

Discipline or Disruption? Stakeholder Relationships and the Effect of Takeover Threat*

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ABSTRACT

Threat of hostile takeovers can impair the ability of firms to commit to long-term relationships with important stakeholders, adversely affecting performance. Using the passage of business combination laws on a state-by-state basis as a source of exogenous variation, we find that a reduction in the threat of a hostile takeover leads to better performance for firms that have important product market relationships. While a sizeable literature suggests that shareholders would always prefer greater vulnerability to hostile takeovers as it reduces agency problems, our results imply that this may not be true for firms for which ability to commit to long-term relationship with stakeholders is important.

I. Introduction

A number of researchers argue that the threat of hostile takeovers helps ameliorate the agency problem between shareholders and managers (e.g. Jensen (1986), Gompers, Ishii and Metrick (2003), Bebchuk, Cohen and Ferrell (2009), Bertrand and Mullainathan (2003)). They suggest that a higher threat of takeovers reduces managerial slack and improves firm performance. In response to corporate governance scandals in the U.S., some have argued that making firms more vulnerable to hostile takeovers would benefit shareholders (e.g. Bebchuk (2005)).

However, a takeover can disrupt existing relationships with stakeholders like employees, customers, suppliers, etc. Therefore, a higher threat of a hostile takeover can reduce the ability of the firm to commit to long-term relationships with stakeholders. As a result, the firm might have difficulty attracting desirable stakeholders and inducing existing stakeholders, including those in the product market, to make relationship-specific investments. This would have an adverse effect on firm performance, especially for firms for which having relationships with stakeholders are important. While the existing literature documents a positive impact of takeover discipline on firm performance, we find that for firms with important product market relationships, higher threat of hostile takeovers is detrimental to their performance.

Our study focuses on firms that sell to a few big customers. A big customer is defined as a customer that accounts for at least 10% of the total sales of the firm. These are identified from disclosures regarding *principal customers* made by firms. More than a third of the firm-years of our sample of all manufacturing firms have at least one *principal customer*. These customers are important stakeholders of the firm as the relationship is often bilateral. The firm depends on these customers for a large proportion of its sales and is likely to have assets in place that are specific to these customers. If the customer is a firm, the relationship is also likely to require relationship-specific investments from the customer. For example, the customer might have to transfer some knowledge to the supplier and invest in training the supplier. Moreover, a disruption in supply can be costly to the customer as its own production process might critically depend on the customized input supplied by the supplier.

As a result the customer would prefer a supplier firm that can commit to a long-term relationship. Inability of a supplier to commit to such a relationship due to a high probability of a takeover could lead to lower business from its existing customers and difficulty in attracting potential customers, adversely affecting its own performance. Furthermore, a customer firm would be reluctant to share sensitive information about its business with a supplier, if there is a possibility of the supplier being taken over by a competitor of the customer firm.

These arguments would not hold when the big customer is a government affiliated organization. In fact, having a relationship with the government assures the firm a market for its product and insulates it from competitive pressures. If the firm's survival is threatened due to a drop in profitability, the government might *bail-out* the firm by providing new orders or better price on existing supply contracts. This could foster an environment for managerial slack, which can be countered by governance mechanisms like the threat of a hostile takeover. Therefore, we might expect a positive relation between the level of takeover threat and firm performance for firms that have the government as a big customer and a negative relation for firms that sell to a few big corporate customers.

To test these hypotheses, we exploit exogenous changes to takeover threat due to passage of business combination (BC) laws in 30 states of the U.S. between 1985 and 1991. Similar empirical strategies have been used by Bertrand and Mullainathan (1999 and 2003), Garvey and Hanka (1999), Cheng, Nagar and Rajan (2005), Rauh (2006), Yun (2009), Giroud and Mueller (2009), and Francis, Hasan, John and Waisman (2009). These laws make hostile takeovers more difficult by impeding the use of the target firm's assets to pay back debt obtained for the acquisition. We examine the effect of these laws on the performance of firms that have big customers, relative to firms that do not have big customers. BC laws passed by a state affect the firms incorporated in that state. Only one-third of the firms from our sample of firms with big customers are located in their state of incorporation. This allows us to control for shocks at the level of state of location and industry level shocks while examining the effect of passage of BC laws on firm performance.

For firms with big corporate customers, we find that a decrease in takeover threat due to passage of BC law leads to an *increase* in ROA of 0.8 percentage points. Therefore a reduction in takeover threat turns out to be good for these firms. In fact, the increase in ROA is 50% higher (i.e. 1.2 percentage points) when the firm has a long-term relationship with customers. We define a long-term relationship as one that last for at least five years. These results are consistent with the view that a reduction in takeover threat allows firms to make long-term commitments, leading to better performance. In sharp contrast to the previous set of results, for firms with big government affiliated customers, we find that a reduction in takeover threat leads to a *decrease* in ROA of 1.9 percentage points. This is consistent with the view that a relationship with the government creates an opportunity for managerial slack and the fear of a hostile takeover keeps managers on their toes, resulting in better performance. The median ROA for our sample (of manufacturing firms) is 12 percent. Therefore, these effects of takeover law passage on ROA of firms with big customers are economically significant and translate into a 6.7 percent increase or 15.8 percent decrease for a median firm.

We also find that after the passage of BC law in the state of incorporation of firms that have corporate *principal customers*, leads to an increase in sales (scaled by assets), number of *principal customers*, proportion of sales to *principal customers* and a decrease in selling and administrative expenses as a proportion of sales. We do not find these effects for suppliers that supply to big government customers. This shows that the reduction in its takeover probability leads to more business to the supplier from big customers and improved cost-efficiency through reduction of discretionary overhead costs. Further, for the sample of all manufacturing firms, we find that passage of a BC law in the state of incorporation leads to higher number of corporate principal customers. These results provide further evidence for that fact that a reduction in takeover threat is good for firms for which it is important to have a relationship with stakeholders like big corporate customers.

Next, we provide evidence that a passage of a BC law leads to strengthening of the relationship with existing big customers by focusing on relationship-year as unit of observation. We find that a reduction in threat of takeover leads to a greater probability of continuation of the relationship only when the customer is a firm, but not a government

affiliated entity. For customer-supplier relationships between firms, passage of BC law in the state of the supplier firm leads to greater sensitivity of the supplier's performance to that of the customer, and greater sensitivity of the supplier's investment to that of the customer's.

The hypothesis that higher threat of takeovers can adversely affect firm performance through inability to commit to long-term relationships with stakeholders has several important implications. First, some studies (e.g. Gompers, Ishii and Metrick (2003), Bebchuk, Cohen and Ferrell (2009)) seem to suggest that shareholders would always prefer greater vulnerability to hostile takeovers. Our results imply that this might not be the case, especially for firms for which long-term stakeholders are important. This can perhaps explain why many firms have anti-takeover measures in place, and that may, in fact, be optimal from the shareholders' perspective. Second, studies of various corporate governance mechanisms would benefit from recognizing the presence of other important stakeholders and how governance mechanisms would impact them. This would enrich our understanding of the consequences of governance mechanisms and further our understanding of shareholders' choice of governance mechanisms. For example, shareholders might choose those governance mechanisms that are more desirable from the perspective of attracting and retaining other important stakeholders. Third, policy efforts at improving corporate governance need to be mindful that increased takeover threat can be detrimental for some firms.

The rest of the paper is organized as follows. The next section reviews the relevant literature. Section III provides a few detailed arguments as to how reduction in takeover threat can be beneficial for the shareholders of a firm. Section IV provides details of our data. Section V presents our empirical approach and analysis. Section VI discusses our results and concludes.

II. Previous literature

We study how presence of important stakeholders in the product market like big customers can interact with the effect of takeover discipline on firm performance. This is related to several strands of finance literature. First, our study is most closely related to the literature

on disciplining role of hostile takeovers (e.g. Jensen (1986), Morck, Shleifer and Vishny (1989), Gompers, Ishii and Metrick (2003), Bebchuk, Cohen and Ferrell (2009), Bertrand and Mullainathan (2003)). Gompers, Ishii and Metrick (2003) and Bebchuk, Cohen and Ferrell (2009) examine the relation between anti-takeover measures adopted by firms and firm value and find that reduction in vulnerability to hostile takeovers is associated with lower firm performance and value. These studies seem to suggest that higher vulnerability to takeovers is always beneficial from the shareholders' perspective. Our results imply that this might not be the case. Cremers, Nair and Peyer (2008) recognize that the level of takeover protection adopted by firms might be a result of trading off various factors. They find that firms in competitive industries adopt higher number of anti-takeover protections and this relation is stronger in industries in which long-term relationships are important. Their findings are consistent with our basic hypotheses that threat of hostile takeovers reduces the ability of firms to commit to long-term relationships. However, they do not provide any direct evidence of negative effects of higher takeover threat, which is what we examine. Further, they focus on explaining industry level differences in anti-takeover measures, while our study is at the firm level.

Second, our study is related to the literature that tries to understand the impact of anti-takeover laws on corporations. Esterbrook and Fischel (1991) and Karpoff and Malatesta (1989 and 1995) study the effect of passage of anti-takeover laws on shareholder value and find that it goes down. Garvey and Hanka (1999) find that passage of these laws leads to reduction in leverage ratios. Bertrand and Mullainathan (1999, 2003) find a decline in profitability and productivity of firms incorporated in states that passed anti-takeover laws. Giroud and Mueller (2009) find that the decline in productivity is higher for more concentrated industries. We add to this literature by showing that effect of passage of anti-takeover laws can differ based on the importance and type of product market relationships.

Third, several studies examine how product market relationships affect various aspects of firm decisions and performance. Some of these studies use the same primary source of information as ours to identify product market relationships i.e. disclosures of *principal customers* (e.g. Kalwani and Narayandas (1995), Kim (1996), Dasgupta and Kim (1997), Fee and Thomas (2004), Banerjee, Dasgupta, and Kim (2004), Fee, Hadlock, and Thomas (2006),

Kale and Shahrur (2007), Cohen and Frazzini (2008), Hertzal, Li, Officer and Rodgers (2008), Bannerjee, Dasgupta and Kim (2009), Brown, Fee and Thomas (2009)). Kim (1996) and Kalwani and Narayandas (1995) look at the effect of principal customer relationships on the seller's profit margin. Dasgupta, and Kim (1997) suggest that principal customer relationships affect bilateral bargaining between the supplier and the customer and the supplier's capital structure, while Banerjee, Dasgupta, and Kim (2004) examine the effect of principal customer relationships on the provision of trade credit. Fee and Thomas (2004) investigate whether sources of gain in horizontal mergers depend on downstream anti-competitive collusion or increase in upstream buying power. Fee, Hadlock, and Thomas (2006) examine whether principal customers own equity stakes in the supplier and explore possible reasons. Kale and Shahrur (2007) and Bannerjee, Dasgupta and Kim (2009) study how buyer-supplier relationships affect capital structure decisions of firms. Hertzal, Li, Officer and Rodgers (2008) show the effects of bankruptcy on customer and supplier firms. Brown, Fee and Thomas (2009) examine whether the increase in leverage during a leveraged buyouts increases the bargaining power of a firm with its suppliers. We add to this strand of literature by examining how corporate governance mechanisms interact with relationship in the product markets.

The traditional view of corporate governance focuses on the aligning managerial interests with shareholders. There is a recent literature examining the effects of governance mechanisms on other stakeholders like bondholders (e.g. Bhojraj and Sengupta (2003), Cremers, Nair and Wei (2007) and Francis, Hasan, John and Waisman (2009)). Francis, Hasan, John and Waisman (2009) examine the effects of state-level anti-takeover provisions on bondholders and conclude that higher takeover protection is associated with higher bond prices (or lower yields) and lower cost of debt. We add to this strand of literature by showing the reduction in takeover threat might benefit a firm as it might lead to more profitable dealings with other stakeholders.

III. Arguments supporting our hypotheses

Shleifer and Summers (1988) point out that while the shareholder wealth gains from hostile takeovers could reflect redistributive consequences of such takeovers (such as layoffs and asset sales or renegeing on other implicit contracts with stakeholders), there could be *ex post* as well as *ex ante* costs associated with hostile takeovers. In this section, we present some arguments as to why hostile takeovers can impose ex-ante costs.

A. The “Breach of Trust” Argument (Shleifer and Summers)

The basic argument can be stated as follows:

Some firms prosper because some managers are pre-disposed towards honoring implicit contracts, and train and recruit new managers with similar traits. Hostile takeovers impose new management culture, and cause implicit contracts to be breached.

Coase (1937) and Fama and Jensen (1983) argue that the firm represents a nexus of contracts between its various stakeholders: employees, customers, and suppliers. Due to the difficulty of writing complete contracts, the relationships between the firm and its stakeholders are often governed by implicit rather than explicit contracts. Implicit relationships, however, are likely to create incentives for opportunistic behavior. A major issue in sustaining implicit relationships is the mitigation of such incentives. Williamson (1985) stresses that institutions can be understood as providing mechanisms to minimize the problem of opportunism. Shleifer and Summers (1988) argue that hostile takeovers breach implicit contracts with stakeholders and create value for shareholders by redistributing wealth from stakeholders to shareholders. While pointing out the potentially negative *ex post* social welfare consequences of such wealth transfers, Shleifer and Summers argue that the *ex ante* welfare implications of hostile takeovers are also substantial. The argument is that if stakeholders anticipate that implicit contracts will be breached, they will not invest in relations-specific capital. Thus, an environment in which hostile takeovers are more likely will adversely affect firm value.

In our context of customer-supplier relationships, the *ex ante* costs can arise, for both suppliers and customers, in many different ways. Consider the supplier first. The supplier produces a product or products tailored (i.e. specific) to the customer, and the nature of the relationship is such that the product or products constitute a major part of the supplier's sales. The supplier's employees can make costly improvements to product quality, which increase the benefit to the customer and result in increased sales for the supplier. The reward may have to be in the form of implicit payments since these improvements are impossible to specify *ex ante*. These implicit payments are essentially in the form of rents, such as promises of employment even when the relationship with the customer is terminated, or internal promotion. The threat of a hostile takeover makes these implicit contracts more likely to be breached (Shleifer and Summers (1988)) – the Raider does not have the same loyalties to stakeholders as incumbent management, and, in fact, the very success of the hostile takeover depends on wealth distribution to shareholders from other stakeholders. Consequently, when hostile takeovers are more likely, employees have reduced incentives to expend effort to make these improvements. This affects the supplier's product quality, sales, production costs, and profitability adversely.

What is different for a supplier with *principal* customers? Unlike firms producing general products that are used by many different buyers, the product-mix is likely to be much less diversified and subject to more frequent change (since products are specific to customers, and customers change over time). Consequently, payments to employees who are integral to the production process are likely to be much more in the nature of rents, since once a product is removed from the product mix, the particular skills of these employees are no

longer relevant. However, the development of these skills is an important part of the success of these firms.

B. Organizational knowledge argument (Shleifer and Vishny)

Shleifer and Vishny (1989) present a slightly different argument as to why renegeing on implicit contracts could be costly. The main argument can be summarized as follows:

A takeover (especially a hostile takeover) may cause disruption in the sense that “organizational knowledge” may be destroyed due to the firing of a CEO who knows who are the key employees, and the exodus of other key employees.

Shleifer and Vishny (1989) argue that CEOs entrench themselves by keeping promises and contracts implicit, and by centralizing decision making. For example, a CEO may keep information about key employees to himself, reward them via implicit promises like promotions, and so on. As a result, firm value is lower if a CEO is fired. A new management may not even know which contracts represent implicit promises, and which are pure overpayment, and may end up firing key employees. An increase in the likelihood of a takeover (for example, due to a law change that lowers the cost of a hostile takeover) in this situation will provide a CEO with additional incentives to get entrenched and make replacement more difficult. However, in equilibrium, the probability of a takeover (even after taking into account the CEO’s response) will be higher.

For a customer firm buying a specialized product from a supplier firm that could be the subject of a hostile takeover, the simultaneous increase in the probability of a takeover and the more implicit nature of contracts will mean a higher likelihood of disruption. If the customer firm has to make specific investments and switching suppliers is difficult, such

disruption will be costly. Thus, the customer will be more likely to produce in-house or buy from other suppliers.

C. The Incomplete Contracting Argument

The key idea here can be stated as follows:

Suppose that complete contracts cannot be written between customer and supplier. Takeovers may facilitate opportunistic behavior by the supplier ex post. The customer may then curtail orders from the supplier, which is ex ante costly. As a result, profits and even ex ante firm value may be lower for the supplier when takeovers, especially hostile takeovers, are possible.

Below, we provide an example:

Initially, let us examine the effect of takeovers without making a distinction between hostile and friendly takeovers. We will argue that our arguments are bolstered if takeovers are hostile.

Assume that a contract can be written which restricts the sale of an input by the supplier to another party, but it cannot enforce the quality of the input delivered by the supplier. Quality has to be sustained by provision of appropriate incentives. Also, obviously, the contract cannot preclude the takeover of the supplier by another firm.

There are three agents, a Supplier, a Customer, and a Raider. Customer and Raider both need 1 unit of a product as an input. Quality of the input can be either High or Low.

High quality input: Supplier can produce it at a cost of $x < 1$. Customer can produce it at a cost of 1 if it decides to do so at time 0. Customer will experience a switching cost of 0.1 if it has to switch to in-house production after entering into a contract with Supplier. Raider can produce at a cost of x with probability p , and 1.2 with probability $1-p$. The exact cost is revealed at time $t=0.5$, after contracts are signed between Customer and Supplier. The

contract stipulates delivery of 1 unit of the input at a price of x . Thus, Supplier breaks even in period 1.

Low quality input: Costs $y < x$. If Supplier produces a high quality input in period 1, it can produce a high quality input at the same cost y as the low quality input in the second period. In that case, Customer buys an additional amount in the second period, knowing that there is no incentive to produce low quality. Otherwise, if low quality is produced in the first period, cheating occurs for sure in the last period, and the Customer does not buy (production is not possible with Low quality input). Quality is observed at time $t=1$.

Let the Supplier's profit from supplying the high quality input in the second period be $z > 0$. For simplicity, assume that the Customer's surplus from buying a high quality input in the second period (compared to producing in-house) is 0. We assume $z > (x-y)$, so that producing High quality in the first period is optimal for the Supplier.

Equilibrium: Suppose at time 0, Customer decides to buy from Supplier, and Raider decides to produce in-house.

Clearly, if Raider discovers at $t=0.5$ that its cost of producing the input is 1.2, it can pay 1.1 for the Supplier's production and "win". The Customer is not willing to bid above 1.1. However, this is not possible without a takeover, since the contract prevents the Supplier from selling to a third party. Thus, the Raider takes over the Supplier with a bid of $1.1 - x + z$, which the Customer cannot match. Its own production capacity (which is now rendered

useless) can be used to produce a low-quality input at cost y to honor the agreement to the Customer.¹

However, given this, it may not be optimal for Customer to not produce in-house. Its cost if it decides to produce in-house at time 0 is 1. The cost of deciding to buy from Supplier is $p*x + (1-p)*(1.1)$, where we have assumed that if the takeover occurs, it must switch to producing in-house. Suppose $p=0.9$. Then, for $x>0.989$, Customer prefers to produce in-house.

So, in this case, the Supplier will not get any order. Its maximum ex-ante value is $(0.1)*1.2 = 0.12$. On the other hand, if a takeover were banned, the ex-ante profit would be z . Thus, banning takeovers would not only increase the order from the customer, but also increase firm value if $z>0.12$.

Why might banning “hostile” takeovers be more disruptive for the Customer-Supplier relationship? Consider the above example, and suppose that the manager of the Supplier firm has 2 units of capital. 1 unit is deployed for production of the input, and the other unit is invested in a negative NPV project which brings the manager a private benefit. Let the NPV be $-n$, where $n>0$. Assume that the Raider can sell off the underperforming asset and keep a fraction of the benefit if it takes over the firm. If the cost of production of the Raider is x with probability p and between 1 and 1.2 with probability $1-p$, then the likelihood of a takeover increases with n . Therefore, either a lower p or a lower cut-off for x will produce

¹ Note that buying the Supplier at time $t=0$ is a negative NPV investment for the Raider. The market value of the Supplier is z . If it buys the Supplier for z , with probability p , the Raider will be able to deliver a high quality input to the Customer (after using the Supplier’s capacity to serve its own need) and get z , and with probability $1-p$, produce the low quality input and lose z . Thus, the NPV is $-z+pz<0$.

the result that the Customer prefers to produce in-house. Note that the absence of the order from the Customer may cause the manager to poorly deploy even the other unit of capital, with even worse performance for the whole firm.

D. Customer's Takeover Vulnerability

Clearly, takeover vulnerability of the customer affects the supplier's ex ante incentives as well. The supplier risks losing the customer if the latter faces a hostile takeover threat. This is because the Raider, being less constrained by the need to continue with implicit guarantees, may switch to a more efficient supplier, or may sell the division that was buying the supplier's product if such an action can create wealth gains for the shareholders (a breach of implicit contract). Therefore, the supplier will make less specific investment, which in turn is likely to cause the customer to switch to more in-house production, and result in reduced orders for the supplier's products.

The above discussion has mostly focused on the effect of takeover vulnerability on the supplier's sales and profitability. In principle, similar arguments apply to the customers as well. However, the customer firms in our sample are much bigger firms than their suppliers. This implies that the effect of takeover law changes in the supplier firm's state of incorporation on the customer firm's profitability may be hard to detect.² Therefore, takeover law change in their own state of incorporation may not have any major implications for either the customer firms or their suppliers.

² However, while the purchases from the supplier may not be a very large part of the customer's overall purchases, the supplier is likely to be an important entity for the particular customer division that it sells to. In other words, the supplier relationship is material for the customer at the level of the relevant decision making unit.

IV. Data

Our main data source is Standard and Poor's Compustat. Our sample consists of all manufacturing firms (primary SIC code within 2000 and 3990) that are located and incorporated within the U.S. The start of our sample period is 1979, which is the earliest period for which information on principal customers is available. Like in Bertrand and Mullainathan (2003) and Giroud and Mueller (2009), our sample period ends in 1995. We exclude firms for which book value of assets is missing or negative. We also drop firms for which the state of location or state of incorporation is not available from Compustat. This leaves us with 5,567 firms and 44,895 firm-year observations.

The Statement of Financial Accounting Standards No. 14 (SFAS 14) of the Financial Accounting Standard Board (FASB) required firms to disclose the names of and sales to their principal customers during our sample period. Principal customers are big customers of the firm who account for more than 10% of the total revenue of the firm. These data are obtained from Compustat's industry segment files. However, the database reports only the name of the customer (not identifiers). Often only the abbreviated versions of the names are reported and the same name is reported in a different form in different years and by different firms. Sometimes, the disclosed customer is a subsidiary or a business segment of a firm. Using manual search procedures, these customers are identified and classified as *non-government (public or private)*, *government* or *unidentified*. We match customers that are firms to their Compustat identifier (gvkey) when possible. The details of identification and classification procedure are in Banerjee, Dasgupta, and Kim (2004).

Table 1 shows the mean and median of values of some characteristics for all manufacturing firms, supplier firms (i.e. firms that reported at least one principal customer), and customer firms (i.e. firms that are identified by at least one firm as being their *principal customer*) that are in Compustat. The customer firms tend to be larger and older than the sample of manufacturing firms. The supplier firms are smaller and a little younger than the manufacturing firm sample. The average return on assets (ROA) of supplier firms is the same as that of an average manufacturing firm. The customer firms have higher average

ROA. The median supplier firm obtains more than one-quarter of its revenues from big customers. This suggests that these customers are quite important from the perspective of the supplier. For the median customer firm, purchases from all dependent suppliers (i.e. all firms that list it as a principal customer) account for only one percent of cost of goods sold.

Table 2 shows the number of firms that are incorporated and located in each state. The state of location of a firm is defined as the state in which its headquarters is located. The state of incorporation determines the legal jurisdiction that applies to the firm. Business combination laws of a state apply to firms incorporated in that state. The state of location and incorporation are obtained from Compustat, which reports the state of incorporation for the latest available year. Bertrand and Mullainathan (2003), and Giroud and Mueller (2009) argue that changes in state of incorporation during the sample period are rare. Therefore, like them, we use the state of incorporation for the latest available year. We find that about 66% of the supplier firms and 70% of the customer firms are located outside their state of incorporation. This allows us to examine effects of passage of BC laws, which operate at the level of the state of incorporation while controlling for shocks at the level of state of location.

Our main measure of operating performance is return on assets (ROA) which is defined as EBITDA divided by book value of assets. We drop observations which are in the extreme 1% tails of ROA values, to remove the impact of outliers on our results. In all our regressions we control for size and age of firms. Size is defined as the natural logarithm of total assets, while age is the natural logarithm of one plus the number of years the firm has been in Compustat.

V. Empirical analysis

A. Empirical methodology

Our empirical strategy relies on the exogenous change in takeover threat due to passage of BC laws in 30 states between 1985 and 1991. The years in which various states passed BC laws are reported in Table 2. In many of our empirical tests, we examine whether these laws

had different effects for firms with big corporate customers, big government customers and no big customers. In our base specification, we estimate the following for all manufacturing firms in Compustat:

$$\begin{aligned}
\text{ROA_of_supplier}_{it} = & \alpha_i + \alpha_t + \beta_1 \text{ NonGovt Big Customer}_{it} + \\
& \beta_2 \text{ NonGovtBigCustomer}_{it} \times \text{Supplier_after_BC_Law}_{it} + \\
& \gamma_1 \text{ GovtBigCustomer}_{it} + \\
& \gamma_2 \text{ GovtBigCustomer}_{it} \times \text{Supplier_after_BC_Law}_{it} + \\
& \phi \text{ Supplier_after_BC_Law}_{it} + \\
& \delta' \text{ Controls}_{it} + \varepsilon_{it} \qquad \dots \qquad (1)
\end{aligned}$$

where i indexes firms and t indexes time. The dependent variable, ROA, is censored at 1st and 99th percentile values. α_i and α_t are firm and year fixed effects. *NonGovtBigCustomer* is a dummy variable that equals one if this manufacturing firm has at least one big non-government-affiliated customer and zero otherwise. Similarly, *GovtBigCustomer* is a dummy variable that equals one if this manufacturing firm has at least one big government-affiliated customer and zero otherwise. *Supplier_after_BC_Law* is a dummy variable that equals one if BC law has been passed in the firm's state of incorporation by time t , and zero otherwise. Following Giroud and Mueller (2009), the vector of control variables includes size, square of size and age. These variables are as defined in the previous section. Since many firms are not located in their state of incorporation, this allows us to control for local and industry shocks. Following Bertrand and Mullainathan (2003) and Giroud and Mueller (2009), we do this by including a full set of time-varying industry-year and state-year control variables, which are the average ROA of all firms in the same industry (defined by 3-digit SIC code) and state of location, respectively, for that year, excluding the firm itself.

The coefficient ϕ captures the effect of BC laws on firms in the manufacturing industry that do not have any big customers. For firms with big non-government customers, the total effect of the BC laws on ROA is captured by $\phi + \beta_2$, while β_2 captures the additional effect on these firms relative to firms with no big customers. Similarly, γ_2 captures the additional

effect on ROA due to BC law on firms with big government affiliated customers relative to firms that have no big customers. Therefore β_2 and γ_2 are the coefficients of primary interest.

This specification is equivalent to a difference-in-difference-in-difference approach. The first difference would capture the change in ROA before and after the passage of each BC law for all firms in the treatment and control groups. The second difference is the difference in the first difference between the treatment and control group of firms. The treatment group is the set of firms which are incorporated in the state in which BC law has been passed. This second difference captures the effect of BC laws on firms' ROA. The coefficients β_2 and γ_2 capture the third difference, which is whether the law has a differential effect on firms with non-government and government big customers, relative to firms with no big customers. The control group includes all firms incorporated in states that have not passed a BC law until time t . Thus, firms incorporated in states that never passed a BC law are a part of the control group. In addition, firms that are incorporated in a state that passed a BC law will be part of the control group for the period prior to the passage of BC law in that state.

We also employ other specifications which are quite similar to equation (1). In particular, to examine the effect of long term relationships, we replace *NonGovtBigCustomer* with *LTNonGovtBigCustomer*, a dummy variable that equals one if this manufacturing firm has at least one long-term big non-government-affiliated customer and zero otherwise. We also replace *GovtBigCustomer* with *LTGovtBigCustomer*, which is similarly defined. A relationship is defined as long-term if the customer-supplier relationship exists continuously for five years. In another specification, we replace the dummy variables capturing the presence of non-government and government big customers with *PctGovtBigCustomer* and *PctNonGovtBigCustomer*, which are defined as the fraction of sales to government-affiliated and non-government-affiliated big customers respectively.

B. Effect of reduction in own takeover threat on profitability of suppliers

Passage of BC laws leads to a reduction in threat of hostile takeovers for firms incorporated in that state. This can have two opposing effects. First, the managers no longer fear a loss of job due to a hostile takeover and therefore may enjoy the "quiet life". This would lead to worse firm performance. This effect has been emphasized by previous studies including

those by Bertrand and Mullainathan (2003), and Giroud and Mueller (2009). The second effect is an increase in the ability of the firm to commit to long-term relationships with various stakeholders resulting from a reduction in the threat of disruption of relationships due to takeovers. Therefore we expect that for firms with big corporate customers, the reduction in takeover threat would improve performance. For firms that have big government-affiliated customers, these arguments are unlikely to hold. Further, the government is not likely to be concerned about takeover of its suppliers. In fact, if the firm's survival is threatened due to a drop in profitability, the government might "bail out" the firm by providing new orders or better price on existing supply contracts. This might foster an environment for managerial slack which can be countered by governance mechanisms like threat of hostile takeovers. Therefore, we expect that a reduction in takeover threat for such firms would lead to worsening of performance.

The results presented in Table 3 are consistent with the above arguments. Column (2) shows the result of estimating the regression specification given in equation (1). We find that relative to firms with no big customers, the ROA of firms with big non-government customers increases by 0.8 percentage points due to passage of BC laws. In contrast, the ROA of firms with big government customers goes down by 1.9 percentage points. These results are consistent with the above hypotheses. The coefficient of *Supplier_after_BC_Law* is negative, indicating that BC law results in a decrease in ROA of a firm with no big customers. This is consistent with findings of previous studies like Bertrand and Mullainathan (2003). However, in our sample this relation is not statistically significant. The coefficients on industry-year and state-year controls are positive and significant, which shows the importance of controlling for industry and local shocks.

Column (2) of Table 3 examines the effect of BC law on firms with long-term relationships. We find that the improvement in ROA is by 1.5 percentage points if the firm has a long-term relationship with a non-government customer. This implies that a reduction in takeover threat is of greater benefit to firms that need to commit to a long-term relationship. This provides further support for our hypothesis that takeover threat impairs the ability to commit to long-term relationships, which adversely affects firm-performance.

Since we are unable to indentify all reported customers, some of those classified in the non-government category may be misclassified. To check if our results are robust, we replace the variable $NonGovtBigCustomer_{it}$ in equation 1 with $CorpBigCustomer_{it}$, which is a dummy variable that is one if the firm has at least one customer that was identified as a firm in Compustat. The (unreported) results for this specification are similar to that presented in Table 3. The economic magnitudes of these coefficients are smaller because the firms that have non-Compustat corporate customers are a part of the control sample under this specification. To the extent that some of these customers are firms like those in Compustat, we would expect the BC law to have a positive effect on the performance of the control group too.

As a further test of robustness, we replace the dummy variables that capture the presence of non-government and government big customers with continuous variables that capture the important of such customers to the firm by looking at the proportion of sales to such customers. The results for this specification are presented in column 3 of Table 3. Once again, we find that BC law has a positive and significant effect on firms for which big non-government customers are important, while having a negative effect on the performance of firms which sell most of their output to government affiliated customers.

C. Examining the sources of improvement in performance of suppliers

To provide further support for our hypotheses, we explore the effect of BC law on other variables. If the improvement in performance of suppliers is a result of increase in orders from big corporate customers, then we should observe an increase in total sales of the suppliers. Further, we would expect that a larger proportion of their total sales are from big customers.

We run regressions similar to that in equation 1, where the LHS variable is sales scaled by total assets. Column (1) of Table 4 presents the results. The coefficient in column (1) on the first interaction term shows that for suppliers with big non-government customers, the ratio of sales to total assets goes up by a statistically significant 5.7% after the passage of BC law. As seen from the coefficient on the second interaction term, there is an opposite effect for suppliers that have big government customers.

Kalwani and Narayandas (1995) find that suppliers in long-term relationships achieve higher profitability by lowering discretionary expenses such as selling, general and administrative overhead costs. Therefore we would expect that SG&A expenses of suppliers with big corporate customers would come down as a result of BC law. Part of the improvement in ROA could be due to a reduction in these discretionary costs. To test this, we run a regression similar to that in equation (1), with the LHS variable as SG&A expenses scaled by assets and scaled by sales respectively. We find that SG&A scaled by total assets, in fact, goes up for suppliers with corporate customers, while it goes down for firms with government affiliated customers. However, this pattern is reversed when we look at SG&A scaled by sales. The coefficient on the interaction term of BC law passage and presence of a non-government big customer is -1% and statistically significant. This implies that there indeed is a reduction in discretionary overhead expenses as a proportion of revenues for suppliers that have big corporate customers after the passage of BC law. However, the actual SG&A costs go up, but not as much as the increase in sales.

We next examine the effect of passage of BC law on growth in sales, proportion of sales to big customers and number of big customers. These results are shown in Table 5. Column (1) shows that there is a significant negative growth in sales for firms with government affiliated big customers. The sales growth for firms with non-government big customers is positive, but not statistically significant. The results in column (2) imply that the proportion of sales to big customers go up by 5.7 percentage points for firms with big non-government customers, which is statistically significant. We see an opposite effect for firms with big government customers. Similarly, the number of large customers goes up for firms with big non-government customers and goes down for firms with government customers. Taken together, these results support our hypothesis that passage of BC law results in the supplier obtaining more business from its big corporate customers and being able to attract other big customers.

Columns (4) and (5) of Table 5 examines how the passage of BC law affects the number of sales to non-government big customers and number of non-government big customer for an average firm in our sample (i.e. manufacturing firm in Compustat). Consistent with our

hypotheses, we find that the average effect of passage of BC law is an increase in number of non-government customers and proportion of sales to non-government customers.

Overall, our results suggest that a reduction in takeover probability of the supplier allows it to commit to longer term relationships, because of which the supplier is able to get profitable projects from the customer which it could not without the commitment. This results in an improvement in ROA of the supplier. Further evidence of this is found in the increase in sales of the supplier and an increase in proportion of sales to big customers. An increase in sales from big customers also results in greater efficiency in terms of discretionary expenses, which is seen in a reduction in selling, general and administrative overhead costs.

D. Effect of drop in takeover threat on strength of customer-supplier relationship

We argued that a reduction in probability of takeover of the supplier would lead to greater business from big corporate customers. This should lead to a strengthening of the relationship between the supplier and the customer. We already showed in the previous sub-section that there is an increase in suppliers' sales to big customers following a reduction in takeover probability. That was based on firm level data. In this section we provide further evidence of strengthening of the relationship by focusing on relationship level data. If one supplier has two big customers in the same year, unlike in the previous sub-section, here we will look at the two relationships separately.

We first construct a panel of relationships by looking at supplier-customer-year as a unit of observation. So as not to classify one-off transactions as a relationship, we require that the supplier lists the same customer as a principal customer in two consecutive years to call it a relationship. We separate relationships with government affiliated entities and those with corporate entities into separate sub-samples. We examine whether the reduction in takeover threat due to passage of BC law in the state of the supplier has an effect on the probability of continuation of the relationship. To do this, we construct a dummy variable which is 1 if the relationship continues for the next year and 0 if not. We estimate a Probit model where with our main explanatory variable of interest being *Supplier_After_BC_Law*, which is 1 if a BC law has been passed or is being passed in the state of incorporation of the supplier. Control variables include the logarithm of the length of past relationship, sales to this

customer as a proportion of total sales of the supplier and cost of materials purchased from this supplier as a proportion of COGS of the customer. We also include ROA, size and square of size for the supplier as well as the customer as control variables.

Columns (1) and (2) of Table 6 show the results for relationships that have a government customer, while columns (3) and (4) show the results for relationships where the customer is a corporate entity. For columns (2) and (4), the LHS dummy variable is defined as one if the relationship continues for two more years, and zero otherwise. We find that for both definitions of continuation of relationship, passage of BC law in the state of incorporation of the supplier leads to a significant increase in the probability of continuation of the relationship when the customer is a corporate entity. However, we do not find any significant effect when the customer is a government entity. This supports the hypothesis that a reduction in takeover probability of the supplier leads to a strengthening of the customer-supplier relationship when the customer is a firm. In the same vein as all our previous results, takeover probability does not have any effect on the strength of relationship with a government affiliated entity.

We provide further evidence of this by strengthening of relationship for the subsample of relationships involving corporate customers using a different strategy. Strengthening of a relationship should result in greater co-movement of the supplier's and customer's performance as the two are more closely related. Moreover, the closer relationship would result in the supplier undertaking more investments on behalf of the customer. This should result in a greater co-movement in their investments.

We first check whether the sensitivity of ROA of the supplier to that of the customer goes up after the passage of BC law in the state of the supplier. Columns (1) of Table 7 show the results for the regression of supplier's ROA on customer's ROA, interaction between customer's ROA and a dummy variable capturing passage of BC law, and other controls. Column (2) replaces customer's ROA with its one period lagged ROA. This is because the effect of a shock in the product market of the customer might be transmitted to the supplier one period later. For both specifications, we see that the coefficients on the interaction term

are significant. This implies that the sensitivity of the supplier's ROA to customers ROA increases after the passage of BC law.

Similarly, we test the sensitivity of supplier's investment on contemporaneous and lagged investment of the customer. We use Capex scaled by total assets as our variable capturing investments. The results presented in columns (3) and (4) of Table 7, show that the investment sensitivity goes up significantly after the passage of BC law. Therefore the supplier seems to invest exactly at the times when the customer is investing after passage of BC law, suggesting that it invests in projects that will be used to supply to the customer.

Overall we find strong evidence that passage of BC law resulting in reduction in takeover threat of the supplier leads to an increase in strength of the customer-supplier relationship. This is reflected by (a) greater probability of continuation of the relationship, (b) greater sensitivity of supplier's performance to that of the customer, suggesting that shocks to the profitability of the customer are transmitted to a greater extent to the supplier, and (c) greater sensitivity of the supplier's investment to that of the customers.

E. Effect of drop in takeover threat of customers

Since the supplier often needs to undertake relationship-specific investments, takeover vulnerability of the customer affects the supplier's ex ante incentives as well. The supplier risks losing the customer if the latter faces a hostile takeover threat. This is because the new owner does not need to continue with implicit guarantees and may switch to a more efficient supplier, or may sell the division that was buying the supplier's product if such an action can create wealth gains for the shareholders (through a breach of implicit contracts). Therefore, the supplier will make less specific investment ex ante, which in turn is likely to cause the customer to switch to more in-house production, and result in reduced orders for the supplier's products.

To examine whether changes in takeover threat to big customers affects the performance of its supplier, we define a variable that sums up the fraction of sales to each non-government-affiliated big customers whose states of incorporation have passed a BC Law and obtain the variable $\sum_i (\text{PctNonGovtBigCustomer}_i \times \text{Customer_after_BC_Law}_i)$. The coefficient on this

variable captures whether the performance of the supplier firm is affected by reduction in takeover threat of its big customers.

The results are presented in Table 8. Column (1) shows that results for a specification in which ROA is regressed on the above variable and controls that correct for presence of a big customer without distinguishing between the types (i.e. government vs. non-government). We find the coefficient on the variable capturing relationship with customers in states that have passed BC laws is positive and significant, suggesting that reduction in takeover threat of big customers leads to improvement in performance of suppliers. Column (2) estimates a regression specification that adds the above variable to the specification in equation 1. The results remain virtually unchanged. Therefore even after controlling for the effect of BC law passage in the state of the supplier, the BC law change in the states of the customers has an effect on the supplier's ROA. The coefficient on `Supplier_after_BC_law x NonGovtBigCustomer` is positive and significant. Therefore, the effect of passage of BC law in the state of incorporation of the supplier survives even after controlling for the effect of reduction in takeover threat of customers.

One concern could be that the variable captures the effect of having a large fraction of sales to non-government big customers. Column (3) controls for the proportion of sales to non-government big customers and we obtain similar result. The results in Table 8 can be interpreted as follows. Column (3) shows that if all the sales of a supplier are to big non-government customers and a BC law is passed in each of their states, then the ROA of the supplier would go up by 1.8 percentage points, after controlling for other factors. This is a large effect since the mean ROA for supplier firms is 12 percent.

These results show that a reduction in takeover threat of a big corporate customers leads to improvement in ROA of a supplier firm. This holds after controlling for changes in takeover threat of the supplier firm itself.

VI. Discussion and conclusion

Using the passage of business combination laws as a source of exogenous variation, we examine if a reduction in threat of hostile takeovers has different effect on firms that have important relationships with big corporate customers and big government affiliated customers, relative to firms that have no such relationships. While firms with relationships with corporate customers experience a significant improvement in operating performance, firms with relationships with government affiliated customers experience a drop. This is consistent with a notion that takeover threat can make it difficult for firms to commit to long-term relationships with other stakeholders, which in turn would adversely affect performance. On the other hand, when such commitments are not important, the threat of takeover acts as a disciplining device for the managers leading to better performance. Furthermore, a relationship with the government can foster an environment for managerial slack and takeover discipline is especially important for such firms.

A reduction in takeover probability of the supplier allows it to commit to longer term relationships with big corporate customers. As a result of being able to commit to a long-term relationship, the supplier is able to get profitable projects from the customer which it could not without the commitment. This results in an improvement in operating performance of the supplier. Further evidence of this is found in an increase in sales of the supplier and an increase in proportion of sales to big customers. Since the supplier takes on more projects from a large customer, there is a strengthening of relationship between the two. This is reflected in longer relationships and greater sensitivity of supplier's performance to that of the customer. Further, there is also a greater sensitivity of the supplier's investment to that of the customers, suggesting that it undertakes projects which will be used to supply to the customer. Taken together, our results support the hypothesis that threat of hostile takeovers can impair the ability of firms to commit to long-term relationship with important stakeholders, adversely affecting its profitability and performance.

Our results have a number of important implications. From a policy perspective, our results imply that takeover friendly laws may not be optimal for shareholders of all firms. Researchers who want to study the effects of governance might want to examine the effects

for firms that are more likely to have an opportunity for managerial slack, e.g., firms with relationships with government affiliated entities, where the empirical relationships are likely to be stronger. Finally, the more effective governance mechanisms are likely to be the ones that are more desirable from the perspective of attracting and retaining other important stakeholders.

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Table 1: Summary Statistics

The mean and median values of several firm characteristics of three samples between 1979 and 1995 are reported in Panel A, Panel B and Panel C. In Panel A, the sample includes all manufacturing firms (SIC 2000 - 3990) retrieved from the COMPUSTAT Industry Annual File. The sample in Panel B consists of all dependent suppliers in the manufacturing industries that report at least one big customer in the COMPUSTAT Business Information File. In Panel C, the sample includes all customer firms that have at least one dependent supplier in one of the manufacturing industries. ROA is defined as EBITDA scaled by the book value of assets, Total Assets is the book value of assets, and History is the number of years for which a firm has existed in COMPUSTAT database. We also report the mean and median values of the proportional sales to big customers for suppliers in Panel B and proportional input from dependent suppliers for customers in Panel C. Besides, the number of firms and number of firm-years are provided for each sample. ROA is censored at the 1st and 99th percentile values. We require all firms in these three samples must have positive book values of total assets and non-missing state of incorporation and state of location in COMPUSTAT.

	(A) All Manufacturing Firms in Compustat		(B) All Listed Dependent Supplier Firms in Manufacturing Industries		(C) All Listed Big Customer Firms in All Industries	
	Mean	Median	Mean	Median	Mean	Median
<i>ROA</i>	0.06	0.12	0.06	0.12	0.15	0.15
<i>Total Assets (\$M)</i>	736.37	41.59	490.01	28.74	8319.82	2115.69
<i>History</i>	13.59	13.06	11.91	8.32	23.98	27.47
<i>Sales to big customers / Total Sales</i>			0.34	0.28		
<i>Purchases from dependent suppliers / COGS</i>					0.04	0.01
<i>Total Number of Firms in the Sample</i>	5567		3254		708	
<i>Total Number of observations (Firm-years)</i>	44895		19720		3026	

Table 2: States of Incorporation and States of Location

This table describes the distribution of dependent suppliers and big customers across states of incorporation and states of location. The second column of this table reports the year when the Business Combination Law was passed in each state. Column (3) and (4) provide the number of dependent suppliers and big customers in each state based on the state of incorporation, and column (5) and (6) provide a similar pattern based on the state of location, i.e., where a firm's headquarter is located. The last two columns of this table give the number of dependent suppliers and big customers that are located in their own states of incorporation. To be included in our study, all dependent suppliers and big customers must have both the state of incorporation and the state of location reported in the COMPUSTAT. The sample period is from 1979 to 1995.

State	BC Law Year	State of Incorporation		State of location		No. of firms incorporated and located in this state	
		No. of supplier firms	No. of customer firms	No. of supplier firms	No. of customer firms	Supplier firms	Customer firms
Alaska	-	0	0	0	0	0	0
Alabama	-	2	0	14	3	1	0
Arkansas	-	0	1	6	4	0	1
Arizona	1987	9	0	43	5	7	0
California	-	176	24	654	126	165	22
Colorado	-	47	3	67	9	29	0
Connecticut	1989	6	1	97	10	6	1
District of	-	0	1	4	2	0	0
Delaware	1988	1846	422	9	5	9	5
Florida	-	70	13	144	28	57	11
Georgia	1988	25	10	66	24	20	9
Hawaii	-	1	0	2	0	1	0
Iowa	-	6	1	13	1	4	0
Idaho	1988	1	0	3	1	0	0
Illinois	1989	16	3	135	52	13	3
Indiana	1986	32	7	37	8	23	4
Kansas	1989	4	5	14	2	3	1
Kentucky	1987	3	1	13	1	3	0
Louisiana	-	4	0	7	1	3	0
Massachusetts	1989	105	16	210	39	90	14
Maryland	1989	20	10	52	12	13	6
Maine	1988	3	2	8	1	3	1
Michigan	1989	46	6	92	16	41	5
Minnesota	1987	106	11	130	19	92	9
Missouri	1986	18	4	48	18	13	3
Mississippi	-	3	0	7	1	3	0
Montana	-	3	0	4	0	3	0
North Carolina	-	25	5	72	12	23	4
North Dakota	-	0	0	0	0	0	0
Nebraska	1988	1	1	5	3	1	1
New Hampshire	-	3	0	21	3	2	0
New Jersey	1986	82	19	209	39	67	14
New Mexico	-	2	1	5	1	1	1
Nevada	1991	63	10	23	3	10	2
New York	1985	152	32	329	60	106	15
Ohio	1990	65	22	109	34	55	19
Oklahoma	1991	5	2	18	5	4	2
Oregon	-	30	3	41	5	26	3
Pennsylvania	1989	72	27	132	39	55	18
Rhode Island	1990	5	0	9	3	4	0
South Carolina	1988	4	5	18	5	4	5
South Dakota	1990	3	1	3	1	3	1
Tennessee	1988	9	3	21	9	8	3
Texas	-	44	7	170	53	42	7
Utah	-	30	5	36	6	21	4
Virginia	1988	32	16	58	21	19	10
Vermont	-	1	0	3	2	1	0
Washington	1987	35	3	43	8	29	3
Wisconsin	1987	33	5	46	8	27	5
West Virginia	-	2	0	4	0	2	0
Wyoming	1989	4	0	0	0	0	0
Total		3254	708	3254	708	1112	212

Table 3: Effect of Business Combination Laws on Operating Performance of Dependent Suppliers

The table presents results of estimating various regression specifications. The dependent variable, ROA, is censored at 1st and 99th percentile values. Govt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one government-affiliated big customer and 0 otherwise; similarly, NonGovt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one non-government-affiliated big customer and 0 otherwise. Supplier_after_BC_Law is a dummy variable that equals one if the business combination law has passed in suppliers' state of incorporation and 0 otherwise. Control variables include the natural logarithm of book value of total assets (Size), the squared term of Size, the natural logarithm of one plus firm's history in COMPUSTAT (Age), the average ROA of all other firms in the same industry (defined by 3-digit SIC code) of the year (Industry-year ROA) and the average ROA of all other firms in the same state of location of the year (State-year ROA). In column (2), we require that big customers must have a long term relationship with the suppliers, i.e., the customer-supplier relationship must exist continuously in the past five years. LT Govt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one long-term big government-affiliated customer and 0 otherwise; similarly, LT NonGovt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one long-term big non-government-affiliated customer and 0 otherwise. Pct Govt Big Customer (Pct NonGovt Big Customer) is the suppliers' proportion of sales to government-affiliated (non-government-affiliated) big customers. A relationship is defined as long-term if it exists continuously for five years. LT Pct Govt Big Customer (LT Pct NonGovt Big Customer) is suppliers' percentage sales to long-term government-affiliated (long-term non-government-affiliated) big customers. We control for the firm-fixed effects and the year fixed effects in all regressions. The standard errors are reported in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% level, respectively.

Dependent Variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA
<i>Supplier_after_BC_law x NonGovt Big Customer</i>	0.008** (0.004)			
<i>Supplier_after_BC_law x Govt Big Customer</i>	-0.019*** (0.006)			
<i>Supplier_after_BC_law x LT NonGovt Big Customer</i>		0.012** (0.005)		
<i>Supplier_after_BC_law x LT Govt Big Customer</i>		-0.021*** (0.007)		
<i>Supplier_after_BC_law x Pct NonGovt Big Customer</i>			0.029*** (0.010)	
<i>Supplier_after_BC_law x Pct Govt Big Customer</i>			-0.043*** (0.013)	
<i>Supplier_after_BC_law x Pct LT NonGovt Big Customer</i>				0.035*** (0.012)
<i>Supplier_after_BC_law x Pct LT Govt Big Customer</i>				-0.040*** (0.013)
<i>NonGovt Big Customer</i>	0.010*** (0.003)			
<i>Govt Big Customer</i>	0.014** (0.006)			
<i>LT NonGovt Big Customer</i>		0.015*** (0.004)		
<i>LT Govt Big Customer</i>		0.009 (0.007)		
<i>Pct NonGovt Big Customer</i>			0.037*** (0.009)	
<i>Pct Govt Big Customer</i>			0.076*** (0.013)	
<i>Pct LT NonGovt Big Customer</i>				0.052*** (0.011)
<i>Pct LT Govt Big Customer</i>				0.078*** (0.013)
<i>Supplier_after_BC_law</i>	-0.002 (0.004)	-0.002 (0.004)	-0.002 (0.004)	-0.002 (0.004)
<i>Age</i>	-0.038*** (0.003)	-0.038*** (0.003)	-0.038*** (0.003)	-0.038*** (0.003)
<i>Size</i>	0.115*** (0.003)	0.114*** (0.003)	0.115*** (0.003)	0.114*** (0.003)
<i>Size squared</i>	-0.009*** (0.000)	-0.009*** (0.000)	-0.009*** (0.000)	-0.009*** (0.000)
<i>Industry-year ROA</i>	0.146*** (0.015)	0.146*** (0.015)	0.145*** (0.015)	0.145*** (0.015)
<i>State-year ROA</i>	0.123*** (0.023)	0.123*** (0.023)	0.120*** (0.023)	0.120*** (0.023)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Adj R-Square</i>	0.644	0.644	0.644	0.645

Table 4: Effect of Business Combination Laws on Sales and Discretionary Expenses of Dependent Suppliers

This table presents the estimates of OLS regressions of ROA components on the interaction between existence of big customers and the passage of business combination law in suppliers' states of incorporation. Dependent variables in column (1) - (3) are defined as follows: Sales/TA is the total sales scaled by the total assets; SGA/TA is the selling, general and administrative expense scaled by total assets; SGA/Sales is the selling, general and administrative expense scaled by sales. Govt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one government-affiliated big customer and 0 otherwise; similarly, NonGovt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one non-government-affiliated big customer and 0 otherwise. Supplier_after_BC_Law is a dummy variable at equals one if the business combination law has passed in suppliers' state of incorporation and 0 otherwise. Other control variables include the natural logarithm of book value of total assets (Size), the squared term of Size and the natural logarithm of one plus firm's history in COMPUSTAT (Age). The sample includes all manufacturing firms (SIC 2000 - 3990) from 1979 to 1995. We control for the firm-fixed effects and the year fixed effects in all regressions. The standard errors are reported in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% level, respectively.

Dependent Variable	(1) <i>Sales/TA</i>	(2) <i>SGA/TA</i>	(3) <i>SGA/Sales</i>
<i>Supplier_after_BC_law x NonGovt Big Customer</i>	0.057*** (0.010)	0.008*** (0.003)	-0.010** (0.004)
<i>Supplier_after_BC_law x Govt Big Customer</i>	-0.080*** (0.014)	-0.018*** (0.004)	0.009 (0.006)
<i>NonGovt Big Customer</i>	-0.006 (0.008)	-0.018*** (0.002)	-0.014*** (0.003)
<i>Govt Big Customer</i>	0.032** (0.014)	0.002 (0.004)	-0.014*** (0.005)
<i>Supplier_after_BC_law</i>	-0.021** (0.010)	0.000 (0.003)	0.006* (0.004)
<i>Age</i>	0.142*** (0.007)	0.070*** (0.002)	-0.010*** (0.003)
<i>Size</i>	-0.110*** (0.007)	-0.134*** (0.002)	-0.069*** (0.003)
<i>Size squared</i>	-0.007*** (0.001)	0.006*** (0.000)	0.005*** (0.000)
<i>Industry-year Sale/TA</i>	0.243*** (0.013)		
<i>State-year Sale/TA</i>	0.186*** (0.023)		
<i>Industry-year SGA/TA</i>		0.089*** (0.011)	
<i>State-year SGA/TA</i>		0.099*** (0.018)	
<i>Industry-year SGA/Sale</i>			0.038*** (0.009)
<i>State-year SGA/Sale</i>			0.013 (0.012)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes
<i>Adj R-Square</i>	0.752	0.836	0.793

Table 5: Effect of Business Combination Laws on sales growth and sales to big customers

This table presents the estimates of OLS/Tobit regressions of suppliers' sales growth, number of principal customers and percentage sales to principal customers on the interaction between existence of big customers and the passage of business combination law in suppliers' states of incorporation. Dependent variables in column (1) - (5) are defined as follows: Sales Growth is the difference between the total sales of this year and the total sales of last year, scaled by the latter; Pct Big Cus Sales is the percentage sales to big customers in total sales; Num Big Customers is the total number of principal customers; Pct Non-gov Big Cus Sales is the percentage sales to non-government big customers in total sales; and Num Non-gov Big Customers is the total number of non-government principal customers. Govt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one government-affiliated big customer and 0 otherwise; similarly, NonGovt Big Customer is a dummy variable that equals 1 if this manufacturing firm has at least one non-government-affiliated big customer and 0 otherwise. Supplier_after_BC_Law is a dummy variable at equals one if the business combination law has passed in suppliers' state of incorporation and 0 otherwise. Other control variables include the natural logarithm of book value of total assets (Size), the squared term of Size and the natural logarithm of one plus firm's history in COMPUSTAT (Age). The sample includes all manufacturing firms (SIC 2000 - 3990) from 1979 to 1995. We control for the firm-fixed effects and the year fixed effects in all regressions. The standard errors are reported in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% level, respectively.

Dependent Variable	(1)	(2)	(3)	(4)	(5)
	Sales Growth OLS	Pct Big Cus Sales Tobit	Num Big Customers OLS	Pct Non-gov Big Cus Sales Tobit	Num Non-gov Big Customers OLS
Supplier_after_BC_law x NonGovt Big Customer	0.001 (0.007)	0.057*** (0.021)	0.048*** (0.007)		
Supplier_after_BC_law x Govt Big Customer	-0.023** (0.009)	-0.146*** (0.033)	-0.046*** (0.009)		
NonGovt Big Customer	0.015*** (0.005)	0.696*** (0.017)	0.891 (0.005)		
Govt Big Customer	0.024** (0.009)	0.545*** (0.027)	0.582*** (0.009)		
Supplier_after_BC_law	-0.006 (0.006)	0.028** (0.012)	0.012* (0.007)	0.159*** (0.031)	0.065*** (0.010)
Age	-0.175 (0.007)	-0.027*** (0.007)	-0.003 (0.005)	-0.077*** (0.011)	0.008 (0.008)
Size	0.067*** (0.006)	-0.026** (0.011)	0.008 (0.005)	0.011 (0.016)	0.021** (0.008)
Size squared	-0.003*** (0.001)	0.000 (0.001)	0.000 (0.001)	-0.007*** (0.002)	0.000 (0.001)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Adj R-Square	0.228	NA	0.892	N/A	0.634

Table 6: Effect of Business Combination Laws on the Continuation of Customer-Supplier Relationship

This table presents the estimates of Probit regressions of the customer-supplier relationship continuation on the passage of business combination law in suppliers' states of incorporation and other control variables. The sample for tests in column (1) and (2) includes all firms with government big customers from 1979 to 1995. Gov Cont1Y (Gov Cont2Y) is a dummy variable that equals 1 if the relationship with government customer(s) will continue in the next year, t+1 (next two years, t+1 and t+2), and 0 otherwise. The sample for tests in column (3) and (4) includes all pairs of dependent suppliers and their big non-government customers from 1979 to 1995, where the customer-supplier relationship exists more than one year. Similarly, Non Gov Cont1Y (Non Gov Cont2Y) is a dummy variable that equals 1 if the relationship with non-government customer will continue in the next year, t+1 (next two years, t+1 and t+2), and 0 otherwise. All control variables reflect customers' and/or suppliers' information at year t. Supplier_AfterDuring_BC_Law is a dummy variable that equals 1 if the business combination law has been passed or is being passed in suppliers' state of incorporation in year t and 0 otherwise. Past Relation is the natural logarithm of the number of years of previous relationship. Supplier Pct Gov Customer is the supplier's proportional sales to government customers in total sales. Customer Pct COGS is the proportion of sales from the dependent supplier in customer's total cost of goods sold. Supplier ROA (Customer ROA) is the ROA of the Supplier (Customer). Supplier Size (Customer Size) is the natural logarithm of supplier's (customer's) book value of total assets. Supplier Size Squared (Customer Size Squared) is the squared term of Supplier Size (Customer Size). We control for the year fixed effects in all regressions. The standard errors are reported in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% level, respectively.

	Government Customers		Non-government Customers	
	(1)	(2)	(3)	(4)
	Gov Cont1Y	Gov Cont2Y	Non Gov Cont1Y	Non Gov Cont2Y
<i>Supplier_AfterDuring_BC_Law</i>	0.069 (0.087)	-0.013 (0.097)	0.108* (0.059)	0.139** (0.060)
<i>Past Relation</i>	0.181*** (0.032)	0.191*** (0.036)	0.168*** (0.024)	0.212*** (0.024)
<i>Supplier Pct NonGov Customer</i>			1.557*** (0.098)	1.448*** (0.092)
<i>Supplier Pct Gov Customer</i>	0.928*** (0.108)	0.972*** (0.121)		
<i>Supplier ROA</i>	0.600*** (0.106)	0.826*** (0.130)	0.723*** (0.087)	0.729*** (0.092)
<i>Supplier Size</i>	0.062* (0.037)	0.058 (0.045)	0.165*** (0.031)	0.141*** (0.032)
<i>Supplier Size Squared</i>	0.000 (0.004)	0.002 (0.104)	-0.008** (0.003)	-0.004 (0.004)
<i>Customer Pct COGS</i>			-0.005 (0.015)	-0.021 (0.017)
<i>Customer_ROA</i>			0.530*** (0.210)	0.522** (0.218)
<i>Customer Size</i>			-0.042 (0.044)	-0.035 (0.046)
<i>Customer Size Squared</i>			0.005* (0.003)	0.004 (0.003)
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Pseudo R-Square</i>	0.106	0.112	0.082	0.099

Table 7: Effect of Business Combination Laws on the Sensitivity of Supplier's Operating Performance and Investment to that of the Customer's

This table presents the estimates of OLS regressions of the supplier' ROA (CAPEX) on the interactive effect between its customer's ROA (CAPEX) and the passage of business combination law in the supplier's state of incorporation. The sample for tests includes all pairs of dependent suppliers and their big non-government customers from 1979 to 1995, where the customer-supplier relationship exists more than one year. Supplier ROA is the ROA of the supplier. Supplier CAPEX/TA is the supplier's capital expenditure scaled by its total assets. Similarly, Customer ROA is the ROA of the customer. Customer CAPEX/TA is the customer's capital expenditure scaled by its total assets. In column (1) and (3), the contemporaneous ROA and CAPEX/TA from customers are used. In column (2) and (4), we use the lagged one-year ROA and CAPEX/TA from customers instead. Supplier_After_BC_Law is a dummy variable that equals 1 if the business combination law has been passed in suppliers' state of incorporation and 0 otherwise. Other control variables in column include the natural logarithm of supplier's book value of total assets (Supplier Size), the squared term of Size (Supplier Size Squared) and the natural logarithm of one plus supplier's history in COMPUSTAT (Supplier Age). We control for the year fixed effects and relationship fixed effect in all regressions. The standard errors are reported in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% level, respectively.

<i>Dependent Variable</i>	(1) <i>Supplier ROA</i>	(2) <i>Supplier ROA</i>	(3) <i>Supplier Capex/TA</i>	(4) <i>Supplier Capex/TA</i>
<i>Customer ROA x Supplier_after_BC_law</i>	0.154** (0.070)			
<i>Customer ROA</i>	0.212*** (0.058)			
<i>Customer ROA(-1) x Supplier_after_BC_law</i>		0.165** (0.080)		
<i>Customer ROA(-1)</i>		0.012 (0.054)		
<i>Customer Capex/TA x Supplier_after_BC_law</i>			0.090** (0.042)	
<i>Customer Capex/TA</i>			0.014 (0.027)	
<i>Customer Capex/TA (-1)x Supplier_after_BC_law</i>				0.081** (0.041)
<i>Customer Capex/TA(-1)</i>				-0.014 (0.027)
<i>Supplier_after_BC_law</i>	-0.025* (0.014)	-0.027* (0.014)	-0.014*** (0.004)	-0.014*** (0.004)
<i>Supplier Age</i>	-0.078*** (0.010)	-0.082*** (0.010)	-0.022*** (0.004)	-0.022*** (0.004)
<i>Supplier Size</i>	0.162*** (0.013)	0.169*** (0.013)	0.012*** (0.004)	0.007* (0.004)
<i>Supplier Size squared</i>	-0.013*** (0.001)	-0.013*** (0.001)	-0.001 (0.001)	-0.001 (0.001)
<i>Relationship Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Adj R-Square</i>	0.687	0.685	0.461	0.456

Table 8: Effect of Business Combination Laws in States of Incorporation of Customers on Operating Performance of Dependent Suppliers

Pct NonGovt Big Customer is the supplier's fraction of sales to non-government-affiliated big customers. Customer_after_BC_Law (Supplier_after_BC_Law) is a dummy variable that equals one if the business combination law has been passed in suppliers' (customers') state of incorporation and 0 otherwise. For each supplier in year t , we sum up the proportion of sales to non-government-affiliated big customers whose states of incorporation has adopted a Business Combination Law and obtain the variable $\Sigma(\text{Pct NonGovt Big Customer} \times \text{Customer_after_BC_Law})$. Big_Customer is a dummy variable that equals one if this firm has at least one big customer and zero otherwise. Govt Big Customer (NonGovt Big Customer) is a dummy variable that equals 1 if the firm has at least one government-affiliated (non-government-affiliated) big customer and 0 otherwise. Other control variables include the natural logarithm of book value of total assets (Size), the squared term of Size and the natural logarithm of one plus firm's history in COMPUSTAT (Age), the average ROA of all other firms in the same industry (defined by 3-digit SIC code) and year (Industry-year ROA) and the average ROA of all other firms in the same state of location and year (State-year ROA). The dependent variable, ROA, is censored at 1st and 99th percentile values. The sample includes all manufacturing firms (SIC 2000 - 3990) between 1979 and 1995. We control for the firm-fixed effects and the year fixed effects in all regressions. The standard errors are reported in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% level, respectively.

Dependent Variable	(1) ROA	(2) ROA	(3) ROA
$\Sigma(\text{Pct NonGovt Big Customer} \times \text{Customer_after_BC_Law})$	0.031*** (0.011)	0.028** (0.011)	0.018* (0.011)
<i>Supplier_after_BC_law</i> \times <i>Big_Customer</i>	0.001 (0.003)		
<i>Big_Customer</i>	0.008*** (0.003)		
<i>Supplier_after_BC_law</i> \times <i>NonGovt Big Customer</i>		0.008** (0.003)	0.008** (0.003)
<i>Supplier_after_BC_law</i> \times <i>Govt Big Customer</i>		-0.012*** (-0.004)	-0.012*** (-0.004)
<i>Pct NonGovt Big Customer</i>			0.027*** (0.007)
<i>NonGovt Big Customer</i>		0.004 (0.003)	-0.001 (0.003)
<i>Govt Big Customer</i>		0.020*** (0.005)	0.018*** (0.005)
<i>Supplier_after_BC_law</i>	-0.001 (0.003)	-0.001 (0.003)	-0.001 (0.003)
<i>Age</i>	-0.028*** (0.003)	-0.029*** (0.003)	-0.028*** (0.003)
<i>Size</i>	0.066*** (0.003)	0.065*** (0.003)	0.065*** (0.003)
<i>Size squared</i>	-0.005*** (0.000)	-0.005*** (0.000)	-0.005*** (0.000)
<i>Industry-year ROA</i>	0.166*** (0.017)	0.167*** (0.017)	0.166*** (0.017)
<i>State-year ROA</i>	0.086*** (0.025)	0.082*** (0.025)	0.082*** (0.025)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes
<i>Adj R-Square</i>	0.620	0.621	0.621