Identifying the Real Effects of the M&A Market on Target Firms*

Elizabeth Berger† *University of Houston*
David De Angelis‡ *University of Houston*
Gustavo Grullon§ *Rice University*

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Abstract

This paper provides causal evidence of the effects of the M&A market on target firms' corporate policies. Using antitrust regulatory thresholds to directly link the probability of a takeover to the size of the firm, we find evidence that firms intentionally reduce their size to elicit a takeover bid. They do so by limiting asset growth and increasing their payouts when they have excess cash. The treatment effect is stronger among firms with greater control over their market value and incentives to cash out via a merger. Our results reveal that antitrust exemptions can create perverse incentives that limit growth.

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†eberger@uh.edu. C.T. Bauer College of Business, University of Houston, 4250 Martin Luther King Boulevard, Houston, TX 77204, USA.

‡deangelis@bauer.uh.edu. C.T. Bauer College of Business, University of Houston, 4250 Martin Luther King Boulevard, Houston, TX 77204, USA.

§grullon@rice.edu. Jones Graduate School of Business, Rice University, P.O. Box 2932, Houston, TX 77252, USA.

1 Introduction

The main function of the mergers and acquisitions (M&A) market is to efficiently allocate resources across firms (Jovanovic and Rousseau, 2008). However, M&A activity can disrupt firms' real activities, especially when firms wish to influence takeover outcomes. Indeed, it is well established in the theoretical literature that M&A activity can create incentives for *target* firms to change their corporate policies to deter or elicit a bid (Gorton, Kahl, and Rosen, 2009). Surprisingly, there is no conclusive empirical evidence that this is the case. The dominant view in the M&A literature is that when firms take any action to influence their probability of being a potential target, it is usually to decrease that probability.[1] But even there, existing evidence is mixed, so it is not clear whether the market for corporate control is causing firms to change their corporate policies.[2] The main purpose of this paper is to examine this important issue.

Finding causal effects of the M&A market on corporate behavior is challenging since assessing the link between corporate policies, managerial intent, and M&A outcomes is difficult. Most researchers rely on theoretical predictions to establish the link between corporate actions and the probability of becoming a target. And then, based on these predictions, they aim to identify managerial intent. However, this approach is prone to an omitted-variable problem because unobservable factors may affect not only the corporate actions, but also the likelihood of a takeover attempt. In addition to this, prior literature has for the most part focused on detecting the deterrence of a takeover bid and thus has overlooked the possibility that firms may try to elicit a bid. Ignoring this possibility might obscure the true relation between corporate policies and takeover probabilities as it biases the analysis toward finding deterrence effects.

[1] For example, not only do firms amend their bylaws and charters to create barriers against potential acquirors (e.g., DeAngelo and Rice, 1983; Jarrell and Poulsen, 1987), but they also adjust their corporate policies. Particularly, consistent with the predictions from theoretical models (Harris and Raviv, 1988; Stulz, 1988; Bagwell, 1991), there is evidence that firms increase their leverage (Garvey and Hanka, 1999; Hege and Hennessy, 2010) and repurchase shares (Billett and Xue, 2007) when they face greater takeover threats.

[2] There is a debate about whether actions to deter a takeover are effective or even intentional (Comment and Schwert, 1995; Wald and Long, 2007; Cain, McKeon, and Solomon, 2017; Liu and Mulherin, 2018).

To address these empirical challenges, we construct a quasi-experimental setting using the amendments to the Hart-Scott-Rodino (HSR) Act in 2000. These amendments modified the size and nature of transaction thresholds under which M&A deals avoid pre-merger scrutiny. Two recent studies, Wollmann (2019) and Kepler, Naiker, and Stewart (2022), show that M&A transaction values cluster below the thresholds, which indicates that acquirers prefer deals that fall below the size threshold (the demand side effect). In this paper, we contribute to this literature by arguing that the discontinuity in demand around the HSR thresholds can allow potential target firms to alter their probability of receiving a takeover bid (the supply side effect). Specifically, firms can strategically adopt corporate policies that reduce (increase) the future transaction size to trigger (deter) an acquisition. Hence, our experimental setting provides a unique opportunity to examine whether the M&A market affects the corporate policies of potential target firms.

We design our experiment using the timing of the HSR amendment and the size of the new thresholds. Given that a firm's equity size is the lower bound on its transaction value (Bradley, Desai, and Kim, 1983, 1988), we define a treatment group of firms based on how close a firm's equity size is to the HSR threshold. We do this because firms that are ex-ante closer to the HSR threshold have a higher chance of successfully eliciting or deterring a takeover bid. Although firms do not have full control over their equity value, they can control their asset growth to influence their equity size (Baumol, 1962; Shalit and Sankar, 1977).

We validate our approach by showing that the link between firm size and the likelihood of a takeover bid is significantly stronger around the HSR threshold than around arbitrary thresholds. This addresses potential concerns that our approach is simply capturing the well-known effect of size on the probability of a takeover attempt. Further, the higher sensitivity of the takeover probability to firm size around the HSR threshold allows us to directly link ex-ante managerial actions to takeover outcomes, without having to rely on theoretical predictions.

We hypothesize that firms will take actions to limit or accelerate asset growth around the HSR thresholds depending on their intentions in the M&A market. Our main empirical specification focuses on asset growth as the primary outcome since this variable is a composite measure of the various mechanisms through which firms can manipulate their size. However, for completeness, we also explore other more granular mechanisms.

Overall, our evidence indicates that firms closer to the HSR threshold slow their asset growth rate compared to firms farther from the threshold. Relative to the unconditional mean, firms near the threshold reduce their asset growth by 14%. The magnitude of this effect is relatively stable across a host of alternative specifications. It is robust to alternative definitions of treatment and control groups, and subsample analyses.

One could argue that our findings on asset growth are the result of reverse causality. For example, it is possible that firms fall below the threshold because their assets decline for other unintentional reasons unrelated to the regulatory threshold. If this interpretation is correct, then we should find similar results around arbitrary thresholds. However, a battery of falsification tests shows that our results hold only during the treatment period and are driven by the specific values of the HSR thresholds. Furthermore, using a bootstrapped distribution of T-stats, we show that our findings are not the result of chance. In sum, the incentive to trigger a takeover attempt appears to be the main reason why firms that are close to the HSR thresholds reduce their asset growth relative to firms farther from the thresholds.

A natural question is how can such a large reduction in asset growth be a value-enhancing decision for shareholders? It is possible that selling out to larger firms can help target firms mitigate potential financial constraint and take advantage of economies of scale and scope. Moreover, if the liquidity of shares held by the target shareholders significantly improves after the deal, it is possible that the benefit from this liquidity improvement may offset the cost of slower growth. For example, liquidity can benefit shareholders that would like to sell their stake in the firm. These firms may manipulate their asset growth more aggressively to

elicit a takeover bid and this may well preserve the most value, even if the actions are costly. Our evidence supports this exit strategy argument. Around the HSR threshold, firms with illiquid shares reduce their asset growth rate by 66% compared to firms with more liquid shares. Given these results, we also run a simple counter-factual cost/benefit exercise that calibrates the maximum cost of these actions in the short run (in terms of a decline in equity value due to slower growth) that still makes this an optimal strategy overall. For example, in the presence of a potential liquidity shock (which existing evidence indicates can be substantial, see, e.g., Silber (1991) and Chakravarty (2001)), our estimates suggest that firms should be willing to reduce equity value in the short run by up to 20% in order to elicit a bid. If we also take into account the average premia targets receive during takeovers, then this proportion increases to 35%.

We also examine whether the treatment effect identified in this paper is stronger among those firms that have better ability to affect their equity size. It is reasonable to assume that if firms are strategically manipulating their size, then one would expect that low-volatility firms should be foregoing growth more aggressively. The reason for this is that the likelihood of meeting a specific market value in the future increases as the uncertainty about the factors which are out of the control of the manager decreases. Consistent with this prediction, we find that the treatment effect is significantly stronger among firms with low stock price volatility. A similar argument can be made based on a firm's cash reserves. Higher cash reserves provide more financial flexibility to grow or disgorge cash to their shareholders, thus allowing firms to impact their asset growth more easily. We find that firms with excess cash use higher payouts as a direct mechanism to reduce equity value (Hege and Hennessy, 2010). For example, relative to the unconditional mean, treated firms with high cash reserves increase their payout ratio by 21% compare to other treated firms. In other words, when firms possess larger cash reserves, they directly reduce their equity base through payouts to potentially elicit takeover bids.

We also explore the underlying mechanisms that firms can use to alter their asset growth

or their takeover probability. We find that firms not only slow down their investment and capital raising activities, but also increase their payouts when they have excess cash. Moreover, after controlling for the magnitude of earnings surprise, we find a dampened market reaction for firms close to the threshold, suggesting that managers may be using a more pessimistic tone during their earnings releases. We also find that firms near the threshold tend to declassify their boards, thereby removing an important antitakeover provision. Collectively, our findings point to direct corporate actions that managers take to *elicit* a bid.

Finally, we examine how the HSR threshold affects the premium accepted by target firms. Within completed deals around the threshold, we find that the premia tend to be lower for those transaction below the threshold. This result provides further evidence that these takeovers below the threshold are strategic from the target side: By accepting a lower premium, target companies keep their equity size from exceeding the size threshold.

This paper contributes to several strands of the literature. First, our results add to the M&A literature that examines the link between corporate policies and M&A outcomes. Although there is evidence that market prices affect takeover probability (Edmans, Goldstein, and Jiang, 2012), existing evidence on the link between corporate policies and M&A outcomes is mixed (Comment and Schwert, 1995; Garvey and Hanka, 1999; Billett and Xue, 2007; Wald and Long, 2007; Cain et al., 2017). As mentioned earlier, one limitation in those studies is the difficulty in assessing managerial intent. Our methodology addresses this limitation by capturing a local treatment effect. Moreover, our evidence shows that in situations in which there is a relatively tight link between corporate actions and takeover outcomes, firms actively change their corporate policies to seek to become a target, contrary to the conventional wisdom that firms tend to deter a takeover attempt (DeAngelo and Rice, 1983; Jarrell and Poulsen, 1987). In a recent paper, Masulis and Simsir (2018) find that target firms tend to initiate the takeover process when they are in financial distress. Our evidence complements their result by showing that firms actively adjust their real activities to elicit a bid even in the absence of distress. Finally, our evidence shows that firms actively change

their size to affect the likelihood of a takeover bid (Gorton et al., 2009) but for reasons linked to the US antitrust regulation. Overall, one major takeaway of our results is that M&A markets can impact real activities when one looks through the lens of the target firms.

Second, our paper contributes to recent economic policy debates regarding antitrust laws (see, e.g., Baer, 1997; Crandall and Winston, 2002; Berry, Gaynor, and Morton, 2019). Recent evidence indicates that acquirers undermine the effectiveness of antitrust regulations by taking actions that allow them to avoid regulatory scrutiny (Wollmann, 2019; Kepler et al., 2022). Our results indicate that target firms are active contributors in this stealth consolidation process. In particular, our paper reveals the adverse incentives to stay small associated with US antitrust regulation. This is potentially important because the actions that firms take to limit growth can reduce overall economic growth. Interestingly, this corporate behavior is contrary to the objectives of existing public policies that try to increase the number of firms in public markets (e.g., the JOBS Act of 2012).

Third, our findings speak to the evidence of a trend in industry consolidation in the US and the decline in product market competitiveness.[3] For example, the number of publicly traded firms in the US has been steadily declining since the beginning of the 21st century (e.g., Doidge, Karolyi, and Stulz, 2017; Grullon, Larkin, and Michaely, 2019). Although it is not completely clear why firms are disappearing from public markets, a higher volume of M&A activity has been identified as a critical factor (Gao, Ritter, and Zhu, 2013; Ederer and Pellegrino, 2023). Our results suggest that targets may be fueling this consolidation trend rather than resisting it, highlighting the importance of the supply side in M&A markets. As documented in Wollmann (2021), these real effects could extend beyond the corporate finance arena, by leading to potentially grave long-term consequences in areas such as public health.

[3]See, e.g., Autor, Dorn, Katz, Patterson, and Van Reenen (2020); Barkai (2020); De Loecker, Eeckhout, and Unger (2020).

2 Institutional Background and Hypotheses

This section describes the Hart-Scott-Rodino (HSR) Act and the features of the regulation that create a quasi-experimental setting. We present our main hypotheses about how the M&A market can impact real activities of potential targets in the context of this setting.

2.1 HSR Regulation

U.S. antitrust policies regulate merger and acquisition activity with the primary objective of preventing deals that are likely to reduce competition among firms. One of the most important mechanisms regulators use to enforce these policies is the premerger notification requirement. The HSR Antitrust Improvements Act of 1976 established the first premerger notification program that codified the requirement that firms must notify the Federal Trade Commission (FTC) of their intent to merge. The purpose of these notifications is to allow regulators to screen deals for potential antitrust violations. The law requires firms to notify the FTC of proposed acquisitions of assets, voting securities, or non-corporate interests and satisfy a 30-day waiting period before completing a deal.

The HSR Act includes exemptions for specific types of firms and deals from reporting the transaction to regulators to make the reporting and antitrust review process less onerous and more effective. Exemptions are based on the value of the acquisition and, in certain cases, the size (assets or sales) of the target and acquiring firms. Initially, the HSR Act of 1976 exempted deals with transaction values of less than $10 million from reporting.

In 2000, amendments to the HSR Act modified the size and nature of these thresholds. The modification that is most relevant for our study is an exemption from reporting requirements for deals below the size-of-transactions threshold of $50 million, which was a dramatic shift from the previous threshold of $10 million. Starting on September 30, 2004, the Federal Trade Commission (FTC) has adjusted the threshold each year based on the annual gross national product (GNP) growth rate.[4] Wollmann (2021) shows that these premerger

[4] "*In 2000, Congress amended the HSR statute to require an annual adjustment of these thresholds based*

notification exemptions severely reduce antitrust enforcement – enforcement rates are 90% when these notifications are required (i.e., above the exemption threshold) but only 1% when exempt – which clearly indicates that firms have incentives to seek these exemptions.

2.2 Hypothesis Development

Theory predicts that the M&A market can incentivize target firms to take actions to deter or elicit a bid (Gorton et al., 2009). For example, managers may deter bids to retain control (e.g., managerial entrenchment) or create value (e.g., negotiating a higher premium). They can do so by adopting antitakeover provisions (DeAngelo and Rice, 1983; Jarrell and Poulsen, 1987). On the other hand, incentives to attract bids include investor liquidity (e.g., manager or large shareholder exit strategy) and realizing the value of potential synergies. Firms can attract bids by initiating the takeover process with a potential acquirer (Masulis and Simsir, 2018). They can also collect several bids before announcing a formal bid (Boone and Mulherin, 2007).

In addition, theoretical models predict that firms may use corporate policies strategically to deter or elicit a bid (Harris and Raviv, 1988; Stulz, 1988; Bagwell, 1991). Finally, it is possible that targets are passive participants in the M&A market and, therefore, do not take any actions to attract or deter takeovers.

Given these arguments, our general hypothesis is the following:

H0 – Inaction: *Firms do not take actions to alter the probability of receiving a takeover bid.*

H1 – Action: *Firms take strategic actions to alter the probability of receiving a takeover bid.*

In our setting, acquirers prefer small transactions due to the HSR regulation size-of-transaction exemption. Wollmann (2019) and Kepler et al. (2022) show that transaction

on the change in gross national product. As a result, reportability under the Act changes from year to year as the statutory thresholds adjust." See full text at https://www.ftc.gov/enforcement/competition-matters/2023/02/hsr-threshold-adjustments-reportability-2023.

values of completed M&A deals cluster below the HSR thresholds, suggesting that acquirers actively avoid regulatory scrutiny by structuring deals below the size threshold. Consequently, these thresholds present an opportunity for firms to alter the probability that they will receive a takeover bid. Specifically, firms can strategically adopt corporate policies that reduce (increase) the potential transaction size to trigger (deter) a future takeover bid. Given these strategic alternatives, we can refine H1 under our setting:

H1-A – Deterring: *HSR thresholds cause firms to take actions that would increase the potential transaction size.*

H1-B – Attracting: *HSR thresholds cause firms to take actions that would decrease the potential transaction size.*

The subsection below elaborates on the different levers that potential target firms can pull to influence the future transaction size.

2.3 Manipulating Firm Size

In our main analysis, we use asset growth to measure the degree to which a firm manipulates its size around the HSR threshold. We focus on this variable for two main reasons. First, asset growth is a fundamental firm characteristic that drives firm size; higher asset growth predicts an increase in firm size (Baumol, 1962; Shalit and Sankar, 1977).[5] Second, asset growth is a fundamental firm characteristic that firms can manipulate through real activities.

In general, firms can issue shares to expand their equity base, or use payouts (i.e., pay dividends or repurchase shares) to reduce their equity base. They can also change their expected growth through a variety of mechanisms. The advantage of using asset growth is that this variable captures the overall impact of these mechanisms, regardless of which component a firm manipulates (Cooper et al., 2008).[6] However, to have a better understanding of what

[5]Although Cooper, Gulen, and Schill (2008) show that future returns are negatively correlated with asset growth, this is not an issue for our paper. The link between portfolio returns and future firm size is ambiguous. The reason for this is that returns are measured on a per share basis without taking into consideration the size of the firm. For example, while returns may go up after a share repurchase program, the total size of the firm may shrink as the firm disgorges the cash to the shareholders.

[6]In fact, Cooper et al. (2008) argues that using individual components of total investment or financing

firms are doing around the HSR threshold, we also explore the individual components of asset growth, such as payout, investment and financing decisions.

3 Methodology and Empirical Setting Relevance

In this section, we present our identification strategy and introduce the main empirical specification. We also describe our dataset construction and validate the key assumptions of our empirical setting.

3.1 Identification Strategy

We use the HSR threshold to identify the impact of the M&A market on corporate policies of potential target firms. Our identification strategy relies on the notion that a firm's ability to manipulate size around the HSR threshold depends on how close the firm is to the threshold ex ante. Those firms that are closer are more likely to be successful whereas those that are farther will find manipulation to be more difficult. Note also that around the HSR thresholds, both firms above and below the threshold would have incentives to manipulate.[7] Our empirical design, which involves using an exogenous regulatory threshold to analyze strategic behavior, is similar to that in the regulation avoidance literature, in which firms have incentives to manipulate their size around a threshold in order to avoid regulation (see, e.g., Gao, Wu, and Zimmerman, 2009; Chen, Cohen, and Lou, 2016; Cespedes, Nickerson, and Parra, 2021; Ewens, Xiao, and Xu, 2021; Alvero, Ando, and Xiao, 2023).

Specifically, to capture the effects of the HSR thresholds, we group firms based on their ex ante firm size relative to the HSR threshold. Companies in close proximity to the HSR threshold are in the treated group while those that are farther from that threshold are in the control group. To separate these two groups, we define a discrete measure of distance to the

obscures the larger picture of asset growth.

[7] For example, consider a firm that is just below the threshold and wishes to remain there. That firm will have incentives to reduce its growth to increase the probability that it stays below the HSR threshold.

HSR threshold using upper and lower bounds around the HSR thresholds based on ex ante firm size. Firms with sizes within those bounds have higher incentives to manipulate their size over the intervening years if they wish to alter the probability of receiving a takeover bid. We define our discrete variable, *HSR Proximity*, in the following way. A firm is within the *HSR Proximity* bounds if its past market capitalization (year t-2) is greater than 50% and less than 150% of the projected HSR threshold value at year t. Figure 1 illustrates the construction of the *HSR Proximity* variable for the years in which the HSR threshold was set at $50M (2001-2004). Although we define the variable using the 50% bounds, our results are not sensitive to the modeling choices regarding bounds, discrete measures of distance, and the timing of the treatment. We discuss these alternative methods and variable definitions below.

[Insert Figure 1 here]

Our main empirical specification tests whether firms change their asset growth around the HSR threshold by comparing the asset growth of firms within the *HSR Proximity* bounds to firms outside those bounds in the following OLS specification:

$$\text{Asset Growth} = \alpha + \beta \text{ HSR Proximity} + \gamma \text{ Controls} + \eta_j + \theta_t + \epsilon \tag{1}$$

where we define Asset Growth in two ways: the scaled change in assets at time t (i.e., ($Assets_t$ - $Assets_{t-1}$) / $Assets_{t-1}$) and the annual change in log of assets (Δ $Log(Assets)$). *HSR Proximity* is an indicator variable that equals one if the firm's market capitalization at t-2 is greater than 50% and less than 150% of the projected HSR threshold at time t. *Controls* is a vector of control variables: *Log(Market Cap (t-2)), Log(Assets (t-1)), Book Leverage (t-1), Market to Book (t-1), ROA (t-1), Lagged Returns (t-1), and Volatility (t-1).* η_j and θ_t are industry (Fama-French 12) and year fixed effects, respectively.

Because we sort on *Market Cap (t-2)*, it is important to control for potential size effects. One can compare our setting to a regression discontinuity design, in which one controls

for the sorting variable and tries to capture a jump in outcomes at the cutoff point.[8] In the same vein, we include *Log(Market Cap (t-2))* as an independent variable to control for the unconditional relation between past market capitalization and future asset growth and systematic variation in asset growth when firms are close to the HSR thresholds. We also control for *Log(Assets (t-1))* in all our specifications (since *Asset Growth (t)* is our main outcome variable), which further absorbs potential size effects.

In Equation 1, the treatment effect, β, captures how firms change their asset growth when their market capitalization is in the $HSR\ Proximity$ bounds in year t-2. In complementary tests, we estimate the parameters of Equation 1, including both the pre- and post-treatment periods (1978-2019). We define an indicator variable $Post\ Regulation$ which equals one in the years following the change in the HSR threshold (i.e., 2001 - 2019) and estimate the coefficient on the interaction term, $HSR\ Proximity \times Post\ Regulation$. Finally, we estimate placebo treatment effects using the post-2000 HSR thresholds during the period 1978 – 1997 (GNP-deflated appropriately), the period before the amendment but after the introduction of the HSR Act (1976).

Our identification strategy is based on the assumption that firms in the $HSR\ Proximity$ bounds are treated, while those outside are not. It is immediately clear that our treatment and control firms differ on at least one dimension – specifically, $Market\ Cap$. Here we discuss why this arises in our setting, how it affects our empirical design, and ways that we address endogeneity concerns.

Regulatory cutoffs provide an arbitrary and potentially exogenous division of firms, and treatment and control firms are typically those below or above the cutoff. Although the regulatory cutoff exists in our setting, we study whether and how firms manipulate behavior around the threshold. Because some firms will manipulate to move above, some will manipulate to move below, and some will manipulate to stay either above or below, the typical

[8] In our case, there is also a cutoff point (the HSR threshold), but the non-manipulation assumption under the regression discontinuity is clearly violated (as we will discuss below when examining density tests of transaction values around the threshold). Indeed, we are explicitly testing for the presence of manipulation. Hence, a formal regression discontinuity design specification is not applicable in our setting.

strategy of looking above and below a cutoff is not so clear cut. Our solution is to design the *HSR Proximity* window, which looks "around" rather than above and below. The window is a region in which manipulative actions are most likely to occur and we let the data determine the preponderant direction of the actions – that is, whether companies try to move above or below the threshold.

Finally, when we define the size of the *HSR Proximity* window we make a tradeoff between precision and power. By defining a large *HSR Proximity* window we are able to study firm behavior within a large set of observations. Because not all firms manipulate and not many firms receive takeover bids, a large *HSR Proximity* window provides many degrees of freedom. The drawback is that we run the risk that other omitted factors influence corporate policies for firms inside the *HSR Proximity* window compared to those outside. To address these concerns, we run an extensive series of placebo tests. For example, we repeat our analysis using the pre-regulation period and a placebo *HSR Proximity* variable. We also repeat our analysis using the post-regulation period and placebo HSR thresholds. Next, we trade power for precision and run our analysis using tighter bounds to define the *HSR Proximity* variable. Finally, instead of using an indicator variable, we run the analysis with a continuous variable that reflects a firm's proximity to the HSR threshold.

In sum, we address concerns about our identification strategy across several fronts and our results are robust. Although none of these solutions is perfect, together they build a case that our results are driven by manipulation around the HSR thresholds (*HSR Proximity*) and are not likely due to an omitted variable or spurious relationship between asset growth and the HSR thresholds.

3.2 Database Construction

We use a combination of five data sources in our analysis. The datasets provide annual firm-year accounting information, records of firm merger activity, annual exemption limits of the HSR Antitrust Improvements Act amendment, classified board status, and analyst

earnings forecasts.

We use the Thomson Reuters Mergers and Acquisition SDC database to gather transaction-level U.S. merger data. These data include the form of transaction, effective date, announcement date, purchase price, and transaction value of the deal as well as the identity and industry of the firms involved. In our analysis, we define our bid year, i.e., the year when the firm becomes a target, as the announcement year reported in SDC. We follow Wollmann (2019) to construct a final set of M&A transactions for which the regulation is relevant. The deals must be identified as an acquisition of assets, acquisition of major interests, acquisition of partial interest, acquisition of remaining interest, acquisition, exchange offer, or merger.[9] Targets and acquirers must be U.S. firms and cannot be the same entity. We exclude targets in industries in which the HSR threshold does not apply or should not have a significant impact on mergers.[10]

We use the merged Center for Research in Security Prices (CRSP)-Compustat database of annual corporate accounting data to construct firm-year observations for the period from 1978 to 2019. We exclude industries that are explicitly exempted from the regulation.[11] Our main outcomes are *Asset Growth*, defined as the change in assets from time t-1 to t scaled by lagged assets (Cooper et al., 2008) and the annual change in log of assets ($\Delta\ Log(Assets)$), where $Log(Assets)$ is the log of total assets (AT_t). $Log(MarketCap)$ is equal to the log of price times shares outstanding ($CSHO_t \times PRCC\_F_t$). Stock return data come from the CRSP monthly stock price database. All other variables are defined in Appendix A.

We match the SDC database to Compustat using the CUSIP firm identifier of the targets and dates of M&A announcements in SDC and the CUSIP firm identifier and calendar year

[9] We exclude the following acquisition techniques: "Management Buyout", "Management Buy-in", "Recapitalization", "Leveraged Buyout", "Repurchase, Restructuring", "Reverse Takeover", "Acquiror Includes Management", "Reverse LBO", "Sale and Leaseback", "LBO + Management + Employee", and "LBO + Employee Stock Plan." The acquisition cannot be due to liquidation or bankruptcy.

[10] These industries are coal, oil and gas, casinos and hotels, and banks. We exclude *acquirers* that engage in financial activities which are defined as credit, insurance, risk management, audit, real estate investment trusts, and accounting.

[11] To be consistent with our SDC sample of M&A bids, we exclude hotels and motels (SIC codes 7011), oil and gas (SIC codes 1311 – 1389), coal (SIC 1241), and banks (SIC 6000 – 6099) as potential target firms.

in Compustat. We merge in the annual HSR exemption limits which are GNP-adjusted and reported annually by the Office of the Federal Register.

The final sample covers the period from 1978 to 2019. Our main analysis focuses on the period following the HSR threshold amendment, i.e., "Post Regulation" from 2001 to 2019. We include the pre-regulation period (1978 - 2000) when gauging pre- and post-regulation effects and running placebo tests of our main results. *Target* is an indicator variable equal to one if the firm receives a takeover bid in that year (i.e., announcement year). We assume that the potential transaction price for each bid is based on the fair market value of the target's securities at the time of the bid.[12] We use a firm's market capitalization as a proxy for the transaction price. Firms with an imputed transaction price above the HSR threshold would be subject to premerger scrutiny and those below would avoid scrutiny. *HSR Proximity* identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *M&A Premium* is defined as ((transaction price$_{t=0}$/target's stock price$_{t=-105}$) - 1) $\times$ 100.

We use classified board data developed in Guernsey, Sepe, and Serfling (2022).[13] The classified board status is determined using a Random Forests Classifier algorithm for almost 13,000 firms (Guernsey et al., 2022; Guernsey, Guo, Liu, and Serfling, 2022). ΔCB measures the change in board status from t-1 to t (cbv_t - cbv_{t-1} in the classified board database). It equals zero if there is no change, negative one if the board becomes declassified, and one if the board becomes classified. Earnings announcement data come from the Refinitiv I/B/E/S database and include analyst and consensus earnings forecasts. We define the earnings announcement cumulative abnormal returns as the sum of the difference between the firm's return and the CRSP market return for event days t-1 to t+1 around earnings announcements. We define *Earnings Surprise* as $(Actual\text{-}Consensus)/Price$ at the end of the fiscal quarter, all at time t. All continuous variables are winsorized by year at the 1%

[12] See 16 CFR § 801.10 - Value of voting securities, non-corporate interests and assets to be acquired.

[13] The data are available for download on Matthew Serfling's website: https://sites.google.com/utk.edu/matthew-serfling/data

and 99% levels. We provide summary statistics of our main variables in Table 1.

[Insert Table 1 here]

3.3 M&A Activity around the HSR Threshold

Before turning to our main analysis, we first verify that M&A activity responds to the amendmends to the HSR Act. Wollmann (2019) shows that the number of pre-merger notifications drops dramatically after the amendment to the HSR Act in 2000. Furthermore, Kepler et al. (2022) document that transaction sizes of completed deals tend to cluster below the HSR thresholds. We confirm these trends in our sample. Specifically, we examine the frequency of bids just below the HSR size threshold during the treatment period (2001-2019) using local quadratic density estimation around the threshold and the data-driven bandwidth selection method developed by Cattaneo, Jansson, and Ma (2020). In the density estimation, the independent variable is the difference between the M&A bid transaction value and the HSR threshold value; a positive (negative) value indicates a bid above (below) the HSR threshold. Figure 2 shows that bids cluster below the HSR threshold and there is a significant difference (p-value of 5.10%) in the density of transaction values around the HSR thresholds.

[Insert Figure 2 here]

We repeat this test during the placebo period (i.e., 1978-1997, the period before the amendment of the HSR thresholds) using a placebo threshold (i.e., the GNP-deflated threshold of $50 million). In this placebo test, we fail to find evidence of a discontinuity in the density of transaction values around the placebo HSR thresholds (p-value of 87.46%). We report this figure in our Internet Appendix.

Our hypothesis rests on the assumptions that both the *HSR Proximity* and *Asset Growth* affect the probability that a firm receives a takeover bid. In Section 5, we demonstrate how a change in ex ante asset growth relates to the ex post probability of receiving a takeover

bid. Establishing this link helps us to validate our empirical setting, particularly our ability to retrieve a local treatment effect.

4 Empirical Analysis

In this section, we test the hypothesis that firms near the HSR threshold strategically manipulate their asset growth to influence the probability of receiving an M&A bid.

4.1 Main Tests: Asset Growth around HSR Thresholds

Given that asset growth predicts a change in the likelihood of a takeover attempt, firms can use asset growth to deter or attract bids. To deter takeovers, firms can increase asset growth such that their firm size exceeds or stays above the HSR threshold. To attract takeovers, they can reduce or limit asset growth such that their firm size remains below or shifts below the HSR threshold. With this in mind, we test whether asset growth is affected by the HSR thresholds (Hypothesis 1). Specifically, we compare the asset growth of firms which are close to the HSR thresholds (*HSR Proximity*) to that of firms which are less affected by the HSR threshold using the regression specification outlined in Equation 1. Table 2 presents our main results.

[Insert Table 2 here]

In Table 2, Panel A, we use *Asset Growth* as our dependent variable. Overall, we find that the coefficient on *HSR Proximity* is negative and significant, indicating that firms which are close to the HSR threshold tend to reduce their asset growth, consistent with Hypothesis 1-B. We use different specifications to assess the sensitivity of our results. In Column (1), we present our most parsimonious specification which includes a discrete measure of a firm's proximity to the HSR threshold to capture the HSR treatment effect and the necessary controls for firm size, *Size Controls*. In this specification, we find that firms reduce asset

growth by 0.012 when they are located around the HSR threshold. When we include industry and year fixed effects in Column (2), the point estimate is similar (-0.011). In Column (3) we include our full set of control variables, *Other Controls*. This specification is our main specification, as outlined in Equation 1. The addition of the control variables increases the precision of our estimates (i.e., lower standard errors) and improves the model's fit (R^2). The point estimate in Column (3) indicates that the economic effect is large. Firms reduce their asset growth by 0.013, or about 14% (33%) relative to the sample mean (median).

We investigate the robustness of our main results to alternative specifications. First, we adjust the timing of our treatment variable to address the concern that firms respond more quickly to the regulatory cutoff (within one year). We run our main test from Column (3) but define a firm's *HSR Proximity* based on its market capitalization one year, rather than two years, before the HSR threshold takes effect. The point estimate reported in Column (4) is even stronger when using this timing classification (-0.025) such that the time lapse of our *HSR Proximity* variable is unlikely to drive our estimated effects.

Another concern might be that our discrete variable, *HSR Proximity*, defined as a fixed distance around the HSR threshold is biased by confounding factors. To address this issue, rather than imposing a discrete cutoff, we define a continuous treatment variable that captures how the distance from the threshold affects a firm's potential manipulation behavior.[14] The results in Column (5) show that as firm size approaches the HSR threshold, firms significantly reduce their asset growth relative to those that are farther from the threshold, consistent with our main results.

We also study how sensitive our main estimates are to the bounds of the discrete *HSR Proximity* variable. According to our initial *HSR Proximity* variable, treated firms are within 50% of the HSR threshold value. Here, we define an alternative variable using a 10% threshold window (i.e., the treatment) as those companies with a market capitalization at

[14]Specifically, our continuous variable measures the absolute value of the difference between a firm's market capitalization at t=-2 and the HSR threshold at t=0 scaled by the HSR threshold. Our final variable is the log of this difference to account for the potential skewness in this variable. We include the negative of this distance variable to measure a firm's proximity to (rather than distance from) the threshold.

t=-2 that is within 10% of the HSR threshold. Column (6) in Table 2 reports that the point estimate is more negative (-0.033) than the estimate from the main specification.

We explore this issue further using narrower windows around the HSR threshold in increments of 10%, i.e. by considering firms that are closer to the HSR threshold as treated firms. Figure 3 plots the estimated coefficients of both *Asset Growth* and Δ *Log*(*Assets*) across these specifications with different bounds (i.e., from 50% of the threshold, our main specification, to 10%, the narrowest specification) along with its 95% confidence interval.

[Insert Figure 3 here]

We observe that across all windows and both measures of asset growth, the effect remains statistically significant. Interestingly, we also observe that the estimated effect grows stronger (i.e., a more negative drop in asset growth) as we use narrower windows around the HSR threshold, consistent with the notion that the effect comes from the HSR threshold rather than an omitted variable. The confidence intervals widen, probably due to the loss of power from reducing the number of treated observations. In sum, our main results are robust to a more narrowly defined treatment window.

Finally, when we use the discrete *HSR Proximity* variable, treated and control firms can differ such that we may be capturing a size effect comparing large firms to small firms. Our main specification controls for size in two ways (using past market capitalization and total asset size). Nevertheless there could be a non linear effect that our specification is not capturing. To address that concern, in Column (7) we study a subsample of firms that are within the 50% bounds of the HSR threshold. Essentially, our test estimates a treatment effect within the treated sample and addresses concerns that our results are driven by a potential "small firm effect." We compare asset growth of firms defined by *HSR Proximity* (10%) relative to those of firms with a market capitalization that is within 50% of the HSR threshold (our initial *HSR Proximity* window). The results are reported in Column (7) in Table 2. We find that treated companies (according to the 10% threshold window) reduce their asset growth significantly relative to the other companies that are within 50% of the

HSR threshold. The point estimate is large (-0.025). Hence, it is unlikely that our main results are driven by a small size effect.

In Panel B of Table 2, we repeat the analysis using Δ $Log(Assets)$ as the dependent variable. The results confirm our findings in Panel A. The magnitudes of the point estimates are more stable (consistent) across specifications. For example, the coefficients obtained from our most parsimonious specification (Column (1)) and from our most restrictive one (Column (7)) are the same.

Finally, we extend the sample to include the period before the HSR amendment (1978-2000) and test whether the coefficient on *HSR Proximity* changes after the amendment (post regulation) relative to before the amendment (pre regulation) (using our main specification from Column (3) in Table 2). The thresholds in the pre-treatment period are GNP-deflated thresholds of $50 million, consistent with the way the threshold is adjusted in the post-treatment period. In Columns (1) and (2) in Table 3, the coefficients on *HSR Proximity* x *Post Regulation* and *HSR Proximity* reveal that firms only manipulate their asset growth when the HSR exemption is in place. One could argue that the pre- and post-treatment periods are relatively long, which can hinder our ability to measure the treatment effect precisely. We thus estimate the treatment effect using a shorter sample period of 5 years before and 5 years after around the 2000 amendment of the HSR. In Columns (3) and (4) in Table 3, we report the results from this truncated period. We find that our main results are even stronger and we observe no treatment effect in the pre-treatment period (i.e. the coefficient for *HSR Proximity* is statistically insignificant and close to zero). This analysis provides further evidence that the treatment effect documented in Table 2 did not exist before the treatment initiation.

[Insert Table 3 here]

Taken together, our results show that there are systematic differences in asset growth for firms close to the HSR threshold compared to those far from the threshold. These results

suggest that firms may be reducing or limiting asset growth to elicit a takeover bid, consistent with hypothesis H1-B.

4.1.1 Randomization of the HSR Threshold Cutoff

To address any concerns that firms may be falling below the HSR threshold for unrelated reasons, we compare our main estimates to those obtained using a randomly assigned HSR threshold. Precisely, we draw a random threshold from a uniform distribution (ranging from \$25M to \$1B). We define *HSR Proximity* around the random threshold and then rerun the specification from Column (3) of Table 2 using that discrete *HSR Proximity* variable. We keep the magnitude of the window bounds consistent with those in our main regressions (e.g., [Threshold -\$25M; Threshold +\$25M] in the pre-2005 period) so that the threshold window does not grow exponentially for large thresholds. We inflation adjust the random thresholds and window sizes by the annual GNP in the post-2004 period. We repeat this process 10,000 times and recover the resulting T-stats of the coefficient of interest. This exercise allows us to assess the statistical significance of our main results. Figure 4 plots a histogram of T-stats for the coefficient of the *Asset Growth* variable on the randomly drawn HSR thresholds. The green dashed vertical line plots the estimated T-stat based on the true HSR threshold, reported in Table 2, Column (3). The bottom figure plots the results if we use the Δ *Log*(*Assets*) variable instead of the *Asset Growth* variable.

[Insert Figure 4 here]

The distribution of T-stats derived using these random thresholds is approximately centered around zero, consistent with the fact that these thresholds are based on random draws. Across both outcome variables, we observe that our estimated T-stat is located in the left tail of the histogram of T-stats based on random thresholds. Specifically, our estimated T-stat for *Asset Growth* (the first specification) would be at the 0.5% percentile of the distribution of T-stats based on random thresholds. For Δ *Log*(*Assets*), our estimated T-stat is lower

than the minimum of the distribution of T-stats based on random thresholds. This analysis indicates that our results are unlikely to be the product of unobservable omitted variables and confirms their statistical significance.

4.1.2 Placebo Period

To check the robustness of our analysis, we repeat our main tests on a sample of firms and transactions over the years 1978 to 1997. In these years, the amended HSR thresholds that we study were not present, and thus we do not expect any effect from our tests. In these placebo tests, we cannot replicate our main results that asset growth declines around the HSR thresholds across different specifications. We tabulate the results from our other placebo tests in our Internet Appendix. Overall, our findings indicate that the slower asset growth around the HSR threshold is not random, addressing any concerns that our results are spurious.

4.2 Cross-Sectional Variation in the Treatment Effect

If our results are indeed the outcome of strategic behavior, they should be sensitive to a firm's incentives or ability to elicit a takeover bid.

First, we test whether managerial incentives help explain our main result. One such incentive is liquidity. Managers of firms with lower share liquidity may wish to sell their shares but cannot in the open market without triggering a costly price impact. In that case, because those illiquid shares cannot be easily converted into cash without a significant loss in value, then the benefit of using an M&A deal to avoid this illiquidity discount could be large enough to justify curbing the firm's growth.[15] Eliciting a takeover bid presents an exit strategy whereby managers can cash out their shares at better prices (an analogous argument applies to an influential shareholder) (Cai and Vijh, 2007). To test this hypothesis, we use

[15]For example, (Chakravarty, 2001) shows that large trades (e.g., from institutional investors) are associated on average with a cumulative price change of about 22%, and medium trades can be associated with a cumulative price change of up to about 30%.

the Amihud illiquidity measure (Amihud, 2002) as a proxy for share liquidity. We define an indicator variable *Low Liquidity*$(t-1)$ that equals one for firms with lagged liquidity below the median liquidity within the industry and year.

[Insert Table 4 here]

The results in Table 4, Columns (1) and (2) show that firms with illiquid shares reduce their asset growth more when they are close to the HSR threshold. They reduce their asset growth by 66% (Column (3)) relative to firms with more liquid shares that are close to the HSR threshold. In this case, firms with stronger incentives to attract a takeover bid restrict asset growth.

Next, we test whether the treatment effect varies with a firm's ability to manipulate asset growth. We use two different measures of ability: stock price volatility and cash reserves. When stock price volatility is low, there is a tighter link between real firm activity and market value. Consequently, managers have more control over the firm's market value and efforts to manipulate size are more likely to achieve the required equity size in the future. Therefore, we expect that firms with low price volatility will reduce their asset growth more aggressively than firms with higher price volatility around the HSR threshold. We define an indicator variable *Low Volatility*$(t-1)$ that equals one for firms with lagged volatility (computed using the past 36 months to obtain a stable estimate of the ability to influence stock price) below the median volatility within the industry and year. We augment Equation 1 to include interactions with *Low Volatility*$(t-1)$. The results of this regression are reported in Table 4, Columns (3) and (4).

The negative and statistically significant coefficient on *HSR Proximity* x *Low Volatility (t-1)* indicates that when companies can be more certain that their efforts will be successful, they take stronger actions to manipulate their asset growth. The magnitude of the effect for these subsamples is economically significant. Low volatility firms reduce their asset growth by 0.024 (Column (1)) relative to high volatility firms around the HSR threshold, which represents a 26% (62%) reduction relative to the sample mean (median). In contrast,

standard real option models predict that high volatility firms should exhibit lower firm growth (Pindyck, 1988). We find the opposite effect, such that strategic managerial manipulation rather than standard real option effects likely drive our results.

We use a firm's cash reserves as our second proxy for its ability to manipulate asset growth. One hypothesis is that firms reduce asset growth because they are financially constrained. We identify firms with high cash reserves, which indicates that the company has resources to finance future growth. We define an indicator variable *High Cash (t-1)* that equals one when a firm's cash-to-asset ratio is above the median cash-to-asset ratio within an industry and year. The results in Columns (5) and (6) of Table 4 show that when firms have high cash reserves and are in close proximity to the HSR threshold, they reduce future asset growth. Although these results are statistically weak, we explore more direct tests in Section 4.3 and show the mechanism through which cash reserves affect asset growth.

Overall, the treatment effect is more pronounced among companies that have stronger incentives to use a takeover as an exit strategy and for those that have more control over their equity size. These results support the hypothesis that firms manage asset growth strategically and they do so to elicit takeover bids. Moreover, our two proxies, *Low Liquidity* and *Low Volatility*, have unique effects on asset growth in this setting. Typically, firms with illiquid shares are also more likely to have volatile stock returns and these characteristics should have similar effects on asset growth. Instead, our results show that managers of firms with more volatile stock returns are less willing to manipulate their asset growth (Table 4 Columns (3) and (4)). The finding that treated firms with illiquid shares reduce asset growth more aggressively than other treated firms uncovers a unique role for liquidity in a firm's strategic behavior around the HSR thresholds.

4.3 Cash Reserves and Payout Policy

We study how firms manage cash reserves and payout policies when they are in close proximity to the HSR threshold. These policies are directly related to firm size and are under the

direct control of the firm. A firm can reduce its size by reducing cash holdings and increasing payouts. These actions should be especially important when firms have large cash reserves.

To test this hypothesis, in Table 5 we estimate Equation 1, but replace asset growth with the change in cash reserves, $\Delta\ Cash$ (Columns (1) and (2)), and total payout, *Payouts* (Columns (3) and (4)), as the dependent variables. We use the indicator variable, *High Cash (t-1)*, to identify firms that are able to reduce cash reserves. In the regression specification, we include the interaction term, *HSR Proximity* x *High Cash (t-1)* to estimate how firms manage their cash reserves and payout policies when they have excess cash.

[Insert Table 5 here]

The results in Column (1) show that, in general, firms close to the HSR threshold (*HSR Proximity*) do not alter their cash reserves. In Column (2), the negative coefficient on the interaction between *HSR Proximity* and $High\ Cash_{t-1}$ shows that, conditional on having large cash reserves ex ante, firms in the *HSR Proximity* treated group actively reduce their cash reserves.

We explore payout as one such mechanism that firms can use to distribute cash and thereby reduce their cash position. In Column (3) the sign of the coefficient on *HSR Proximity* is positive but is not significant. It is perhaps not surprising that we fail to find an unconditional treatment effect, because payouts are possible only when firms have cash to distribute. Firms around the HSR threshold are small and may not systematically have enough cash to redistribute to their shareholders.

Conditional on having excess cash, the results in Column (4) tell a different story. We include an interaction term with *High Cash (t-1)* to measure the differential treatment effect of ex ante cash reserves on these policies. The coefficient on $HSR\ Proximity \times High\ Cash_{t-1}$ is positive and statistically significant. Treated firms with high cash increase their payout ratio by 21% (55%) relative to the sample mean (median) compared to firms with low cash reserves within the bounds of the *HSR Proximity* variable.

These findings provide strong evidence that firms actively reduce their cash reserves in order to reduce firm value (Hege and Hennessy, 2010). In other words, when cash reserves allow, firms directly reduce their equity base through payouts to elicit takeover bids. These findings point to an effective and direct decision that firm managers can make to change real, fundamental attributes of the firm.

4.4 Other Corporate Policies

The following analyses examine other specific actions that managers can take to elicit takeover bids. Asset growth is a composite measure that reflects many fundamental firm decisions. We study its components to investigate the potential mechanisms through which firm managers can reduce their firm's size, limit its growth, or accomplish both. We examine three types of corporate policies: payout, financing, and investment policies. In addition, we examine how firms manage other decisions that affect firm management and share prices: specifically, the board of directors and earnings announcements around the HSR thresholds. For each test, we estimate Equation 1 and replace the asset growth variable with each mechanism as the outcome variable. The results are presented in Table 6. An important caveat is that these are potential mechanisms that managers may employ, and will vary firm-by-firm and year-by-year. It is unlikely that firms will use all, or even more than one, of these.

[Insert Table 6 here]

4.4.1 Components of Asset Growth

First, we study payout policies. In the prior subsection, we showed that change in payout policies when cash reserves are large can explain the movement in asset growth. Second, we study whether firms alter financial and investment policies to reduce their size. Specifically, we measure the link between *HSR Proximity* (i.e., treatment) and changes in investment (ratio of capital expenditure to lagged assets), debt, and the book value of equity.

Columns (1)-(3) report negative and statistically significant coefficients on $HSR\ Proximity$ in the three specifications. Managers limit investment when they are near the HSR threshold compared to those further away (Column (1)), indicating an intent to limit growth by reducing new investment. Firms in close proximity to the HSR threshold tend to reduce their level of debt, thereby reducing financing growth (Column (2)). Likewise, treated firms exhibit a drop in the book of value of their equity (Column (3)), which is consistent with our previous results regarding cash, payout, and asset growth. Although the mechanisms tested here are not an exhaustive list and the composite asset growth measure is a stronger, more comprehensive predictor of firm value, these results illustrate direct actions that managers take to change firm fundamentals to manipulate asset growth and thereby elicit potential takeover bids.

4.4.2 Classified Board

Classified boards create stability and promote long-term corporate strategies. Classified boards also insulate inefficient managers from unwanted takeover bids. In fact, classified boards are a type of antitakeover provision. Hence, when a firm "de-classifies" its board, it removes a powerful protection against takeover bids. In Column (4), we examine whether firms change their classified board status when they are close to the HSR threshold. ΔCB measures the change in board status from t-1 to t. It equals zero if there is no change, negative one if the board becomes declassified, and one if the board becomes classified. The result indicates that firms near the HSR thresholds ($HSR\ Proximity$) tend to declassify their boards of directors.

In sum, firms in close proximity to the HSR threshold tend to remove a barrier to an M&A deal by reducing the protection that comes from a classified board. These results are consistent with our main findings that firms around the HSR thresholds take strategic actions to facilitate a takeover.

4.4.3 Earnings Announcements

Finally, we study actions that affect share prices more directly by examining market reactions around earnings announcements. Managers may attempt to constrain market price reactions around earnings announcements by, for example, toning down positive perceptions of current or expected performance. To test this argument, we use *Abnormal Announcement Returns* as the outcome variable (measured as the sum of the difference between a firm's return and the market return for event days between t=-1 and t=1 relative to the earnings announcement day) in Equation 1, and add an additional control for the earnings surprise (*Earnings Surprise*) in this test. This specification tests whether excess stock returns differ for firms around the HSR threshold after controlling for earnings surprises.

Column (5) reports that the coefficient on *HSR Proximity* is significantly negative. When firms make earnings announcements and are in close proximity to the HSR threshold, they tend to have lower market reactions. This result supports the hypothesis that managers may try to elicit weaker market reactions around earnings announcements, with the intention of keeping a firm's equity value below the HSR threshold.

4.5 M&A Premium Analysis

Premiums in an M&A deal increase the total transaction size of the merger and could push the transaction value above the HSR threshold. Hence, another mechanism that firms can use to avoid the threshold is to negotiate a lower premium with the acquirer. We hypothesize that for bids in which target firms are trying to stay below the HSR threshold, premiums should be smaller as the transaction value approaches the HSR threshold.

We test this hypothesis by studying how premia vary if the bid is below the HSR threshold. We restrict the sample to completed deals that are greater than 50% and less than 150% of the HSR threshold (at time t). Our unit of observation is the deal-year level. Our outcome variable is the M&A premium. To compute the premium, we follow the recent guidelines from Eaton, Liu, and Officer (2021) and use a 105 day window before the event

to fully capture the price run up.[16] *M&A Premium* equals ((transaction price$_{t=0}$/target's stock price$_{t=-105}$) - 1) $\times$ 100. *Below Threshold* is an indicator variable that equals one if the transaction value is below the HSR threshold. All specifications include consideration structure, year, and industry fixed effects (Fama-French 12). Specifications in Columns (2) and (3) include proxies to control for bargaining power between target and acquiring companies. Specifically we include *Relative Size* to control for bargaining power driven by firm size and *Multiple Bids* as a proxy for demand for the target (Masulis and Simsir, 2018). Table 7 reports the results.

[Insert Table 7 here]

The coefficients on *Below Threshold* show that premia for transactions below the HSR threshold are lower than premia for transactions above the HSR threshold. Our estimates show a reduction in premium between 43.5 percentage points (Column (1)) and 41.1 percentage points (Column (3)). Note that although the premium is lower, it is still positive. Specifically, within the sample of bids that are within the threshold window, our univariate analysis indicates that premia are 38% on average when the bid is below the threshold (while they are 64% when they are above). In other words, shareholders still receive a premium from the takeover, albeit smaller. It is possible that this takeover would not take place if they did not accept a lower premium. In that sense, the right counterfactual is not a bid with a transaction value above the threshold, but the possibility that there would be no bid if the target did not accept a price that ensures a transaction value below the HSR threshold (i.e., a premium of zero). This result provides further evidence that takeovers below the threshold are strategic from the target's side: By accepting a lower premium, target companies keep their equity size from exceeding the size threshold thereby making the deal more attractive to potential acquirers.

[16] Eaton et al. (2021) show that traditional shorter windows tend to underestimate the premium, especially when deals are target initiated. Transactions in our sample are likely to be target initiated transactions because the target firms are manipulating their asset growth to attract a takeover bid according to our hypothesis.

Finally, in auxiliary analysis not reported in the table, we investigate the premium effect using two other benchmark prices to compute our premium. We first use a shorter window of 63 days, which is the standard window duration in the literature (Schwert, 2000). We also use a longer window of 126 days, which is important to fully capture the price premium for target-initiated deals (Eaton et al., 2021). We find that the effect significantly attenuates with the shorter window. The fact that the magnitude of the effect is larger when using longer windows, which is consistent with premia of target initiated deals, supports our hypothesis that target firms are active participants in eliciting an M&A bid.

5 Additional Analysis

In this Section, we examine the relationship between asset growth and takeover outcomes. By doing so, we establish the empirical validity of our setting. In light of these results, we also discuss the economic magnitudes of our effects and gauge the plausibility of our interpretation. Particularly, we discuss a counterfactual scenario in which a manager does not use firm size to attract a takeover bid below the HSR threshold and show that our results can be rational, incentive compatible, and are not necessarily value destroying.

5.1 Asset Growth and Probability of Takeover Bids

Our hypothesis rests on the assumptions that both the *HSR Proximity* and *Asset Growth* affect the probability that a firm receives a takeover bid. We estimate whether the *HSR Proximity* predicts a takeover bid, whether *Asset Growth* predicts a takeover bid, and whether *Asset Growth* predicts a takeover bid for firms within the *HSR Proximity* treatment group using the following probit regression specification:

$$\begin{aligned}\text{Probit(Target)} = F(&\alpha + \beta \text{ HSR Proximity} \times \text{Asset Growth}_{t-1} \\ &+ \kappa \text{ Asset Growth}_{t-1} + \lambda \text{ HSR Proximity} \\ &+ \gamma \text{ HSR Proximity} \times (\text{Controls} + \eta_j + \theta_t) \\ &+ \omega \text{ Controls} + \eta_j + \theta_t) \end{aligned} \tag{2}$$

where *Target* is an indicator variable that equals one if the firm receives a takeover bid at time t. *HSR Proximity* is an indicator variable that equals one if the firm's market capitalization at t-2 is greater than 50% and less than 150% of the projected HSR threshold at time t. *Controls* is a vector of control variables: *Log(Market Cap (t-2)), Book Leverage (t-1), Log(Assets (t-2)), Market to Book (t-1), ROA (t-1), Lagged Returns (t-1), and Volatility (t-1).* η_j and θ_t are industry (Fama-French 12) and year fixed effects, respectively In Equation 2, β captures the change in the likelihood of a takeover bid due to changes in asset growth for firms close to the HSR threshold in year t-2. The results are presented in Table 8.

[Insert Table 8 here]

In Column (1) of Panel A the coefficient on *HSR Proximity* shows that being close to the HSR threshold is a significant predictor of a takeover bid. This result validates the results from Figure 2 in a regression framework and confirms that there are more bids around the HSR thresholds. The results in Column (2) show that the unconditional relationship between *Asset Growth*$_{t-1}$ and takeover probability is not statistically significant but that the point estimate is negative. In Column (3) the coefficient on *HSR Proximity* x *Asset Growth*$_{t-1}$ shows that asset growth at t-1 reduces the likelihood of receiving a takeover bid for firms within the *HSR Proximity* bounds. This result suggests that a firm could manipulate its asset growth to change the probability of a takeover bid.

One concern is that asset growth could be systematically associated with takeover bids and, by chance, we obtain this relation around the HSR thresholds. Indeed, Hasbrouck

(1985) and Palepu (1986) find that targets tend to be smaller firms. To address this concern, we perform a similar analysis in which we extend the sample to include the pre-regulation period before the HSR Act amendment was adopted. Precisely, we assess the treatment effects by comparing the pre- and post-regulation estimates of interest and estimating the coefficient for $HSR\ Proximity \times Post\ Regulation \times Asset\ Growth_{t-1}$ in Equation 2.[17] The test determines whether the coefficient on $HSR\ Proximity$ x $Asset\ Growth_{t-1}$ changes after the amendment relative to before the amendment using placebo threshold windows during this pre-regulation period. We replicate the analysis from Column (3) but include an indicator *Post Regulation* which equals one in the period during which the regulation is in place and zero prior to the regulation. In Column (4), the coefficient on $HSR\ Proximity$ x $Post\ Regulation$ x $Asset\ Growth_{t-1}$ is negative and statistically significant. Columns (5) and (6) report that the results are robust to using a linear probability model, rather than a probit model.

Table 8 Panel B reports the results with $\Delta\ Log\ Assets_{t-1}$ as the dependent variable. The coefficient on $HSR\ Proximity$ is positive (Column (1)), the coefficient on $\Delta\ Log\ Assets_{t-1}$ is negative, the coefficients on $HSR\ Proximity \times \Delta\ Log\ Assets_{t-1}$ are negative (Columns (3) and (4)), and the coefficients on $HSR\ Proximity \times Post\ Regulation \times \Delta\ Log\ Assets_{t-1}$ are negative (Columns (5) and (6)). All coefficients are statistically significant as in Panel A.

Taken together, these results indicate that the predictive power of asset growth on the probability of a takeover bid is economically relevant when the HSR amendment is binding. Asset growth is strongly related to a firm's takeover probability around the HSR thresholds and thus represents a fundamental characteristic that firms can manipulate to influence the likelihood of receiving a bid. Overall, HSR thresholds are economically relevant and, in turn, present opportunities for strategic behavior, not only from acquirers, but also from potential

[17] In those complementary tests, when examining Equation 2, the year indicators are not interacted with the $HSR\ Proximity$ variable because that variable is already interacted with the *PostRegulation* variable to capture a change over time.

target firms that may wish to attract or deter M&A bids.

Given the predictive power of asset growth on the probability of receiving a takeover bid around the HSR thresholds, our setting is able to retrieve a local treatment effect. This is a significant methodological contribution to the literature because we can establish a direct link between corporate actions and the probability of a takeover bid, without relying on the empirical validity of a specific theoretical argument, and are less vulnerable to an omitted variable driving the effect. By capturing this local treatment, our setting is not prone to the standard omitted variable concerns, and in fact can identify managerial intent more directly.

5.2 Discussion

Overall, our evidence indicates that firms tend to take actions to elicit (rather than to deter) takeover bids around the HSR thresholds. They do so by taking real actions: reducing asset growth, increasing payout when cash reserves allow, changing board structure, and eliciting weaker market reactions around earnings announcements. Moreover, the firms that successfully complete a deal below the HSR threshold accept a lower premium on the final transaction compared to those above the threshold.

Why is it not easier just to sell even a somewhat illiquid ownership stake outright? It can appear surprising that some firms would knowingly reduce equity value – a seemingly costly action – to induce a takeover bid. A natural question is whether this behavior is optimal for existing shareholders.

One possibility is that if the expected premium paid during the deal is high enough to compensate the target's shareholders for the cost of foregoing new investment, then it would be rational for the target firm to reduce its size to trigger a takeover bid.

We start by describing a baseline setup with limited frictions, and then consider a setting with asymmetric information and a liquidity shock. Based on this framework, we then present a counterfactual analysis. We address this question by considering the potential benefits of these actions for shareholders. For example, consider a firm that contemplates taking actions

to influence the probability of receiving a bid. Given our main results, we consider that the firm may try to elicit a bid (rather than to deter one). In that setting, the firm can take costly action, such as foregoing profitable growth, because it would increase the probability of receiving a bid. This increase in probability stems from the fact that those actions lead firm equity value to stay/drop below the HSR threshold, and thus attract potential bidders that wish to avoid the HSR regulation. In this scenario, if the shareholders of the target firm hold highly illiquid shares that cannot be easily converted into cash without a significant loss in value, then the benefit of using an M&A deal to avoid this illiquidity discount could be large enough to justify curbing firm's growth.[18] Hence, target shareholders may tolerate a lower growth rate to increase the chances of a takeover bid. Our results are consistent with this liquidity-based argument. We document that the treated firms in our sample with illiquid shares reduce their asset growth at a higher rate than other treated firms. This liquidity-based explanation can rationalize the body of results presented in this paper. We surmise that there are other motivations for this behavior as well such that the real effects of the M&A market on target firms may be prevalent beyond our experimental setting.

If the company receives a bid and successfully sells, the existing shareholders would receive the current share equity price, plus a premium per share. This premium can stem from various sources, such as potential synergies and/or benefits from the acquirer to gain market share "under the radar" that could be shared between the acquirer and acquired.

Assuming that the company is currently fairly priced, a standard economic trade-off argument would predict that the firm should undertake the costly action A if $\pi \times P > Ca$.[19]

Next, building on that baseline setting, we consider a liquidity shock arising from the possibility of a large equity block sale. For ease of exposition, we consider that this block

[18] For example, (Chakravarty, 2001) shows that large trades (e.g., from institutional investors) are associated on average with a cumulative price change of about 22%, and medium trades can be associated with a cumulative price change of up to about 30%.

[19] We assume that other future potential takeover are already reflected in the current price, E, and that $E - Ca + P < HSR\ Threshold$, i.e. satisfying the condition that the bid is elicited through the HSR stealth motivation.

sale concerns the firm's manager.[20] In these small companies, the manager is likely to own an important part of the company. Consider that for exogenous reasons, the manager wants to sell her shares (e.g., she wants to retire). This potential sale would induce a stock price decline, L. This decline can be motivated by stock liquidity reasons and standard asymmetric information arguments.[21] Indeed the managerial equity sale can represent a negative signal that leads market participants to update negatively about firm value. Acting on this signal, investors may sell their shares, creating further downward price-pressure on the firm stock. In that setting, eliciting a bid now represents an exit strategy for the manager. The trade-off for the manager becomes whether to sell her shares in the open market and absorbs the liquidity cost, or to try to elicit a bid by undertaking action A. The manager should undertake the costly action A if $E+\pi \times P-Ca > E-L$, in other words when the cost Ca is below $\pi \times P+L$. Note here that there could be a conflict of interest between the shareholders and the manager (because potentially $E > E+\pi \times P-Ca$, and so absent the need for the manager to sell her shares, the status quo would be optimal for the shareholders). But given the need for the manager to sell her shares and the fact that the shareholders cannot force the manager to maintain ownership, it is optimal for both the manager and the shareholders to undertake action A if $\pi \times P + L > Ca$.[22] In other words, regardless whether there is a conflict of interest or not, the implication holds true.

This simple conceptual framework can help to rationalize our main results. According to our summary statistics and estimates, we can run a simple counter-factual exercise. We consider a premium, P, of about 38% (which is the average premium below the threshold), an increase in the probability of receiving a bid of, π, of 40%, and a liquidity shock, L, of

[20] The arguments still apply if the sale concerns an outside block as long as the outside block communicates with the manager with their intention to sale. Large block tends to have directors on the board, so that this communication is likely.

[21] For example, examining institutional trading, (Chakravarty, 2001) shows that large trades can lead to an important change in stock price. Specifically, large trades are associated on average to a cumulative price change of about 22%, and medium trades can be associated up to about 30%.

[22] Note also that the same implications hold true if the manager is the sole owner of the company (since by construction there is no conflict of interest in that case).

20% (Kepler et al., 2022; Chakravarty, 2001).[23] Under this scenario, as long the Ca is below 35% of the equity value (= 40% × 38% + 20%), the manager should undertake action A. Even without the potential liquidity shock, it would be valuable to manipulate firm size as long the Ca is below 15% of the equity value. Overall, it would be optimal for the manager to try to elicit a bid, even if those actions are costly in the short run in terms of equity value since this would be offset by the avoidance of the stock price decline associated with the equity sale and the expected benefit of receiving a premium.

6 Conclusion

An important question in the M&A literature is whether the market for corporate control influences target firms' corporate policies. The empirical evidence is mixed due to potential identification issues. In this paper, we use a quasi-experimental setting to address this issue. In particular, using transaction size thresholds under which deals avoid pre-merger scrutiny, our setting captures a local treatment effect. Our experimental setting tests whether companies preemptively change their corporate policies to influence the probability of receiving a takeover bid. In our context, the main mechanism to influence that probability is to change firm size. To validate this setting, we document that ex-ante changes in firm size around those thresholds directly influence the probability that a firm receives a takeover bid.

Our main results show that on average firms around those thresholds try to elicit a bid by strategically reducing their size. This effect is robust to a host of alternative specifications, and a battery of falsification tests show that these results hold only during the treatment period and only for the specific values of the thresholds. The treatment effect is stronger for firms that have more control over their market value and those for which managers have greater incentives to cash out their positions via a merger. Firms reduce their size using a range of mechanisms, such as increasing their payouts if they have sufficient cash reserves.

[23] Kepler et al. (2022) find that there are approximately 40% more deals than expected just below HSR thresholds.

Our findings establish several facts about the market for corporate control that have not been explored or well understood. Specifically, while prior studies have highlighted that firms actively deter takeover attempts, we show that they also actively elicit takeover bids. In addition, firms use levers that include payout policy and financing strategies to influence takeover outcomes. Finally, we show that these levers are effective. When firms strategically change these policies, they directly impact the probability that they will receive a takeover bid. These empirical facts reveal heterogeneity in strategic behavior of firms in the takeover market and provide an explanation for the mixed results in the literature about strategic behavior and M&A outcomes.

Our evidence also suggests that target firms may have been fueling the recent stealth consolidation trend in the US rather than resisting it. Our results are thus an important first step in better understanding the supply side of M&A markets and their interaction with US regulation. Further examination of these issues and their implications for the skewness in firm size distribution would be a fruitful research avenue. The findings should be of interest to policymakers, who have adopted policies to increase the number of companies in public markets.

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Appendix A Data Dictionary

Variable	Definition
Abn Announcemt Ret	Sum of the difference between firm's return and market return for event days -1 to 1 around a firm's earnings announcement date
Asset Growth	$(AT_t\text{-}AT_{t-1})$ / AT_{t-1}
Log(Assets)	Ln(AT_t)
Δ Log(Assets)	Ln(AT_t) - Ln(AT_{t-1})
Below Threshold	Indicator variable that equals 1 if the transaction value is below the HSR threshold, and 0 otherwise
Book Leverage	$(DLTT_t + DLC_t)/AT_t$
Δ Cash	$(Cash_t - Cash_{t-1})/AT_{t-1}$
Δ CB	cbv_t - cbv_{t-1}, where *cbv* is an indicator variable that equals 1 when the board is classified, and 0 otherwise
BV Equity	$(SEQ_t + TXDITC_t - PSTK_t)$ when available
Δ BV Equity	$(BV\ Equity_t - BV\ Equity_{t-1})/BV\ Equity_{t-1}$
Δ Debt	$((DLTT_t + DLC_t)$ - $(DLTT_{t-1} + DLC_{t-1}))/(DLTT_{t-1} + DLC_{t-1})$
Earnings Surprise	(Actual-Consensus Earnings Forecast)/Price at the end of the fiscal quarter, all at time t from I/B/E/S
High Cash	Indicator variable that equals 1 for firm-years in which a firm's CH_t/AT_{t-1} is above the median for firms in the same industry and year, and 0 otherwise
HSR Proximity (Indicator)	Indicator variable that equals 1 if the firm's market capitalization at t-2 is greater than 50% and less than 150% of the projected HSR threshold at t
HSR Proximity (Continuous)	Negative one × Log of the absolute value of the difference between a firm's market capitalization at t=-2 and the HSR threshold at t=0
Illiquidity	Illiquidity measure per Amihud (2002); yearly average of the square root of (Price x Vol)/Return
Investment	$CAPX_t/AT_{t-1}$
Low Liquidity	Indicator variable that equals 1 for firm-years in which a firm's illiquidity is above the median for firms in the same industry and year, and 0 otherwise
Low Volatility	Indicator variable that equals 1 for firm-years in which a firm's returns volatility is below the median for firms in the same industry and year, and 0 otherwise
M&A Premium	((Transaction price / Target firm's stock price at t=-105) - 1) × 100
Log(Market Cap)	Ln($PRCC\_F_t \times CSHO_t$)
Market to Book	Market equity plus total debt plus preferred stock liquidating value minus deferred taxes and investment tax credits scaled by assets $(MEC_t + TotalDebt_t + PSTKL_t + TXDITC_t)/AT_t$
Multiple Bids	Indicator variable that equals 1 if there are multiple bids
Payouts	$(DVC_t + REPA_t)/Market\ Cap_{t-1}$
Post Regulation	Indicator variable that equals 1 for years from 2001 to 2019 and 0 for years from 1978 to 2000
Relative Size	Target firm's market capitalization / Acquiring firm's market capitalization (computed using the number of shares outstanding and stock price at t=-105)
Returns	Monthly CRSP stock returns over the past 12 months
ROA	Operating Income$_t$/AT$_{t-1}$
Target	Indicator variable that equals 1 for firm-years in which a firm receives an M&A offer in that year, and 0 otherwise
Volatility	Volatility of monthly CRSP stock returns over the past 12 months

Table 1: Summary Statistics

This table reports summary statistics for the variables used in this study. Panel A summarizes the variables used in our main analysis. Panel B summarizes the variables used in our premium analysis. Variables are defined in Appendix A.

	Panel A: Main Analysis Sample				
	Mean	Std Dev	25%	50%	75%
Takeover Outcome					
Target	0.113	0.317	0.000	0.000	0.000
Main Variables					
HSR Proximity (Indicator)	0.127	0.333	0.000	0.000	0.000
HSR Proximity (Continuous)	-1.914	2.291	-3.529	-1.951	0.092
Asset Growth	0.094	0.359	-0.054	0.039	0.153
Δ Log(Assets)	0.048	0.280	-0.055	0.039	0.142
Other Corporate Policies					
Δ Cash	0.019	0.175	-0.029	0.002	0.042
Payouts	0.029	0.044	0.000	0.011	0.043
Investment	0.045	0.053	0.011	0.028	0.058
Δ Debt	0.631	4.174	-0.173	-0.003	0.193
Δ BV Equity	0.077	0.681	-0.094	0.048	0.177
Δ CB	-0.010	0.119	0.000	0.000	0.000
Controls					
Book Leverage	0.222	0.261	0.011	0.170	0.349
Log(Market Cap)	6.271	2.186	4.708	6.235	7.734
Log(Assets)	6.357	2.284	4.694	6.266	7.873
Market to Book	2.345	53.216	0.777	1.162	1.985
ROA	0.055	0.251	0.022	0.099	0.164
Returns	0.118	0.687	-0.215	0.048	0.310
Volatility	0.139	0.106	0.074	0.111	0.170
Observations	71363				
	Panel B: Premium Analysis Sample				
M&A Premium	48.901	92.212	0.251	32.727	77.391
Below Threshold	0.594	0.492	0.000	1.000	1.000
Relative Size	0.198	0.442	0.011	0.064	0.196
Multiple Bids	0.036	0.188	0.000	0.000	0.000
Observations	192				

Table 2: Asset Growth around HSR Thresholds

This table reports the effects of HSR thresholds on *Asset Growth* (Panel A) and Δ *Log Assets* (Panel B) over the period between 2001 and 2019 using OLS regressions. *HSR Proximity* (*indicator*) identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *HSR Proximity* (1 *lag*) identifies these firms at t=-1 (Column (4)). *HSR Proximity* (*continuous*) is defined as the negative value of the log of the absolute value of the difference between a firm's market capitalization at t=-2 and the HSR threshold at t=0 scaled by the HSR threshold (Column (5)). *HSR Proximity* (*indicator*(10%)) identifies firms with market capitalizations that are greater than 90% and less than 110% of the HSR threshold at t=-2 (Column (6)). The subsample in Column (7) includes only the firms that have market capitalizations greater than 50% and less than 150% of the HSR threshold at t=-2. *Size Controls* include Log(Market Cap) (t-2) and Log(Assets) (t-1). *Other Controls* include Book Leverage (t-1), Market to Book (t-1), ROA (t-1), Returns$_{t-1}$, and Volatility$_{t-1}$. Columns (2) - (7) include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Panel A: Asset Growth

	(1) Asset Growth	(2) Asset Growth	(3) Asset Growth	(4) Asset Growth	(5) Asset Growth	(6) Asset Growth	(7) Asset Growth
HSR Proximity	-0.012**	-0.011**	-0.013***	-0.025***	-0.007***	-0.033***	-0.025**
	(0.006)	(0.005)	(0.005)	(0.005)	(0.002)	(0.010)	(0.011)
Proximity: Indicator	✓	✓	✓				
Proximity: Indicator (1 lag)				✓			
Proximity: Continuous					✓		
Proximity: Indicator (10%)						✓	✓
Size Controls	✓	✓	✓	✓	✓	✓	✓
Year FE		✓	✓	✓	✓	✓	✓
Industry FE		✓	✓	✓	✓	✓	✓
Other Controls			✓	✓	✓	✓	✓
Subsample							✓
R-squared	0.011	0.036	0.147	0.149	0.147	0.147	0.179
Number of Observations	71,363	71,363	71,363	71,363	71,363	71,363	9,047

Table 2: Asset Growth around HSR Thresholds (cont'd)

Panel B: Δ Log Assets

	(1) Δ Log(Assets)	(2) Δ Log(Assets)	(3) Δ Log(Assets)	(4) Δ Log(Assets)	(5) Δ Log(Assets)	(6) Δ Log(Assets)	(7) Δ Log(Assets)
HSR Proximity	-0.017***	-0.015***	-0.016***	-0.025***	-0.006***	-0.027***	-0.017*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.008)	(0.009)
Proximity: Indicator	✓	✓	✓				
Proximity: Indicator (1 lag)				✓			
Proximity: Continuous					✓		
Proximity: Indicator (10%)						✓	✓
Size Controls	✓	✓	✓	✓	✓	✓	✓
Year FE		✓	✓	✓	✓	✓	✓
Industry FE		✓	✓	✓	✓	✓	✓
Other Controls			✓	✓	✓	✓	✓
Subsample							✓
R-squared	0.007	0.040	0.180	0.183	0.180	0.180	0.193
Number of Observations	71,363	71,363	71,363	71,363	71,363	71,363	9,047

Table 3: Asset Growth around HSR Thresholds (Pre-Post Regulation)

This table reports the results of OLS regressions of asset growth on HSR thresholds over the period from 1978 to 2019 (Columns (1) and (2)) and from 1996 to 2005 (Columns (3) and (4)). Results for *Asset Growth* are in Columns (1) and (3) and Δ *Log Assets* in Columns (2) and (4). *HSR Proximity* identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *Post Regulation* equals 1 for years after 2000 and 0 for years before 2000 (inclusive). The control variables are defined in the text. Specifications include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

	(1) Asset Growth	(2) Δ Log(Assets)	(3) Asset Growth	(4) Δ Log(Assets)
HSR Proximity x Post Regulation	-0.014**	-0.011***	-0.036***	-0.030***
	(0.006)	(0.004)	(0.011)	(0.008)
HSR Proximity	0.001	-0.001	-0.002	-0.002
	(0.004)	(0.002)	(0.009)	(0.005)
Year FE	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
R-squared	0.165	0.185	0.196	0.219
Number of Observations	165,643	165,643	49,000	49,000
Time Period	1978-2019	1978-2019	1996-2005	1996-2005

Table 4: Cross-Sectional Variation in the Effect of HSR Proximity

This table reports the results of OLS regressions of asset growth on HSR thresholds and share liquidity, returns volatility, and cash reserves over the period from 2001 to 2019. Results for *Asset Growth* are in Columns (1), (3), and (5) and Δ *Log Assets* in Columns (2), (4), and (6). *HSR Proximity* identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *Low Liquidity* $(t-1)$ equals 1 when a firm's lagged Amihud (2002) illiquidity measure is above the median illiquidity within an industry and year. *Low Volatility* $(t-1)$ equals 1 when the volatility of a firm's lagged returns are below the median volatility within an industry and year. *High Cash* $(t-1)$ equals 1 when a firm's cash-to-assets ratio is above the median cash-to-asset ratio within an industry and year. The control variables are defined in the text. Specifications include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

	(1) Asset Growth	(2) Δ Log(Assets)	(3) Asset Growth	(4) Δ Log(Assets)	(5) Asset Growth	(6) Δ Log(Assets)
HSR Proximity x						
Low Liquidity(t-1)	-0.061**	-0.066***				
	(0.028)	(0.022)				
Low Liquidity(t-1)	-0.028***	-0.024***				
	(0.004)	(0.003)				
HSR Proximity x						
Low Volatility(t-1)			-0.026***	-0.016**		
			(0.008)	(0.007)		
Low Volatility(t-1)			0.003	0.003		
			(0.004)	(0.003)		
HSR Proximity x						
High Cash(t-1)					-0.004	-0.014*
					(0.009)	(0.007)
High Cash(t-1)					-0.012***	-0.011***
					(0.003)	(0.003)
HSR Proximity	0.051*	0.053**	-0.006	-0.011**	-0.012*	-0.009*
	(0.028)	(0.021)	(0.006)	(0.005)	(0.006)	(0.005)
Year FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓
R-squared	0.148	0.181	0.147	0.180	0.147	0.180
Number of Observations	71,283	71,283	71,322	71,322	71,361	71,361

Table 5: Cash Reserves and Payout Strategies around HSR Thresholds

This table reports the results of OLS regressions of cash reserves and payout strategies on HSR thresholds over the period from 2001 to 2019. The corporate policies are Δ *Cash* (Columns (1) and (2)) and *Payouts* (Columns (3) and (4)). Δ *Cash* is a firm's change in cash between years t and t-1 scaled by lagged assets. *Payouts* measure a firm's total payouts divided by lagged market cap. *HSR Proximity* identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *High Cash* $(t-1)$ equals 1 when a firm's cash-to-assets ratio is above the median cash-to-asset ratio within an industry and year. The control variables are defined in the text. Specifications include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

	(1) Δ Cash	(2) Δ Cash	(3) Payouts	(4) Payouts
HSR Proximity	-0.002	0.007***	0.001	-0.001*
	(0.003)	(0.002)	(0.001)	(0.001)
High Cash(t-1)		-0.033***		0.002***
		(0.001)		(0.001)
HSR Proximity x High Cash(t-1)		-0.019***		0.004***
		(0.005)		(0.001)
Year FE	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓
R-squared	0.104	0.113	0.142	0.143
Number of Observations	71,358	71,358	65,298	65,298

Table 6: Other Corporate Policies around HSR Thresholds

This table reports the results of OLS regressions of corporate policies on HSR thresholds over the period from 2001 to 2019. *Investment* is capital expenditure divided by lagged assets. Δ *Debt* is the change in debt divided by lagged debt. Δ *BV Equity* is the change in book value of equity divided by lagged book value of equity. Δ *CB* is the change in classified board status. *Abnormal Announcement Returns* are measured as the sum of the difference between a firm's return and the market return for event days between t=-1 and t=1 around the earnings announcements. *HSR Proximity* identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. The control variables are defined in the text. The specification in Column (3) restricts the sample to firms with strictly positive lagged book equity value. The specification in Column (5) controls for *Earnings Surprises* in addition to the standard control variables. Specifications include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)	(5)
	Investment	Δ Debt	Δ BV Equity	Δ CB	Abn Announcemt Ret
HSR Proximity	-0.002*	-0.110*	-0.016*	-0.004***	-0.003***
	(0.001)	(0.066)	(0.009)	(0.001)	(0.001)
Year FE	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓
R-squared	0.165	0.040	0.103	0.007	0.055
Number of Observations	70,620	57,908	68,882	56,694	45,184

Table 7: M&A Premium around the HSR Threshold

This table reports the results of OLS regressions of M&A premium on HSR thresholds over the period from 2001 to 2019. The analysis studies the M&A premium for deals that are completed below the HSR threshold (*Below Threshold*) compared to those above the threshold. We restrict the sample to deal values that are between 50% and 150% of the HSR threshold. The unit of observation is the deal-year level. *M&A Premium* is ((transaction price$_{t=0}$/target's stock price$_{t=-105}$) - 1) $\times$ 100. *Relative Size* is the ratio of the target firm's market capitalization divided by the acquiring firm's market capitalization. Both market capitalizations are computed using the number of shares outstanding and stock price at t=-105. *Multiple Bids* is an indicator variable equal to one if there are multiple bids. Specifications include consideration structure, year, and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

	(1) M&A Premium	(2) M&A Premium	(3) M&A Premium
Below Threshold	-43.514**	-41.195**	-41.144**
	(20.022)	(19.705)	(19.738)
Relative Size		-35.187**	-35.155**
		(13.948)	(13.827)
Multiple Bids			-9.857
			(39.092)
Year FE	✓	✓	✓
Industry FE	✓	✓	✓
Consideration Structure FE	✓	✓	✓
R-squared	0.236	0.259	0.259
Number of Observations	192	192	192

Table 8: Validating the Empirical Setting: Predicting Takeover Bids

This table reports results from regressions of takeover bids (*Target*) on *Asset Growth* (Panel A) and Δ *Log Assets* (Panel B). Results from the probit model are in Columns (1) - (4) and from the linear probability model are in Columns (5) and (6). Results for the full sample period (1978 - 2019) are in Columns (4) and (6). *Target* equals one if the firm receives a takeover bid in year t, and 0 otherwise. *HSR Proximity* identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *Post Regulation* equals 1 for years between 2001 and 2019 and 0 for years between 1978 and 2000. *HSR Proximity* x *Asset Growth* x *Post Regulation* measures the effect of strategic changes in assets on a firm's takeover probability across regulatory periods. The control variables are defined in the text. Specifications include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses.

Panel A: Asset Growth as the Predicting Variable

	(1) Target	(2) Target	(3) Target	(4) Target	(5) Target	(6) Target
HSR Proximity	0.109***		-0.195	0.281*	0.028	0.083***
	(0.026)		(0.300)	(0.163)	(0.038)	(0.024)
Asset Growth(t-1)		-0.028	-0.004	0.090***	-0.002	0.012***
		(0.019)	(0.020)	(0.016)	(0.003)	(0.003)
HSR Proximity x Asset Growth(t-1)			-0.194***	-0.031	-0.019***	-0.002
			(0.060)	(0.032)	(0.006)	(0.006)
HSR Proximity x Asset Growth(t-1) x Post Regulation				-0.176***		-0.020**
				(0.067)		(0.008)
Year FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓
R-squared Pseudo	0.087	0.087	0.089	0.109		
R-squared					0.064	0.076
Number of Observations	71,363	71,363	71,363	165,643	71,363	165,643
Model	Probit	Probit	Probit	Probit	LPM	LPM
Time Period	2001-2019	2001-2019	2001-2019	1978-2019	2001-2019	1978-2019

Table 8: Validating the Empirical Setting: Predicting Takeover Bids (cont'd)

Panel B: Δ Log Assets as the Predicting Variable

	(1) Target	(2) Target	(3) Target	(4) Target	(5) Target	(6) Target
HSR Proximity	0.109***		-0.203	0.284*	0.027	0.083***
	(0.026)		(0.300)	(0.163)	(0.038)	(0.024)
Δ Log Assets(t-1)		-0.103***	-0.069**	0.085***	-0.015***	0.005
		(0.027)	(0.030)	(0.026)	(0.005)	(0.005)
HSR Proximity x Δ Log Assets(t-1)			-0.190***	-0.039	-0.017*	0.002
			(0.071)	(0.050)	(0.009)	(0.009)
HSR Proximity x Δ Log Assets(t-1) x Post Regulation				-0.168*		-0.023*
				(0.086)		(0.013)
Year FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Control Variables	✓	✓	✓	✓	✓	✓
R-squared Pseudo	0.087	0.087	0.090	0.109		
R-squared					0.064	0.076
Number of Observations	71,363	71,363	71,363	165,643	71,363	165,643
Model	Probit	Probit	Probit	Probit	LPM	LPM
Time Period	2001-2019	2001-2019	2001-2019	1978-2019	2001-2019	1978-2019

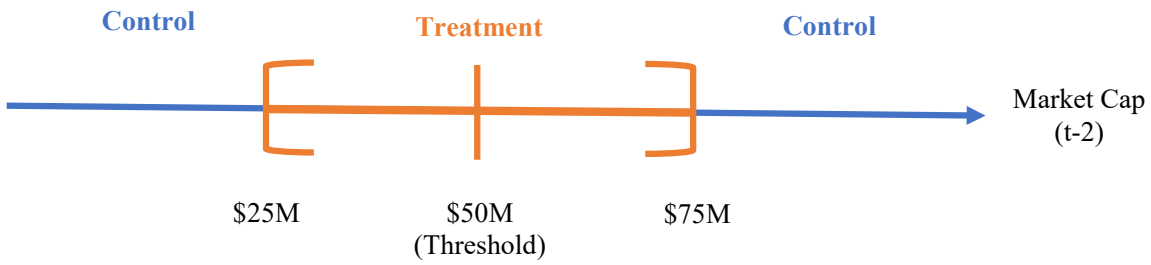

Figure 1:
HSR Proximity Illustration

This figure illustrates the construction of the *HSR Proximity* variable for the years in which the HSR threshold was set at $50M (2001-2004). The *HSR Proximity* indicator variable equals one if a firm's past market capitalization (year t-2) is greater than 50% and less than 150% of the projected HSR threshold value (year t). The orange bars represent upper and lower bounds around the HSR threshold, which are determined by market capitalization. The orange segment represents the window around the HSR threshold. Our identification strategy is based on the assumption that firms in that window are treated, while those outside are not.

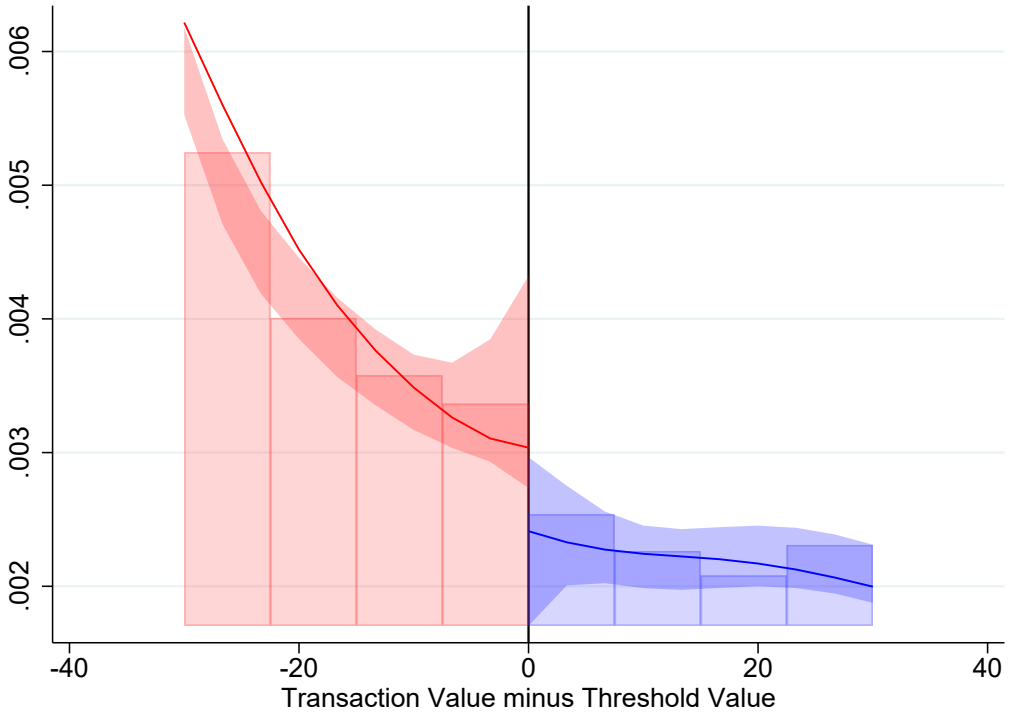

Figure 2:
Clustering of M&A Transactions around HSR Thresholds

This figure shows the density of M&A transactions around HSR thresholds over the period from 2001 to 2019. The x-axis reports the distance to the HSR threshold defined as the M&A bid transaction value minus the value of the HSR threshold. A positive value (in blue) indicates a bid above the HSR threshold and a negative value (in red) indicates a bid below the HSR threshold. The solid red and blue lines represent the estimated density at each distance and the shaded region around each line is its 95% confidence interval.

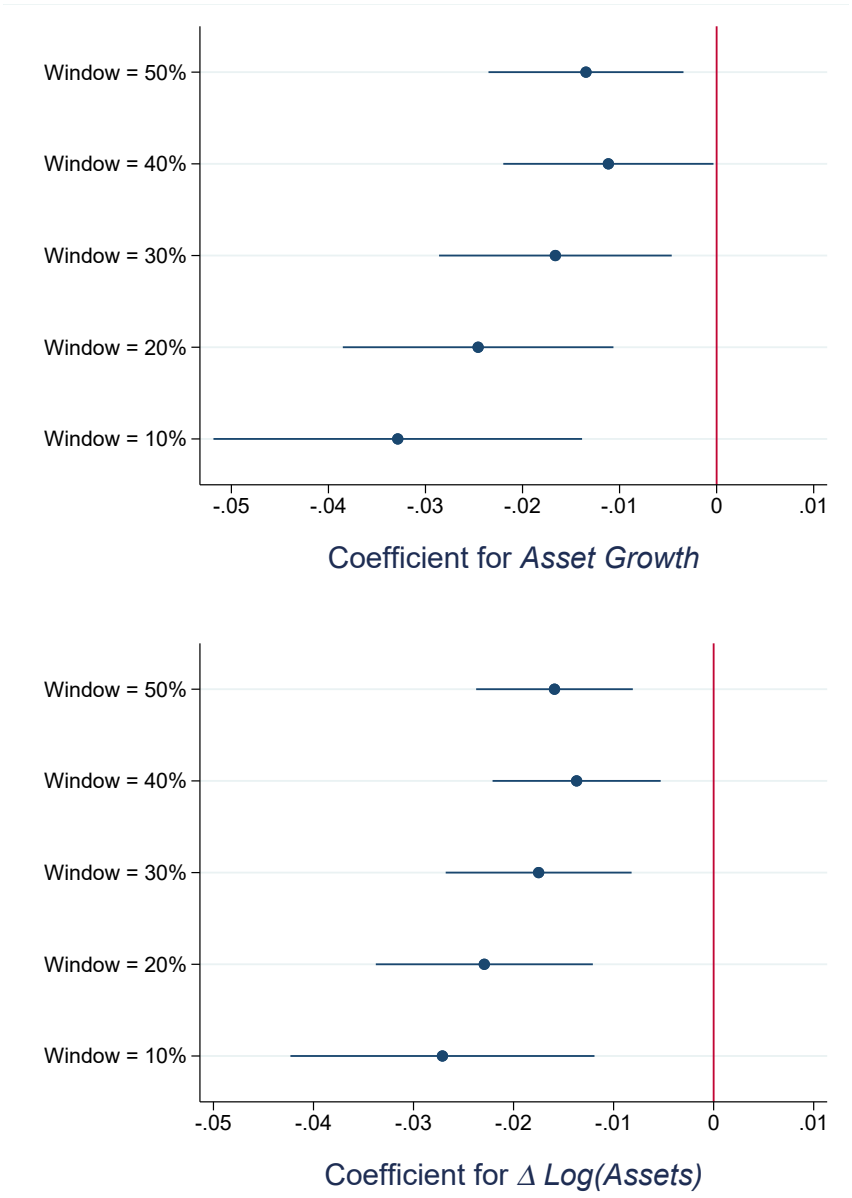

Figure 3:
Alternative HSR Proximity Bandwidths

This figure plots the estimated coefficients of the asset growth variables across specifications with different bounds of the HSR Proximity variable along with its 95% confidence interval. "HSR Proximity" is defined as firms with market values greater than 50% and less than 150% of the HSR threshold at t=-2. In this figure, bounds range from 50% of the threshold (*Window=50%*, our main specification) to 10% of the threshold (*Window=10%*, the most restrictive window). Panel A presents results for *Asset Growth*. Panel B presents results for Δ *Log Assets*.

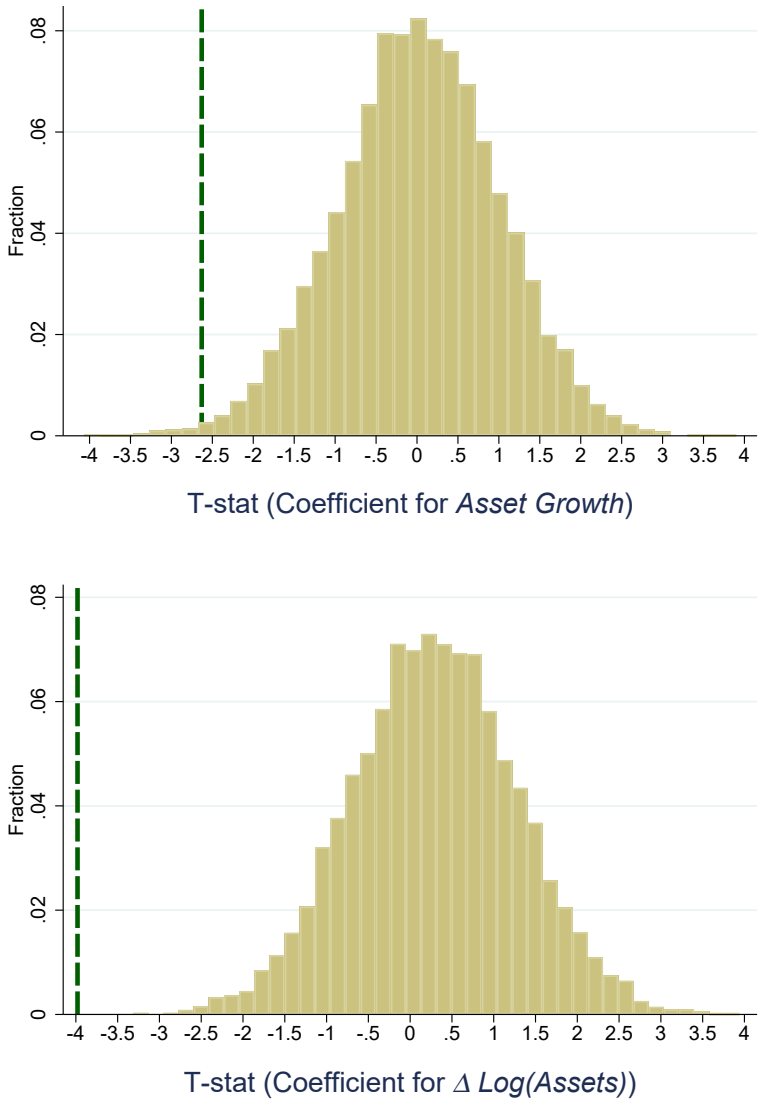

Figure 4:
Falsification Test: Randomization of the HSR Thresholds

This figure plots a histogram of T-stats for the coefficient of the asset growth variables from our main specification from Table 3 but using a sample of randomly selected HSR thresholds (rather than the true HSR thresholds). Specifically, we draw a random threshold from an uniform distribution (ranging from $25M to $1B) and run our main regression using that random threshold from 2001 to 2019. We inflation adjust the random thresholds and window sizes by the annual GNP in the post-2004 period. We repeat this process 10,000 times and plot the resulting T-stats. The green dashed vertical line plots the estimated T-stat from Table 3, based on the true HSR threshold.

Internet Appendix

"Identifying the Real Effects of the M&A Market on Target Firms"

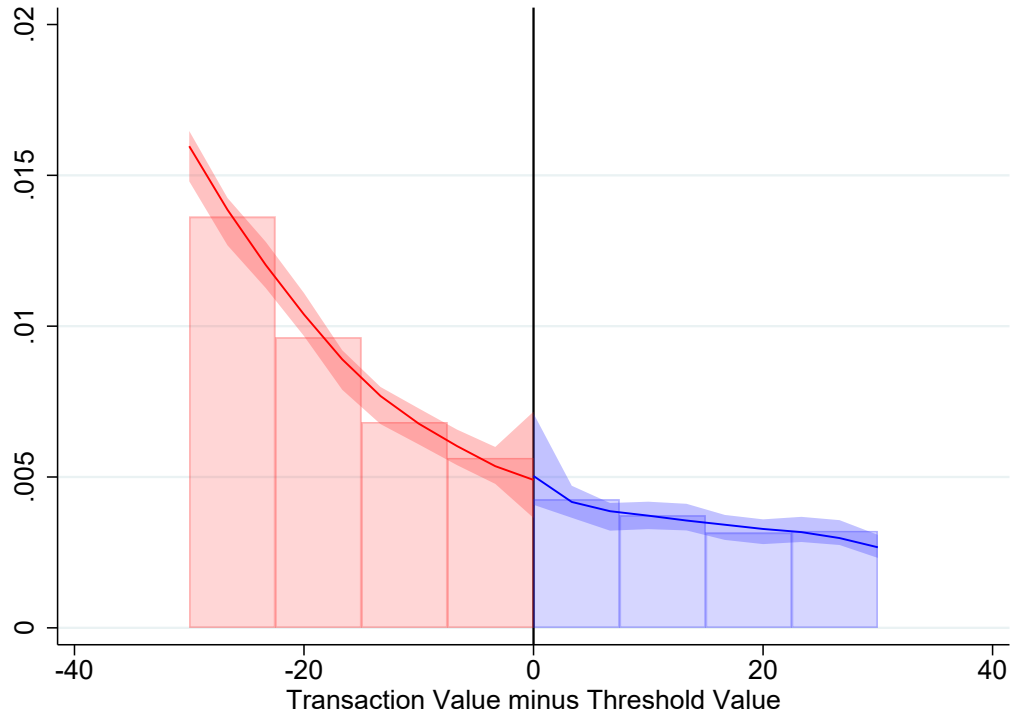

Figure IA.1:
Clustering of M&A Transactions around Placebo HSR Thresholds

This figure shows the density of M&A transactions around placebo HSR thresholds over the period from 1978 to 1997. The x-axis reports the distance to the placebo HSR threshold defined as the M&A bid transaction value minus the value of the placebo HSR threshold. A positive value (in blue) indicates a bid above the placebo HSR threshold and a negative value (in red) indicates a bid below the placebo HSR threshold. The solid red and blue lines represent the estimated density at each distance and the shaded region around each line is its 95% confidence interval.

Table IA.1: Asset Growth around Placebo HSR Thresholds

This table reports the effects of HSR thresholds on *Asset Growth* (Panel A) and Δ *Log Assets* (Panel B) over the pre-regulation placebo period between 1978 to 1997 using OLS regressions. *HSR Proximity* (*indicator*) identifies firms with market capitalizations that are greater than 50% and less than 150% of the HSR threshold at t=-2. *HSR Proximity* (1 *lag*) identifies these firms at t=-1 (Column (4)). *HSR Proximity* (*continuous*) is defined as the negative value of the log of the absolute value of the difference between a firm's market capitalization at t=-2 and the HSR threshold at t=0 scaled by the HSR threshold (Column (5)). *HSR Proximity* (*indicator*(10%)) identifies firms with market capitalizations that are greater than 90% and less than 110% of the HSR threshold at t=-2 (Column (6)). The subsample in Column (7) includes only the firms that have market capitalizations greater than 50% and less than 150% of the HSR threshold at t=-2. *Size Controls* include Log(Market Cap) (t-2) and Log(Assets) (t-1). *Other Controls* include Book Leverage (t-1), Market to Book (t-1), ROA (t-1), Returns_{t-1}, and Volatility_{t-1}. Columns (2) - (7) include year and industry fixed effects (Fama-French 12). Robust standard errors, clustered by firm, are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Panel A: Asset Growth

	(1) Asset Growth	(2) Asset Growth	(3) Asset Growth	(4) Asset Growth	(5) Asset Growth	(6) Asset Growth	(7) Asset Growth
HSR Proximity	-0.002	-0.005	0.001	0.006	0.003**	-0.001	-0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.001)	(0.007)	(0.008)
Proximity: Indicator	✓	✓	✓				
Proximity: Indicator (1 lag)				✓			
Proximity: Continuous					✓		
Proximity: Indicator (10%)						✓	✓
Size Controls	✓	✓	✓	✓	✓	✓	✓
Year FE		✓	✓	✓	✓	✓	✓
Industry FE		✓	✓	✓	✓	✓	✓
Other Controls			✓	✓	✓	✓	✓
Subsample							✓
R-squared	0.020	0.038	0.157	0.162	0.157	0.157	0.182
Number of Observations	78,425	78,425	78,425	78,425	78,425	78,425	15,430

Table IA.1: Asset Growth around Placebo Thresholds (cont'd)

Panel B: Δ Log Assets

	(1) Δ Log(Assets)	(2) Δ Log(Assets)	(3) Δ Log(Assets)	(4) Δ Log(Assets)	(5) Δ Log(Assets)	(6) Δ Log(Assets)	(7) Δ Log(Assets)
HSR Proximity	-0.002	-0.004	-0.000	0.005*	0.002**	-0.003	-0.007
	(0.003)	(0.003)	(0.003)	(0.003)	(0.001)	(0.005)	(0.006)
Proximity: Indicator	✓	✓	✓				
Proximity: Indicator (1 lag)				✓			
Proximity: Continuous					✓		
Proximity: Indicator (10%)						✓	✓
Size Controls	✓	✓	✓	✓	✓	✓	✓
Year FE		✓	✓	✓	✓	✓	✓
Industry FE		✓	✓	✓	✓	✓	✓
Other Controls			✓	✓	✓	✓	✓
Subsample							✓
R-squared	0.012	0.031	0.181	0.189	0.181	0.181	0.203
Number of Observations	78,425	78,425	78,425	78,425	78,425	78,425	15,430