	0.303***
	(0.038)	(0.037)	(0.039)	(0.061)	(0.084)	(0.063)
Macroeconomic Uncertainty	-5.620***	-5.569***	-7.962***	-7.732	0.699	-11.891***
	(2.186)	(2.188)	(2.941)	(5.843)	(5.583)	(0.950)
Acquirer Sigma			0.401***	0.453***	0.313	0.277*
			(0.078)	(0.107)	(0.179)	(0.150)
Industry Effects	YES	YES	YES	YES	YES	YES
Year Effects	NO	NO	YES	YES	YES	YES
N	11,605	11,605	11,605	4,637	2,368	4,600
Adjusted R-Squared	0.04	0.04	0.05	0.04	0.04	0.07

The table reports four models examining the wealth effects of announced acquisitions. The dependent variable in these models is the acquirer's 3-day CAR. Models (1) to (3) are estimated on the overall sample used in this paper. Models (4), (5), and (6) are estimated on the samples of small deals, medium deals, and large deals, respectively. The White (1980) standard error are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 9 Market reaction to deal timing: A multivariate analysis based on the acquirer's size

Dependent Variable	**CAR**	**CAR**	**CAR**
Target Group	**Small Deals**	**Small Deals**	**Small Deals**
Acquirer Group	**Small Acquirers**	**Medium Acquirers**	**Large Acquirers**
Explanatory Variable\Model	**(1)**	**(2)**	**(3)**
Intercept	22.244***	-8.085	-2.839
	(10.824)	(10.657)	(4.641)
Indicator Day	1.488***	0.876	0.171
	(0.523)	(0.557)	(0.318)
Control Factors	YES	YES	YES
Industry Effects	YES	YES	YES
Year Effects	YES	YES	YES
N	1,856	925	1,856
Adjusted R-Squared	0.05	0.02	0.02

The table reports three models examining the wealth effects of announced acquisitions within the group of small acquisitions across different sub-groups determined by the market valuation of the acquiring firm. Within the group of small deals, we sort acquirers into three groups based on their pre-acquisition equity market valuation. Small (Large) acquirers are those classified in the bottom (top) two quintiles of market valuations. Medium acquirers are those in the middle quintile. The three models control for the same factors that are included in Model (4) (Table 8). The White (1980) standard errors are reported in parentheses.. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 10 The effect of unresolved uncertainty of the acquirer's risk-adjusted returns

Dependent Variable	**CAR**	**CAR**	**CAR**	**CAR**
Target Group	**Small Deals**	**Small Deals**	**Small Deals**	**Small Deals**
Acquirer Group	**All Acquirers**	**All Acquirers**	**Small Acquirers**	**Small Acquirers**
Explanatory Variable\Model	**(1)**	**(2)**	**(3)**	**(4)**
Intercept	4.111***	4.209***	4.113***	4.858***
	(0.686)	(0.813)	(1.702)	(1.857)
Indicator Day	1.000***	1.125***	1.671***	2.192***
	(0.279)	(0.288)	(0.531)	(0.564)
Indicator Day × High Uncertainty	-1.861*	-1.915**	-4.499**	-4.376***
	(1.061)	(0.837)	(2.214)	(1.614)
High Uncertainty	-0.062	0.078	0.072	0.634
	(0.783)	(0.440)	(1.453)	(1.295)
Control Factors	YES	YES	YES	YES
Industry Effects	NO	YES	NO	YES
Year Effects	NO	YES	NO	YES
N	4,637	4,637	1,856	1,856
Adjusted R-Squared	0.04	0.04	0.05	0.05

The table presents four models aiming to highlight the effect of unresolved uncertainty for the deals announced on indicator days. Models (1) and (2) are estimated on the full sample including small acquisitions. Models (3) and (4) limit the analysis to deals announced by small acquirers (bottom two quintiles in the sample of small deals). *High Uncertainty* is a dummy variable assigned the value of 1 if the Jurado et al. (2015) 12-months-ahead macroeconomic uncertainty index by the end of the deal announcement month exceeds the 80th percentile in the sample, and 0 otherwise. The models control for the same factors that are included in Model (4) (Table 8). The White (1980) standard errors are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 11 Endogeneity and switching regression analyses

Panel A: Selection and Outcome Equations			
Dependent Variable	**Indicator Day=1 Otherwise=0**	**CAR**	**CAR**
Equation	**Selection (Probit)**	**Indicator Day**	**Non-Indicator Day**
Explanatory Variable\Model	**(1)**	**(2)**	**(3)**
Intercept	-0.273	4.858	2.887
	(0.474)	(4.793)	(5.301)
Full Stock	-0.101**	-0.121	0.335
	(0.053)	(0.527)	(0.597)
Full Cash	-0.002	-0.306	0.159
	(0.047)	(0.478)	(0.525)
Diversified	-0.002	0.411	0.211
	(0.039)	(0.382)	(0.431)
ln(Acquirer Market Value)	-0.050***	-0.557***	-0.803***
	(0.012)	(0.126)	(0.133)
Private	0.027	0.702	0.949
	(0.063)	(0.617)	(0.716)
Subsidiary	-0.010	0.969	1.466*
	(0.072)	(0.701)	(0.808)
Acquirer Market-to-Book Value	-0.0004	0.190***	0.102
	(0.006)	(0.063)	(0.072)
Macroeconomic Uncertainty	0.621	-1.770	-6.074
	(0.514)	(5.151)	(5.754)
Acquirer Sigma	-0.0004	-0.167*	-0.008
	(0.010)	(0.101)	(0.112)
Synergetic Abilities	0.007*	0.831***	0.883***
	(0.004)	(0.043)	(0.046)
Indicator Day Frequency	0.067***		
	(0.019)		
Industry Effects	YES	YES	YES
Year Effects	YES	YES	YES
N	4,517	2,340	2,177
Panel B: Sigmas and Rhos			
σ_1		8.453***	
		(0.136)	
σ_2		11.259***	
		(0.249)	
$\rho_{1\varepsilon}$		0.042	
		(0.200)	
$\rho_{2\varepsilon}$		0.852***	
		(0.013)	
Panel C: Switching effects under low uncertainty			
Outcome\Group	-	**Indicator Day**	**Non-Indicator Day**
Actual CAR	-	2.73***	1.99***
Hypothetical CAR	-	2.20***	2.41***
Improvement	-	-0.53**	0.51**
Panel D: Switching effects under high uncertainty			
Outcome\Group	-	**Indicator Day**	**Non-Indicator Day**
Actual CAR	-	0.95*	1.82***
Hypothetical CAR	-	2.14***	0.94*
Improvement	-	1.19***	-0.88***

The table presents the endogeneity and switching regression analyses of the effect of the deal timing on the acquirer CAR. In Panel A, we report a Probit selection model (Model (1)) in addition to the variation in the acquirer CAR for deals announced on indicator days (Model (2)) and the variation in the acquirer CAR for deals announced on non-indicator days (Model (3)). The starting year for the sample is 1989 to allow us to control for the acquirer's average synergetic abilities and announcements on indicator days in the previous three calendar years. In Panel B, we report the estimates and standard errors of the Rhos and Sigmas that evaluate the impact of selection bias on our conclusions. In Panel C, we report the outcome of the What-If analysis on the sample of deals whose announcements do not coincide with high Jurado et al. (2015) uncertainty index (less than the 80th percentile in the sample). For deals on indicator and non-indicator days, we report the average CAR, the hypothetical CAR, and the difference between the hypothetical and actual CAR. The description of the estimation approach is discussed in Appendix B. In Panel D, we replicate the same approach for deals whose announcement coincides with high uncertainty by the end of the deal's announcement month (higher than the 80th percentile in the sample). Standard errors are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 12 PSM Analysis

Panel A: Logit model

Intercept	Full cash	Full stock	Diversified	ln(Acquirer market value)	Private	Subsidiary	Acquirer market-to-book value	Macroeconomic uncertainty	Acquirer sigma	Synergetic abilities	Indicator day frequency	*N*
0.333** (0.171)	0.020 (0.019)	-0.047** (0.021)	0.002 (0.015)	-0.008* (0.005)	0.012 (0.025)	-0.0006 (0.028)	-0.002 (0.002)	0.232 (0.187)	0.0002 (0.004)	0.004*** (0.001)	0.030*** (0.009)	4,517

Panel B: Matching Results for CAR

Matching Algorithm	**Caliper Matching (No Replacement)**
Caliper	0.1
Matched Observations per Treated Deal	1:1
Number of Treated Observations	2,045
Number of Control Observations	2,045
ATT (%) (Abadie and Imbens (2006) Standard Errors)	0.82*** (0.29)
Coefficient of Indicator Day	1.10*** (0.304)
Coefficient of Indicator Day × High Uncertainty	-2.08*** (0.75)
Coefficient of High Uncertainty	0.22 (0.90)

Panel C: Covariates' Balancing

Sample	**Before Matching**			**After Matching**		
Variable	**Treatment Group**	**Control Group**	***p*-value**	**Treatment Group**	**Control Group**	***p*-value**
Propensity Score	0.52	0.51	0.00	0.52	0.52	0.11
Full Stock	0.23	0.28	0.00	0.26	0.25	0.39
Full Cash	0.52	0.47	0.00	0.48	0.50	0.12
Diversified	0.41	0.40	0.64	0.42	0.41	0.42
ln(Acquirer Market Value)	4.61	4.71	0.03	4.69	4.73	0.36
Private	0.67	0.66	0.73	0.66	0.66	0.90
Subsidiary	0.23	0.23	0.78	0.23	0.23	0.91
Acquirer Market-to-Book Value	3.15	3.34	0.04	3.22	3.22	0.99
Macroeconomic Uncertainty	0.89	0.89	0.00	0.89	0.89	0.12
Acquirer Sigma	3.23	3.22	0.87	3.17	3.23	0.37
Synergetic Abilities	0.75	0.40	0.01	0.61	0.52	0.45
Indicator Day Frequency	0.37	0.30	0.00	0.32	0.30	0.65

The table reports the outcome of the propensity score matching analysis on the sample of small target acquisitions (bottom two quintiles of the distribution). The main treatment variable is the announcement of the deal on a day when at least one influential macroeconomic indicator is released. The starting year for the sample is 1989 to allow us to control for the acquirer's average synergetic abilities and announcements on indicator days in the previous three calendar years. Panel A presents the logit model used to explain the choice of the timing announcement, with the dependent variable as *Indicator Day*. Panel B presents the outcome of the matching algorithm with caliper 0.1 and without replacement. We report the number of matched observations to each treated one and the number of treated and control observations on the matched sample, in addition to the estimated *ATT* with the Abadie and Imbens (2006) standard errors. We also report the coefficients of *Indicator Day*, *Indicator Day × High Uncertainty*, and *High Uncertainty* from the regression with the same specification as Model (2) (Table 10) on the matched sample. Panel C provides an example of the matching exercise's success by representing the balancing of the propensity scores and the key empirical variables. The mean value of each of these variables in the treated group and the control group, and the bootstrapped p-value from the *t*-test of the null hypothesis that the difference is statistically equal to 0, are reported before and after matching. Standard deviations are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 13 Market reaction to deal timing under expansions and recessions

Panel A: Multivariate Analysis of BHAR						
Post-Acquisition Returns	**$BHAR_3$**	**$BHAR_3$**	**$BHAR_6$**	**$BHAR_6$**	**$BHAR_{3\ to\ 6}$**	**$BHAR_{3\ to\ 6}$**
Explanatory Variable\Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Intercept	-11.264	-13.589*	7.425	-5.946	44.828***	35.917***
	(8.253)	(8243)	(10.973)	(10.808)	(8.993)	(8.885)
Indicator Day	-0.034	-0.048	1.169	1.065	1.077	1.008
	(0.655)	(0.653)	(8.523)	(0.846)	(0.672)	(0.669)
Small Deal	1.425*	1.669*	3.802***	4.360***	2.418***	2.790***
	(0.882)	(0.885)	(1.196)	(1.196)	(0.910)	(0.913)
Indicator Day × Small Deal	-0.201	-0.134	-2.924**	-2.551*	-2.546**	-2.431**
	(1.143)	(1.143)	(1.430)	(1.525)	(1.166)	(1.612)
Full Stock	-1.066	-0.596	-2.968***	-2.120**	-1.908**	-1.343
	(0.893)	(0.905)	(1.172)	(1.173)	(0.925)	(0.935)
Full Cash	2.175***	1.761***	5.431***	4.309***	3.495***	2.748***
	(0.715)	(0.720)	(0.978)	(0.967)	(0.771)	(0.751)
Hostile	-5.370	-5.528	-7.834**	-8.633***	-3.301	-3.833
	(3.509)	(3.514)	(3.720)	(3.755)	(2.565)	(2.566)
Diversified	-1.154**	-1.025*	-3.157***	-2.859***	-2.191***	-1.993***
	(0.589)	(0.589)	(0.770)	(0.767)	(0.595)	(0.594)
ln(Acquirer Market Value)	1.504***	1.054***	2.240***	1.192***	0.675***	-0.023
	(0.176)	(0.196)	(0.213)	(0.236)	(0.155)	(0.166)
Private	1.643**	1.787***	0.508	0.997	-1.583**	-1.257*
	(0.729)	(0.726)	(0.923)	(0.915)	(0.677)	(0.676)
Subsidiary	1.448*	1.650**	-0.261	0.280	2.035***	-1.674**
	(0.823)	(0.823)	(1.084)	(1.074)	(0.807)	(0.798)
Acquirer Market-to-Book Value	0.061	0.161	-0.436***	-0.181	-0.529***	-0.359***
	(0.130)	(0.131)	(0.159)	(0.161)	(0.128)	(0.128)
Macroeconomic Uncertainty	-7.027	-1.338	-36.976***	-7.085	-56.043***	-36.124***
	(9.056)	(9523)	(11.911)	(11.873)	(9.714)	(9.694)
Acquirer Sigma		-1.011***		-2.496***		-1.664***
		(0.244)		(0.313)		(0.253)
Monthly Market Returns and Uncertainty Effects	YES	YES	YES	YES	YES	YES
Industry Effects	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES
N	11,605	11,605	11,605	11,605	11,605	11,605
Adjusted R-Squared	0.03	0.03	0.04	0.05	0.03	0.03

Panel B: Relative Drifts in Small Non-Indicator Deals			
Post-Acquisition Returns	$\boldsymbol{BHAR_{i,Non-Indicator\ Day,3}}$	$\boldsymbol{BHAR_{i,Non-Indicator\ Day,6}}$	$\boldsymbol{BHAR_{i,Non-Indicator\ Day,3\ to6}}$
Number of Matches =2,001	-0.893	2.901**	2.074**
	(1.075)	(1.456)	(1.091)

Panel A of this table reports six models explaining the variation in the post-acquisition Buy-and-Hold Abnormal Returns (BHAR). Models (1) and (2) analyze the variation in the acquirer's 3-month BHAR. Models (3) and (4) analyze the variation in the acquirer's 6-month BHAR. Models (4) and (5) analyze the variation in the acquirer's BHAR between the 3rd and 6th month (inclusive) after the acquisition. Models (1), (3), and (5) do not control for the acquirer's sigma, while the remaining models control for this factor. All models control for the market returns and the level of the Jurado et al. (2015) macroeconomic uncertainty index in each month. Panel B reports the BHAR based on the matching of each small deal on a non-indicator day to a comparable small deal on an indicator day. The matches are chosen to have the smallest differences in market and market-to-book valuations, provided that these differences do not exceed one standard deviation. The (White, 1980) Standard deviations error are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 14 Deal completion in response to the market's announcement period reaction across different deal sizes

	All Deals				Deals on Indicator Days				Deals on Non-Indicator Days			
	All	Completed	Withdrawn	% of Withdrawn	All	Completed	Withdrawn	% of Withdrawn	All	Completed	Withdrawn	% of Withdrawn
	Panel A: All											
$CAR < -3\%$	2,587	2,370	217	8.4%	1,244	1,135	109	8.8%	1,343	1,235	108	8.0%
$-3\% \leq CAR < 0\%$	2,602	2,450	152	5.8%	1,311	1,239	72	5.5%	1,291	1,211	80	6.2%
$0\% \leq CAR < 3\%$	2,719	2,603	116	4.3%	1,392	1,333	59	4.2%	1,327	1,270	57	4.3%
$CAR \geq 3\%$	3,743	3,501	242	6.5%	1,918	1,781	137	7.1%	1,825	1,720	105	5.8%
	Panel B: Small deals (Bottom two quintiles)											
$CAR < -3\%$	988	946	42	4.3%	493	465	28	5.7%	495	481	14	2.8%
$-3\% \leq CAR < 0\%$	972	934	38	3.9%	478	463	15	3.1%	494	471	23	4.7%
$0\% \leq CAR < 3\%$	1,037	1,003	34	3.3%	560	542	18	3.2%	477	461	16	3.4%
$CAR \geq 3\%$	1,645	1,546	99	6.0%	877	821	56	6.4%	768	725	43	5.6%
	Panel C: Medium deals (Middle quintile)											
$CAR < -3\%$	483	447	36	7.5%	243	224	19	7.8%	240	223	17	7.1%
$-3\% \leq CAR < 0\%$	563	542	21	3.7%	300	290	10	3.3%	263	252	11	4.2%
$0\% \leq CAR < 3\%$	623	602	21	3.4%	322	311	11	3.4%	301	291	10	3.3%
$CAR \geq 3\%$	697	663	34	4.9%	350	329	21	6.0%	347	334	13	3.7%
	Panel D: Large deals (Top two quintiles)											
$CAR < -3\%$	1,116	977	139	12.5%	508	446	62	12.2%	608	531	77	12.7%
$-3\% \leq CAR < 0\%$	1,067	974	93	8.7%	533	486	47	8.8%	534	488	46	8.6%
$0\% \leq CAR < 3\%$	1,059	998	61	5.8%	510	480	30	5.9%	549	518	31	5.6%
$CAR \geq 3\%$	1,401	1,292	109	7.8%	691	631	60	8.7%	710	661	49	6.9%

The table presents the status of the deal (completed vs. withdrawn) based on the market's initial response. We divide the market's response into four groups: $CAR < -3\%, -3\% \leq CAR < 0\%, 0\% \leq CAR < 3\%$, and $CAR \geq 3\%$. For each group, we report the numbers of completed and withdrawn deals in addition to the percentage of deals that are withdrawn. We apply this approach for deals whose announcement coincides with releases of key economic indicators and for deals whose announcement does not coincide with such releases. Panel A applies this analysis to the whole sample, Panel B applies this analysis to small deals (bottom two quintiles), Panel C applies it to medium deals (middle quintile), and Panel D applies it to large deals (top two quintiles).

Table 15 The likelihood of listening to the market in small deals

Dependent Variable	**Withdrawn=1 Otherwise=0**	**Withdrawn=1 Otherwise=0**	**Withdrawn=1 Otherwise=0**
Target Size	**Small**	**Medium**	**Large**
Model Type	**Logit**	**Logit**	**Logit**
Explanatory Variable\Model	**(1)**	**(2)**	**(3)**
Intercept	-3.098	-5.443*	-6.596***
	(2.259)	(2.973)	(1.389)
Indicator Day	0.075	0.223	0.114
	(0.171)	(0.257)	(0.138)
Negative Market Feedback	-0.961***	0.314	0.115
	(0.319)	(0.337)	(0.172)
Negative Market Feedback × Indicator Day	0.819**	-0.025	-0.2236
	(0.415)	(0.454)	(0.238)
Full Stock	0.667***	0.287	0.312**
	(0.201)	(0.287)	(0.149)
Full Cash	-0.094	0.001	0.0720
	(0.213)	(0.296)	(0.151)
Diversifying	0.221	-0.144	0.092
	(0.168)	(0.229)	(0.123)
ln(Acquirer Market Value)	-0.639***	-0.449***	-0.573***
	(0.067)	(0.093)	(0.048)
ln(Deal Value)	0.493***	0.224	0.549***
	(0.109)	(0.385)	(0.061)
Private	-1.801***	-1.646***	-1.270***
	(0.187)	(0.274)	(0.168)
Subsidiary	-1.735***	-1.610***	-1.154***
	(0.253)	(0.343)	(0.167)
Acquirer Market-to-Book Value	0.055**	0.005	-0.025
	(0.024)	(0.049)	(0.022)
Macroeconomic Uncertainty	3.248	5.234**	6.057***
	(2.360)	(2.734)	(1.439)
Acquirer Sigma	-0.022	-0.006	0.001
	(0.019)	(0.030)	(0.006)
Industry Effects	YES	YES	YES
Year Effects	YES	YES	YES
N	4,637	2,368	4,600
Pseudo R-Squared	0.21	0.21	0.28

The table reports the outcome of three logit models on the sample of small, medium, and large deals, respectively. The dependent variable in all models is *Withdrawn*, which is assigned the value of 1 if the deal is withdrawn, and 0 otherwise (i.e. if the deal is completed). All models control for industry and year effects. *N* indicates the number of observations. Standard deviations are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.

Table 16 The likelihood of deal withdrawal under different volatility regimes

Dependent Variable	**Withdrawn=1 Otherwise=0**	**Withdrawn=1 Otherwise=0**	**Withdrawn=1 Otherwise=0**
Target Size	**Small Deals**	**Medium Deals**	**Large Deals**
Model Type	**Logit**	**Logit**	**Logit**
Explanatory Variable\Model	(1)	(2)	(3)
Intercept	-2.003 (1.761)	-4.500* (2.625)	-4.165*** (1.236)
Indicator Day	0.093 (0.170)	0.170 (0.254)	0.134 (0.137)
Negative Market Feedback	-0.960*** (0.317)	0.202 (0.327)	0.125 (0.172)
Negative Market Feedback × Indicator Day	1.015*** (0.424)	-0.086 (0.474)	-0.276 (0.256)
Negative Market Feedback × Indicator Day × High Cumulative VXO	-1.042* (0.635)	0.826 (0.682)	0.183 (0.354)
High Cumulative VXO	0.163 (0.191)	0.027 (0.270)	-0.173 (0.153)
Control Factors	YES	YES	YES
Industry Effects	YES	YES	YES
Year Effects	YES	YES	YES
N	4,637	2,368	4,600
Pseudo R-Squared	0.20	0.18	0.16

The table reports the outcome of three logit models on the sample of small, medium, and large deals, respectively. These models evaluate the role of large volatility spikes at the time of the deal's announcement on the acquirer's tendency to withdraw the deal in response to a significant negative CAR. The dependent variable in all models is *Withdrawn*, which is assigned the value of 1 if the deal is withdrawn, and 0 otherwise (i.e. if the deal is completed). All models control for industry and year effects. N indicates the number of observations. Standard deviations are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Please refer to Appendix A for an accurate description of the variables.