Do managerial behaviors trigger firm exit? The case of hyperactive bidders

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Abstract

This paper investigates the effects of managerial mergers- and acquisitions-related investment strategies on the exit risk of firms. Using a sample of hyperactive bidders, I show that managerial excessive acquisitiveness can precipitate firm exit. Overbidding is associated with weak corporate governance and lower disclosure quality within firms. I find that hyperactive bidders take more risk compared to conservative bidders. Such bidders also misallocate firms' resources and dent firms' reputational capital. Eventually, the external corporate control market is more effective compared to mechanisms such as bankruptcy reorganization, forced liquidation, leveraged buy-out, and expulsion from stock exchanges in disciplining hyperactive bidders by turning them into targets of takeover. These results suggest that a hyper acquisition-induced growth strategy is, on average, detrimental to the long-term survivability of firms and that the internal and external corporate-control mechanisms may not be effective enough to forestall falling value of an excessively acquisitive firm.

JEL classification: G30; G33; G34; L00; M40
Keywords: Managerial behavior; Firm exit; Mergers and acquisitions; Excessive acquisitiveness

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1. Introduction

Academics disagree on whether and to what extent managers are responsible for their firms' demise. There are two diametrically opposed views on this issue. On the one hand, the standard rational economic theory posits that corporate exits are the results of external economic disturbances beyond managerial control (Nelson & Winter, 1978; Ericson & Pakes, 1998; Jovanovic, 1982; Hopenhayn, 1992; Cabral, 1993; Denis & Denis, 1995; Khanna & Poulsen, 1995). On the other hand, the behavioral theory argues that managerial cognitive biases lead to systematic errors in corporate investment and financing policies precipitating inefficient firm exit (Conlisk, 1996; Lovallo & Kahneman, 2003; Hirshleifer & Thakor, 1992; Heaton, 2002; Barberis & Thaler, 2003; Baker, Ruback, & Wurgler, 2006; Camerer & Malmendier, 2007). Despite our best efforts, the empirical validity of different theories remains an open question (Jensen, 1993; Asquith, Gertner, & Scharfstein, 1994; John, Lang, & Netter, 1992; Lang & Stulz, 1992).

The purpose of this paper is to investigate a behavioral mechanism under which managerial actions can trigger firm exit. To this end, I focus on managerial hyperactive mergers and acquisitions (M&A) bidding behavior and examine the effect of such strategy on an extreme measure of firm performance, i.e., firm exit. It is well documented in the literature that most mergers and acquisitions destroy bidding firms' shareholder value (Agrawal & Jaffe, 2000; Moeller, Schlingemann, & Stulz, 2005; Andrade, Mitchell, & Stafford, 2001; Malmendier, Moretti, & Peters, 2012; Dodd, 1980; Firth, 1980; Ruback & Mikkelson, 1984). Despite the negative effects of M&A on shareholder wealth in general, some managers remain excessively acquisitive (Rahaman, 2009). In the academic literature, such behaviors have been interpreted as evidence of empire building (Jensen, 1986), misaligned personal objectives of managers (Morck, Shleifer, & Vishny, 1990), managerial hubris (Roll, 1986; Malmendier & Tate, 2008) and uncertainty regarding manager's own ability.[1] In the popular press, it is often noted that "acquisitions may have less to do with a cunning business calculation

[1] Researchers such as Holmstrom (1999), Narayanan (1985), and Stein (1989) have developed models showing that managers choose short-term projects to quickly resolve uncertainty regarding their abilities. Hirshleifer and Chordia (1991) and Bebchuck and Stole (1993) show that this preference for resolution of uncertainty regarding managerial ability may result in overinvestment in long-term projects such as M&As.

than the inflated managerial ego."[2] In sum, the extant studies in the academic literature and the popular press suggest that hyper-acquisitiveness of a manager is (in an ex-ante sense) detrimental to firm value.

Indeed, using a sample of hyperactive bidders and a discrete-time hazard methodology, I find that excessive acquisitiveness is positively associated with the likelihood of inefficient exit of the bidding firm. After removing the exit hazard arising from various exogenous economic disturbances and idiosyncratic firm characteristics, I find that a one-standard-deviation increase around the mean of the hyperactive bidding measure is associated with a 61% increase in the conditional exit hazard of an overbidding firm. These results are robust to alternative specifications of estimation strategies, alternative definitions of firm exit, endogeneity, and reverse causality issues. These results point to the failure of the internal control systems of firms to cause hyperactive bidders to maximize efficiency. Substantial data also support this proposition as Jensen (1993) argues that the internal control systems of publicly-held corporations have generally failed to cause managers to maximize efficiency and value. Consistent with this argument, I find evidence that overbidding is associated with weak corporate governance and lower quality of accounting disclosure within firms.

I then propose three channels via which excessive acquisitiveness translates into heightened exit risk for firms. First, excessive acquisitiveness of a manager can increase the underlying business risk of the firm, thereby increasing the likelihood of inefficient exit. Second, hyperactive bidders may misallocate firms' capital, thereby distorting corporate investment policy and increasing the likelihood of inefficient exit. Finally, overbidding may dent the reputational capital of the firm, thereby limiting a firm's access to the capital market and increasing its exit risk. Using a mediating instrument methodology, I find that hyperactive bidders do take more idiosyncratic risk (compared to conservative bidders) that is not rewarded by the market. They also distort the firms' investment policies and dent the reputational capital of firms. As a result, such firms are also more likely to

[2] Acquisitive Egos, The Economist, 1995. Other relevant business press articles include: "Why Do So Many Mergers Fail?" (Knowledge@Wharton, March 30, 2005); "Avoiding Decision Traps" (CFO Magazine, June 1, 2004); "Enron's Bust: Was It the Result of Over-Confidence or a Confidence Game?" (US Newslink, December 13, 2001); "Mergers & Acquisitions: Irreconcilable Differences" (Accenture Outlook Journal, January, 2000); "Mergers: Why Most Big Deals Don't Pay Off" (Businessweek, October 13, 2002).

exit inefficiently compared to other acquiring firms in the industry.

The natural question that arises is: How effective are the external control mechanisms in disciplining managerial hyperactive bidding behaviors? To this end, I examine the relative importance of various capital-market disciplinary mechanisms to curb excessive acquisitiveness by redeploying the assets of overbidding firms to other higher-value users. I find that the capital market, on average, punishes hyperactive bidders by reacting negatively to their stock prices at the time of bid announcements, but the negative market reaction is not uniform across all quantiles of the conditional distribution of bidders' cumulative abnormal returns from bid announcements; at some quantiles the market reacts positively, while at others it reacts negatively revealing a sense of myopia in the capital market reaction. Despite this seeming myopia, I find that the external corporate control market eventually reins in the hyperactive bidders by turning them into future targets of takeover as suggested by Mitchell and Lehn (1990). Assets of hyperactive bidders are more likely to be redeployed via the external corporate control market than through other mechanisms such as bankruptcy/liquidation. However, given the positive announcement effects for some hyperactive bidders, the market discipline may not be swift enough to forestall falling value of the excessively acquisitive firm.

This paper makes three contributions to the literature on managerial behavior and firm exit. First, by identifying the effect of hyper-acquisitiveness on firm exit and various channels associated with this effect, it provides additional understanding of the competing theories of corporate exit in the literature. Lee and Malmendier (2011) show that overbidding in auctions is inconsistent with rational behavior. Malmendier and Tate (2008) show that overconfident CEOs overestimate their ability to generate returns and, as a result, they overpay for target companies and undertake value-destroying mergers. Contrary to Fuller, Netter, and Stegemoller (2002) who suggest that acquiring private and subsidiary firms creates value for bidding firms, Antoniou, Petmezas, and Zhao (2007) show that frequent bidders experience significant wealth losses regardless of the target type acquired over longer time horizon. This paper complements the extant studies by establishing a key relationship between overbidding and an extreme measure of firm performance, i.e., firm exit. Second, it illustrates the effectiveness of various market mechanisms in dealing with managerial sub-optimal behaviors. In particular, it shows that the capital market eventually disciplines any sub-optimal managerial behavior and redeploys the assets to other firms, and that this disciplinary role of the capital market is more pronounced when there exists a vibrant external market for corporate control. Finally, this study highlights the twin roles of the external corporate control market related to firm exit: managers can use it to pursue an aggressive corporate growth strategy to the detriment of the long-term survival of their firms, but outsiders can also use it to curb such behaviors.

Immediately following, Section 2 describes the data and main variables. Section 3 develops the empirical strategy and estimates the relationship between overbidding and firm exit. Sections 4 and 5 deal with the role of internal and external governance mechanisms in curbing the effect of hyperactive bidding on firm exit. Section 6 concludes the paper.

2. Data and main variables

2.1. Data

I use the Thomson Financial SDC Platinum Merger and Acquisition data set to identify the corporate M&A decisions. SDC details all public and private acquisition transactions involving at least 5% of the ownership of a company where the transaction was valued at $1 million or more, but after 1992, deals of any value (including undisclosed values) are covered. I focus on the U.S. industrial firms and collect all SDC documented M&A deals involving U.S. acquirers and targets from 1979 until 2006 totaling 208,105 deals. I then match the SDC deals with the merged quarterly COMPUSTAT-CRSP industrial file using the 6-digit CUSIP, ticker symbol, and company name. I apply a filter and keep only the deals for which I have CRSP daily stock price data on the transaction date, one day after the transaction date, and at least two months of daily stock price data prior to the transaction date. This filter ensures that I have a sufficient record of daily stock price data prior to and after the transaction date to calculate the cumulative abnormal return to the equity holders as a result of the transaction. The final deal data set contains 63,613 transactions involving 10,779 distinct bidding firms and 3,582 deals involving 2,124 distinct target firms. Firms that are in the merged quarterly COMPUSTAT-CRSP but do not make any acquisition bid in my deal data set I classify as non-bidders.

I use Fama and French (1997) industry classifications to categorize the deals into one of the 49 industries based on the reported 4-digit SIC in SDC. To identify the final status of firms in my data set, particularly in cases when firms drop out of COMPUSTAT, I use the yearly COMPUSTAT data footnotes AFTNT33, AFTNT34, and AFTNT35 that code, respectively, the month, the year, and the reason for deletion from the COMPUSTAT data file. I also verify these footnotes with the CRSP de-listing codes to accurately identify the reason for as well as the precise time of exit. I also collect all defaults and subsequent bankruptcies and reorganization events from the Moody's Default Risk Services (DRS) database, SDC Corporate restructuring database, and LoPuki's Bankruptcy Research Database (BRD) for the period of 1980 to 2006. I then manually combine the default and bankruptcy data with the merged COMPUSTAT-CRSP data set by taking into account historical name changes, CUSIP, and ticker symbol changes. My final data set consists of 14,191 non-bidding firms and 10,779 bidding firms and out of those 10,779 bidding firms, 6,144 (57%) firms eventually drop out of COMPUSTAT-CRSP while the rest, 4,635 (43%), remain active until the end of the sample period. Of the firms that eventually exit the industry, 445 (7.24%) are either bankrupt or liquidated, 4,338 (70.61%) are acquired, and the rest, 1,361 (22.15%), drop out for other reasons such as leveraged buy-out, management buy-out, or dropping off the exchange. For the empirical analysis in this paper, I focus only on the bidding sample where each unit of observation is a firm-quarter. The main source of variation in managerial bidding behaviors arises from the changes in M&A bids within a firm across time (calendar quarter).

Table 1 compares firm characteristics of the bidding and the non-bidding firms. It shows that bidding firms are larger in size, better in operating performance, and have longer maturity debt than non-bidding firms. Also, bidding firms, on average, have fewer growth opportunities (proxied by the market-to-book ratio), lower leverages, and less liquid assets compared to non-bidding firms. In short, looking at the summary statistics in Table 1, we cannot conclude that one set of firms is systematically better or worse than the other set of firms. In other words, being a bidder or a non-bidder firm in my sample may not be driven by selection issues.

Table 1 is about here

2.2. Inefficient firm exit

An exit is defined as inefficient if the exited firm fails to preserve value for at least one of its stakeholders. Following this logic, I define inefficient exit in two steps. First, whenever a firm exits through bankruptcy or liquidation, I define the exit event as inefficient because in a typical bankruptcy or liquidation event many stakeholders of the firm incur significant value loss (Altman, 1984; Lubben, 2000; LoPucki & Doherty, 2004; Bris, Welch, & Zhu, 2006; Davydenko, Strebulaev, & Zhao, 2012).[3] Second, whenever a firm exits via other means such as M&A, leveraged buy-out, or management buy-out, I calculate the 'buy-and-hold' return (including dividend) from the first trading month until the firm exits as follows: $BHR_{iT} = \prod_{t=1}^{T} \left(1 + r_{it}\right) - 1$, where BHR_{iT} is the 'buy-and-hold' return at the time of exit, $t = 1$ is the first trading month, $t = T$ is the last trading month in which the firm exits, and r_{it} is the monthly return (including dividend) for firm i. If $BHR_{iT} < 0$, an investor who put $1 in the stock of that company in the beginning, at exit gets back less than $1. If $BHR_{iT} < 0$ at exit, I define this as an inefficient exit. With this two-step definition of inefficient firm exit, I classify 2,789 (25.87%) of the bidding firms as exitors. Of those exitor-bidding firms, 445 (15.96%) exit the sample through bankruptcy/liquidation, 1,268 (45.46%) exit the sample through M&A, and the remaining 1,076 (38.58%) exit the sample through other

[3] However, using only bankruptcies and liquidations as forms of exit will underestimate the actual propensity of inefficient exit since many severely distressed firms are eventually acquired without going through the bankruptcy and liquidation process (Asquith, Gertner, & Scharfstein, 1994; Mitchell & Lehn, 1990; Lehn & Zhao, 2006; Davydenko & Rahaman, 2012).

means, such as leveraged buy-out, management buy-out, or dropping off the exchange.

I also use four alternative measures of inefficient exit for robustness. First, when a firm exits the industry due to severe financial distress, I define the exit event as inefficient ($EDISTRESS$). I use Moody's Default Risk Services (DRS) database, SDC Corporate restructuring database, and LoPuki's Bankruptcy Research Database (BRD) to identify whether a firm filed for bankruptcy or liquidation or defaulted on its debt obligation within three years prior to exit. If so, the exit is presumed to be due to financial distress. Using the foregoing definition, I identify 603 acquiring firms in the sample that exited due to severe financial distress. Second, when the equity return of a firm underperforms the CRSP value-weighted market index for two consecutive years prior to exiting the industry, I define the exit as inefficient ($EXRET$). This criterion identifies 729 acquiring firms as exitors. Third, when the return on assets (EBITDA/Total assets) of a firm underperforms its four-digit SIC industry average for two consecutive years prior to exiting the industry, I define the exit as inefficient ($EROA$). This criterion identifies 804 acquiring firms as exitors. Finally, if the profitability (Net income/Sales) of a firm underperforms its four-digit SIC industry average for two consecutive years prior to exiting the industry, I define the exit as inefficient ($EPROFIT$). This criterion identifies 776 acquiring firms as exitors. Alternative measures of exit entail similar results and do not alter the core argument of the paper.

2.3. Hyperactive bidding

A firm is defined as hyperactive bidder if it uses M&A investment strategy more aggressively than its industry peers. Maksimovic and Zechner (1991) show that positioning with the average firm in the industry serves as a natural hedge for a firm when a strategy's payoff is uncertain. MacKay and Philips (2005) find that positioning with the median firm in the industry indeed serves as a natural hedge for firms simultaneously making investment, financing, and business-risk decisions. Motivated by this argument, I use the M&A bids of the median acquiring firm in the industry as a benchmark assuming that the median bidding firm behaves as a typical firm in the industry equilibrium model of Maksimovic and Zechner (1991). The distance from natural hedge $\left(DNH_{ijt}\right)$ of firm i in industry j at time t is given by: $DNH_{ijt} = \frac{\left|X_{ijt} - Median(X_{-ijT})\right|}{Range\left\{\left|X_{ijt} - Median(X_{-ijT})\right|\right\}\forall\, i \in \psi(j,T)}$, where X_{ijt} is the cumulative number of acquisition bids of firm i in industry j until calendar quarter t, and is normalized by the total number of calendar quarters for which I observe the firm in my sample. $\psi(j, T)$ is the set of all firms in industry j and calendar year T. I normalize the cumulative number of bids of a firm to attenuate the survivorship bias in the hyper-acquisitiveness measure; that is, the longer the firm remains active in the industry, the more likely it is to undertake acquisitions. This construction design also assigns greater importance to the most recent bids while giving less weight to the earlier bids.[4] I calculate the corresponding industry median for firm i in industry j for each calendar year T. When calculating the median for a particular firm i, I include all firms in calendar year T in firm i's industry, but exclude firm i itself so that the benchmark remains exogenous to the firm.[5] Moreover, I divide $\left|X_{ijt} - Median(X_{-ijT})\right|$ by its range across all firms and industries at time T to make the distance from natural hedge comparable for all firms in all industries in a given period.

The distance from a natural hedge proxy reflects how different a bidding firm is from its typical industry counterpart in using the acquisition investment tool to pursue its growth strategy, and it is comparable across firms and industries since it is a unit-free measure and is bounded between 0 and 1. From the DNH_{ijt} proxy, I define my measure of managerial hyper-acquisitiveness in the following way: $HYPERBID_{ijt} = DNH_{ijt} \times I_{(X_{ijt} - Median(X_{-ijT})>0)}$, where I is an indicator function that returns 1 if X_{ijt} is above the industry median and returns 0 if X_{ijt} is below the industry median.[6] Table 2 reports the differential firm characteristics at the time of the bid announcement for the

[4]I also add some random noise to the weighting variable, i.e., the number of periods for which I observe a firm in my data set, so that the weighting metric remains exogenous and not determined endogenously.

[5]I impose the restriction of 5 or more firms to calculate the median in a given year.

[6]For example, let's assume that there are only two firms in my data set and that both of them are in the same industry and survive exactly 4 quarters or 1 year. Firm 1 makes 4 bids in total, one in each period, and firm 2 makes 2 bids in total, 1 in each of the first two periods and no bid in the last two periods. Then, the degree of acquisitiveness of firm 1 and firm 2 from period 1 to period 4 would be (1/4, 2/4, 3/4, 4/4) and (1/4, 2/4, 2/4, 2/4), respectively. The corresponding industry median for firm 1 and firm 2 would be 0.5 and 0.625, respectively. The excessive acquisitiveness for firm 1 and firm 2 before adjustment would be (0, 0, 0.25, 0.5) and (0, 0, 0, 0), respectively. After adjusting with the range of excessive acquisitiveness across both firms in the industry, the excessive acquisitiveness measure becomes (0, 0, 0.5, 1) for firm 1 and (0, 0, 0, 0) for firm 2.

hyperactive bidders vis-à-vis their relatively conservative counterparts.[7] It shows that hyperactive bidders are larger in size and better in operating performance but fare worse in growth opportunities compared to their relatively conservative counterparts at the time of the bid announcement. To finance hyper-acquisitiveness, bidders take on more leverage while their liquid assets in hand shrink. Moreover, the average and median stock-price performance surrounding the bid announcement is worse for the hyperactive bidders relative to their conservative counterparts; they, on average, lose 1% in value surrounding the announcement event due to their hyper-acquisitiveness after correcting for a broad market return on that day.

Table 2 is about here

3. Hyperactive bidding and inefficient firm exit

3.1. Estimation methodology

I use a discrete-time hazard model to estimate the exit hazard of the sample firms. I treat each firm-manager as a decision unit and assume that each decision unit is always at the risk of exit and that the risk process is governed by a simple form of a proportional hazard function (Cox, 1972): $\lambda\big(t, X_{t-1}\big) = \lambda_0\big(t\big) exp^{X'_{t-1}\beta}$, where λ_0 is the baseline hazard of exit over time t under the condition $exp^{X'_{t-1}\beta} = 1$, i.e., no heterogeneity among firm-managers. Heterogeneity among firm-managers captured, for example, by differences in information set X_{t-1}, might change the actual hazard. Following Cox (1972), an extension of this proportional hazard model in discrete time is as follows: $\frac{\lambda\left(t|X_{t-1}\right)}{1-\lambda\left(t|X_{t-1}\right)} = \frac{\lambda_0\left(t\right)}{1-\lambda_0\left(t\right)} exp^{X'_{t-1}\beta}$. Taking logs, one can obtain a model on the Logit of the hazard or conditional probability of exit at t given no exit up to that time, $Logit\big(\lambda\big(t \mid X_{t-1}\big)\big) = \alpha + X'_{t-1}\beta$, where $\alpha = Logit\big(\lambda_0\big(t\big)\big)$ is the Logit of the baseline hazard and $X'_{t-1}\beta$ is the effect of the covariates on the Logit of the actual hazard.

[7] An acquiring firm is defined as conservatively acquisitive if it is not excessively acquisitive. In other words, I define conservative acquisitiveness as: $CONSERVBID_{ijt} = DNH_{ijt} \times I_{(X_{ijt}-Median(X_{-ijT})<0)}$.

Shumway (2001) argues that the Logit type of hazard models are more suited to analyze the failure intensity of corporate events and shows that, under certain regularity conditions, a multi-period Logit model is equivalent to the discrete-time hazard model with the inclusion of log of firm age among the covariates as a proxy for the baseline hazard. Note that the primary dependent variable, i.e., firm exit, is an absorbing state in the sense that once exit occurs, firms never recover, and we do not observe any of the explanatory variables in X_{t-1} for the exited firms. Such specification weakens the plausibility of reverse causation. That is, a causal effect from the outcome variable to any of the explanatory variables does not make sense since all the explanatory variables are measured temporally before the outcome variable. This, of course, assumes that managers cannot predict exit some period ahead. If managers can predict exit ahead of the actual exit time, then the reverse causality is still a concern. To alleviate such concern, I estimate the discrete-time hazard regression with up to three lags of all explanatory variables. Since the results do not vary with higher lags, I report the results where all explanatory variables are lagged by one period.

3.2. Baseline estimation results

Table 3 reports the regression results from the discrete-time hazard model estimated using only the bidding sample. The dependent variable is a dichotomous variable that equals 1 for the last fiscal quarter in which a bidding firm exits and 0 otherwise. All explanatory variables are lagged by one period. I also include industry-fixed effects, year-fixed effects, and various deal-structure dummy variables; correct for clustering of observations by firm; and use robust standard errors to test the significance of the estimated coefficients in each regression model. I present all coefficients in the form of a logarithm-of-odds ratio in the table.

Table 3 is about here

It shows that the most important bidding-firm characteristics that cushion against exit are firm size, age (baseline hazard), and growth opportunity (Market-to-book). These results are consistent with the findings in the literature. For instance, it is well documented in the industrial organization literature that firm growth and exit risk decrease with firm age and size.[8] Fama and French (1995) show that a high book-to-market ratio signals persistent poor earnings and that a low book-to-market ratio signals strong earnings, which has direct implications for the long-term survival of the firm. After removing the exit risk arising from the idiosyncratic firm characteristics, industry- and year-fixed effects, deal specificities, and exogenous economic disturbances, I find that hyperactive bidding relative to the industry median does indeed aggravate the bidding firm's exit hazard. The results also show that the further away the firm is from its natural hedge, the more likely it is to exit. However, the exit-augmenting effect of DNH_{ijt} is primarily due to hyper-acquisitiveness rather than to conservative acquisitiveness since the coefficient of $HYPERBID_{ijt}$ is always greater in magnitude than that of the DNH_{ijt}. Furthermore, inclusion of the hyperactive bidding measure in the hazard regression improves the model fit, measured by McFadden's Pseudo-R^2, by up to 36%. I can correctly identify the exit events for my sample firms 72% of the time using model (2) in Table 3 and 75% of the time using model (5), and in both cases the inclusion of the excessive bidding measure increases the likelihood of correct identification by 6%.[9] When conditioned on managerial hyperactive bidding relative to the industry benchmark, there are almost no variations left in the explained variation of the hazard model to be attributed to the set of exogenous economic disturbances. That is, conditional on managerial hyper-acquisitiveness, incorporating economic disturbances in the hazard model does not add to the model's explanatory power.

3.3. Robustness: Instrumental variables regression analysis

Several caveats are in order. The effect of hyperactive bidding on a firm's exit hazard may be corrupted by endogeneity, omitted covariates, or errors in the hyperactive bidding measure. These potential problems can be addressed by using an instrumental variable estimation in a linear setting, but in a non-linear setting, instruments cannot in general be used to produce a consistent estimator of the desired causal effects. To this end, I use a methodology developed by Hardin,

[8] See Rahaman (2011) for a discussion on the effect of firm size and growth on firm exit.

[9] The primary dependent variable, i.e., firm exit, is centered on .01. An exit event is correctly identified if the predicted probability from the hazard model at exit is higher than the centered value of the dependent variable.

Schmeidiche, and Carroll (2003) to consistently estimate the effect of the hyperactive bidding on firm exit using an instrumental variable estimation in my discrete-time hazard model setting. A valid instrument must be highly correlated with the firm-level hyperactive bidding while having no effect on the dependent variable, i.e., firm exit, so that the correlation between the instrument and the error term is not significantly different from zero. I instrument the degree of hyperactive bidding with a measure of industry merger momentum.

The M&A literature has long recognized that intense mergers and acquisitions activities come in waves and tend to cluster within industries and across time although there are considerable debates about what drives those acquisition waves. But it is well understood that firms are more active in acquisition transactions during industry merger waves than in any other periods, and the effects of greater activism during merger waves on firm exit are not obvious in the existing literature. Harford (2005) argues that mergers before the optimal stopping point within a wave are value creating whereas mergers after the optimal stopping point are value destroying compared to non-wave mergers and acquisitions without any reference to firm exit. Thus, it is fair to conclude that firm-level acquisitiveness is related to industry merger waves, but industry merger waves, as far as we know, do not have any clear effect on firm-exit hazard.

Using an industry-merger wave dummy as an instrument for the firm-level hyperactive bidding, I find a statistically significant effect of this measure on firm-exit hazard. I also interact the merger wave dummy with industry-level computerization to make sure that the industry-merger wave is associated with some structural change within the industry, and also find a statistically significant effect of the hyperactive bidding on firm exit.[10] For diagnostic purposes, I also do two-stage least-square (2SLS) estimations, and my instruments satisfy the non-excludability criterion in the first stage with high F-statistics. The instruments also statistically significantly affect firm exit hazard in the second stage of my 2SLS estimation. For robustness, I do a false instrument experiment in

[10] I collect industry-level computerization data from the Bureau of Economic Analysis. Chun *et al.* (2007) show that traditional U.S. industries with higher firm-specific stock returns and fundamentals performance heterogeneity use information technology (IT) more intensively and post faster productivity growth in the late 20th century. They argue that elevated firm-performance heterogeneity mechanically reflects a wave of creative destruction disrupting a wide swath of U.S. industries, with newly successful IT adopters unpredictably undermining established firms.

which I instrument the period $t-1$ excessive bidding with the periods $t+1$, $t+2$, $t+3$, and $t+4$ industry-merger wave, and in all cases the false instruments do not have any statistically significant effect on firm-exit hazard, buttressing the statistical as well as temporal validity of my instruments.

3.4. Robustness: Alternative specifications

Table 4 reports various robustness tests related to alternative specifications of the baseline discrete-time hazard model. In columns (1) and (2), I estimate a linear probability model (LPM) of exit with firm-fixed effects which I cannot do in the discrete-time hazard model due to non-convergence. Inclusion of firm-fixed effects removes any firm-specific effects on exit hazard, such as an inherently bad-firm effect that is constant across time, and I find that hyperactive bidding increases the exit risk. Thus, it is more likely that managerial hyperactive bidding behavior is responsible for the heightened exit risk in my sample rather than firm-specific effects. In columns (3) and (4), I focus on the acquiring firms for which I observe the complete bidding history in the SDC data set since the time the firm went public, that is, after the year 1980 (almost 20% of the sample firms went public before 1980 for which I do not observe the complete bidding history). I find evidence of a statistically significant effect of hyperactive bidding on firm exit for the complete bidding history sample as well. One potential explanation for exit could be that excessively acquisitive firms suffer from winners' curse in the sense that they end up winning their bids, but they also end up with bad targets more often. I use the cumulative number of completed contested bids normalized by the total number of bids by firms to construct a measure of winners' curse and find that it does indeed increase exit risk as shown in columns (5) and (6). However, winners' curse does not have enough explanatory power to soak up the explanatory power of the hyperactive bidding measure. I also condition the hazard regression on the total number of bad ($CAR < 0$) and good ($CAR > 0$) bids normalized by the total number of bids made by a firm to differentiate "more" versus "bad or good" bids (Mitchell & Lehn, 1990), and columns (7) to (10) show that the hyperactive bidding measure is still statistically significant in affecting the exit risk to increase. Finally, in columns (11) and (12) I estimate the discrete-time hazard model with two-dimensional clustering (cluster the observations by firms and also by size) and find a robust effect of hyperactive bidding on firm exit hazard.[11]

Table 4 is about here

3.5. *Robustness: Alternative definitions of firm exit*

Columns (1) to (8) of Table 5 reports estimation results from the discrete-time hazard model using four alternative definitions of inefficient firm exit. In columns (1) and (2), the dependent variable ($EDISTRESS$) is 1 for the last fiscal quarter in which the firm exits after defaulting on its debt obligations within three years prior to the exit. In columns (3) and (4), the dependent variable ($EXRET$) is 1 for the last fiscal quarter in which the firm exits after underperforming the broad market index for two consecutive years to the exit. In columns (5) and (6), the dependent variable ($EROA$) is 1 for the last fiscal quarter in which the firm exits after underperforming the industry average return on assets for two consecutive years to the exit. In columns (7) and (8), the dependent variable ($EPROFIT$) is 1 for the last fiscal quarter in which the firm exits after underperforming the industry average profitability for two consecutive years to the exit. Results show that alternative measures of exit entail similar results as the main dependent variable of exit and do not alter the core argument of the paper.

Table 5 is about here

3.6. *Robustness: Selection and reverse causality*

Columns (9) to (16) of Table 5 address a particular issue of selection and reverse causality. The concern is that managers may deliberately choose to be hyper-acquisitive because doing so

[11] If the market capitalization of the firm is in the 25th percentile, I classify the firm as small cap; if the market capitalization is between the 25^{th} and 75^{th} percentile, I classify the firm as medium cap; and if the market capitalization of the firm is more than the 75th percentile, I classify the firm as large cap.

can increase the attractiveness of the firm to potential buyers, thereby increasing the likelihood of future exit. This is known as 'making the pig more beautiful' in the strategy literature. If such a strategy can enhance the short-term attractiveness (for potential buyers) of a firm, an efficient capital market will incorporate its valuation effect into the equity price of the firm. To this end, in columns (9) and (10) I regress the acquiring firm's excess return over the CRSP value-weighted market index ($XRET$) on the hyperactive bidding measure. Results show that hyperactive bidding has a negative and statistically significant effect at the 1% level on the excess return of acquirers. To the extent that the U.S. capital market is an efficient one, this result suggests that hyperactive bidding is not associated with 'making the pig more beautiful' strategy. In columns (11) to (14), I use industry-adjusted return on assets (ROA) and industry-adjusted profitability ($PROFIT$) as dependent variables and regress them on hyperactive bidding and the results suggest that such bidding behavior decreases the accounting performance of acquirers and thus cannot be attributed to 'making the pig more beautiful' strategy.

Another concern is that managerial bidding behavior can be related to the future exit risk of the firm. If the manager anticipates that the firm is likely to exit inefficiently in the near future, he/she may engage in asset substitution (Jensen & Meckling, 1976; Myers, 1977) by pursuing an aggressive and risky acquisition strategy. Thus, it is not necessarily the case that hyperactive bidding leads to higher exit risk, rather that anticipated future exit risk leads to an elevated bidding strategy. To test this reverse causality issue, I directly measure the future exit risk of a firm. I assume that current exit risk of a firm is positively correlated with its future exit risk and measure the current exit risk as follows: $\frac{NEXIT_{jt}}{NTOTAL_{jt}}$, where $NEXIT_{jt}$ is the total number of exitor firms in four-digit SIC industry j in period t and $NTOTAL_{jt}$ is the total number of firms in industry j and period t. I also construct a similar exit risk metric related to acquisition, management buy-out, and leveraged buy-out. For instance, the exit risk associated with acquisition is measured as: $\frac{NACQEXIT_{jt}}{NTOTAL_{jt}}$, where $NACQEXIT_{jt}$ is the total number of firms that exited industry j in period t through acquisition. I then regress hyperactive bidding measure on the exit risk of firms in their four-digit SIC industries and columns (15) and (16) report the result. They show that hyperactive bidding behaviors of sample firms are not associated with their future exit hazard. These results suggest that the effect of hyperactive bidding on the inefficient exit risk of firms is robust to reverse causality issue.

4. Internal control, hyperactive bidding, and firm exit

The foregoing results highlight the failure of internal control systems of firms to cause hyperactive bidders to maximize efficiency. To illustrate this point further, I use two measures of the quality of internal corporate governance of a firm. The first governance measure is the g-index from Gompers, Ishii, and Metrick (2003). The second measure is the accounting transparency of a firm suggested by Bharath, Sunder, and Sunder (2008). They compute three abnormal operating accrual metrics following Dechow and Dichev (2002), Teoh, Welch, and Wong (1998), and Dechow, Sloan, and Sweeney (1995) and isolate the common components of firm-level accounting quality from the three standardized abnormal operating accrual metrics using Principal Components Analysis. I follow their procedure and construct a similar accruals quality metric for the sample firms. I also construct a dichotomous variable to characterize the nature of the acquisition bid a firm makes. The dichotomous variable equals 1 if the firm receives a negative productivity shock in period t but still announces an acquisition bid which I denote as an optimism-driven acquisition bid. To estimate the idiosyncratic productivity shocks of the sample firms in each year, I assume that all firms have access to the following production function: $Y_{ijt} = A_{ijt} \times K_{ijt}^{\alpha} L_{ijt}^{1-\alpha}$, where Y_{ijt} is the sales revenues, K_{ijt} is the capital stocks, L_{ijt} is the number of employees, and A_{ijt} is the idiosyncratic total factor productivity of firm i in industry j and at time t. By taking a natural logarithm, we get: $y_{ijt} = a_{ijt} + \alpha.k_{ijt} + (1-\alpha).l_{ijt}$. I then use the methodology developed by Olley and Pakes (1996) to estimate the productivity shocks of firms from the logarithmic production function.

Table 6 is about here

Table 6 reports the correlation structure of these variables with the managerial hyperactive and conservative bidding measures. It shows that firms with higher anti-takeover provisions, proxied by the Gompers, Ishii, and Metrick (2003) G-index (weaker corporate governance), tend to be more acquisitive than their conservative counterparts. Overbidding is significantly negatively correlated with the quality of disclosure within the firm. Furthermore, optimism-driven bids are significantly positively correlated with overbidding and also significantly negatively correlated with the conservative counterparts. Hyperactive bidders also spend significantly more in capital and have higher acquisition expenses than their conservative counterparts. From the correlation structure of these variables, one may deduce that internal suboptimal governance structure is associated with hyper-acquisitiveness of managers.

4.1. Hyperactive bidding and firm exit: Channels

How does overbidding translate into heightened exit risk? In this section, I explore three specific channels via which the failure of internal control mechanisms translate into heightened exit hazard for firms managed by hyperactive bidders. In particular, I focus on the risk-taking attributes of overbidding, the resulting distortion in the firm's investment policy, and the eventual erosion of reputational capital of the firm as channels to understand how overbidding can increase the exit risk of firms. To identify the channel via which managerial hyperactive bidding affects firm exit, I use a mediating instrument methodology within the discrete-time hazard framework (Baron & Kenny, 1986; Judd & Kenny, 1981). To implement the mediation process, I estimate the following regression models:

$$E\big(Y_{it} = 1 \mid X, Z\big) = F\big(\alpha + \beta X_{it-1} + \delta Z_{t-1}\big) \tag{1}$$

$$E\big(Y_{it} = 1 \mid X, M, Z\big) = F\big(\alpha + \beta' X_{it-1} + \theta M_{it-1} + \delta' Z_{it-1}\big) \tag{2}$$

where Y_{it} is the firm-exit dichotomous variable, X_{it-1} is the measure of managerial excessive bidding, M_{it-1} is a mediating instrument, and Z_{it-1} is the set of other control variables. If $F(.)$ is a linear function, then with an appropriate distributional assumption on the error term the regression models collapse into linear probability models (LPM), whereas with $F(.)$ as a logistic function with an appropriate distributional assumption on the error term, we get back our discrete-time hazard model. Although a mediation methodology is mostly applied to a linear setting, it can easily be extended to a non-linear setting, particularly in the case of $F(.)$ as a logistic function.

I estimate both cases, i.e., LPM and discrete-time hazard, but report the results only for discrete-time hazard specification. In these models, β is called the 'total effect' of X on Y and β' is called the 'direct effect' of X on Y after M has been controlled for. From these regression models, I calculate the percent reduction in the logarithm-of-odds ratio as a result of mediation using $\frac{(\beta-\beta')}{\beta} \times 100$ and bootstrap the percent reduction parameter to come up with confidence intervals. The design considerations of the mediating instrument methodology weaken the plausibility of reverse mediation. That is, mediation from the outcome variable to any of the explanatory variables does not make sense since exit is an absorbing state and all explanatory variables are measured temporally before the outcome variable.

4.1.1. Excessive risk channel

Consistent with the standard economic theory, an investment decision by a firm involving uncertain payoffs, such as mergers and acquisitions, could be treated as a lottery with some probability of success, and also with some probability of failure. This gambling property of M&A investment decisions has a bearing on the underlying business risk of bidding firms. However, in a nearly-complete capital market, shareholders can diversify away the idiosyncratic risk, but managers remain exposed to such risk. Since managerial human capital is mostly firm-specific, it makes sense for a manager to make diversifying acquisitions to lessen exposure to the idiosyncratic risk component of the firm. If instead a manager pursues an aggressive acquisition-driven growth strategy disregarding diversification-induced synergy and economies-of-scope, overbidding can amplify cash-flow volatilities which in turn can increase the exit risk of firms.

To empirically measure the idiosyncratic business risk of a firm, I use Shumway's (2001) *sigma* measure which gives the standard deviation of a firm's idiosyncratic stock returns. Shumway (2001) argues that firms with more volatile cash flows should have higher *sigma*, and that higher *sigma* also implies higher operating leverage for firms. I follow Shumway (2001) and regress each stock's daily returns on the value-weighted NYSE/AMEX index returns for the same quarter and calculate *sigma* as the standard deviation of the residuals of this regression.[12]

Table 7 and Table 8 are about here

Table 7 reports the estimates from the mediating instrument methodology using Shumway's (2001) *sigma* as a mediating instrument. Columns (1) to (3) report the mediation of the relationship between hyperactive bidding and firm exit through the *sigma* measure. It shows that *sigma* is significantly correlated with hyperactive bidding and also with firm-exit outcome. Moreover, controlling for *sigma* along with the hyperactive-bidding measure reduces the absolute size of the 'total effect' by 3% while it remains statistically significant. This translates into a 9% decline in the odds ratio (I report the logarithm-of-odds ratio in the table) of the 'total effect' of hyperactive bidding on firm exit. These results show evidence of partial mediation through *sigma* because the 'direct effect' is still statistically different from 0. Thus, instead of stabilizing, the excessive use of acquisition amplifies cash-flow volatilities which, in turn, increases the conditional exit risk of firms (conditional on exogenous economic disturbances and other firm characteristics).

4.1.2. Investment distortion channel

Pertaining to the argument that overbidding is an ex-ante bad investment policy, I assume that these managers are also more prone to make inefficient acquisition investment decisions. To empirically measure inefficiency in managerial acquisition investment decisions, I assume that the

[12] One of the advantages of using *sigma* as a proxy for idiosyncratic business risk of the firm as opposed to actual cash-flow volatility is that *sigma* is a market driven variable whereas $EBITDA$ based cash-flow volatility measures are accounting based. Furthermore, it is difficult to separate the unsystematic component of $EBITDA$ based measures from the systematic component. I also use $log\Big(\mid EBITDA_it - EBITDA_{it-1} \mid \Big)$ as a measure of business risk, and the results are similar to what I report in the table using the *sigma* measure.

bidding decision of the benchmark firm $\big(Y_B\big)$ is governed by the following equation:[13] $E\big(Y_B = 1|X\big) = F(X\beta) + \varepsilon$, where X is the set of economic fundamentals and ε is a stochastic error independent of X that captures noise and other unobservables, such as luck, and $\varepsilon \rightarrow_{iid} N\big(0, \sigma_\varepsilon^2\big)$. The bidding decisions of the excessively optimistic firm-manager $\big(Y_{up}\big)$ and the excessively conservative firm-manager $\big(Y_{down}\big)$ are given by, respectively: $E\big(Y_{up} = 1|X\big) = F(X\beta) + \varepsilon + u_i$ and $E\big(Y_{down} = 1|X\big) = F(X\beta) + \varepsilon - v_i$. I assume that both u_i and v_i are independent of X and ε, and are distributed as $u_i \rightarrow N^+\big(\mu_u, \sigma_u^2\big)$ and $v_i \rightarrow N^+\big(\mu_v, \sigma_v^2\big)$ with truncation at 0. From this specification, it is obvious that both u_i and v_i act as non-negative shifters in these models where u_i captures unobservables that systematically push up the likelihood of acquisition bids and v_i captures unobservables that systematically pull down the likelihood of acquisition bids compared to the benchmark firm. Moreover, both u_i and v_i are unrelated to any observables that may affect the acquisition decision of the benchmark firm. I fit a linear probability model (LPM) of Y_{up} and Y_{down} on the set of firm characteristics described in Table 3, industry-fixed effects, year-fixed effects, and the set of industry and aggregate economic-disturbance variables to extract the u_i and v_i from the observed firm-managerial acquisition bids. The ε term in the LPM is assumed to have two components; one component is assumed to have a strictly non-negative distribution, and the other component is assumed to have a symmetric distribution. In the econometrics literature, the symmetric distribution is referred to as the idiosyncratic error, and the non-negative component is the measure of a particular type of inefficiency associated with managerial acquisition decisions. From the u_i and v_i, I construct the "inefficiency" measure as: $u_i + v_i$.

Columns (4) to (6) of Table 7 report the mediation of the effect from hyperactive bidding to firm exit through the inefficiency channel. It shows that inefficiency in managerial acquisition decisions relative to the benchmark firm is statistically significantly correlated with hyperactive bidding and firm-exit outcome. Moreover, controlling for inefficiency along with a hyperactive bidding measure reduces the absolute size of the 'total effect' by 9% while remaining statistically significant. This

[13] I assume that the benchmark firm is also the rational firm in the sense that the propensity of acquisition bid of the firm can be explained by the observable characteristics.

translates into a 26% decline in the odds ratio (I report the logarithm of odds ratio in the table) of the 'total effect' of hyperactive bidding on the conditional exit risk of firms.

4.1.3. Reputational capital channel

Bad managerial decisions dent the reputational capital of firms which, in turn, may hinder firms' access to capital markets in the future precipitating exit. In order to construct a proxy for the reputational effect of hyperactive bidding, I use the cumulative number of lawsuits filed against a bidder as a direct consequence of his acquisition bids. I also normalize the cumulative number of lawsuits filed against a bidder by the total number of deals conducted by the firm.[14] From my data set, I could clearly identify 491 lawsuits filed against the bidders as a result of their acquisition bids, and these lawsuits are unrelated to any other operational aspects of the bidding firms.

Columns (1) to (3) of Table 8 show that a greater number of litigations (and hence greater adverse reputational impact) is statistically significantly correlated with hyperactive bidding and firm exit outcome. However, controlling for the cumulative number of lawsuits along with the hyperactive bidding measure reduces the absolute size of the "total effect" by a meager 1% in terms of the odds ratio. It implies that almost all of the variation in the litigation measure is explained by the hyperactive-bidding measure. Thus, after controlling for the hyperactive-bidding measure, there is very little variation left in the litigation measure to explain exit risk.

[14] Litigation is an everyday fact of life for American corporations. According to the Fulbright & Jaworski's Litigation Trends Survey, 94% of U.S. counsels canvassed said that their companies had some form of legal dispute pending in a U.S. venue. For 89%, at least one new suit was filed against their company during the past year. One third of all companies and nearly 40% of $1 billion-plus firms project the amount of litigation to increase next year. The survey also indicates that U.S. companies spend 71% of their overall estimated legal budgets on disputes. Large U.S. companies, typically the public firms that we study in this paper, commit an average of $19.8 million to litigation, approximately 58% of the total average legal spending of $34.2 million. More than two-thirds of large companies surveyed reported at least one new suit involving $20 million or more in claims; 17% faced a minimum of six suits in the $20 million-plus range. Given this gloomy state of corporate litigation involving U.S. firms, I argue that litigation arising as a result of acquisition bids may drain corporate resources and dent the reputational capital of firms.

4.2. *Which channel explains more?*

While the three channels may not necessarily be mutually exclusive, it is instructive to examine what proportion of a particular exit is attributed to a given channel. Columns (4) to (5) of Table 8 include all channels and show that the *sigma*, *inefficiency*, and *litigation* measures are statistically significantly correlated with firm-exit outcome. When these measures enter the discrete-time hazard regression in column (5) together with the hyperactive bidding measure, they reduce the absolute size of the "total effect" by 12% which translates into a 32.51% reduction in the odds ratio of "total effect." Overall, the results from Table 7 and Table 8 show clear evidence of mediation from hyper-acquisitiveness to firm exit through managerial excessive risk-taking, proxied by the *sigma* measure, and through the investment distortion channel, proxied by the inefficiency associated with managerial acquisition decisions.

I bootstrap the change in "total effect" due to mediation via the inefficiency and the *sigma* measures. Figure 1 depicts the distribution of $\frac{(\beta-\beta')}{\beta} \times 100$ after 1000 replications. It shows that mediation takes place (absolute size of "total effect" shrinks) with probability 1 through the inefficiency channel while mediation through the *sigma* measure occurs with probability 0.90 illustrating the fact that the mediation process is stronger through the investment distortion channel than through the excessive risk-taking channel.

Figure 1 is about here

Note that the positive relationship between hyper-acquisitiveness and firm exit that I find above does not suggest that all acquisitions are bad. In fact, I find evidence that the acquisition activities of the bidding firms are in general driven by broad fundamental factors related to firm size, operating performance, future growth opportunities (Tobin's q), and various exogenous economic disturbances conforming to the postulation of Jensen (1993) that relates the restructuring activities of the 1980s to changes in technologies, input prices, and regulations.[15] However, some firms seem

[15] I do not report the regression results here due to space limitations, but these are available on request. Gort (1969) was one of the earliest to argue that economic disturbances alter the structure of expectations among the

to be more acquisitive relative to their natural-hedge counterpart within the industry. In reality, some firms can be hyper-acquisitive and be very successful while there also are firms that were hyper-acquisitive but failed spectacularly, such as WorldCom. The empirical regularity that I identify in this paper suggests that on average (not at the extreme tails of the distribution of firm value) overbidding is a bad investment policy since it accentuates the exit hazard of the firm.

5. Disciplinary role of the capital market

5.1. Market reaction to managerial hyperactive bidding

In an efficient capital market, any adverse effects of suboptimal managerial decisions should be fully incorporated into the security prices without any substantial delay. To investigate the market reaction to managerial hyperactive bidding behavior, I calculate the bidders' cumulative abnormal return $\left(CAR_{(-1,+1)}\right)$ around a three-day event window that includes one trading day prior to the bid announcement, the day of announcement, and one trading day after the bid announcement. To calculate the $CAR_{(-1,+1)}$, I estimate a market model using stock returns from 60 trading days (estimation window) prior to the event window and use the parameters from the market model to calculate normal returns during the event window. I then subtract the estimated normal returns from the observed returns during the event window to calculate abnormal returns and cumulate the abnormal returns over three days to come up with my $CAR_{(-1,+1)}$ measure. I regress $CAR_{(-1,+1)}$ on the hyperactive bidding measure, various mediating instruments, Gompers, Ishii, and Metrick (2003) governance score, and various deal-structure dummy variables.

market participants and generate discrepancies in valuations of income-producing assets. A non-owner with a higher valuation of a firm's assets than that of the owner places a bid for the firm's assets in pursuit of economies of scale, monopoly power, or yet other sources of gain. More recently, Jovanovic and Rousseau (2002) in the same vein as Coase (1937) argue that technological change alters the available profitable capital reallocation opportunities at the disposal of firms and leads to restructuring. Empirical evidence by Mitchell and Mulherin (1996), Andrade, Mitchell, and Stafford (2001), and Harford (2005) show that economic disturbances lead to a clustering of takeover activities within industries and across time. Shleifer and Vishny (2003), on the other hand, posit that bull markets lead groups of bidders with overvalued stock to use the stock to buy real assets of undervalued targets through mergers. Rhodes-Kropf, Robinson, and Viswanathan (2005), Ang and Cheng (2006), Dong et al. (2006) and Verter (2002) find evidence that the dispersion of market valuations is correlated with aggregate merger activities.

Table 9 reports the estimates from the Ordinary Least Square (OLS) regression. It shows that the market reacts through $CAR_{(-1,+1)}$ negatively to deals if the firm has been hyperactive in the past. The Gompers, Ishii, and Metrick (2003) governance score has a negative and statistically significant effect on $CAR_{(-1,+1)}$. Contrary to the effect on firm-exit hazard, the idiosyncratic volatility of stock return (*sigma*) has a positive effect on $CAR_{(-1,+1)}$. The results are similar if I also control for a deal value normalized by the market value of the firm.[16] To examine the confounding effect of the underlying business risk measure on $CAR_{(-1,+1)}$, I estimate the regression at various conditional quantiles of the $CAR_{(-1,+1)}$ distribution.[17]

Table 9 is about here

A quantile regression is a statistical technique intended to estimate, and conduct inference about, conditional quantile functions.[18] While the OLS enables us to estimate models for conditional mean functions, quantile regression methods offer a mechanism for estimating models for the conditional median function, and the full range of other conditional quantile functions. By estimating an entire family of conditional quantile functions, a quantile regression is capable of providing a more complete statistical analysis of the stochastic relationships between $CAR_{(-1,+1)}$ and other explanatory variables of interest. Figure 2 depicts the effects of hyper-acquisitiveness and other mediating instruments on $CAR_{(-1,+1)}$ at various quantiles of the condition distribution of $CAR_{(-1,+1)}$ along with the 95% confidence intervals. It shows that the market reacts positively to hyperactive bidding until the 30^{th} conditional quantile and that the reaction becomes negative and increasingly stronger at the higher quantiles. The asymmetry of the market reaction at various conditional quantiles of $CAR_{(-1,+1)}$ is also evident in measures of business risk and inefficiency. These results point to a myopia in the capital market response in the sense that even though the hyperactive bidding aggravates a bidding firm's exit hazard, and the *sigma* and the *inefficiency*

[16]When I control for deal value in the regression, the number of observations in the regression is greatly reduced due to undisclosed deal value in many acquisition transactions. I do not report these results in Table 9 for the sake of brevity, but the results are available upon request.

[17]I also report the effects of some selected deal structure dummy variables on $CAR_{(-1,+1)}$ in Table 9 but do not discuss these results here for the sake of brevity.

[18]See Koenker & Hallock (2001) for more about quantile regressions.

measures mediate the effect from hyperactive bidding to firm exit, capital market reaction through $CAR_{(-1,+1)}$ does not fully reflect these exit-augmenting effects at all quantiles of the condition distribution of $CAR_{(-1,+1)}$.

Figure 2 is about here

5.2. Redeploying assets of hyperactive bidders

Despite the ostensible market myopia in fully incorporating the exit-augmenting effects of hyperactive bidding and other mediating instruments, the external market for corporate control seems to be effective in turning the hyperactive bidders into future targets. In Table 10, I estimate a competing hazard model and also a multi-period multinomial logit model. In both empirical models, I assume that the assets of the sample firms are at risk of being reallocated to other firms either through the market for takeovers or through other mechanisms such as bankruptcy, liquidation, leveraged buy-outs, or management buy-outs. The only difference between the two models is that the risk of a firm's assets being reallocated either through takeover or through other mechanisms is independent in the competing hazard model, and the risk is relative to assets remaining within the existing firm in the multinomial logit model.

Columns (1) to (4) in Table 10 show the estimates from the competing hazard model. It shows that hyperactive bidding increases the conditional risk of redeployment of a firm's assets to other firms via all mechanisms, but the marginal effect is higher for reallocation through takeover than through other mechanisms. Conditional on other explanatory variables evaluated at their mean, sample firms' assets are almost three times more likely to be redeployed via takeover compared to other mechanisms when hyperactive bidding increases. The results are also similar using the multinomial logit as the empirical specification.

Table 10 is about here

Panel B of Table 10 reports the marginal effects and other measures of economic significance from the multinomial logit specification. It shows, for example, when the hyperactive bidding measure increases from a minimum (0) to a maximum (1), the conditional probability of assets being redeployed via takeover increases by 0.43 whereas the probability of reallocation through other mechanisms increases by 0.34. In short, the statistical as well as economic significance estimates show that the market for takeover is a more effective mechanism relative to others in reallocating the assets of hyperactive bidders in the long run. These findings support Jensen (1986), Mitchell and Lehn (1990), and Lehn and Zhao (2006) who argue that the external corporate control market prevents bad acquirers from making future value-destroying acquisitions either by redeploying their assets to other firms or by firing the manager who indulges in bad acquisitions.

6. Conclusion

We know that firms exit, but we know little about the causes of exit. Do firms exit because of unintended adverse effects of managerial rational decisions arising from forces beyond their control, or do they exit because of flawed managerial decision-making? Theoretical debates on this question have been at best bifurcated. While rational economic theory blames exogenous economic disturbances beyond managerial control for exit, behavioral theory argues that a large number of exits in the modern corporate landscape cannot be explained simply by external disturbances. The managers of exitor firms who suffer from behavioral biases in their decision-making are partly to blame. Despite our best efforts, the current understanding of this issue is limited because when firms exit, it is difficult to separate the exit that arises as a result of the adverse effects of managerial rational decisions beyond their control from the exit that results simply because of flawed decision-making.

In this paper, I investigate a behavioral mechanism under which managerial actions can trigger inefficient firm exit. In particular, I use a sample of hyperactive bidders and show that managerial hyperactive bidding precipitates inefficient corporate exit. This finding is robust to alternative specifications of empirical strategies, alternative definitions of inefficient firm exit, endogenity, and reverse causality issues. I find that overbidding is associated with weak corporate governance and lower accounting disclosure quality within firms and thus points to the failure of internal control mechanisms to cause hyperactive bidders to maximize efficiency.

I then propose three channels via which the failure of internal control mechanisms translate into heightened exit hazard for firms managed by hyperactive bidders. In particular, I focus on the risk-taking attributes of overbidding, the resulting distortion in the firm's investment policy, and the eventual erosion of reputational capital of the firm as channels to understand how overbidding can increase the exit risk of firms. I find that hyperactive bidders do take more idiosyncratic risk that is not rewarded by the market. Such behavior also distorts the firm's investment policy, and dents the reputational capital of the firm. As a result, such firms also exit at a greater rate than other acquiring firms in the industry.

Finally, I show that the capital market does not fully internalize the costs associated with managerial hyper-acquisitiveness at the time of the bid announcement. Eventually, the external corporate control market disciplines hyperactive bidders by turning them into targets of takeover. The redeployment of assets of hyperactive bidders is more prevalent via takeovers compared to other mechanisms such as bankruptcy, liquidation, leveraged buy-out, and management buy-out. These results suggest that managerial actions can precipitate corporate exit and that the internal and external corporate control mechanisms may not be effective enough to forestall the falling value of an excessively acquisitive firm.

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Table 1: **Bidding and non-bidding firm characteristics**

This table reports the differential firm characteristics of bidding and non-bidding sample firms. *Total assets (TA)* is defined as the total book value of a firm's assets at the end of the fiscal quarter in which the firm announces a bid. *Market value (MV)* is defined as the sum of the market value of equity and the book value of debt. *Net income (NI)* is earnings after all interest and tax payment while $EBITDA$ is earnings before interest, tax, depreciation and amortization. The *Market-to-book (MTB)* ratio is calculated by dividing the market value of a firm's assets by its book value. *Total liabilities (TL)* measures all outstanding liabilities owed to outsiders other than to the shareholders of the firm. *Book leverage (BL)* is defined as the ratio of a firm's total outstanding short-term (STD) and long-term debt (LTD) to book value of total assets whereas *Market leverage (ML)* is defined to be the ratio of total outstanding STD and LTD to the market value of the firm's total assets. STD refers to debt obligations maturing within one year while LTD refers to debt obligations maturing in two years or more. $CASH$ is defined as the value of cash and other cash equivalent marketable securities. *Current assets (CA)* are defied as cash plus account receivables. *Current liabilities (CL)* is defined as STD plus accounts payable. PPE is defined as the net book value of the firm's Properties, Plants, and Equipment. In the table, "*" denotes significance at the 10% level; "**" denotes significance at the 5% level; "***" denotes significance at the 1% level.

	Bidding sample				Non-bidding sample				Difference			
	Mean (1)	Median (2)	N	Num. of firms	Mean (3)	Median (4)	N	Num. of firms	(1-3)	Absolute t-stat	(2-4)	Absolute χ^2
Log(TA)	5.27	5.19	519395	10635	3.79	3.6	336160	12868	1.48***	34.14	1.58***	220.41
Log(MV)	5.76	5.66	482903	10623	4.14	3.88	234873	10596	1.63***	41.92	1.78***	251.55
NI/TA	-0.01	0.01	516861	10635	-0.5	0	330533	12815	0.49***	4.52	0.01***	130.03
EBITDA/TA	0.01	0.03	437606	10272	-0.36	0.02	279834	12033	0.37***	3.78	0.01***	113.80
MTB	2.11	1.28	482798	10623	19.43	1.31	233867	10594	-17.32***	4.00	-0.03***	14.03
TL/TA	0.74	0.56	518565	10616	3.28	0.61	335654	12846	-2.54***	4.49	-0.05***	67.30
BL	0.74	0.56	518979	10635	3.39	0.61	335572	12866	-2.65***	4.12	-0.05***	67.63
ML	0.44	0.41	482903	10623	0.42	0.39	234873	10596	0.01***	3.55	0.02***	13.21
Cash/TA	0.16	0.07	429807	8891	0.17	0.06	291285	11565	-0.02***	6.13	0.01***	22.56
Cash/CL.	1.57	0.28	429980	8891	3.06	0.2	292597	11568	-1.49***	8.76	0.08***	48.87
STD/TL	0.11	0.05	481029	10588	0.15	0.06	316417	12737	-0.04***	22.54	-0.02***	55.00
LTD/TL	0.3	0.26	513200	10614	0.29	0.22	333412	12837	0.01***	2.92	0.04***	29.53
PPE/Tot. assets	0.27	0.2	504699	10507	0.32	0.22	329718	12787	-0.04***	10.38	-0.02***	24.55

Table 2: **Hyperactive and conservative bidding sample characteristics**

This table reports the differential firm characteristics of the hyperactive and the conservative bidding firms at the time of bid announcement. Definitions of all firm characteristics and deal characteristics are the same as in Table 1. See Section 2 of the paper for definitions of *Hyperactive bidders* and *Conservative bidders*. *Cumulative abnormal return (CAR)* is calculated using a market model abd a three-day event window around the acquisition announcement date. In the table, "*" denotes significance at the 10% level; "**" denotes significance at the 5% level; "***" denotes significance at the 1% level.

	Hyperactive bidders				Conservative bidders				Difference			
	Mean (1)	Median (2)	N	Num. of firms	Mean (3)	Median (4)	N	Num. of firms	(1-3)	Absolute t-stat	(2-4)	Absolute χ^2
Log(TA)	6.41	6.36	51630	8319	5.65	5.52	9630	5014	0.75***	14.27	0.84***	31.10
Log(MV)	6.88	6.83	51019	8227	6.12	6.02	9464	4925	0.76***	14.08	0.81***	26.59
NI/TA	0.00	0.01	51490	8303	0.00	0.01	9612	5008	0.00***	3.64	0.00***	8.26
EBITDA/TA	0.03	0.03	43139	7462	0.02	0.03	8477	4514	0.01***	6.81	0.00***	10.66
MTB	1.94	1.40	51019	8227	2.12	1.39	9464	4925	-0.17***	4.00	0.02*	1.67
TL/TA	0.56	0.56	51564	8297	0.54	0.53	9628	5013	0.03***	5.14	0.03***	9.27
BL	0.56	0.56	51597	8313	0.54	0.53	9629	5013	0.03***	5.17	0.03***	9.20
ML	0.42	0.38	51019	8227	0.40	0.35	9464	4925	0.02***	3.21	0.03***	6.06
CASH/TA	0.12	0.05	51344	8275	0.16	0.07	9587	4997	-0.03***	10.49	-0.01***	10.65
CASH/CL	1.01	0.28	40175	6789	1.61	0.40	7656	3998	-0.61***	5.14	-0.11***	12.83
CA/CL	2.55	1.91	39977	6717	3.26	2.09	7655	3991	-0.71***	4.37	-0.18***	9.36
STD/TL	0.09	0.04	47049	7998	0.08	0.03	8998	4767	0.01***	3.69	0.01***	8.85
LTD/TL	0.33	0.30	51108	8273	0.28	0.21	9546	4983	0.05***	8.37	0.08***	14.95
PPE/TA	0.24	0.17	49161	8116	0.23	0.15	9310	4858	0.01**	2.38	0.02***	7.35
CAR	1.00%	0.00%	53494	8651	2.00%	1.00%	10087	5227	-1.00%***	6.80	-1.00%***	9.25

Table 3: **Hyperactive bidding and inefficient firm exit: Baseline results**

This table reports results from the discrete-time hazard model to determine the effect of managerial hyperactive bidding on the bidding firm's (inefficient) exit risk. The dependent variable is 1 for the last fiscal quarter in which the firm (inefficiently) exits; otherwise, it is 0. Definitions of all firm characteristics are the same as in Table 1. See Section 2 of the paper for definitions of *Firm exit*, *Distance to natural hedge*, and *Hyperactive bidding*. Industry and aggregate economic disturbance measures are described in the appendix. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10% level; "**" denotes significance at the 5% level; "***" denotes significance at the 1% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Distance to natural hedge		3.0573***					3.2250***			
		[6.02]					[5.36]			
Hyperactive bidding			3.2038***					3.4053***		
			[6.66]					[5.61]		
Hyperactive bidding (IV1)				48.5988***					28.1320***	
				[3.48]					[2.81]	
Hyperactive bidding (IV2)					17.9145**					34.3793**
					[2.17]					[2.52]
Firm characteristics:										
Log(TA)	-0.4754**	-0.5505***	-0.5722***	-1.5211***	-0.8188***	-0.4825*	-0.5858**	-0.5939**	-1.1915***	-1.2200***
	[2.33]	[2.64]	[2.89]	[4.95]	[4.30]	[1.91]	[2.38]	[2.35]	[5.01]	[4.28]
Log(AGE)	-0.6620***	-0.5329***	-0.4860***	-0.4325***	-0.5122***	-0.6358***	-0.4744***	-0.4374***	-0.3736***	-0.2745
	[7.89]	[7.47]	[6.98]	[3.22]	[6.57]	[6.05]	[4.86]	[4.60]	[2.82]	[1.37]
NI/TA	-0.3038	-0.1776**	-0.1375***	0.8125*	0.0348	-0.4654	-0.2828	-0.1353*	0.1997	0.3270
	[1.36]	[2.34]	[2.77]	[1.88]	[0.13]	[1.27]	[0.61]	[1.90]	[1.00]	[0.90]
TL/TA	0.8813	1.0149*	0.8871	1.4641**	1.8958***	0.6639	0.8270*	0.7599	1.0252***	1.4301***
	[1.41]	[1.70]	[1.61]	[2.10]	[4.52]	[0.83]	[1.92]	[1.18]	[8.69]	[4.75]
CASH/TA	-0.7037	-0.2779	-0.1833	3.9786***	2.0625**	-1.3053	-0.6672	-0.6590	1.8586*	2.5818**
	[0.78]	[0.30]	[0.21]	[3.17]	[2.38]	[1.13]	[0.58]	[0.57]	[1.95]	[2.09]
LTD/TA	-0.3762	-0.6463	-0.5789	-0.1519	-0.0439	-0.3558	-0.2990	-0.6188	-0.0523	-0.0391
	[0.07]	[0.12]	[0.11]	[0.91]	[0.86]	[0.06]	[0.05]	[0.10]	[0.85]	[0.73]
PPE/TA	0.1013	0.4201	0.4672	1.6873***	0.8860*	0.1237	0.3398	0.5294	2.0635***	2.7578**
	[0.06]	[0.23]	[0.26]	[2.86]	[1.81]	[0.06]	[0.17]	[0.26]	[2.97]	[2.45]
MTB	-0.5803***	-0.7105***	-0.5746***	-0.7504***	-0.5934***	-0.5393***	-0.6299***	-0.5479***	-0.7435***	-0.6038***
	[3.53]	[3.36]	[3.33]	[5.34]	[11.33]	[2.93]	[3.19]	[2.60]	[9.68]	[10.25]
Control For:										
Exogenous shocks	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Deal-structure dummies	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No
Industry fixed effects	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No
Year fixed effects	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No
N	410133	406306	406306	409105	293581	316502	313169	313169	315740	223235
Num. of firms	10438	10438	10438			8677	8677	8677		
Pseudo-R^2	0.15	0.18	0.19			0.14	0.18	0.19		

Table 4: **Hyperactive bidder and inefficient firm exit: Robustness I**

This table reports various robustness tests of the causal effects of hyper acquisitiveness on firm exit risk. The dependent variable is 1 for the last fiscal quarter in which the firm (inefficiently) exits; otherwise, it is 0. Definitions of all firm characteristics are the same as in Table 1. See Section 2 of the paper for definitions of *Firm exit*, *Distance to natural hedge*, and *Hyperactive bidding*. Industry and aggregate economic disturbance measures are described in the appendix. *Winner* is defined as the total number of contested and completed acquisitions normalized by the total number of bids. *CAR* refers to the cumulative abnormal return to the acquiring firm's shareholders at the time of the acquisition bid announcement. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10% level; "**" denotes significance at the 5% level; "***" denotes significance at the 1% level.

	LPM with firm FE		1980-2006 IPOs only		Winners' Curse		CAR<0 Acquisitions		CAR>0 Acquisitions		Clustering by Firm and Size)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hyperactive bidding	0.031***	0.035***	3.166***	3.365***	3.206***	3.408***	2.928***	3.120***	2.847***	3.016***	3.175***	3.389***
	[18.27]	[17.28]	[36.12]	[35.73]	[6.64]	[5.60]	[6.08]	[5.10]	[6.36]	[5.42]	[5.25]	[4.19]
Winners' bid					2.347***	2.296***						
					[5.53]	[4.25]						
Bad acquisitions							1.490***	1.514***				
							[18.40]	[17.48]				
Good acquisitions									1.299***	1.334***		
									[17.44]	[15.34]		
Control For:												
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exogenous disturbance	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Deal-Structure dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	No	No	No	No	No	No	No	No	No	No
N	412220	318760	262847	193356	406306	313170	406306	313170	406306	313170	397869	310295
Num. of firms	10439	8678	8134	6645	10438	8677	10438	8677	10438	8677		
Pseudo-R^2/Adjusted-R^2	0.07	0.07	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.20		

Table 5: **Hyperactive bidder and inefficient firm exit: Robustness II**

This table reports various robustness tests related to alternative definitions of *firm exit*. Definitions of all firm characteristics are the same as in Table 1. See Section 2 of the paper for definitions of $EDISTRESS$, $EXRET$, $EROA$, $EPROFIT$, *Distance to natural hedge*, and *Hyperactive bidding*. *Overall exit risk* is defined as ratio of the total number of exitor firms in four-digit SIC industry in a given period over the total number of firms in the industry in that period. *Acquisition exit risk* is defined as the ratio of the total number of firms that exited industry in a given period through acquisition over the total number of firms in the industry in that period. Industry and aggregate economic disturbance measures are described in the appendix. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10% level; "**" denotes significance at the 5% level; "***" denotes significance at the 1% level.

	EDISTRESS		EXRET		EROA		EPROFIT		XRET		ROA		PROFIT		HYPERBID	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Dist. to natural hedge	1.363***		3.436***		2.605***		2.847***		-0.002***		-0.005*		-0.016***			
	[5.82]		[13.90]		[13.99]		[16.76]		[-3.34]		[-1.82]		[-3.96]			
Hyperactive bidding		1.498***		3.526***		2.782***		2.986***		-0.003***		-0.008***		-0.023***		
		[7.17]		[15.48]		[16.92]		[19.40]		[-4.21]		[-2.91]		[-5.66]		
Overall exit risk															-0.000	
															[-0.04]	
Acquisition exit risk																0.001
																[0.15]
Firm characteristics:																
Log(TA)	0.064*	0.055	-0.288***	-0.312***	-0.349***	-0.369***	-0.389***	-0.409***	-0.001***	-0.001***	0.001	0.001	0.002***	0.003***	0.042***	0.042***
	[1.86]	[1.59]	[-6.04]	[-6.36]	[-11.66]	[-12.13]	[-13.44]	[-13.83]	[-4.42]	[-4.13]	[0.93]	[1.19]	[2.82]	[3.26]	[114.55]	[114.55]
Log(AGE)	0.009	0.022	0.128	0.162	-0.124	-0.092	-0.049	-0.020	0.001	0.001	0.051***	0.052***	0.072***	0.073***	0.088***	0.088***
	[0.08]	[0.20]	[0.94]	[1.16]	[-1.42]	[-1.04]	[-0.58]	[-0.23]	[0.83]	[1.03]	[20.04]	[20.15]	[18.85]	[19.11]	[54.69]	[54.69]
NI/TA	-6.778***	-6.689***	-2.641***	-2.477***	-5.190***	-4.981***	-5.790***	-5.595***	0.005***	0.005***	0.269***	0.268***	0.333***	0.332***	-0.105***	-0.105***
	[-11.25]	[-10.99]	[-3.18]	[-2.95]	[-11.37]	[-10.78]	[-13.25]	[-12.67]	[3.13]	[3.05]	[42.44]	[42.36]	[35.20]	[35.07]	[-25.01]	[-25.01]
TL/TA	6.694***	6.672***	2.215***	2.167***	3.188***	3.149***	3.767***	3.732***	0.001	0.001	0.026***	0.026***	0.019***	0.019***	0.029***	0.029***
	[17.88]	[17.87]	[6.85]	[6.71]	[14.44]	[14.24]	[17.35]	[17.15]	[1.38]	[1.44]	[11.14]	[11.19]	[5.48]	[5.57]	[18.82]	[18.82]
CASH/TA	-1.216	-1.141	0.742*	0.853**	0.355	0.464	-0.359	-0.267	0.002**	0.002**	-0.009***	-0.010***	0.012***	0.011***	-0.054***	-0.054***
	[-1.46]	[-1.38]	[1.73]	[1.97]	[0.98]	[1.28]	[-0.95]	[-0.71]	[2.45]	[2.35]	[-3.19]	[-3.27]	[2.77]	[2.62]	[-27.76]	[-27.76]
LTD/TA	-2.317***	-2.327***	-0.698**	-0.734**	-1.207***	-1.244***	-1.303***	-1.336***	0.001	0.001	-0.009***	-0.009***	-0.013***	-0.013***	0.009***	0.009***
	[-7.50]	[-7.58]	[-2.25]	[-2.37]	[-5.87]	[-6.02]	[-6.17]	[-6.29]	[1.41]	[1.44]	[-4.87]	[-4.85]	[-4.41]	[-4.37]	[6.68]	[6.68]
PPE/TA	1.815***	1.856***	0.180	0.241	0.637**	0.706***	0.740***	0.796***	0.001	0.001	0.010***	0.010***	-0.009*	-0.009*	-0.041***	-0.041***
	[5.59]	[5.72]	[0.43]	[0.58]	[2.41]	[2.65]	[2.94]	[3.15]	[0.86]	[0.80]	[2.86]	[2.81]	[-1.67]	[-1.75]	[-17.14]	[-17.14]
MTB	-1.214***	-1.210***	-0.271***	-0.265***	-0.401***	-0.395***	-0.317***	-0.310***	-0.000***	-0.000***	0.000	0.000	0.001	0.001	0.000**	0.000**
	[-3.64]	[-3.63]	[-3.58]	[-3.50]	[-5.81]	[-5.72]	[-6.28]	[-6.15]	[-5.27]	[-5.28]	[0.73]	[0.73]	[1.33]	[1.34]	[2.57]	[2.58]
Control for:																
Exogenous shocks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal-structure dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	299523	299523	278475	278475	306625	306625	299787	299787	318760	318760	264868	264868	310551	310551	319771	319771
Num. of firms	8539	8539	8345	8345	8619	8619	8642	8642	8678	8678	8234	8234	8608	8608	8678	8678
$R^2/Pseudo-R^2$	0.33	0.33	0.13	0.14	0.18	0.19	0.23	0.24	0.06	0.06	0.35	0.35	0.29	0.29	0.71	0.71

Table 6: **Why are some firms more acquisitive than others?**

This table shows the correlation structure of managerial hyperactive and conservative bidding a firm's corporate governance, accounting quality, investment and acquisition expenditure and future growth opportunity proxies. See Section 2 of the paper for definitions of *Hyperactive bidding* and *Conservative bidding*. *Optimism-driven bid* is a dummy variable that equals 1 if the firm announces an acquisition bid even if it receives a negative productivity shock in that period. Firm-level "*Capital expenditure*" and "*Acquisition expenditure*" are from COMPUSTAT data item 90 and data item 94, respectively. Governance index (G) is from Gompers, Ishii, and Metrick (2003). Accounting quality measure is from Bharath, Sunder, and Sunder (2008). P-values are given in brackets.

	Hyperactive bidders	Conservative bidders
Bidders' G-Index	0.0468	-0.0269
	[0.00]	[0.00]
Bidders' accruals quality	-0.0425	0.0154
	[0.00]	[0.00]
Optimism-driven bid	0.1316	-0.0730
	[0.00]	[0.00]
Capital expenditure	0.0709	-0.0058
	[0.00]	[0.00]
Acquisition expenditure	0.1022	-0.0145
	[0.00]	[0.00]

Table 7: **Hyperactive bidder and inefficient firm exit: The risk and inefficiency channels**

This table reports the estimates from the mediating instrument methodology to determine the channels through which managerial hyperactive bidding affects the bidding firm's exit risk. Definitions of all firm characteristics are the same as in Table 1. Industry and aggregate economic disturbance measures are described in the appendix. See Section 2 of the paper for definitions of *Firm exit* and *Hyperactive bidding*. *Sigma* is calculated following Shumway (2001). Section 4.1 of the paper explains the *inefficiency* measure in the M&A investment policy of a firm. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10%; "**" denotes significance at the 5%; "***" denotes significance at the 1% level.

	Risk channel			Inefficiency channel		
Estimation Methodology:	Tobit	Hazard	Hazard	Tobit	Hazard	Hazard
Dependent Variable:	Sigma	Exit	Exit	Inefficiency	Exit	Exit
	(1)	(2)	(3)	(4)	(5)	(6)
Hyperactive bidding	0.0048***		3.2329***	0.0911***		3.0300***
	[20.07]		[5.22]	[81.92]		[4.47]
Sigma		8.9590***	8.6466***			
		[6.01]	[4.52]			
Inefficiency					4.7467***	3.4729***
					[12.97]	[9.52]
Firm characteristics:						
Log (TA)	-0.0058***	-0.3884	-0.5122**	-0.0020***	-0.4864*	-0.6077**
	[237.53]	[1.58]	[2.26]	[17.19]	[1.88]	[2.36]
Log (AGE)	-0.0034***	-0.6052***	-0.3893***	-0.0020***	-0.5244***	-0.3517***
	[42.73]	[5.32]	[3.46]	[5.41]	[3.94]	[3.12]
NI/TA	-0.0038***	-0.1538	-0.0657	-0.0009	-1.1539*	-0.1280*
	[20.16]	[1.29]	[0.20]	[1.09]	[1.85]	[1.69]
TL/TA	0.0021***	0.8088**	0.5942	0.0031***	0.6928	0.7410
	[28.19]	[2.36]	[1.15]	[8.78]	[0.65]	[1.20]
CASH/TA	-0.0042***	-1.0699	-0.6132	0.0105***	-1.2118	-0.6849
	[16.09]	[0.87]	[0.57]	[8.53]	[1.09]	[0.58]
LTD/TA	-0.0001*	-0.4797	-0.4149	0.0001	-0.4246	-0.7310
	[1.73]	[0.08]	[0.07]	[0.57]	[0.07]	[0.11]
PPE/TA	0.0006**	0.1525	0.4264	0.0012	0.2269	0.6234
	[2.46]	[0.07]	[0.21]	[0.99]	[0.11]	[0.30]
MTB	-0.0005***	-0.5978***	-0.4505***	-0.0012***	-0.5896***	-0.5356***
	[34.14]	[2.66]	[2.60]	[18.09]	[3.08]	[2.62]
Control for:						
Exogenous shocks	Yes	Yes	Yes	Yes	Yes	Yes
Deal-structure dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	318656	318825	315492	318760	318928	315595
Num. of firms	8677	8677	8677	8678	8678	8678
R^2/Pseudo-R^2		0.16	0.20		0.15	0.20

Table 8: **Hyperactive bidder and firm exit: Reputational capital channel**

This table reports the estimates from the mediating instrument methodology to determine the channels through which managerial hyperactive bidding affects the bidding firm's exit hazard. Definitions of all firm characteristics are the same as in Table 1. Industry and aggregate economic disturbance measures are described in the appendix. See Section 2 of the paper for definitions of *Firm exit* and *Hyperactive bidding*. *Sigma* is calculated following Shumway (2001). Section 4.1 of the paper explains the *inefficiency* measure in the M&A investment policy of a firm. *Litigation* for a given period is defined as the cumulative number of lawsuits filed against an acquirer as a direct consequence of its acquisition decision normalized by the total number of bids up until that given period. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10%; "**" denotes significance at the 5%; "***" denotes significance at the 1% level.

	Reputational capital channel			All channels	
Estimation Methodology:	OLS	Hazard	Hazard	Hazard	Hazard
Dependent Variable:	Litigation	Exit	Exit	Exit	Exit
	(1)	(2)	(3)	(4)	(5)
Hyperactive bidding	0.0168***		3.3191***		2.9354***
	[7.60]		[5.13]		[4.52]
Sigma				8.5150***	8.4336***
				[5.28]	[4.08]
Inefficiency				4.6408***	3.2867***
				[12.96]	[10.18]
Litigation		1.6759**	1.3479**	1.5587***	1.2460*
		[2.44]	[2.13]	[2.66]	[1.96]
Firm characteristics:					
Log(TA)	0.0007***	-0.5188**	-0.6108**	-0.3940	-0.5130**
	[4.39]	[2.00]	[2.37]	[1.62]	[2.27]
Log(AGE)	0.0027***	-0.6465***	-0.4208***	-0.5348***	-0.3369***
	[4.57]	[5.24]	[3.98]	[4.35]	[2.91]
NI/TA	0.0007	0.1181	-0.1358**	-0.1426	-0.0675
	[1.44]	[0.26]	[2.24]	[1.48]	[0.19]
TL/TA	0.0011	1.0388**	0.7815	0.7520**	0.5470
	[1.49]	[2.24]	[1.26]	[2.28]	[0.92]
CASH/TA	0.0006	-1.0712	-0.6766	-1.0570	-0.6231
	[0.32]	[0.92]	[0.58]	[0.86]	[0.60]
LTD/TA	0.0000	-0.4869	-0.7132	-0.4962	-0.4253
	[0.71]	[0.08]	[0.11]	[0.08]	[0.07]
PPE/TA	-0.0019	0.1999	0.5850	0.2271	0.4561
	[0.66]	[0.09]	[0.28]	[0.11]	[0.22]
MTB	-0.0001*	-0.7154***	-0.5529***	-0.5523**	-0.4316***
	[1.89]	[3.02]	[2.61]	[2.57]	[2.61]
Control for:					
Exogenous shocks	Yes	Yes	Yes	Yes	Yes
Deal-structure dummies	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
N	318760	318928	315595	318825	315492
Num. of firms	8678	8678	8678	8677	8677
R^2/Pseudo-R^2	0.02	0.14	0.19	0.18	0.21

Table 9: **The capital market reaction at the time of deal announcements**

This table reports the estimates from OLS regression to determine the market reactions to managerial hyper acquisitiveness and various mediating instruments. The dependent variable is the cumulative abnormal return around a 3-day event window surrounding the announcement event of the acquisition. See Section 2 of the paper for definition of *Hyperactive bidding*. *Sigma* is calculated following Shumway (2001). Section 4.1 of the paper explains the *inefficiency* measure in the M&A investment policy of a firm. *Litigation* for a given period is defined as the cumulative number of lawsuits filed against an acquirer as a direct consequence of its acquisition decision normalized by the total number of bids up until that given period. *Governance Index* is from Gompers, Ishii, and Metrick (2003). The table also includes 32 dummy variables portraying various deal characteristics in these regressions, but due to space limitations reports the coefficients only for a few of those that are statistically significant. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10%; "**" denotes significance at the 5%; "***" denotes significance at the 1% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hyperactive bidding	-0.019***					-0.012***	-0.006***
	[12.26]					[6.92]	[3.81]
Sigma		0.533***				0.507***	0.276***
		[5.81]				[5.44]	[4.23]
Inefficiency			0.003			0.002	-0.002
			[0.80]			[0.65]	[0.56]
Litigation				-0.002		0.012	-0.027*
				[0.16]		[1.01]	[1.80]
Governance score					-0.001***		-0.000***
					[4.51]		[3.19]
Selected deal-structure dummies:							
Similar-industry acquisition	0.004***	0.005***	0.004***	0.004***	0.004***	0.005***	0.004***
	[3.69]	[5.40]	[4.30]	[4.34]	[5.52]	[4.91]	[5.07]
Stock-swap deal	-0.010***	-0.011***	-0.010***	-0.010***	-0.011***	-0.011***	-0.012***
	[3.48]	[3.64]	[3.47]	[3.47]	[5.36]	[3.64]	[5.42]
Pure cash-financed deal	-0.003***	-0.002**	-0.003***	-0.004***	-0.001	-0.002**	-0.000
	[3.21]	[2.31]	[3.30]	[3.31]	[0.50]	[2.28]	[0.46]
Hostile deal	-0.013***	-0.012***	-0.013***	-0.013***	-0.009*	-0.011**	-0.008
	[2.75]	[2.59]	[2.89]	[2.89]	[1.65]	[2.53]	[1.47]
Financing through borrowing	0.009***	0.009***	0.010***	0.010***	0.005*	0.009***	0.004
	[3.62]	[3.66]	[3.81]	[3.80]	[1.73]	[3.56]	[1.56]
Financing through internal credit	0.009***	0.010***	0.009***	0.009***	0.007***	0.010***	0.006***
	[3.48]	[3.94]	[3.67]	[3.66]	[2.68]	[3.81]	[2.64]
Financing through lines of credit	0.010***	0.011***	0.010***	0.010***	0.007**	0.010***	0.007**
	[4.01]	[4.31]	[4.19]	[4.18]	[2.30]	[4.23]	[2.21]
Control for:							
Deal-structure dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	63556	63580	63581	63581	33771	63555	33761
Num. of firms	10771	10774	10774	10774	2925	10771	2925
R^2	0.01	0.02	0.01	0.01	0.02	0.02	0.03

Table 10: **Hyperactive bidding and redeployment of firms' assets**

This table reports the estimates from the competing hazard model and the multinomial Logit model. The dependent variable is 1 for the last fiscal quarter in which the firm exits; otherwise it is zero. Definitions of all firm characteristics are the same as in Table 1. Industry and aggregate economic disturbance measures are described in the appendix. See Section 2 of the paper for definitions of *Firm exit* and *Hyperactive bidding*. *Sigma* is calculated following the Shumway (2001). Section 4.1 of the paper explains the *inefficiency* measure in the M&A investment policy of a firm. *Litigation* for a given period is defined as the cumulative number of lawsuits filed against an acquirer as a direct consequence of its acquisition decision normalized by the total number of bids up until that given period. *Non-acquisition exitors* refers to the sample of firms that exit the industry via means other than mergers or takeovers. Mechanisms other than mergers and takeovers refer to bankruptcy, liquidation, LBO, MBO, or dropping off the exchange due to poor performance. *Acquisition exitors*" refers to the sample of firms that exit the industry via mergers and takeovers. In Panel B, Marginal effects are estimated conditional on all other exogenous variables evaluated at their mean. The table also shows the changes in failure probability when an explanatory variable of interest changes from $Minimum$ to $Maximum$, from $(Mean - \frac{1}{2})$ to $(Mean + \frac{1}{2})$, and from $(Mean - \frac{sd}{2})$ to $(Mean + \frac{sd}{2})$, where sd refers to the standard deviation of the explanatory variable of interest. Robust z statistics are given in brackets. In the table, "*" denotes significance at the 10%; "**" denotes significance at the 5%; "***" denotes significance at the 1% level.

Panel A: Competing hazard and multinomial Logit models

	Competing hazard model				Multinomial Logit model			
	Non-acquisition exitors		Acquisition exitors		Non-acquisition exitors		Acquisition exitors	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hyperactive bidding	3.525***	3.407***	2.857***	2.401***	3.647***	3.491***	2.915***	2.455***
	[4.60]	[4.23]	[35.26]	[27.22]	(31.87)	(30.68)	(35.23)	(27.43)
Sigma		8.711***		0.169		9.417***		0.778
		[2.60]		[0.24]		(10.43)		(0.97)
Inefficiency		0.709		4.918***		0.909***		4.926***
		[1.62]		[17.14]		(2.82)		(17.17)
Control for:								
Firm characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Exogenous shocks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deal-structure dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	314896	314793	315595	315492	315595	315492	315595	315492
Num. of firms	8658	8657	8678	8677	8678	8677	8678	8677
$Pseudo-R^2$	0.18	0.22	0.08	0.10	0.1240	0.1429	0.1240	0.1429

Panel B: Economic significance measures from multinomial Logit specification

		(1)			(2)			(3)			(4)		
		All firms	Acquired firms	Other exitors	All firms	Acquired firms	Other exitors	All firms	Acquired firms	Other exitors	All firms	Acquired firms	Other exitors
Hyperactive Bidding	$Min \Rightarrow Max$	0.5122	0.4295	0.3388							0.4361	0.2305	0.4236
	$Mean \pm \frac{1}{2}$	0.0114	0.0139	0.0033							0.0093	0.0104	0.0036
	$Mean \pm \frac{sd}{2}$	0.0015	0.0019	0.0004							0.0013	0.0015	0.0004
	$Marginal\ Effect$	0.0081	0.0100	0.0020							0.0070	0.0082	0.0023
Sigma	$Min \Rightarrow Max$				0.6663	-0.0032	0.9995				0.6662	-0.0033	0.9993
	$Mean \pm \frac{1}{2}$				0.0716	0.0095	0.0979				0.0465	0.0023	0.0674
	$Mean \pm \frac{sd}{2}$				0.0003	0.0002	0.0002				0.0002	0.0001	0.0002
	$Marginal\ Effect$				0.0102	0.0084	0.0069				0.0058	0.0026	0.0061
Inefficiency	$Min \Rightarrow Max$							0.0155	0.0220	0.0012	0.0107	0.0155	0.0005
	$Mean \pm \frac{1}{2}$							0.0465	0.0680	0.0017	0.0256	0.0378	0.0006
	$Mean \pm \frac{sd}{2}$							0.0017	0.0023	0.0002	0.0014	0.0020	0.0001
	$Marginal\ Effect$							0.0138	0.0192	0.0015	0.0114	0.0165	0.0006

Figure 1: **Probability of mediation by the mediating instruments**

This graph shows the bootstrap distribution of percentage changes $\left(\frac{\beta-\beta'}{\beta} \times 100\right)$ in the 'Total Effect' of hyperactive bidding on firm exit hazard as a result of mediation through the risk and the inefficiency channels. The vertical axis denotes the probability with which mediation takes place, and the horizontal axis shows the % change in the 'Total Effect' of the hyper-acquisitiveness measure. It clearly shows that 'Total Effect' decreases (% change is negative) with probability 1.00 using the *inefficiency* measure whereas 'Total Effect' declines (% change is negative) with probability 0.90 using the *sigma* measure. In other words, the mediation process seems to be stronger through the inefficiency channel than through the risk channel.

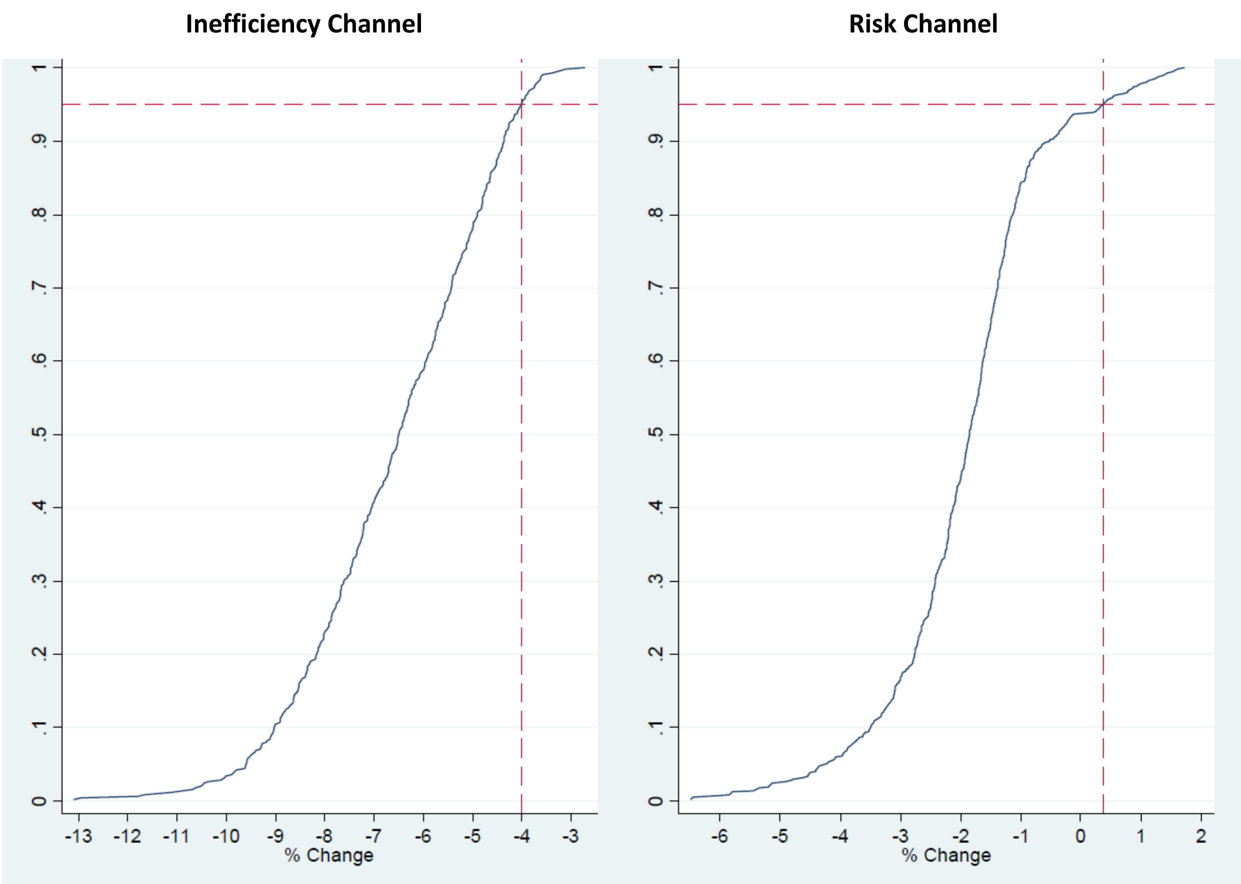
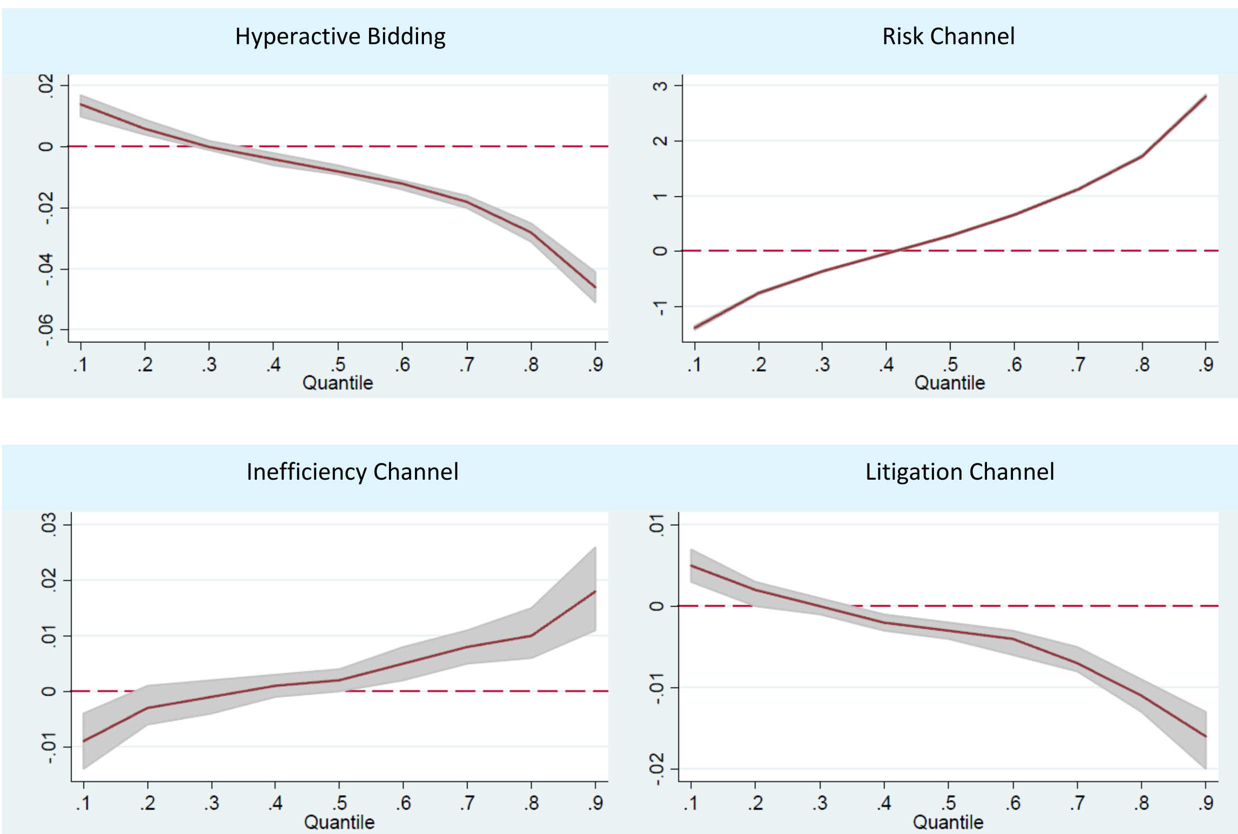


Figure 2: **Conditional quantile functions of cumulative abnormal return**

This figure depicts the conditional quantile functions of the Cumulative Abnormal Return (CAR) of bidders from the acquisition announcement events. The vertical axis measures the effects of hyperactive bidding, idiosyncratic cash-flow volatility, investment inefficiency, and litigation at various conditional quantiles whereas the horizontal axis refers to those quantiles themselves. It shows that the capital market does not always react negatively to the bidder's hyperactive acquisition behavior and other mediating instruments even though these factors eventually augment the conditional exit risk of the firm.



A. Construction of exogenous economic disturbance measures

- **Industry demand and supply shocks:** For each of the Fama and French (1997) industries I calculate the total industry net sales from the quarterly COMPUSTAT data using item 2 as a proxy for industry demand. I also calculate the total industry costs of goods sold from the quarterly COMPUSTAT data using item 30 as a proxy for industry supply. I then decompose these series into trend and irregular components using the Hodrick-Prescott (H-P) filter. The H-P filter calculates the trend component by minimizing the following loss function: $\sum_{t=1}^{T}\left(X_t - \widetilde{X}_t\right)^2 + \lambda\sum_{t=3}^{T}\left\{\left(X_t - \widetilde{X}_{t-1}\right) - \left(X_{t-1} - \widetilde{X}_{t-2}\right)\right\}^2$, where X_t is the actual series and $\widetilde{X}_t$ is the trend component of the series. The first term punishes the (squared) deviations of the actual series from the trend; the second term punishes the (squared) acceleration (change of change) of the trend level. The method thus involves a trade-off between tracking the original series and the smoothness of the trend level: $\lambda = \infty$ generates a linear trend, while $\lambda = 0$ generates a trend that matches the original series. Ravn and Uhlig (2002) have shown that the smoothing parameter should vary by the fourth power of the frequency observation ratios, so that for annual data a smoothing parameter of 6.25 and for monthly data a smoothing parameter of 129,600 are recommended, while for quarterly data a smoothing parameter of 1600 is commonly used. After decomposing the actual series into trend and irregular components, I calculate the series' instability by estimating the acceleration (change of change) of the irregular component. Thus, the instabilities or shocks in the industry demand and the industry supply series are given by: $\left\{\left(X_t - \widetilde{X}_t\right) - \left(X_{t-1} - \widetilde{X}_{t-1}\right)\right\} - \left\{\left(X_{t-1} - \widetilde{X}_{t-1}\right) - \left(X_{t-2} - \widetilde{X}_{t-2}\right)\right\}$.

- **Industry technology shocks:** I collect information about all patents for the period of 1963-2002 from the NBER patent database and convert the assigned technology class of each of these patents into the international patent class using the methodology developed by Silverman (2002). From the international patent class, I convert them back into 1987 Standard Industry Classifications (SIC) and assign the patents by grant year to each of our 49 Fama and French (1997) industries. I then apply the H-P filter on the total number of patents granted each year in each of the Fama-French industries to calculate our industry level technology shocks variable.

- **Industry regulatory shocks:** I use major deregulatory initiatives during the sample period as proxies for industry regulatory shocks. Deregulatory events and dates for my sample industries are collected from Harford (2005) for the period of 1980-1996 and from Lexis-Nexis for the rest of the sample period.

- **Aggregate demand and supply shocks:** I use the quarterly real GDP data from the Federal Reserve Bank of St. Louis as a proxy for aggregate demand and the real price of crude petroleum in the U.S. from the U.S. Energy Information Administration as a proxy for aggregate supply. Utilizing the H-P filter, I then calculate the aggregate demand and supply shocks series.

- **Capital-market instability and stock-market momentum:** To construct measures of capital-market instability, I apply the H-P filter on the Dow Jones Industrial Average and the bank prime lending rate. To capture the momentum in the aggregate equity market, I apply the H-P filter on the S&P 500 index and use the smoothed trend portion of the series as my proxy for momentum in the aggregate equity market.