Corporate governance and abnormal returns from M&A: A structural analysis

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Abstract

We examine acquisitions to identify the effect that a measure of management entrenchment (E-index) has on firms' values. Greater E-index gives more power to management and less to shareholders. We model the problem in reduced form and as a structural model. The latter suggests: (1) high E-index firms are more valuable and (2) targets with higher E-indices tend to lose negotiation power against the acquirer. These results diverge somewhat from the literature. However, with reduced form, results align with the literature. This raises concerns that interpretations/conclusions about the E-index's impact on firms' values might be driven by the analytical framework.

Keywords: board entrenchment, E-index, event study, structural analysis, mergers and acquisitions

JEL classifications:
G34 - Mergers; Acquisitions; Restructuring; Corporate Governance
G14 - Information and Market Efficiency; Event Studies

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1. Introduction

The agency problem between shareholders and management is one of the quintessential characteristics of corporations. Establishing boards of directors serves as an attempt to mitigate the problem. But the introduction of another group of players in the game creates another layer of issues within the corporation, as Adam *et al*. (2010) discuss in a comprehensive survey of the literature. Numerous corporate governance provisions seek to rectify the potential misalignment of interests between shareholders and management through restraining the behavior of the members of the board. The underlying expectation is that through a set of rules, or even laws, a firm can organize itself so as to achieve greater value by reducing agency problems.

The conventional wisdom based on reduced form modeling is that as the degree of entrenchment of the members of the board of directors increase the value and/or performance of the firm decreases. In our data we find the same reduced form results as in this literature. But we also apply structural analysis and reach the opposite conclusions from those in the literature. The reduced form results herein and earlier are strong, and our structural model results are strong. This suggests that even if the reduced for results are strong, the inferences from these results are called into question. This implies not only that policy implications implied by the interpretation of the reduced form results may be questionable, but also there are potentially testable implications to distinguish between two effects: value creation (or destruction) and distribution of value among players.

The impact of corporate governance provisions on the value or the performance of firms has been the subject of numerous empirical studies in the past few decades. Some of these studies directly estimate changes in performance over a long period of time

following changes in corporate governance attributes. In this branch of the literature, firm ownership does not change, as would be the case in a merger or an acquisition. The authors of these studies typically explain their results in terms of a shift of balance of power between shareholders and board members (management) induced by changes in governance provisions.

In another branch of the literature, the subject is evaluated in the context of mergers and acquisitions. Methodologically short term event studies are designed to estimate the effects that certain governance provision might have on the abnormal gains and losses revealed by the announcement of these transactions. Typically researchers apply reduced form approaches to estimate the parameters of interest.

We also apply an event methodology to estimate abnormal returns around the announcement of acquisitions. Our innovation is that we formally recognize the simultaneous determination of the parties' abnormal returns. Simultaneity occurs because, on the one hand, given some total value, one dollar more to one party means one less dollar to the other party. On the other hand, each additional dollar created in the transaction means more gains to both parties. Therefore, what one party gains (or loses) is not independent of what the other party earns. Putting this differently, our approach allows the estimation of the effects of corporate governance environments on two dimensions: value creation or destruction (positive or negative synergies) and the balance of power between targets' and acquirers' shareholders in acquisition negotiations. We are not aware of any study in which these are disentangled in an econometric structural model.

In our analysis we use the E-index of corporate governance introduced by Bebchuk *et al*. (2009) as a measure of the level of entrenchment of the managements. Our results from our reduced form analysis are mostly aligned with previous papers that report an association of the corporate governance indices, in particular the E-index, with the value or performance of firms. That is, higher values for the E-index, which are associated with greater management/board of director's autonomy or entrenchment, are associated with lower firm values. Our structural estimates, on the other hand, suggest that the higher the E-index, the higher the value of a firm.

There are several potential explanations for divergent conclusions from the same dataset but processed with different econometric approaches. Among them we could list: the structural model may be simply wrong; functional forms are inappropriate; or the data is poor. A subtler potential source of divergent conclusions is related to the relationship between the structural model and its corresponding reduced forms. The parameters of the structural system are functions of the parameters of the reduced form equations (and vice-versa). The estimates of one form and the other are related but are not the same. We believe that the last source is the most likely to explain the divergence. And, given that the structural model has theoretical support, we put more credence into its estimates for now.

From the structural model we also find evidence that board entrenching arrangements affect the balance of power in acquisition negotiations between a targets' shareholders and an acquirers' shareholders. More entrenched acquirers' board members (higher E-index) seem to have more power to favor acquirers' shareholders.

Even though we propose a structural approach in the context of corporate governance, its application to event-studies in mergers and acquisitions can be wider. With it we can revisit the role of other traditionally examined determinants of abnormal returns in the mergers and acquisition literature. Importantly, the structural approach allows the investigation of hypotheses as complimentary, rather than exclusive or competing theories. The best example of this in our paper is the use of cash as payment in acquisitions. We find 3 hypotheses in the literature and conclude for the structural parameter estimates that 2 are more likely to explain the results concurrently. Similarly, we also investigate the role of the relative size of acquiring firms and targets and variables related to the industries of the parties.

A long-standing benchmark in the M&A literature is that, on average, targets' shareholders benefit in M&A deals, while acquirers' shareholders just break even. Our findings from the structural analysis lead us to propose a restatement along the following lines: when acquisitions destroy value, targets do not do as poorly as acquirers do (this part aligns with the literature); when acquisitions create value, acquirers tend to do better (this part diverges from the literature).

The paper is organized as follows: Section 2 reviews some literature related to our work. Section 3 discusses the potential for endogeneity between governance and firm value. In Section 4 we present our approach for dealing with simultaneous determination of a target's and an acquirer's abnormal returns. Section 5 describes the use of inverse variance weights in our event study. In Section 6 we present some indicators of the corporate governance environment available in the literature and briefly discuss their characteristics. Section 7 describes our data sources and variables. Some descriptive

statistics are reported in Section 8. Section 9 describes our empirical strategy in using instrumental variables and identification (and elimination) of potential outliers. The results are presented in Section 10 and discussed in Section 11. Section 12 concludes the paper.

2. Literature Review

Gompers *et al.* (2003) construct a "Governance Index" (which we shall call the G-index) from 24 governance provisions published by the Investor Responsibility Research Center (IRRC). These provisions are associated with the balance of power between shareholders and management/board of directors, so that the G-index proxies for the strength of shareholder rights. A high G-index reflects a power structure that favors managers and a low G-index reflects more rights to shareholders. Gompers *et al.* find that firms with lower G-indices earn higher returns, are valued more highly, and have better operating performance. They, however, do not evaluate the strength of each provision in explaining the results and acknowledge that "*the data do not allow strong conclusions about causality.*" Using the G-index, Core *et al.* (2006) try to bridge the causality gap and their results do not support the hypothesis that weaker governance causes poorer stock returns.

Among the 24 provisions, some consist of corporate arrangements that protect incumbent members from removal from the board of directors. One such arrangement is called a staggered board. A crucial feature of a staggered board is that it takes a few years to replace a majority of the board of directors. A practical and relevant consequence is that, as Bebchuk and Cohen (2005) put it, *"staggered boards make it harder to gain control of a company in either a stand-alone proxy contest or a hostile takeover."*

Instead of using an index of 24 provisions, Bebchuk and Cohen (2005) examine empirically the effect that only the provision related to staggered boards might have on firms' value, as measured by Tobin's Q,[1] during the period 1995–2002. They find that staggered boards that are established in the corporate charter are associated with reduced firm value.

Bebchuk *et al.* (2009) introduce the "entrenchment" index, the E-index, that is a composition of 6 provisions that they identify as being the most influential among the 24 G-index provisions in the determination of firm value. The staggered board provision is among them. The E-index is the measure of governance that we will be examining in this paper.

Masulis, Wang, and Xie (2007) find that acquirers with more antitakeover provisions experience lower abnormal stock returns upon the announcement of acquisitions. They argue that more protection is likely to entice empire-building acquisitions that reduce shareholder value.

Bates *et al*. (2008) examine the relationship between board staggering, takeover activity, and transaction outcomes. They find that whether a target's board is staggered or not does not change the likelihood that a firm, once targeted, is ultimately acquired. They conclude that the evidence they collect is inconsistent with the conventional wisdom that board staggering is an anti-takeover device that facilitates managerial entrenchment.

[1] Tobin's Q is commonly defined as the ratio between the market value and replacement value of the same physical assets.

3. Potential endogeneity between governance and value

The relationship between corporate governance arrangements and firm value is likely to be a two-way street. In one direction - call it the direct effect - some corporate governance features may affect firm value because they could offer protection that attracts self-serving board members whose actions or decisions produce lower firm value. In the other direction - call it the feedback effect - some features may be selected by low-value firms that seek to protect themselves from a takeover. Gompers *et al.* (2003) summarize it when they say that "*new defenses may be driven by contemporaneous conditions at the firm; i.e., adoption of a defense may both change the governance structure and provide a signal of managers' private information about impending takeover bids."*

Several papers have investigated the direct relationship between attributes of corporate governance and firm value. Typically firm value is inferred from performance measures. The object of investigation is the effect of a firm's attributes of corporate governance on the firm's performance measures. Although the potential endogeneity problem is widely acknowledged, it is rarely accounted for in the published econometric analyses.[2]

The evidence about the feedback effect is mixed. Using a dataset of hostile bids, Bebchuk *et al.* (2002) find that a staggered (classified) board nearly doubled the target's odds of remaining independent. On the other hand, Bates *et al*. (2007) find that target's

[2] Bebchuck and Cohen (2005): *"While fully addressing the simultaneity issue is difficult, we explore it and provide some suggestive evidence that staggered boards at least partly cause, and not merely reflect, a lower firm value."* What they did to avoid the complexity of the econometric issues involved in resolving the endogeneity problem was to work with a period of time and a sample selection in which the feedback was likely to be either weak or non-existent.

board staggering does not change the likelihood that a firm, once targeted, is ultimately acquired. In our paper we do not examine this issue. Instead we rely on Bates *et al.* in order to proceed with our analysis that assumes away selection bias, while being mindful of the potential for feedback effect as indicated by Bebchuk *et al*. (2002).

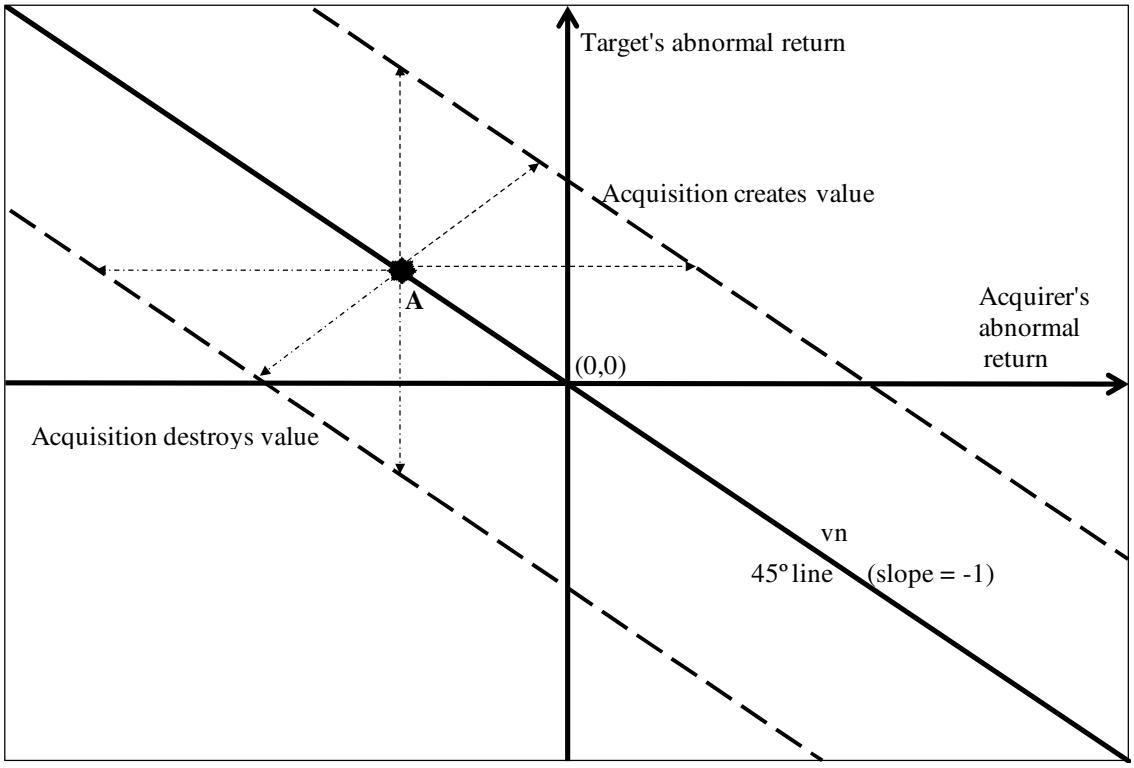
4. Simultaneity between targets' and acquirers' values in mergers and acquisitions

It has been argued that firm value and governance structure might be endogenous in typical governance-value analyses where ownership is unaltered. The analysis of the effect of governance changes on values in mergers and acquisitions – i.e. when there is an abrupt change in ownership - can break the endogeneity. An unanticipated change in ownership first modifies the governance structure and, then, changes performance and value. In this respect, acquisition studies offer the potential to overcome this econometric concern.

Nonetheless we identify and take into account another potential source of simultaneity that has been overlooked in change of ownership studies. Consider the case of an acquisition that neither creates nor destroys value. Assume further that all assets are correctly valued and that stock prices correctly reflect valuations. The sum of the parties' value change in response to the transaction is zero. For equal size parties, it means that the sum of their abnormal returns is zero. Putting it differently, one party's gain is the other party's loss. Again, for equal size parties, this is equivalent to saying that one party's abnormal return is the negative of the other party's abnormal return. In a graph (Figure 1) where one party's abnormal return is represented on the horizontal axis and the

other party's abnormal return is on the vertical axis, this relationship is represented by a straight line with slope of minus 1 (negative 45 degree line). Call this line vn (value neutral).

Figure 1: Parties' abnormal returns negative relationship and synergy effect.

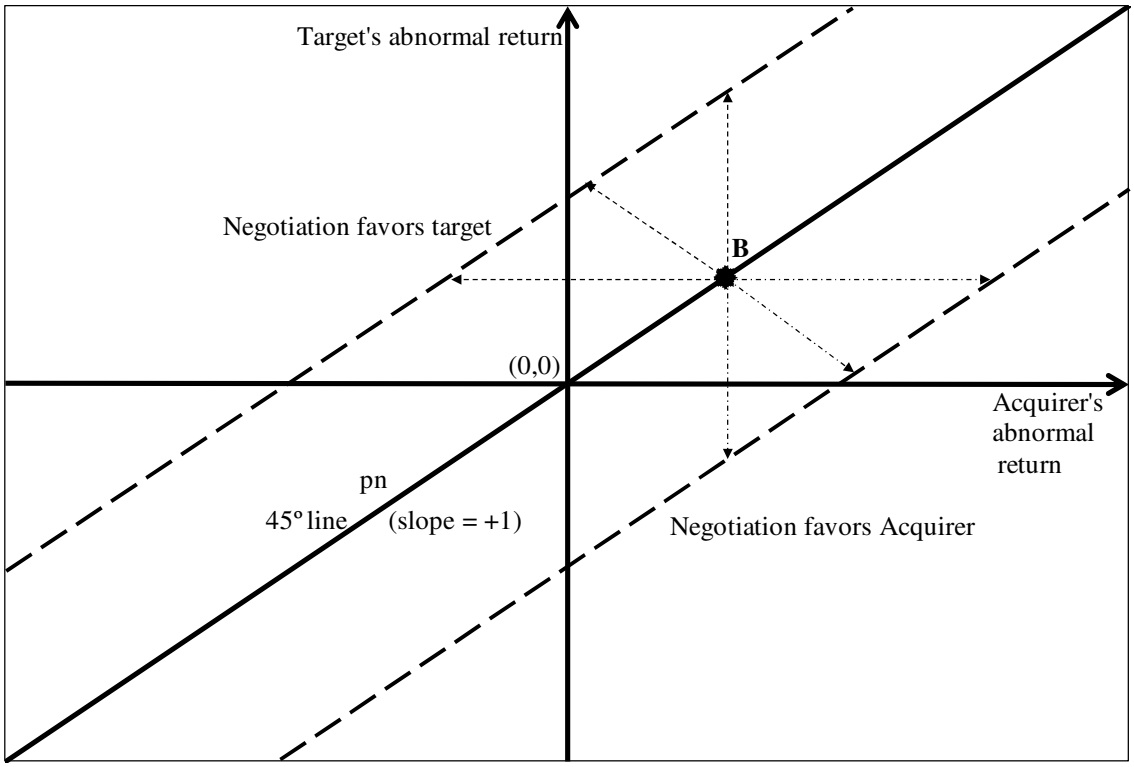


In practice, acquisitions can create or destroy value. I.e., after the transaction the value of the new entity can be different than the sum of the parties' values before the transaction. Graphically, gains (losses) correspond to a shift up (down) of the vn line. The next issue is how the parties split gains and/or losses.

For equally sized parties, if the negotiation power between the parties is perfectly balanced, then one expects that the parties equally share gains. The target's and the acquirer's abnormal returns are expected to be equal. Graphically, their relationship is depicted as the unity slope (the positive 45 degree line) straight line from the origin (in the middle of the figure). Call this pn (the power neutral line) in Figure 2. This outcome is unlikely to be observed if one of the parties has more negotiation power than the other. When there is an imbalance of power, the ratio of the parties' abnormal returns should reflect the parties' relative negotiation powers. The more powerful party is likely to

receive a larger share of the gains. Graphically, this suggests that either the slope or the intercept of the pn line may change in response to imbalances to the distribution of negotiation power among the parties.

Figure 2: Parties' abnormal returns positive relationship and negotiation power effect.



Hence, we can identify two interacting effects. One, call it a synergy effect, is related to the creation (or destruction) of value. The other, call it a dominance effect, is related to imbalance of the negotiation power between the parties.

It is our contention that these effects may simultaneously act in the market for corporate control. At times one force prevails over the other. And there may be times when they cancel each other out. To see how these "forces" act in the market for corporate control, consider that a firm that has an attribute of corporate governance that is deemed as "good" in the market for corporate control. This firm is valued at a premium

with respect to a firm with exact the same characteristics but that lacks that "good" attribute. Gompers *et al.* (2003), for instance, point out that weak shareholder rights could cause additional agency costs. Therefore, governance provisions that strengthen shareholder rights could be "good" attributes to the extent that they could reduce or eliminate those presumed additional agency costs.

Consider an acquisition in which the target lacks that "good" attribute of corporate governance and that the acquirer possesses that attribute. Suppose that the lack of that attribute tilts the bargaining power in favor of the target. Further, suppose that, by acquiring the target, the acquirer transmits its "good" governance practice to the target.

The transmission of the "good" practice to the target could be captured in the market as creation of value. An example illustrates the point. Let the value of the target before the acquisition be $100. Recall that before the acquisition the target lacks the "good" attribute. But if the target had that attribute, it would be valued at $120, i.e. $20 more. Let the value of the acquirer be $500 and the value of the merged firm $620. The value of the merged firms is $20 more than the value of the sum of the value of the target and the value of the acquirer prior to the transaction. The incremental value of $20 could reflect the gain associated with the transmission of the "good" practice.

This example suggests that one variable that may matter for the value creation (or destruction) in corporate acquisitions is the difference between the corporate governance attributes of the target and the acquirer. This variable when associated with value creation could shift up the curve that captures the negative association between the parties' returns.

Basically, the idea is that a merger between a target that lacks good corporate governance and an acquirer that has good corporate governance creates value, *ceteris paribus*. Conversely, a merger between a target that has good corporate governance and an acquirer that lacks good corporate governance destroys value. Finally, a merger between parties with equivalent quality of corporate governance (either "good – good" or "bad – bad") is likely to be value neutral.

While the *difference* between qualities of corporate governance may be associated with value creation or destruction, we argue that the *levels* of corporate governance may be related to the balance of the merger negotiation power between the parties. In this case, this means that the target's attributes and the acquirer's attributes could be variables that shift the curve that captures the positive relationship between abnormal returns.
In what follows let the target and the acquirer be of the same size. In Figure 1 (far above) consider the straight-line vn ("value neutral"). This line represents all combinations of acquirer's abnormal returns and target's abnormal returns when value is neither created nor destroyed (neither positive nor negative synergies). The origin point (middle of the figure) belongs to line vn. When both parties' abnormal returns are nil, it means that the acquisition does not change the parties' values so that total value is unaltered. Next consider point A on line vn. The total value associated with point A is still unaltered but target's shareholders gain positive abnormal returns, reflecting the fact that the offer price is higher than the market price. Each dollar in excess paid to the target means one dollar less to the acquirer so that total value is constant. Hence, the acquirer's abnormal return is negative.

Departing from point A in Figure 1, if the acquisition creates (destroys) value either the target's abnormal return increases (decreases) or the acquirer's abnormal return increases (decreases), or both. This means that line vn shifts up (down).

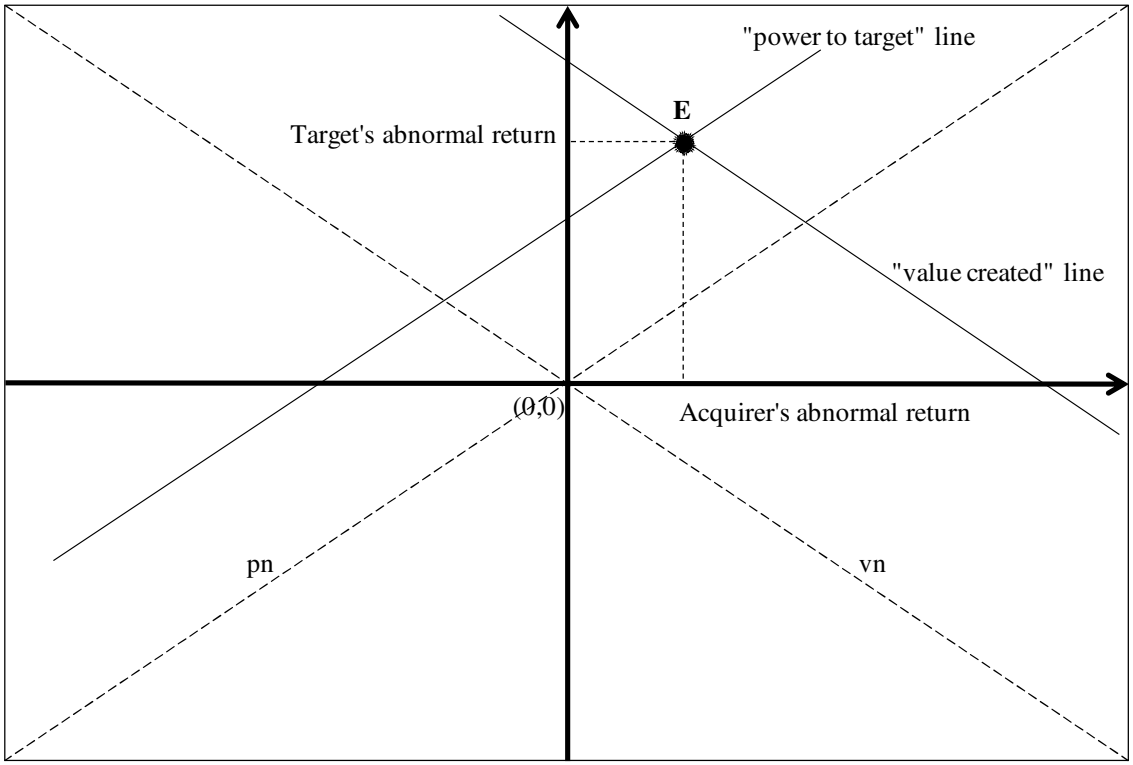
In Figure 2 (far above) consider the straight-line pn (power neutral). This line represents all combinations of target's and acquirer's abnormal returns for balanced negotiation power between the parties, that is, the target's shareholder keep 50 percent of any value created and the acquirer's shareholders keep the other 50 percent. If total value is unaltered, both parties' abnormal returns are nil, which means that the origin point belongs to line pn. Next consider point B on line pn. The power balance associated with point B is still unaltered as each additional dollar created is split according to the distribution (50, 50). Both parties' shareholders gain positive abnormal returns.

Departing from point B in Figure 2, the power balance may change in favor of the target (acquirer), so that either the target's abnormal return increases (decreases) or the acquirer's abnormal return decreases (increases), or both. Graphically this can be represented by a shift up (down) of line pn.

Mathematically, the *difference* between levels of corporate governance is a particular linear combination of the target's level and the acquirer's level. Econometrically, this mathematical fact imposes the restriction that one cannot estimate the coefficients of the difference and of the levels with one regression equation. It is necessary that one variable be left out of the equation so the other two can be estimated. But without the one that is left out, one cannot discern the effects of the two hypothesized interacting forces. Consequently, disentangling these forces directly from a reduced form model imposes a practical challenge no matter how rich the data set.

Figure 3 below suggests how the problem could be econometrically modeled so as to disentangle the two potential effects. Point E represents the distribution of abnormal returns in an acquisition that displaces the vn curve up by creating value and that moves the pn curve up by shifting some negotiation power to the target. As a result, in the illustration, the target's abnormal return is positive and the acquirer's abnormal return is also positive but less than the target's abnormal return. A structural form model in which the abnormal returns of the target and of the acquirer are simultaneously determined by the intersection of the two solid lines in Figure 3 has the potential to capture that simultaneous relationship and, importantly, measure the underlying corporate governance forces that may drive the observed abnormal returns. Note that the simultaneity between the target's abnormal return and the acquirer's abnormal return is not causal. Hence, an alternative structural model would replicate the second equation below with the acquirer's abnormal return on the left hand side of the equation and the target's abnormal return on the right (which we will also estimate). The simultaneity is econometrically modeled via instruments in our empirical implementation.

Figure 3 Simultaneous determination of abnormal returns



When one works with econometric structural form models the concern related to identification of the structural parameters arises naturally. We offer the following example of a structural form model that is exactly identified, i.e., there exists one and only one solution for the structural parameters. The *structural model* can be expressed as:

$$\begin{cases} ar_{\text{target}} + ar_{\text{acquirer}} = \alpha_0 + \alpha_1 \left(\phi_{\text{target}} - \phi_{\text{acquirer}} \right) + \alpha_2 Y_2 + \alpha_3 Y_3 + \varepsilon_1 \\ ar_{\text{i}} = \beta ar_{\text{j}} + \beta_0 + \beta_1 \phi_{\text{target}} + \beta_2 \phi_{\text{acquirer}} \qquad + \beta_3 Y_3 + \varepsilon_2 \end{cases}$$

where:

$i, j = \{\text{target, acquirer}\}$ and $i \neq j$;

ar_{target} is the target's abnormal return;

ar_{acquirer} is the acquirer's abnormal return;

φ_{target} is the target's indicator of corporate governance environment;

$\varphi_{\text{acquirer}}$ is the acquirer's indicator of corporate governance environment;

Y_2 are predetermined variables that affect only the first structural equation (the synergy line);

Y_3 are predetermined variables that affect both structural equations;

ε_1 and ε_2 are error terms; and

$\alpha_0, \alpha_1, \alpha_2, \alpha_3, \beta, \beta_0, \beta_1, \beta_2$ and β_3 are the structural parameters.

The corresponding *reduced form equations* are:

$$ar_{\text{target}} = \mu_0 + \mu_1 \varphi_{\text{target}} + \mu_2 \varphi_{\text{acquirer}} + \mu_3 Y_2 + \mu_4 Y_3 + u$$
$$ar_{\text{acquirer}} = \gamma_0 + \gamma_1 \varphi_{\text{target}} + \gamma_2 \varphi_{\text{acquirer}} + \gamma_3 Y_2 + \gamma_4 Y_3 + w$$

where

u and *w* are error terms; and

$\gamma_0, \gamma_1, \gamma_2, \gamma_3, \gamma_4, \mu_0, \mu_1, \mu_2, \mu_3$ and μ_4 are the reduced form parameters.

The unique correspondence between the coefficients of the structural model and the reduced form equations is given by the set of equations in Table 1.

Table 1: Relationship between structural and reduced form parameters

Structural parameters as function of reduced form parameters		Reduced form parameters as function of structural parameters	
$\alpha_0 = \gamma_0 - \frac{(\gamma_1 + \gamma_2)}{\mu_1 + \mu_2}\mu_0$	$\beta = \frac{\gamma_3}{\mu_3}$	$\gamma_0 = \frac{\alpha_0\beta - \beta_0}{1+\beta}$	$\mu_0 = \frac{\alpha_0 - \beta_0}{1+\beta}$
$\alpha_1 = \frac{\gamma_2\mu_2 - \gamma_1\mu_1}{\mu_1 + \mu_2}$	$\beta_0 = \gamma_0 - \frac{\gamma_3}{\mu_3}\mu_0$	$\gamma_1 = -\frac{\beta_2 + \alpha_1\beta}{1+\beta}$	$\mu_1 = \frac{\alpha_1 - \beta_1}{1+\beta}$
$\alpha_2 = \gamma_3 - \frac{(\gamma_1 + \gamma_2)}{\mu_1 + \mu_2}\mu_3$	$\beta_1 = \gamma_2 - \frac{\gamma_3}{\mu_3}\mu_1$	$\gamma_2 = \frac{\alpha_1\beta - \beta_1}{1+\beta}$	$\mu_2 = -\frac{\alpha_1 + \beta_2}{1+\beta}$
$\alpha_3 = \gamma_4 - \frac{(\gamma_1 + \gamma_2)}{\mu_1 + \mu_2}\mu_4$	$\beta_2 = \gamma_1 - \frac{\gamma_3}{\mu_3}\mu_2$	$\gamma_3 = \frac{\alpha_2\beta}{1+\beta}$	$\mu_3 = \frac{\alpha_2}{1+\beta}$
	$\beta_3 = \gamma_0 - \frac{\gamma_3}{\mu_3}\mu_4$	$\gamma_4 = \frac{\alpha_3\beta - \beta_3}{1+\beta}$	$\mu_4 = \frac{\alpha_3 - \beta_3}{1+\beta}$

The feature that exactly identifies the parameters of the structural system from the parameters of the reduced form equations is the presence of a predetermined variable in the equation that contains the difference variable and the absence of the same predetermined variable in the equation that contains the corporate governance level variables (Y_2 in the equations above). In other words, there must be at least one predetermined variable that potentially affects the creation (or destruction) of value that does not affect the distribution of negotiation power between the target and the acquirer.

In Table 1, note that the coefficients of the reduced form equations that capture the effect of corporate governance attributes ($\gamma_1, \gamma_2, \mu_1$ and μ_2) are mixes of the slope coefficient of the structural system (β), the coefficient of the attribute's *difference* variable (α_1) and the coefficients of the attributes' *levels* (β_1 and β_2). This is the feature that makes explicit the challenge a reduced form approach encounters in estimating the effects of the synergy effect and the shifting of power effect that may be associated with the governance attributes.

4.1 Normalization of the acquirer's abnormal return

Recall that in the introduction of the approach we take in this paper we considered a target and an acquirer of the same size. In reality, however, their sizes are different (very different in most cases). To reconcile our analytical approach to the reality of the matter, a form of normalization is necessary. Too see why this might be the case, consider two acquisitions with the following characteristics:

- no value is created or destroyed;

- the distribution of negotiation power between target and acquirer is identical for both acquisitions;
- the targets are of the same size, say $ 100 million;
- the targets' abnormal returns are identical, say 1 percent (it means that the targets are bought for $101 million each).

Now suppose that a large acquirer's size is $1 billion and that a small acquirer's size is $100 million. Their abnormal returns are negative 0.1 percent and negative 1 percent, respectively.

Therefore, these acquisitions define two distinct pairs (points) in the graph acquirer's abnormal returns *vs*. target's abnormal return as in Figure 3: (-0.001; +0.01) and (-0.01; +0.01). It is impossible that these two points belong to the same straight line, unless this line is perfectly horizontal. Consequently even though size is not the focal variable of our investigation, disregarding size differences may bias the results. The example suggests that firm size may enter the analysis affecting either the slopes or the intercepts of the linear models or both.

Apart from the econometric concern, the *relative* size variable in our study is supported by economic theory. As da Graça (2012) points out, all else equal, it is expected that if a larger company makes a *profitable* acquisition at a given value, its stock's abnormal return should be lower than a smaller company's stock's abnormal return since the value of the acquisition to the larger firm is smaller relative to the *ex ante* value of the company.

We propose a convenient transformation: divide the acquirer's abnormal return by the relative size of the acquisition, defined as the target's size divided by the acquirer's

size. In the stylized example above, the relative sizes are 10 percent when the acquirer is the large one and 100 percent when the acquirer is the small one. Applying the transformation we obtain the following transformed pairs of abnormal returns (-0.01; +0.01) and (-0.01; +0.01), which are, in fact, coincident points in a graph where on the horizontal axis one plots the acquirer's normalized abnormal returns and on the vertical axis one plots the target's abnormal return.

This transformation accounts for the potential effect of the relative size variable on the slope of the linear relationships.

4.2 Interpretation of the parameters of the structural system

Henceforth, when we say "acquirer's abnormal return" we mean to say "acquirer's normalized abnormal return," as defined in the previous section.

There is no prior expectation about the numeric value of β, except that it be positive. As greater value is created by the acquisition, it is likely that the target's abnormal returns and the acquirer's abnormal returns, both, increase. If β is equal to one, it means that value gains (or losses) are equally shared among the parties. If β is less (greater) than one, it means that the acquirer keeps a larger (smaller) share of the value gains than the share of the target.

When an acquisition neither creates nor destroys value and when the negotiation power between acquirer and target are exactly balanced, one would expect that the parties' abnormal returns would be nil. Econometrically, this suggests that the intercepts of both equations of the structural model (α_0 and β_0) should be nil.

5. Event-studies

In the context of the power dispute between shareholders and management/boards of directors, event studies have been used to examine firm value changes in response to an announcement of the adoption or the removal of corporate governance provisions. Bhagat and Romano (2001) is a comprehensive survey of the application of this methodology in the corporate law literature.

An acquisition abruptly breaks the target's original balance of power between its shareholders and its management/board members. The acquirer's corporate governance structure is likely to replace the target's structure. In the case of takeover activity, the initial step of the methodology consists of comparing the share returns of a firm surrounding the key events with some counterfactual proposal of what these returns might have been in the absence of the takeover negotiation. The difference between the actual and counterfactual returns over the corresponding time interval is called an abnormal return attributable to the information impounded on that key event. Positive abnormal return accrued by a party around the announcement of an acquisition is a measure of how good the terms of the deal were in its favor.

If the corporate governance attributes of the target and of the acquirer matter for the total merger value and for distribution of gains and losses; *and* if the stock markets fully and quickly incorporate all information that is relevant for the valuation[3] of the deal, then

[3] Firm value reflects three standard operational measures: net profit margin (income divided by sales); return on equity (income divided by book equity); and expected sales growth. When an unanticipated acquisition is announced, abnormal returns are a manifestation of unanticipated changes in any of these measures.

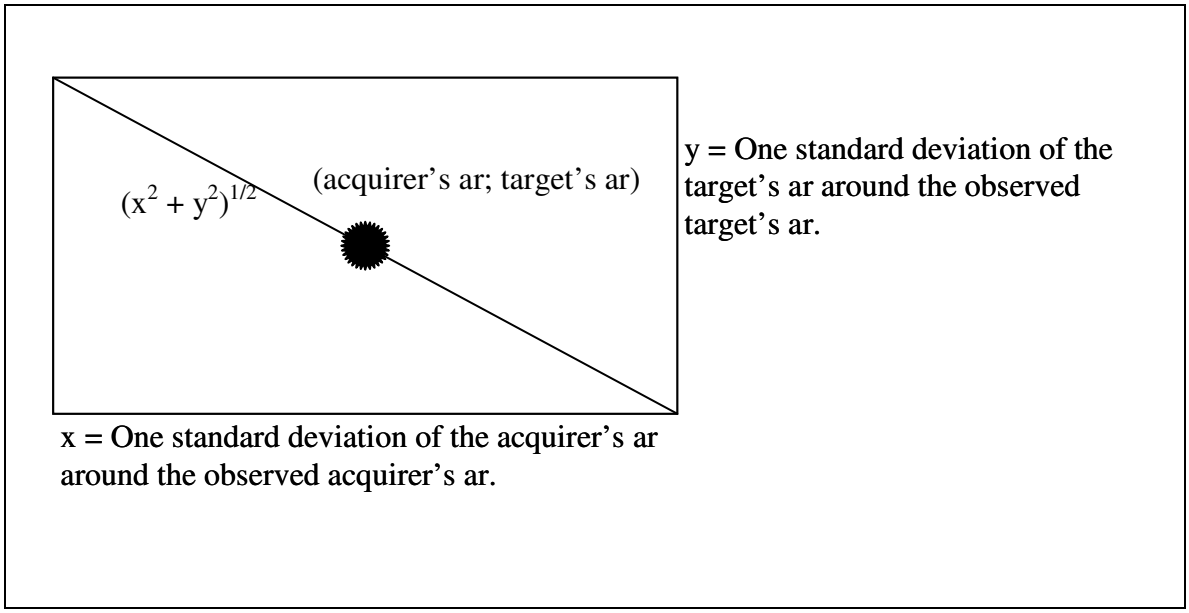
the stock prices (of the target and of the acquirer) should quickly adjust to the announcement of the transaction.

Once the parties' abnormal returns are estimated, they are typically regressed against potential explanatory variables as in typical cross section analysis. In the standard estimation procedure each observation is equally weighted. A particularity of event-studies it that the abnormal returns are measured with errors. Da Graça (2010) and da Graça and Masson (2012) make the point that it is possible to improve the statistical efficiency of event study cross section estimators by weighting each observation by the inverse variance of the abnormal return.[4] In the case of the structural model we propose herein, however, each observation is a pair of abnormal returns: the target's abnormal return and the acquirer's abnormal return. Each of them in measured with its own measurement error.

When an observation is the sum of two abnormal returns, we propose the use of the inverse of the sum of the target's abnormal return variance and the acquirer's abnormal return variance. Graphically the square root of the sum of variances shows as the diagonal of the rectangle that has the pair of abnormal returns in its center; the base is the standard deviation of the acquirer's abnormal return and the height is the standard deviation of the target's abnormal return. Figure 4 below illustrates the idea.

[4] The intuition for the benefit of using the inverse variance weighting follows the same line of reasoning behind the expected improvement in efficiency of GLS estimation upon OLS estimation.

Figure 4: Square root of sum of variances



Intuitively, more precisely estimated pairs of abnormal returns are surrounded by "tighter" rectangles. The weight of each pair in the estimation process is heavier the "tighter" the rectangle is.

6. Indicators of corporate governance environment

We review three indicators of corporate governance environment that have attracted most of the academic debate in the last decade: the G-index (Gompers *et al.* (2003)), the classified board indicator (Bebchuk and Cohen (2005)), representing staggered boards, and the E-index (Bebchuk *et al.* (2009)).

The G-index construction is straightforward: for every firm one point is added for each of the 24 provisions that could potentially reduce shareholder rights, as reported in the Investor Responsibility Research Center's (IRRC) database of antitakeover provisions. Thus, the G-index is the number of provisions that could reduce shareholder rights. Despite its merits and simplicity, the G-index has a weakness, as it does not

accurately reflect the relative impacts of different provisions. To see this consider two provisions: provision A confers great power to shareholders and provision B confers some but not much power to shareholders. Suppose a firm's charter initially includes provision A but does not include provision B. Suppose there is a change in the charter so that provision A is eliminated and provision B is added, while everything else is constant. The G-index would be unaltered, in spite of a loss of shareholder power.

In investigating further the properties and the details of the construction of the G-index from many provisions, Bebchuk and Cohen (2005) take the other extreme of the spectrum and identify the one governance provision that is likely to explain most of the variation of firm values. They find that whether or not a firm adopts a staggered board has a strong effect on its market value and that this effect is several times larger than the average effect of other provisions in the constructed G-index. In the case of hostile takeovers, they observe that staggered boards protect incumbent board members from removal. They reason that such protection may affect management behavior, incentives, and bargaining power, and, consequently, may misalign management and shareholders' interests which affects firm value.

Bebchuk *et al.* (2009) try to strike a balance between the excess of the G-index and the extreme parsimoniousness of the staggered board indicator by proposing the entrenchment index (the E-index). They report that, among the IRRC's 24 G-index provisions, six[5] of them draw opposition from institutional investors and are deemed as

[5] *Staggered board*: a board in which directors are divided into separate classes (typically three) with each class being elected to overlapping terms.
Limitation on amending bylaws: a provision limiting shareholders' ability through majority vote to amend the corporate bylaws.
Limitation on amending the charter: a provision limiting shareholders' ability through majority vote to amend the corporate charter.

"influential" by experienced practitioners. Bebchuk *et al.* (2009) construct the E-index in the same way the G-index is constructed, i.e., one point is added for each of the six provisions. They find that more entrenched firms (higher E-index) are associated with lower valuations.

7. Data

We combine and use two sources of data. One dataset comes from Huang (2010), who kindly shared it with us. He identifies acquisitions that meet the following criteria:

1. Public acquirers incorporated in the U.S.
2. Public targets incorporated in the U.S.
3. Transaction value of more than $1 million.
4. In a given transaction, the acquirer controls less than 50% of its target's shares prior to the announcement and owns 100% of the target's shares after the transaction
5. In a given transaction, the acquirer has annual financial statement information available from Compustat and stock return data (210 trading days prior to acquisition announcements) from the University of Chicago's Center for Research in Security Prices (CRSP) Daily Stock Price and Returns file.
6. Targets have beta less than 10 and more than -10.

Supermajority to approve a merger: a provision that requires more than a majority of shareholders to approve a merger.
Golden parachute: a severance agreement that provides benefits to management/board members in the event of firing, demotion, or resignation following a change in control.
Poison pill: a shareholder right that is triggered in the event of an unauthorized change in control that typically renders the target company financially unattractive or dilutes the voting power of the acquirer.

7. The acquirer is included in the Investor Responsibility Research Center's (IRRC) database of antitakeover provisions.

For the identified acquisitions, and for each party in the transaction, Huang (2010) estimates the 2-day, 5-day and 10-day windows' cumulative abnormal returns – in short, abnormal returns. The 2-day window's abnormal return includes the returns of the two days before and after the announcement day and the announcement day itself, hence it contains five total days. The 5-day and 10-day windows' abnormal returns follow the same logic. The CRSP equal-weighted return is used as the market return in the estimation of the market over the 200-day period from event day -210 to event day -11. The estimation of each market model estimates the variance of its error term and its beta. The former is an input for the determination of each observation weight in the regression analysis as explained in Section 5. The latter is a measure of a firm's systematic risk.

We take a step farther and modify criterion 7 above by identifying acquisitions in which *both* the acquirer *and the target* are included in the Investor Responsibility Research Center's (IRRC) database.

The dataset that contains the E-index comes from the IRRC database. IRRC published the data for the years 1990, 1993, 1995, 1998, 2000, 2002, 2004, 2006, 2007 and 2008. We assume that during the years between two consecutive publications, firms have the E-indices as in the previous publication year.

We consider some deal characteristics that may either influence the potential for value synergy of an acquisition or the distribution of negotiation power between the parties that have attracted some attention in the academic debate. The relative deal size is a measure of the target's size relative to the acquirer's size. Market capitalization is

included as a measure of a firm size. Our empirical framework allows investigating the relative size effect and whether the source of the effect is related to synergies and/or power imbalances in the negotiation stage.

Jensen (1986), Lewellen (1971) and Dong *et al.* (2002) present evidence that the share of cash payment in an acquisition might be related to three hypotheses: (1) the acquirer's free cash flow availability; (2) a co-insurance effect[6]; and (3) pre-transactions overvaluation of acquirer's equity (also characterized in Travlos (1987) as the acquirer signaling its private information about the true value of its stock through equity offers). Our structural approach allows us to examine these hypotheses all at once. The free cash flow hypothesis is likely to affect the balance of power in negotiations. Presumably, more free cash makes the acquirer softer. The co-insurance and the overvaluation hypotheses suggest a reduction in total value the smaller the share of cash in payment for the deal. The overvaluation hypothesis may additionally shift the negotiation power so that acquirers are likely to bid higher as long as they pay mostly with their overvalued equity.

We examine whether or not a diversifying acquisition creates synergies. We set the diversifying acquisition dummy to one when the acquirer and target have different four-digit SIC codes and zero otherwise. This dummy variable may capture the *de novo* entry effect through an acquisition, as theorized by McCardle and Viswanathan (1994). It may also capture the effect related to the possibility that some firms in mature industries seek

[6] Travlos (1987) in pages 945-6 explains that "*the combination of two firms lacking perfect positive correlation of cash flows can decrease the default risk of the combined entity and, therefore, increase its debt capacity due to the co-insurance effect. Also, the debt capacity of the new entity will increase if there is any latent debt capacity in the acquired firm. In either case, unless capital restructuring occurs, at least part of the benefits from higher debt capacity accrues to the merging firms' bondholders at the stockholders' expense Thus, a common stock exchange offer leads to a wealth transfer from stockholders to bondholders, implying a fall in stock prices. On the other hand, a cash acquisition might offset the negative changes in the bidding firms' common stock prices, caused by the co-insurance effect, leaving the bidding firms' stock prices unchanged*."

new growth opportunities in other industries. The perspective of new growth may take the form of positive synergies in the *post* acquisition period.

The potential for growth is related to the industries to which the parties belong. Firms' valuations depend largely on their growth rates. Ideally one would like to control for as many industries as possible. Given the limitations of our dataset, a parsimonious yet efficient trade-off is to consider the dichotomy high-tech industries versus traditional industries. High technology industries typically grow faster than traditional industries. Therefore, a dummy variable that is equal to one when the firm is considered to belong to a high-tech industry (and is equal to zero otherwise) may capture two effects: (i) synergies derived from the combination of firms in different industries; and (ii) negotiation power differences between a party in a high-tech industry and another party in a traditional industry.

The market for corporate control experiences cycles. We adopt a proxy for the M&A market condition in order to capture these market movements. If an acquisition is announced during a boom year, it is possible that acquirers become overly optimistic and offer higher premia for their purchases. This variable is determined as the average premium paid for all deals in a given year, computed as the average of the premium paid based on the target's stock price four weeks prior to merger announcement in a given year for all announced mergers in Huang's (2010) sample.

Finally, we consider the variable offering price to target earnings ratio as it may capture - to some extent at least - how far the bid offer is from the fundamentals of the target.

8. Empirical Strategy

The negotiation power equation has one of the parties' abnormal return as the dependent variable and the other party's abnormal return as an independent variable. Nonetheless, we argue that the pair of abnormal returns is simultaneously determined. Hence, for statistical consistency, one needs instrumental variables for the abnormal return that enters the negotiation power equation as independent variables.

In our regression analysis, we use the target's and the acquirer's 2-day window abnormal returns as the simultaneously determined variables. We use the 5-day and the 10-day window abnormal returns, in conjunction with other explanatory variables, to generated predicted 2-day window abnormal returns. These predicted values are then used as instruments for the corresponding variable.

First, we "clean" the t-day (t = 5 or 10) window from the 2-day window abnormal return. We define the t,2 window as the time interval between time $-t$ and -2 and the time interval between 2 and t. We can determine the abnormal return over the t,2 window ($ar_{t,2}$) as the difference between the t-day window abnormal return and the 2-day window abnormal return.[7]

Then we run the regression:

$$ar_2 = a + b_5\, ar_{5,2} + b_{10}\, ar_{10,2} + c\,\text{other predetermined variables} + error\,term\,.$$

---

[7]

$$ar_2 = Log[p_2] - Log[p_{-2}]$$
$$ar_t = Log[p_t] - Log[p_{-t}]$$
$$ar_t = Log[p_t] - Log[p_2] + \underbrace{Log[p_2] - Log[p_{-2}]}_{ar_2} + Log[p_{-2}] - Log[p_{-t}]$$
$$ar_{t,2} \equiv Log[p_t] - Log[p_2] + Log[p_{-2}] - Log[p_{-t}] = ar_t - ar_2$$

We identify the observations that may be characterized as outliers using the SAS criteria. For each observation in the dataset, we determine the DFFITS statistic that is a scaled measure of the change in the predicted value for the observation and is calculated by deleting that observation. A large value indicates that the observation is very influential and is, therefore, a potential outlier. As a decision rule we use a size-adjusted cutoff recommended by Belsley, Kuh, and Welsch (1980). We exclude the potential outliers from the dataset and rerun the same regression to estimate a, b_5, b_{10} and c.

Next we predict ar_2 as

$\hat{ar}_2 = \hat{a} + \hat{b}_5\, ar_{5,2} + \hat{b}_{10}\, ar_{10,2} + \hat{c}\,(\text{all other predetermined variables})$. Then, we use $\hat{ar}_2$ in place of ar_2 as an instrumental variable on the right hand side of the negotiation power equation.

One can construe the negotiation power equation in two alternative ways: with the target's abnormal return as the dependent variable and the acquirer's as the independent variable; and vice versa. We conduct our analysis both ways. We clean each alternative its potential outliers in separate analyses. As such, the dataset that contains the predicted acquirers' abnormal returns has 170 observations. We call this dataset the "broad" sample. Target abnormal returns had far more outliers than the number of acquiring firm outliers. The dataset that contains the predicted targets' abnormal returns has 116 observations. We call it the "restricted" sample.

The *estimable structural systems* of equations that we work with is therefore:

$$\begin{cases} ar_{\text{target}} + ar_{\text{acquirer}} = \alpha_0 + \alpha_1(\varphi_{\text{target}} - \varphi_{\text{acquirer}}) + \alpha_2 Y_2 + \alpha_3 Y_3 + \varepsilon_1 \\ ar_{\text{i}} = \beta \hat{ar}_{\text{j}} + \beta_0 + \beta_1 \varphi_{\text{target}} + \beta_2 \varphi_{\text{acquirer}} \quad + \beta_3 Y_3 + \varepsilon_2 \end{cases}$$

where $i, j = \{\text{target, acquirer}\}$ and $i \neq j$.

Notice that the difference between the *estimable structural systems* and the *structural systems* of Section 4 is the use of the predicted abnormal returns in the right hand side of the second equation of the structural system, i.e., the negotiation power equation.

9. Descriptive Statistics

We present summary statistics of our data in Table 2.

Table 2: Summary statistics

	Broad sample (# obs = 170)				Restricted sample (# obs = 116)			
	Mean	Std Dev	Min	Max	Mean	Std Dev	Min	Max
acquirer's abnormal return	0.006	0.039	-0.138	0.125	-0.003	0.075	-0.481	0.166
normalized acquirer's ab. return	0.016	0.407	-1.177	1.275	-0.433	2.864	-18.102	4.312
target's abnormal return	-0.001	0.066	-0.408	0.300	-0.004	0.016	-0.040	0.029
acquirer's E-index	2.188	1.323	0.000	5.000	2.207	1.296	0.000	5.000
target's E-index	2.594	1.348	0.000	6.000	2.448	1.182	0.000	5.000
(target's E - acquirer's E)	0.406	1.776	-4.000	5.000	0.241	1.692	-3.000	4.000
share of the deal paid in cash	34.4	40.7	0.0	100.0	37.1	41.2	0.0	100.0
relative size	0.205	0.265	0.013	1.823	0.136	0.192	0.001	1.288
diversifying acquisition	0.535	0.500	0.000	1.000	0.517	0.502	0.000	1.000
offer to income	7.0	186.1	-1622.6	334.5	13.5	189.9	-1478.3	355.0
target in high tech industry	0.182	0.387	0.000	1.000	0.207	0.407	0.000	1.000
acquirer in high tech industry	0.218	0.414	0.000	1.000	0.181	0.387	0.000	1.000
acquirer's beta	0.851	0.399	0.007	2.414	0.940	0.445	0.160	2.269
target's beta	0.864	0.488	-0.236	2.707	0.890	0.472	-0.179	2.081
(target's beta - acquirer's beta)	0.012	0.419	-1.118	1.389	-0.050	0.443	-1.118	1.136
acquirer's Tobin's Q	1.836	0.989	0.955	6.767	1.792	1.184	0.955	9.351
M&A market condition	47.9	10.5	28.3	74.9	46.3	12.2	28.3	74.9

Table 2 reveals that the difference variables (we shaded them in Table 2) have enough variation to be used as explanatory variables in our analysis.

In Table 3 we present the correlation among the predetermined variables in our dataset. We also indicate the degree to which correlations are statistically different from zero. We break down Table 3 into three panels so as to facilitate visualization. In Panel A

we display the correlations among the deal characteristic variables. Recall that in Section 4 we define Y_2 as the set of predetermined variables that affect only the synergy equation. In our empirical work, "M&A market condition," "acquirer's beta," "target's beta" and "(target's beta – acquirer's beta)" are the potential Y_2 variables. The other variables in Panel A are the potential Y_3 variables, i.e., predetermined variables that affect both structural equations.

In Panel A we see that there is a "cluster" of highly significant correlations (we shaded it in Table 3). The inclusion of the predetermined variables of the "cluster" in our regression analysis may lead to multicollinearity. The coefficient estimates of multicollinear variables may not give valid inferences about the true coefficients of the same variables. To the extent our focus is on the coefficients of other predetermined variables, the correlations among the cluster variables do not compromise our analysis.

In Panel B, we see insignificant correlations between the targets' E-indices and the acquirers' E-indices. Naturally the difference between them is correlated with each other.

In Panel C, we investigate if deal characteristics and the E-indices are correlated. For most pairs, the evidence cannot reject the null hypothesis that the correlation between any deal characteristic and levels or differences of the E-indices is zero. When a correlation is statistically significant it is not highly significant and its magnitude is never greater than 0.16.

Table 3: Correlation among predetermined variables

Panel A: correlation among deal characteristics

Variable	label	c	S	d	Oti	t_h	a_h	a_b	t_b	d_b	a_q	m&a
share of the deal paid in cash	c	1.00	0.07	0.17 M	-0.07	0.12	0.04	-0.08	0.08	0.17 M	-0.01	-0.23 H
relative size	s	0.07	1.00	0.08	-0.08	-0.09	-0.06	0.00	0.03	0.04	-0.07	-0.07
diversifying acquisition	d	0.17 M	0.08	1.00	0.02	-0.02	0.06	-0.01	0.05	0.06	0.03	-0.17 M
offer to income	oti	-0.07	-0.08	0.02	1.00	-0.14 L	-0.14 L	-0.15 L	-0.05	0.08	-0.08	-0.06
target in high tech industry	t_h	0.12	-0.09	-0.02	-0.14 L	1.00	0.78 H	0.25 H	0.46 H	0.30 H	0.28 H	-0.33 H
acquirer in high tech industry	a_h	0.04	-0.06	0.06	-0.14 L	0.78 H	1.00	0.22 H	0.41 H	0.27 H	0.31 H	-0.31 H
acquirer's beta	a_b	-0.08	0.00	-0.01	-0.15 L	0.25 H	0.22 H	1.00	0.57 H	-0.29 H	0.15 M	-0.27 H
target's beta	t_b	0.08	0.03	0.05	-0.05	0.46 H	0.41 H	0.57 H	1.00	0.62 H	0.22 H	-0.39 H
(target's beta - acquirer's beta)	d_b	0.17 M	0.04	0.06	0.08	0.30 H	0.27 H	-0.29 H	0.62 H	1.00	0.11	-0.20 H
acquirer's Tobin's Q	a_q	-0.01	-0.07	0.03	-0.08	0.28 H	0.31 H	0.15 M	0.22 H	0.11	1.00	-0.08
M&A market condition	m&a	-0.23 H	-0.07	-0.17 M	-0.06	-0.33 H	-0.31 H	-0.27 H	-0.39 H	-0.20 H	-0.08	1.00

Panel B: correlation among E indices

Variable	label	a_e	t_e	d_e
acquirer's E-index	a_e	1.00	0.12	-0.66 H
target's E-index	t_e	0.12	1.00	0.67 H
(target's E - acquirer's E)	d_e	-0.66 H	0.67 H	1.00

Panel C: correlation between E indices and deal characteristics

Variable	label	c	S	d	Oti	t_h	a_h	a_b	t_b	d_b	a_q	m&a
acquirer's E-index	a_e	0.04	0.05	0.10	0.12	-0.04	-0.12	-0.13 L	-0.16 M	-0.06	-0.16 M	-0.13 L
target's E-index	t_e	0.07	0.11	0.10	0.09	0.00	0.00	-0.18 M	-0.05	0.11	-0.14 L	0.03
(target's E - acquirer's E)	d_e	0.02	0.05	0.00	-0.02	0.03	0.09	-0.04	0.07	0.13 L	0.01	0.12

Superscript "H" (high) means statistically significant at 1 percent level.
Superscript "M" (medium) means statistically significant at 5 percent level.
Superscript "L" (low) means statistically significant at 10 percent level

After the simple correlation analysis in Table 3, we go a step further and examine that possibility that some linear combination of the deal characteristics is correlated to some linear combination of the E-indices. The statistical tool that evaluated this possibility is called canonical correlation analysis. We find that the highest possible correlation between any linear combination of the other predetermined variables in the negotiation equations and any linear combination of the E-indices is 0.30 but this is not statistically significant at the 10 percent level. Likewise, the highest possible correlation between any linear combination of the other predetermined variables in the synergy equation and the difference of E-indices is 0.228 but this is not statistically significant at the 10 percent level. Therefore, running the structural equations having the deal characteristics and E-indices as predetermined variables does not threaten the validity of the parameter estimates related to the governance indicator with respect to possibility of multicollinearity.

10. Results

We estimate 8 models of the synergy equation (the sum of normalized abnormal returns), 8 models of the negotiation equation with the targets' abnormal returns as the dependent variable (the "T-negotiation equations"), and 8 models of the negotiation equations with the acquirers' abnormal returns as the dependent variable (the "A-negotiation equations"). From this point on, we set the statistical tests as one-sided tests. We interpret the statistical test in such a way that the null hypothesis could be stated as "the true sign of the coefficient is the opposite of the sign that is estimated."

Table 4, Table 5 and Table 6 present the results of the synergy, the T-negotiation and the A-negotiation equations, respectively. They are estimated with the inverse

variance weighted estimation procedure. The equations account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)). The columns contain the parameter estimates of the coefficients of the variables in the left most column. Below each parameter estimate, in parenthesis, is the corresponding standard deviation and statistical significance is given by H, M, L for 1%, 5%, or 10% levels, respectively. In each table, the models are ordered from left to right in descending order according to their R-squares. The corresponding results of the three equations, estimated with the equally weighted estimation procedure are presented in Table 4–A, Table 5–A, and Table 6–A in the appendix.

Table 4: Results of the 8 models of the *synergy equation* of the *structural* system estimated with the *inverse variance weighted observations procedure*. The left hand side variable of the regressions is the sum of the target's abnormal return and the acquirer's normalized abnormal return. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) as the difference between the target's E-index and the acquirer's E index. The models are positioned from left to right in decreasing order of their R-squares. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170	170	170
R square	0.2162	0.2146	0.1249	0.1239	0.1154	0.1153	0.1108	0.1099
(target's E -acquirer's E)	-0.0120 L	-0.0119 L	-0.0125 L	-0.0125 L	-0.0123 L	-0.0123 L	-0.0127 L	-0.0127 L
	(0.0081)	(0.0081)	(0.0084)	(0.0084)	(0.0083)	(0.0083)	(0.0086)	(0.0086)
share of the deal paid in cash	0.0006 M	0.0006 L	0.0006 M	0.0006 M	0.0007 M	0.0007 M		
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0004)	(0.0004)		
relative size	0.0302	0.0290	0.0120	0.0124			0.0064	0.0068
	(0.0264)	(0.0262)	(0.0273)	(0.0272)			(0.0283)	(0.0283)
diversifying acquisition							0.0264	0.0272
							(0.0322)	(0.0320)
(target's high tech - acquirer's high tech)	-0.0693	-0.0714	-0.0994 M	-0.0981 M			-0.0827 L	-0.0813 L
	(0.0570)	(0.0568)	(0.0591)	(0.0589)			(0.0606)	(0.0603)
offer-to-income	0.0001		0.0000		0.0000		0.0000	
	(0.0001)		(0.0001)		(0.0001)		(0.0001)	
M&A market condition	0.0016	0.0014			0.0017	0.0017	0.0004	0.0005
	(0.0015)	(0.0015)			(0.0016)	(0.0016)	(0.0014)	(0.0014)
(target's beta - acquirer's beta)	0.1213 H	0.1304 H	0.1766 H	0.1711 H	0.1614 H	0.1596 H	0.1755 H	0.1698 H
	(0.0428)	(0.0397)	(0.0427)	(0.0405)	(0.0431)	(0.0406)	(0.0437)	(0.0412)
acquirer's Tobin's Q	0.0736 H	0.0718 H						
	(0.0176)	(0.0173)						
Intercept	-0.2203 H	-0.2079 H	-0.0056	-0.0058	-0.0773	-0.0794	-0.0129	-0.0178
	(0.0880)	(0.0852)	(0.0265)	(0.0265)	(0.0846)	(0.0827)	(0.0768)	(0.0756)

Table 5: Results of the 8 models of the *T-negotiation equation* of the *structural* system estimated with the *inverse variance weighted observations procedure*. The *left hand side* variable of the regressions is the *target*'s abnormal return. The *predicted* value of the *acquirer*'s normalized abnormal return is the *instrumental* variable for the *acquirer*'s normalized abnormal return in the right hand side of the regressions. All models account for the potential effect of the corporate governance environment as quantified by the E-index(Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in decreasing order of their R-squares. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1		2		3		4		5		6		7		8	
Number of observations	170		170		170		170		170		170		170		170	
R square	0.3578		0.3556		0.3246		0.3246		0.3232		0.3232		0.3083		0.3083	
acquirer's predicted ab ret	0.1118	H	0.1139	H	0.1815	H	0.1814	H	0.1898	H	0.1896	H	0.1833	H	0.1832	H
	(0.0448)		(0.0447)		(0.0398)		(0.0394)		(0.0370)		(0.0367)		(0.0367)		(0.0363)	
acquirer's E index	-0.0064	L	-0.0063	L	-0.0053		-0.0053		-0.0048		-0.0048		-0.0036		-0.0036	
	(0.0045)		(0.0045)		(0.0047)		(0.0047)		(0.0046)		(0.0046)		(0.0046)		(0.0046)	
target's E index	-0.0098	H	-0.0103	H	-0.0134	H	-0.0134	H	-0.0129	H	-0.0129	H	-0.0134	H	-0.0134	H
	(0.0041)		(0.0041)		(0.0042)		(0.0042)		(0.0041)		(0.0041)		(0.0041)		(0.0041)	
share of the deal paid in cash	0.0005	H	0.0004	H	0.0005	H	0.0005	H	0.0006	H	0.0006	H	0.0005	H	0.0005	H
	(0.0001)		(0.0001)		(0.0001)		(0.0001)		(0.0001)		(0.0001)		(0.0001)		(0.0001)	
relative size	-0.0123		-0.0144	L	-0.0215	M	-0.0216	M	-0.0227	H	-0.0228	M	-0.0181	M	-0.0181	M
	(0.0113)		(0.0109)		(0.0112)		(0.0109)		(0.0110)		(0.0107)		(0.0105)		(0.0103)	
diversifying acquisition	-0.0087				-0.0002		.		-0.0005				-0.0002			
	(0.0118)				(0.0118)				(0.0118)				(0.0117)			
target's high tech	-0.0462	M	-0.0424	L	-0.0279		-0.0278		-0.0309		-0.0308					
	(0.0275)		(0.0270)		(0.0283)		(0.0278)		(0.0277)		(0.0273)					
acquirer's high tech	-0.0050		-0.0079		-0.0056		-0.0056		-0.0064		-0.0066					
	(0.0224)		(0.0221)		(0.0230)		(0.0226)		(0.0229)		(0.0225)					
offer-to-income	.				0.0000		0.0000									
					(0.0000)		(0.0000)									
acquirer's Tobin's Q	0.0263	H	0.0247	H			.									
	(0.0089)		(0.0087)													
Intercept	0.0034		0.0032		0.0508		0.0507		0.0488		0.0486		0.0416		0.0416	
	(0.0250)		(0.0249)		(0.0204)		(0.0200)		(0.0201)		(0.0196)		(0.0197)		(0.0191)	

Table 6: Results of the 8 models of the *A-negotiation equation* of the *structural* system estimated with the *inverse variance weighted observations procedure*. The *left hand side* variable of the regressions is the *acquirer*'s normalized abnormal return. The *predicted* value of the *target*'s abnormal return is the *instrumental variable* for the *target*'s abnormal return in the *right hand side* of the regressions. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in decreasing order of their R-squares. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	116	116	116	116	116	116	116	116
R square	0.0874	0.0874	0.0593	0.0587	0.0571	0.0568	0.0336	0.0335
target's predicted ab ret	3.6252	3.6296	3.8657	3.8711	4.3286 L	4.3141 L	3.8080	3.8027
	(3.2629)	(3.2455)	(3.4202)	(3.4051)	(3.2792)	(3.2638)	(3.2455)	(3.2303)
acquirer's E index	0.0037	0.0037	0.0102	0.0104	0.0083	0.0085	0.0063	0.0064
	(0.0170)	(0.0170)	(0.0176)	(0.0175)	(0.0171)	(0.0170)	(0.0171)	(0.0170)
target's E index	-0.0100	-0.0102	-0.0177	-0.0169	-0.0182	-0.0175	-0.0164	-0.0161
	(0.0216)	(0.0212)	(0.0215)	(0.0212)	(0.0214)	(0.0211)	(0.0214)	(0.0210)
share of the deal paid in cash	-0.0007	-0.0007	-0.0008	-0.0008	-0.0009	-0.0009	-0.0007	-0.0007
	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0007)
relative size	0.1418 M	0.1418 H	0.1289 M	0.1289 M	0.1314 M	0.1312 M	0.1101 M	0.1101
	(0.0612)	(0.0609)	(0.0621)	(0.0618)	(0.0617)	(0.0614)	(0.0594)	(0.0591)
diversifying acquisition	-0.0016		0.0109		0.0087		0.0039	
	(0.0435)		(0.0441)		(0.0437)		(0.0437)	
target's high tech	-0.1192	-0.1195	-0.1155	-0.1130	-0.1110	-0.1092		
	(0.2334)	(0.2322)	(0.2371)	(0.2359)	(0.2361)	(0.2349)		
acquirer's high tech	0.2300	0.2306	0.2562	0.2526	0.2542	0.2513		
	(0.2433)	(0.2417)	(0.2468)	(0.2452)	(0.2458)	(0.2443)		
offer-to-income			0.0001	0.0001				
			(0.0003)	(0.0003)				
acquirer's Tobin's Q	0.0475 M	0.0474 M						
	(0.0253)	(0.0250)						
Intercept	-0.0597	-0.0597	0.0230	0.0257	0.0393	0.0408	0.0499	0.0505
	(0.1091)	(0.1086)	(0.1024)	(0.1014)	(0.0967)	(0.0959)	(0.0967)	(0.0960)

The gain in overall fitness of the structural models by the application of the inverse variance weight scheme as compared to the equally weighted scheme becomes apparent when comparing Table 4, Table 5, and Table 6 with the corresponding appendix tables, Table 4–A, Table 5–A, and Table 6–A. R-square statistics are higher (at times much higher) in Table 4 and Table 5, in comparison to Table 4–A and Table 5–A, respectively. With equal weights, the estimated coefficients of the difference of the E-index variable in the synergy equation models are all positive albeit statistically insignificant. Interestingly, these estimated coefficients become negative and statistically significant at the 10 percent level with the inverse variance weights. For the pair Table 6 and Table 6–A, R-squares are higher with equally weighted observations. However, the process of identification and elimination of potential outliers for the estimation of the A-negotiation equations restricted the number of observations severely (the A-negotiation regression results are based on 116 observations as opposed to the T-negotiation regression results that are based on 170 observations, i.e. almost 50 percent more observations). Because of this we have greater confidence in the results of the T-negotiation equations.. Furthermore, the estimates obtained with inverse variance weights find support in da Graça (2010) and da Graça and Masson (2012) in terms of their efficiency. Accordingly, henceforth we focus our attention on the inverse variance weighted results.

The synergy models (Table 4) provide evidence that:

1. When a lower E-index acquirer acquirers a higher E-index target, there is evidence that some total value is lost (negative synergy). The estimates indicate that this loss is in the order of 1.2 percent for each unit of reduction in the E-index. This effect is statistically significant at the 10 percent level.

2. When a lower Beta acquirer acquirers a higher Beta target, there is a highly statistically significant increase in total value.
3. When the deal involves higher share of cash, it is associated with an increase in total wealth as the coefficient of the cash variable shows statistical significance.
4. In six of the eight models, the intercept is slightly negative but not statistically significant. This could suggest that - aside from other factors - acquisitions do not create or destroy value. Interestingly, however, when the acquirer's Tobin's Q variable is introduced, the intercept becomes statistically negative while the coefficient of Tobin's Q emerges as statistically positive.
5. The relative size variable does not display statistically significant effects, suggesting that synergy effects are not related to relative size.
6. The estimates suggest that when a high tech target is acquired by a non-tech buyer there is a negative synergy effect, which can be statistically significant depending on the specification of the model. However, the diversification variable does not seem to impact the total value of acquisitions to any statistically significant level.
7. The M&A Market Condition does not impact the synergy equations in any statistically significant magnitude. Likewise, the offer-to-income variable is not statistically related to synergy effects.

The T-negotiation models (Table 5) provide evidence that:

1. The data fits the structural formulation we propose in Section 4. One cannot reject the hypothesis that the intercept is nil. Moreover, the coefficient of the instrument variable for the acquirer's abnormal return is positive and highly statistically significant.
2. The evidence that the acquirer's E-index is significant is – at best – weak. However, higher target's E-index is highly statistically associated with a lower share of negotiation gains to the target's shareholders. One additional unit of target's E-index is estimated to reduce the target's shareholders' gains by approximately 1 percent.
3. On the other hand, larger shares of cash in a deal seem to favour target's shareholders, as the coefficient estimate is positive and highly statistically significant.
4. There is mild evidence that greater relative size, i.e., as parties tend to become of the same size, targets' shareholders tend to gain less from the negotiation. The relative size coefficient is negative in all models. It can be weakly, mildly or highly statistically significant, depending on the specific model.
5. Industry effects seem to play a minor role in the negotiation game as the diversification and the acquirer's high tech variables do not reach any significance level. The target's high tech variable is, at best, mildly significant in one specification.
6. We find no statistical evidence that the offer-to-income variable unbalances the negotiation game one way or the other.

7. Higher acquirer's Tobin's Q is positively and statistically related to gains to the target's shareholders in the acquisition negotiations.

The evidence that we obtain from the A-negotiation models (Table 6) is less compelling than what we obtain with the T-negotiation models. In direct comparison to the T-negotiation equations, the A-negotiation models' R-squares are lower and significance levels are for the most part lower as well. This should not be surprising given the much smaller data set after elimination of outliers. Still, most of the A-negotiation's estimates are congruent to the T-negotiation's estimates. The estimates of the E-indices have opposite signs in the negotiation equations. This makes sense as in negotiations a gain of a party means some loss to the other. Also, the coefficients of the cash, size, diversification and acquirer's high tech dummy variables are estimated with opposite signs in the negotiation equations. The only highly statistically significant exception to the opposite sign pattern is the acquirer's Tobin's Q variable that is positive in both formulations. Importantly, for each model, the A-negotiation equation and the T-negotiation equation estimate similar sharing of the acquisition synergy effects: on average, approximately 80~83 percent is kept by the acquirer's shareholders and 17~20 percent is kept by the target's shareholders.[8]

Table 7 and Table 8 present the results of the reduced form equations estimated with the inverse variance weighted procedure and the broad sample. In Table 7 the left hand side variable is the target's abnormal return. In Table 8 the left hand side variable is

[8] Using the β of the T-negotiation equation, the split between the parties of each additional unit of value created is determined such that $1/(1+\beta)$ is kept by the acquirer's shareholders. If, in this case, $\beta = 0.2$, then $1/(1+\beta) = 0.83$. On the other hand, using the β of the A-negotiation equation, the split is $\beta/(1+\beta)$ to the acquirer's shareholders. . If, in this case, $\beta = 4$, then $\beta/(1+\beta) = 0.8$.

the acquirer's abnormal return. The explanatory variables are the same in both tables. In particular, we focus on the potential effect of the corporate governance environment as quantified by the E-index. The columns contain the parameter estimates of the coefficients of the variables in the left most column. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. The corresponding results of the pair of reduced form equations, estimated with the equally weighted estimation procedure, are presented in Table 7-A and Table 8–A in the appendix.

Table 7: Results of the 8 *reduced form* models in which the *left hand side* variable of the regressions is the *target*'s abnormal return. The models are estimated with the *inverse variance weighted observations procedure*. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in decreasing order of their R-squares. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170	170	170
R square	0.3952	0.3936	0.3140	0.3120	0.3043	0.3030	0.2895	0.2863
acquirer's E index	-0.0048	-0.0047	-0.0073 L	-0.0075 L	-0.0066 L	-0.0067 L	-0.0066 L	-0.0069 L
	(0.0043)	(0.0043)	(0.0046)	(0.0046)	(0.0046)	(0.0046)	(0.0044)	(0.0044)
target's E index	-0.0089 M	-0.0093 H	-0.0155 H	-0.0152 H	-0.0141 H	-0.0139 H	-0.0147 H	-0.0143 H
	(0.0040)	(0.0040)	(0.0042)	(0.0042)	(0.0041)	(0.0041)	(0.0041)	(0.0041)
share of the deal paid in cash	0.0005 H	0.0005 H	0.0006 H	0.0006 H	0.0006 H	0.0006 H	0.0006 H	0.0006 H
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
relative size	-0.0035	-0.0051	-0.0084	-0.0069	-0.0104	-0.0091	-0.0102	-0.0084
	(0.0102)	(0.0099)	(0.0108)	(0.0106)	(0.0108)	(0.0105)	(0.0104)	(0.0102)
diversifying acquisition	-0.0077		0.0081		0.0067		0.0102	
	(0.0116)		(0.0120)		(0.0120)		(0.0118)	
target's high tech	-0.0665 H	-0.0632 H	-0.0398 L	-0.0434 L	-0.0522 M	-0.0548 M		
	(0.0266)	(0.0261)	(0.0293)	(0.0288)	(0.0283)	(0.0278)		
acquirer's high tech	0.0182	0.0160	0.0272	0.0300 L	0.0285	0.0309 L		
	(0.0219)	(0.0216)	(0.0232)	(0.0228)	(0.0233)	(0.0229)		
offer-to-income			0.0001 L	0.0001 L				
			(0.0000)	(0.0000)				
acquirer's Tobin's Q	0.0348 H	0.0336 H						
	(0.0071)	(0.0068)						
(target's beta - acquirer's beta)	0.0490 H	0.0486 H	0.0461 H	0.0473 H	0.0577 H	0.0584 H	0.0535 H	0.0542 H
	(0.0151)	(0.0151)	(0.0178)	(0.0176)	(0.0161)	(0.0160)	(0.0159)	(0.0159)
M&A Market Condition	0.0013 M	0.0014 H	0.0018 H	0.0017 H	0.0016 H	0.0016 H	0.0016 H	0.0016 H
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)
Intercept	-0.0897	-0.0934	-0.0408	-0.0343	-0.0337	-0.0286	-0.0353	-0.0262
	(0.0399)	(0.0395)	(0.0410)	(0.0398)	(0.0409)	(0.0397)	(0.0396)	(0.0381)

Table 8: Results of the 8 *reduced form* models in which the *left hand side* variable of the regressions is the *acquirer*'s normalized abnormal return. The models are estimated with the *inverse variance weighted observations procedure*. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in decreasing order of their R-squares. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170	170	170
R square	0.0971	0.0969	0.0741	0.0740	0.0713	0.0713	0.0701	0.0663
acquirer's E index	0.0003	0.0003	-0.0015	-0.0014	-0.0018	-0.0017	-0.0034	-0.0040
	(0.0101)	(0.0100)	(0.0102)	(0.0101)	(0.0102)	(0.0101)	(0.0098)	(0.0097)
target's E index	-0.0141 L	-0.0138 L	-0.0193 M	-0.0191 M	-0.0185 M	-0.0185 M	-0.0192 M	-0.0185 M
	(0.0094)	(0.0093)	(0.0094)	(0.0092)	(0.0094)	(0.0091)	(0.0091)	(0.0091)
share of the deal paid in cash	-0.0001	-0.0001	0.0000	0.0000	0.0000	0.0000	-0.0001	-0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
relative size	0.0273	0.0282	0.0209	0.0207	0.0242	0.0242	0.0156	0.0194
	(0.0240)	(0.0232)	(0.0242)	(0.0240)	(0.0237)	(0.0234)	(0.0230)	(0.0225)
diversifying acquisition	0.0044		0.0184	0.0183			0.0215	
	(0.0272)		(0.0268)	(0.0266)			(0.0260)	
target's high tech	-0.0338	-0.0357	-0.0185	-0.0200	-0.0267	-0.0272		
	(0.0624)	(0.0611)	(0.0655)	(0.0626)	(0.0643)	(0.0617)		
acquirer's high tech	0.0293	0.0306	0.0392	0.0393	0.0457	0.0457		
	(0.0513)	(0.0506)	(0.0518)	(0.0516)	(0.0508)	(0.0507)		
offer-to-income			0.0000		0.0000			
			(0.0001)		(0.0001)			
acquirer's Tobin's Q	0.0336 M	0.0343 M						
	(0.0166)	(0.0160)						
(target's beta - acquirer's beta)	0.0654 M	0.0656 M	0.0724 M	0.0738 M	0.0752 M	0.0757 M	0.0710 M	0.0725 M
	(0.0355)	(0.0354)	(0.0397)	(0.0356)	(0.0394)	(0.0354)	(0.0350)	(0.0350)
M&A Market Condition	-0.0005	-0.0005	-0.0002	-0.0002	-0.0003	-0.0004	-0.0004	-0.0005
	(0.0013)	(0.0013)	(0.0014)	(0.0013)	(0.0014)	(0.0013)	(0.0013)	(0.0013)
Intercept	0.0096	0.0117	0.0628	0.0636	0.0777	0.0779	0.0821	0.1012
	(0.0937)	(0.0925)	(0.0916)	(0.0907)	(0.0888)	(0.0881)	(0.0870)	(0.0838)

As it is in the case of the structural equations, the inverse variance weighted reduced form regressions typically generate better fit (higher R-squares) and higher level of statistical significance for some parameter estimates. Some OLS statistically insignificant parameter estimates switch sign and become statistically significant with the inverse variance weighted procedure (the cash variable in Table 7 and in Table 7-A being a case in point). Again, with support of da Graça and Masson (2012), we focus our attention on the inverse variance weighted results here.

1. Most of the estimates related to the E-index in Table 7 and in Table 8 are negative. Even though some are positive, these are not statistically significant. Most of the negatively estimated E-index effects are statistically significant. Some are highly significant.
2. The cash variable comes out as positive and highly statistically significant in Table 7 and insignificant (and mostly negative) in Table 8.
3. The M&A Market Condition variable is positive and highly statistically significant in Table 7 but it is insignificant (and negative) in Table 8.
4. In the target's abnormal return reduced form equation (Table 7), the target's high tech dummy variable comes out statistically negative in all models. All acquirer's high tech estimates are positive, although only a couple are statistically significant. The diversification dummy is insignificant in all models. In Table 8, none of the industry variables are significant in the reduced form equation for the acquirer's abnormal return.
5. The difference of betas variable (target's beta minus acquirer's beta) is positive and statistically significant in all models of Table 7 and Table 8.

6. Acquirer's Tobin's Q and offer-to-income variables are positive in the models of both reduced forms, but they are only (highly) statistically significant in Table 7.

11. Discussion

Our findings indicate that the acquirer's corporate governance environment as measured by the E-index affects the distribution of negotiation power in an acquisition. Recall that the E-index is such that one point is added for every one of the 6 provisions that reduces shareholder rights. The E-index ignores correlations among the provisions and ignores that some provisions may be more relevant than others. These weaknesses may reduce the variability of the E-index so that the E-index may be less informative than what one might assume. Likewise, the G-index has the same problem. The construction of an index that accounts for the correlations among the provisions is an issue worth further exploration.

The highly statistically negative effect of target's E-index on the target's negotiation equation models is interesting when one is reminded that one of the most common justifications for the adoption of more entrenched boards is to slow down hostile takeover attempts, presumably, to the benefit of the target's shareholders. But our results suggest exactly the opposite, i.e. they suggest that the negotiation power shifts to the acquirer to the detriment of the target's shareholders.

One possible explanation could be that, instead of fixing potential agency problems, entrenched boards exacerbate the misalignment of interests between board members and shareholders precisely during acquisition negotiations. When a takeover attempt is or becomes credible the members of an entrenched board may use their more entrenched

positions to negotiate and extract benefits for themselves not necessarily for the shareholders. This suggests a testable hypothesis if one can track the fates of target management post acquisition.

So it appears as though an entrenched board does hurt targets' shareholders but not through the commonly suggested channel of protecting board members and managers from being fired when they undertake negative net present value (NPV) projects. Our results suggest that entrenched boards may have the benefit of directing the firms towards longer term growth. But when an acquisition is imminent, the board seems to sell the target short.

Gompers *et al.* (2003) interpret some of their results as evidence that high G-index firms engaged in inefficient acquisitions during the 1990s. Herein we investigate the effect of the E-index, not the G-index. However, to the extent that these indices are likely to be positively correlated, we infer that Gompers *et al.* would reach similar conclusions had they used the E-index in their analysis. Following this inference one would expect to observe wealth destruction (creation) when a high (low) E-index firm acquired a low (high) E-index firm, as the low (high) E-index firm inherits the high (low) E-index of the acquirer. Our synergy equation of the structural approach, however, points towards the opposite direction of this inference. We find that high (low) E-index acquirer acquiring a low (high) E index target is, on average, associated with positive (negative) synergy. But interestingly, we could have leaned towards a similar conclusion as Gompers *et al* had we focused on the results of our reduced form equations. Most of the coefficients of the acquirer's E-index are negative and some are statistically significant. In the couple of models where this coefficient is positive, it is insignificantly so.

A relevant point we discuss is the difference in conclusions one may reach from the interpretation of estimated coefficients of the reduced form equations as compared to the estimated coefficients of the structural equations. We focus, in particular, on the E-index effect.

In reduced form, as we have seen, most of the estimated E-index coefficients are negative. This result suggests that the acquirer's and the target's abnormal returns, both, tend to decrease as the E-index increases. One may, not implausibly, imply that total wealth is reduced as the E-index (level of entrenchment) increases. In this sense our reduced form results align with Bebchuk *et al.* (2009) and much of the literature.

Analyzing the same dataset but with a different empirical approach, another possible interpretation emerges. Our structural formulation suggests that the E-index does play an important role in the splitting of acquisition losses or gains among target's and acquirer's shareholders. But the structural formulation does not support the view that less entrenched boards are associated with higher firm value. On the contrary, we find evidence that when a more (less) entrenched target is acquired by a less (more) entrenched acquirer, total wealth decreases (increases). The statistical significance of this finding is low but its magnitude is considerable: a little over one percent per unit of difference in the E-index.

The negative change in total value as a result of a reduction in the target's E-index supports the narrative that some firms adopt more entrenched boards that shield firms from the market for corporate control so that these firms can seek longer term and sustainable profitability without threat of punishment for short term difficulties. In other words, it is possible that some higher E-index firms can become more valuable than what

they would be without that level of entrenchment. When these firms are - at last - acquired by less entrenched firms, additional value can be lost from the perspective of the capital market, as our structural form results suggest.

Instead of being interpreted as an expression of lost total value, the negative impact on the target's abnormal return of the target's E-index estimated by the reduced form models in Table 7 can be reasoned as an expression of a loss that the target's shareholders face in the acquisition negotiation process. This re-interpretation of the reduced form results can reconcile the results of the structural form and the results of the reduced form approaches.

The greatest advantage of the structural approach is to provide an analytical framework that may allow the identification of the fundamental economic sources of the potential effect of the E-index on the parties' abnormal returns. In more basic terms, we seek to estimate the effect that the E-index may have on the total value (size of the pie) and how the parties split it. The reduced form results do not directly address this issue.

In addition to the effect of the corporate governance environment on firm performance, our structural analysis allows us to revisit some recurrent topics in the finance literature, such as how targets and acquirers split gains or losses; the impact of the use of cash in acquisition deals; the size effect; and industry related effects.

The established empirical literature states that targets' shareholders benefit more than acquirers' shareholders. Under this light our result is partially, but not totally, puzzling because we collect evidence that the distribution of the acquisition incremental value is such that it favors the acquirer when there are gains and works to the detriment of the acquirer when there are losses. Accordingly, we propose a restatement along the

following lines: when acquisitions destroy value, targets do not do as poorly as acquirers do (this is the part that aligns with the literature); when acquisitions create value, acquirers tend to do better (this part diverges from the literature).

Recall that the equations of the structural model, the acquirers' abnormal returns are "normalized" to the targets' abnormal returns using the relative size variable. Then the relative size of the parties may reconcile our results with the empirical literature in regards to the distribution of gains and losses. To see this suppose that an acquirer is a hundred times larger than a target. One percent normalized acquirer's abnormal return is associated with, on average, approximately 0.2 percent target's abnormal return through the T-negotiation equation. But one percent normalized acquirer's abnormal return corresponds to 0.01 percent acquirer's abnormal return. Without the normalization, it may appear that the target gains 20 times more than the acquirer. Hence whether or not one normalizes a party's abnormal returns using their relative sizes can lead to divergent conclusions.

Much has been written about the influence that firm size might have on the determination of the parties' abnormal returns following the announcement of mergers and acquisitions. Our structural framework allows the analysis to estimate parameters and test alternative hypotheses with respect to the origin of the size effect: synergy (size of the pie) or negotiation (the splitting of the pie). Notably, given the structural form, these hypotheses need not be exclusive. Rather, they can be complementary.

Our structural results with respect to the relative size variable are interesting in themselves. But, perhaps more importantly for our methodological point, the potential for conflicting interpretations of estimates derived from reduced form and from the

corresponding underlying structural model arises in the estimation of the relative size effect. We observe that, in reduced form, the relative size variable is insignificant in all models. Nonetheless, it is statistically significant in all but one model of the negotiation equations in the structural formulation. This means that it is likely that the relative size of the parties is a relevant explanatory variable of the splitting of the acquisition proceeds but it is unlikely that it affects the amount of the proceeds.

Another instance where the structural approach allows the evaluation of several hypotheses about the same variable is related to the share of cash as payment. More cash seems to benefit the target to the detriment of the acquirer. This resonates with the Jensen's (1986) free cash flow hypothesis while it is at odds with the overvaluation hypothesis of Dong *et al.* (2002). In regards to total wealth, more cash is positively related to gains. This result is aligned with the co-insurance hypothesis and the overvaluation hypothesis. Overall, our cash coefficients suggest the rejection of the overvaluation hypothesis, while accepting the free cash flow and the co-insurance hypotheses.

12. Conclusions

Our paper makes several contributions to the literature in corporate finance: some are empirical and are related to the impact the corporate governance environment might have on firms' valuation; some are methodological. On the methodological front we propose a structural approach for the determinants of the abnormal returns of the parties in acquisitions. One structural equation models the total acquisition value change (synergy equation). The other equation models the distribution of the total acquisition

value change between the parties (negotiation equation). We posit that from the interaction of these equations the parties' abnormal returns are determined.

Furthermore, we find that the application of the inverse variance weights to the regression analysis does make a noticeable difference in terms of the estimated coefficients (at times signs change) and in terms of their statistical significance (significance appears or is strengthened). In other words, these weights increase the efficiency of the estimation procedure as pointed out in da Graça and Masson (2012) and da Graça (2010).

The focus of the empirical effort is the effect of the parties' E-indices on the values of the parties in acquisitions. Some previous studies have applied long-term event-studies following changes in a firm's corporate governance provision, without any substantial change in ownership. Ours is a short-term event study of the issue in the context of mergers and acquisitions. Applying our novel methodological approach we find results that offer different perspectives on the impact the corporate governance environment might have on the performance and, as a consequence, on the value of corporations. Crucially, our structural results suggest that: (1) firms with more highly entrenched management are more valuable and (2) in an acquisition negotiation targets with higher E-indices tend to lose negotiation power against the acquirer. These findings diverge from some influential published papers but they are coherent with the notion that more entrenched boards can concentrate their efforts to lead their firms towards longer term growth. Less entrenched boards may dissipate energy micromanaging their firms in order to avoid short-term missteps that might expose them to the unforgiving market for corporate control. However, when an acquisition is credible, imminent and – perhaps -

unavoidable, a target's entrenched board members seem to be positioned to extract private benefits from the acquirer to the detriment of the target's shareholders.

In addition to the structural analysis, we ran the corresponding reduced form regressions on the same dataset. Interestingly, the reduced form results seem aligned with much of the literature. This leads us into contemplating the possibility that conclusions might be driven by the way the empirical analysis is structured. Certainly, our structural approach decomposes the estimated effects in a different way than the reduced form approach does. This can also yield different interpretations of the same underlying parameter estimates. Naturally, this is as aspect of our research that deserves more attention, as well.

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Table 4-A: Results of the 8 models of the ***synergy equation*** of the ***structural*** system estimated with the ***equally weighted observations procedure***. The left hand side variable of the regressions is the sum of the target's abnormal return and the acquirer's normalized abnormal return. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) as the difference between the target's E-index and the acquirer's E index. The models are positioned from left to right in the same order as in Table 4. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170	170	170
R square	0.1351	0.1086	0.0333	0.0175	0.0415	0.0249	0.0485	0.0304
(target's E -acquirer's E)	0.0123	0.0118	0.0181	0.0173	0.0154	0.0148	0.0129	0.0123
	(0.0181)	(0.0183)	(0.0187)	(0.0188)	(0.0187)	(0.0188)	(0.0189)	(0.0190)
share of the deal paid in cash	0.0000	-0.0002	-0.0004	-0.0005	-0.0002	-0.0003		
	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)		
relative size	0.1104	0.0875	0.0577	0.0425			0.0670	0.0486
	(0.1197)	(0.1207)	(0.1251)	(0.1254)			(0.1248)	(0.1252)
diversifying acquisition							0.0057	0.0074
							(0.0668)	(0.0673)
(target's high tech - acquirer's high tech)	-0.0790	-0.0760	-0.1093	-0.1057			-0.1177	-0.1157
	(0.1208)	(0.1222)	(0.1264)	(0.1270)			(0.1259)	(0.1267)
offer-to-income	0.0004 M		0.0003 L		0.0003 M		0.0003 M	
	(0.0002)		(0.0002)		(0.0002)		(0.0002)	
M&A market condition	0.0061 M	0.0056 M			0.0051 L	0.0047 L	0.0054 M	0.0052 L
	(0.0031)	(0.0032)			(0.0033)	(0.0033)	(0.0032)	(0.0033)
(target's beta - acquirer's beta)	-0.0920	-0.0745	-0.0787	-0.0651	-0.0545	-0.0424	-0.0563	-0.0453
	(0.0788)	(0.0794)	(0.0810)	(0.0810)	(0.0817)	(0.0818)	(0.0812)	(0.0815)
acquirer's Tobin's Q	0.1303 H	0.1229 H						
	(0.0323)	(0.0325)						
Intercept	-0.5469 H	-0.4957 H	0.0037	0.0132	-0.2295 L	-0.2063	-0.2712 L	-0.2540 L
	(0.1774)	(0.1781)	(0.0501)	(0.0500)	(0.1661)	(0.1664)	(0.1689)	(0.1697)

Table 5-A: Results of the 8 models of the ***T-negotiation equation*** of the ***structural*** system estimated with the ***equally weighted observations procedure***. The ***left hand side*** variable of the regressions is the ***target***'s abnormal return. The ***predicted*** value of the ***acquirer***'s normalized abnormal return is the ***instrumental*** variable for the ***acquirer***'s normalized abnormal return in the right hand side of the regressions. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in the same order as in Table 5. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170	170	170
R square	0.0197	0.0197	0.0224	0.0224	0.0193	0.0193	0.0178	0.0177
acquirer's predicted ab ret	0.0058	0.0058	0.0044	0.0044	0.0122	0.0122	0.0139	0.0140
	(0.0384)	(0.0383)	(0.0322)	(0.0321)	(0.0302)	(0.0301)	(0.0298)	(0.0297)
acquirer's E index	-0.0021	-0.0021	-0.0026	-0.0026	-0.0020	-0.0020	-0.0022	-0.0022
	(0.0042)	(0.0042)	(0.0043)	(0.0042)	(0.0042)	(0.0041)	(0.0041)	(0.0041)
target's E index	-0.0045	-0.0045	-0.0050	-0.0050	-0.0047	-0.0047	-0.0046	-0.0046
	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)
share of the deal paid in cash	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
relative size	0.0113	0.0113	0.0126	0.0127	0.0107	0.0107	0.0102	0.0102
	(0.0200)	(0.0199)	(0.0201)	(0.0200)	(0.0199)	(0.0198)	(0.0197)	(0.0196)
diversifying acquisition	0.0002		0.0002		0.0003		0.0008	
	(0.0107)		(0.0107)		(0.0107)		(0.0105)	
target's high tech			0.0000	0.0000				
			(0.0000)	(0.0000)				
acquirer's high tech	-0.0034	-0.0035	-0.0021	-0.0022	-0.0025	-0.0025		
	(0.0225)	(0.0222)	(0.0222)	(0.0220)	(0.0222)	(0.0219)		
offer-to-income	0.0076	0.0076	0.0093	0.0094	0.0080	0.0081		
	(0.0209)	(0.0206)	(0.0209)	(0.0206)	(0.0208)	(0.0205)		
acquirer's Tobin's Q	0.0019	0.0019						
	(0.0071)	(0.0071)						
Intercept	0.0103	0.0103	0.0150	0.0150	0.0136	0.0137	0.0150	0.0152
	(0.0196)	(0.0194)	(0.0154)	(0.0151)	(0.0153)	(0.0149)	(0.0149)	(0.0145)

Table 6-A: Results of the 8 models of the ***A-negotiation equation*** of the ***structural*** system estimated with the ***equally weighted observations procedure***. The ***left hand side*** variable of the regressions is the ***acquirer***'s normalized abnormal return. The ***predicted*** value of the ***target***'s abnormal return is the ***instrumental*** *variable* for the ***target***'s abnormal return in the ***right hand side*** of the regressions. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in the same order as in Table 6. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	116	116	116	116	116	116	116	116
R square	0.1502	0.1499	0.1741	0.1738	0.1486	0.1484	0.1090	0.1090
target's predicted ab ret	84.0074 H	84.0064 H	54.7329 L	55.3961 M	83.9808 H	83.9805 H	69.4752 H	69.4219 H
	(30.0877)	(29.9521)	(33.7836)	(33.4683)	(29.9734)	(29.8385)	(29.6098)	(29.4634)
acquirer's E index	0.2086	0.2067	0.1825	0.1853	0.2147	0.2129	0.1950	0.1957
	(0.2006)	(0.1994)	(0.1980)	(0.1967)	(0.1993)	(0.1982)	(0.2015)	(0.2004)
target's E index	-0.4003 M	-0.3971 M	-0.4169 M	-0.4203 M	-0.4121 M	-0.4089 M	-0.3842 M	-0.3852 M
	(0.2249)	(0.2233)	(0.2202)	(0.2185)	(0.2225)	(0.2207)	(0.2246)	(0.2230)
share of the deal paid in cash	-0.0221 H	-0.0221 H	-0.0214 H	-0.0214 H	-0.0224 H	-0.0224 H	-0.0171 H	-0.0171 H
	(0.0071)	(0.0071)	(0.0070)	(0.0070)	(0.0070)	(0.0070)	(0.0067)	(0.0067)
relative size	2.9751 M	2.9706 M	2.6478 M	2.6597 M	2.9774 M	2.9733 M	2.4676 M	2.4678 M
	(1.4031)	(1.3966)	(1.3951)	(1.3875)	(1.3977)	(1.3913)	(1.3969)	(1.3906)
diversifying acquisition	-0.1010		0.1042	.	-0.0899		0.0327	
	(0.5191)		(0.5223)		(0.5165)		(0.5188)	
target's high tech			0.0028 M	0.0028 M				
			(0.0016)	(0.0015)				
acquirer's high tech	1.6361	1.6038	1.4415	1.4791	1.6607	1.6313		
	(1.3214)	(1.3050)	(1.3071)	(1.2877)	(1.3152)	(1.2985)		
offer-to-income	-0.2538	-0.2289	-0.0352	-0.0614	-0.1781	-0.1574		
	(1.3544)	(1.3422)	(1.3264)	(1.3140)	(1.3380)	(1.3267)		
acquirer's Tobin's Q	0.1004	0.0982						
	(0.2308)	(0.2295)						
Intercept	0.4217	0.3730	0.4564	0.5119	0.6040	0.5570	0.6429	0.6597
	(0.9422)	(0.9043)	(0.8359)	(0.7847)	(0.8407)	(0.7926)	(0.8406)	(0.7936)

Table 7-A: Results of the 8 ***reduced form*** models in which the ***left hand side*** variable of the regressions is the ***target***'s abnormal return. The models are estimated with the ***equally weighted observations procedure***. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in the same order as in Table 7. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170 .	170	170
R square	0.0297	0.0296	0.0329	0.0329	0.0281	0.0281	0.0263	0.0262
acquirer's E index	-0.0028	-0.0029	-0.0034	-0.0034	-0.0031	-0.0031	-0.0035	-0.0035
	(0.0040)	(0.0040)	(0.0040)	(0.0040)	(0.0040)	(0.0039)	(0.0039)	(0.0039)
target's E index	-0.0039	-0.0039	-0.0045	-0.0045	-0.0042	-0.0042	-0.0041	-0.0042
	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0039)	(0.0038)
share of the deal paid in cash	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
relative size	0.0114	0.0113	0.0131	0.0130	0.0110	0.0110	0.0104	0.0104
	(0.0197)	(0.0196)	(0.0198)	(0.0197)	(0.0197)	(0.0196)	(0.0194)	(0.0193)
diversifying acquisition	-0.0011		-0.0008		-0.0008		-0.0004	
	(0.0107)		(0.0107)		(0.0106)		(0.0105)	
target's high tech			0.0000	0.0000				
			(0.0000)	(0.0000)				
acquirer's high tech	-0.0033	-0.0030	-0.0009	-0.0006	-0.0025	-0.0023		
	(0.0224)	(0.0220)	(0.0224)	(0.0220)	(0.0223)	(0.0219)		
offer-to-income	0.0077	0.0074	0.0103	0.0101	0.0091	0.0089		
	(0.0209)	(0.0207)	(0.0207)	(0.0205)	(0.0207)	(0.0204)		
acquirer's Tobin's Q	0.0029	0.0028						
	(0.0056)	(0.0056)						
(target's beta - acquirer's beta)	-0.0145	-0.0145	-0.0159	-0.0159	-0.0142	-0.0143	-0.0128	-0.0128
	(0.0132)	(0.0132)	(0.0133)	(0.0133)	(0.0132)	(0.0131)	(0.0127)	(0.0127)
M&A Market Condition	-0.0004	-0.0004	-0.0003	-0.0003	-0.0004	-0.0004	-0.0005	-0.0005
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Intercept	0.0285	0.0279	0.0314	0.0309	0.0342	0.0337	0.0404	0.0402
	(0.0350)	(0.0343)	(0.0332)	(0.0324)	(0.0330)	(0.0323)	(0.0302)	(0.0295)

Table 8-A: Results of the 8 ***reduced form*** models in which the ***left hand side*** variable of the regressions is the ***acquirer***'s normalized abnormal return. The models are estimated with the ***equally weighted observations procedure***. All models account for the potential effect of the corporate governance environment as quantified by the E-index (Bebchuk *et al.* (2009)) for the target and for the acquirer. The models are positioned from left to right in the same order as in Table 8. The columns contain the parameter estimates of the coefficients of the variables in the left most column for each model. Below each parameter estimate, in parenthesis, the corresponding standard deviation is reported. Superscript "H" (high) means statistically significant at 1 percent level. Superscript "M" (medium) means statistically significant at 5 percent level. Superscript "L" (low) means statistically significant at 10 percent level.

Model	1	2	3	4	5	6	7	8
Number of observations	170	170	170	170	170	170	170	170
R square	0.1168	0.1165	0.0803	0.0514	0.0794	0.0505	0.0420	0.0407
acquirer's E index	-0.0212	-0.0208	-0.0355 L	-0.0310 L	-0.0348 L	-0.0303	-0.0364 L	-0.0357 L
	(0.0235)	(0.0233)	(0.0238)	(0.0241)	(0.0237)	(0.0239)	(0.0236)	(0.0235)
target's E index	0.0035	0.0040	-0.0117	-0.0072	-0.0110	-0.0064	-0.0070	-0.0061
	(0.0230)	(0.0229)	(0.0233)	(0.0236)	(0.0232)	(0.0234)	(0.0235)	(0.0234)
share of the deal paid in cash	-0.0001	-0.0001	0.0000	-0.0002	0.0001	-0.0001	-0.0003	-0.0002
	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)
relative size	0.0830	0.0843	0.1004	0.0696	0.1025	0.0717	0.0596	0.0627
	(0.1157)	(0.1152)	(0.1188)	(0.1194)	(0.1183)	(0.1190)	(0.1184)	(0.1180)
diversifying acquisition	0.0155		0.0254	0.0260			0.0302	
	(0.0627)	0.0000	(0.0639)	(0.0647)	0.0000	0.0000	(0.0638)	0.0000
target's high tech			0.0004 M		0.0004 M			
			(0.0002)		(0.0002)			
acquirer's high tech	-0.0547	-0.0597	0.0026	-0.0222	-0.0054	-0.0305		
	(0.1313)	(0.1293)	(0.1341)	(0.1353)	(0.1322)	(0.1334)		
offer-to-income	0.0636	0.0675	0.1373	0.1197	0.1439	0.1265		
	(0.1226)	(0.1213)	(0.1243)	(0.1256)	(0.1228)	(0.1241)		
acquirer's Tobin's Q	0.1134 H	0.1138 H						
	(0.0328)	(0.0327)						
(target's beta - acquirer's beta)	-0.0611	-0.0607	-0.0755	-0.0506	-0.0749	-0.0500	-0.0297	-0.0294
	(0.0776)	(0.0773)	(0.0799)	(0.0801)	(0.0796)	(0.0798)	(0.0774)	(0.0772)
M&A Market Condition	0.0060 M	0.0059 M	0.0071 M	0.0062 M	0.0069 M	0.0061 M	0.0051 L	0.0049 L
	(0.0032)	(0.0032)	(0.0033)	(0.0033)	(0.0032)	(0.0033)	(0.0031)	(0.0031)
Intercept	-0.4635	-0.4548	-0.2780	-0.2361	-0.2624	-0.2200	-0.1459	-0.1273
	(0.2050)	(0.2013)	(0.1990)	(0.2006)	(0.1945)	(0.1960)	(0.1845)	(0.1798)