

Corporate Governance Transfer and Synergistic Gains from Mergers and Acquisitions

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We present evidence on the benefits of changes in control from mergers and acquisitions. We find that the stronger the acquirer's shareholder rights relative to the target's, the higher the synergy created by an acquisition. This result supports the hypothesis that acquisitions of firms with poor corporate governance by firms with good corporate governance generate higher total gains. We also find that the synergy effect of corporate governance is shared by target shareholders and acquiring shareholders, in that both target returns and acquirer returns increase with the shareholder-rights difference between the acquirer and the target. (*JEL* G34, G14, K22)

Do acquisitions of poorly managed targets by well-managed bidders create more value than others? The question is central to one of the most important sources of synergistic gains from mergers and acquisitions, the benefits of changes in control. Yet previous research does not provide us with a definitive answer. Early studies by Lang, Stulz, and Walkling (1989) and Servaes (1991) present evidence consistent with an affirmative answer—that the synergy of an acquisition is increasing in the bidder's Tobin's Q and decreasing in the target's Tobin's Q —with the premise that Q can be interpreted as a measure of how well a firm is run. However, results from recent academic endeavors suggest otherwise. For example, Bhagat et al. (2005) find that the bidder's Q has a negative effect while the target's Q has no impact on acquisition synergy, and Moeller, Schlingemann, and Stulz (2004) and Dong et al. (2006) find that the bidder's Q and its close surrogates such as the market-to-book ratio have negative effects on bidder returns.

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In light of the conflicting evidence, we approach the opening question in an alternative way by employing a measure that is more fundamental than Tobin's Q to capture how well a firm is managed. As Dong et al. (2006) point out, Tobin's Q is subject to the influences of (1) agency problems, (2) investment opportunities, and (3) market misvaluation.¹ Therefore, it is important to isolate the agency component from the other two in order to have a clean examination of the above question, especially when the investment-opportunity interpretation has the same prediction regarding the effect of Tobin's Q on acquisition synergy as the agency perspective does.² We use corporate governance metrics to proxy for the strength of managerial incentives or the severity of agency problems. For reasons discussed later, we focus on the shareholder rights or anti-takeover provisions (ATPs) adopted by each firm and stipulated in its charter/bylaws. Recent research finds that firms with stronger shareholder rights or fewer ATPs are associated with higher market value (Gompers, Ishii, and Metrick, 2003, GIM; Bebchuk, Cohen, and Ferrell, 2004, BCF; and Bebchuk and Cohen, 2005, BC) and better operating performance (Core, Guay, and Rusticus, 2006). A hypothesis that GIM propose for these findings is that ATPs cause agency costs "through some combination of inefficient investment, reduced operational efficiency, or self-dealing," which is supported by a number of studies examining the effects of ATPs on investment profitability (Masulis, Wang, and Xie, 2007), operational efficiency (Bertrand and Mullainathan, 2003), and executive compensation (Borokhovich, Brunarsky, and Parrino, 1997; Bertrand and Mullainathan, 2001; and Fahlenbrach, 2004).³

In a merger or acquisition (M&A) that is accompanied by a change in control, the acquirer's shareholder rights will apply to the combined company, in effect replacing the target's shareholder rights. Therefore, after the transaction the target's assets will be controlled by managers governed by the acquirer's shareholder rights. When the acquirer has stronger shareholder rights than the target, the change in control will result in an improvement in corporate governance at the target. Such an acquisition leads to a better use of target assets and creates more value.⁴ The reverse is true when the acquirer has

¹ Lang, Stulz, and Walking (1989) also recognize that Tobin's Q may reflect market misvaluation. Accounting-based performance measures will be jointly affected by the first two factors.

² When a bidder with good investment opportunities acquires a target with poor investment opportunities, the combination may create value because after the transaction, the target's assets will be used to exploit the better investment opportunities available to the bidder. To the extent that growth opportunities can be both industry-specific and firm-specific, industry-adjusted Q is not immune to this criticism.

³ Masulis, Wang, and Xie (2007) find that managers protected by more ATPs make acquisitions that destroy bidder shareholder value, a major form of empire building and investment inefficiency. Bertrand and Mullainathan (2003) find that the passage of state-level antitakeover legislation leads to higher employee wages, slowdown of new plant opening and old plant closing, and declines in overall productivity and profitability at firms incorporated in law-passing states, evidence of reduced efficiency. Borokhovich, Brunarsky, and Parrino (1997), Bertrand and Mullainathan (2001), and Fahlenbrach (2004) show that the pay setting process at firms with more ATPs tends to favor executives at the expense of shareholders.

⁴ A better use of target assets can take the form of making profitable investments, improving the operating efficiency of existing assets, or reducing managerial self-dealing behavior or expropriation of shareholder wealth.

weaker shareholder rights than the target. Therefore, we expect the synergy or the total value generated by an acquisition to be an increasing function of the difference in the strength of shareholder rights between the acquirer and the target. In other words, the stronger the acquirer's shareholder rights relative to the target's, the higher the acquisition synergy, *ceteris paribus*.

The evidence from a sample of 396 completed domestic acquisitions by US firms between 1990 and 2004 supports our conjecture. We use the corporate governance index constructed by GIM as our primary measure of the strength of a firm's shareholder rights, and find that the difference in the strength of shareholder rights between the acquirer and the target has a positive effect on acquisition synergy, calculated as the announcement-period abnormal return of a value-weighted portfolio of the acquirer and the target following the methodology of Bradley, Desai, and Kim (1988). This result holds for alternative shareholder-rights indices we consider and it is robust to controlling for other determinants of acquisition synergy. We also find that both the target's and the acquirer's abnormal returns increase with the difference in shareholder rights, suggesting that target shareholders and acquirer shareholders share the benefits of changes in control, or more precisely, the valuation effects of changes in corporate governance.

We also examine the operating performance change of the acquirer and the target as a combined company from prior to an acquisition to after an acquisition. We find that the shareholder-rights difference has a significant and positive effect on the operating performance change of the combined company. This is consistent with our abnormal stock return-based evidence and further supports our hypothesis.

Our paper makes two contributions to the literature. First, we provide a more definitive answer to the question of whether takeovers of poorly managed targets by well-run acquirers generate more synergies. By focusing on one aspect of a firm's corporate governance system rather than Tobin's Q , we are able to better identify the effect of agency problems separately from the confounding effects of investment opportunities and market misvaluation. Our evidence suggests that one possible source of synergistic gains from M&As is the improvement in corporate governance effected by changes in control. In this sense, our paper also contributes to the discussions on how M&As generate synergy. It is well received in the literature that takeovers of the 1980s create value by addressing the agency problem and eliminating managerial inefficiencies. Our results suggest that the M&A activities in the 1990s and the first half of this decade are capable of generating efficiency gains in a similar fashion through corporate governance transfers from acquirers to targets.

Second, our paper represents an alternative approach to investigating the valuation effect of shareholder rights. Most studies in this area such as GIM, BCF, and BC rely on cross-sectional or within-firm time-series variations in shareholder rights. Since such variations could be endogenous, it is difficult to establish causality based on the evidence from these studies. Our tests can be interpreted as examining how changes in firms' shareholder rights affect firm

value, and more specifically, how changes in *target* shareholder rights affect *target* firm value. The changes that we exploit result from targets being taken over by other companies, and thus represent exogenous shocks to targets. This exogenous nature helps us circumvent the endogeneity problem and allows us to draw causality inferences from our evidence. Our findings of positive effects of target governance changes on acquisition synergy and takeover premium/target abnormal returns indicate that stronger shareholder rights indeed lead to higher firm value, reinforcing the evidence in GIM, BCF, and BC.

Our analysis is the first attempt to examine in a domestic setting how differences in corporate governance between targets and acquirers affect the value creation by M&As. Two recent papers by Starks and Wei (2004) and Bris and Carbolis (2007) link country-level corporate governance to the wealth effects of cross-border M&A transactions. These two studies differ in their hypothesis, sample selection, and experimental design, and perhaps not surprisingly, report different results. Bris and Carbolis find that takeover premiums in cross-border deals are increasing (decreasing) in the level of shareholder protection and the quality of accounting standards in the acquirer's (target's) country, and that the pattern holds only when target nationality changes. In contrast, Starks and Wei fix target country-level corporate governance by using a sample of acquisitions of US targets by foreign acquirers, and find that the better the foreign acquirer's country-level corporate governance, the lower the takeover premium.⁵ Our sample of domestic acquisitions by US firms enables us to remove any difference in country-level governance between acquirers and targets and to cleanly identify the effect of differences in firm-level corporate governance, an element that has been missing from the aforementioned papers in the international context. We also focus our hypothesis and analysis on the total returns or synergy of an acquisition, since neither target returns nor acquirer returns can fully capture the valuation effects of corporate governance differences if the effects are shared by targets and acquirers.

Before we move on to the empirical part of the paper, it is important that we explain why we focus on shareholder rights. Our choice is driven by the observation that acquirers' shareholder rights provisions do not change during acquisitions, and will apply to the combined companies as a result of the transactions. This is not the case for other aspects of firms' corporate governance systems. For example, both the board size and the board composition of acquirers prior to acquisitions could be substantially different from those of the combined companies, especially for large acquisitions. The managerial equity ownership at acquirers could also change as a result of the transactions,

⁵ Two papers that are somewhat related to Starks and Wei (2004) and Bris and Carbolis (2007) are Kuipers, Miller, and Patel (2003) and Chari, Ouimet, and Tesar (2005). Like Starks and Wei, Kuipers, Miller, and Patel also look at a sample of acquisitions of US targets by foreign acquirers, but their focus is on how an acquirer country's legal environment mitigates the manager-shareholder agency problem at acquirers. Chari, Ouimet, and Tesar study acquisitions of emerging-market targets by developed-market acquirers, but they do not bring country-level corporate governance into their analysis.

since acquirers often issue new shares to finance their purchases.⁶ In other words, the post-acquisition corporate governance along these dimensions at the combined companies is a function of deal characteristics. Therefore, potential attempts to examine the valuation effects of changes in targets' corporate governance along these dimensions from pre-acquisition to post-acquisition would be fraught with endogeneity bias.

The remainder of the paper is organized as follows. Section 1 describes the data source and sample construction. Section 2 presents the empirical results. Section 3 concludes the paper.

1. Sample Description

We extract our acquisition sample from the Securities Data Corporation's (SDC) US Mergers and Acquisitions database. A total of 396 acquisitions between January 1, 1990, and December 31, 2004, meet the following criteria:

- (1) The acquisition is completed.
- (2) The bidder controls less than 50% of the shares of the target prior to the announcement and owns more than 50% of the target after the transaction.⁷
- (3) The deal value disclosed in SDC is more than \$1 million and is at least 1% of the acquirer's market capitalization measured on the sixth trading day prior to the announcement date.⁸
- (4) Both the bidder and the target have annual financial statement information available from Compustat and daily stock return data (210 trading days prior to acquisition announcements) from CRSP.
- (5) Both the bidder and the target are included in the Investor Responsibility Research Center (IRRC) database of ATPs.⁹

There have been seven IRRC publications (1990, 1993, 1995, 1998, 2000, 2002, and 2004). They include detailed information on the ATPs of approximately 1,500 firms in each of the seven publication years, with more firms added in recent publications. As GIM point out, these firms are large companies from the S&P 500 and annual lists of the largest corporations compiled by *Fortune*, *Forbes*, and *BusinessWeek*. The IRRC expanded the sample in 1998 to include smaller firms and firms with high levels of institutional ownership. Following GIM, we assume that during the years between two consecutive publications, firms have the same ATPs as in the previous publication year. We

⁶ This is especially true for acquisitions in our sample, 88% of which are at least partially financed with stock.

⁷ This criterion ensures that the acquisitions in our sample result in changes in control. We find very similar results using several lower change-in-control thresholds, as we discuss in more detail in the sensitivity tests.

⁸ We borrow the \$1 million deal value threshold from Moeller, Schlingemann, and Stulz (2004). But this constraint is not binding, since the targets in our sample are from the IRRC universe, which consists mostly of large companies (see Table 1 for the summary statistics on the target's market capitalization).

⁹ GIM, BCF, and BC all exclude firms with dual-class shares from their studies, which we do as well.

Table 1
Sample distribution by announcement year

Year	Number of acquisitions	Percentage of sample	Mean (median) acquirer market cap (\$mil)	Mean (median) target market cap (\$mil)	Mean (median) market cap ratio
1990	8	2.02	6,732.34 (2,133.30)	1,001.13 (459.59)	0.19 (0.17)
1991	14	3.54	3,004.47 (2,041.99)	637.40 (264.94)	0.24 (0.13)
1992	13	3.28	4,168.09 (2,821.70)	453.21 (489.56)	0.14 (0.11)
1993	9	2.27	3,370.97 (3,159.56)	1,246.07 (680.87)	0.38 (0.32)
1994	20	5.05	5,763.20 (3,033.56)	932.64 (361.72)	0.34 (0.22)
1995	28	7.07	6,918.40 (4,893.96)	1,801.84 (1,231.04)	0.40 (0.35)
1996	21	5.30	10,848.03 (5,948.40)	3,567.93 (1,163.24)	0.33 (0.27)
1997	35	8.84	13,652.68 (5,487.32)	2,331.75 (10,89.00)	0.30 (0.18)
1998	63	15.91	18,282.46 (7,708.17)	6,051.94 (1,694.90)	0.41 (0.30)
1999	63	15.91	19,371.27 (5,264.96)	3,753.58 (974.85)	0.33 (0.21)
2000	40	10.10	23,468.90 (9,405.25)	3,617.94 (1,106.48)	0.30 (0.10)
2001	26	6.57	17,055.07 (6,000.35)	3,462.67 (1,395.63)	0.31 (0.17)
2002	10	2.53	67,875.79 (14,254.98)	6,119.03 (1,108.29)	0.14 (0.04)
2003	23	5.81	24,408.51 (7,135.65)	3,194.20 (1,194.93)	0.28 (0.18)
2004	23	5.81	17,512.33 (6,608.39)	4,421.35 (1,452.07)	0.35 (0.28)
Total	396	100.00	16,647.44 (5,484.02)	3,405.36 (1,059.25)	0.32 (0.21)

The sample consists of 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRIC ATP database prior to the acquisition. Both the acquirer market capitalization and the target market capitalization are measured at the sixth trading day prior to the announcement date. Figures in parentheses are medians.

obtain very similar results (unreported, but available upon request) when we use the shareholder rights in the post-acquisition publication year for the bidders or when we require that bidders have the same shareholder rights in both the pre-acquisition publication year and the post-acquisition publication year.¹⁰

In Table 1, we present the distribution by announcement year of our sample of acquisitions. Starting from the early 1990s, the number of acquisitions in each year increases steadily until it reaches its highest levels in 1998 and 1999. Then it drops off significantly before rebounding in 2003. This trend is generally consistent with the trend of overall acquisition activities documented by Moeller, Schlingemann, and Stulz (2004). Table 1 also reports the annual mean and median bidder and target market capitalizations prior to the acquisition, and the ratio of the target market capitalization to the bidder market

¹⁰ For targets, we have to use their shareholder rights in the pre-acquisition publication year, since they will drop out of the IRRIC coverage after being acquired.

capitalization. Since we require that both the bidder and the target are in the IRRC database, the market values of both parties are much higher than those reported in Moeller, Schlingemann, and Stulz (2004). The average (median) ratio of the target's size to the acquirer's size is about 1/3 (1/5).

2. Empirical Results

2.1 Variable construction

In the next three subsections, we discuss the measurement of three categories of variables: acquisition synergy, target return/takeover premium, and acquirer return as our dependent variables, the difference in shareholder rights between the acquirer and the target as our key explanatory variable, and bidder-, target- and deal-specific characteristics as control variables.

2.1.1 Acquisition synergy, target return/takeover premium, and bidder return. We measure acquisition synergy in percentage returns using the methodology developed by Bradley, Desai, and Kim (1988). For each acquisition, we form a value-weighted portfolio of the bidder and the target, with the weights based on their respective market capitalizations at the sixth trading day prior to the initial announcement of the acquisition. We adjust the target's weight by subtracting from the target's market capitalization the value of target equity held by the bidder prior to the acquisition announcement. The acquisition synergy is defined as the portfolio's cumulative abnormal return during an event window. We measure the portfolio abnormal returns by market-model adjusted returns around initial acquisition announcements. We obtain the announcement dates from SDC's US Mergers & Acquisitions database. We use the CRSP value-weighted return as the market return and estimate the market model parameters over the period from event day -210 to event day -11 , where event day 0 is the acquisition announcement date. Finally, following Bradley, Desai, and Kim (1988) and Lang, Stulz, and Walkling (1989), we compute 11-day portfolio cumulative abnormal returns (PCAR) over the event window $(-5, +5)$. We also separately calculate the 11-day cumulative abnormal returns for the target (TCAR) and the acquirer (ACAR). For 391 acquisitions in our sample, we are able to obtain from SDC the takeover premium (PREM), which is defined as the ratio of offer price to the target's stock price 1 week prior to the initial acquisition announcement minus one.

As shown in panel A of Table 2, the average 11-day PCAR for the whole sample is 0.97%, significantly different from zero at the 5% level. Recent studies such as Andrade, Mitchell, and Stafford (2001), Moeller, Schlingemann, and Stulz (2004), and Bhagat et al. (2005) also document positive combined returns. The mean 11-day CARs for the target and the acquirer are 21.52% and -2.91% , respectively, both highly significant. This is consistent with existing evidence that M&A transactions are value-increasing for target shareholders (Bradley, Desai, and Kim, 1988; Lang, Stulz, and Walkling, 1989; and Dong et al. 2006)

Table 2
Summary statistics

Variable	Mean	Standard deviation	Q1	Median	Q3
Panel A: total returns, target returns/premiums, and acquirer returns					
PCAR (%)	0.97**	8.27	-3.80	0.56**	6.08
TCAR (%)	21.52***	21.65	7.55	17.88***	31.60
PREM (%)	32.84***	25.76	16.02	29.74***	46.55
ACAR (%)	-2.91***	8.20	-7.79	-2.78***	2.53
Panel B: shareholder-rights difference					
Bidder GIM	9.71	2.68	8	10	12
Target GIM	9.41	2.81	7	10	12
GIM difference (Target GIM - Bidder GIM)	-0.30	3.72	-3	0	2
Panel C: bidder characteristics					
Log(bidder's market cap)	8.75	1.38	7.81	8.61	9.66
Bidder's <i>Q</i>	2.01	1.51	1.14	1.51	2.32
Bidder's leverage	0.25	0.16	0.14	0.23	0.34
Bidder's return on assets (ROA)	0.13	0.09	0.05	0.13	0.19
Panel D: target characteristics					
Log(target's market cap)	7.03	1.40	5.99	6.97	7.94
Target's <i>Q</i>	1.66	1.08	1.09	1.29	1.77
Target's leverage	0.25	0.18	0.10	0.25	0.38
Target's return on assets (ROA)	0.11	0.11	0.04	0.12	0.16
Panel E: deal characteristics					
Market cap ratio (target/bidder)	0.32	0.35	0.08	0.21	0.46
Tender offer (dummy)	0.16	0.37	0	0	0
Diversifying acquisition (dummy)	0.26	0.44	0	0	1
All cash deal (dummy)	0.12	0.32	0	0	0
Competed (dummy)	0.06	0.23	0	0	0
Hostile (dummy)	0.04	0.19	0	0	0
Merger of equals (dummy)	0.06	0.23	0	0	0
High-tech combination (dummy)	0.15	0.36	0	0	0

The sample consists of 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRIC ATP database prior to the acquisition. PCAR is the 11-day cumulative abnormal return for a value-weighted portfolio of the bidder and target return around the announcement date. TCAR is the 11-day target cumulative abnormal return around the announcement date. PREM is the premium of offer price to target trading price 1 week prior to the announcement date. ACAR is the 11-day acquirer cumulative abnormal return around the announcement date. Other variable definitions are in the Appendix. In panel A, ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively.

and value-decreasing for acquirer shareholders when the targets are public companies (Fuller, Netter, and Stegemoller, 2001; and Moeller, Schlingemann, and Stulz, 2004). On average, PREM is higher than TCAR, which is similar to what Hartzell, Ofek, and Yermack (2004) find. The most likely reason is that target returns incorporate the probability of an acquisition falling through. In the ensuing analysis, we use both target returns and takeover premiums to measure target shareholder gains.

2.1.2 Shareholder-rights differences. The IRRIC publications cover 24 unique ATPs, from which GIM construct a shareholder-rights index by adding one point for each provision that enhances (weakens) managerial power (shareholder rights). Firms with higher GIM indices are viewed as having

weaker shareholder rights since it is more difficult and costly for shareholders to remove managers at these firms. GIM find that firms with higher indices or weaker shareholder rights are associated with lower firm value. BCF build on GIM and create a more parsimonious index based on six key ATPs, which include staggered boards, limits to shareholder bylaw amendments, limits to shareholder charter amendments, supermajority requirements for mergers, poison pills, and golden parachutes. Finally, BC focus on whether a firm has a staggered board and find that the market assigns lower valuations to firms with staggered boards.

Our key explanatory variable is the difference in shareholder rights between the acquirer and the target calculated using the GIM index.¹¹ More precisely, it is computed as the target's GIM index minus the acquirer's GIM index. The difference is positive when the acquirer's GIM index is lower than the target's, or equivalently, when the acquirer's shareholder rights are stronger than the target's. The higher the difference, the stronger the acquirer's shareholder rights relative to the target's, and the more efficiency the acquirer would be able to squeeze out of the target's assets. Therefore, we expect the shareholder-rights difference to have a positive effect on acquisition synergy. We also examine how the synergistic gains due to shareholder-rights differences are divided between acquirers and targets. Because of the competition among acquirers in the market for corporate control, most of the gains would usually accrue to target shareholders. However, in some deals, there is also competition among targets, and in some other transactions, bilateral negotiations prevail. Therefore, it is possible that acquirers will capture some of the synergistic gains as well.¹²

The summary statistics in panel B of Table 2 indicate that the bidders and the targets in our sample are fairly representative of the IRRC universe in that their mean and median GIM indices are similar to what GIM report for the IRRC universe. The shareholder-rights difference is close to zero at both the mean and the median, but its standard deviation is quite large. The correlation matrix in Table 3 shows that the shareholder-rights difference is positively correlated with acquisition synergy (PCAR), target returns (TCAR), takeover premiums (PREM), and acquirer returns (ACAR). The scatter plots of PCAR, TCAR, PREM, and ACAR against the shareholder-rights difference in Figure 1 show very few signs of outliers, especially the plot of PCAR, the dependent variable that our hypothesis is mostly concerned with.¹³

¹¹ We obtain very similar results when we compute the shareholder-rights difference based on the BCF or BC index, since the shareholder-rights differences based on the three indices are highly correlated with each other. Pairwise correlation coefficients are 0.740 for GIM difference and BCF difference, 0.474 for GIM difference and BC difference, and 0.644 for BCF difference and BC difference, all significant at the 0.1% level. These results are available upon request.

¹² We thank the editor for suggesting these possibilities.

¹³ Our results are robust to an alternative median regression framework or winsorizing PCAR, TCAR, PREM, and ACAR at their respective 1st and 99th percentiles.

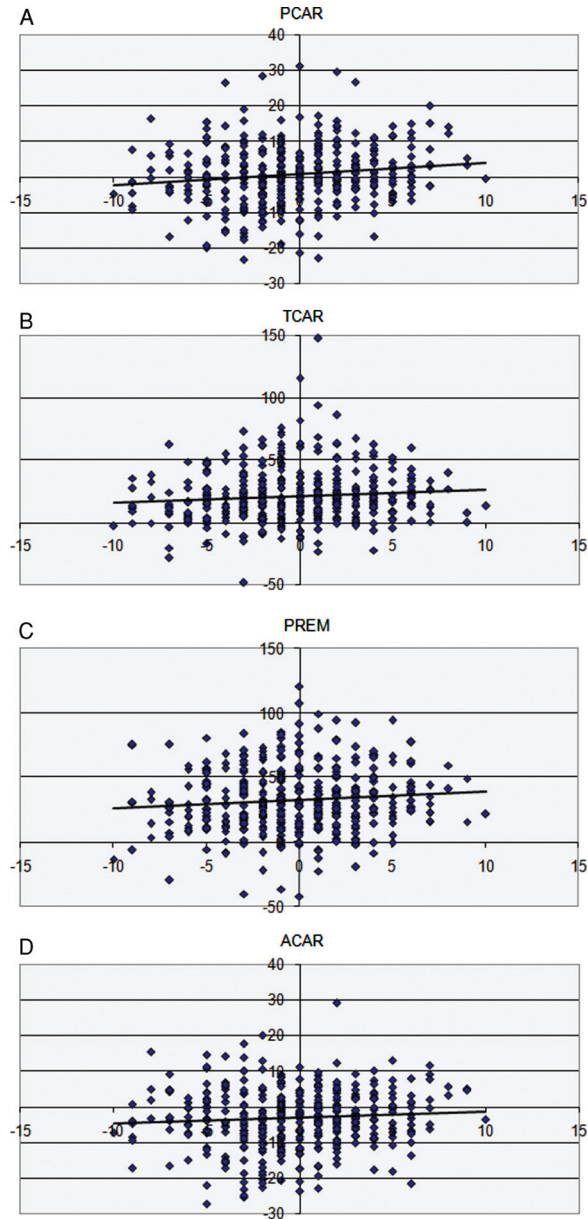


Figure 1
The scatter plots are based on 396 completed US M&As (listed in SDC) between 1990 and 2004
Both the bidder and the target are covered by the IRRG ATP database prior to the acquisition. The variable represented by the horizontal axis in all four plots is the shareholder-rights difference, i.e., the target's GIM index minus the acquirer's GIM index. The variables represented by the vertical axis in the plots are PCAR, TCAR, PREM, and ACAR, respectively. PCAR is the 11-day cumulative abnormal return for a value-weighted portfolio of the acquirer and the target around the announcement date. TCAR is the 11-day target cumulative abnormal return around the announcement date. PREM is the premium of offer price to target trading price 1 week prior to the announcement date. ACAR is the 11-day acquirer cumulative abnormal return around the announcement date.

Table 3
Correlation matrix

	PCAR	TCAR	PREM	ACAR
TCAR	0.429 (0.000)			
PREM	0.192 (0.000)	0.817 (0.000)		
ACAR	0.863 (0.000)	0.235 (0.000)	-0.011 (0.835)	
GIM difference	0.145 (0.004)	0.091 (0.071)	0.096 (0.057)	0.080 (0.113)

The sample consists of 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRC ATP database prior to the acquisition. PCAR is the 11-day cumulative abnormal return for a value-weighted portfolio of the bidder and target return around the announcement date. TCAR is the 11-day target cumulative abnormal return around the announcement date. PREM is the premium of offer price to target trading price 1 week prior to the announcement date. ACAR is the 11-day acquirer cumulative abnormal return around the announcement date. GIM difference is the difference between target GIM index and acquirer GIM index. Variable definitions are also in the Appendix. *P*-values are in parentheses.

2.1.3 Control variables. We build on studies such as Bradley, Desai, and Kim (1988), Lang, Stulz, and Walkling (1989), Servaes (1991), and Bhagat et al. (2005) and control for a number of bidder, target, and deal characteristics. The bidder and target attributes that we consider are firm size, Tobin's *Q*, leverage, and ROA, all of which are measured at the fiscal year end prior to an acquisition announcement. The deal characteristics include the method of payment, the industry relatedness of an acquisition, the relative size of the target to the acquirer, whether an acquisition is a tender offer, whether a deal is a merger of equals (MOE), and whether a deal is between two companies from high-tech industries defined by Loughran and Ritter (2004). The Appendix contains the definitions of these variables, and Table 2 presents their summary statistics. Sixteen percent of the acquisitions in our sample are in the form of tender offers, 26% are diversifying, 88% involve at least some stock financing, 6% are competed deals, 4% are hostile, 6% are classified as mergers of equals, and 15% are combinations of high-tech companies.

We have conjectures on the relations between a few explanatory variables and acquisition synergy. In light of the univariate results in Moeller, Schlingemann, and Stulz (2004), we expect that larger bidders make acquisitions that generate lower synergy. We also expect a cash-financed acquisition to generate higher total returns than a stock-financed acquisition, because stock being used as M&A currency sends a negative signal to the market about the acquirer's stock and thus drives down the acquirer's stock price (Myers and Majluf, 1984; and Travlos, 1987). This negative abnormal return experienced by the acquirer is unrelated to the value creation by the merger, but is nevertheless picked up by the total abnormal returns, which we use to measure acquisition synergy. Therefore, we follow the convention in the literature and control for a deal's method of payment in order to separate the signaling effect from the value created by the transaction. There is some anecdotal evidence suggesting that mergers of equals, e.g., the 1998 merger of Daimler-Benz and Chrysler, often

fail to generate much synergy. Combinations of high-tech companies are also likely to generate lower synergy, since it is difficult for technology companies to integrate smoothly due to the importance of human capital and intellectual property at these companies, which are often lost with increased employee turnover (Masulis, Wang, and Xie, 2007).

However, for other control variables, we do not have clear-cut predictions regarding their effects on acquisition synergy. For example, although Lang, Stulz, and Walkling (1989) find some evidence that acquisition synergy increases with the acquirer's Tobin's Q and decreases with the target's Tobin's Q , our sample of acquisitions in the 1990s may yield quite different patterns given the findings of Bhagat et al. (2005) and Dong et al. (2006). Similarly, acquisitions of related assets or businesses could generate greater synergy because of the potential for cost saving through economies of scale, but recent research on "diversification discount" (Campa and Kedia, 2002; and Villalonga, 2004a, 2004b) suggests that diversification does not necessarily lead to lower firm value and sometimes is associated with higher firm value.

2.2 Main results

2.2.1 Regressions of acquisition synergies. We present the results from the synergy regressions in Table 4. In the first two columns, the only explanatory variables we include are the shareholder-rights difference and the bidder's size. Our objective is to ensure that any identified effect of shareholder-rights difference on acquisition synergy is not driven by the presence of control variables that are potentially endogenously determined, such as Tobin's Q , leverage, and the method of payment. Coefficient estimates show that, consistent with our hypothesis, the shareholder-rights difference has a positive effect on acquisition synergy and the effect is significant both statistically and economically. For example, the coefficient estimate of the shareholder-rights difference is 0.320 with a t -statistic of 3.10 in column 2. GIM assigns firms with an index of 5 or below to a "democracy" portfolio and firms with an index of 14 or above to a "dictatorship" portfolio. Given that the difference in the GIM index between a typical "dictatorship" firm and a typical "democracy" firm is about 10, the percentage synergy generated by the acquisition of a "dictatorship" firm by a "democracy" firm will be about 3.20% higher than that generated by the combination of two firms with the same GIM index. We also find that the bidder's size has a significantly negative effect on acquisition synergy, in line with the univariate results of Moeller, Schlingemann, and Stulz (2004).

In column 3 of Table 4, we include all explanatory variables regardless of whether they are potentially endogenous. We find that the shareholder-rights difference continues to have a significantly positive effect on acquisition synergy, but neither the bidder's Q nor the target's Q appears to be related to acquisition synergy. Acquisitions made by bidders that are smaller or have better performance measured by ROA generate greater synergy. We also find that purely cash-financed acquisitions and tender offers are associated with

Table 4
Regression analysis of acquisition synergies

	(1)	(2)	(3)
Shareholder-rights difference (Target index – bidder index)	0.298*** (2.80)	0.320*** (3.10)	0.341*** (3.30)
Bidder characteristics			
Log(market cap)		–0.975*** (–3.12)	–1.293* (–1.93)
Tobin's <i>Q</i>			–0.157 (–0.28)
Leverage			–1.753 (–0.68)
Return on assets (ROA)			11.054* (1.72)
Target characteristics			
Log(market cap)			0.901 (1.36)
Tobin's <i>Q</i>			–0.704 (–1.10)
Leverage			2.152 (0.97)
Return on assets (ROA)			2.639 (0.62)
Deal characteristics			
Market cap ratio			–0.001 (–0.00)
Tender offer			2.574** (2.14)
Diversifying acquisition			2.149 (1.52)
All cash deal			2.653** (2.09)
Merger of equals			–3.863** (–2.13)
High-tech combination			–2.975*** (–3.16)
Intercept	3.381*** (3.39)	11.078*** (4.19)	7.012** (2.34)
Number of Obs.	396	396	396
Adjusted <i>R</i> ²	3.7%	6.8%	13.3%

The sample consists of 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRC ATP database prior to the acquisition. The dependent variable is PCAR, the 11-day cumulative abnormal return for a value-weighted portfolio of the bidder and the target around the announcement date. Definitions of the independent variables are in the Appendix. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and acquirer clustering. ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively. All regressions control for calendar year-fixed effects, whose coefficient estimates are suppressed for brevity.

significantly higher synergy, and mergers of equals and combinations of high-tech companies create significantly lower synergy.

We also investigate whether our results are driven by acquisitions clustering within a particular time period. We re-estimate column 3 in Table 4 on subsamples of acquisitions from 1990 to 1994 (64 transactions), from 1995 to 1999 (210 transactions), and from 2000 to 2004 (122 transactions), respectively. The shareholder-rights difference has a positive effect on acquisition synergy in each subsample regression. Its coefficient is 0.323 with a *t*-statistic of 1.51 (significant at the 10% level based on a one-sided test) for the period from 1990

to 1994, 0.341 with a t -statistic of 2.72 for the period from 1995 to 1999, and 0.553 with a t -statistic of 2.43 for the period from 2000 to 2004. Therefore, our results appear to hold up well through the entire sample period.

We conduct additional analyses to rule out the possibility that we obtain our results simply because Tobin's Q does not enter the synergy regression in the correct form. As alternatives to the acquirer's and the target's raw Q s that we include as explanatory variables in Table 4, we experiment with a number of Q -based variables such as (1) industry-median adjusted Q s, (2) both industry-median Q s and industry-adjusted Q s, (3) the difference in raw Q between the acquirer and the target, and (4) the difference in industry-adjusted Q between the acquirer and the target. None of these variables has a significant effect on acquisition synergy, regardless of whether the shareholder-rights difference is included as a regressor. Replacing the raw Q s of the target and the acquirer with these variables hardly changes the magnitude and the significance level of the coefficient of the shareholder-rights difference (unreported but available upon request). This suggests that the shareholder-rights difference clearly has incremental explanatory power over Tobin's Q .

We also replace the contemporaneous Q s in Table 4 with historical average Q s measured over the period from 1980 to 1985. Lehn, Patro, and Zhao (2007) find that once they control for a firm's historical average Q from 1980 to 1985, the contemporaneous relation between shareholder rights and firm value documented by GIM and BCF for the period from 1990 to 2003 disappears. We restrict our analysis to the 223 acquisitions in which both the acquirer and the target have at least 1 year of Compustat data between 1980 and 1985 so that we can construct a historical average Q over that period for the acquirer and the target, respectively. We find that the coefficient of neither historical average Q is significant, while the shareholder-rights difference continues to have a significant and positive effect on synergy (coefficient: 0.287; t -statistic: 2.08).

Overall, the evidence reported in this section supports our hypothesis that acquisitions of firms with poor corporate governance by firms with good corporate governance generate more efficiency gains. We next examine the division of these efficiency gains between target shareholders and acquirer shareholders, i.e., the effects of the shareholder-rights difference on takeover premiums/target returns and acquirer returns.

2.2.2 Regressions of target returns, acquisition premiums, and acquirer returns. We present results from regressions of target returns, acquisition premiums, and acquirer returns in Table 5. The explanatory variables are the same as in Table 4. We find that the shareholder-rights difference has significantly positive effects on target returns, takeover premiums, and bidder returns, reinforcing the evidence in the preceding section, and lending further support to our hypothesis that acquisitions of poorly governed targets by well-governed acquirers create more value. These results also suggest that target shareholders

Table 5
Regression analysis of target returns, takeover premiums, and bidder returns

	(1) TCAR	(2) PREM	(3) ACAR
Shareholder-rights difference (Target index – bidder index)	0.836*** (3.48)	1.001*** (3.31)	0.222** (2.10)
Bidder characteristics			
Log(market cap)	2.084 (1.25)	1.608 (0.73)	0.773 (1.15)
Tobin's <i>Q</i>	−0.543 (−0.57)	−0.269 (−0.25)	−0.287 (−0.53)
Leverage	−10.512* (−1.71)	−3.157 (−0.33)	−1.943 (−0.70)
Return on assets (ROA)	35.827*** (2.66)	11.923 (0.72)	9.784 (1.48)
Target characteristics			
Log(market cap)	−3.985** (−2.48)	−4.057* (−1.94)	−0.892 (−1.34)
Tobin's <i>Q</i>	−0.114 (−0.10)	1.658 (1.23)	−0.713 (−1.44)
Leverage	−1.101 (−0.17)	−5.345 (−0.68)	2.487 (1.12)
Return on assets (ROA)	−12.927 (−1.20)	−7.137 (−0.49)	2.358 (0.56)
Deal characteristics			
Market cap ratio	−5.770 (−1.59)	−6.752 (−1.23)	−0.159 (−0.07)
Tender offer	9.859** (2.55)	9.332** (2.15)	1.982* (1.71)
Diversifying acquisition	3.873 (1.50)	2.861 (0.99)	0.997 (1.05)
All cash deal	2.022 (0.44)	−0.370 (−0.07)	2.612** (2.15)
Merger of equals	−9.446*** (−3.99)	−13.915*** (−3.94)	1.645 (0.42)
High-tech combination	0.042 (0.01)	4.483 (1.20)	−2.916*** (−2.89)
Intercept	32.256*** (4.87)	49.106*** (5.77)	−2.477 (−0.78)
Number of Obs.	396	391	396
Adjusted <i>R</i> ²	21.6%	14.6%	7.5%

The sample consists of 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRIC ATP database prior to the acquisition. The dependent variable in column 1 is TCAR, the 11-day target cumulative abnormal return around the announcement date. The dependent variable in column 2 is PREM, the premium of offer price to target trading price 1 week prior to the announcement date. The dependent variable in column 3 is ACAR, the 11-day acquirer cumulative abnormal return around the announcement date. Definitions of the independent variables are in the Appendix. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and acquirer clustering. ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively. All regressions control for calendar year-fixed effects, whose coefficient estimates are suppressed for brevity.

and acquirer shareholders share the valuation effects of changes in corporate governance.¹⁴

¹⁴ This finding leads to an interesting question: Why don't target managers voluntarily change their firms' governance structure so that target shareholders capture all the valuation effects? The reason is that only a tiny portion of the valuation effects will accrue to target managers because of their typically low percentage ownership of their companies (the percentage stock and stock option ownerships are about 0.4% and 0.8%, respectively, for the median CEO in the 1992–2003 ExecuComp database), but target managers bear the full cost of improving

For the control variables, most of the parameter estimates are qualitatively similar to what other authors find (Huang and Walkling, 1987; Servaes, 1991; Schwert, 2000; Officer, 2003; Moeller, Schlingemann, and Stulz, 2004; Dong et al. 2006; and Masulis, Wang, and Xie, 2007). In particular, we observe that target returns or takeover premiums are significantly lower when targets are larger, significantly higher in tender offers, and significantly lower in mergers of equals, and that bidder returns are significantly higher in purely cash-financed transactions and tender offers, and significantly lower in deals combining high-tech companies.

2.3 Additional analyses

2.3.1 Efficiency versus censoring. One potential concern about our findings is that they could be driven by a censoring problem. The reason is that targets with more ATPs (weaker shareholder rights) are more difficult to acquire. Therefore, it is possible that an acquisition involving a target with strong takeover protection will only happen when the acquisition's synergy is high enough to be worth the trouble for a potential bidder to overcome the difficulty presented by target ATPs and eventually take over the target.¹⁵ This censoring-based hypothesis predicts a positive relation between acquisition synergy and the *target's* shareholder-rights index. However, our efficiency-based hypothesis predicts a positive relation between acquisition synergy and the shareholder-rights *difference*. To see which prediction prevails, we re-estimate the regressions of acquisition synergy, takeover premium, target returns, and acquirer returns in Tables 4 and 5, with the target's shareholder-rights index included as an additional regressor. Table 6 presents the estimation results. In all four regressions, the shareholder-rights difference continues to have a positive and significant coefficient, while the coefficient of the target's shareholder-rights index never turns out significant. We conclude that the censoring problem does not appear to be responsible for our findings.¹⁶

corporate governance in the form of reduced private benefits of control, which could be substantial. Therefore, target managers usually do not have enough incentives to voluntarily change the governance structure at their firms. This incentive problem is solved in the context of mergers and acquisitions where acquirers make sizable side payments to target managers, as documented by Hartzell, Ofek, and Yermack (2004), so that target managers are willing to give up control of their companies.

¹⁵ We thank the editor for suggesting this possibility.

¹⁶ We also re-estimate the synergy regression with both the shareholder-rights difference and the acquirer's shareholder rights included as regressors. We find that the shareholder-rights difference continues to have a positive and significant coefficient, while the coefficient of the acquirer's shareholder-rights index is not significant. One possible reason why the acquirer's shareholder rights do not have a significant effect on the total returns of an acquisition is that managers at acquiring firms with strong shareholder rights try to maximize the gains captured by acquiring shareholders rather than the total gains accruing to the target and acquirer as a whole, since greater total gains do not guarantee greater acquirer gains. Note that an acquisition creating more synergy is neither a sufficient nor a necessary condition for greater gains obtained by acquiring shareholders: two acquisitions may generate the same level of synergy, but shareholders of one acquiring company may fare very differently from those of the other, depending on how synergistic gains are divided between the acquirer and the target in each acquisition, or equivalently, the price paid by the acquirer for each acquisition.

Table 6
Efficiency versus censoring

	(1) PCAR	(2) TCAR	(3) PREM	(4) ACAR
Shareholder-rights difference (Target index – bidder index)	0.308** (2.14)	0.567* (1.74)	0.866** (2.03)	0.283** (2.01)
Target index	0.063 (0.30)	0.488 (1.03)	0.262 (0.40)	–0.119 (–0.60)
Bidder characteristics				
Log(market cap)	–1.281* (–1.91)	2.604 (1.57)	1.651 (0.75)	0.753 (1.12)
Tobin's <i>Q</i>	–0.142 (–0.25)	–0.546 (–0.58)	–0.211 (–0.20)	–0.315 (–0.59)
Leverage	–1.785 (–0.69)	–8.724 (–1.50)	–3.288 (–0.34)	–1.888 (–0.68)
Return on assets (ROA)	10.839* (1.69)	33.035** (2.50)	11.070 (0.66)	10.186 (1.54)
Target characteristics				
Log(market cap)	0.876 (1.31)	–4.159*** (–2.63)	–4.153* (–1.95)	–0.848 (–1.27)
Tobin's <i>Q</i>	–0.700 (–1.08)	–0.061 (–0.05)	1.674 (1.24)	–0.720 (–1.46)
Leverage	2.112 (0.94)	–0.909 (–0.16)	–5.519 (–0.70)	2.562 (1.15)
Return on assets (ROA)	2.669 (0.62)	–12.731 (–1.11)	–7.058 (–0.49)	2.313 (0.55)
Deal characteristics				
Market cap ratio	0.048 (0.02)	–5.072 (–1.41)	–6.577 (–1.18)	–0.241 (–0.10)
Tender offer	2.564** (2.15)	10.299*** (2.69)	9.276** (2.13)	2.006* (1.73)
Diversifying acquisition	2.122 (1.49)	2.614 (1.13)	2.840 (0.98)	1.005 (1.06)
All cash deal	2.672** (2.09)	2.616 (0.62)	–0.284 (–0.06)	2.573** (2.12)
Merger of equals	–3.877** (–2.14)	–8.370*** (–3.44)	–13.967*** (–3.95)	1.668 (0.82)
High-tech combination	–2.940*** (–3.06)	1.118 (0.38)	4.624 (1.24)	–2.982*** (–2.95)
Intercept	6.461* (1.85)	22.004*** (2.80)	46.825*** (4.60)	–1.435 (–0.39)
Number of Obs.	396	396	391	396
Adjusted <i>R</i> ²	13.1%	22.4%	14.4%	7.3%

The sample consists of 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRC ATP database prior to the acquisition. The dependent variable in column 1 is PCAR, the 11-day cumulative abnormal return for a value-weighted portfolio of the bidder and the target around the announcement date. The dependent variable in column 2 is TCAR, the 11-day target cumulative abnormal return around the announcement date. The dependent variable in column 3 is PREM, the premium of offer price to target trading price 1 week prior to the announcement date. The dependent variable in column 4 is ACAR, the 11-day acquirer cumulative abnormal return around the announcement date. Definitions of the independent variables are in the Appendix. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and acquirer clustering. ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively. All regressions control for calendar year-fixed effects, whose coefficient estimates are suppressed for brevity.

2.3.2 Changes in operating performance. Our evidence based on abnormal stock returns around acquisition announcements is consistent with the hypothesis that acquisitions of poorly governed targets by well-governed acquirers generate more efficiency gains. However, it is interesting to see whether the

stock market's expectations in fact materialize and through what channels the efficiency gains are achieved. Toward that end, we examine the effect of the shareholder-rights difference on the change in operating performance of the combined company from pre-acquisition to post-acquisition.

Ideally, we would like to study the operating performance changes of target companies alone. However, the lack of post-acquisition data on target companies does not allow us to carry out such an analysis. The lack of data also prevents us from examining changes in perhaps more salient features of targets such as investment and executive compensation policies. The shareholder wealth effects of these more isolated yet significant corporate decisions do not necessarily manifest themselves through operating performance. For example, overly generous stock option grants awarded to executives do not reduce a company's reported earnings until very recently, and the sometimes staggering amount of money that shareholders lose because their managers overpay for acquisitions (Moeller, Schlingemann, and Stulz, 2005) is not reflected in financial statements either. All this will bias against us finding significant results by examining operating performance changes of combined companies.

We measure operating performance as return on assets (ROA), i.e., the ratio of operating incomes to the book value of total assets (item 13/item 6). To identify operating performance changes due to mergers alone, we select control companies for acquirers and targets based on industry classification (two-digit SIC code) and premerger operating performance to filter out the effects of industry-wide factors and the well-known mean reversion of accounting performance measures. Barber and Lyon (1996) show that performance matching is especially important if sample companies have abnormal pre-event performance. This happens to be the case for the acquirers in our sample; their mean and median industry-adjusted ROAs for the year prior to an acquisition announcement are 0.054 and 0.024, respectively, both significant at the 1% level.

For the acquirer in an acquisition, we select its control company in the year immediately prior to the acquisition announcement. We first identify all other firms with the same two-digit SIC code as the acquiring company, and then choose the firm whose ROA is the closest to that of the acquirer. The control company for the target in an acquisition is selected in the same manner. The acquirer's (target's) performance-adjusted ROA for the premerger year is calculated as its ROA minus its matching company's ROA. For the fiscal year prior to each merger, we construct an imaginary combined company whose performance-adjusted ROA, *Pre_adj_ROA*, is the weighted average performance-adjusted ROA of the acquirer and the target, with the weights being the book values of total assets for the two merging companies. We find that the mean and median of *Pre_adj_ROA* are 0.001 and 0.000, respectively, neither significantly different from zero, attesting

to the ability of our performance matching to eliminate pre-event abnormal performance.

We track each acquisition for 3 years after its completion. For each year, we calculate the weighted average ROA of the acquirer's control firm and the target's control firm, and subtract it from the merged company's ROA. We then compute the 3-year average of the resultant performance-adjusted ROAs, and denote it as *Post_adj_ROA*. We define the operating performance change of the combined company as the difference between *Pre_adj_ROA* and *Post_adj_ROA*, denoted as ΔAdj_ROA . The mean (median) of ΔAdj_ROA is 0.014 (0.003), which is significant at the 1% (5%) level. This is consistent with the earlier stock return evidence that the combined abnormal return of the acquirer and the target (PCAR) is on average positive (see Table 2).

We regress the operating performance changes of combined companies against the shareholder-rights difference and other explanatory variables included in the synergy regressions. Results in column 1 of Table 7 indicate that the shareholder-rights difference has a significant and positive coefficient, implying that acquisitions of poorly governed targets by well-governed acquirers experience greater operating performance improvements. We also repeat the above performance matching procedure and regression analysis using return on sales (ROS, which is equal to item 13/item 12) as an alternative performance measure, and again find a significantly positive coefficient for the shareholder-rights difference (see column 2 of Table 7). These findings echo the abnormal return-based evidence we present earlier, and suggest that the stock market anticipates future operating performance changes and reacts to acquisition announcements accordingly.¹⁷

These results can also help differentiate our hypothesis from potential alternative explanations of our abnormal return-based evidence. For example, it can be argued that acquisitions involving targets with more ATPs (weaker shareholder rights) may be less anticipated by the stock market than acquisitions involving targets with fewer ATPs. As a result, we could observe higher announcement-period abnormal returns for the former group of deals than for the latter, given that, on average, mergers generate positive abnormal stock returns.¹⁸ This market surprise-based argument may have some power in explaining our stock return evidence, but it has no prediction regarding the relation between the shareholder-rights difference and the operating performance change of a combined company from pre-acquisition to post-acquisition. In contrast, our efficiency-based hypothesis is able to explain not only the positive relation between the shareholder-rights difference and the total returns

¹⁷ The sample size is reduced by 99 observations for the regressions in Table 7, since we require that for each acquisition, the merged company and control companies of the acquirer and the target have accounting data for the first 3 years after the completion of the acquisition. Our results from synergy regressions continue to hold in this smaller subsample.

¹⁸ We thank the referee for this suggestion.

Table 7
Regression analysis of changes in performance-adjusted ROA and ROS

	(1) Change in performance- adjusted ROA	(2) Change in performance- adjusted ROS
Shareholder-rights difference (Target index — bidder index)	0.003*** (2.73)	0.004** (2.01)
Bidder characteristics		
Log(market cap)	0.010 (1.37)	0.012 (0.85)
Tobin's <i>Q</i>	0.012* (1.75)	0.014* (1.79)
Leverage	-0.051 (-1.25)	0.101 (1.41)
Return on assets (ROA)	-0.132 (-1.55)	0.002 (0.02)
Target characteristics		
Log(market cap)	-0.019** (-2.33)	-0.005 (-0.40)
Tobin's <i>Q</i>	0.007 (0.86)	-0.012 (-1.36)
Leverage	-0.042 (-1.04)	-0.043 (-0.73)
Return on assets (ROA)	0.038 (0.57)	-0.182 (-1.36)
Deal characteristics		
Market cap ratio	0.030 (1.33)	0.073 (1.20)
Tender offer	0.031** (2.42)	0.046* (1.84)
Diversifying acquisition	0.006 (0.54)	0.030* (1.66)
All cash deal	-0.002 (-0.12)	-0.029 (-1.36)
Merger of equals	0.041 (1.22)	-0.003 (-0.05)
High-tech combination	-0.007 (-0.47)	0.010 (0.42)
Intercept	0.046 (1.24)	-0.077 (-1.05)
Number of Obs.	297	297
Adjusted <i>R</i> ²	11.02%	9.54%

The sample consists of 297 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRC ATP database prior to the acquisition. The dependent variable in column 1 is the difference between *Post_adj_ROA* and *Pre_adj_ROA*. *Post_adj_ROA* is the three-year average of the performance-adjusted return on assets (ROA) of the merged company after the acquisition. *Pre_adj_ROA* is the weighted average performance-adjusted ROA of the acquirer and the target in the year immediately prior to the acquisition, with the weights being the book values of total assets for the two merging companies. The dependent variable in column 2 is defined in a similar manner, except that the operating performance measure is return on sales (ROS). Definitions of the independent variables are in the Appendix. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and acquirer clustering. ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively. All regressions control for calendar year-fixed effects, whose coefficient estimates are suppressed for brevity.

of an acquisition, but also the positive relation between the shareholder-rights difference and the operating performance change of the combined company.¹⁹

¹⁹ We can also differentiate our hypothesis from this alternative explanation by the augmented regression of acquisition synergy presented in column 1 of Table 6. Note that the empirical prediction of the alternative

2.3.3 Managerial ability as an omitted variable. Although our focus on exogenous governance changes at targets facilitates causality inferences, we need to address another endogeneity-related problem before we are able to conclude that corporate governance changes contribute to the value creation of acquisitions. The concern is that some unobservable factors could be responsible for both the difference in shareholder rights and the total returns of an acquisition. One factor that may have this property is the difference in managerial ability between the acquirer and the target. It is conceivable that incompetent managers run their firms inefficiently and adopt weaker shareholder rights to entrench themselves and that acquisitions of firms with incompetent managers by firms with competent managers generate more value. In other words, the difference in shareholder rights may simply proxy for the difference in managerial ability.

We conduct four tests to address the above concern. In the first test, we construct a proxy for managerial ability similar to the one used by Morck, Shleifer, and Vishny (1990). Specifically, we measure managerial ability by the industry-adjusted return on assets (ROA) averaged over the 3 years prior to acquisition announcement. We then take the difference in the managerial ability proxy between the acquirer and the target and include it as an additional control variable in the synergy regression.

Results reported in column 1 of Table 8 show that the difference in managerial ability has a positive coefficient with a *t*-statistic of 1.36, which is significant at the 10% level based on a one-sided test. Therefore, there is some evidence that acquisitions of firms with incompetent managers by firms with competent managers generate more value. But more important to our purpose, we find that the shareholder-rights difference continues to have a significantly positive effect on acquisition synergy. Therefore, our earlier findings do not appear to be driven by managerial ability.

In the second test, we limit our attention to a sample of 70 acquisitions for which both the target and the acquirer went public prior to 1990 and both the target's CEO and the acquirer's CEO at the acquisition announcement took office after 1990.²⁰ For these acquisitions, the difference in managerial ability between the acquirer and the target at the time of the acquisition announcement is unlikely to drive the difference in shareholder rights. The reason is that for firms that went public prior to 1990, most of their shareholder-rights provisions were adopted in the 1980s (see Gompers, Ishii, and Metrick, 2003),

explanation is a positive relation between the *target's* shareholder-rights index and the total returns of an acquisition, while our efficiency-based hypothesis predicts a positive relation between the shareholder-rights *difference* and the total returns of an acquisition. Column 1 of Table 6 shows that when both the shareholder-rights difference and the target's shareholder-rights index are included in the synergy regression, the target's shareholder-rights index has little explanatory power, while the shareholder-rights difference continues to have a significant and positive effect on acquisition synergy. So again the results support our hypothesis but not the alternative.

²⁰ We match the acquirers and targets in our sample to the ExecuComp database to obtain the information on when a CEO took office.

Table 8
Controlling for the difference in managerial ability

	(1) PCAR	(2) PCAR	(3) PCAR	(4) PCAR	(5) PCAR
Shareholder-rights difference (Target index – bidder index)	0.301*** (2.79)	0.626** (2.03)	0.622** (2.02)		0.496*** (2.94)
Managerial-ability difference Bidder average ROA _{-3, -1} – target average ROA _{-3, -1}	4.366 (1.36)				
Managerial-ability difference Bidder average ROA _{1985, 1989} – target average ROA _{1985, 1989}			7.600 (0.59)		
State-level ATP difference				0.567* (1.79)	
Firm-level ATP difference				0.547*** (2.90)	
Bidder characteristics					
Log(market cap)	-1.273* (-1.78)	-0.106 (-0.06)	-0.257 (-0.12)	-0.813 (-0.70)	0.784 (0.58)
Tobin's <i>Q</i>	0.042 (0.09)	-1.627* (-1.82)	-1.481* (-1.74)	-0.019 (-0.03)	-2.427*** (-3.65)
Leverage	-1.957 (-0.78)	0.822 (0.11)	0.681 (0.09)	-4.801 (-0.96)	-18.028*** (-3.10)
Return on assets (ROA)		28.782* (1.70)	19.167 (1.39)	2.106 (0.22)	25.688* (1.88)
Target characteristics					
Log(market cap)	0.831 (1.19)	-0.948 (-0.47)	-0.766 (-0.34)	0.061 (0.06)	-1.409 (-0.95)
Tobin's <i>Q</i>	-0.650 (-0.96)	0.864 (1.13)	0.757 (0.97)	-0.595 (-0.55)	-0.429 (-0.56)
Leverage	3.449 (1.53)	4.599 (0.75)	4.712 (0.72)	2.284 (0.66)	5.325 (1.27)
Return on assets (ROA)		2.182 (0.33)	5.914 (0.62)	5.443 (0.64)	8.789 (0.92)
Deal characteristics					
Market cap ratio	1.237 (0.45)	1.237 (0.16)	0.836 (0.10)	5.914 (1.57)	12.918** (2.30)
Tender offer	2.385** (2.18)	-2.255 (-0.78)	-1.649 (-0.57)	-1.401 (-0.89)	5.300** (2.08)
Diversifying acquisition	2.426** (2.29)	4.087* (1.68)	4.199* (1.71)	6.071** (2.36)	1.363 (0.83)
All cash deal	3.386*** (2.74)	6.204* (1.92)	6.657* (1.97)	3.294* (1.78)	4.255* (1.95)
Merger of equals	-4.563** (-2.36)	1.861 (0.35)	1.805 (0.32)	-2.512 (-0.94)	-5.535** (-2.07)
High-tech combination	-2.157** (-2.12)	-7.410** (-2.24)	-7.326** (-2.14)	-1.360 (-0.83)	-0.107 (-0.07)
Intercept	4.312 (1.18)	3.799 (0.43)	3.706 (0.39)	5.889 (1.36)	4.147 (0.82)
Number of Obs.	373	70	70	178	143
Adjusted <i>R</i> ²	12.9%	34.6%	33.6%	10.6%	26.8%

The subsample used for the first regression consists of 373 acquisitions for which both the target and the acquirer have Compustat data available for the 3 years prior to the acquisition announcement. The subsample used for the second and third regression consists of 70 acquisitions for which both the target and the acquirer went public prior to 1990 and both the target's CEO and the acquirer's CEO at the acquisition announcement took office after 1990. The subsample used for the fourth regression consists of 178 acquisitions for which both the acquirer and the target were initially incorporated before 1985 and if they were ever reincorporated, the reincorporation happened before 1985. The subsample used for the fifth regression consists of 143 acquisitions for which the target CEO became CEO, Chairman of the Board, President, Vice President, Chief Operating Officer of the combined company, or became head of a subsidiary that target assets and operations are now part of. All four subsamples are drawn from 396 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the acquirer and the target are covered by the IRRIC ATP database prior to the acquisition. The dependent variable for all the regressions is PCAR, the 11-day cumulative abnormal return for a value-weighted portfolio of the bidder and the target around the announcement date. *Bidder (target) average ROA_{-3, -1}* is the bidder's (target's) average industry-adjusted ROA over the 3 years prior to acquisition announcement. *Bidder (target) average ROA_{1985, 1989}* is the bidder's (target's) average industry-adjusted ROA from 1985 to 1989. *State-level ATP difference* is equal to the number of target state-level ATPs minus the number of bidder state-level ATPs. *Firm-level ATP difference* is equal to the number of target firm-level ATPs minus the number of bidder firm-level ATPs. Definitions of other independent variables are in the Appendix. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and acquirer clustering. ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively. All regressions control for calendar year-fixed effects, whose coefficient estimates are suppressed for brevity.

and therefore, CEOs who took office after 1990 cannot be responsible for adopting these provisions. We re-run the synergy regression on this subsample, and report the results in column 2 of Table 8. Despite the small sample size, the effect of the shareholder-rights difference on synergy is still significantly positive.

Although our sample selection criteria for this subsample ensure that the difference in managerial ability between acquirer and target CEOs at acquisition announcement cannot *cause* the difference in shareholder rights, these two variables could still be correlated. The reason is that managers of a certain quality could bequest their positions to managers with a similar quality. Therefore, the abilities of acquirer and target CEOs at acquisition announcement could be positively correlated with the abilities of their respective predecessors who were in office during the 1980s, and who potentially shaped the shareholder-rights landscape at their companies. In other words, the managerial ability difference at acquisition announcement and the shareholder-rights difference are correlated because both are influenced by the managerial ability difference in the 1980s. The implication of this possibility is that the regression in column 2 of Table 8 still suffers from an omitted variable problem with the omitted variable being the difference in ability between acquirer CEO and target CEO who were in office during the 1980s.²¹ To address this issue, we measure the acquirer (target) CEO's ability during the 1980s by the acquirer's (target's) average industry-adjusted ROA from 1985 to 1989, and then include the managerial-ability difference in the 1980s as another regressor. The results in column 3 of Table 8 indicate that this additional control does not change our finding; the coefficient of the shareholder-rights difference is significantly positive and not much different from that in column 2.

In our third test, we focus on the six state-level ATPs in the GIM index, and create a difference in state-level ATPs and a difference in firm-level ATPs between the acquirer and the target for each acquisition. We then create a subsample of 178 acquisitions where both acquirers and targets were initially incorporated before 1985 and if they were ever reincorporated, the reincorporation happened before 1985.²² This restriction, coupled with the fact that nearly all of the second-generation state-level ATPs were adopted between 1985 and 1991 (Bebchuk and Cohen, 2003), ensures that for these acquirers and targets, neither their managers in the 1980s nor their managers at acquisition announcements determine the state-level ATPs that they are subject to. Therefore, the state-level ATP difference is not susceptible to the problem of managerial-ability difference as an omitted variable. We re-estimate the synergy regression with the overall shareholder-rights difference replaced by the state-level ATP

²¹ We thank the editor for pointing this out.

²² We use Moody's Manual to find each firm's incorporation date and reincorporation history.

difference and the firm-level ATP difference. The results reported in column 4 of Table 8 show that the state-level ATP difference has a positive and significant coefficient, evidence that the omitted variable problem is at least not entirely responsible for our findings.

In our fourth test, we circumvent the problem of managerial-ability difference being an omitted variable by focusing on acquisitions in which target CEOs were not removed and instead stayed at the combined companies. For each of the 396 acquisitions in our sample, we read the proxy statement of the combined firm immediately after the deal completion date and search news reports using LexisNexis around the deal announcement, and completion dates to identify what happened to the target CEO. We find that the target CEO stayed at the combined company in 244 deals. We eliminate 54 deals in which target CEOs stayed for less than 1 year, since these CEOs may simply be around to help the transition or integration. We also exclude 47 deals in which target CEOs held nonoperational positions such as director and vice chairman. Our final sample consists of 143 transactions in which the target CEO became CEO, Chairman of the Board, President, Vice President, or Chief Operating Officer of the combined company, or became head of a subsidiary that target assets and operations are now part of. We re-estimate the synergy regression in this subsample and present the results in column 5 of Table 8. The shareholder-rights difference continues to have a positive and significant effect on acquisition synergy, again suggesting that the managerial ability difference is not driving our findings.

2.3.4 Bidder shareholder-rights changes from one IRRC publication year to the next. We mentioned in the introduction that acquirers' shareholder rights provisions do not change during acquisitions, and will apply to the combined companies as a result of the transactions. However, this does not mean that a bidder's shareholder rights will stay the same from the pre-acquisition IRRC publication year to the post-acquisition publication year, a period that is at least 2 years long. Of the 396 acquisitions in our sample, 335 are such that the bidder has IRRC coverage in the two consecutive publication years encompassing the acquisition. We find that there are 155 acquisitions where bidders experience changes in the shareholder-rights index from the pre-acquisition publication year to the post-acquisition one. We randomly select 50 of these deals and read the news reports on the acquiring company in *The Wall Street Journal* around the announcement and completion dates of each acquisition. We do not find any mention of shareholder-rights changes for any of the deals, indicating that the changes do not appear to be driven by acquisitions.

We then limit our sample to the 180 acquisitions where bidders experience no change in the shareholder-rights index between the two consecutive publication years encompassing acquisitions. We re-estimate all our regressions using this subsample and present the results in Table 9. We find that the shareholder-rights

Table 9
Subsample where bidders experience no changes in shareholder rights around acquisitions

	(1) PCAR	(2) TCAR	(3) PREM	(4) ACAR
Shareholder-rights difference (Target index – bidder index)	0.261** (1.99)	1.029*** (3.08)	0.964** (1.98)	0.105 (0.68)
Bidder characteristics				
Log(market cap)	–1.298 (–1.57)	–1.901 (–0.97)	–2.217 (–0.69)	1.040 (1.11)
Tobin's <i>Q</i>	0.156 (0.25)	0.952 (0.55)	2.327 (1.11)	–0.252 (–0.37)
Leverage	1.616 (0.41)	–9.704 (–0.91)	–0.218 (–0.01)	–1.641 (–0.33)
Return on assets (ROA)	3.766 (0.40)	55.867** (2.56)	24.471 (0.72)	3.599 (0.31)
Target characteristics				
Log(market cap)	1.096 (1.36)	–0.516 (–0.31)	–1.048 (–0.37)	–1.088 (–1.23)
Tobin's <i>Q</i>	–0.441 (–0.57)	0.434 (0.22)	1.569 (0.59)	–0.460 (–0.55)
Leverage	2.645 (0.77)	–2.050 (–0.21)	–3.739 (–0.30)	4.152 (1.03)
Return on assets (ROA)	1.925 (0.28)	–26.318* (–1.78)	–29.341 (–1.33)	1.109 (0.15)
Deal characteristics				
Market cap ratio	–0.036 (–0.02)	–14.032*** (–3.04)	–14.085* (–1.80)	1.066 (0.37)
Tender offer	2.514 (1.61)	12.344*** (2.86)	7.674 (1.42)	1.194 (0.75)
Diversifying acquisition	2.673* (1.70)	1.645 (0.42)	2.126 (0.48)	2.178 (1.36)
All cash deal	2.860 (1.58)	4.757 (0.74)	5.185 (0.69)	2.919 (1.56)
Merger of equals	–7.685** (–2.58)	–8.896** (–2.07)	–15.338** (–2.10)	–3.665 (–1.14)
High-tech combination	–3.653** (–2.39)	0.253 (0.05)	8.296 (1.21)	–3.929** (–2.43)
Intercept	0.587 (0.10)	41.455*** (2.77)	59.681*** (3.09)	–7.694 (–1.08)
Number of Obs.	180	180	179	180
Adjusted <i>R</i> ²	13.0%	24.8%	14.5%	3.5%

The sample used for the regressions in this table consists of 180 completed US mergers and acquisitions (listed in SDC) between 1990 and 2004. Both the bidder and the target are covered by the IRRIC ATP database prior to the acquisition. The bidder experiences no change in the shareholder-rights index between the two consecutive IRRIC publication years encompassing the acquisition. The dependent variable in column 1 is PCAR, the 11-day cumulative abnormal return for a value-weighted portfolio of the bidder and the target around the announcement date. The dependent variable in column 2 is TCAR, the 11-day target cumulative abnormal return around the announcement date. The dependent variable in column 3 is PREM, the premium of offer price to target trading price 1 week prior to the announcement date. The dependent variable in column 4 is ACAR, the 11-day acquirer cumulative abnormal return around the announcement date. Definitions of the independent variables are in the Appendix. In parentheses are *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and acquirer clustering. ***, **, and * stand for the statistical significance at the 1%, 5%, and 10% level, respectively. All regressions control for calendar year-fixed effects, whose coefficient estimates are suppressed for brevity.

difference between acquirers and targets continues to have positive effects on acquisition synergy, target return, acquisition premium, and acquirer return, with all but the last relation being statistically significant at the 5% or 1% level despite the substantially smaller sample size.

2.3.5 A dummy-variable approach. We also estimate an alternatively specified synergy model in which we replace the shareholder-rights difference with two dummy variables. The first dummy is equal to one for acquisitions where the bidder's shareholder rights are stronger than sample median and the target's shareholder rights are weaker than sample median, or zero otherwise. The second dummy is equal to one for acquisitions where the bidder's shareholder rights are weaker than sample median and the target's shareholder rights are stronger than sample-median, or zero otherwise. Regression results (unreported, but available upon request) show that the coefficient estimate of the first dummy is positive with a robust *t*-statistic of 2.15, and the coefficient of the second dummy is negative with a robust *t*-statistic of 1.40, significant at the 10% level based on a one-sided test. This is consistent with our earlier evidence that acquisitions of firms with poor (good) governance by firms with good (poor) governance generate more (less) synergy.

2.3.6 Corporate governance improvement versus deterioration. We also explore whether the effect of the shareholder-rights difference on acquisition synergy depends on whether an acquisition results in an improvement in or deterioration of target corporate governance. We create a dummy variable that is equal to one for acquisitions in which the target has stronger shareholder rights than the acquirer, or zero otherwise. We include an interaction term between this dummy variable and the shareholder-rights difference as an additional independent variable in synergy regressions. We find that the shareholder-rights difference itself continues to have a significantly positive effect on synergy, and the coefficient estimate of the interaction term is not statistically significant at any conventional level (unreported, but available upon request). Therefore, the effect of the shareholder-rights difference appears symmetric.

2.3.7 Sensitivity tests. Our results are also robust to the following alternative specifications of our empirical tests: (1) we use the BCF index or the BC index to measure a firm's shareholder rights; (2) we measure abnormal announcement returns over alternative event windows, such as $(-1, +1)$ and $(-2, +2)$; (3) we measure the acquisition synergy in dollar terms instead of percentage terms; (4) we raise the minimum relative deal size to 5%; (5) we experiment with several change-in-control ownership thresholds other than 50%, such as 40%, 30%, and 20%;²³ (6) similar to Lang, Stulz, and Walkling (1989), we construct four indicator variables based on whether the acquirer's and the target's *Q* ratios are above or below their respective industry medians and substitute any three of them for the acquirer's and the target's *Q* ratios;

²³ In most US mergers and acquisitions, the acquirers have very low ownership in the targets prior to acquisition announcements and have full control or close to full control of target shares after the transactions. Therefore, our sample composition does not change much when we alter the ownership threshold.

(7) we control for bidder's pre-acquisition ownership in the target, the percentage of target shares acquired in the transaction, whether a deal is hostile, and whether a deal has competing bidders; (8) in place of the *all-cash* indicator variable, we control for the percentage of deal value paid by stock, which is a continuous variable ranging from 0 to 1; or (9) we control for both the acquirer's and the target's asset intangibility (item 33/item 6) as a proxy for asset scarcity.

We obtain virtually the same results when we (10) exclude acquisitions made in the "bubble" period, i.e., years 1999 and 2000; (11) exclude large-loss acquisitions or large-gain acquisitions or both, where we follow Moeller, Schlingemann, and Stulz (2005) in defining large-loss (or gain) acquisitions as those that generate more than \$1 billion loss (or gain) for bidder shareholders over the event window; (12) exclude hostile deals, tender offers, or competed deals, since these deals may have higher uncertainty of completion when first announced, and thus the abnormal returns around announcement may not be able to fully capture the wealth effects of these transactions (Bhagat et al. 2005); (13) exclude mergers of equals; (14) exclude 37 acquisitions in which the target's shareholder-rights index is the same as the acquirer's; or (15) exclude 15 unsolicited deals.

3. Conclusions

We provide evidence supporting the hypothesis that acquisitions of poorly managed targets by well-run acquirers create more value than other acquisitions. We focus on an important aspect of a firm's corporate governance, i.e., the shareholder rights, as a proxy for how well a firm is run, and find that the total return of an acquisition increases with the difference in shareholder rights between the acquirer and the target. In other words, the stronger the acquirer's shareholder rights relative to the target's, the higher the acquisition synergy. Further analyses show that the shareholder rights difference has significantly positive effects on both target shareholder gains and bidder shareholder gains, indicating that targets and acquirers share the valuation effects of corporate governance transfers.

We also examine operating performance changes of the acquirer and the target as a combined company from prior to an acquisition to after an acquisition. We find that the shareholder-rights difference has a significant and positive effect on the operating performance changes of the combined company. This echoes our abnormal stock return-based evidence and suggests that the stock market anticipates future efficiency gains and reacts to acquisition announcements accordingly.

Appendix: Variable Definitions

Variable	Definition
Panel A: total returns, target returns/premiums, and acquirer returns	
PCAR (−5, +5)	11-day cumulative abnormal return (in percentage, calculated using the market model) for a value-weighted portfolio of the bidder and the target. The market model parameters are estimated using the portfolio return data for the period (−210, −11). The weights for the bidder and the target are based on their market capitalizations at the sixth trading day prior to the announcement. The target's weight is adjusted for the bidder's toehold.
TCAR (−5, +5)	11-day target cumulative abnormal return (in percentage) calculated using the market model. The market model parameters are estimated using the return data for the period (−210, −11).
PREM	Premium of offer price to target trading price 1 week prior to the original announcement date. This variable is taken from SDC.
ACAR (−5, +5)	11-day acquirer cumulative abnormal return (in percentage) calculated using the market model. The market model parameters are estimated using the return data for the period (−210, −11).
Panel B: shareholder-rights variables	
GIM index	Taken from GIM (2003), based on 24 anti-takeover provisions. Higher index levels correspond to more managerial power and weaker shareholder rights.
GIM difference	Target GIM index − Bidder GIM index
Panel C: bidder and target characteristics	
Market value of equity	Number of shares outstanding multiplied by the stock price at the sixth trading day prior to announcement date.
Tobin's <i>Q</i>	Market value of assets over book value of assets: (Compustat item 6 − item 60 + item 25 × item 99)/item 6.
Leverage	Book value of debts over book value of total assets: (item 34 + item 9)/item 6.
ROA	Operating income before depreciation (item 13), scaled by book value of total assets (item 6).
Panel D: deal characteristics	
All-cash deal	Dummy variable: 1 for purely cash-financed deals, 0 otherwise.
Diversifying	Dummy variable: 1 if bidder and target do not share a two-digit SIC industry, 0 otherwise.
Competed	Dummy variable: 1 if a deal has competing bidders, 0 otherwise.
Hostile	Dummy variable: 1 if a bid is hostile, 0 otherwise.
Tender offer	Dummy variable: 1 for tender offers, 0 otherwise.
Merger of equals	Dummy variable: 1 if a deal is classified as merger of equals by SDC, 0 otherwise.
High-tech combination	Dummy variable: 1 if bidder and target are both from the high-tech industries defined by Loughran and Ritter (2004), 0 otherwise.

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