

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

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ABSTRACT

Although a sizable literature suggests that shareholders prefer greater vulnerability to takeovers because it reduces agency problems, the threat of takeovers can also impose *ex ante* costs on firms by adversely affecting important stakeholders, such as major customers. In this paper, we find that for firms with corporate customers as important stakeholders, a reduction in the threat of takeovers results in better operating performance and higher stock returns, increases firms' ability to attract new customers, and strengthens relationships with existing customers. Our results suggest that anti-takeover provisions can increase shareholder value for certain types of firms and that a strong market for corporate control may not be optimal in emerging market settings where stakeholder relationships tend to be more important.

Key Words: takeovers, corporate governance, product market relationships, Business Combination Laws

JEL Codes: G34, G38, L14

An extensive literature suggests that an active takeover market is an important mechanism for reducing managerial slack and improving firm performance (e.g., Grossman and Hart (1980), Jensen (1986), Gompers, Ishii, and Metrick (2003), Bebchuk, Cohen, and Ferrell (2009), Bertrand and Mullainathan (2003)). In this paper, we argue and provide evidence that the threat of takeovers can also impose costs on firms that have important stakeholders; takeover protection does not necessarily hurt the shareholders of such firms.

The stakeholders we focus on in this paper are a firm's principal customers, or those who account for at least 10% of sales and are considered important for the firm's business. Firms supplying to these principal customers generally produce highly customized products. From the point of view of these customers, a takeover of the supplier could be harmful in many situations, as we discuss below. Thus, if the potential for such disruption is high, the customer may not be willing to make a strong commitment to the supplier, which would adversely affect the sales of the latter.

We provide a variety of anecdotal evidence suggesting that customers are concerned about the risk of disruption caused by the takeover of a supplier.¹ In 2010, Dow Jones launched a new information service, Supplier & Risk Monitor. This service aims to provide managers with "proactive monitoring of the events affecting suppliers and supply chains".² Ten categories of potential risks to the supply chain are considered, of which "Acquisitions and Mergers" is one ("Bankruptcy" and "Management Moves" are the other corporate events among the 10 categories).

¹ In Appendix A, we discuss several examples in detail.

² According to Brigitte Ricou-Bellan, vice president and managing director of Enterprise Solutions, Dow Jones, "Dow Jones Supplier & Risk Monitor helps manage the often overwhelming and fragmented flow of information related to key suppliers, providing supply chain managers with critical information that can help them better manage risk and identify potentially disruptive events before they lead to full-blown supply chain disasters, such as product recalls or loss of revenue."

A specific example of customer concern about disruption is the takeover attempt of the Ogilvy Group by the U.K. based WPP Group in 1989. Ogilvy, one of the world's largest advertising companies, was subject to a hostile takeover bid from WPP in 1989. Ogilvy's clients included major companies (customers) such as American Express, Unilever, Seagram, and Ford Motor. Several of the clients reacted very negatively to the announcement of the takeover bid. For example, Edgar Bronfman Jr., executive vice president of Seagram's United States operations, called the offer "very unwelcome", and added that a takeover would lead to "tremendous disruption". Nancy Muller, a spokeswoman for American Express, said "advertising is a personal service business, and anything that might affect the level of service we receive or the creative output of the agency would be a matter of great concern for us".³

As the case of Ogilvy illustrates, customers are likely to be especially concerned about potential disruption caused by the takeover of a supplier when the product in question is somewhat unique and customized to the requirements of the customer, or when they have to make specific investments in the product (such as adapting their production processes to a particular type of input being supplied). Thus, takeover threats are especially likely to be disruptive to firms' relationships with principal customers, since these firms typically produce unique products for the latter, as opposed to firms that sell standardized products to a large number of customers (who individually account for a small fraction of the sales).

³ Microsoft has an arrangement in place with graphics and mobile processor manufacturer Nvidia that gives it the exclusive right to equal any offers by third-parties for 30 percent or more of Nvidia's outstanding shares. The deal effectively prevents any other company besides Microsoft from acquiring Nvidia. According to an article published in Digital Trends in June 3, 2011, "Having the option to prevent another company acquiring Nvidia puts Microsoft in a strong position as it means *the computer giant can stop another company coming along and potentially disrupting the supply chain for components for its devices*, such as upcoming tablets running Windows 8." (<http://www.digitaltrends.com/computing/microsoft-pact-with-nvidia-could-result-in-future-takeover/>).

Moreover, customers buying durable products from their suppliers are especially likely to be vulnerable to the threat of takeover of suppliers.⁴

Since a principal customer is clearly a valuable stakeholder, it is worthwhile to ask why an acquirer would disrupt the relationship between the supplier and the customer. In general, an acquisition can affect the efficiency of the supplier for the very same reasons that preclude the customer from vertically integrating with the supplier in the first place. Integration of an independent company with another (usually larger) company is associated with well-known costs – for example, dampening of incentives when an independent firm becomes a part of a larger organization. If the acquirer’s interest is driven by a desire to vertically integrate with the supplier (for example, to insulate against price changes or achieve better coordination), then the availability of a ready “internal market” and the absence of competition can make the supplier less efficient ex post, and the customer may have to bear the cost.⁵

Another important reason that a customer may be wary of the acquisition of a supplier has to do with the way in which the acquisition is financed. Acquisitions that are paid for in cash are often financed with debt. Customers are very likely to be averse to acquirer’s debt, since this greatly increases the risk of the acquirer’s defaulting on the debt and causing disruption in supply. As we discuss below, debt-financed acquisitions are an

⁴ This is because durable goods typically require after-sales support from the supplier. As an example of the importance of after-sales service for customers of durable goods, consider the recent wave of consolidations in the high-tech industry, driven by firms such as Oracle, IBM, and Hewlett-Packard. An Associated Press article published in 2010 (“Tech Customers Skeptical of Takeovers” by Jordan Robertson, July 5, 2010) documents how customers are poorly served when their suppliers are acquired. One customer who replaced DEC servers with machines from IBM and Sun Microsystems when DEC was acquired by Compaq states: “I have never seen a merger that saves the customer money”, and that he “learned to try to pick computing suppliers that aren't likely to be acquired”.

⁵ Other well known costs of vertical integration are attributed to the elimination of market-based performance evaluation, and less efficient allocation of capital due to imperfect communication between a division and a corporate headquarters.

important class of acquisitions in the context of our results, and in Appendix A we provide several examples of customer concern and disruption due to such acquisitions.

To test our hypothesis that a decrease in the threat of takeovers can have some beneficial effects for firms with principal customers, we exploit exogenous changes to the threat of takeovers due to the passage of Business Combination (BC) Laws in 30 states in the U.S. between 1985 and 1991. Such changes in law are not affected by endogeneity, unlike anti-takeover protections chosen by individual firms, since the latter could reflect and anticipate those very performance changes that we intend to study. Similar empirical strategies have been used by Bertrand and Mullainathan (1999, 2003), Garvey and Hanka (1999), Cheng, Nagar, and Rajan (2005), Rauh (2006), Yun (2009), Giroud and Mueller (2010), and Francis, Hasan, John, and Waisman (2009). As has been discussed extensively in the literature (see, for example, Bertrand and Mullainathan (2003)), these BC laws empower the target boards with the right to refuse certain transactions that make it easier for the acquiring firm to pay back the debt incurred for the acquisition. This enables the board to resist takeovers they oppose. However, as we elaborate in Section I, if the takeover is in the interest of the principal customer (e.g., because the acquirer can produce a better quality product), then the board may not be able to prevent it. Thus, the BC law change will mostly hinder acquisitions that are opposed by the principal customers, and thus enable those customers to make a stronger commitment to the relationship with the supplier.

In a framework that is equivalent to a triple-difference setting, we compare the effect of BC laws on the performance of firms that have principal customers with that of firms that do not have principal customers. BC laws passed by a state only affect the firms that are incorporated in that state, and only one-third of the firms from our dependent supplier sample are located in their state of incorporation. This allows us to control for shocks at the

level of state of location. We also control for industry-level shocks while examining the effect of BC laws on firm performance.

For firms with corporate principal customers, we find that a decrease in takeover threat due to a BC law leads to an *increase* in return on assets (ROA) of 1.2 percentage points. The median ROA for our sample firms with principal customers is 11.1 percent. Thus, the effects of BC laws on the ROA of firms with principal customers are economically significant, and, for the median firm, would translate to a 10 percent increase for firms with corporate principal customers.⁶ We investigate the source of these changes in ROA. We find that the passage of a BC law in the state of incorporation of firms that have corporate principal customers leads to an increase in sales (scaled by assets) and a decrease in cost of goods sold (COGS) as a proportion of sales, as well as SG&A expenses as a proportion of sales. We also find that the passage of a BC law leads to an increase in the number of corporate principal customers and in the proportion of sales to these customers. This suggests that the improvement in ROA of firms with corporate principal customers is partially driven by more business from these customers and improved cost-efficiency. As with our results for operating performance, we find that a reduction in takeover threat results in higher stock returns for firms with corporate principal customers. These results provide further evidence that a reduction in takeover threat is beneficial for firms with corporate customers as important stakeholders.

Next, we provide evidence that a BC law leads to stronger relationships between a supplier and its existing corporate principal customers. We find that a reduction in threat of takeover leads to a greater probability that the relationship with corporate customers will continue. Further, the passage of a BC law in the state of the supplier firm leads to greater

⁶ Consistent with Bertrand and Mullainathan (2003) and Giroud and Mueller (2010), for firms without principal customers, we find that ROA decreases by 1 percentage point after the passage of BC law.

sensitivity of the supplier's investment to that of its corporate customer, and similarly, a greater sensitivity of the supplier's operating performance to that of its corporate customer. The fact that the investments of the customers and suppliers commove more suggests that there is greater outsourcing of some of the production to the suppliers after the passage of BC law.

A supplier could benefit from a BC law either because of customers' substitution of in-house production by outsourcing (as suggested by the greater comovement of capital expenditure discussed above), or at the expense of suppliers in the states that do not pass BC laws. Our data allow a test of the second channel by identifying a sample of two competing suppliers of the principal customer, where one supplier's state passes a BC law and the other supplier's state does not do so within the prior or subsequent three-year window. This sample is necessarily small because we want to ensure that the suppliers come from the same 4-digit SIC code, so that it is very likely that they are supplying similar products. We find that while a supplier incorporated in law-change state experiences higher sales growth and ROA after a BC law, its competing supplier (not incorporated in the same state) experiences a decrease in sales growth and ROA, relative to industry benchmarks, in each of the three years after the law change.

Many firms in our sample have a government entity as their principal customer. Government procurement policy may be dictated by political considerations and may be less affected by anticipation of supplier disruption; in fact, if government policy bails out poorly performing firms, it may even encourage managerial slack, which is further exacerbated when takeover threats become less effective. Unlike our results for non-government principal customers, we find that, for firms with government-affiliated principal customers, a reduction in takeover threat leads to a *decrease* in ROA of 2.0 percentage points. Similarly, we

find that a reduction in takeover threat leads to lower stock returns for firms with government principal customers. We also find no evidence that relationships continue longer with the government customers after a BC law change.

In this paper we argue that higher threat of takeovers can adversely affect firm performance because it prevents the firm from committing to long-term relationships with stakeholders. This hypothesis has several important implications. Some studies seem to suggest that shareholders always prefer greater vulnerability to hostile takeovers (see, e.g., Gompers, Ishii, and Metrick (2003), Bebchuk, Cohen, and Ferrell (2009)). Our results imply that this might not be the case, especially for firms for which long-term stakeholders are important, e.g., firms in manufacturing industries and especially in durable goods industries. This can perhaps explain why many firms have anti-takeover measures in place, and this may, in fact, be optimal from the shareholders' perspective. In a recent paper, Johnson, Karpoff and Yi (2012) find that firms adopt more takeover defenses at the IPO stage if they have more important customers and suppliers; moreover, the customer firms experience more positive stock price reactions at the IPO stage if the suppliers adopt anti-takeover provisions. These results complement our findings in this paper about the value of relationship specificity and the possible disruptive effect of takeovers.⁷

The rest of the paper is organized as follows. Section I provides detailed arguments for why a reduction in takeover threat can be beneficial for the shareholders of a firm. Section II provides details about our data. Section III presents our empirical approach and analysis. Section IV concludes.

⁷ Cremers, Nair, and Peyer (2008) point out that anti-takeover provisions can make the firm more attractive to shareholders and employees. Bates, Becher, and Lemmon (2008) suggest other benefits of anti-takeover provisions: they endow target managers with leverage sufficient to deter opportunistic bidding, negotiate for higher value bids, and pursue higher-value third-party suitors.

I. How Can Takeover Protection Be Beneficial to Firms with Important Customers?

Shleifer and Summers (1988) were among the first to argue that takeovers – especially hostile ones – can impose *ex ante* costs on a firm’s shareholders because they adversely affect the incentives of important stakeholders to make specific investments in the relationship. They argue that such takeovers are usually motivated by the possibility of *ex post* wealth redistribution in favor of shareholders, for example, through layoffs, renegotiation of wage contracts, or asset sales; however, these actions also reduce the incentives of stakeholders such as employees to acquire specific skills that are not valuable outside the firm. Shleifer and Summers (1988) argue that firms can prosper only if the “implicit contracts” with employees and other stakeholders are not reneged, even though such a breach can increase shareholder value *ex post*.

One context in which the arguments of Shleifer and Summers (1988) are particularly plausible is the situation in which a firm depends on a few principal customers for its sales. These principal customers are among the most important stakeholders for such firms. The presence of these costs implies that takeover protection of the supplier will enable it to attract more business from its principal customers.

There are several reasons that the acquisition of a supplier could be disruptive to the relationship with the firm’s principal customers and impose costs on the latter. In Appendix A, we discuss these reasons in detail and provide several examples and anecdotal evidence. Here, we briefly summarize these arguments.

A. Acquirer Debt and Debt-Financed Acquisitions

Most acquisitions paid for in cash involve an increase in the acquirer’s debt. The takeover boom of the 1980s (the period during which most of the state-level Business

Combination Laws were passed) saw many acquisitions financed with debt. During periods of industry consolidation, serial acquirers often emerge with high levels of debt. Acquirers burdened with takeover debt are undesirable from the point of view of a customer of the target because they might go into financial distress, cut quality, and let go of key employees, all of which affect the customer adversely. There is substantial anecdotal evidence that debt-financed takeovers are indeed a concern for customers, as we discuss in Appendix A.

B. Horizontal Market Power and Consolidation

An acquirer may be interested in acquiring a supplier to increase its monopsony power vis-à-vis upstream firms or to compete more effectively with other suppliers. This is clearly costly for the customer, not only because it can result in the customer paying higher prices for the products, but also because it eliminates competition for its suppliers and creates scope for slack.

A related issue arises when an acquirer attempts to buy suppliers with the specific objectives of overhauling and consolidating product lines. Oracle's pursuit of consumer relationship management (CRM) product suppliers such as PeopleSoft and Siebel was motivated by a desire to consolidate the functionalities from various products into one application. However, PeopleSoft's and Siebel's customers were strongly opposed to the move as they had already invested in a particular system and were concerned about losing support. A principal customer who has invested in a particular product from a supplier is at risk if the latter's acquisition is driven by the desire to replace existing products with an improved product that has a broader range of functionalities, since the switching costs may be substantial.

C. Other Acquisition Motives

Motives for an acquisition could be unrelated to the principal customer – for example, an undervalued supplier without adequate takeover protection could be an attractive takeover target. In such cases, the acquisition could impose costs on the principal customer if the integration of the supplier with the acquirer is inefficient. For example, the acquisition could be associated with replacement or departure of employees who are crucial to the relationship with the principal customer, or other inefficiencies that arise when an independent entity is integrated into a much larger one. Even though such transitions impose costs on the principal customer, the latter may not be able to switch if it has already invested in the relationship (e.g., designed its production process to the input provided by the supplier).

A principal customer is particularly vulnerable if an acquirer is mainly interested in aspects of the supplier's business that do not involve the principal customer. Thus, an acquirer may decide to acquire a supplier to exploit a specific synergy – for example, access to specific markets, co-branding of certain products, or a particular know-how. However, such an acquisition may not be in the interest of a principal customer who relies on the supplier for a very specialized product.

The acquisition could also be driven by the acquirer's need to grow rapidly or acquire assets quickly to fill orders from its own customers. In such cases, given capacity constraints, its own requirements may take priority over those of the supplier's customers, leading to delays in delivery or deterioration of quality of the input supplied to the principal customer. In Appendix A, we discuss Flextronics' acquisition of Dovatron, as an example of an

acquirer's being more interested in the supplier's other business than that with the customer.⁸

D. How Takeover Protection Increases Shareholder Value of Firms with Principal Customers

In the previous sub-section, we discussed several reasons that the takeover of a supplier can be disruptive to the principal customers. If takeover protection blocks such acquisitions, then the principal customers are likely to make a stronger commitment to the relationship. An important channel through which this could happen is greater outsourcing of in-house production to suppliers in law-change states. Many aspects of the customers' production process might require specialized or customized inputs. Since substitutes are not readily available for such inputs, customers are likely to produce these in-house if the risk of disruption from outsourcing is high. Takeover protection reduces the risk of such disruption. Moreover, if the relationship is less likely to be discontinued, both parties now have an incentive to make specific investments in the relationship that improve the quality of the product. Thus, suppliers in law-change states are likely to benefit from the outsourcing of such production when in-house production is otherwise less inefficient.⁹

However, not all takeovers will be harmful to the principal customers, and some may even be beneficial. For example, the potential acquirer may be more innovative, or may have a greater reputation for the reliability and quality of its products than the supplier. Could BC law that gives the supplier's board more power to resist takeovers cause the principal

⁸ The dispute between the customer and the acquirer in this case resulted in the largest jury verdict in a civil dispute in Orange County history.

⁹ The literature identifies many costs of vertical integration, such as the problem of incentives and coordination in hierarchical and non-market based structures. See, for example, Perry (1989), and Grossman and Helpman (2002).

customer to switch to suppliers in non-BC law states so that it could realize these benefits? If so, takeover protection could perhaps hurt suppliers with principal customers.

We argue that this is unlikely. If, after specific investment, it is optimal, from the customer's point of view, for the acquirer to take over the supplier, then it is most likely that the acquirer would retain the key employees of the latter, so that the acquisition is viewed as friendly and is not resisted by the board. It may also be possible for the principal customer to pressure the supplier to sell a partial stake to the acquirer (thereby enabling the management to remain in control) and enter into a strategic alliance with the acquirer to improve the quality of the product. Even when the supplier's board resists the takeover, the principal customer could facilitate a takeover that it favors but the board opposes – for example, by buying a stake in the acquirer which largely negates the effect of BC law on the cost of financing the acquisition.

The key observation here is that whether the provision of takeover protection – be it a firm-level anti-takeover provision or a state-level law – is applied in a particular case very much depends on the target's board. Bertrand and Mullainathan (2003) argue that because incumbent management greatly influences the board, the board is likely to resist those takeovers that the management is opposed to.¹⁰ If these takeovers are harmful to the customer, then BC laws are likely to block these takeover attempts. However, our arguments above suggest that takeovers favored by the customer are very likely to go through, so that the overall effect of BC laws is to make the supplier more attractive to the customer.

¹⁰ Bertrand and Mullainathan (2003), describing the BC laws, write: “Business Combination Laws are likely to have strong effects on disciplinary takeovers *because they place in the directors' hands, before the acquiring person becomes an interested shareholder, the right to refuse such transactions and because incumbent management greatly influences the board.* Barring these transactions impedes highly leveraged takeovers, a trademark of the 1980s, since they are often financed by selling some of the target's assets. In essence, Business Combination Laws give management the right to “veto” a takeover by making it more difficult to finance.”

II. Data

Our main data source is Standard and Poor's Compustat. Our sample consists of all firms that are not regulated utility firms (SIC 4900 to 4999) and 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. As in Bertrand and Mullainathan (2003) and Giroud and Mueller (2010), our sample period ends in 1995. We exclude firms for which the book value of assets is missing or negative. We also drop firms for which the state of location or incorporation is not available from Compustat. This leaves us with 13,092 firms and 96,817 firm-year observations.

The Statement of Financial Accounting Standards No. 14 (SFAS 14, issued in 1976 and superseded by SFAS 131 in 1997) of the Financial Accounting Standards Board (FASB) requires firms to disclose the names of and sales to their principal customers during our sample period. Principal customers are those who account for more than 10% of the total revenue of the firm. The data are obtained from Compustat's segment customer files. However, the database reports only the name of the customer without identifiers. Often only an abbreviated version of the name is reported, and the same customer is reported in a different form in different years and by different suppliers. Sometimes, the disclosed customer name is a subsidiary or a business segment of a firm. We identified these customers and classified them as *government*, *non-government (public or private)*, or *unidentified*. For those classified as *non-government*, we manually find the Compustat identifier (i.e., GVKEY) when possible. The details of the classification procedure are discussed in Banerjee, Dasgupta, and Kim (2004 and 2009).

[Insert Table I Here]

Table I shows the mean and median values of some characteristics for all sample firms, supplier firms (i.e., firms that reported at least one principal customer), and customer firms that are in Compustat (i.e., those that are in Compustat and are reported as a principal customer by at least one firm). The median customer firm is larger, older, and has a higher return on assets (ROA) than the median firm in Compustat. The median supplier firm is smaller and slightly younger than the median firm in Compustat. The ROA of the median supplier firms is comparable to that of a median Compustat firm. Panel B shows that firms that supply to government customers are larger and older and have higher ROA than those that supply to non-government customers. The median supplier firm obtains more than one-quarter of its revenues from principal customers. This suggests that these customers are quite important from the perspective of the suppliers. However, for the median customer firm in our sample, purchases from all dependent suppliers (i.e., all firms that list it as a principal customer) account for only 1% of the cost of goods sold.

Table A1 of the appendix shows how supplier firms (the ones that have at least one principal customer) and customer firms are distributed across various industries. Panel A shows the industries by 3-digit SIC that have the highest proportion of total industry sales to principal customers. Panel B and Panel C show the top 20 industries in terms of the number of supplier firms and customer firms, respectively.

[Insert Table II Here]

Table II shows the number of firms that are incorporated and located in each state. The firm's state of location is defined as the state in which its headquarters is located. The state of incorporation determines the legal jurisdiction that applies to the firm. A state's Business Combination Laws apply to firms incorporated in that state. We find that about 66% of the supplier firms and 69% of the customer firms are located outside their states of

incorporation.¹¹ This allows us to examine the effects of BC laws, which operate at the level of the state of incorporation, while controlling for shocks at the level of state of location.

III. Empirical analysis

A. Primary empirical methodology

Our empirical strategy relies on the exogenous change in takeover threat due to the passage of BC laws in 30 states between 1985 and 1991. As mentioned earlier, these laws reduce the threat of a hostile takeover for firms that are incorporated in the state that passes such a law.¹² The years in which states in the U.S. passed BC laws are reported in Table II. Drawing on the study of the political economy of BC law passage by Romano (1987), Bertrand and Mullainathan (2003) argue that it is exogenous to the performance of firms incorporated in that state, with the possible exception of one or two large firms that came under attack from a raider.

In our first set of empirical tests, which provides the basic structure for many of the later tests, we examine whether these laws have different effects on the performance of firms with non-government principal customers and government principal customers, relative to benchmark firms with no principal customers. We estimate the following model for all firms in our sample:

¹¹ Compustat reports the states of location and incorporation for the latest available year. Bertrand and Mullainathan (2003), and Giroud and Mueller (2010) 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.

¹² These laws affect not just those takeover attempts which are overtly hostile, but can also takeovers which would seem friendly, but the management would not oppose knowing that such an action would lead to the acquirer pursuing the takeover in a hostile fashion. In unreported results, we find that BC laws reduce the likelihood of being targeted by hostile as well as friendly takeovers attempts.

$$\begin{aligned}
\text{Performance}_{it} = & \\
& \alpha_i + \alpha_t + \beta_1 \text{ NonGovt Pncpl Customer}_{it} + \\
& \beta_2 \text{ NonGovtPncplCustomer}_{it} \times \text{After_BC_Law}_{it} + \\
& \gamma_1 \text{ GovtPncplCustomer}_{it} + \\
& \gamma_2 \text{ GovtPncplCustomer}_{it} \times \text{After_BC_Law}_{it} + \\
& \phi \text{ After_BC_Law}_{it} + \\
& \delta' \text{ Controls}_{it} + \varepsilon_{it} \qquad \dots \quad (1)
\end{aligned}$$

where i indexes firms and t indexes time. The standard errors in our estimations are clustered at the state of incorporation level.¹³

The dependent variable in Equation (1) is a measure of operating performance: return on assets (ROA), which is defined as EBITDA (earnings before interest, taxes, depreciation and amortization) divided by book value of total assets. Like Giroud and Mueller (2010), we drop observations that are at the extreme 1% tails of ROA values to remove the impact of outliers on our results. In other empirical tests reported later, we employ a return-based performance measure.

Firm and year fixed effects are represented by α_i and α_t , respectively, in Equation (1). *NonGovtPncplCustomer* is a dummy variable that equals 1 if this firm has at least one principal customer that is not affiliated with any government and 0 otherwise. Similarly, *GovtPncplCustomer* is a dummy variable that equals 1 if this firm has at least one government-affiliated principal customer and 0 otherwise. *After_BC_Law* is a dummy variable that equals 1 if a BC law has been passed in the firm's state of incorporation by time t , and 0 otherwise.

¹³ This allows for potential correlation between error terms of the same firm over time, as well as across different firms incorporated in the same state. The statistical significance of our main results is not affected if standard errors are clustered by firm.

Following Giroud and Mueller (2010), we include size, the square of size, and firm age as additional control variables. Size is defined as the natural logarithm of total assets, and firm age is the natural logarithm of one plus the number of years the firm has been included in Compustat. Only about one-third of the firms are incorporated in their state of location, allowing us to control for shocks at the level state of location while examining the effect of BC law on firm performance. Following Bertrand and Mullainathan (2003) and Giroud and Mueller (2010), we control for industry as well as local shocks by including two control variables: i) the average of the dependent variable (which is ROA in the first set of empirical tests) across all firms in the same *industry* (defined by 3-digit SIC code), for that year, excluding the firm itself, and ii) the average of the dependent variable across all firms in the same *state of location* (defined as the state of the location of the firm’s headquarters), for that year, excluding the firm itself.

The coefficient ϕ in Equation (1) captures the effect of BC laws on firms that do not have any principal customers. For firms with non-government principal customers, the total effect of the BC laws on firm performance (ROA) is captured by $\phi + \beta_2$, while β_2 captures the additional effect on these firms relative to firms with no principal customers. Similarly, γ_2 captures the additional effect of a BC law on performance of firms with government-affiliated principal customers relative to firms that have no principal customers. Therefore, β_2 and γ_2 are the coefficients of our primary interest.

In the above specification, the year fixed effects control for aggregate fluctuations in the economy while the firm fixed effects control for fixed differences across firms, which subsumes any fixed differences between firms in the treated group and the control group. The treatment group is the set of firms that are incorporated in states in which a BC law has been passed. 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 have never passed a BC law are always a part of the control group. In addition, firms that are incorporated in a state that did pass a BC law will be part of the control group for the period prior to the passage of the BC law. As discussed earlier, the industry-year mean ROA and state-year mean ROA variables control for shocks at the level of industry and state of location, respectively. Logarithm of size and the age of the firm are included as additional controls. A specification estimating the coefficient on *After_BC_Law* in the presence of these controls would be similar to a difference-in-difference estimate of the effect of BC law, capturing the additional change in performance of the treatment group firms due to BC law, relative to the change in performance of the control group firms over the same period. This would be captured by ϕ in the following regression specification.

$$\text{Performance}_{it} = \alpha_i + \alpha_t + \phi \text{After_BC_Law}_{it} + \delta' \text{Controls}_{it} + \varepsilon_{it} \quad \dots \quad (2)$$

By comparison, the specification in Equation (1) is equivalent to a triple-difference approach, where the coefficients β_2 and γ_2 capture whether the law has a differential effect on performance of firms with non-government and government principal customers, respectively, relative to firms with no principal customers.

We also employ other specifications similar to that in Equation (1). In particular, we replace the dummy variables capturing the presence of non-government and government principal customers with the continuous variables *PctGovtPncplCustomer* and *PctNonGovtPncplCustomer*, which are defined as the fraction of sales to government-affiliated and non-government-affiliated principal customers, respectively.

B. Effect of an exogenous reduction in takeover threat on firm profitability

The reduction in the threat of hostile takeovers for firms incorporated in a state that passes a BC law can potentially have two opposing effects. First, the managers who no longer fear losing their jobs after a hostile takeover may start to enjoy the “quiet life” and their complacency could lead to worse firm performance. This effect has been emphasized by previous studies, including Bertrand and Mullainathan (2003), and Giroud and Mueller (2010). Alternatively, when the takeover threat is reduced, firms may find it easier to commit to long-term relationships with their stakeholders, including existing and potential principal customers. We would therefore expect a reduction in takeover threat to have a less adverse effect on the performance of firms with corporate principal customers. For firms whose principal customers are government-affiliated, the effect might be the opposite, as we discuss in the introduction. The government is not likely to be concerned about the takeovers of its suppliers. In fact, if a supplier firm’s survival is threatened by a drop in profitability, the government might even bail out the firm by providing new orders or paying a higher price on existing supply contracts. This might foster an environment for managerial slack which could worsen when a governance mechanism like threat of takeovers is removed. Therefore, we expect that a reduction in takeover threat would lead to a worsening of performance in this situation.

[Insert Table III Here]

The results presented in Table III show the effect of BC laws on performance of different types of firms and are consistent with the above arguments. Column (1) shows the results of a base case regression specification given in Equation (2). Consistent with Bertrand and Mullainathan (2003), and Giroud and Mueller (2010), we find that BC laws have an adverse effect on the performance of the average firm in the sample. Column (2) shows the result of estimating the regression specification given in Equation (1). We find that, relative

to firms with no principal customers, the ROA of firms with non-government principal customers increases by 1.2 percentage points as a result of BC law. In contrast, the ROA of firms with government principal customers goes down by 2.0 percentage points. Like in column (1), the coefficient of *After_BC_Law* is negative, indicating that BC law results in a decrease in ROA of a firm with no principal customers. The coefficients on industry-year and state-year controls are positive and significant, which shows the importance of controlling for industry and local shocks.

To test the robustness of these results, we replace the dummy variables that capture the presence of non-government and government principal customers with continuous variables representing the proportion of sales to such customers. The results for this specification are presented in column (3) of Table III. Paralleling the results based on dummy variables, we find that BC laws have a larger positive and significant effect on the performance of firms for which sales to non-government principal customers are more important, and have a stronger negative effect on the performance of firms that sell a higher proportion of their output to government-affiliated principal customers.

Giroud and Mueller (2010) show that the effect of anti-takeover laws on firm performance depends on the extent of product market competition within the industry. They use the Herfindahl-Hirschman Index (HHI) at the 3-digit industry level as their measure of industry concentration. We find that controlling for HHI and interaction of HHI with *After_BC_Law* dummy makes virtually no difference to the economic magnitude and statistical significance of our results. These results are reported in Table A2 in the Appendix.

We are unable to identify all reported customers in Compustat through our manual search procedures. For the results in columns (2) and (3), if we are unable to classify a customer as affiliated with a government, we classify it as non-government. However, some

of the customers in the non-government category may be misclassified. To address this concern, we classify those firms that we could find in the Compustat database as *identified corporate customer*. In column (4) we present the results of a regression that replaces the variable $NonGovtPncplCustomer_{it}$ in Equation (1) with $IdCorpPncplCustomer_{it}$, which is a dummy variable that is one if the firm has at least one customer that was identified as a Compustat firm, and zero otherwise. Similarly, column (5) shows the results using a continuous version of this variable based on the fraction of sales to identified corporate customers instead of a dummy. The results in columns (4) and (5) are similar to the earlier ones, with a slightly stronger positive effect for firms with corporate principal customers relative to those in columns (2) and (3), respectively. This is consistent with the idea that this classification better captures firms with corporate principal customers, for which we expect a positive effect of the BC laws.

Firms in durable goods industries are more likely to be producing specific products for their customers. Also, customers of such firms are likely to have a greater need for a long-term relationship to ensure future after-sales support in the form of servicing and maintenance (Titman and Wessels (1988)). Therefore we would expect that the effect of a reduction in takeover threat on performance should be stronger for dependent suppliers in durable goods industries. Columns (6) and (7) of Table III show results similar to those in columns (2) and (3) but only for the sample of firms in durable goods industries. Product durability is defined by 3-digit SIC codes as in Gomes, Kogan, and Yogo (2009). The effect of BC laws is stronger in this sub-sample and results in an improvement of 2.1 percentage points in ROA (as opposed to 1.2 percentage points for the average firm non-government customers in the entire sample). This suggests that the impact of a reduction in takeover

threat is indeed higher when the importance of a long-term relationship is greater—i.e., when the supplier supplies a durable product.

C. Examining the sources of improvement in performance

To provide further support for our hypothesis and understand better why BC laws lead to improvement in the performance of suppliers with non-government customers, we explore the effect of BC laws on variables that could affect performance. ROA, which is our measure of performance in the previous sub-section, can be decomposed as follows:

$$\begin{aligned} \text{ROA} &= \text{EBITDA}/\text{Assets} = (\text{Sales} - \text{Costs})/\text{Assets} \\ &= (\text{Sales}/\text{Assets}) [1 - \text{COGS}/\text{Sales} - \text{SG\&A}/\text{Sales} - \text{Other Costs}/\text{Sales}] \end{aligned}$$

One possibility is that the improvement in performance of suppliers is a result of an increase in orders from corporate principal customers, leading to higher sales as a proportion of assets. Alternatively, stronger relationships can also lead to better cost efficiency driven by economies of scale for the supplier firm. This can lower the cost of goods sold (COGS), as well as sales, general, and administrative expenses (SG&A), as a proportion of sales.

[Insert Table IV Here]

We run regressions similar to that in Equation (1), where the dependent variable is sales scaled by total assets. Column (1) of Table IV presents the results. The coefficient in column (1) on the first interaction term shows that for suppliers with non-government principal customers, the ratio of sales to total assets goes up by a statistically significant 4.4 percentage points due to BC law.

To test if the improvement in firm performance documented earlier is partly driven by reduction in costs, we run a regression similar to that in Equation (1), with the LHS variables are cost of goods sold scaled by sales (COGS/Sales) and selling, general, and administrative expense scaled by sales (SGA/Sales), respectively. Columns (2) and (3) of

Table IV show that both COGS/Sales and SGA/Sales go down for firms with non-government principal customers by 2.5 percentage points each. This suggests that BC law leads to higher sales as well as better cost efficiency for firms with corporate principal customers.

For suppliers with government customers, we do not observe a statistically significant change in Sales/Assets or COGS/Sales. However, we do observe an increase in SG&A/Sales, suggesting that an increase in wasteful expenses is partially responsible for the lower performance of such firms after BC laws are passed in their states of incorporation.

[Insert Table V Here]

We next examine the effect of BC law on the change in proportion of sales to principal customers and the number of principal customers. These results are shown in Table V. We estimate a specification similar to Equation (2) for all firms in our sample with the dependent variable replaced by the number of principal customers. Since the dependent variable, number of principal customers, is a count measure, rather than a continuous variable, and more than one-third of the firms in our sample never have a principal customer, we estimate a Zero-inflated Poisson model. We also estimate a tobit regression with percentage sales to principal customers as the dependent variable. These results are presented in columns (1), (2), and (3) of Table V.

The results show a significant increase in the number of principal customers as well as the proportion of total sales to principal customers as a result of BC law. Column (1) shows that the marginal effect of BC law (i.e., *After_BC_Law* increases from 0 to 1 while other variables stay at their means) is an increase in the number of non-principal customers by 0.045. Since the average number of principal customers is 0.8, this represents a 5.6% increase in number of principal customers due to BC law. We also examine the effects of BC

law on increase of non-government principal customers and government-affiliated principal customers. These results are presented in columns (3) – (6) of Table V. We see that all of the increase in principal customers as a result of BC law is due to increase in non-government principal customers. These results support our hypothesis that BC laws helps firms obtain more business from their existing corporate principal customers and attract new principal customers. However, the law has no effect on obtaining business from government principal customers.

Overall, our results so far suggest that a reduction in the takeover probability of the supplier allows it to obtain more business from its non-government customers, resulting in an improvement in its ROA. This improvement seems driven by an increase in suppliers' total sales and a decrease in the proportion of production and administrative costs to total sales.

D. The effect of BC law on competing suppliers

We now provide some evidence that a part of the gain in the business from its non-government customers enjoyed by a supplier firm in a BC law state comes at the expense of competing suppliers in states that do not pass such a law in around the same time period. In general, the increase in business from principal customers could come from a number of sources:

- i) The supplier gains new business from an existing customer at the expense of another competing supplier, selling a similar product to the same customer and located in a state that did not (recently) have a law change.
- ii) The supplier obtains more business from existing customers, replacing production that the customer was doing in-house before the law change, but was reluctant to outsource.

- iii) The supplier gains at the expense of other potential suppliers. New business from existing customers and other customer firms that would have gone to other firms now comes to this supplier.

The last channel, i.e., gains at the expense of other potential suppliers, although potentially important, is difficult to identify. Therefore, we confine attention to the first two channels and attempt to provide some empirical evidence consistent with these two channels. In this section we attempt to provide a direct test of the first channel. Later in the paper we provide supporting evidence for the second channel.

We identify customer firms with two suppliers in the same 4 digit SIC industry, but incorporated in different states. Let us, for the sake of exposition, refer to these entities as customer, supplier1, and supplier2, respectively. We require that the state of incorporation of supplier1 (state1) passes a BC law at some point, say year t . Further, we require that the supplier2's state of incorporation (state2) does not pass a BC law in a $[t-3, t+3]$ window. When state1 passes a BC law, this should have a positive effect on the business it gets from the customer. Our results so far are consistent with this. However, our hypothesis also implies that supplier2, whose state of incorporation does not pass a BC law around the same time, should be adversely affected, since supplier1 gains a relative advantage. As a result, some of the business that supplier1 gets would be at the expense of business that supplier2 was getting, or would have potentially received, from the same principal customer. This is what we try to test.

Our dataset does not capture all competing suppliers from the perspective of the customer, since this customer may not be a principal customer (representing more than 10% of sales) of all its competing suppliers. Further, suppliers may be capable of producing goods

and services that are associated with a different SIC code than those they have been classified into. Therefore we are unable to obtain a comprehensive sample of competing suppliers to the same customer. Nevertheless, we obtain a small sample of trios of customer-supplier1-supplier2. We then examine the effect of the passage of BC law in state1 on the year-on-year change in ROA and growth in sales to the principal customer of supplier1 and supplier2. For benchmarking, we obtain the average change in ROA and the growth rate of sales to their principal customers of all other suppliers in our sample in the same industry as supplier1 and supplier2.

[Insert Table VI Here]

Table VI shows the average growth rate of sales of supplier1 and supplier2 to their principal customers, as well as the annual change in ROA for three years after the passage of BC law in state1. We notice that supplier1 has higher sales growth and change in ROA compared to the benchmark firms in each of the three years following the law change. On the other hand, supplier2 has negative sales growth and change in ROA relative to the benchmark firms in each of these three years. This clearly shows the negative effect on a competing supplier incorporated in a *different state* due to a BC law change. Most, but not all, of these differences are statistically significant. However, all effects are in the direction predicted. As expected, the differences in sales growth between supplier1 and supplier2 are highly statistically significant, as are the differences in change in ROA.

The above test is also free from any concerns of endogeneity of the timing of passage of BC laws with respect to the future performance of firms incorporated in that state. One might argue that BC laws are passed in anticipation of better performance of firms incorporated in that state.¹⁴ However, the competing suppliers identified for this test

¹⁴ As pointed out earlier, Bertrand and Mullainathan (2003) argue that this is unlikely to be the case.

are incorporated in different states. It would be hard to argue that adoption of BC law in one state would be in anticipation of future under-performance of firms that are incorporated in a different state and are direct competitors of firms incorporated in that state.

E. The effect of a reduction in takeover threat on stock price performance

Until now we have focused on the improvement in operating performance of a supplier due to a reduction in the threat of takeovers. We now examine whether we could obtain similar results with abnormal stock returns as the measure of firm performance. We use a specification similar to Equation (1) with a different dependent variable – abnormal annual stock return. This is the characteristics-adjusted annual return computed using a procedure similar to that in Daniel, Grinblatt, Titman, and Wermers (1997) (hereinafter, DGTW). In each year, the twelve-month raw returns are computed based on cumulative returns from January to December. To construct the benchmark portfolios, at the end of every calendar year we first assign stocks to market-cap quintiles based on NYSE breakpoints. Within each size quintile, stocks are then assigned into sub-quintiles, based on their most recent book-to-market ratios. In each of these 25 groups, we further partition stocks into sub-quintiles based on past six-month stock returns. This procedure yields 125 (5×5×5) groups based on size, book-to-market ratios, and past returns. For each group, the equal-weighted twelve-month return is computed and is used as the benchmark portfolio return. The DGTW adjusted annual return for a stock (*Adj. Ret12M*) is the difference between the raw return of this stock and the return of the benchmark portfolio to which it belongs. The results of the regression are presented in Table VII.

[Insert Table VII Here]

Column (2) of Table VII shows that, relative to firms with no principal customers, those with non-government principal customers have a statistically significant +2.1% annual

abnormal return as a result of BC laws. Similar results hold when we use the proportion of sales to non-government customers instead of the dummy variable for presence of non-government customers. Overall, the results in Table VII broadly parallel those in columns (1), (2), and (3) of Table III, which have ROA as the measure of performance.

F. The effect of takeover threat on the strength of customer-supplier relationships

A reduction in the probability of a takeover of the supplier should lead to a strengthening of the relationship between the supplier and the customer. We show in Section III.C that suppliers' sales to principal customers increase after the probability of a takeover is reduced. That result is based on firm-level data. In this subsection we provide further evidence that the customer-supplier relationship is strengthened by focusing on relationship-level data. For suppliers that have multiple principal customers in the same year, we now look at each of the relationships separately.

We first construct a panel of relationships where a supplier-customer-year is used as a unit of observation. When a supplier lists the same customer as a principal customer for at least two consecutive years, we call it a "relationship". We separate relationships with government-affiliated entities and those with corporate entities into separate sub-samples and examine whether the reduction in takeover threat due to adoption of a BC law in the supplier's state has an effect on the probability that the relationship will continue. To do this, we estimate a Probit model in which the dependent variable is a dummy variable that takes the value of 1 if the relationship continues for the subsequent year(s), and 0 if the supplier firm still exists in the Compustat but the relationship does not continue. Our main explanatory variable of interest is *After_BC_Law*, which is 1 if a BC law has been passed in the current year or any of the previous years in the supplier's state of incorporation. 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 the COGS of the customer. We also include ROA, size, and the square of size for the supplier and the customer as control variables.

[Insert Table VIII Here]

Column (1) of Table VIII shows that a BC law leads to a significant increase in the probability that the relationship between the supplier and a non-government customer continues for at least one more year. Column (2) shows that we obtain similar results when looking at the probability of continuation of the relationship for at least two more years. However, we do not find any significant effect when the customer is a government entity, as shown in column (3) and (4). Consistent with our earlier results, takeover probability does not have any effect on the strength of a supplier's relationship with a government-affiliated entity.

We provide further evidence of relationship strengthening for the subsample of relationships with corporate customers using a different strategy. A closer relationship would likely result in the supplier's undertaking more investments at times when the customer increases its investment. This should result in a greater co-movement in their investments. Moreover, a stronger relationship should result in greater co-movement of the supplier's and customer's performance. For example, greater demand for the customer's products should lead to more orders for the supplier's products from the customer.

[Insert Table IX Here]

We first examine whether the sensitivity of the supplier's investment to that of the customer goes up as a result of BC law adoption in the supplier's state. We use Capex scaled by total assets as our variable to capture investment. Column (1) of Table IX shows the results for the regression of supplier's investment on customer's investment, the interaction

between customer's investment and a dummy variable representing the passage of a BC law, and other controls. Column (2) replaces the customer's investment with its one-period lagged investment to allow for the possibility that the effect of a shock leading to higher customer investments might not be immediately transmitted to the supplier. For both specifications, we see that the coefficients on the interaction term are statistically significant at the 5% level. This implies that the sensitivity of the supplier's investment to the customer's investment increases after the adoption of a BC law, suggesting higher outsourcing by the customer to the supplier.

Similarly, we test the sensitivity of a supplier's ROA to contemporaneous and lagged ROA of the customer. The results presented in columns (3) and (4) of Table IX show that the ROA sensitivity goes up significantly after the passage of a BC law.

Overall we find strong evidence that BC laws result in a reduction in takeover threat to the supplier, leading to an increase in the strength of the customer-supplier relationship. This is reflected in (a) a greater probability that the relationship will continue, (b) a greater sensitivity of the supplier's investment to that of its customer, and (c) a greater sensitivity of the supplier's performance to that of its customers.

G. The effect of a takeover (or a takeover attempt) on relationship continuation

A key element in our arguments as to why takeover protection can have beneficial effects on suppliers with principal customers is that takeovers can be disruptive to the customers. We provide anecdotal evidence in the introductory section, outline the channels through which such disruption can occur in Section I, and provide examples in Appendix A. In this section, we provide some direct supportive evidence of this link in the argument by examining the effect of a takeover (or a takeover attempt) of the supplier on the probability of continuation of relationship with an existing customer.

Table X shows the effect of a takeover or a takeover attempt of the supplier on the continuation of a customer-supplier relationship for another year (or another two years).¹⁵ A relationship with a principal customer is considered to be discontinued only if the supplier firm is covered by Compustat even after the event, but it no longer reports this principal customer. This ensures that a firm's dropping out of the database or consolidating in financial statement reporting with the acquirer is not considered a discontinuation of a relationship. For the purpose of this test, we define takeover as cases in which the acquirer has less than 50% ownership of the target firm before the deal and aims to hold more than 50% after the deal. The main independent variables of interest are whether the supplier was successfully taken over in a particular year and whether there was an unsuccessful takeover attempt on the supplier. We define success and failure with respect to the original intentions of the acquirer. Information of mergers and acquisitions is obtained from the SDC Platinum database.

The Probit model we estimate is similar to the one we use to examine the effect of passage of a BC law on relationship continuation, and has the same set of control variables. It is possible that the acquisition is triggered by worsening sales to principal customers, which in turn can have an effect on likelihood of continuation of a relationship with the customer in the future. Therefore, we include an additional control variable – the growth rate of sales to a non-government customer in the past year. Contrary to the above concern, we observe that sales to principal customers tend to rise, rather than fall, in the year before a takeover.

¹⁵ We examine effects of all takeovers, including those that are not classified as hostile by the SDC database. This is for two reasons. First, the SDC database classification tends to miss out quite a few hostile takeovers, which were not hostile at deal completion although they started out as such. Second, BC laws affect not just those takeover attempts which are overtly hostile, but can also takeovers which would seem friendly, but the management would not oppose knowing that such an action would lead to the acquirer pursuing the takeover in a hostile fashion. In unreported results, we find that BC laws significantly reduce the likelihood takeover attempts that were classified as hostile and well as those that were not.

We find that a successful takeover of the supplier reduces the probability of relationship continuation into the next year by about 17.6 percentage points, and the probability of the relationship continuing two more years by about 19.7 percentage points. An unsuccessful takeover attempt reduces the probability of the relationship continuation into the next year by about 6.5 percentage points.

A merger deal could use cash, stock, or a mix of the two. Since cash deals are more likely to be financed using debt, they would increase the bankruptcy risk of the supplier, making the relationship less attractive from the customer's perspective. We might therefore expect a lower probability of relationship continuation for deals financed by cash than those financed by stock. Columns (2) and (4) of Table X show that this is indeed the case – for successful as well as unsuccessful takeover attempts. The probability of relationship continuation is lower if a higher fraction of the deal is financed using cash. These results provide support for the hypothesis that a takeover of a supplier is indeed likely to disrupt its relationship with a customer.

IV. Conclusion

Using the passage of Business Combination Laws as a source of exogenous variation, we examine the effect of a reduction in the threat of takeovers on firms that have important relationships with corporate principal customers and government-affiliated principal customers. Firms in relationships with corporate principal customers experience a significant improvement in operating performance when the threat of a takeover goes down. This is consistent with the notion that the threat of takeovers can make it difficult for firms to commit to long-term relationships with other stakeholders, which in turn adversely affects performance. The impact of a reduction in takeover threat on performance of firms with

corporate principal customers is larger when the importance of a long-term relationship is greater, e.g., when the supplier produces a durable goods product for its customers. On the other hand, a relationship with the government can foster an environment for managerial slack, and takeover discipline is especially important for firms in such an environment. Accordingly, we find that firms with a relationship with government affiliated customers experience a drop in performance when takeover threat goes down.

We find that after the passage of BC laws, the number of corporate principal customers increases, the supplier's sales to principal customers increases, and the relationship between the supplier and its corporate customers becomes stronger, as evidenced by a higher likelihood of relationship continuation and greater sensitivity of the supplier's performance and investment to those of the customer. Taken together, these empirical results support the hypothesis that the threat of takeovers can impair the ability of firms to commit to long-term relationships with important stakeholders, adversely affecting their profitability and performance. We also find empirical evidence supporting the notion that a relationship is more likely to be discontinued if the supplier is taken over, or is subject to an unsuccessful takeover attempt. This provides evidence that customer-supplier relationships are indeed disrupted due to takeovers.

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. Further, adoption of anti-takeover measures may not necessarily hurt shareholders, especially for firms that need to attract important stakeholders by implicitly promising a long-term relationship. Moreover, governance mechanisms that attract and retain important stakeholders are likely to be more effective than those that do not. Finally, our results about how government-affiliated entities, in their role as principal customers, promote managerial

slack when the threat of a takeover is reduced, should be of particular interest to researchers who study the effects of corporate governance on firm performance.

References

- Banerjee, Shantanu, Sudipto Dasgupta, and Yungsoo Kim, 2004, Buyer-supplier relationships and trade credit, Working paper, Hong Kong University of Science and Technology.
- Banerjee, Shantanu, Sudipto Dasgupta, and Yungsoo Kim, 2009, Buyer-supplier relationships and the stakeholder theory of capital structure, *Journal of Finance* 63, 2507–2552.
- Bates, Thomas, David A. Becher, and Michael L. Lemmon, 2008, Board classification and managerial entrenchment: Evidence from the market for corporate control, *Journal of Financial Economics* 87, 656–77.
- Bebchuk, Lucian A., 2005, The case for increasing shareholder power, *Harvard Law Review* 118, 833–913.
- Bebchuk, Lucian A., and Alma Cohen, 2005, The cost of entrenched boards, *Journal of Financial Economics* 78, 409–433.
- Bebchuk, Lucian A., Alma Cohen, and Allen Ferrell, 2009, What matters in corporate governance? *Review of Financial Studies* 22, 783–827.
- Bertrand, Marianne, and Sendhil Mullainathan, 1999, Is there discretion in wage setting? A test using takeover legislation, *Rand Journal of Economics* 30, 535–554.
- Bertrand, Marianne, and Sendhil Mullainathan, 2003, Enjoying the quiet life? Corporate governance and managerial preferences,” *Journal of Political Economy* 111, 1043–1075.
- Bhojraj, Sanjeev, and Partha Sengupta, 2003, The effect of corporate governance mechanisms on bond ratings and yields: the role of institutional investors and outside directors, *Journal of Business* 76, 455–475.
- Brown, David T., Fee C. Edward, and Shawn E. Thomas, 2009, Financial leverage and bargaining power with suppliers: evidence from leveraged buyouts, *Journal of Corporate Finance* 15, 196–211.
- Cheng, Shijun, Venky Nagar, and Madhav V. Rajan, 2005, Identifying control motives in managerial ownership: evidence from antitakeover legislation, *Review of Financial Studies* 18, 637–672.
- Claessen, Stijn, Simeon Djankov, and Larry H. P. Lang, 2000, The separation of ownership and control in East Asian corporation,” *Journal of Financial Economics* 58, 81–112.
- Coase, Ronald H., 1937, The nature of the firm, *Economica* 4, 386–405.
- Cohen, Lauren, and Andrea Frazzini, 2008, Economic links and predictable returns, *Journal of Finance* 63, 1977–2011.

- Cremers, K. J. Martijn, and Vinay B. Nair, 2005, Governance mechanisms and equity prices, *Journal of Finance* 60, 2859–2894.
- Cremers, K. J. Martijn, Vinay B. Nair, and Urs Peyer, 2008, Takeover defenses and competition, *Journal of Empirical Legal Studies* 5, 791–818.
- Cremers, K. J. Martijn, Vinay B. Nair, and Chenyang Wei, 2007, Governance mechanisms and bond prices, *Review of Financial Studies* 20, 1359–1388.
- Daniel, Kent, Mark Grinblatt, Sheridan Titman, and Russ Wermers, 1997, Measuring mutual fund performance with characteristic-based benchmarks, *Journal of Finance* 52, 1035–1058.
- Dasgupta, Sudipto, and Yungsan Kim, 1997, Vertical buyer-supplier relationships and capital structure, Working paper, Hong Kong University of Science and Technology.
- Drucker, Peter F, 1986, Corporate takeovers – what is to be done? *The Public Interest* 82 , 3–24.
- Easterbrook, Frank H., and Daniel R. Fischel, 1991, *The Economic Structure of Corporate Law* (Harvard University Press).
- Fama, Eugene F., and Michael C. Jensen, 1983, Separation of ownership and control, *Journal of Law and Economics* 26, 301–325.
- Fee, C. Edward, Charles J. Hadlock, and Shawn Thomas, 2006, Corporate equity ownership and the governance of product market relationships, *Journal of Finance* 61, 1217–1250.
- Fee, C. Edward, and Shawn Thomas, 2004, Sources of gain in horizontal mergers: evidence from customers, suppliers, and rival firms, *Journal of Financial Economics* 74, 423–460.
- Francis, B. Bill, Iftekhar Hasan, Kose John, and Maya Waisman, 2009, The effect of state antitakeover laws on the firm's bondholders, *Journal of Financial Economics* 96, 127–154.
- Garvey, Gerald T., and Gordon Hanka, 1999, Capital structure and corporate control: the effect of antitakeover statutes on firm leverage, *Journal of Finance* 54, 519–546.
- Giroud, Xavier, and Holger Mueller, 2010, Does corporate governance matter in competitive industries? *Journal of Financial Economics* 95, 312–331.
- Gomes, João F., Leonid Kogan, and Motohiro Yogo, 2009, Durability of output and the cross-section of stock returns, *Journal of Political Economy* 117, 941–986.
- Gompers, Paul A., Joy L. Ishii, and Andrew Metrick, 2003, Corporate governance and equity prices, *Quarterly Journal of Economics* 118, 107–155.

- Grossman, Gene M., and Elhanan Helpman, 2002, Integration versus outsourcing in industry equilibrium, *Quarterly Journal of Economics* 117, 85–120.
- Grossman, Sanford J., and Oliver D. Hart, 1980, Disclosure laws and takeover bids, *Journal of Finance* 35, 323–334.
- Grossman, Sanford J., and Oliver D. Hart, 1986, The costs and benefits of ownership: a theory of vertical integration, *Journal of Political Economy* 94, 691–719.
- Hertzel, Michael G., Zhi Li, Micah S. Officer, Kimberly J. Rodgers, 2008, Inter-firm linkages and the wealth effects of financial distress along the supply chain, *Journal of Financial Economics* 87, 374–387.
- Jensen, Michael C., 1986, Agency costs of free cash flow, corporate finance, and takeovers, *American Economic Review* 76, 323–329.
- Johnson, William C., Jonathan M. Karpoff, and Sangho Yi, 2012, Why do IPO firms have takeover defenses?, Working Paper, University of Washington.
- Joskow, Paul L., 1987, Contract duration and relationship-specific investments: empirical evidence from coal markets, *American Economic Review* 77, 168–185.
- Kale, Jayant R., and Husayn Shahrur, 2007, Corporate capital structure and the characteristics of supplier and customer markets, *Journal of Financial Economics* 83, 321–365.
- Kalwani, Manohar U., and Narakesari Narayandas, 1995, Long-term manufacturer-supplier relationships: do they pay off for supplier firms? *Journal of Marketing* 59, 1–16.
- Karpoff, Jonathan M., and Paul H. Malatesta, 1989, The wealth effects of second-generation state takeover legislation, *Journal of Financial Economics* 25, 291–322.
- Karpoff, Jonathan M., and Paul H. Malatesta, 1995, State takeover legislation and share values: the wealth effect of Pennsylvania's Act 36, *Journal of Corporate Finance* 1, 367–382.
- Klein, Benjamin, Robert G. Crawford, and Armen A. Alchian, 1978, Vertical integration, appropriable rents, and the competitive contracting process, *Journal of Law and Economics* 21, 297–326.
- Kim, Yung-san, 1996, Big customers, selling expenses and profit margin, *Journal of Economic Research* 1, 311–326.
- Lang, Larry H. P., 2000, *Cases of Mergers and Acquisitions in Hong Kong* (Prentice Hall Press).
- Law, Warren A., 1986, A corporation is more than just its stock, *Harvard Business Review* 64, 80–83.
- Lowenstein, Louis, 1985, Management buyouts, *Columbia Law Review* 85, 730–784.

- Martin, Roger, 2010, The age of customer capitalism, *Harvard Business Review* 88, 58-65.
- Maug, Ernst, 1997, Boards of directors and capital structure: alternative forms of corporate restructuring, *Journal of Corporate Finance* 3, 113–139.
- McAfee, R. Preston, and Marius Schwartz, 1994, Opportunism in multilateral vertical contracting: nondiscrimination, exclusivity, and uniformity, *American Economic Review* 84, 210–230.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny, 1989, Alternative mechanisms for corporate control, *American Economic Review* 79, 842–852.
- Perry, Martin, K., 1989, Vertical integration: determinants and effects, in R. Schmalensee and R. Willig, ed.: *Handbook of Industrial Organization* (North Holland)
- Romano, Roberta, 1987, The Political Economy of Takeover Statutes, *Virginia Law Review* 73, 111–199.
- Rauh, Joshua D., 2006, Own company stock in defined contribution pension plans: a takeover defense? *Journal of Financial Economics* 81, 379–410.
- Schnitzer, Monika, 1995, “Breach of trust” in takeovers and the optimal corporate charter, *Journal of Industrial Economics* 43, 229–259.
- Shleifer, Andrei, and Lawrence Summers, 1988, Breach of trust in hostile takeovers, in Alan J. Auerbach, ed.: *Corporate Takeovers: Causes and Consequences* (University of Chicago Press).
- Titman, Sheridan, and Roberto Wessels, 1988, The determinants of capital structure choice, *Journal of Finance* 43, 1–19.
- Williamson, Oliver E., 1985, *The Economic Institutions of Capitalism* (Free Press).
- Yun, Hayong, 2009, The choice of corporate liquidity and corporate governance, *Review of Financial Studies* 22, 1447–1475.

Table I
Summary Statistics

The mean and median values of several firm characteristics of three samples for the period 1979–1995 are reported in Panel A. The sample reported in column (1) includes all firms in non-regulated industries (i.e., we exclude industries with SIC 4900-4999) from the Compustat Fundamental Annual File. The sample reported in column (2) consists of all dependent suppliers that report at least one principal customer. In column (3), the sample includes all principal customer firms that have dependent suppliers. In Panel B, we further partition all dependent suppliers (as reported in column (2) of Panel A) into three sub-groups. The summary statistics of dependent suppliers that only have government principal customers are reported in column (4) and that only have non-government principal customers in column (5). In column (6), the sample includes dependent suppliers that have government and non-government principal customers simultaneously. *ROA* is defined as EBITDA scaled by the book value of total assets; *Total Assets* is the book value of total assets; and *History* is the number of years that a firm has existed in the Compustat database. We also report the mean and median values of the proportional sales to principal customers for dependent suppliers (in columns (2), (4), (5) and (6)) and proportional inputs from dependent suppliers for principal customers (in column (3)). *ROA* is censored at the 1st and 99th percentile values. We require that all firms in these samples have positive book values of total assets and non-missing information about the state of incorporation and the state of location in Compustat.

(Table I Continued)

Panel A: Firms in the Entire Sample

	(1) All Firms in Compustat		(2) All Dependent Supplier Firms		(3) All Principal Customer Firms	
	Mean	Median	Mean	Median	Mean	Median
<i>ROA</i>	0.071	0.101	0.067	0.111	0.141	0.148
<i>Total Assets (\$M)</i>	1297.809	53.404	506.227	30.188	7383.667	1492.784
<i>History (Years)</i>	11.480	8.000	10.742	7.000	22.171	24.000
<i>Sales to principal customers / Total Sales</i>			0.355	0.275		
<i>Purchases from dependent suppliers / COGS</i>					0.045	0.010
<i>Total Number of Firms</i>		13092		7804		1184
<i>Total Number of Observations</i>		96817		45341		5943

Panel B: Dependent Suppliers

	(4) Dependent Suppliers with Government Customers Only		(5) Dependent Suppliers with Non-government Customers Only		(6) Dependent Suppliers with Both Government and Non-government Customers	
	Mean	Median	Mean	Median	Mean	Median
<i>ROA</i>	0.104	0.124	0.061	0.107	0.065	0.110
<i>Total Assets (\$M)</i>	1217.701	63.719	394.570	27.654	395.546	26.982
<i>History (Years)</i>	14.962	12.000	9.723	7.000	12.291	9.000
<i>Sales to principal customers / Total Sales</i>	0.301	0.190	0.331	0.260	0.564	0.485
<i>Total Number of Firms</i>		502		5825		1477
<i>Total Number of Observations</i>		6144		33739		5458

Table II
States of Incorporation and States of Location

This table describes the distribution of dependent suppliers and principal customers across states of incorporation and states of location. This table first reports the year when the Business Combination Law was passed in each state. column (1) shows the number of dependent suppliers and principal customers in each state by state of incorporation, and column (2) shows the number of suppliers and customers by state of location, i.e., where a firm's headquarters is located. column (3) shows the number of dependent suppliers and principal customers that are located in their states of incorporation. Our sample includes all firms in non-regulated industries (i.e., we exclude industries with SIC 4900-4999) from the Compustat Fundamental Annual File between 1979 and 1995. We also require that all firms in this sample have positive book values of total assets and non-missing information about the state of incorporation and the state of location in Compustat.

State	BC Law	(1) Firms Incorporated in This State		(2) Firms Located in This State		(3) Firms Incorporated and Located in This State	
		Suppliers	Customers	Suppliers	Customers	Suppliers	Customers
Alaska	-	4	1	4	0	2	0
Alabama	-	3	1	31	6	2	0
Arkansas	-	3	3	30	10	3	3
Arizona	1987	26	2	104	12	22	2
California	-	360	43	1300	198	325	40
Colorado	-	197	6	268	26	115	3
Connecticut	1989	18	4	181	32	17	3
D. Ct.	-	2	1	15	3	0	0
Delaware	1988	3999	701	22	6	19	5
Florida	-	185	19	378	45	144	17
Georgia	1988	79	17	179	36	67	15
Hawaii	-	7	0	10	0	6	0
Iowa	-	15	5	28	8	10	4
Idaho	1988	2	0	14	3	1	0
Illinois	1989	38	6	269	64	31	6
Indiana	1986	58	14	74	14	43	6
Kansas	1989	19	3	38	4	15	1
Kentucky	1987	11	2	37	7	10	2
Louisiana	-	16	0	37	3	13	0
Massachusetts	1989	178	32	386	64	153	27
Maryland	1989	95	19	123	20	33	10
Maine	1988	7	2	8	1	4	1
Michigan	1989	81	16	142	27	72	13
Minnesota	1987	213	26	241	36	177	23
Missouri	1986	33	9	94	26	25	7

Mississippi	-	6	0	19	2	6	0
Montana	-	4	0	7	0	4	0
North Carolina	-	48	5	119	21	43	3
North Dakota	-	4	0	3	0	2	0
Nebraska	1988	4	1	19	3	3	1
New Hampshire	-	4	0	33	4	2	0
New Jersey	1986	148	28	403	61	108	16
New Mexico	-	10	0	18	1	6	0
Nevada	1991	201	19	57	6	29	6
New York	1985	337	51	731	101	237	25
Ohio	1990	130	37	215	51	112	31
Oklahoma	1991	36	5	88	14	27	4
Oregon	-	50	8	63	12	41	8
Pennsylvania	1989	142	28	261	51	104	22
Rhode Island	1990	10	2	22	5	9	2
South Carolina	1988	11	4	34	4	11	4
South Dakota	1990	3	1	7	2	3	1
Tennessee	1988	25	5	80	18	22	5
Texas	-	174	19	678	106	153	18
Utah	-	79	1	77	6	41	1
Virginia	1988	79	20	155	32	48	12
Vermont	-	5	0	11	2	4	0
Washington	1987	70	10	93	16	55	10
Wisconsin	1987	54	8	77	14	45	8
West Virginia	-	4	0	9	1	3	0
Wyoming	1989	15	0	10	0	6	0
Total		7302	1184	7302	1184	2433	365

†D.C. = District of Columbia

Table III
Effect of Business Combination Laws on Operating Performance of Dependent Suppliers

This table presents the estimates of OLS regressions of operating performance on the interaction between the presence of government or non-government principal customers and the passage of Business Combination Law in suppliers' states of incorporation. Our sample includes all Compustat firms in non-regulated industries (i.e., we exclude industries with SIC 4900-4999) for the period between 1979 and 1995. The dependent variable, *ROA*, is censored at 1st and 99th percentile values. *Govt Pncpl Customer* is a dummy variable that equals 1 if this firm has at least one government-affiliated principal customer, and 0 otherwise; *NonGovt Pncpl Customer* is a dummy variable that equals 1 if this firm has at least one non-government-affiliated principal customer, and 0 otherwise; *IdCorp Pncpl Customer* is a dummy variable that equals 1 if this firm has at least one corporate principal customer that can be identified in Compustat, and 0 otherwise. When these variable names are prefixed with *Pct*, these dummy variables are replaced by the proportional sales of dependent suppliers' sales to the corresponding type of principal customers. *After_BC_Law* is a dummy variable that equals one for all years after Business Combination Laws have been passed in suppliers' state of incorporation, and 0 otherwise. Other control variables in all columns include the natural logarithm of book value of total assets (*Size*), the squared term of Size (*Size Squared*), the natural logarithm of one plus the number of years the firm has been included in Compustat (*Age*), the average ROA of all other firms in the same 3-digit SIC industry for the year (*Industry-year ROA*), and the average ROA of all other firms in the same state of location for the year (*State-year ROA*). While results reported in columns (1) – (5) are for the full sample, results in columns (6) and (7) are generated from firms in durable goods industries as defined in Gomes, Kogan, and Yogo (2009). We control for the firm fixed effects and the year fixed effects in all OLS regressions. The standard errors (in parentheses) are clustered at the state of incorporation level. ***, ** and * denotes statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Full Sample</i>	<i>Full Sample</i>	<i>Full Sample</i>	<i>Full Sample</i>	<i>Full Sample</i>	<i>Durable Goods Ind.</i>	<i>Durable Goods Ind.</i>
		<i>X=NonGovt</i>	<i>X=Pct NonGovt</i>	<i>X=IdCorp</i>	<i>X=Pct IdCorp</i>	<i>X=NonGovt</i>	<i>X=Pct NonGovt</i>
		<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>
		<i>Y=Govt</i>	<i>Y=Pct Govt</i>	<i>Y=Govt</i>	<i>Y=Pct Govt</i>	<i>Y=Govt</i>	<i>Y=Pct Govt</i>
		<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>	<i>Pncpl Customer</i>
<i>After_BC_law x X</i>		0.012*** (0.002)	0.026*** (0.008)	0.016*** (0.003)	0.053*** (0.010)	0.021** (0.010)	0.034** (0.016)
<i>After_BC_law x Y</i>		-0.020*** (0.003)	-0.046*** (0.008)	-0.019*** (0.003)	-0.044*** (0.008)	-0.041*** (0.013)	-0.042 (0.027)
<i>X</i>		0.017*** (0.002)	0.056*** (0.009)	-0.002 (0.003)	0.004 (0.008)	-0.015 (0.013)	-0.009 (0.009)
<i>Y</i>		0.009*** (0.003)	0.069*** (0.013)	0.009*** (0.003)	0.068 (0.013)	-0.002 (0.012)	-0.003 (0.076)
<i>After_BC_law</i>	-0.009** (0.004)	-0.010** (0.004)	-0.010** (0.004)	-0.009** (0.004)	-0.010** (0.004)	-0.013 (0.015)	-0.013 (0.015)
<i>Age</i>	-0.031*** (0.004)	-0.032*** (0.005)	-0.032*** (0.005)	-0.032*** (0.004)	-0.032*** (0.004)	-0.050*** (0.012)	-0.049*** (0.013)
<i>Size</i>	0.088*** (0.006)	0.087*** (0.006)	0.088*** (0.006)	0.088*** (0.006)	0.088*** (0.006)	0.063*** (0.014)	0.064*** (0.014)
<i>Size squared</i>	-0.007*** (0.000)	-0.006*** (0.000)	-0.006*** (0.000)	-0.007*** (0.000)	-0.006*** (0.000)	-0.006*** (0.001)	-0.006*** (0.001)
<i>Industry-year ROA</i>	0.172*** (0.024)	0.172*** (0.023)	0.172*** (0.025)	0.171*** (0.024)	0.171*** (0.024)	0.230*** (0.045)	0.222*** (0.047)
<i>State-year ROA</i>	0.300*** (0.043)	0.296*** (0.044)	0.295*** (0.046)	0.295*** (0.044)	0.295*** (0.044)	0.352*** (0.092)	0.350*** (0.090)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>SE Clustered (State of Incorp.)</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj R-Squared</i>	0.599	0.598	0.599	0.597	0.598	0.607	0.606
<i>No. Obs.</i>	96817	96817	96817	96817	96817	4484	4484

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

This table presents the estimates of OLS regressions of sales and discretionary expenses of dependent suppliers on the interaction between the status of having government or non-government principal customers and the passage of a Business Combination Law in suppliers' states of incorporation. Our sample includes all Compustat firms in non-regulated industries (i.e., we exclude industries with SIC 4900-4999) for the period between 1979 and 1995. Dependent variables in columns (1), (2) and (3) are defined as follows for each year t : $Sales/TA$ is the total sales scaled by the total assets. $COGS/Sales$ is the cost of goods sold scaled by total sales. $SGA/Sales$ is the selling, general, and administrative expense scaled by total sales. The control variables are defined in the same way as described in Table III. We control for the firm fixed effects and the year fixed effects in all OLS regressions. The standard errors (in parentheses) are clustered at the state of incorporation level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	(1)		(2)		(3)	
	<i>Sales/TA</i>		<i>COGS/Sales</i>		<i>SGA/Sales</i>	
	OLS		OLS		OLS	
<i>After_BC_law</i> × <i>NonGovt Pncpl Customer</i>	0.044***		-0.025**		-0.025***	
	(0.016)		(0.013)		(0.008)	
<i>After_BC_law</i> × <i>Govt Pncpl Customer</i>	0.006		0.006		0.016**	
	(0.014)		(0.005)		(0.008)	
<i>After_BC_law</i> × <i>Pct NonGovt Pncpl Customer</i>		0.074***		-0.102***		-0.117***
		(0.020)		(0.022)		(0.020)
<i>After_BC_law</i> × <i>Pct Govt Pncpl Customer</i>		0.065*		0.013		0.049**
		(0.033)		(0.019)		(0.023)
<i>NonGovt Pncpl Customer</i>	-0.001		-0.038***		-0.041***	
	(0.014)		(0.006)		(0.011)	
<i>Govt Pncpl Customer</i>	0.060***		0.008		-0.036***	
	(0.015)		(0.007)		(0.010)	
<i>Pct NonGovt Pncpl Customer</i>		0.047**		0.001		-0.074**
		(0.020)		(0.042)		(0.035)
<i>Pct Govt Pncpl Customer</i>		0.173***		0.072**		-0.126***
		(0.041)		(0.035)		(0.030)
<i>After_BC_law</i>	-0.008	0.000	0.027**	0.019*	0.007	0.004
	(0.013)	(0.014)	(0.011)	(0.010)	(0.010)	(0.011)
<i>Age</i>	0.107***	0.106***	0.040***	0.039***	-0.030**	-0.024***

<i>Size</i>	(0.009)	(0.009)	(0.006)	(0.006)	(0.013)	(0.011)
	-0.225***	-0.224***	-0.082***	-0.084***	-0.091***	-0.092***
	(0.011)	(0.012)	(0.013)	(0.013)	(0.024)	(0.024)
<i>Size squared</i>	0.003***	0.003***	0.003***	0.003***	0.006***	0.006**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
<i>Industry-year Sales/TA</i>	0.217***	0.219***				
	(0.012)	(0.012)				
<i>State-year Sales/TA</i>	0.048	0.046				
	(0.033)	(0.033)				
<i>Industry-year COGS/Sales</i>			0.258***	0.259***		
			(0.027)	(0.027)		
<i>State-year COGS/Sales</i>			0.116**	0.116**		
			(0.053)	(0.053)		
<i>Industry-year SGA/Sales</i>					0.080***	0.076***
					(0.017)	(0.017)
<i>State-year SGA/Sales</i>					0.154***	0.147***
					(0.047)	(0.046)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>SE Clustered (State of Incorp.)</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj R-Squared</i>	0.811	0.811	0.513	0.513	0.616	0.616
<i>No. Obs.</i>	96817	96817	96817	96817	82036	82036

Table V
Effect of Business Combination Laws on Sales to Principal Customers

This table presents the estimates of Zero-inflated Poisson/Tobit regressions of firms' numbers of principal customers and percentage sales to principal customers on the passage of a Business Combination Law in suppliers' states of incorporation. Dependent variables are defined as follows: *Num Pncpl Customers* is the total number of all principal customers, and *Pct Pncpl Cus Sales* is the percentage sales of dependent suppliers to all principal customers in total sales. Similarly, *Num Gov Pncpl Customers* (*Num Non-gov Pncpl Customers*) is the total number of principal government (non-government) customers, and *Pct Gov Pncpl Cus Sales* (*Pct Non-gov Pncpl Cus Sales*) is the percentage sales of dependent suppliers to government (non-government) principal customers in total sales. Independent variables are defined in the same way as described in Table III. *Pass_Law* is a dummy variable that is one if the state of incorporation of the firm passed a BC law at any time during our sample period. Our sample includes all Compustat firms in non-regulated industries (i.e., we exclude industries with SIC 4900-4999) for the period between 1979 and 1995. The standard errors in all regressions (in parentheses) are clustered at the state of incorporation level. Besides the standard errors of coefficients presented in parentheses, we also report the marginal effect of *After_BC_Law* evaluated at the means of all independent variables in square brackets. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

(Table V Continued)

Dependent Variable	Government Customers					
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Num Pncpl Customers</i> (ZIP)	<i>Pct Pncpl Cus Sales</i> (Tobit)	<i>Num Non-gov Pncpl Customers</i> (ZIP)	<i>Pct Non-gov Pncpl Cus Sales</i> (Tobit)	<i>Num Gov Pncpl Customers</i> (ZIP)	<i>Pct Gov Pncpl Cus Sales</i> (Tobit)
<i>After_BC_law</i>	0.051*** (0.010) [0.045]	0.029*** (0.004) [0.009]	0.113*** (0.012) [0.076]	0.034*** (0.004) [0.010]	-0.036 (0.023) [-0.004]	-0.008 (0.018) [-0.001]
<i>Age</i>	-0.039*** (0.005)	-0.011*** (0.002)	-0.054*** (0.006)	-0.027*** (0.002)	0.378*** (0.019)	0.076*** (0.010)
<i>Size</i>	-0.035*** (0.007)	-0.021*** (0.002)	-0.085*** (0.005)	-0.023*** (0.002)	0.027** (0.011)	0.012 (0.010)
<i>Size squared</i>	-0.002** (0.001)	-0.003*** (0.000)	-0.012*** (0.001)	-0.004*** (0.000)	0.012*** (0.002)	-0.002 (0.001)
<i>State-year Avg.</i>	0.418*** (0.027)	0.845*** (0.041)	0.511*** (0.029)	0.189*** (0.009)	2.382*** (0.208)	0.358** (0.144)
<i>Ind-year Avg.</i>	0.303*** (0.013)	0.424*** (0.004)	0.996*** (0.016)	0.402*** (0.005)	5.266*** (0.071)	1.167*** (0.071)
<i>Pass_law</i>	0.035*** (0.011)	0.045*** (0.005)	0.099*** (0.012)	0.025*** (0.004)	0.144*** (0.029)	0.005 (0.023)
<i>SE Clustered</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>No. Obs.</i>	96817	96817	96817	96817	96817	96817

Table VI
Effect of BC Law Passage on Competing Suppliers of the Same Principal Customer

For each law change year t , we identify principal customers with competing suppliers (i.e., within the same 4-digit SIC codes) incorporated in different states. If we observe a BC law change at year t , we partition all dependent suppliers in this subsample into two groups, i.e., we require that at least one supplier is incorporated in the state with a BC law change and at least one supplier is incorporated in the state that experiences no BC law changes three years before and after year t . For suppliers in these two groups, we compute the average growth rate of sales to principal customers and average change of ROA in three years after the law change. The statistics for the suppliers incorporated in the states with law changes and for suppliers incorporated outside the states with law changes are reported in column (1) and column (2), respectively. In column (3), we report the average growth rate of sales to principal customers and the change in RoA of all other suppliers in the same SIC industry. The differences between groups and their t-statistics are also reported in the table.

Panel A									
Growth Rate of Sales to Principal Customers									
	(1)	(2)	(3)	(1)-(3)	T-stat (1) -(3)	(2)-(3)	T-stat (2) -(3)	(1)-(2)	T-stat (1) -(2)
$Y1$	0.320	0.051	0.102	0.218**	2.28	-0.051	-0.97	0.269**	2.53
$Y2$	0.481	-0.034	0.218	0.263	1.48	-0.252**	-3.73	0.515***	2.96
$Y3$	0.458	-0.038	0.199	0.259*	1.92	-0.237**	-3.43	0.496***	3.65
Panel B									
Change of ROA									
	(1)	(2)	(3)	(1)-(3)	T-stat (1) -(3)	(2)-(3)	T-stat (2) -(3)	Difference	T-stat (1) -(2)
$Y1$	0.017	0.000	0.003	0.014**	2.07	-0.003	-0.55	0.017**	2.07
$Y2$	0.012	-0.005	0.005	0.007*	1.83	-0.010	-1.21	0.017*	1.70
$Y3$	0.012	-0.022	0.003	0.009*	1.91	-0.025**	-2.00	0.034***	2.61
<i>Num. Obs.</i>	155								

Table VII
Effect of Business Combination Laws on Stock Performance of Dependent Suppliers

This table presents the estimates of OLS regressions of adjusted annual stock returns of dependent suppliers on the interaction between the status of having government or non-government principal customers and the passage of Business Combination Law in the suppliers' states of incorporation. Our sample includes all Compustat firms with annual return information from CRSP in non-regulated industries (i.e., we exclude industries with SIC 4900-4999) for the period between 1979 and 1995. The dependent variable is the DGTW adjusted annual return after eliminating the size, value, and momentum effects (*Adj. Ret12M*). Independent variables are defined in a way similar to those reported in Table III. Other control variables in all columns include the average *Adj. Ret12M* of all other firms in the same 3-digit SIC industry of the year (*Industry-year Adj. Ret12M*) and the average *Adj. Ret12M* of all other firms in the same state of location for the year (*State-year Adj. Ret12M*). We control for the firm fixed effects and the year fixed effects in all OLS regressions. The standard errors (in parentheses) are clustered at industry-year (SIC 1-digit industries in each year) level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

(Table VII Continued)

Dependent Variable	(1) <i>Adj. Ret12M</i>	(1) <i>Adj. Ret12M</i>	(3) <i>Adj. Ret12M</i>
<i>After_BC_law</i> × <i>NonGovt Pncpl Customer</i>		0.021* (0.012)	
<i>After_BC_law</i> × <i>Govt Pncpl Customer</i>		0.015 (0.017)	
<i>After_BC_law</i> × <i>Pct NonGovt Pncpl Customer</i>			0.061** (0.030)
<i>After_BC_law</i> × <i>Pct Govt Pncpl Customer</i>			-0.074* (0.041)
<i>NonGovt Pncpl Customer</i>		-0.011 (0.009)	
<i>Govt Pncpl Customer</i>		-0.021 (0.017)	
<i>Pct NonGovt Pncpl Customer</i>			-0.032 (0.029)
<i>Pct Govt Pncpl Customer</i>			0.011 (0.059)
<i>After_BC_law</i>	-0.020* (0.011)	-0.016 (0.011)	-0.017 (0.011)
<i>Industry-year Adj. Ret12M</i>	0.272*** (0.037)	0.272*** (0.037)	0.272*** (0.037)
<i>State-year Adj. Ret12M</i>	0.238*** (0.028)	0.237*** (0.028)	0.237*** (0.028)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes
<i>SE Clustered (Industry-Year)</i>	Yes	Yes	Yes
<i>Adj R-Squared</i>	0.054	0.054	0.055
<i>No. Obs.</i>	58982	58982	58982

Table VIII
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 a Business Combination Law in suppliers' states of incorporation and other control variables. The sample for tests in columns (1) and (2) includes all firms with non-government principal customers for the period 1979–1995. *Non Gov Cont1Y* (*Non Gov Cont2Y*) is a dummy variable that equals 1 if the relationship with the non-government principal customer will continue in the next year, $t+1$ (next two years, $t+1$ and $t+2$), and 0 if both the customer firm and the supplier firm still exist in the Compustat but the relationship does not continue. The sample for tests in columns (3) and (4) includes all pairs of dependent suppliers and their principal government customers from 1979 to 1995. Similarly, *Gov Cont1Y* (*Gov Cont2Y*) is a dummy variable that equals 1 if the relationship with the government customer continues in the next year, $t+1$ (next two years, $t+1$ and $t+2$), and 0 if the supplier firm still exists in the Compustat but the relationship does not continue. We require that all customer-supplier relationships exist more than one year at year t . All control variables reflect customers' and/or suppliers' information at year t . *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. *Past Relation Length* 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*). The standard errors (in parentheses) are clustered at the customer-supplier pair level. We also report the marginal effect of *After_BC_Law* evaluated at the means of all other independent variables in square brackets. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

(Table VIII Continued)

	Non-government Customers		Government Customers	
	(1)	(2)	(3)	(4)
	<i>Non Gov Cont1Y</i>	<i>Non Gov Cont2Y</i>	<i>Gov Cont1Y</i>	<i>Gov Cont2Y</i>
<i>After_BC_Law</i>	0.104*** (0.038) [0.027]	0.128*** (0.043) [0.046]	0.050 (0.054) [0.009]	0.018 (0.058) [0.005]
<i>Past Relation Length</i>	0.219*** (0.026)	0.239*** (0.029)	0.175*** (0.031)	0.159*** (0.034)
<i>Supplier Pct NonGov Customer</i>	1.529*** (0.102)	1.446*** (0.101)		
<i>Supplier Pct Gov Customer</i>			1.140*** (0.078)	1.155*** (0.083)
<i>Supplier ROA</i>	0.772*** (0.078)	0.906*** (0.094)	0.621*** (0.097)	0.772*** (0.106)
<i>Supplier Size</i>	0.054** (0.024)	0.061** (0.029)	0.060** (0.026)	0.043 (0.029)
<i>Supplier Size Squared</i>	0.004* (0.003)	0.006* (0.003)	-0.001 (0.003)	0.001 (0.003)
<i>Customer Pct COGS</i>	0.073* (0.039)	-0.026 (0.045)		
<i>Customer_ROA</i>	0.598*** (0.192)	0.605*** (0.219)		
<i>Customer Size</i>	-0.028 (0.045)	-0.007 (0.053)		
<i>Customer Size Squared</i>	0.004 (0.003)	0.003 (0.003)		
<i>SE Clustered (Relationship Level)</i>	Yes	Yes	Yes	Yes
<i>Pseudo R-Squared</i>	0.089	0.098	0.079	0.080
<i>No. of Obs</i>	12223		9481	

Table IX
Effect of Business Combination Laws on the Sensitivity of Capital Investment and Operating Performance of the Supplier to that of the Customer

This table presents the estimates of OLS regressions of the suppliers' capital investment (i.e., Capex) and operational performance (i.e., ROA) on the interaction between their customers' capital investment and operational performance and the passage of a Business Combination Law in the supplier's state of incorporation. The sample for tests includes all pairs of dependent suppliers and their principal non-government customers for the period 1979–1995. We require that all customer-supplier relationships exist more than one year. *Supplier Capex/TA* is the supplier's capital expenditure scaled by its total assets at year t . *Supplier ROA* is the ROA of the supplier at year t . Similarly, *Customer Capex/TA* is the customer's capital expenditure scaled by its total assets at year t and *Customer ROA* is the ROA of the customer at year t . In columns (1) and (3), the contemporaneous Capex/TA and ROA of customers are used. In columns (2) and (4), we use the lagged one-year Capex/TA and ROA of customers instead. Other independent variables are defined in a similar way as those described in Table III. We control for the year fixed effects and relationship fixed effects in all OLS regressions. The standard errors (in parentheses) are clustered at the customer-supplier pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

(Table IX Continued)

<i>Dependent Variable</i>	(1)	(2)	(3)	(4)
	<i>Supplier Capex/TA</i>	<i>Supplier Capex/TA</i>	<i>Supplier ROA</i>	<i>Supplier ROA</i>
<i>Customer Capex/TA</i> × <i>After_BC_law</i>	0.098*** (0.032)			
<i>Customer Capex/TA</i>	0.053** (0.022)			
<i>Customer Capex/TA (-1)</i> × <i>After_BC_law</i>		0.079** (0.031)		
<i>Customer Capex/TA (-1)</i>		0.002 (0.021)		
<i>Customer ROA</i> × <i>After_BC_law</i>			0.162*** (0.052)	
<i>Customer ROA</i>			0.071** (0.035)	
<i>Customer ROA(-1)</i> × <i>After_BC_law</i>				0.204*** (0.051)
<i>Customer ROA(-1)</i>				-0.009 (0.033)
<i>After_BC_law</i>	-0.004 (0.004)	-0.004 (0.004)	-0.028*** (0.010)	-0.033*** (0.010)
<i>Supplier Age</i>	-0.021*** (0.003)	-0.021*** (0.003)	-0.057*** (0.008)	-0.060*** (0.008)
<i>Supplier Size</i>	0.012*** (0.003)	0.012*** (0.003)	0.138*** (0.008)	0.142*** (0.008)
<i>Supplier Size squared</i>	-0.000 (0.001)	-0.001 (0.001)	-0.012*** (0.001)	-0.012*** (0.001)
<i>Relationship Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>SE Clustered (Relationship Level)</i>	Yes	Yes	Yes	Yes
<i>Adj R-Squared</i>	0.576	0.578	0.652	0.654
<i>No. Obs.</i>	12223	12223	12223	12223

Table X
Effect of Successful and Unsuccessful M&As on
the Continuation of Customer-Supplier Relationship

This table presents the estimates of Probit regressions of the customer-supplier relationship continuation on the successful and unsuccessful attempts to acquire the suppliers by acquirers that are not the existing customers of these firms. The specification is very similar to what we have in Table VIII. The dependent variable, *Cont1Y* (*Cont2Y*), is a dummy variable that equals 1 if the relationship with the non-government principal customer continues in the next (two) year and 0 if both the customer firm and the supplier firm still exist in the Compustat but the relationship does not continue. *Completed Deal* is a dummy variable that equals 1 if the supplier is successfully acquired by at least one acquirer in year t , and 0 otherwise; *Withdrawn Deal* is a dummy variable that equals 1 if there is at least one unsuccessful attempt to acquire the supplier in year t , and 0 otherwise. *Pct Cash* is the percentage of deal value that would be paid in cash. The standard errors (in parentheses) are clustered at the customer-supplier relationship (pair) level. We also report the marginal effect of *Completed Deal*, *Withdrawn Deal* and their interactive terms with *Pct Cash* evaluated at the means of all independent variables in square brackets. Other independent variables are defined in a similar way as those described in Table VIII. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Probit Regressions	<i>Cont1Y</i>		<i>Cont2Y</i>	
	(1)	(2)	(1)	(2)
<i>Completed Deal</i>	-0.593*** (0.130) [-0.176]	-0.241* (0.144) [-0.072]	-0.512*** (0.129) [-0.197]	-0.077 (0.175) [-0.030]
<i>Completed Deal * Pct Cash</i>		-0.862*** (0.304) [-0.256]		-1.189*** (0.342) [-0.458]
<i>Withdrawn Deal</i>	-0.217* (0.118) [-0.065]	0.028 (0.163) [0.008]	-0.333*** (0.113) [-0.129]	-0.195 (0.148) [-0.075]
<i>Withdrawn Deal * Pct Cash</i>		-0.532** (0.237) [-0.158]		-0.326* (0.185) [-0.126]
<i>Past Relation Length</i>	0.162*** (0.023)	0.163*** (0.023)	0.176*** (0.026)	0.177*** (0.026)
<i>NonGov Customer Sales Growth</i>	0.077*** (0.021)	0.077*** (0.021)	0.049*** (0.017)	0.049*** (0.017)
<i>Supplier Pct NonGov Customer</i>	1.598*** (0.095)	1.601*** (0.095)	1.540*** (0.096)	1.542*** (0.096)
<i>Supplier ROA</i>	0.816*** (0.076)	0.820*** (0.076)	0.993*** (0.091)	0.996*** (0.091)
<i>Supplier Size</i>	0.018 (0.024)	0.018 (0.024)	0.018 (0.028)	0.017 (0.027)
<i>Supplier Size Squared</i>	0.008*** (0.002)	0.008*** (0.002)	0.009*** (0.003)	0.009*** (0.003)
<i>Customer Pct COGS</i>	-0.105 (0.221)	-0.099 (0.220)	-0.056 (0.250)	-0.048 (0.249)
<i>Customer ROA</i>	0.222 (0.176)	0.230 (0.175)	0.326* (0.202)	0.334* (0.202)
<i>Customer Size</i>	0.006 (0.047)	0.007 (0.047)	0.016 (0.056)	0.017 (0.056)
<i>Customer Size Squared</i>	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)
<i>SE Clustered (Relationship Level)</i>	Yes	Yes	Yes	Yes
<i>Pseudo R-Squared</i>	0.075	0.076	0.081	0.082
<i>No. of Obs</i>	12223		12223	

Appendix A: Examples of Customer-supplier Relationship Disruption due to Takeovers

A.1 Acquirer Debt and the Potential for Supply Disruption: Examples

In Section I.A, we argue that debt-financed acquisitions and debt-laden serial acquirers are often a source of supply disruption. In our sample period, debt financed takeovers, often characterized as hostile, were common. Moreover, an important feature of the BC laws is that they made it difficult for the acquirer to pay for the acquisitions by imposing restrictions on the use of the target assets – precisely the features that would make debt-financed acquisitions difficult. Here, we provide several examples of how acquirer debt led to disruptions.

The first example shows that a customer (McDonald's), concerned about supply disruption following a debt-financed acquisition of its supplier's parent company (Wilson), was instrumental in the sale of the subsidiary (Anderson) to a third party.

Example 1. Wilson and McDonald's

Wilson & Co. began shipping fresh beef patties to McDonald's in 1968. In 1971, the Wilson meat plant incorporated as Anderson Meat and Provisions, and continued selling to McDonald's as a Wilson subsidiary. Sales to McDonald's Corporation accounted for 10.5 percent of Wilson's net sales in 1987. When Dorskocil conducted a hostile takeover of Wilson in 1988, McDonald apparently refused to continue the purchase contract with the new owners. Wilson then agreed to sell Anderson to Oklahoma City veterinarian Norman Pick, Anderson's president. As a result, a company called Normac emerged.¹⁶

¹⁶ In 1990, McDonald's approached Mr. Lopez, a longtime franchise owner in Los Angeles, about becoming part of the company's supply chain by buying Normac.

Doskocil was already highly levered when it launched its bid for Wilson in 1988 (with a total liability to asset ratio in excess of 0.8). In 1987, Doskocil had repurchased nearly a million shares of its common stock. Late in that same year, the company raised \$57.5 million through the bond markets.

On February 28, 1990, Doskocil announced that the company and its subsidiaries, including the recently acquired Wilson Foods Corp., were in default on a \$133 million loan agreement. Chairman Larry Doskocil said the company's liquidity problems resulted, in part, from interest expense tied to Doskocil's \$238 million acquisition of Wilson Foods in 1988 and delays in selling Wilson's fresh and retail meats division.

The case illustrates the customer's (McDonald's) refusal to invest in a relationship with a debt-laden acquirer. While it could not prevent the takeover, it was an important enough customer that selling the Anderson division was the only way Doskocil could get any value for Anderson's relationship with McDonald.

Example 2: Debt-Financed Acquisitions in the Auto-Parts Industry in the 1990s

In the auto-parts supplier industry, a big wave of consolidations occurred in the 1990s, with the acquisitions mainly financed with debt. Eventually, the acquirers piled up too much debt and ran into financial trouble, which disrupted supplies to the automakers.

Notably, these events occurred in the age of "just-in-time" parts supply, when automakers started to maintain smaller inventories and their dependence on parts suppliers increased. The motive for the acquisition spree in the auto-parts supplier industry in the 1990s appears to have been to increase size to compete more effectively with larger firms within the industry.

An article published in *Automotive News* on May 13, 2002¹⁷ provides more perspective on the problems afflicting the parts suppliers. The article states that in the 1990s, General Motors and other automakers encouraged suppliers to expand rapidly. Vendors were expected to operate in all major world markets; they were also encouraged to design their own components, which made them key players in vehicle development. However, the desire to expand sparked an unprecedented wave of consolidation. In the 1990s, suppliers negotiated 272 mergers worth \$19.5 billion. As a result of that frenzy, many suppliers ended up with heavy burdens of debt. Faced with price pressures and declining production, in the short period between October 2001 and May 2002 half a dozen large suppliers, with combined sales of \$7.4 billion, sought Chapter 11 bankruptcy protection.

We discuss two specific cases below.

Example 2.1. Breed Technologies

Breed Technologies was a parts supplier to GM and other car manufacturers. Its example shows how dealing with a debt-laden acquirer (or one that finances its acquisitions by issuing debt) can be costly for the customer. In 1997, Breed acquired AlliedSignal's seat belt business, heavily financing the acquisition with debt. Soon after that, Breed ran into financial distress. In September, 1999, Breed Technologies nearly shut down nine GM truck plants after it stopped supplies of seat belts for 3 days. The reason for the disruption was a pricing dispute, resulting in a demand by Breed that GM pay \$44.5 million immediately to meet a repayment obligation. The shutdown would have been very costly to GM, with estimates showing a single day's stoppage resulting in a loss of \$80 million per day. Eventually, a court order restored the supply.

¹⁷ "Too big to fail; GM props up ailing key suppliers to keep its assembly lines rolling", by Robert Sherefkin, *Automotive News*, May 13, 2002, Vol. 76, Issue 5983.

An article in *Automotive News* on September 6, 1999 states¹⁸: “The GM lawsuit also underscores the perils of merger mania among suppliers. Over the past five years, Breed spent \$1 billion to acquire 11 companies, part of its ambitious bid to compete against industry behemoths Autoliv Inc. and TRW Inc. Breed became the world's fourth-largest maker of airbags and seat belts. *Now it is sinking under a mountain of debt.*”

Example 2.2. Oxford Automotive

In the course of customer-supplier relationships, the customer may need to exploit its bargaining power to ensure quality. However, imposing penalties in the form of withholding payments can be difficult if the supplier has too much debt. Thus, customers will be opposed to acquisitions of their conservatively financed suppliers by firms that are highly levered or that finance the acquisition with debt. Regulation such as the BC laws that make debt-financed acquisitions difficult is thus good for customer-supplier relationships.

An example is Oxford, a supplier of suspensions and chassis components. With worldwide sales of \$824 million, the Troy, Mich., business was a key supplier for GM's profitable compact sport-utility vehicles. In 2001, the company spent heavily on factories and tooling to supply components for nine new vehicles. Unable to comply with the terms of its bank loans, Oxford began Chapter 11 reorganization proceedings in January of 2002. What complicated matters for GM was an ongoing dispute with Oxford regarding supplies of defective parts. The two companies were locked in a dispute over a defective part that forced the recall of 6,000 Chevrolet TrailBlazers, GMC Envoys and Oldsmobile Bravadas. Oxford's financial woes made it difficult for GM to withhold millions of dollars in payments to Oxford for the defective parts.

¹⁸ “Breed, GM in belt battle: Price spat perils supply for truck”, by Robert Sherefkin, *Automotive News*, September 9, 1999, Vol. 74, Issue 5836.

A.2 Acquirer Opportunism and Supply Disruption: Flextronics' Acquisition of Dovatron

In Section I.C, we argue that the acquirer might be interested in the supplier's assets if it has plans for deploying these assets for alternative uses, including meeting supply targets for its own customers. Flextronics' acquisition of Dovatron is an example of an acquirer's being more interested in the supplier's other business than that with the customer, Beckman Coulter. Beckman Coulter was Dovatron's customer for switchboards needed for the manufacture of medical instruments. In April of 2000, Flextronics purchased Dovatron. On May 30, 2000, however, Flextronics notified all the customers of Dovatron's Anaheim facility, including Beckman Coulter, that it was closing its doors within 90 days, and that employees were being terminated. The following day Flextronics announced in a public press release that it had just entered into a \$30 billion contract with Motorola. It was revealed during testimony at the trial that Flextronics was switching from "high mix low volume" business to "low mix high volume" business. In other words, it no longer wanted to manufacture complicated circuit boards for Beckman Coulter's LX20 but rather was choosing to make simpler circuit boards, such as for cell phones for Motorola.

Table A1
Top 20 Principal-customer-dependent Industries (SIC3)

Top 20 principal-customer-dependent industries, defined by the 3-digit SIC codes (SIC3), are provided in this table. We measure the principal customer dependence by three proxies: the percentage of industry total sales to principal customers (*Pct Sales Prin Cus* in Panel A), the number of dependent suppliers in each industry (*Num Depd. Suppliers* in Panel B), and the number of principal customers for each industry (*Num Pncpl Customer* in Panel C). We only include SIC 3-digit industries with at least 5 firms in this list. In addition, *Ind Tot Sales* is the average industry total annual sales and *Ind Tot Num Firms* is the average number of firms in each industry in our sample period from 1979 to 1995.

Panel A: Ranks based on the percentage of industry total sales to principal customers

Rank	SIC3	Industry Nature	Pct Sales Prin Cus	Ind Tot Sales
1	122	Bituminous Coal and Lignite Mining	0.376	2537.559
2	104	Gold and Silver Ores	0.354	1923.347
3	253	Public Building and Related Furniture	0.352	3591.656
4	233	Women's, Misses', and Juniors' Outerwear	0.299	4013.727
5	162	Heavy Construction, Excluding Highway	0.294	579.966
6	332	Iron and Steel Foundries	0.212	2321.439
7	239	Misc. Fabricated Textile Products	0.207	1595.722
8	363	Household Appliances	0.205	10051.286
9	346	Metal Forgings and Stampings	0.177	2326.150
10	232	Men's and Boys' Furnishings	0.168	2557.453
11	509	Misc. Durable Goods – Wholesale	0.164	2699.362
12	809	Misc. Health and Allied Service	0.155	993.997
13	347	Metal Services	0.151	418.994
14	306	Fabricated Rubber Products	0.143	1491.922
15	731	Advertising	0.141	3535.262
16	394	Toys and Sporting Goods	0.136	5919.715
17	873	Research and Testing Service	0.133	617.019
18	225	Knitting Mills	0.129	2856.192
19	302	Rubber and Plastic Footwear	0.119	4079.470
20	275	Commercial Printing	0.113	5386.243

(Table A1 Continued)

Panel B: Ranks based on the number of dependent suppliers in each SIC3 industry

Rank	SIC3	Industry Nature	Num Depd. Suppliers	Ind Tot Num Firms
1	131	Crude Petroleum and Natural Gas	158.294	216.765
2	737	Computer and Data Processing Services	138.647	258.706
3	357	Computer and Office Equipment	109.765	181.588
4	283	Drugs	97.647	163.882
5	367	Electronic Components and Accessories	97.529	141.765
6	366	Communication Equipment	85.235	133.588
7	384	Medical Instruments & Suppliers	76.824	158.647
8	382	Measuring and Controlling Devices	72.353	144.059
9	308	Misc. Plastics Products	38.294	64.529
10	371	Motor Vehicles and Equipment	37.412	66.706
11	356	General Industry Machinery	33.471	65.118
12	679	Misc. Investing	32.824	214.824
13	355	Special Industry Machinery	28.471	48.059
14	138	Oil and Gas Field Service	26.412	39.059
15	738	Misc. Business Service	25.882	59.294
16	331	Blast Furnace and Basic Steel Products	23.941	45.353
17	873	Research and Testing Service	23.471	38.647
18	504	Professional Equipment – Wholesale	22.235	46.353
19	781	Motion Picture Production & Services	21.706	39.765
20	394	Toys and Sporting Goods	20.706	33.176

(Table A1 Continued)

Panel C: Ranks based on the number of principal customers in each SIC3 industry

Rank	SIC3	Industry Nature	Num Pncpl Customer	Ind Tot Num Firms
1	357	Computer and Office Equipment	21.765	181.588
2	283	Drugs	13.471	163.882
3	291	Petroleum Refining	13.118	32.824
4	371	Motor Vehicles and Equipment	10.882	66.706
5	737	Computer and Data Processing Services	10.000	258.706
6	541	Grocery Stores	9.000	49.824
7	366	Communication Equipment	7.588	133.588
8	384	Medical Instruments & Suppliers	7.588	158.647
9	367	Electronic Components and Accessories	7.294	141.765
10	382	Measuring and Controlling Devices	6.706	144.059
11	372	Aircraft and Parts	6.647	30.294
12	131	Crude Petroleum and Natural Gas	6.059	216.765
13	533	Variety Stores	5.941	26.824
14	531	Department Store	5.471	25.529
15	602	Commercial Banks	5.235	226.765
16	504	Professional Equipment – Wholesale	5.176	46.353
17	506	Electrical Goods - Wholesale	5.000	37.824
18	208	Beverages	4.529	21.294
19	284	Soaps, Cleaners and Toilet Goods	4.118	46.353
20	282	Plastics Materials and Synthetic	3.882	17.000

Table A2
Robustness Checks: Industry Competitiveness

The test specifications are similar to those in Table III, with one piece of information added in control variables: industry competitiveness. To proxy for industry competitiveness, *HHI* is the Herfindahl-Hirschman Index based on 3-digit SIC industries. The dependent variable and other control variables are defined in a way identical to those described in Table III. We control for the firm fixed effects and the year fixed effects in all OLS regressions. The standard errors (in parentheses) are clustered at the state of incorporation level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

(Table A2 Continued)

Dependent Variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA
<i>After_BC_law</i> × <i>NonGovt Pncpl Customer</i>			0.012*** (0.002)	
<i>After_BC_law</i> × <i>Govt Pncpl Customer</i>			-0.019*** (0.003)	
<i>After_BC_law</i> × <i>Pct NonGovt Pncpl Customer</i>				0.026*** (0.007)
<i>After_BC_law</i> × <i>Pct Govt Pncpl Customer</i>				-0.045*** (0.008)
<i>After_BC_law</i> × <i>HHI</i>		-0.047*** (0.007)	-0.048*** (0.007)	-0.049*** (0.007)
<i>NonGovt Pncpl Customer</i>			0.017*** (0.002)	
<i>Govt Pncpl Customer</i>			0.009*** (0.003)	
<i>Pct NonGovt Pncpl Customer</i>				0.057*** (0.009)
<i>Pct Govt Pncpl Customer</i>				0.069 (0.012)
<i>After_BC_law</i>	-0.009** (0.004)	-0.001 (0.004)	-0.003 (0.004)	-0.002 (0.004)
<i>HHI</i>	0.010* (0.005)	0.026*** (0.007)	0.025*** (0.008)	0.026*** (0.008)
<i>Age</i>	-0.031*** (0.004)	-0.031*** (0.004)	-0.032*** (0.004)	-0.032*** (0.004)
<i>Size</i>	0.088*** (0.006)	0.088*** (0.006)	0.088*** (0.006)	0.088*** (0.006)
<i>Size squared</i>	-0.007*** (0.000)	-0.007*** (0.000)	-0.006*** (0.001)	-0.006*** (0.000)
<i>Industry-year ROA</i>	0.172*** (0.024)	0.173*** (0.024)	0.172*** (0.024)	0.173*** (0.024)
<i>State-year ROA</i>	0.299*** (0.043)	0.297*** (0.043)	0.293*** (0.044)	0.292*** (0.046)
<i>Firm Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes
<i>SE Clustered (State of Incorporation)</i>	Yes	Yes	Yes	Yes
<i>Adj R-Squared</i>	0.597	0.597	0.599	0.599
<i>No. Obs</i>	96817	96817	96817	96817