Anti-Takeover Provisions and Takeover Returns

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Abstract

Masulis, Wang, and Xie (2007) find that acquirers with more anti-takeover provisions (ATPs) earn lower announcement returns. We confirm this finding using an extended sample, but show that the observed 'ATP effect' can be explained by an omitted variable, takeover premium, which captures managerial hubris in acquiring firms. Our results suggest that ATPs do not cause managers to seek out value destroying takeovers but, at best, managerial hubris. This is consistent with related findings that ATPs do not cause lower stock returns for firms in general (Core, Guay, and Rusticus (2006)). Our findings are robust to a range of econometric issues.

I. Introduction

In this paper, we re-examine the relationship between acquirer takeover announcement returns and anti-takeover provisions (ATPs). Masulis et al. (2007) find that acquirers with more ATPs, which they refer to as dictatorships, earn lower announcement returns.[1] They argue that this supports their main hypothesis that ATPs protect managers from the market for corporate control, thereby inducing possible agency conflicts and encouraging value-destroying acquisitions. ATPs, which include for example, poison pills, classified or staggered boards and charter amendments, are argued to weaken shareholder rights by making it more difficult for shareholders and the market for corporate control to discipline poorly performing mangers. Masulis et al. (2007) take the view that protection from the takeover market induces agency conflicts and, more importantly from a shareholder value perspective, encourages investment decisions of lower quality, as reflected in lower announcement returns.

Masulis et al. (2007) acknowledge that their results are inconsistent with related findings in Core et al. (2006), who find no support for ATPs causing lower stock returns for firms in general. This result follows the widely held view that in an efficient market, weak governance structures, as captured by the presence of more ATPs, does not convey 'new' information about future cash flows, and so should not be priced (Core, Holthausen, and Larcker (1999)). Core et al. (2006) show that investors appear to be fully aware of the under/over performance of high/low-ATP firms, as indicated by lower earnings forecasts and, further, find no significant difference in stock returns between the groups around earnings announcements. They also fail to find a significant difference in the likelihood of takeover between high/low-ATP firms, so lower returns are unlikely to be attributable to high-ATP firms losing out in receiving a takeover premium. More recently, Bates, Becher and Lemmon (2008) show that the existence of a classified board has no impact on takeover success, once a firm has been targeted, indicating that classified boards do not frustrate takeover completion.

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[1] Conversely, firms with fewer ATPs are referred to as democracies. Dictatorship and democracy firms are defined using the median value for ATPs for the sample. In this paper, we refer to firms with the number of ATPs above (below) the median value as 'high' ('low') ATP firms.

Core et al.'s (2006) results support a related literature that shows no link between ATPs and firm value, measured as price-to-book or Tobin's q. Lehn, Patro, and Zhao (2007) show that once pre-ATP firm value is controlled for in a cross-sectional regression of firm value on ATPs (and other controls), the ATP effect becomes insignificant, suggesting that ATPs do not cause lower firm values. This result is in stark contrast to earlier findings in Gompers, Ishii, and Metrick (2003), Bebchuk, Cohen, and Farrell (2004) and Bebchuk and Cohen (2005), who show a negative and significant correlation between firm value and ATPs. However, these latter studies do not properly control for pre-ATP firm performance, so their results are more consistent with low-value firms adopting ATPs (possibly for entrenchment purposes) as opposed to ATPs actually causing lower values. This causality interpretation also has some support from related studies that examine operating performance pre- and post ATP-adoption. For example, Danielson and Karpoff (2006) show that for a sample of pre-ATP adopting firms, operating performance actually increases modestly over a 5-year post-adoption period. These recent findings are clearly at odds with value destruction associated with ATPs. This raises the question as to why the market appears to react differently to high/low-ATP firms during takeover announcements. This motivates a re-examination of this issue.

We hypothesize that the observed ATP effect arises because of an omitted variable bias in the Masulis et al. (2007) baseline model. The omitted variable explanation suggests that poorly specified or omitted variable(s) in the regression model of announcement acquirer returns on ATPs explain differences in high/low-ATP returns. Specifically, we hypothesize that the Masulis et al. (2007) baseline model does not adequately control for possible hubris (Roll (1986)) or managerial mistakes in estimating the gains to the takeover. We believe that hubris is a reasonable explanation for the observed ATP effect because firms with more ATPs do not actually lose in takeovers, since the announcement returns reported by Masulis et al. (2007) and in this paper are not statistically different from zero. While differences in returns between high and low-ATP firms are statistically significant, suggesting an ATP effect, the fact that firms with more ATPs do not lose from a statistical viewpoint suggests possible hubris and not value destruction (Berkovitch and Naranyan

(1993)).[2] From a more practical viewpoint, since most firms incorporated ATPs in the late 1980s (possibly as a response to the hostile takeover wave), why should they have any impact on managerial investment decisions for the next 20 or so years? Assuming that CEOs are replaced on average every 5 years, this implies that all new CEOs to firms that have, e.g., a classified board in place, suddenly come under its magic spell and start investing in loss making takeover deals!

Takeover premium (excess of transaction value over target value) is generally used as a proxy to capture hubris. If more ATPs insulate managers from the discipline of the market for corporate control, then this may encourage hubris and overpayment. Masulis et al. (2007) do not directly control for overpayment, but do include a control for firm size in their model. They argue that firm size is a natural takeover defense and so, in addition to controlling for possible hubris, may also serve as a proxy for managerial entrenchment. They find a significant negative correlation between firm size and acquirer returns, consistent with both hubris and entrenchment hypotheses. We also find firm size to be negative and significant. However, adding premium to the baseline regression model not only renders ATPs statistically insignificant, but also firm size, suggesting that premium is a better proxy for managerial hubris than firm size.[3] As expected, premium is negative and highly significant, consistent with overpayment reducing returns to acquiring firms.

A possible drawback in using premium as a proxy for hubris and overpayment is that higher premiums may also reflect higher expected synergies from the deal for some acquiring managers, and so reflect deal quality. This suggests that premium could be asymmetric across high/low-ATP acquirers, if high (low)-ATPs acquiring managers can be categorized by value-reducing/neutral (enhancing) motives. We deal with this issue by estimating separate regressions for high/low-ATP

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2 Masulis et al. (2007) find that firms with more ATPs earn lower abnormal returns, ranging from -0.38% to -0.05%, which are not significantly different from zero. We report similar values, ranging from -0.27% to 0.09%, again not statistically significant. Note that for the combined acquirer and target returns, the values will be more positive since target firms on average gain significantly from takeovers, again suggesting that high-ATP acquirers do not lose.

3 Surprisingly, estimating a reduced-form regression of acquirer returns on ATPs and firm size alone suggests that the ATP effect is only observed in one out of the three governance indices examined, indicating that lower returns to acquirers with more ATPs can largely be explained by the well documented 'size-effect' in acquirer returns (Moeller et al. (2004). We find that the ATP effect only occurs consistently across all three indices when additional control variables used in the Masulis et al. (2007) model are added to the regression. We discuss this further in Section III.

acquirer groups. If takeovers by firms with fewer ATPs are primarily motivated by synergy, we predict a positive or insignificant correlation between premium and returns. On the other hand, if acquirers with more ATPs are more likely to overpay due to hubris, we expect a negative and significant correlation between premium and returns. Our results bear this out, suggesting that for high-ATP acquirers, premium reflects overpayment, and so hubris is the primary motive.

We also acknowledge some econometric limitations in using premium as a proxy for hubris, including possible measurement error and endogeneity. The measurement error problem occurs because premium can vary considerably depending on what day prior to the takeover announcement date target value is measured and on the availability of accurate transaction values. We address this issue by calculating several premium measures using different sources, including SDC platinum and CRSP databases, and also measure target value over a range of days prior to the takeover announcement date. Our results are not sensitive to alternative premium measures.

The endogeneity issue is particularly troublesome for corporate governance studies (see Larcker and Rusticus (2005)) and tends to arise because of omitted variables that help determine one or more independent variables and are also correlated with the dependent variable, acquirer announcement returns. On the basis of simple pair-wise correlations, we believe that excluding premium results in an endogeneity problem due to the omission of a variable that is highly correlated with acquirer returns and other control variables in the model (e.g., firm size). The literature suggests, however, that premium is also likely to be endogenous with respect to other omitted variables from the Masulis et al. (2007) baseline regression, including the existence of overvalued equity (Jensen (2005)), the mood of the deal (hostile or friendly), geographical location (cross-border), and the number of bidders (competed) – all of which are also likely to be correlated with the dependent variable, acquirer returns (Moeller et al. (2004)). To address the omitted variable issue, we use a modified model including additional variables as suggested by theory to capture firm and deal characteristics that are correlated with acquirer returns. Since this approach might also lead to collinearity problems, we also use an alternative measure of hubris, using the residuals (i.e., unexplained premium) from a regression of premium on common factors used in the literature to

explain premium (Schwert (2000), Officer (2005)). This specification has the effect of 'stripping out' factors that are correlated or determine premium and so provides a 'cleaner' measure of hubris and overpayment. Our results remain unchanged when we use this alternative measure.

The results suggest that the ATP effect observed by Masulis et al. (2007) arises due to an omitted variable that better captures managerial hubris and overpayment by acquirers with more ATPs. More importantly, our results are consistent with related findings in Core et al. (2006) and Lehn et al. (2007) that ATPs do not cause significantly lower returns and value destruction. The results are also robust to a range of econometric issues, including outliers, large loss deals (Moeller et al. 2005), and other model specification issues.

The paper makes two important contributions to the literature. First, it determines the underlying cause of the observed ATP effect - an omitted variable, takeover premium, which reflects overpayment by acquiring firm's with more ATPs. Controlling for premium indicates that ATPs have no significant effect on acquirer returns. Since takeover performance proxies for investment efficiency, this indicates that ATPs do not cause managers to make value-destroying investments. This is confirmed by the observation that firms with more ATPs do not, from a statistical viewpoint, lose in takeovers. This issue has important policy implications for the legislation of ATPs given the growing pressure to prohibit or restrict the use of ATPs. While ATPs may be undesirable from a shareholder perspective, the evidence in this paper suggests that shareholders should not be overly concerned that ATPs cause managers to engage in value destruction via takeovers. Our results complement Bates et al.'s (2008) findings, that ATPs (specifically, classified boards), neither entrench nor facilitate managerial self-dealing in completed takeovers. Second, results from our modified model uncover some interesting findings with respect to overvalued equity, which we measure using a price-to-residual-income-valuation model (Dong, Hirshleifer, Richardson, and Teoh (2006)). The results provide some support for Jensen's (2005) agency costs to overvalued equity hypothesis in that overvalued firms generate significantly lower announcement returns. While we find that this result only holds for firms with fewer ATPs,

suggesting an asymmetric effect, the existence of overvalued equity alone is not sufficient to explain the ATP effect.

The paper has the following structure. Section II describes the sample construction procedures and outlines the replication of the Masulis et al. (2007) baseline model. Section III sets out to explain the ATP effect by examining the impact of an omitted variable, takeover premium, and introduces our modified regression model. Section IV tests the sensitivity of the results to several econometric specification issues. Section V outlines some implications of our results and Section VI concludes.

II. Sample Construction and Masulis et al. (2007) Replication

This paper examines 3,992 US takeovers from 1990 to 2005. The takeover sample is from SDC Platinum's Mergers and Acquisitions database. Following Masulis et al. (2007), the paper imposes the following sample requirements:

1 The acquisition must be completed;

2 The bidder must own less than 50% of the target before the acquisition and 100% after;

3 Transaction value must exceed $1 million and at least 1% of the bidder's market capitalization 11 days before the announcement;

4 The bidder must have accounting data on Compustat and stock data on CRSP for 210 trading days before the announcement;

5 The bidder must have Investor Responsibility Research Centre (IRRC) governance data.

Insert Table I about here

The IRRC database primarily comprises of large S&P 500 firms that constitute over 90% of US stock market capitalization (Bebchuk et al. (2004)). However, post-1998 IRRC publications now include smaller firms. The IRRC has published data in 1990, 1993, 1995, 1998, 2000, 2002, and 2004. This paper assumes that firms maintain the previous publication's provisions in between

publication dates (following Gompers et al. (2003), Masulis et al. (2007)). In Section IV of the paper, we test the sensitivity of our results to this assumption.

The sample indicates a gradual increase in activity during the early to mid-1990s, with significant increases in both the number and transaction values from 1998 (see Table I). Similar to Masulis et al. (2007) and Moeller et al. (2004), transaction values and bidder size increased significantly during 1999 and 2000 - a period generally regarded as the 'bubble' period. Interestingly, the large differences in mean and median values indicate the existence of some very large bidders and deals. We examine whether this impacts on our results in Section IV.

A. Masulis et al. (2007) Replication

We replicate the Masulis et al. (2007) methodology using our extended sample, 1990 to 2005. We first confirm whether bidders that have more ATPs (i.e., dictatorships or 'high') earn lower abnormal returns than bidders with fewer ATPs (i.e., democracies or 'low') through a univariate analysis of abnormal returns. The next stage examines whether the ATP effect is due to systematic differences in bidder and deal characteristics between dictatorships and democracies. Following Masulis et al. (2007) we estimate OLS regressions of cumulative abnormal acquirer returns (CARs) on governance indices, controlling for bidder and deal characteristics. The regression model has the form:

$$CAR_i = \alpha_i + \lambda_i \times governance_i + \phi_i \times deal_i + \gamma_i \times bidder_i + \varepsilon_i$$

Where:

CAR = 5-day abnormal return

$governance$ = Governance index (GIM, BCF, CBOARD)

$deal$ = Deal characteristics

$bidder$ = Bidder firm characteristics

The dependant variable is the 5-day OLS market model CAR. Parameters are estimated from days [-210,-11]. Following Masulis et al. (2007) we examine three governance indices – GIM,

BCF and CBOARD. GIM classifies firms as a dictatorship (high-ATP) or a democracy (low-ATP) based on the Gompers et al. (2003) governance index, which assigns one point for every ATP, summing to a maximum of 24 points.[4] Firms are assigned to portfolios based on the median value for each index. Specifically, firms are assigned to high (low) portfolios if they have a GIM score of at least 14 or 10 (no more than 5 or 9).[5] The second governance measure, BCF, is based on the Bebchuk et al. (2004) classification system and incorporates only six key ATPs from the GIM. These provisions include classified or staggered boards, limits to shareholder by-law and charter amendments, supermajority requirements for takeovers, poison pills, and golden parachutes. BCF classifies firms into high (low) portfolios if they have a BCF score of at least 3 (no more than 2). The third measure assesses the impact of classified or staggered boards (CBOARD), taking a value of 1 for high-ATP acquirers and zero for low-ATP acquirers.

The paper controls for bidder and deal characteristics that may affect acquirer returns. Previous studies find lower returns for firms with larger size (Moeller et al. (2004)); higher free cash flow (Jensen (1986); Harford (1999)); lower leverage (Maloney et al. (1993); Moeller et al. (2005)), lower stock pre-announcement returns (Masulis et al. (2007)), and lower growth options, measured using Tobin's q (Moeller et al. (2004)). Abnormal returns are predicted to increase for acquisitions that occur during a merger wave (Moeller et al. (2004)) or that involve high-tech firms (Loughran and Ritter (2004)); however, they should decrease for large technology acquisitions (Masulis et al. (2007)) and diversifying acquisitions (Moeller and Schlingemann (2005)). Method of payment (Travlos (1987)), target status, and the interaction thereof affects abnormal returns (Chang (1998), Fuller et al. (2002)). Thus, the paper controls for the interactions of public target with cash payment; public target with stock payment; private target with cash payment; private target with stock payment; and subsidiary target with cash payment. To avoid the dummy variable trap, we

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4 For a full list of the IRRC anti-takeover provisions, see the Appendix in Gompers et al. (2003).

5 Following Masulis et al. (2007), we use three breakpoints in forming GIM portfolios. The first is the median value of 9, and the second is a value of 14 or more for dictatorship firms and 5 or less for democracy.

drop the subsidiary target stock dummy variable. A detailed description of the variables and how they are calculated is reported in Table AI in Appendix A.

The descriptive statistics reported in Table II indicate that bidders earn positive and significant abnormal returns on average, with a mean (median) equally-weighted CAR (EWCAR) of 0.30% (0.10%). These numbers are consistent with Masulis et al. (2007), who find a mean (median) EWCAR of 0.22% (0.10%).[6] The average number of ATPs in our sample of acquirers is 9.42 (GIM), with 63% of firms having a classified board (CBOARD) in place. Again, these statistics are similar to those reported by Masulis et al. (2007). In terms of bidder characteristics, our sample of firms are larger than Masulis et al. (2007) with a mean (median) of $12 ($2.3) billion, compared to $9 (1.99) billion reported by them. Leverage is also higher at 24% (versus 15%), but Tobin's q is lower at 1.83 (versus 1.98).

Insert Table II about here

The results in Table III indicate that high-ATP or 'dictatorship' firms (GIM≥10 or 14) earn lower abnormal returns than low-ATP or 'democracy' firms (GIM≤9 or 5). Moreover, high-ATP firms have significantly lower mean and median EWCARs than low-ATP firms across all governance indices and ATP sorts, confirming Masulis et al. (2007). More noteworthy, however, are the dollar ($AR) returns, value-weighted (VWCAR) returns, and abnormal return per-dollar-spent ($AR/TV). The latter indicate that high-ATP firms lose about 9 cents per dollar invested, whereas low-ATP firms gain about 3 cents per dollar invested, suggesting a stronger size-effect for firms with more ATPs. However, the losses for high-ATP firms are not statistically significant, again suggesting possible hubris and overpayment, as opposed to value destruction. While we control for acquirer size in our cross-sectional regressions using book and market value definitions, we also show later in the paper that firm size alone explains a large part of the observed ATP effect.

Insert Table III and IV about here

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[6] Restricting the sample to the same time-period (1990-2003) as Masulis et al. (2007) gives an EWCAR of 0.21%, which is similar to the 0.215% reported by them.

Table IV reports descriptive statistics for variables sorted by governance index. We also include some new variables (see Appendix for definitions), which we will use later in our modified regression model. Firms with more ATPs are generally larger in size, are less likely to be overvalued (PRIV) and have lower growth options (Tobin's q). Surprisingly, takeover premiums are also significantly lower for high-ATP firms, although as we will see later in the paper, it is not the absolute size of the premium alone that signals hubris, but its correlation with announcement returns. High-ATP firms also have higher leverage, and are more likely to be involved in several deals (serial), which has been used in prior literature as a measure of overconfidence and hubris (Fuller et al. (2002)). The Pearson correlation matrix in Table V confirms the negative correlation between acquirer returns and governance indices. As expected, firm size, overvaluation (PRIV) and premium are all negatively correlated with returns. Also of interest is the correlation between our overvaluation measure (PRIV) and Tobin's q, which at only 22%, suggests that PRIV and q capture different aspects of a firm's value, which we discuss further in Section III.

Insert Table V and VI about here

Table VI reports the regression results for the Masulis et al. (2007) baseline model, which tests whether the ATP effect is robust after controlling for several firm and deal characteristics. The results show that all three governance indices have negative and significant coefficients and the models have similar R^2 to those reported by Masulis et al. (2007). Further, free cash flow, leverage and tech have positive significant coefficients.[7] Masulis et al. (2007) finds these coefficients positive, but insignificant. The difference arises because the time-series used in this paper is longer by 2 years. Using a similar sample to theirs (i.e., 1990 to 2003) produces identical results. Table VI also reports the results for a reduced-form regression, including only the governance indices and firm size. The results provide strong evidence that the ATP effect can largely be explained by the well documented size-effect in acquirer returns (Moeller et al. (2004) with only the BCF index

[7] The positive and significant sign on free cash flow is opposite to that predicted by Jensen's (1986) theory. This is because the inclusion of ATPs may also proxy for possible agency costs related to free cash flow, so the free cash flow variable reflects profitability, which is predicted to be positively correlated with returns.

remaining significant.[8] We suspect that firm size captures, albeit imperfectly, possible hubris and overpayment by high-ATP firms, which is consistent with Moeller's et al. (2004) observation that larger firms are more likely to suffer from hubris. We examine this in greater detail in the next section.

III. Explaining the ATP effect

The results so far suggest that firms with fewer ATPs generate higher announcement returns, even after controlling for firm and deal characteristics. Masulis et al. (p.1,853, 2007) interpret their results as suggesting that protection from the takeover market (more ATPs) encourages 'empire-building acquisitions that destroy shareholder value'. However, while high-ATP firms generate negative returns, they are not statistically different from zero, which at best indicates possible hubris and overpayment as opposed to value destruction. We hypothesize that firms with more ATPs face less discipline from the takeover market and through proxy contests, which may encourage managerial hubris. Hubris is argued to cause overconfidence and over-payment (Roll (1986)), so we expect premium to be negatively correlated with acquirer returns, which reflects the transfer of wealth from acquirer to target shareholders.

A. Is Premium an Omitted Variable?

The literature presents two measures of premium. First, some papers stipulate that premium is the target's cumulative abnormal return (CAR) from a date prior to the announcement to a date after the announcement (Comment and Schwert (1995), Schwert (2000), Field and Karpoff (2002)). Second, others define premium as the transaction value over the target's market capitalization prior to the announcement (Byrd and Hickman (1992), Datta et al. (2001), Dong et al. (2006), Heron and Lie (2006)). This paper uses the second method because bidder and target abnormal returns are

[8] It is not surprising that firm size does not explain away the ATP effect using the BCF-index since the descriptive statistics reported in Table IV indicate no significant difference in size, whereas for the GIM and CBOARD indices high-ATP acquirers are significantly larger than low-ATP suggesting a stronger size-effect.

endogenous (i.e., simultaneously determined). Thus, including target CARs in an OLS regression would induce inconsistent estimates, which the second definition avoids.

In calculating premium, target market value is measured over various days prior to the takeover announcement date, including the day prior, 3, 11 and 21 days prior – giving a total of 4 premium measures. We also source target market value data from different sources, including SDC and CRSP. Target market value is defined as the price on each of the four days times the number of shares outstanding at the accounting year-end. On comparing target price on each day across the two databases we find no significant differences in reported values. For example, the mean (standard deviation) target price for 3 days prior to the announcement date reported by SDC is $21.45 ($30.71) compared to $21.50 ($29.63) reported by CRSP. SDC, however, does not report the number of shares outstanding, so we use CRSP values. This gives two measures of target market value (CRSP and SDC using CRSP shares outstanding) with four measurement dates (t-1, t-3, t-11, t-21) giving a total of eight premium measures. Our findings remain largely unchanged when we use alternative premium measures, so we only report the results for the 3-day premium values measured using CRSP target market values.

Insert Table VII about here

Table VII reports the results for the Masulis et al. (2007) baseline model including premium and a reduced-form model including only governance indices and premium. The results indicate that premium significantly reduces acquirer returns and renders the ATP effect insignificant.[9] Noteworthy also is the impact that premium has on firm size, which is now insignificant. This result is consistent with Moeller et al. (2004) who find some evidence that larger acquirers pay higher premiums, although the size effect remains in their regression after controlling for premium.

One concern with including premium in the regression is that it is likely to be endogenous with respect to other variables in the regression model (e.g., firm size, method of payment) and also omitted variables from the regression. The first issue does not concern us too much since premium

[9] The result also holds when we constrain the sample to the 1990-2003 time period examined by Masulis et al. (2007).

remains negative and highly significant (and ATPs insignificant) when other controls are excluded as reported in the reduced-form regression in Table VII. The second issue is more troubling since there could be numerous omitted variables from the model that could explain both premium and acquirer returns. To attempt to alleviate this concern we return to theory as recommended by Larcker and Rusticus (2005) to guide us on additional variables that may be omitted from the model.[10] The literature suggests several variables that are correlated with acquirer returns, and that are also likely to be correlated with premium. More recently, acquirer returns have been shown to decrease with: (1) the existence of overvalued equity (Dong et al. (2006); (2) competition (Bradley et al. (1988), Lang et al. (1996), Boone and Mulherin (2003)); (3) deal friendliness (Schwert (2000)); (4) geographic-diversification (Moeller and Schlingemann (2005)); and (5) serial-acquisitions, which reflect over-confidence (Fuller et al. (2002)). Lastly, volume, which addresses pre-announcement informed trade, is predicted to increase returns since it implies that information asymmetry reduces pre-announcement stock price. Hence, takeover announcements, which reveal information, should increase prices and returns (Easley and O'Hara (2004), Botosan and Plumlee (2005)). Definitions of variables 2 to 6 are provided in Table A1 in Appendix A and Table IV provides descriptive statistics for these new variables sorted by governance index. Variable 1, overvalued equity, requires more attention and is discussed in more detail in Appendix B.[11]

Table VIII reports the results of our modified model which includes the additional variables and shows that the results remain unchanged (models 1 to 3). It is noteworthy that including premium and the additional variables appears to eliminate omitted variable bias since it renders the constants insignificant and Ramsay RESET tests find no omitted variable bias. Conversely, models that do not include premium and the new variables (i.e., those reported in Table VI and VII) have significant constants and Ramsay RESET tests detect omitted variable bias. As predicted, deal friendliness and our proxy for overvalued equity (PRIV) significantly reduce acquirer returns. The

[10] Naturally, this implies that the underlying structural equation is poorly specified, at least at the operational level.

[11] Following Moeller et al. (2004), we also make some minor modifications to our proxy for firm size and free cash flow. Specifically, we replace log total assets with log market value (as the proxy for size) and scale free cash flow with market value as opposed to total assets. Moeller et al. (2004) suggests that market values influence managers' decision-making more than book values.

latter result provides some support for Jensen's (2005) agency costs theory related to overvalued equity and suggests that PRIV is a more appropriate measure of misvaluation than metrics used in prior studies, e.g., Tobin's q and price-to-book (PB). This is probably because, unlike q or price-to-book, PRIV is calculated using analyst's forecasts of earnings, so growth options should be filtered out of price.[12] Further, PRIV has been shown to predict stock returns and track firm value more accurately than either Tobin's q or PB (Lee, Myers, and Swaminathan (1999)).

Insert Table VIII about here

Model 4 in Table VIII also confirms that only firms with more ATPs are penalized for overpaying, suggesting that premium is asymmetric.[13] This indicates that hubris/overpayment is more prevalent amongst high-ATP firms, supporting our main hypothesis. This result suggests that differences in returns between low/high-ATP firms can be explained by hubris, and more importantly, firms with more ATPs do not engage in value destroying takeovers. The insignificant coefficient on premium for low-ATP firms also suggests that higher premiums paid by these firms are more likely to be motivated by synergy reasons. PRIV is also only significant for acquirers with fewer ATPs, indicating that they drive the overvalued equity effect.

B. Endogeneity concerns

One concern with using premium is that it is likely to be endogenous with respect to other variables in the regression model, including firm size, multiple bidders and method of payment. Also, there may be collinearity problems when premium is included in the model given that it is positively correlated (see Table V) with other variables, including firm size, relative size, Tobin's q and overvaluation (PRIV). To address these concerns, we test the robustness of the results to an alternative measure, 'unexplained premium', calculated using the residuals from a first-stage

[12] Note that this assumes that analyst forecasts act as perfect filters for growth, which may not be the case. Dong et al. (2006) show that adding further controls (i.e., price-to-book) to their multivariate regression model (see Table V in their paper) does not impact on the relation between PRIV and acquirer returns. We also find this to be the case in unreported results.

[13] Instead of dividing the sample into high and low-ATP groups, we also use an interaction term to capture high-ATP premium acquirers (high ATP dummy multiplied by premium) and arrive at the same conclusions.

regression of premium on variables that have commonly been used in the literature (Schwert (2000), Officer (2005)) to explain premium, including the governance indices. This has the effect of 'stripping out' factors within the model that are correlated with or determine premium, and so helps to address some of the endogeneity and collinearity issues.

Table IX reports the results from these regressions and shows that several variables are significantly and positively related to premium, including firm size, relative deal size, Tobin's q and the level of takeover activity within an industry. The negative and significant correlation with both governance indices confirms the descriptive statistics reported in Table IV for premium. The models do a reasonable job at explaining premium with R^2 of about 24%, which is significantly higher than similar models reported by prior research (for example, Moeller et al. (2004) reports an R^2 of 4%). More importantly, the results in Table X indicate that our findings remain unchanged when we use this alternative measure, indicating that differences in premium mitigate the ATP effect.[14] Consistent with the results reported in model 4 of Table VIII, only high-ATP firms get penalized for overpaying, confirming our hypothesis that ATPs give rise to a 'hubris effect'.

Insert Table IX and X about here

IV. Other Econometric and Model Specification Issues

This section examines the impact, if any, of several econometric issues that may impact on the robustness of our results. We examine several model based tests, including examining the impact of outliers through the use of quantile regressions, and several specification-type tests.

A. Model Based Sensitivity Tests

The results so far suggest that once managerial hubris is controlled for, ATPs have no impact on the *average* acquiring firm. This, however, does not mitigate the possibility that ATPs impact on the returns of certain firms, for example, at the tails of the distribution, even after

[14] In unreported results, we also include the predicted values from the premium regression (i.e., what acquirers should have paid) and find similar results to those reported in Table X.

controlling for managerial hubris. To address this possibility, we re-estimate our modified model reported in Table VIII using quantile regressions (Koenker and Basset (1978)). Quantile regressions allow for the relaxation of the normality assumption related to the distribution of the errors in OLS and show whether outliers impact on the reported results. The results reported in Table XI indicate that ATPs have no significant impact on acquirer returns in 8 of the 9 quantile regressions. While there is some evidence of a significant effect at the 0.7 quantile, it is only significant at the 10% level. On the other hand, premium is significant and negative across 8 of the 9 quantiles, with only the 0.9 quantile of acquirer returns appearing insignificant. Interestingly, premium has a larger impact at lower levels of the distribution of acquirer returns. This is consistent with our expectations in that acquirers who perform worse (i.e., generate lower returns) in takeovers get penalized more for overpaying. The results also indicate that the negative effect of overvalued equity (PRIV) is more pronounced in the upper tails, although remains significant in 6 out of the 9 quantiles.

The second model-based test we employ is principal components regressions to ensure that collinearity does not induce the hubris effect. We estimate a regression of acquirer abnormal returns on each governance index and six factors that reflect the other control variables. In unreported results, ATPs are negative and significant before controlling for managerial hubris (premium), and are insignificant thereafter. While these results are economically meaningless since the individual variables do not represent any underlying economic theory (Greene (2003)), they at least demonstrate that the results are robust to multicollinearity concerns.

B. Other Specification Tests

We conduct a further battery of robustness tests to ensure the results are not sensitive to variable definitions. First, the results are robust to abnormal return specification. Abnormal returns calculated using a market model may yield inconsistent market model parameters due to thin trading and non-synchronous trading (Brown and Warner (1985)). The paper tests sensitivity using two alternative specifications. First, we estimate Bollserslav's (1986) GARCH (1,1) model, which controls for auto-regressive conditional heteroskedasticity and time-varying volatility. Second, we

estimate an EGARCH (1,1) model, whose generalized error distribution controls for skewness in GARCH(1,1) residuals (as Kramer (2001) and Hilliard and Savickas (2002) suggest). All abnormal return specifications produce the observed ATP effect, which becomes insignificant when we include premium or unexplained premium. Further, the results are robust to alternative event windows (-1,0), (0,1), (-1,1), (-2,2), and (-3,3).

The results are also not sensitive to sample selection. The findings hold in (1) the Masulis et al. (2007) sample period, from 1990-2003; (2) the Gompers et al. (2003) and the Lehn et al. (2007) sample period from 1990-1999; (3) in models that only include observations in years that the IRRC publishes governance reports (1990, 1993, 1995, 1998, 2000, 2002, 2004); and (4) a sample that uses governance indices from the following IRRC report for the years in between IRRC reports.

The results are not sensitive to independent variable specification. Our findings hold in models that (1) replace the log of total assets with the log market value of assets as a measure of firm size; (2) replace free cash flow with Compustat's operating cash flow (item308); (3) divide leverage by market value of assets as opposed to book value of total assets; and (4) include a Delaware incorporation dummy.

The results are also not due to large loss deals (Moeller et al. (2005)). We define large loss deals as takeovers that lose $1 billion in 2005 dollars (following Moeller et al. (2005)). The sample contains 161 large loss deals when measuring abnormal returns using OLS. This exceeds the number of large loss deals in Moeller et al (2005) since this paper inflates $ARs to 2005 dollars (rather than 2002 dollars). Large loss deals lose $688 billion on aggregate and bidders lose $386 billion overall. Excluding large loss deals, bidders gain $302 billion on average. Arguably, entrenched managers are more likely to make large loss deals, which might drive the ATP and hubris effect. Nonetheless, the results still hold in samples that exclude large loss deals. More importantly, the existence of large loss deals does not drive hubris and overpayment.

V. Discussion of the Results

The results show that observed ATP effect reported by Masulis et al. (2007) persists in our extended sample. Controlling for premium, which we use to proxy for hubris, eliminates the ATP effect implying that it is due to managerial hubris, and not agency conflicts. The 'hubris effect' is robust to firm and deal characteristics and several econometric issues. More importantly, the results suggest that ATPs do not cause value destruction once hubris is accounted for. This complements prior findings that ATPs do not destroy value by entrenching managers (Comment and Schwert (1995), Core et al. (2005), Herron and Lie (2006), Bates et al. (2008)), reduce operating performance (Danielson and Karpoff (2005)) or lower firm value (Core et al. (2005), Lehn et al. (2007)).

Below we further discuss some of the more salient results from our empirical research, in particular, how they relate to other research related to overvaluation and hubris.

A. Overvaluation

Our findings suggest that PRIV is a better measure of overvaluation (than Tobin's q) for capturing agency conflicts, with a negative and highly significant correlation with acquirer returns. We show that the overvaluation effect is more pronounced in low-ATP firms, suggesting that they probably take advantage of overvalued equity to acquire assets more cheaply, which is consistent with Shleifer and Vishny (2003). The related literature provides some clues as to whether our results for PRIV are more consistent with agency costs of overvalued equity (Jensen (2005)) or managers simply exploiting overvalued equity to acquire assets at a lower cost. We know from the descriptive statistics in Table IV that not only do low-ATP firms pay higher premiums, based on the GIM index they are also more likely to use stock as the method of consideration. If target management are aware that bidder stock is overvalued, then stock is less attractive, which may increase the pressure on the bidder to offer a higher premium (Dong et al. (2006)). If target firms are also overvalued, this provides an additional incentive for target managers to accept bidder overvalued stock so they can 'cash-out' (Shleifer and Vishny (2003)). On the other hand, the Q-

theory suggests that bidders with higher growth options (Tobin's q or PB) are in a better position to generate higher gains when matched with undervalued targets. Under these circumstances, the bidder may be willing to share more of the gains with the target, which may explain the higher premiums paid. The results in Table IV are also consistent with this theory, since low-ATP acquirers have significantly higher growth options, as measured using Tobin's q. However, higher growth options do not drive the higher premiums paid by low-ATP acquirers. In unreported results, re-estimating the premium regressions for low/high-ATP groups, Tobin's q becomes insignificant, whereas PRIV is positive and significant, confirming that overvalued equity and not the q-theory drives the higher premiums paid by low-ATP acquirers.

B. Hubris and Overpayment

The discussion above suggests that overvalued equity reduces returns to low-ATP firms and, further, causes them to pay higher premiums compared to high-ATP firms. Interestingly, however, only high-ATP firms get penalized for overpayment – that is, the correlation between premium and acquirer returns is only significant and negative for high-ATP acquirers. So, why do high-ATP firms get penalized for paying lower premiums compared to low-ATP firms? Clearly, the market perceives the level of premium paid by high-ATP acquirers as too high given the target – that is, the 41-46% median premium paid by high-ATP firms is viewed excessive given the level of synergies in the deal. Given the asymmetric nature of premium, it also suggests that the market penalizes managers with hubris motivations. We also suspect that the market also penalizes high-ATP firms because premium also captures the well documented size-effect in acquirer returns. Table IV shows that high-ATP firms are generally larger than low-ATP firms, and further, size becomes insignificant once premium is included in the model.

VI. Conclusions

This paper shows that the ATP effect can be explained by an omitted variable that captures managerial hubris. While Masulis et al. (2007) argue that the ATP effect arises because ATPs entrench management, which causes agency conflicts and value-destroying takeovers, this contradicts recent findings that ATPs do not destroy shareholder wealth. This is likely to be of some regulatory interest since it removes the impetus to legislate against anti-takeover provisions on the grounds that they encourage value destruction in investment decisions. The results also show that price-to-residual-income-value (PRIV) has some merit as proxy for overvaluation, against alternative metrics typically used in the literature, such as Tobin's q and price-to-book. We show that PRIV significantly reduces abnormal returns after controlling for ATPs, bidder and deal characteristics. By contrast, Tobin's q, which captures both growth and overvaluation, does not significantly affect abnormal returns when included in the Masulis et al. (2007) baseline model. This supports Lee et al's (1999) finding that PRIV best predicts future stock price and tracks firm value better than metrics commonly used by analysts. That both hubris and overvaluation significantly reduce CARs also indicates that models should control for both factors when assessing the relation between governance and acquirer returns.

Appendix A
Table AI: Variable Definitions

Variable	*Definition*
Abnormal Returns and Anti-takeover Provisions	
CAR	5-day cumulative abnormal return (%), calculated using the market model. The paper estimates market model parameters over days (-210,-11) using an OLS model.
GIM	Gompers et al. (2003) governance index; aggregates 24 anti-takeover provisions.
BCF	Bebchuk et al. (2004) entrenchment index; aggregates 6 core anti-takeover provisions.
CBOARD	Dummy: 1 if bidder has a staggered board, 0 otherwise
Bidder Characteristics	
Firm size	Log of total assets (item6) or log of market value (number of shares outstanding x price 11 days prior to announcement)
Leverage	Book value of debts (item34 + item9) over total assets (item6)
Free cash flow	Operating income before depreciation (item13) – interest expenses (item15) – income taxes (item16) – capital expenditures (item128) over book value of total assets (item6): (item13 – item15 – item16 – item128)/ item6
Tobin's q	Market value of assets over book value of assets: (item6 – item60 +item25 x item199)/item6
Price-to-residual-income-value (PRIV)	Price 35 days before announcement over residual income valuation (see Appendix B for more details).
Stock run-up	Buy-and-hold-return over days (-210,-11) using the CRSP value-weighted index.
Volume	Abnormal volume over days (-30,-11).
Deal Characteristics	
Transaction value	Dollar value of deal reported by SDC Platinum
Public	Dummy: 1 for public targets, 0 otherwise
Private	Dummy: 1 for private targets, 0 otherwise
Subsidiary	Dummy: 1 for subsidiary targets, 0 otherwise
Cash	Dummy: 1 for deals financed with cash only, 0 otherwise
Stock	Dummy: 1 for deals financed with stock, 0 otherwise
Conglomerate	Dummy: 1 where bidder and target are in a different Fama-French industry, 0 otherwise
Relative Size	Transaction value over bidder's market capitalization 11 days before the announcement date.
Industry M&A	Aggregate value of corporate control transactions over the aggregate book value of assets (item 6) for each prior year and Fama-French industry
Friendly	Dummy: 1 for friendly deals, 0 otherwise
Serial	Dummy: 1 for acquirers involved in 5 or more deals
Competed	Dummy: 1 for competed deals, 0 otherwise
Cross border	Dummy: 1 for cross-border deals
Premium	Payment exceeding target's price 3 days before the takeover announcement

Table AI: Variable Definitions – Continued

Variable	***Definition***
Tech	Dummy: 1 for high-tech acquisitions, 0 otherwise. An acquisition is high-tech if both the bidder and target are technology firms. Following Loughran and Ritter (2004), Faccio and Masulis (2005), and Masulis, et al (2006), tech firms involve computer hardware {SIC codes 3571, 3572, 3575, 3577, 3578}; communications equipment {3661,3663,3669}; electronics {3671, 3672, 3674, 3675, 3677, 3678, 3679}; navigation equipment {3812}; measuring and controlling devices {3823, 3825, 3826, 3827, 3829}; medical instruments {4812, 4813}; telephone equipment {4899} and software {7371, 7372, 7373, 7374, 7375, 7378, 7379}.
Tech x Relative size	Dummy: Interacts relative deal size and tech

Appendix B: Implementing the Residual Income Valuation Model

This paper calculates intrinsic value using Ohlson's (1995) model, as applied in Lee et al. (1999) and Dong et al. (2006). Denote the residual-income-value (RIV) for firm i at time t RIV_{it}. Equation (A1) expresses RIV_{it} as an infinite sum. RIV_{it} computes intrinsic value as book value of equity (B) plus the discounted-sum of the predicted future residual income:

$$RIV_{it} = B_{it} + \sum_{n=1}^{\infty} \frac{FROE_{t+n} - r_{e,it}}{\left(1 + r_{e,it}\right)^{t}} \tag{A1}$$

The paper utilizes a parsimonious 3-year forecast horizon since an infinite sum is impractical and forecast horizons exceeding 3 years do not significantly improve RIV quality (Lee et al. (1999)). Equation (A2) specifies the 3-year model:

$$\begin{aligned} RIV_{it} &= B_{it} + \frac{(FROE_{t+1} - r_{e,i,t+1})B_{i,t}}{\left(1 + r_{e,i,t+1}\right)^{t+1}} + \frac{(FROE_{t+2} - r_{e,i,t+2})B_{i,t+1}}{\left(1 + r_{e,i,t+2}\right)^{t+2}} + TV \\ TV &= \frac{(FROE_{t+3} - r_{e,i,t+3})B_{i,t+2}}{\left(1 + r_{e,i,t+2}\right)^{t+2} r_{e,i,t+3}} \end{aligned} \tag{A2}$$

where:

B_{it} = Most recent book value of equity
$B_{i,t+n}$ = Forecasted clean-surplus book value of equity
r_e = Cost of equity
$FROE_{i,t+n}$ = Forecasted ROE

Book value of equity, the cost of equity and the forecasted ROE and EPS are discussed further below.

A. Book value of equity:

B_{it} is the most recent book value of equity preceding the takeover (Compustat item 60). $B_{i,t+n}$ is the future book value in year n. Future book values follow clean-surplus accounting, which

computes future book value as the sum of current book value and earnings less dividends: $B_{t+1} = B_t + FEPS_{t+1} - FDPS_{t+1}$. $FDPS_{t+n}$ is the forecast dividends per share in year n: Mathematically, it is the forecasted EPS multiplied by the current dividend payout ratio (PO): $FDPS_{i,t+n} = FEPS_{i,t+n} \times PO$. If PO is negative (due to negative earnings), following Dong et al. (2006) the paper sets payout ratio as *DPS*/(0.06 x *total assets*). This assumes that earnings are 6% on average of total assets.

B. Cost of equity

RIV requires a discount rate commensurate with the riskiness of cash flows to equity holders. The cost of equity is determined using the Capital Asset Pricing Model (CAPM), which comprises of a time-varying riskless rate and a time-varying firm-specific risk premium: $k_e = r_f + \beta\left(r_m - r_f\right)$; where r_f is the riskless rate (monthly-annualized T-Bill rate); r_m, the market return and β the firm's sensitivity to systematic risk. The risk premium is time varying and comprises of the annualized monthly market return for the previous 30 years (following Dong et al. 2006) and the contemporaneous riskless rate. Market return, r_m, is the annualized monthly return on the NYSE/AMEX/NASDAQ value-weighted market portfolio (following Ang and Cheng (2003)).

C. Forecasted ROE and Earnings

RIV requires forecasts of earnings. EPS forecasts are taken from I/B/E/S. Forecast earnings are calculated as I/B/E/S EPS multiplied by I/B/E/S shares outstanding. Where I/B/E/S does not cover a firm, the paper extrapolates historical earnings using the long-term growth rate to maintain the sample size.

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TABLE I
Sample Construction by Announcement Year

Number of takeovers completed between 1990 and 2005 by acquirer market capitalization, transaction value and relative deal size. Median values for market capitalization, transaction value and relative deal size are reported in parentheses.

Year	*Number of deals*	*% of sample*	*Mean Acquirer Market Capitalization.($mil)*	*Mean Transaction Value ($mil)*	*Relative deal Size*
1990	119	3.0%	1,778	174	0.11
			(628)	(40)	(0.05)
1991	110	2.8%	2,173	205	0.15
			(892)	(68)	(0.07)
1992	124	3.1%	1,856	145	0.09
			(1,095)	(53)	(0.05)
1993	204	5.1%	2,134	157	0.10
			(1,307)	(57)	(0.04)
1994	229	5.7%	2,769	209	0.12
			(1,521)	(80)	(0.04)
1995	227	5.7%	3,224	470	0.14
			(1,230)	(92)	(0.07)
1996	237	5.9%	4,228	519	0.15
			(2,205)	(134)	(0.06)
1997	241	6.0%	6,067	549	0.15
			(2,431)	(165)	(0.07)
1998	384	9.6%	7,473	900	0.15
			(2,709)	(153)	(0.06)
1999	325	8.1%	12,094	1,389	0.18
			(2,440)	(210)	(0.07)
2000	284	7.1%	17,869	1,297	0.16
			(3,833)	(260)	(0.06)
2001	259	6.5%	9,422	812	0.12
			(2,764)	(154)	(0.05)
2002	326	8.2%	6,281	447	0.12
			(1,251)	(90)	(0.05)
2003	292	7.3%	5,793	612	0.13
			(1,614)	(109)	(0.06)
2004	341	8.5%	4,968	669	0.15
			(1,845)	(118)	(0.06)
2005	290	7.3%	10,179	1304	0.14
			(2,462)	(160)	(0.06)
Overall	3,992	100.0%	6,925	704	0.14
			(1,851)	(116)	(0.06)

TABLE II
Descriptive Statistics

Cumulative abnormal returns (CARs), governance indices (ATPs), bidder and deal characteristics. Variable definitions are given in Appendix A. Superscripts ***, **, and * denotes statistical significance using a two-tailed test at the 1%, 5%, and 10% levels, respectively.

	Mean	*SD*	*Q1*	*Median*	*Q3*
Panel A: CARs and ATPs					
Cumulative Abnormal Return (%)	0.30**	6.6	-2.9	0.1	3.5
GIM	9.42	2.71	7	9	11
BCF	2.27	1.29	1	2	3
CBOARD	0.63	0.48	0	1	1
Panel B: Bidder Characteristics					
Total assets ($mil)	12,164	54,705	769	2,362	7,961
Market value ($mil)	17,260	63,739	1,320	4,151	12,240
Tobin's q	1.829***	1.486	1.118	1.414	1.979
Price-to-residual-income-value (PRIV)	2.394**	7.241	1.025	1.604	2.657
Free cash flow to total assets	0.030**	0.088	0.015	0.030	0.066
Leverage	0.236***	0.169	0.105	0.225	0.343
Stock run-up	-0.071	0.341	-0.117	-0.038	0.017
Volume	0.082	1.390	-0.557	-0.046	0.588
Panel C: Deal Characteristics					
Public dummy	0.316***	0.465	0	0	1
Private dummy	0.366***	0.482	0	0	1
Subsidiary dummy	0.314	0.464	0	0	1
All cash dummy	0.552	0.497	0	1	1
Conglomerate dummy	0.368	0.482	0	0	1
Relative size	0.138***	0.238	0.025	0.058	0.145
Tech dummy	0.687	0.464	0	0	1
Industry M&A	0.022	0.022	0.006	0.014	0.030
Friendly dummy	0.989***	0.104	1	1	1
Competed dummy	0.019***	0.138	0	0	0
Transaction value ($mil)	704**	3,354	40	117	350
Transaction value to assets (Book)	0.129***	0.261	0.019	0.054	0.140
Transaction value to assets (Market)	0.070***	0.116	0.012	0.031	0.078

TABLE III
Announcement Abnormal Returns by Governance Index

Mean abnormal returns are calculated as the 5-day OLS market model CAR. The table reports equally-weighted (EWCAR), 2005 dollar value ($AR), value-weighted (VWCAR) and return per dollar invested ($AR/TV). Median values are in parentheses. Superscripts ***, **, and * denotes statistical significance using a two-tailed test at the 1%, 5%, and 10% levels, respectively.

	$\%EWCAR_{(-2,+2)}$	$\$AR_{(\$2005)}$	$\%VWCAR_{(-2,+2)}$	$\$AR/TV$
Panel A: GIM				
GIM≥14	-0.269	-36.277	-0.641	-0.090
	(-0.220)	(-3.861)		(-0.041)
GIM≥10	-0.044	-67.024***	-1.022	-0.093
	(-0.196)	(-1.930)***		(-0.020)
GIM≤9	0.546***	-124.927**	-1.343	0.039
	(0.379)***	(3.670)*		(0.043)***
GIM≤5	0.683	-53.222	-0.526	0.357
	(1.265)***	(11.654)***		(0.171)***
{GIM≥14}-{GIM≤5}	-0.952	16.945	-0.115	-0.447*
	(-1.486)***	(-15.515)***		(-0.211)**
{GIM≥10}-{GIM≤9}	-0.590***	57.904	0.320	-0.132
	(-0.575)***	(-5.600)***		(-0.063)***
Panel B: BCF				
BCF≥3	0.010	-75.717***	-1.297	-0.094
	(-0.135)	(-1.190)**		(-0.012)
BCF≤2	0.466***	-114.230**	-1.176	0.032
	(0.303)***	(3.785)		(0.040)***
{BCF≥3}-{BCF≤2}	-0.455**	38.513	-0.121	-0.126
	(-0.438)***	(-4.975)**		(-0.052)***
Panel C: CBOARD				
CBOARD	0.099	-126.091***	-1.787	-0.142**
NCBOARD	0.534***	-47.736	-0.501	0.174**
CBOARD - NCBOARD	-0.434*	-78.354	-1.286	-0.317***

TABLE IV
Descriptive Statistics by Governance Index

Descriptive statistics for the Masulis et al. (2007) baseline regression model and new variables, as defined in Appendix A. Median values are denoted in parentheses. Superscripts ***, **, and * denote a statistically significant difference between high and low-ATP acquirers, using a two-tailed test at the 1%, 5%, and 10% levels, respectively.

	GIM				***BCF***		***CBOARD***	
	GIM≥14	GIM≥10	GIM≤9	GIM≤5	BCF≥3	BCF≤2	CBOARD	NCBOARD
Price-to-RIV	1.877***	2.074*	3.005	5.407	2.248	2.762	2.067**	3.313
	(1.494)***	(1.494)***	(1.811)	(2.098)	(1.575)**	(1.765)	(1.607)**	(1.775)
Tobin's q	1.471***	1.640***	2.005	2.718	1.650***	1.974	1.708***	2.032
	(1.364)***	(1.364)***	(1.531)	(1.739)	(1.351)***	(1.511)	(1.376)***	(1.519)
Premium (3-day)	0.837***	0.887***	1.268	1.450	0.861***	1.254	0.956***	1.268
	(0.469)**	(0.413)**	(0.619)	(0.779)	(0.391)***	(0.619)	(0.421)***	(0.717)
Firm size	9.097	9.325***	9.083	8.908	9.162	9.251	9.277*	9.092
	(9.321)	(9.321)***	(8.949)	(8.836)	(9.302)	(9.197)	(9.403)***	(8.900)
Free cash flow	0.023***	0.023**	0.018	0.007	0.022	0.019	0.021	0.020
	(0.020)***	(0.020)***	(0.020)	(0.017)	(0.022)	(0.021)	(0.021)	(0.022)
Leverage	0.204***	0.168***	0.136	0.140	0.170***	0.137	0.167***	0.128
	(0.195)***	(0.195)***	(0.111)	(0.088)	(0.153)***	(0.115)	(0.145)***	(0.095)
Volume	-0.012	0.018	-0.011	-0.010	-0.001	0.009	-0.027	0.058
	(-0.022)	(-0.022)	(-0.062)	(-0.093)	(-0.060)	(-0.062)	(-0.079)	(-0.012)
Stock run-up	-0.031***	-0.036	-0.055	-0.150	-0.037	-0.053	-0.032**	-0.068
	(-0.026)***	(-0.026)**	(-0.036)	(-0.060)	(-0.026)	(-0.034)	(-0.022)***	(-0.042)
Industry M&A	0.023	0.019***	0.024	0.022	0.021	0.022	0.021	0.022
	(0.015)	(0.015)***	(0.015)	(0.016)	(0.014)	(0.014)	(0.014)	(0.015)
Competed	0.081	0.051	0.043	0.048	0.055	0.040	0.047	0.046
Relative size	0.278	0.194	0.209	0.237	0.199	0.203	0.204	0.197
	(0.162)	(0.162)	(0.096)	(0.141)	(0.096)	(0.093)	(0.092)	(0.099)
Tech	0.767	0.724***	0.808	0.730	0.744	0.781	0.747*	0.794
Tech x Rel.size	0.213	0.135	0.155	0.182	0.143	0.147	0.144	0.147
	(0.096)	(0.096)**	(0.060)	(0.070)	(0.049)	(0.056)	(0.049)	(0.059)
Conglomerate	0.395	0.314*	0.266	0.270	0.297	0.285	0.284	0.303
Cross-border	0.012	0.003	0.009	0.032	0.008	0.005	0.006	0.007
Friendly	0.965*	0.973	0.980	1.000	0.979	0.973	0.975	0.978
Serial	0.581***	0.527***	0.436	0.222	0.539***	0.434	0.539***	0.387
Cash	0.337	0.295	0.285	0.254	0.278	0.301	0.286	0.298

TABLE V
Pearson Correlation Matrix

The table reports Pearson pair-wise correlations for the sample of 3,992 completed takeovers between 1990 and 2005. Superscript * denotes significance at the 5% level using a two-tailed test.

	CARs	GIM	BCF	CBOARD	Size	Tobin's q	PRIV	Premium	FCF	Leverage	Run-up	Industry M&A	Relative size	Conglom-erate	Competed	Cross-border	Friendly
CARs	1																
GIM	-0.046*	1															
BCF	-0.047*	0.708*	1														
CBOARD	-0.037*	0.499*	0.640*	1													
Size	-0.136*	0.149*	0.042*	0.062*	1												
Tobin's q	-0.013	-0.160*	-0.149*	-0.105*	0.069*	1											
PRIV	-0.090*	-0.047*	-0.040*	-0.019	0.092*	0.216*	1										
Premium	-0.112*	-0.147*	-0.157*	-0.116*	0.226*	0.247*	0.059*	1									
FCF	0.030	0.088*	0.043*	0.032*	0.081*	0.044*	-0.004	-0.131*	1								
Leverage	0.056*	0.127*	0.116*	0.085*	0.037*	-0.344*	-0.098*	-0.120*	-0.183*	1							
Run-up	-0.012	0.068*	0.055*	0.059*	0.100*	-0.023	0.051*	-0.090*	0.039*	0.024	1						
Industry M&A	-0.003	-0.062*	-0.076*	-0.056*	-0.124*	0.174*	0.063*	0.109*	0.023	-0.131*	-0.065*	1					
Relative Size	0.001	0.018	0.022	0.003	-0.109*	-0.096*	-0.035*	0.164*	-0.040*	0.270*	0.004	-0.060*	1				
Conglom-erate	0.028	0.049*	0.013	-0.009	-0.110*	0.011	-0.003	0.020	0.073*	-0.006	-0.001	0.111*	-0.064*	1			
Competed	-0.028	0.021	0.013	-0.001	0.028	-0.005	-0.003	0.052	0.015	0.024	-0.035*	0.023	0.101*	-0.032*	1		
Cross-border	0.042*	-0.061*	-0.046*	-0.050*	0.015	-0.028	-0.009	-0.015	0.001	0.017	-0.006	0.016	-0.012	-0.006	-0.012	1	
Friendly	-0.025	-0.015	0.007	0.003	-0.042*	-0.009	-0.000	-0.086*	-0.022	0.004	0.005	-0.024	-0.055*	0.001	-0.212*	0.009	1
Serial	-0.014	0.133*	0.075*	0.086*	0.248*	0.020	0.003	-0.058	0.060*	-0.003	0.003	-0.004	-0.113*	-0.027	-0.008	-0.041*	-0.005

TABLE VI

Masulis et al. (2007) Baseline Model and a Reduced-Form Model

The Masulis et al. (2007) model is replicated using a sample of 3,992 acquisitions from 1990 to 2005. The 5-day OLS market model CAR (in percentages) is the dependant variable. Governance represents the GIM, BCF, and CBOARD governance indices. Other variable definitions are defined in Appendix A. Standard errors adjusted for heteroskedasticity and acquirer clustering are denoted in parentheses. Superscripts ***, **, * denotes significance at 1%, 5% and 10%, respectively. All regressions control for year fixed effects (not reported).

	Baseline Model			**Reduced-Form Model**		
	GIM	**BCF**	**CBOARD**	**GIM**	**BCF**	**CBOARD**
Governance	-0.099**	-0.238***	-0.411*	-0.059	-0.182**	-0.351
	(0.040)	(0.085)	(0.239)	(0.041)	(0.085)	(0.244)
Log total assets	-0.258***	-0.275***	-0.280***	-0.441***	-0.446***	-0.451***
	(0.076)	(0.077)	(0.077)	(0.067)	(0.067)	(0.068)
Tobin's q	0.015	0.012	0.024			
	(0.105)	(0.103)	(0.104)			
Free cash flow	3.489*	3.387*	3.325*			
	(2.067)	(2.050)	(2.043)			
Leverage	3.213***	3.256***	3.179***			
	(1.064)	(1.066)	(1.064)			
Stock run-up	-0.062	-0.054	-0.061			
	(0.558)	(0.557)	(0.553)			
Industry M&A	-1.505	-1.845	-1.822			
	(5.835)	(5.802)	(5.830)			
Relative size	1.407	1.422	1.441			
	(1.017)	(1.014)	(1.010)			
Tech	0.464*	0.467*	0.504*			
	(0.278)	(0.280)	(0.280)			
Tech × Relative size	-2.125*	-2.171*	-2.206*			
	(1.272)	(1.270)	(1.269)			
Conglomerate	-0.002	-0.022	-0.031			
	(0.228)	(0.229)	(0.229)			
Public cash	-1.824***	-1.795***	-1.819***			
	(0.650)	(0.647)	(0.648)			
Public stock	-4.152***	-4.098***	-4.128***			
	(0.596)	(0.593)	(0.594)			
Private cash	-1.640***	-1.606***	-1.621***			
	(0.597)	(0.595)	(0.596)			
Private stock	-1.706***	-1.645***	-1.638***			
	(0.601)	(0.599)	(0.599)			
Subsidiary cash	-1.018*	-0.995*	-1.016*			
	(0.566)	(0.564)	(0.565)			
Constant	4.539***	4.250***	3.997***	4.315***	4.211***	4.055***
	(1.062)	(1.024)	(1.013)	(0.684)	(0.597)	(0.576)
No. of observations	3,992	3,992	3,992	3,992	3,992	3,992
R^2	6.44%	6.50%	6.38%	1.33%	1.40%	1.34%

TABLE VII

Masulis et al. (2007) Baseline Model with Premium and a Reduced-Form Model

The Masulis et al. (2007) baseline model is estimated with our proxy for hubris (Premium) using a sample of 1,128 acquisitions from 1990 to 2005. The 5-day OLS market model CAR (in percentages) is the dependant variable. Governance represents the GIM, BCF, and CBOARD governance indices. Premium is the takeover premium, calculated as the transaction value over the target's price 3 days prior to the takeover announcement. High-ATP acquirers have a GIM≥10 or BCF≥3. Low-ATP acquirers have a GIM≤9 or BCF≤2. Other variable definitions are defined in Appendix A. Standard errors denoted in parentheses are adjusted for heteroskedasticity and acquirer clustering. Superscripts ***, **, * denotes significance at 1%, 5% and 10%, respectively. All regressions control for year fixed effects (not reported).

	Baseline Model + Premium			**Reduced-Form Model**		
	GIM	**BCF**	**CBOARD**	**GIM**	**BCF**	**CBOARD**
Governance	-0.096	-0.161	-0.265	-0.031	-0.142	-0.240
	(0.067)	(0.132)	(0.422)	(0.069)	(0.132)	(0.413)
Premium	-0.417**	-0.413**	-0.402**	-0.551***	-0.564***	-0.551***
	(0.165)	(0.165)	(0.166)	(0.155)	(0.155)	(0.156)
Log total assets	0.194	0.171	0.179			
	(0.145)	(0.146)	(0.148)			
Tobin's q	0.375**	0.375**	0.379**			
	(0.171)	(0.170)	(0.171)			
Free cash flow	5.681	5.380	5.360			
	(5.252)	(5.268)	(5.264)			
Leverage	5.703***	5.663***	5.599***			
	(1.801)	(1.797)	(1.803)			
Stock run-up	-0.200	-0.197	-0.206			
	(1.061)	(1.061)	(1.052)			
Industry M&A	4.314	3.999	4.149			
	(11.459)	(11.428)	(11.522)			
Relative size	-1.283	-1.244	-1.254			
	(1.409)	(1.424)	(1.421)			
Tech	-0.104	-0.054	-0.056			
	(0.537)	(0.535)	(0.536)			
Tech × Relative size	-0.781	-0.845	-0.833			
	(1.694)	(1.707)	(1.706)			
Conglomerate	-0.030	-0.069	-0.069			
	(0.424)	(0.426)	(0.425)			
Cash	2.771***	2.760***	2.765***			
	(0.448)	(0.447)	(0.447)			
Constant	-3.979**	-4.283**	-4.610***	-0.729	-0.686*	-0.874**
	(1.803)	(1.736)	(1.662)	(0.745)	(0.414)	(0.376)
No. of observations	1,128	1,128	1,128	1,128	1,128	1,128
R^2	10.39%	10.34%	10.27%	1.27%	1.34%	1.29%

TABLE VIII
The Modified Model

The modified model is estimated using a sample of 1,124 acquisitions from 1990 to 2005. The 5-day OLS market model CAR (in percentages) is the dependant variable. Governance represents the GIM, BCF, and CBOARD governance indices. Premium is the takeover premium, calculated as the transaction value over the target's price 3 days prior to the takeover announcement. High-ATP acquirers have a GIM≥10 or BCF≥3. Low-ATP acquirers have a GIM≤9 or BCF≤2. Other variable definitions are defined in Appendix A. Standard errors denoted in parentheses are adjusted for heteroskedasticity and acquirer clustering. Superscripts ***, **, * denotes significance at 1%, 5% and 10%, respectively. All regressions control for year fixed effects (not reported).

Model	(1)	(2)	(3)	(4)			
	GIM	*BCF*	*CBOARD*	*Low-ATP*		*High-ATP*	
				GIM	*BCF*	*GIM*	*BCF*
Governance	-0.099	-0.194	-0.334	0.070	-0.065	0.055	-0.235
	(0.068)	(0.133)	(0.413)	(0.191)	(0.342)	(0.144)	(0.332)
Log market value	0.094	0.067	0.081	0.083	0.238	0.024	-0.179
	(0.154)	(0.155)	(0.155)	(0.218)	(0.184)	(0.204)	(0.244)
Tobin's q	0.509***	0.508***	0.510***	0.507**	0.375**	0.602***	0.911***
	(0.156)	(0.155)	(0.157)	(0.208)	(0.166)	(0.229)	(0.310)
Price-to-RIV (PRIV)	-0.089***	-0.088***	-0.088***	-0.092***	-0.085***	-0.067	-0.173*
	(0.027)	(0.027)	(0.028)	(0.027)	(0.027)	(0.171)	(0.096)
Premium	-0.402**	-0.399**	-0.388**	-0.254	-0.164	-0.488**	-0.841***
	(0.160)	(0.160)	(0.161)	(0.225)	(0.205)	(0.225)	(0.250)
Free cash flow	9.871	9.425	9.238	15.309	15.118	6.835	-6.562
	(8.108)	(8.141)	(8.112)	(10.667)	(10.164)	(10.750)	(14.439)
Leverage	6.086***	6.067***	5.998***	7.586***	7.097***	5.397**	4.881**
	(1.782)	(1.779)	(1.788)	(2.833)	(2.563)	(2.420)	(2.375)
Stock run-up	-0.092	-0.081	-0.093	-0.991	-0.273	3.662**	-0.408
	(1.039)	(1.041)	(1.032)	(0.978)	(1.204)	(1.539)	(1.996)
Industry M&A	0.744	0.439	0.722	5.125	15.379	-13.109	-12.921
	(11.319)	(11.278)	(11.338)	(17.017)	(16.454)	(14.190)	(14.953)
Relative size	-1.710	-1.681	-1.685	-0.358	-0.999	-5.125***	-4.520**
	(1.378)	(1.392)	(1.387)	(1.791)	(1.664)	(1.593)	(1.852)
Tech	0.065	0.114	0.110	0.128	-0.217	-0.297	0.009
	(0.555)	(0.552)	(0.553)	(1.024)	(0.820)	(0.615)	(0.707)
Tech × Relative size	-0.468	-0.530	-0.516	-1.207	-0.565	1.965	1.609
	(1.661)	(1.672)	(1.670)	(2.159)	(2.154)	(2.098)	(2.265)
Conglomerate	0.100	0.060	0.059	0.780	0.664	-0.510	-0.433
	(0.419)	(0.423)	(0.421)	(0.677)	(0.611)	(0.562)	(0.622)
Cash	2.598***	2.580***	2.591***	2.420***	2.547***	2.633***	2.634***
	(0.442)	(0.441)	(0.442)	(0.717)	(0.653)	(0.575)	(0.600)
Competed	-0.354	-0.342	-0.372	0.606	0.507	-0.916	-0.839
	(0.940)	(0.937)	(0.941)	(1.551)	(1.296)	(1.229)	(1.375)
Volume	0.118	0.124	0.117	0.192	0.177	0.028	0.083
	(0.201)	(0.201)	(0.200)	(0.280)	(0.264)	(0.232)	(0.246)
Cross-border	2.842	3.015	2.968	1.852	3.948	6.874**	3.753
	(1.931)	(1.899)	(1.920)	(2.428)	(2.776)	(2.747)	(2.536)
Friendly	-2.602**	-2.585**	-2.582**	-1.727	-2.600	-3.372**	-2.321
	(1.225)	(1.227)	(1.228)	(2.016)	(1.748)	(1.483)	(1.825)
Serial	-0.233	-0.243	-0.255	-0.442	-0.768	-0.111	0.403
	(0.376)	(0.378)	(0.372)	(0.619)	(0.548)	(0.456)	(0.488)
Constant	-0.554	-0.766	-1.190	-3.777	-3.117	0.097	2.435
	(2.237)	(2.189)	(2.107)	(3.573)	(2.829)	(3.283)	(3.629)
No. of observations	1,124	1,124	1,124	537	594	587	530
R^2	11.82%	11.82%	11.72%	12.95%	13.29%	16.19%	16.80%

TABLE IX
Unexplained premium regression

Premium is the transaction value over the target's price 3 days prior to the takeover announcement. Variable definitions are given in Appendix A and B. Standard errors adjusted for heteroskedasticity and acquirer clustering are denoted in italics. Superscripts ***, **, * denotes significance at 1%, 5% and 10%, respectively. All regressions control for year fixed effects (not reported).

	GIM	*BCF*
Governance	-0.052***	-0.092***
	(0.015)	(0.028)
Log market capitalization	0.269***	0.257***
	(0.030)	(0.030)
Toehold	0.010	0.010
	(0.011)	(0.011)
Tobin's q	0.127***	0.127***
	(0.040)	(0.040)
Price-to-RIV (PRIV)	-0.006	-0.006
	(0.011)	(0.011)
Free cash flow	-6.010***	-6.279***
	(1.243)	(1.272)
Leverage	-1.213***	-1.243***
	(0.399)	(0.391)
Volume	-0.036	-0.033
	(0.031)	(0.031)
Stock run-up	-0.378*	-0.376*
	(0.201)	(0.201)
Industry M&A	5.974***	5.850***
	(2.202)	(2.194)
Competed	0.200	0.204
	(0.186)	(0.186)
Relative size	1.106***	1.100***
	(0.163)	(0.161)
Conglomerate	0.166*	0.141
	(0.086)	(0.086)
Cross-border	-0.576	-0.483
	(0.394)	(0.399)
Friendly	-0.359	-0.348
	(0.321)	(0.323)
Serial	-0.113	-0.119
	(0.084)	(0.083)
Cash	-0.021	-0.033
	(0.084)	(0.085)
Constant	-0.875*	-1.008**
	(0.465)	(0.467)
No. of observations	1,122	1,122
R^2	24.63%	24.38%

TABLE X
The Modified Model with Unexplained Premium

The modified model is estimated using a sample of 1,124 acquisitions from 1990 to 2005. The 5-day OLS market model CAR (in percentages) is the dependant variable. Governance represents the GIM, BCF, and CBOARD governance indices. Unexplained premium is calculated as the residual from a regression on premium of all factors commonly used to explain premium (see Table IX). High-ATP acquirers have a GIM≥10 or BCF≥3. Low-ATP acquirers have a GIM≤9 or BCF≤2. Other variables are defined in Appendix A. Standard errors denoted in parentheses are adjusted for heteroskedasticity and acquirer clustering. Superscripts ***, **, * denotes significance at 1%, 5% and 10%, respectively. All regressions control for year fixed effects (not reported).

Model	(1)	(2)	(3)	(4)			
	GIM	*BCF*	*CBOARD*	*Low-ATP*		*High-ATP*	
				GIM	*BCF*	*GIM*	*BCF*
Governance	-0.079	-0.159	-0.334	0.075	-0.055	0.081	-0.159
	(0.068)	(0.134)	(0.413)	(0.195)	(0.344)	(0.145)	(0.333)
Log market value	-0.013	-0.035	-0.021	0.017	0.199	-0.109	-0.398*
	(0.152)	(0.153)	(0.152)	(0.216)	(0.182)	(0.194)	(0.235)
Tobin's q	0.457***	0.457***	0.459***	0.474**	0.354**	0.541**	0.805***
	(0.152)	(0.151)	(0.153)	(0.203)	(0.162)	(0.227)	(0.306)
Price-to-RIV (PRIV)	-0.086***	-0.086***	-0.088***	-0.090***	-0.084***	-0.063	-0.168*
	(0.027)	(0.027)	(0.028)	(0.027)	(0.027)	(0.171)	(0.096)
Unexplained premium	-0.407**	-0.402**	-0.388**	-0.252	-0.167	-0.497**	-0.851**
	(0.160)	(0.160)	(0.161)	(0.225)	(0.205)	(0.226)	(0.251)
Free cash flow	12.384	12.011	11.833	16.936	16.181	9.914	-1.233
	(8.038)	(8.080)	(8.033)	(10.511)	(10.091)	(10.767)	(14.336)
Leverage	6.564***	6.551***	6.520***	7.853***	7.286***	6.015**	5.931**
	(1.779)	(1.775)	(1.784)	(2.832)	(2.558)	(2.448)	(2.369)
Stock run-up	0.058	0.067	0.071	-0.897	-0.214	3.846**	-0.089
	(1.042)	(1.045)	(1.038)	(0.988)	(1.209)	(1.531)	(2.003)
Industry M&A	-1.695	-1.937	-1.453	3.690	14.460	-16.208	-18.052
	(11.492)	(11.449)	(11.478)	(17.217)	(16.743)	(14.223)	(14.839)
Relative size	-2.150	-2.116	-2.056	-0.634	-1.165	-5.656***	-5.428***
	(1.370)	(1.384)	(1.377)	(1.780)	(1.661)	(1.590)	(1.851)
Tech	0.072	0.120	0.113	0.138	-0.198	-0.299	0.013
	(0.556)	(0.554)	(0.553)	(1.033)	(0.827)	(0.615)	(0.706)
Tech × Relative size	-0.475	-0.536	-0.605	-1.215	-0.580	1.954	1.591
	(1.662)	(1.673)	(1.667)	(2.164)	(2.157)	(2.098)	(2.264)
Conglomerate	0.039	0.008	0.005	0.746	0.655	-0.596	-0.555
	(0.420)	(0.423)	(0.420)	(0.680)	(0.613)	(0.564)	(0.623)
Cash	2.611***	2.597***	2.579***	2.447***	2.559***	2.644***	2.662***
	(0.443)	(0.442)	(0.442)	(0.727)	(0.658)	(0.575)	(0.601)
Competed	-0.435	-0.424	-0.431	0.553	0.478	-1.015	-1.009
	(0.940)	(0.936)	(0.940)	(1.545)	(1.292)	(1.232)	(1.380)
Volume	0.132	0.137	0.131	0.200	0.182	0.045	0.110
	(0.201)	(0.201)	(0.200)	(0.280)	(0.264)	(0.233)	(0.246)
Cross-border	3.043	3.182*	3.072	1.986	4.021	7.052**	4.079
	(1.931)	(1.899)	(1.920)	(2.425)	(2.772)	(2.815)	(2.519)
Friendly	-2.460**	-2.448**	-2.430**	-1.626	-2.544	-3.204**	-2.032
	(1.223)	(1.225)	(1.225)	(2.013)	(1.743)	(1.485)	(1.821)
Serial	-0.191	-0.199	-0.195	-0.420	-0.754	-0.055	0.506
	(0.378)	(0.381)	(0.374)	(0.625)	(0.552)	(0.457)	(0.490)
Constant	-0.204	-0.371	-0.712	-3.526	-2.990	0.530	3.309
	(2.243)	(2.198)	(2.113)	(3.583)	(2.852)	(3.252)	(3.615)
No. of observations	1,122	1,122	1,122	535	592	587	530
R^2	11.82%	11.81%	11.72%	12.92%	13.27%	16.22%	16.85%

TABLE XI
Quantile Regressions

The quantile regressions are estimated using a sample of 1,124 acquisitions from 1990 to 2005. The 5-day OLS market model CAR (in percentages) is the dependant variable. The first five variables reported in Table VIII are reported, with remaining suppressed for reporting convenience. Governance is measured using the GIM governance index. Premium is the takeover premium, calculated as the transaction value over the target's price 3 days prior to the takeover announcement. Other variables are defined in Appendix A. Superscripts ***, **, * denotes significance at 1%, 5% and 10%, respectively. All regressions control for year fixed effects (not reported).

	Quantile								
Panel A: Modified Model	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Governance	0.149	0.064	-0.021	-0.057	-0.092	-0.120	-0.152*	-0.142	-0.234
	(0.117)	(0.069)	(0.079)	(0.076)	(0.075)	(0.073)	(0.081)	(0.103)	(0.149)
Log market value	0.320	0.487*	0.447**	0.241	0.164	-0.003	-0.031	-0.099	-0.353
	(0.276)	(0.255)	(0.193)	(0.216)	(0.165)	(0.179)	(0.193)	(0.174)	(0.269)
Tobin's q	0.262*	0.036	0.141	0.199	0.483	0.743***	0.661***	0.712***	0.654**
	(0.146)	(0.166)	(0.328)	(0.255)	(0.315)	(0.231)	(0.238)	(0.269)	(0.331)
Price-to-RIV (PRIV)	-0.172	-0.060	-0.097**	-0.121*	-0.112*	-0.098**	-0.087**	-0.073***	-0.058
	(0.108)	(0.067)	(0.046)	(0.063)	(0.059)	(0.044)	(0.037)	(0.026)	(0.043)
Premium	-0.807**	-0.802***	-0.652***	-0.480***	-0.524***	-0.453***	-0.522***	-0.460***	-0.496
	(0.328)	(0.248)	(0.175)	(0.186)	(0.130)	(0.122)	(0.191)	(0.171)	(0.351)
Constant	-7.696	-6.404	-5.788	-3.179	-0.423	1.947	1.431	4.348	10.155*
	(4.445)	(3.803)	(3.171)	(3.014)	(3.154)	(3.458)	(3.551)	(3.724)	(5.190)
R^2	19.19%	14.14%	10.50%	8.27%	6.37%	5.56%	5.61%	7.33%	10.16%