The Effect of Governmental Major Customers on Corporate Capital Structure

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The Effect of Governmental Customers on Corporate Financial Policies

Abstract: This paper examines the impact of dealing with governments as major customers on firms' capital structures and investment policies. Firms with government (nongovernment) customers have higher (lower) leverage, speed of adjustment, and profitability. Dealing with nongovernment major customers has a negative effect on investment policy with more evident effects on R&D. The difference in the effect of customer types may be attributed to the differences in risk associated with each type. The financial conditions of firms with major customers can offer some explanation: the results are stronger in financially constrained firms. Our results show that government (nongovernment) customers can offer supplier firms more flexibility (pressure) that reduces (increases) the idiosyncratic risks associated with these firms. Collectively, the findings of this study support the view that dealing with governments as major customers can reduce risk and provide other benefits.

1. Introduction

One of the key differences between governments and any firm or corporation is that they have different objectives; a government seeks to maximize the welfare of its citizen, while the management of a corporation aims to maximize the wealth of its shareholders. This significant difference in orientation can have many consequences for anyone dealing with these two entities, especially in the corporate world. Firms with major customers that account for more than 10 % of total sales can offer a unique way to test the differences. Roughly one of every two firms has a major customer (Ellis et al., 2012) that can act as a nonfinancial stakeholder and influence corporate decisions (Fee et al., 2006). This opens the door to questions as to how having a government as a major customer is different than any other type of customer and how this impacts corporate capital structures and other financial policies decisions, especially with regard to profitability and investment policy. The real question here is whether having a government as

a major customer affects the firm's profitability and capital structure differently than having a nongovernment major customer.

There are several reasons to believe that different types of customers have different types of effects. First, government customers are seen as less risky as they offer more security. Also, government contracts usually provide more flexibility in schedules and less operational risk. Governments do not tend to frequently change their suppliers or the firms with which they deal, and they usually have a long-term commitment in place. Moreover, governments in general are less likely to declare bankruptcy or default as they can find themselves with theoretically unlimited leverage. Finally, the literature pertaining to political connections shows that firms with government connections can enjoy more financing with less cost, even during times of recession or when the market has limited financing supplies (e.g. Cull & Xu, 2005; Charumilind, Kali, & Wiwattanakantang 2006; Dinc, 2005; Faccio, 2006; Faccio, Masulis, and McConnel 2006; Johnson & Mitton, 2003; Khawaja & Mian 2005). However, dealing with governments can amplify agency risks and exposure to political ambiguity and bureaucracy (Rainey & Bozeman, 2000).

The literature documents that major customers can affect a firm's decisions on various issues, for example, corporate governance (Fee et al., 2006), cash holdings (Itzkowitz, 2013, 2015); capital structure and leverage levels (Banerjee et al., 2008; Kale and Shahrur, 2007); financing cost (Dhaliwal et al., 2016); paying dividends (Wang, 2012); initial public offerings (Johnson et al., 2010); and corporate accounting and financial reporting (Ellis et al., 2012; Patatoukas, 2012). However, most studies do not recognize a difference in customer type. Therefore, they are not able to recognize or capture the impact of dealing with a government as a major customer. I aim to fill the gap in my current study.

Accordingly, I have two main objectives in this study. First, I examine that having a government as a major customer accounting for 10% of sales or more affects leverage in unique ways that make it a determinant of the capital structure of a firm in U.S. markets. Secondly, expanding the study in order to measure the impact of this unique supplier-customer relationship on the speed of adjustment of capital structure, profitability, and investment policy. The goal here is to test how and whether having a government customer is different than having a nongovernment customer. Comparing the two types can show the difference in orientations, motivation, and goals and can have some real consequences for the corporation itself.

The results of this study show significant evidence that the impact of a major customer on capital structure depends on the type of customer. The capital structure of firms is different for firms with government major customers; they tend to hold higher leverage ratios than firms with any other type of major customer. The results are not limited to capital structure, but also apply to the firm's speed of adjustment and profitability – dealing with a government offers more profit and a faster speed of adjustment to the targeted leverage. Testing these results using firm financial conditions offers some explanations for these unique situations and explains differences in relations. The findings support the notion that dealing with a government customer can reduce financial stress on financially constrained firms and offer more flexibility. However, firms with nongovernment customers face higher idiosyncratic risks.

This study contributes to the literature in many ways. First, it complements and expands the findings of Banerjee et al. (2008) and documents the effects of major customers on firms' capital structure. This applies to all firms and is not limited to firms in the manufacturing sector or durable goods industries. However, I find a different impact for varied customer types where firms with government (nongovernment) customers hold more (less) debt. The new insight of the

study is explained by these results using firms' financial condition to show that firms with major customers are mainly financially constrained. Moreover, and to the best of our knowledge, this paper is the first study to examine the impact of having a major customer on the corporate speed of adjustment and documenting a significant impact. It reports the advantages of dealing with government customers by documenting their impact on firms' profitability where firms with government (nongovernment) customers have higher (lower) returns on assets.

Banerjee et al. (2008) address the effect of supplier-customer relationships on capital structure using a sample of manufacturing firms only and show that both customers and suppliers maintain low leverage to protect themselves from the disruptive effects of losing major customers. This study is different in many ways. First, I use a larger sample that includes all firms listed in a Compustat sample (excluding utilities and the financial sector, following the practice of most of the studies in this literature) whereas they focused only on manufacturing firms. Moreover, the sample period is almost twice as long, comprising the years 1978 to 2013 – the former study stopped at 1997. Many events and changes in the business environment happened since then across various industries and therefore warrant further investigation. These changes in the sample have a very significant impact on the study results. This will be shown in later sections, and I attempt to capture the unique impact of government customers. In addition, I document the effect of major customers on firms' capital structures and show that it is not limited to manufacturing firms in the durable goods industry. Secondly, this study focuses on uncovering the impact of having a major customer on supplier firms' corporate decision making only, not on the effects of suppliers on customer firms. A statement of financial accounting standards (SFAS) 131 requires firms to report the sales of any customer that has 10 sales or more. However, the regulation does not require the declaration of the customer's identity or

name. Ellis et al. (2012) show that firms have some incentive to declare the identity of their major customers, as there is a trade-off for the benefit and cost of this announcement. Their study shows evidence that samples comprised of customers from the segment data should result in selection bias. They recommend that researchers focus on firms with customers and not the customer themselves to avoid any selection bias. Consequently, I focus only on firms with major customers, not the customers themselves. Also, I focus on government customers to show the unique impact of dealing with government customers and as opposed to dealing with nongovernment entities. Lastly, I expand the investigation of the effects of having a major customer on profitability, investment policy, and the speed of adjusting capital structures, and the study do not limit the investigation to the level of leverage only.

2. Literature Review

2.1. Background of Capital Structure

Since Modigliani and Miller (1958) (M&M hereafter) introduced their seminal theory of the irrelevance of capital structure in firm valuation, the research on capital structure has not stopped. Many theories attempt to offer an explanation for corporate capital structure; for example, trade-off theory, static trade-off (Bradley et al.,1984), dynamic trade-off (Hovakimian et al., 2001), pecking order theory (Mayer, 1984), market timing theory (Baker and Wurgler, 2002), and commitment theory (Titman, 1984).

Empirical literature focuses a great deal on the existence of an optimal level of leverage and the determinants of corporate capital structure. Rajan and Zingales (1995) show that firm leverage is quite similar across the world and this determinate of leverage identified in the U.S. appears to be the same as that in other countries. They argue that any differences that exist are not easily explained by institutional differences. Their study concludes that the optimal level of

leverage is positively related to size and tangibility and is negatively related to market-to-book ratio and profitability. A few years later, Frank and Goyal (2009) attempted to find the main determinants in capital structure decisions by testing most of the factors introduced as determinants of leverage in the literature to find the most reliable factors. Their study shows that six factors explain a large portion of capital structure decisions. They conclude that the optimal market level of leverage is negatively related to market-to-book ratio and profitability, similar to Rajan and Zingales (1995). Also, they show that dividend-paying firms have less leverage. It is positively related to industry median leverage, size, expected inflation (as a measure of debt market condition), and tangibility.

2.2. Speed of Adjustment (SOA)

While some studies focus on the level part of capital structure, other studies focus a great deal on the speed of adjustment to the target leverage and show findings indicating significant results. Building upon and in support of the trade-off theory and the existence of an optimal leverage, many studies attempt to empirically model the speed of partial adjustment (SOA) by which firms return to their optimal capital structure (for example, Fama and French, 2002; Flannery and Rangan, 2006; Lemmon et al., 2008; Byoun, 2008; Huang and Ritter, 2009; and Oztekin and Flannery, 2012). It is true that all of these studies present some evidence that firms move toward their target leverage, but the SOA documented that this is very slow. For example, Fama and French (2002) indicate that the SOA is around 15% per year. This is consistent with the results of a survey conducted on cash flows from operations (CFOs) of firms that have a targeted capital structure. Their survey shows that the majority of CFOs support the static trade-off model by reporting that the firm has some kind of target leverage; this target depends on the industry practice or pattern. However, adjusting and achieving this target leverage is not one of

the primary goals for management. Therefore, it is worth mentioning that SOA is not the same for all firms, as it depends on whether the firm is above or below target levels of leverage (Byoun, 2008; Oztekin and Flannery, 2012). Also, market friction and financial flexibility play a key role in the decision making of firms when moving toward their targets. Likewise, the financial condition of the firm affects the capital structure and SOA (Faulkender et al., 2012).

However, most of the studies in the field of SOA based on capital structure differ in the empirical modeling used to estimate the SOA and econometric implementation. While Fama and French (2002) used the Fama Macbeth method to estimate SOA, Flannery and Rangan (2006) argue that the use of firm fixed effect controls any of the omitted or unobservable variables determinate of capital structure. They present a model with fixed effects and instrumental variables as the best model to estimate the speed of adjustment. Other studies show that the ordinary least squares (OLS) model under-estimates the actual SOA and the fixed effects model over-estimates it (Lemmon et al., 2008). Lemmon et al. (2008) present evidence that initial leverage effects the long-term leverage even after 20 years. Moreover, they argue that there is no big difference if the target leverage is a function of firm characteristics that change over time or if they are a fixed target for each firm. They show that using any of the two estimation methods has very little effect on the SOA and employed a general method of moments (GMM) system that used differences and lagged values of dependent variables to avoid any bias in their study. This debate on econometrics bias on dynamic panel models led Flannery and Hankins (2013) to compare the results of all of these models using simulation modeling of the datasets. They show evidence that the two-step system in the GMM model of Blundell and Bond (1998) provided one of the best estimators of SOA. Since the GMM system provides the best estimation of dynamic panel models, I employ this setting for the primary model of our paper.

2.3. Customer Supplier Relationship

A related area of research for this study builds on this framework and addresses the effect of a major customer on the firm's capital structure. The studies focus on the impact of customer-supplier relationships and show that both major customers and suppliers with customer concentrations maintain low leverage to protect themselves from the disruptive effects of losing major customers (Kale and Shahrur, 2007; Banerjee et al., 2008). Both studies use a sample of U.S. manufacturing firms to investigate the customer-supplier impact on capital structure. Building on theoretical models of commitment theory, which is based on unique products and the risk associated with dealing with firms in distress introduced by Titman (1984), they were able to show that customer-supplier relationships impacted capital structure in manufacturing industries. Banerjee et al. (2008) find that both suppliers and customers in the durable goods industry hold lower leverage ratios, but that results are weaker for nondurable goods. Kale and Shahrur (2007) use a sample of firms with joint ventures or strategic alliances with lower leverage to show that leverage is negatively related to R&D intensity – their measure of unique products – for both suppliers and customers. It is true that both studies document the customer-supplier relationship and affect leverage, but they were not able to capture the impact of government customers in capital structures. Banerjee et al. (2008) argue that government is a unique customer and government customers do not focus on their supplier's leverage or financial performance. Government suppliers are under less pressure and monitoring threats. However, they fail to capture any relationship between government major customers and the supplier firms' capital structure, even in the durable sectors. Government customers have different characteristics than any other type of customer. Their study highlights that governments are not only less opportunistic and less likely to cancel contracts, but also more credit worthy, stable,

and have consistent demand. However, government can be a unique customer in the sense that it does not care about the leverage of its suppliers like any other firm. One reason for this result is possibly because both studies focus on manufacturing firms only, which causes them to lose most of the government customers in their sample. In Table 1, note that although firms with major customers are distributed in all industries, firms with government customers are concentrated in industries outside of manufacturing, such as services, healthcare, and transportation. Therefore, they were not successful to account for special characteristics of different types of major customers.

[Insert Table 1]

A related area of research for our study addresses the effect of having a major customer. Ellis et al. (2012) calculate that half of U.S. corporations have at least one major customer, with an average of two customers for each firm. The literature shows that firms with major customers have some of the characteristics of financially-constrained firms, where they hold more short-term debt and mainly have high-growth opportunities measured by market-to-book ratios (Campello & Gao, 2014). Moreover, these firms usually have both age and size below the average. This will guide this study and assist us in determining whether financial constraints dominate the relationship of firms with major customers. The financial conditions of these firms can offer some explanations for the impact of different customer types. Therefore, it is important to test the results under the context of financial constraints.

3. Hypotheses

The paper examines the impact of different major customer types on corporate financial policies. Consequently, the first hypothesis tests whether the findings of Banerjee et al. (2008) that firms in the durable goods industry with major customers hold less debt can be expanded to

all firms publicly traded in U.S. markets and not limited to firms in the manufacturing sector. As evidenced in Table 1, firms with major customers are distributed among all industries and not concentrated in the durable goods sector or even in manufacturing, to be more specific. In fact, as reported in the table, the industries with the most concentration of firms with major customers are industries such as business services; wholesale; transportation; and oil, petroleum, and natural gas, which are not all in the manufacturing sample of the previous study. So, our study hypothesis is based on the idea that having a major customer affects firms' capital structures where firms with major customers have lower leverage and hold less debt. Banerjee et al. (2008) explain their results by arguing the association with the higher idiosyncratic risks of losing the major customers. This explanation will be further be examined and challenged by using the hypothesis of financial constraint in the next stages of this study.

The next pertinent issue is to identify the role of government customers in corporate financial decisions and investigate the consequences of deviating from optimal capital structures using the type of major customer. The riskiness of major customers may have some costs and negative impacts. Therefore, Dhaliwal et al. (2016) argue that the customer-supplier relationship has a significant impact on the firm's financing as the cost of both equity and debt for firms with major customers or high customer concentrations have higher costs of equity and debt. However, they argue that firms with government customers have lower systematic risks. Therefore, supplier firms with government customers have a lower cost of equity. Many other researchers support the last conclusion and show that working with a government customer is less risky and safer. As such, the effect of having the government as a major customer can play a big role in the financial decision-making process. On the other hand, supplier firms with government customers could be more exposed to political risk than firms that are not connected to the government. One can

argue that supplier firms of government customers will have more leverage since dealing with government is less risky. However, this can also deviate the other way where supplier firms of government customers are exposed to more political turmoil, especially after the recent financial crisis. These firms are forced to hold lower leverage than their counterparts, especially when dealing with the government. Nevertheless, the involvement of government in the corporate decision-making process can increase agency conflicts since it can have other objectives as opposed to value maximization alone. But there are still no clear measures pertaining to government involvement. Using major customer types can offer a new way to test how to deal with government and its involvement can impact corporate decisions. From the discussion above, the second hypothesis is that a firm with government (nongovernment) major customers holds more (less) debt relative to the optimal capital structure.

Next, the study builds on the prior literature since the majority of government contracts come in the form of cost-plus and guarantees the profit of its suppliers. But nongovernment customers focus more on price since they have one objective, which is value maximization. The major customer increases its demand for sales and has more bargaining power and monitoring tools. This drives them to push their suppliers and ask for more concessions and other benefits, which may reduce profitability. So, the question here is how deviating from target leverage impacts corporate investment policy and how the type of major customer affects the firm's profitability. I thus hypothesize that firms with a government customer have higher profitability than firms with a nongovernment major customers.

One of the goals of this study is to test the influence of having a government major customer on corporate investment decisions. Similar to profitability, one can expect that deviating from target capital structure won't affect investment decisions if the motive is to increase corporate

efficiency. However, if deviating from targets causes the firm to lose the opportunity to involve itself in a project with positive NPV or reduce spending on research and development or capital expenditures, it would have significant impacts on investment policy. In other words, when supplier firms are forced to deviate from their target leverage, other corporate decisions such as corporate investment could be impacted. So, I hypothesize the following: Firms with a government (nongovernment) major customer invest (under-invest) relative to firms without a major customer.

Building upon previous literature, the next pertinent issue is to identify some explanations regarding the unique impact of different types of customers. To explore the domain of firm financial conditions with respect to the relationship between major customers and capital structure, I develop an argument around the impact of major customers as a measure of financial constraint. Firm financial conditions offer special insight into our target sample: research shows that firms with major customers tend to be smaller, younger, and possess more growth opportunity. These are the characteristics of financially constrained firms. Wang (2012) shows that firms with major customers pay lower dividends because they are financially constrained. Thus, I hypothesize that the effect of major customer types on capital structure is more pronounced for financially constrained firms, and firms' financial condition governs the relationship between the major customer types and capital structure.

Finally, since the hypothesis states that having a major customer affects capital structure, I expect it to challenge the speed of adjustment of these firms as well. Since I hypothesize that firms with government (nongovernment) major customers hold high (lower) debt due to the difference in idiosyncratic risks, I also expect the speed of adjustment to have different effects based on customer type. As earlier research highlights, the SOA depends on whether the firm is

above or below its optimal target leverage, so the effect of having a major customer may vary depending upon customer type. If dealing with government customers reduces risk and offers more financial flexibility, firms with government customers have more options. So, I expect that for firms that have a government major customer the speed of adjustment of the debt ratio will be slower than that for firms with nongovernment major customers. The main reason behind this prediction is that the government does not care about the leverage of its supplier, unlike firms in the public and private sector. This might reduce the need of these firms to adjust their capital and offer them more flexibility. So based on this narrative, our last hypothesis is that firms with government (nongovernment) major customers have a faster (slower) speed of adjustment to the optimal capital structure.

4. Methodology: Methods to Estimate Leverage and Speed of Adjustment

To find the answer to these assertions, I follow previous literature regarding capital structure and use two different specifications. The first estimates the optimal capital structure, and the second estimates the speed at which the firm adjusts its capital structure.

To test whether having different types of major customers has different effects on capital structures, I follow the literature and construct a model based on Frank and Goyal's (2009) capital structure reliable factors and Rajan and Zingales' (1995) leverage determinants. Based on the conclusions of the two studies, the capital structure of corporations has positive associations with the size of a firm's assets, the proportion of tangible assets to total assets, leverage levels of firms in the same industry, and negative associations related to market-to-book ratio and profitability. By employing these capital structure determinates in the primary specification, I test the hypothesis of major (government) customers affecting the level of cash holdings. To do this, I include a measure of major customers that indicates whether a firm has a major customer

as well as the type of major customer. The full description of measures of major customers is presented in the data section. The following is the primary specification to model capital structure tests.

$$\begin{aligned} \textit{Leverage}_{i,t} = \beta 1\ \textit{Industry Median Leverage}_{i,t\text{-}1} + \beta 2\ \textit{Size}_{i,t\text{-}1} + \beta 3\ \textit{Dividends}_{i,t\text{-}1} \\ + \beta 4\ \textit{Tangibility}_{i,t\text{-}1} + \beta 5\ \textit{Profitability}_{i,t\text{-}1} + \beta 6\ \textit{MB}_{i,t} + \beta 7\ \textit{MajorCustomer}_{i,t\text{-}1} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

In this model, the variables predicting target capital structure levels lag for one fiscal year. In the primary model, the dependent variable is market leverage measured as leverage. This is short-term debt plus long-term debt over market value. In later tests, I will use different measures of leverage to ensure the robustness of the results. In this study, I follow the literature and control for industry fixed effects since the literature shows the increasing variation within the industry as opposed to across industries in a cross-sectional setting (Graham and Leary, 2011). The tests will be performed at aggregate levels of major customers first, then for each type of customer to allow the examination of all hypotheses in this study.

The study then move to the second specification model of the speed at which the firm adjusts its capital structure. I follow the literature to model the partial adjustment on leverage (e.g., Graham and Leary, 2011; Flannery and Rangan, 2006; Lemmon et al., 2008).

$$Leverage_{i,t} = \propto + (\lambda\beta) X_{i,t-1} + (1-\lambda) Leverage_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where λ is the SOA to the target leverage level. This equation is derived from a simple change in the model below.

$$Leverage_{i,t} - Leverage_{i,t-1} = \propto + \lambda_{i,t} \left(DEV_{i,t}\right) + \varepsilon_{i,t} \quad (3)$$

where

$$DEV_{i,t+1} = Leverage^{*}_{i,t+1} -$$

$Leverage_{i,t}$.

(4)

Substituting (4) into (3) and rearranging gives:

$$Leverage_{i,t} - Leverage_{i,t-1} = \propto + \lambda \left(Leverage^{*}_{i,t} - Leverage_{i,t-1} \right) + \varepsilon_{i,t}.$$

Rearranging:

$$Leverage_{i,t} = \propto + \lambda\, Leverage^{*}_{i,t} + (1 - \lambda) Leverage_{i,t-1} + \varepsilon_{i,t}. \quad (5)$$

But, as highlighted earlier on (1),

$$Leverage^{*}_{i,t} = \beta X_{i,t-1} \quad (6)$$

where *Leverage** is the firm's optimal target leverage ratio and $X_{i,t-1}$ is a vector of firm determinants of the firm's target capital structure. As highlighted earlier, the firm characteristics that I use to determine the optimal capital structure can be used again to estimate the target leverage for each firm for every year of observation.

$$Leverage_{i,t} = (\lambda\beta) X_{i,t-1} + (1 - \lambda) Leverage_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

Again, building on the previous literature on speed of adjustment, I estimate this model by employing a two-step system generalized method of moments (GMM) estimator as presented by Blundell and Bond (1998).

5. Data and Sample Construction

The data for this study was obtained from Compustat North America annual files and Compustat historical segment files. The sample includes all firms in the Compustat universe with positive assets, net assets, sales, market value of assets, and equity for the period between 1978 and 2013, excluding the utilities and financial sectors (SIC codes between 4900 and 4999 and between 6000 and 6999). Our samples start in 1978 as it is the start-reporting year on Compustat Segment. All of the main variables of the study models are winsorized using 1 and 99 percentiles

and are deflated to the 2007 dollar value using a CPI deflator. The data in Compustat segment files include the data for all firms' major customers accounting for 10% or more of total sales. SFAS 14 and SFAS 131 require the disclosure of any major customers that account for 10% or more of total sales. To test the effects of a major customer on capital structure, measures for major customer are calculated. In this study, I follow the methods used in previous research and use three well-established measures: percentage of sales, a dummy variable, and concentration of sales (Banerjee et al., 2008; Patatoukas, 2012; Dhaliwal et al., 2016). First, the percentage of the sales made to major customers is simply the sum of sales to all major customers in a given year as a proportion of the firm's total sales. A second measure is the dummy variable showing the existence of a major customer. This takes the value of 1 in years the firm has at least one major customer and 0 in all other years. The third and last measure is a modified version of the Herfindahl index that captures the concentration of sales to major customers and accounts for the relative impact of major customers to other customers. The major customer concentration (HHCC) measure is calculated as:

$$HHCC_{i,t} = \sum_{j=1}^{j} \left(\frac{Sales\ to\ Major\ Customer_{ijt}}{Total\ Sales_{it}} \right)^2.$$

The beauty of the data in the Compustat segments is that it allows for a differentiation between major customer types. Therefore, I calculate the measure of a major customer in two ways. First I calculate the measure at aggregate levels regardless of the type of customer. Then calculate the measures for each type of customer, government and nongovernment. The separation between the two types allows for a clear test of the effect of the two types. Many firms report sales to more than one major customer in a given year. All firms in the sample with sales to both types of major customers were eliminated from the study sample to avoid any overlapping. I then test the hypotheses using the measures for major customer at the aggregate

level, as well as with regard to the type of customer, allowing for the documentation of evidence as to whether there are any differences between the types of major customers.

The final sample consists of 186,240 firm-year observations. Table 2 offers descriptive statistics on the main variables of U.S. firms in the study sample. Firms with major customers tend to have customers the following year if there is a low rate of turnover. Overall, and consistent with previous research, around 40% of firms in the study sample have a major customer and 6% of the firms in the sample have a government as a major customer (Dhaliwal et al., 2016). Panel B of Table 2 presents the sample divided between firms with major customers and those without major customers. Firms with major customers are, on average, smaller in size, pay smaller dividends, hold lower leverage, and hold more cash compared to firms without a major customer during the years that they report relationships. This is consistent with the findings in previous literature in this field (Wang, 2012; Itzkowitz, 2013). Also, and as mentioned in the previous literature, most of the firms are smaller in size, younger, and have more growth opportunity.

[Inset Table 2]

In Panel C of the same table, the sample of firms with a major customer is broken into two groups based on customer type, government and nongovernment. Firms with a government as a major customer are in general four years older than firms with nongovernment customers. Also, they hold higher leverage and lower cash when compared to other firms. They are smaller in size and have lower growth opportunity measured by market-to-book ratio and higher profitability measured by return on assets. While the table shows some evidence of the characteristics of the two types of major customers, it is important to empirically test all the hypotheses and show evidence of the results and conclusions.

6. Empirical Results

6.1. Capital Structure

The first step is to test the effect of having a major customer on capital structure to see whether the Banerjee et al. (2008) empirical results can be expanded upon and generalized to the sample of all U.S. firms, including but not limited to the manufacturing sector. The next step is to demonstrate the differences between government and nongovernment entities as major customers. Table 3 presents the results from the study sample using the primary model as presented in Equation 1 where the dependent variable is the lead of market leverage. The table presents the results via cross-sectional regression, controlling for the Fama-French 48 Industries and using 173,035 firm-year observations. The sign and significance of all control variables are also consistent with the results in previous literature. Firm leverage is negatively related to paying dividends, market-to-book ratio, and profitability and is positively related to industry median leverage, size, and proportion of assets in plant and equipment as it measures tangibility. Next, when testing the study hypotheses, the first three columns in the table report the results of testing the effect of having a major customer on firm capital structure. The first column uses a dummy variable for a major customer in order to test its effect. The result of the model indicates that firms with major customers hold less debt and have lower leverage ratios. The second and third column replace the dummy variable with the two other measures of major customers: percentage of sales (MC%) in the second column and by the customer concentration (HHCC) index in the third column. By comparing the coefficients for the MC% and HHCC models, the results are not only statistically significant but also economically significant. The results support the first hypothesis and show that the greater the concentration of sales to major customers, the less debt the firm holds. The inclusion of major customer variables does not change the signs or

estimation coefficients of the other control variables of leverage. These results confirm the general finding of Banerjee et al. (2008), and the results by the three measures confirm that the effect of having a major customer in capital structure can be generalized, and not limited to, firms in durable goods.

[Inset Table 3]

Until this point, the study treated all major customers as a homogenous group. I separate the measure of major customers by the type of customer: government and nongovernment. Clearly governments are unique and different from any other type of customer. Government customers have different objectives and may reduce idiosyncratic risk and provide stable demand. Therefore, I expect differences between types of major customers and their effect on firms' capital structure. Next, in order to test the second hypothesis (which argues the unique effect of government customers on capital structure), columns 4-6 of Table 4 introduce major customer variables based on customer types as explained earlier. These results show clear and consistent trends where the effect of the two major customers are not only significantly different but have contrary directions. In column 4, I use dummy variables for both government and nongovernment major customers, and the results show significant differences. While having a government as a major customer can have a positive effect on capital structure, having nongovernment major customers can have negative effects on the capital structure. The coefficients for both are significant at 0.01. Moreover, these results are significant and consistent using any of the measures of major customer (in columns 4-6). In column 5 and 6, if the major customer is nongovernment, these firms hold less leverage than firms without a major customer. The empirical results indicate the opposing impact of the two types of major customers on capital structure: having a government customer can have a positive effect on capital structure

and having a nongovernment customer can have a negative effect. In other words, firms with a government customer hold more debt than any other type of firm. This lends support to the hypothesis that government customers put less pressure on supplier firms since government customers are less risky and opportunistic; this may provide for more financing opportunities and could be based on the idea that government and nongovernment customers have different levels of idiosyncratic risk.

To validate and confirm the findings shown in the previous table, I repeat the same test using four alternative methods of measuring leverage ratio as it has been reported in previous literature (Frank & Goyal, 2009). The leverage ratio is now calculated as market leverage by two different methods: total debt-to-market value (TDM) and long-term debt-to-market value (LDM). Book leverage, again, is done by two different methods: total debt-to-book value of assets (TDA) and long-term debt-to-book value of assets (LDA). This can offer a way of testing whether the effect of major customers on a firm's capital structure depends on the method of measuring the leverage ratio or whether it supports the previous findings.

Table 4 reports the results of the panel regression in Equation (1). The first four columns of this table use a dummy variable for having a major customer, the second four columns use the percentage of sales to major customers (%MC), and the last four columns use the customer concentration (HHCC). The results are consistent for the different measures of major customers. No matter how the leverage ratio is calculated, the presence of a major customer implies a decrease in leverage.

[Inset Table 4]

Next, in order to test whether the previous findings for a positive association of having a government customer and debt level only hold for market leverage, I run an estimation for the

coefficients for government customers and nongovernment customers after splitting the measures again. Then all of the tests of the models are repeated with the four different measures of leverage presented in the previous table.

Table 5 presents the results from these estimations. Remarkably, no matter how leverage or major customer were measured, I find entirely significant positive results for the firms with government customers and entirely significant negative results for the firms with nongovernment customers. This implies that the relationship between the type of major customer and capital structure does differ significantly. When comparing the coefficients for nongovernment customers in Table 5 with the coefficients for major customers in Table 4, it is evident that private sector major customers decrease the leverage of supplier firms. In fact, the results become larger in absolute value and more negative with any specifications. This result supports our hypothesis and indicates that firms with government (nongovernment) major customers hold more (less) debt relative to the optimal capital structure. The overall result is that not all major customers are alike, and that differences in risk and leverage depend not only on whether a firm has a major customer, but also on the type of major customer.

[Inset Table 5]

6.2. Profitability & Investment Policy

The previous results concerning the impact of the type of major customer on capital structure lead us to investigate the effect of the type of major customer on corporate investment policy and profitability. This analysis can explain why firms with government customers hold more debt and why firms with other types of major customers hold less debt. As noted before, “major customer” is separated into two subgroups: government customers and nongovernment customers. Comparing the effect of both types of major customers can offer justification for the

different reactions of firms to having different types of customers. This allows for testing of the third and fourth hypotheses, which state that each type of customer has a different effect on firm investment policies and corporate profitability.

Table 6 starts by testing the hypothesis that having a major customer affects investment policies, and firms with a government major customer invest more than firms with nongovernment major customers. The first model in the table tests the effect of having a major customer on firm profitability using customer concentration (HHCC) as a measure of a major customer. The results present a negative impact with regard to having a major customer pertaining to corporate profitability. The results are significant at the 1% level. However, with the two measures of types of major customers, the story changes remarkably. Column 4 in the table presents the results. Again, the two types of major customers here have an opposing effect; having nongovernment customers has a negative impact on firm profitability, and having government customers has a positive impact on firm profitability. This supports the study hypothesis that major customer types impact corporate profitability. One explanation for these results can be based on the idea that government customers enjoy less risk and less pressure while dealing with contract designs in the form of cost-plus. On the other hand, nongovernment customers try to squeeze their suppliers when they feel that they have the upper hand. This provides support to the hypothesis that firms with a government customer have higher profitability than firms with a nongovernment major customer.

[Insert Table 6]

Next, the go on to test the effects of major customers on corporate investment policy. I use two measures of investments: research and development (R&D) and capital expenditure (CAPX). The second column in Table 6 uses R&D and column 3 uses CAPX. The table reports

the estimated coefficients corresponding to the interaction of customer concentration for major customers. The results show that having a major customer affects the investment policy; however, the direction of the effect depends on the type of investment. Firms with major customers invest more in R&D and less in CAPX. To further test these results, the measure of the type of customer is introduced in columns 5 and 6. Interestingly, the table shows that the effect is significant for the nongovernment customer measures only. For firms with government customers, the results are insignificant. The results of all models concerning investment in the firm with government customers indicate that they are inconclusive. This offers support for the hypothesis that firms with nongovernment major customers under-invest relative to firms without a major customer.

To further test the above findings, the MC% and dummy variable are employed in the model specifications. The results, unreported in this paper, are consistent for all three measures of major customers. They are not only significant but also robust when using any measures of major customers. So the hypothesis is supported in that having a major customer impacts corporate profitability and investment. This shows a clear comparison of the impact of major customer types. Having major customers affects the firm's investment policy; however, this depends on both the type of the customer and the investment.

6.3. Speed of Adjustment

The speed of adjustment plays a key role in the firm's capital structure, so to determine the SOA for firms with major customers, the methods described in Equation (2) were followed. This model uses market leverage as the dependent variable and estimates how fast a firm changes its debt level to reach its targeted leverage. As mentioned above, one of our objectives is to estimate SOA of capital structures for firms with major customers, especially government customers.

Table 7 presents the results where the sign and significance of all control variables are also consistent with the results of the previous literature. Furthermore, the results of the base model for the whole sample in column 1 report the SOA is 0.19, which is close to the previous literature estimate. Any difference is most likely due to different samples and probably based on econometric modelling the speed of adjustment. The study turns to test the hypothesis that a firm with a major customer has faster SOA of capital structure. The results of columns 2 and 3 show clear evidence in support of this hypothesis as the SOA becomes 0.20 when I estimate the model for firms with major customers only (column 2) and 0.16 for firms without major customers (column 3). The results in columns 4 and 5 compare the impact of having government and nongovernment customers. The table results show that firms with government customers have the fastest SOA, supporting the prediction of the study hypothesis. The SOA for firms with government customers is 0.38, and the SOA for firms with nongovernment customers is 0.21. Remarkably, the results for each type of customer are significantly different from each other. This supports the idea that the SOA depends on the type of major customer. To validate these findings and confirm the results of this table, I used another method to test these results. To estimate the SOA in the presence of a major customer, measures of major customers (indicator variable, MC%, and HHCC) with lagged value of leverage and including the measures of major customers were interacted with. The results supported the same conclusions: having major customers affects the SOA of capital structures, but the magnitude of impact deepened pertaining to the type of customer. This supports the hypothesis that firms with government (nongovernment) major customer have a faster (slower) speed of adjustment to the optimal capital structure.

[Insert Table 7]

6.4. Can Financial Constraints Offer an Explanation for These Findings?

Finally, the study attempt to find an explanation for the varied reactions to different types of major customers. Building upon prior literature, firms with major customers have the characteristics of financially constrained firms. Moreover, previous studies argue that access to financing markets and market friction can play a key role in capital structure decisions. Therefore, I use firm financial conditions to see whether they can justify the results shown in previous tables. In this section, I split the sample to financially constrained and unconstrained firms based on previous literature. The goal is to rationalize the results of the previous section. Faulkender and Petersen (2006) show that firms with more access to the financial markets, measure by having bond ratings, tend to hold more debt. They show that larger firms that have bond ratings or pay dividends tend to be less constrained. Therefore, I employ these measures for financial constraints: size, rating, paying dividends, and market-to-book ratio as a measure of market timing and growth opportunity (Byoun, 2008; Faulkender et al., 2012). Comparing the results of the regression of the two groups can allow us to test the hypothesis noting that the financial conditions of the firm govern the relationship between the type of major customer and capital structure.

Table 8 presents the testing of the previous hypothesis using a dummy variable as a measure of major customer. In this table, I repeat the same regression estimation experienced in Table 3, which is based on Equation (1), but split the firm based on its financial condition. The table shows a clear contrast and differences between the results of the two groups. From columns 1, 3, 5, and 7, it is very clear that the results are more pronounced and significant for financially constrained firms. Columns 2, 4, 6, and 8 present insignificant results for the measures of major customers for both types: government and nongovernment. The table, consistent with the study

predictions, supports the hypothesis that the financial conditions of the firm govern the impact of major customers, where the effect of both major customer types are only evident on financially constrained firms. The table rejects the idea of the commitment theory since having a major customer, regardless of the type of customer, does not affect the capital structure of financially unconstrained firms. To evaluate the sensitivity of the results, I repeat the tests in the tables using different measures of leverage and major customers. Nevertheless, the results reach the same conclusion and the findings still hold. The overall results support the idea that dealing with a government customer can relieve the financial constraints of firms by providing more financing options; on the other hand, nongovernment customers put more pressure on their suppliers.

[Insert Table 8]

6.5. Robustness Checks

To confirm the above conclusions, I employ one more test. In Table 10 of their paper, Banerjee et al. (2008), present a logit model using zero leveraged firms in an attempt to see how having a major customer affects the likelihood of having zero leverage. The study shows that there is a higher likelihood for firms with nongovernment customers to have zero leverage. It also shows that having government customers is insignificant and does not affect the relationship.

In our Table 9 I attempt to examine whether these findings still hold using the study sample. I present the result for performing the same tests using the study sample. Remarkably, the results in the first model in the table are significant for measuring major customers, whereas firms with nongovernment (government) customers have more (less) likelihood to be zero leveraged. This motivates us to expand this test to the likelihood for these firms to be financially constrained. Using the same definition of financial constraints employed in the previous table, I created a

dummy variable that takes the value of one if a firm is financially constrained and zero otherwise. The goal here is to answer the question of whether having a major customer increases the likelihood of being financially constrained.

[Insert Table 9]

Table 10 presents the result where all the models show a significant relationship between the likelihood of being financially constrained, and both government and nongovernment customers were found. Interestingly, the table reports are negative and entirely significant results for firms with government customers, and are positive and entirely significant results for firms with nongovernment customers, except for firms in the nondurable goods industries. This implies that having a government (nongovernment) customer decreases (increase) the likelihood of a firm being financially constrained. There is strong support for this study hypothesis as the financial condition of the firm governs the impact of a major customer. Also, the impact of having a major customer depends on the type of customer.

[Insert Table 10]

7. Conclusion

Previous research has ignored the impact of dealing with government major customers in corporate decision making, especially with regard to capital structure. Banerjee et al. (2008) showed evidence that firms with major customers in the durable goods sector have lower leverage ratios. This motivated me to explore and explain how dealing with major customers impacts capital structure and how this effect depends on the type of customer. I confirm their general results but also find that the type of major customer affects capital structure and the speed of adjustment. Comparing the leverage ratio and speed of adjustment of capital structure across different firms allows us to show this impact and explain why major customer types differ

and why each type has a unique effect. It also shows the varied results for different types of customers. Therefore, the effect on customer types is not the same, and each has its own unique impact. In particular, I find that the firms with government (nongovernment) major customer have higher (lower) leverage ratios, profitability, and speed of adjustment. Even in terms of investment policy, each type of customer affects decision making differently. Having nongovernment customers has significant impacts, including increased investment in R&D and decreased investment in CAPX. On the other hand, having government customers creates an insignificant impact on both. I hypothesize that the reasons for this concern the nature of firms with major customers – they are financially constrained and have idiosyncratic risks associated with each customer type. Since nongovernment customers have one objective, they are more likely to ask for price concessions and other benefits to pressure the supplier. So having nongovernment customers leads to increased idiosyncratic risk. I present evidence that the impacts of major customers are more pronounced on financially constrained firms. Also, firms with government (nongovernment) customers have a lower (higher) likelihood of being zero leveraged and financially constrained. These results support the study hypothesis that major customer impacts on corporate financial decision making depend on the financial condition of the firm. This offers some new insight regarding the benefits of dealing with government. Therefore, the findings open the door for further research to question the impact of government involvement on the financial decisions of corporations around the world.

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Table 1: Summary of Industries Distributions

This table presents summary of industries distributions for the study sample of firm-years from the 1978-2013 of U.S.-based publicly traded firms using Fama-French 48 industries.

Fama-French Industry (48 Industries)	No Major Customer	Major Customer
Agriculture	519	320
Food Products	2,438	1,487
Candy & Soda	349	208
Beer & Liquor	631	270
Tobacco Products	173	100
Recreation	836	1,000
Entertainment	2,912	838
Printing and Publishing	1,409	372
Consumer Goods	2,493	1,689
Apparel	1,342	1,580
Healthcare	1,692	888
Medical Equipment	3,472	2,938
Pharmaceutical Products	5,484	5,093
Chemicals	2,453	1,734
Rubber and Plastic Products	1,090	1,138
Textiles	762	668
Construction Material	3,597	1,728
Construction	1,706	939
Steel Works Etc	1,936	1,480
Fabricated Products	440	450
Machinery	4,011	3,365
Electrical Equipment	1,687	1,665
Automobiles and Truck	1,655	1,727
Aircraft	337	503
Shipbuilding, Railroad	144	207
Defense	79	182
Precious Metals	2,128	336
Non-Metallic	1,683	447
Coal	161	309
Petroleum and Natural	8,557	5,522
Communication	5,776	1,832
Personal Services	1,809	452
Business Services	12,423	10,633
Computers	3,698	4,597
Electronic Equipment	3,545	7,830
Measuring and Control	1,918	2,380
Business Supplies	2,146	1,199
Shipping Containers	349	265
Transportation	3,583	2,101
Wholesale	5,750	2,947
Retail	10,155	1,015
Restaurants, Hotels	4,040	280
Almost Nothing	2,063	1,355
Total	113,431	76,069

Table 2: Summary Statistics of the Key Variables

This table presents descriptive statistics on key variables for the study sample of firm-years from the 1978-2013 sample of U.S.-based, publicly traded firms. Real variables are deflated using the CPI into 2007 dollars. Age is number of years the firm has been listed in Compustat. Assets are the book value of total assets at the end of fiscal year. Size is defined as the natural logarithm of net assets. The market-to-book ratio is measured as the sum of the market value of equity plus total liabilities divided by assets. Net working capital is calculated without cash. Total leverage is total debt, which is sum of long-term debt and debt in current liabilities over the sum of total debt and market value of equity. Free cash flow is defined as operating income minus interest expense minus income taxes. TDM is total debt divided by market value measured as the sum of total debt, preferred stock/liquidating value, deferred taxes and investment tax credit and market value of equity. LDM is long-term debt to market value. TDA (book leverage) is total debt to book value of assets, and LDA is long-term debt to book value of assets. Return on assets is operating income before depreciation over net assets. Tangibility is property, plant, and equipment divided by assets. Other variables displayed include measures of R&D spending, capital expenditures, and dividends. Industries are as in the Fama-French 48 industries. N is the number of non-missing observations in the sample for each variable. Variables winsorized at 1 and 99 percentiles with the exception of R&D measures that are winsorized at the upper tail.

Panel A	**Major Customer (N = 186,240)**				
	Mean	**Std Dev**	**1st Quartile**	**Median**	**3rd Quartile**
Age	14.791	12.122	6.000	11.000	20.000
Assets	1,903.223	13,129.472	13.933	72.207	427.727
Size	4.381	2.492	2.634	4.280	6.058
MB	2.424	4.243	1.030	1.404	2.247
NWC/Assets	-0.015	0.701	-0.056	0.048	0.200
CAPX/Assets	0.071	0.084	0.019	0.043	0.088
Leverage	0.249	0.255	0.023	0.169	0.403
FCF/Assets	-0.085	0.636	-0.032	0.053	0.100
R&D/Assets	0.052	0.128	0.000	0.000	0.045
R&D/Sales	0.278	1.820	0.000	0.000	0.048
Dividends/Assets	0.009	0.022	0.000	0.000	0.008
ROA	-0.018	0.555	0.000	0.101	0.166
Tangibility	0.304	0.245	0.102	0.238	0.451
TDA	0.282	0.434	0.042	0.205	0.377
LDA	0.179	0.218	0.004	0.114	0.276
TDM	0.249	0.255	0.023	0.169	0.403
LDM	0.174	0.208	0.002	0.091	0.280
Investment	0.124	0.152	0.034	0.078	0.154

Table 2 Continued

Panel B	Major Customer (N = 76,069)					No Major Customer (N = 113,431)				
	Mean	**Std Dev**	**1st Quartile**	**Median**	**3rd Quartile**	**Mean**	**Std Dev**	**1st Quartile**	**Median**	**3rd Quartile**
Age	15.117	12.310	6.000	11.000	20.000	14.570	11.893	6.000	10.000	20.000
Asset	1,857.527	13,151.137	12.530	64.734	412.534	1,883.654	12,928.791	14.417	73.599	418.647
Size	4.342	2.490	2.528	4.170	6.022	4.369	2.486	2.668	4.299	6.037
MB	2.373	3.742	1.050	1.456	2.340	2.422	4.496	1.008	1.354	2.147
NWC/Assets	0.016	0.634	-0.038	0.072	0.216	-0.030	0.735	-0.065	0.035	0.194
CAPX/Assets	0.064	0.077	0.018	0.038	0.078	0.075	0.087	0.021	0.048	0.095
Leverage	0.228	0.248	0.013	0.141	0.368	0.266	0.259	0.035	0.193	0.431
FCF/Assets	-0.069	0.558	-0.040	0.054	0.103	-0.091	0.675	-0.024	0.053	0.098
R&D/Assets	0.065	0.131	0.000	0.009	0.077	0.041	0.123	0.000	0.000	0.022
R&D/Sales	0.202	1.157	0.000	0.009	0.090	0.322	2.130	0.000	0.000	0.020
Dividends/Assets	0.007	0.021	0.000	0.000	0.001	0.010	0.022	0.000	0.000	0.011
ROA	-0.009	0.485	-0.012	0.096	0.163	-0.019	0.592	0.009	0.106	0.170
Tangibility	0.269	0.233	0.085	0.196	0.387	0.329	0.250	0.122	0.271	0.493
TDA	0.262	0.416	0.024	0.183	0.361	0.295	0.440	0.059	0.220	0.388
LDA	0.165	0.214	0.001	0.092	0.259	0.189	0.219	0.009	0.132	0.287
TDM	0.228	0.248	0.013	0.141	0.368	0.266	0.259	0.035	0.193	0.431
LDM	0.155	0.199	0.000	0.068	0.247	0.189	0.214	0.005	0.112	0.307
Investment	0.130	0.150	0.038	0.085	0.167	0.119	0.152	0.033	0.074	0.145

Table 2 Continued

Panel C	Nongovernment Major Customer (N = 70860)					Government Major Customer (N = 5,209)				
	Mean	**Std Dev**	**1st Quartile**	**Median**	**3rd Quartile**	**Mean**	**Std Dev**	**1st Quartile**	**Median**	**3rd Quartile**
Age	14.847	12.257	6.000	11.000	19.000	18.786	12.441	9.000	16.000	27.000
Asset	1,913.941	4,273.321	8.804	65.211	419.137	1,090.106	4,894.033	12.602	59.350	326.246
Size	4.348	2.502	2.528	1.472	2.371	4.259	2.307	2.534	4.083	5.788
MB	2.419	3.824	1.057	0.067	0.210	1.734	2.270	0.995	1.257	1.755
NWC/Assets	0.009	0.645	-0.041	0.038	0.078	0.119	0.448	0.014	0.154	0.295
CAPX/Assets	0.064	0.079	0.017	0.136	0.363	0.058	0.057	0.022	0.042	0.075
Leverage	0.225	0.248	0.011	0.054	0.104	0.272	0.245	0.060	0.210	0.427
FCF/Assets	-0.074	0.570	-0.047	0.000	0.000	0.004	0.347	0.016	0.060	0.096
R&D/Assets	0.066	0.133	0.000	0.008	0.094	0.051	0.104	0.000	0.018	0.061
R&D/Sales	0.208	1.181	0.000	0.000	0.000	0.110	0.761	0.000	0.016	0.055
Dividends/Assets	0.007	0.021	0.000	0.095	0.163	0.007	0.015	0.000	0.000	0.012
ROA	-0.015	0.494	-0.019	0.195	0.395	0.066	0.320	0.054	0.116	0.166
Tangibility	0.271	0.237	0.083	0.181	0.361	0.236	0.165	0.110	0.204	0.317
TDA	0.263	0.425	0.021	0.090	0.259	0.249	0.275	0.079	0.206	0.345
LDA	0.165	0.216	0.000	0.136	0.363	0.174	0.181	0.027	0.132	0.261
TDM	0.225	0.248	0.011	0.065	0.244	0.272	0.245	0.060	0.210	0.427
LDM	0.153	0.198	0.000	0.086	0.168	0.195	0.203	0.020	0.133	0.307

Table 3: The Effect of Major Customer on Corporate Capital Structure

This table present the results of a panel regression of Equation (1) where its dependent variable is the market leverage of dependent variable is leverage measured as total debt, which is sum of long-term debt and debt in current liabilities over sum of total debt and market value of equity. Assets in the denominators of variables are calculated as are the book value of total assets at the end of the fiscal year. Real variables are deflated using the CPI into 2007 dollars. Size is defined as the natural logarithm of net assets. Industry leverage is the median of an industry's leverage. Industries are defined using the Fama-French 48 industries. The market-to-book ratio is measured as the sum of the market value of equity plus total liabilities divided by net assets. Return on assets is operating income before depreciation over net asset. Dividend is total dividend divided by assets. Tangibility is property, plant, and equipment divided by assets. All other variables are defined in Table 1. Three different measures of a major customer are used in the regressions. The measures are dummy variables (MC), percentage of sales of overall sales (MC/Sales), and customer concentration (HHCC). This panel regression is based on industry fixed effect. N is the number of non-missing observations in the sample for each variable. Robust standard errors are in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

	Major Customer			**Government Major Customer**		
	Indicator Model	**MC% Model**	**HHCC Model**	**Indicator Model**	**MC% Model**	**HHCC Model**
Size	0.0112***	0.0112***	0.0112***	0.0108***	0.0108***	0.0108***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Industry Leverage	0.55300***	0.5540***	0.5510***	0.5560***	0.5560***	0.5540***
	(0.0088)	(0.0088)	(0.0088)	(0.0075)	(0.0075)	(0.0075)
Dividend	-1.7440***	-1.7420***	-1.7470***	-1.7260***	-1.7250***	-1.7300***
	(0.0285)	(0.0285)	(0.0285)	(0.0285)	(0.0285)	(0.0286)
MB	-0.0116***	-0.0116***	-0.0116***	-0.0113***	-0.0113***	-0.0113***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.00029)
Tangibility	0.211***	0.2110***	0.2110***	0.2080***	0.2080***	0.2070***
	(0.0033)	(0.0033)	(0.0033)	(0.0034)	(0.0034)	(0.00344)
ROA	-0.0879***	-0.0882***	-0.0881***	-0.0859***	-0.0863***	-0.0862***
	(0.0022)	(0.0022)	(0.0022)	(0.0021)	(0.0021)	(0.0021)
Major Customer	-0.0079***	-0.0242***	-0.0172***			
	(0.0012)	(0.0026)	(0.0017)			
Government				0.0170***	0.0248***	0.0220***
				(0.0033)	(0.0084)	(0.0060)
Nongovernment				-0.0078***	-0.0260***	-0.0172**
				(0.0012)	(0.0026)	(0.0017)
Constant	0.0824***	0.0817***	0.0833***	0.0832***	0.0831***	0.0843***
	(0.0026)	(0.0026)	(0.0026)	(0.0024)	(0.0023)	(0.0024)
Obs.	173,035	173,035	173,035	173,035	173,035	173,035
R^2	0.208	0.208	0.208	0.220	0.220	0.220
Year Dummy	No	No	No	No	No	No
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes

Table 4: The Effect of Major Customer on Corporate Capital Structure Using Different Measures of Leverage

This table presents the results of a panel regression of Equation (1), where the dependent variable is four different measures of leverage. The leverage ratio now calculated as market leverage by two different method: total debt to market value (TDM), long-term debt to market value (LDM); and book leverage again by two different methods: total debt to book value of assets (TDA) and long-term debt to book value of assets (LDA). Three different measures of a major customer used in the regressions. The measures are dummy variables (MC), percentage of sales of overall sales (MC/Sales), and customer concentration (HHCC). All other variables are defined in Table 2. This panel regression based on industry fixed effect. N is the number of non-missing observations in the sample for each variable. Robust standard errors in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

	Dummy Variable				**Percentage of Sales to Major Customers**				**Customer Concentration**			
	TDM	**LDM**	**TDA**	**LDA**	**TDM**	**LDM**	**TDA**	**LDA**	**TDM**	**LDM**	**TDA**	**LDA**
Size	0.0112***	0.0173***	0.0111***	0.0136***	0.0112***	0.0173***	0.0111***	0.0136***	0.0112***	0.0173***	0.0112***	0.0136***
	(0.0003)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)	(0.0003)
Industry Leverage	0.5530***	0.4330***	0.5530***	0.2040***	0.5540***	0.4330***	0.5530***	0.2020***	0.5510***	0.4310***	0.5510***	0.2020***
	(0.0088)	(0.0073)	(0.0088)	(0.0071)	(0.0088)	(0.0073)	(0.0088)	(0.0071)	(0.0088)	(0.0073)	(0.0088)	(0.0071)
Dividend	-1.7440***	-1.2330***	-1.7390***	-0.7140***	-1.7420***	-1.2310***	-1.7370***	-0.7160***	-1.7470***	-1.2350***	-1.7420***	-0.7170***
	(0.0285)	(0.0232)	(0.0284)	(0.0269)	(0.0285)	(0.0232)	(0.0284)	(0.0269)	(0.0285)	(0.0232)	(0.0284)	(0.0269)
MB	-0.0116***	-0.0069***	-0.0116***	0.0003	-0.0116***	-0.0069***	-0.0116***	0.0003	-0.0116***	-0.0069***	-0.0116***	0.0003
	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)	(0.0003)
Tangibility	0.2110***	0.1980***	0.2110***	0.2020***	0.2110***	0.1980***	0.2110***	0.2020***	0.2110***	0.1970***	0.2100***	0.2020***
	(0.0033)	(0.0028)	(0.0033)	(0.0031)	(0.0033)	(0.0028)	(0.0033)	(0.0031)	(0.0033)	(0.0028)	(0.0033)	(0.0031)
ROA	-0.0879***	-0.0397***	-0.0877***	-0.0495***	-0.0882***	-0.0400***	-0.0880***	-0.0496***	-0.0881***	-0.0399***	-0.0879***	-0.0495***
	(0.0022)	(0.00123)	(0.0022)	(0.0027)	(0.0022)	(0.0013)	(0.0022)	(0.0027)	(0.0022)	(0.0013)	(0.0022)	(0.0027)
Major Customer	-0.0079***	-0.0057***	-0.0078***	0.00027								
	(0.0012)	(0.0009)	(0.0012)	(0.0011)								
HHCC					-0.0242***	-0.0167***	-0.0241***	-0.0069***				
					(0.0026)	(0.0020)	(0.0025)	(0.0024)				
MC%									-0.0172***	-0.0127***	-0.0171***	-0.0034**
									(0.0017)	(0.0013)	(0.0017)	(0.0016)
Constant	0.0824***	-0.0112***	0.0823***	0.0277***	0.0817***	-0.0118***	0.0816***	0.0289***	0.0833***	-0.0104***	0.0832***	0.0289***
	(0.0026)	(0.0020)	(0.0026)	(0.0024)	(0.0026)	(0.0020)	(0.0026)	(0.0023)	(0.0026)	(0.0020)	(0.0026)	(0.0023)
Obs.	173,035	172,710	173,035	174,232	173,035	172,710	173,035	174,232	173,035	172,710	173,035	174,232
R^2	0.208	0.227	0.208	0.125	0.208	0.227	0.209	0.125	0.208	0.227	0.209	0.125
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5: The Effect of Government Major Customer on Corporate Capital Structure Using Different Measures of Leverage

This table presents the results of a panel regression of Equation (1), where the dependent variable is four different measures of leverage. The leverage ratio calculated as market leverage by two different method: total debt to market value (TDM), long-term debt to market value (LDM); and book leverage again by two different methods: total debt to book value of assets (TDA) and long-term debt to book value of assets (LDA). Three different measures of a major customer for each type was used in the regressions. Government is the interaction of a dummy variable indicating a government customer with an indicator variable for a major customer (Government in Models 1-4), the percentage of total sales to the major customer (%Government in Models 5-8) and the Hefindahl-Hirschman customer concentration, HH government (Models 9-12). Nongovernment is the interaction of an indicator variable with the same major customer specifications. All other variables are defined in Table 2. Regression based on industry fixed effect. N is the number of non-missing observations in the sample for each variable. Robust standard errors in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

	Dummy Variable				**Percentage of Sales to Major Customers**				**Customer Concentration**			
	TDM	**LDM**	**TDA**	**LDA**	**TDM**	**LDM**	**TDA**	**LDA**	**TDM**	**LDM**	**TDA**	**LDA**
Size	0.0108***	0.0168***	0.0107***	0.0135***	0.0108***	0.0168***	0.0108***	0.0135***	0.0108***	0.0168***	0.0108***	0.0135***
	(0.0003)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0002)	(0.0003)	(0.0002)
Industry Leverage	0.5560***	0.4080***	0.5550***	0.1950***	0.5560***	0.4090***	0.5550***	0.1930***	0.5540***	0.4070***	0.5530***	0.1930***
	(0.0075)	(0.0062)	(0.0075)	(0.0063)	(0.0075)	(0.0061)	(0.0075)	(0.0062)	(0.0075)	(0.0062)	(0.0075)	(0.0063)
Dividend	-1.7260***	-1.2310***	-1.7210***	-0.7290***	-1.7250***	-1.2300***	-1.7210***	-0.7310***	-1.7300***	-1.2330***	-1.7250***	-0.7320***
	(0.0285)	(0.0233)	(0.0284)	(0.0270)	(0.0285)	(0.0233)	(0.0285)	(0.0270)	(0.0286)	(0.0233)	(0.0285)	(0.0270)
MB	-0.0113***	-0.0067***	-0.0113***	0.0005	-0.0113***	-0.0067***	-0.0113***	0.0005	-0.0113***	-0.0067***	-0.0113***	0.0005
	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)	(0.0003)
Tangibility	0.2080***	0.1900***	0.2070***	0.1950***	0.2080***	0.1900***	0.2070***	0.1950***	0.2070***	0.1900***	0.2070***	0.1950***
	(0.0034)	(0.0028)	(0.0034)	(0.0032)	(0.0034)	(0.0028)	(0.0034)	(0.0032)	(0.0034)	(0.0028)	(0.0034)	(0.0032)
ROA	-0.0859***	-0.0385***	-0.0858***	-0.0487***	-0.0863***	-0.0387***	-0.0861***	-0.0487***	-0.0862***	-0.0386***	-0.0860***	-0.0487***
	(0.0021)	(0.0013)	(0.0021)	(0.0027)	(0.0021)	(0.0013)	(0.0021)	(0.0027)	(0.0021)	(0.0013)	(0.0021)	(0.0027)
Government	0.0170***	0.0217***	0.0170***	0.0124***	0.0248***	0.0391***	0.0247***	0.0261***	0.0220***	0.0329***	0.0220***	0.0184***
	(0.0033)	(0.0027)	(0.0033)	(0.0026)	(0.0084)	(0.0070)	(0.0084)	(0.0076)	(0.0060)	(0.0051)	(0.0060)	(0.0051)
Non-government	-0.0078***	-0.0061***	-0.0078***	-2.6000	-0.0262***	-0.0194***	-0.0261***	-0.0094***	-0.0172***	-0.0133***	-0.0172***	-0.0043***
	(0.0012)	(0.0010)	(0.0012)	(0.0011)	(0.0026)	(0.0020)	(0.0026)	(0.0025)	(0.0017)	(0.0014)	(0.0017)	(0.0016)
Constant	0.0832***	-0.0029	0.0831***	0.0315***	0.0831***	-0.0032*	0.0830***	0.0329***	0.0843***	-0.0022	0.0842***	0.0327***
	(0.0024)	(0.0018)	(0.0024)	(0.0022)	(0.0023)	(0.0018)	(0.0023)	(0.0022)	(0.0024)	(0.0018)	(0.0023)	(0.0022)
Obs.	173,035	172,710	173,035	174,232	173,035	172,710	173,035	174,232	173,035	172,710	173,035	174,232
R^2	0.220	0.238	0.221	0.134	0.220	0.238	0.221	0.134	0.220	0.238	0.221	0.134
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: **Effect of Government Major Customer on Profitability & Investment**

This table present the results of a panel regression of these equations:

$$ROA_{i,t} = \mathrm{X}_{i,t-1} + ROA_{i,t-1} + MajorCustomer_{i,t-1} + \varepsilon_{i,t}$$
$$R\&D_{i,t} = \mathrm{X}_{i,t-1} + R\&D_{i,t-1} + MajorCustomer_{i,t-1} + \varepsilon_{i,t}$$
$$CAPX_{i,t} = \mathrm{X}_{i,t-1} + CAPX_{i,t-1} + MajorCustomer_{i,t-1} + \varepsilon_{i,t}$$

where its dependent variable is the lead of ROA, R&D and CAX. $\mathrm{X}_{t-1}$is the lag level of variable X. Industries are defined using using the Fama-French 48 industries. The market-to-book ratio is measured as the sum of the market value of equity plus total liabilities divided by assets. Return on assets is operating income before depreciation over net assets. Tangibility is property, plant and equipment divided by assets. R&D is research and development expense over total assets and if it is missing, it is set to zero. CAPX is capital expenditures over assets. Investments are the sum of research and development and capital expenditures over total assets. The measures of a major customer used in the regressions are customer concentration (HHCC), and number of major customers (MC Number). This panel regression based on industry fixed effect. Standard errors are in parentheses. All the standard errors are in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

	Major Customer			**Government Major Customer**		
	ROA	**R&D**	**CAPX**	**ROA**	**R&D**	**CAPX**
Size	0.0144***	-0.0012	-0.0014***	0.0144***	-0.0012	-0.0014***
	(0.0004)	(0.0008)	(6.4400)	(0.0004)	(0.0008)	(6.4401)
MB	-0.0086***	0.0031	0.0018***	-0.0086***	0.0031	0.0018***
	(0.0011)	(0.0020)	(7.4801)	(0.0011)	(0.0020)	(7.4801)
Tangibility	0.1100***	-0.1330***	0.0302***	0.1100***	-0.1330***	0.0302***
	(0.0059)	(0.0114)	(0.0011)	(0.0059)	(0.0114)	(0.0011)
ROA	0.6530***	-0.0844***	0.0192***	0.6530***	-0.0843***	0.0192***
	(0.0096)	(0.0185)	(0.0006)	(0.0096)	(0.0185)	(0.0006)
Investments	-0.0699***			-0.0696***		
	(0.0178)			(0.0178)		
R&D		0.5590***			0.5590***	
		(0.0116)			(0.0116)	
CAPEX			0.5010***			0.5010***
			(0.0042)			(0.0042)
HHCC						
	-0.0220***	0.0397***	-0.0032***			
	(0.0044)	(0.013100)	(0.0006)			
HHGoverment						
				0.0262**	0.0181	-0.0028
				(0.0111)	(0.0299)	(0.0017)
HHNonGoverment				-0.0251***	0.0411***	-0.0032***
				(0.00459)	(0.0137)	(0.0007)
Constant	-0.0750***	0.1210***	0.0250***	-0.0721***	0.1080***	0.0246***
	(0.0038)	(0.0084)	(0.0005)	(0.0038)	(0.0080)	(0.0005)
Observations						
	174,567	174,567	174,567	174,567	174,567	174,567
R^2	0.594	0.570	0.473	0.594	0.570	0.473
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: **Speed of Adjustment of Capital Structure**

This table present the results of a panel regression of Equation (2) where its dependent variable is the market leverage measured as total debt, which is sum of long-term debt and debt in current liabilities over sum of total debt and market value of equity.

$$Leverage_{i,t} = \propto + (\lambda\beta)X_{i,t-1} + (1-\lambda)Leverage_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where λ is the SOA to the target leverage level. $X_{i,t-1}$ is a vector of firm determinate of the firm's target capital structure. the determinants of are market-to-book ratio, size, return on asset, industry maiden leverage, dividend, and tangibility. This model estimated using a two-step system generalized method of moments (GMM) estimator as presented by Blundell and Bond (1998). Standard errors are in parentheses. All the standard errors are in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

	Full Sample	**Firm With Customer**	**Firm Without Customer**	**Government Customer**	**Nongovernment Customer**
SOA	0.1760	0.2050	0.1570	0.3770	0.2090
Lag Leverage	0.8240***	0.7950***	0.8430***	0.6230***	0.7910***
	(0.0085)	(0.0128)	(0.0114)	(0.0352)	(0.0131)
Size	-0.0077***	-0.0015	-0.0135***	0.0081	-0.0008
	(0.0014)	(0.0020)	(0.0020)	(0.0077)	(0.0020)
Industry Leverage	-0.3470***	-0.4150***	-0.3550***	-0.0233	-0.4190***
	(0.0128)	(0.0216)	(0.0160)	(0.0636)	(0.0224)
Dividend	0.33900***	0.1770***	0.4180***	0.5050**	0.1670***
	(0.0400)	(0.0473)	(0.0586)	(0.2440)	(0.0477)
MB	0.0063***	0.0067***	0.0059***	0.0076***	0.0065***
	(0.0004)	(0.0006)	(0.0005)	(0.0019)	(0.0006)
Tangibility	-0.0806***	-0.0812***	-0.0645***	-0.0479	-0.0700***
	(0.0114)	(0.0179)	(0.0142)	(0.0657)	(0.0183)
ROA	0.0464***	0.0439***	0.0465***	0.0155	0.0429***
	(0.0036)	(0.0056)	(0.0047)	(0.0195)	(0.0057)
Constant	0.1620***	0.1360***	0.1910***	0.0614	0.1310***
	(0.0083)	(0.0114)	(0.0118)	(0.0431)	(0.0116)
Observations	152,196	62,593	89,603	3,979	58,614
R^2					
Number of ID	16,787	9,783	13,336	927	9,299

Table 8: **The Impact of Financial Constraints on the Relation**

This table present the results of a panel regression of Equation (1) where its dependent variable is the market leverage measured as total debt, which is the sum of long-term debt and debt in current liabilities over the sum of total debt and the market value of equity. Assets in the denominators of variables are calculated as the book value of total assets at the end of the fiscal year. Real variables are deflated using the CPI into 2007 dollars. Size is defined as the natural logarithm of net assets. Industry leverage is the median of an industry's leverage. Industries are defined using the Fama-French 48 industries. The market-to-book ratio is measured as the sum of the market value of equity plus total liabilities divided by net assets. Return on assets is operating income before depreciation over net asset. Dividend is total dividend divided by assets. Tangibility is property, plant, and equipment divided by assets. All other variables are defined in Table 1. Four different measures of financial constraints are used in the regressions. The measures are WW Index (columns 1-2), size (columns 3-4), ratings (columns 5-6), and dividend (columns 7-8). Major customer is measured as customer concentration (HHGoverment and HHNonGoverment). This panel regression based on industry fixed effect. N is the number of non-missing observations in the sample for each variable. Robust standard errors in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

	WW Index		**Size**		**Ratings**		**Dividend**	
	Constrained	**Unconstrained**	**Small**	**Big**	**No Rating**	**Rating**	**Non-Payer**	**Payer**
Size	0.0133***	0.0071***	0.0063***	0.0013**	0.0074***	-0.0277***	0.0145***	0.0096***
	(0.0007)	(0.0005)	(-0.0009)	(-0.0005)	(0.0003)	(0.0009)	(0.0004)	(0.0004)
Industry Leverage	0.5270***	0.4010***	0.3680***	0.4060***	0.5530***	0.3080***	0.6530***	0.4460***
	(0.0184)	(0.0136)	(-0.0197)	(-0.0135)	(0.0096)	(0.0218)	(0.0128)	(0.0126)
Dividend	-1.0730***	-1.3760***	-1.2600***	-1.5500***	-1.5900***	-1.0430***		-0.7810***
	(0.0650)	(0.0513)	(-0.0451)	(-0.0524)	(0.0285)	(0.0859)		(0.0382)
MB	-0.0044***	-0.0387***	-0.0043***	-0.0351***	-0.0103***	-0.0625***	-0.0091***	-0.0311***
	(0.0003)	(0.0020)	(-0.0003)	(-0.0021)	(0.0003)	(0.0031)	(0.0003)	(0.0027)
Tangibility	0.2320***	0.1650***	0.2090***	0.1830***	0.2240***	0.1130***	0.2520***	0.1640***
	(0.0057)	(0.0056)	(-0.0059)	(-0.0055)	(0.0036)	(0.0082)	(0.0043)	(0.0051)
ROA	-0.0382***	-0.4930***	-0.0358***	-0.6700***	-0.0785***	-0.4790***	-0.0734***	-0.5540***
	(0.0020)	(0.0294)	(-0.0020)	(-0.0215)	(0.0021)	(0.0284)	(0.0021)	(0.0217)
HHGovernment	0.0453***	-0.0238*	0.0228*	-0.0053	0.0298***	-0.0500***	0.0369***	-0.0034
	(0.0153)	(0.0132)	(-0.0120)	(-0.0095)	(0.0093)	(0.0186)	(0.0110)	(0.0122)
HHNongovernment	-0.0243***	-0.0048	-0.0116***	-0.0018	-0.0297***	-0.0039	-0.0406***	-0.0082*
	(0.0042)	(0.0049)	(-0.0031)	(-0.0029)	(0.0028)	(0.0066)	(0.0031)	(0.0047)
Constant	0.0609***	0.2520***	0.0945***	0.3150***	0.0808***	0.6380***	0.0448***	0.1930***
	(0.0042)	(0.0080)	(-0.0046)	(-0.0070)	(0.0027)	(0.0112)	(0.003180)	(0.0061)
Observations	58,439	58,072	50,427	62,471	146,981	26,073	115,421	57,633
R^2	0.149	0.301	0.117	0.306	0.198	0.327	0.220	0.285
Year Dummy	No	No	No	No	No	No	No	No
Industry Dummy	No	No	No	No	No	No	No	No

Table 9: **Zero Long-Term Debt and Firm With Major Customer**

This table presents the results of a Logit models for the likelihood of firm with major customer to have zero long-term debt. The dependant variable is a dummy variable that takes the value of 1 if the firm has zero long-term debt (LDM) and 0 otherwise. The control variables are market-to-book ratio, size, return on asset, industry maiden leverage, dividend, and tangibility. The first two models include all firms in the study sample. The third model includes firms in durable goods only (SIC 3,400, to 3,990). Fourth model includes firms in nondurable goods only (SIC 2,000 to 3,400). The fifth model includes all firms in in the study sample except the ones in durable goods only (SIC 3,400, to 3,990). This logit models based on firm and year fixed effect. Standard errors are in parentheses. All the standard errors are in parentheses. Significance levels are *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

	Full Sample				All firms except
	No Constant	With Constant	Durable	Nondurable	Durable
Size	-0.2820***	-0.3740***	-0.3040***	-0.4690***	-0.3990***
	(0.0037)	(0.0034)	(0.0065)	(0.0082)	(0.0040)
Industry	-3.311000***	-2.2780***	-2.7480***	-1.6500***	-2.4430***
Leverage	(0.0705)	(0.0619)	(0.1550)	(0.1360)	(0.0657)
Dividend	10.0500***	9.5550***	14.0400***	12.8000***	8.9260***
	(0.3070)	(0.2930)	(0.9080)	(0.7070)	(0.3110)
MB	0.0106***	0.0191***	0.0291***	0.0098**	0.0145***
	(0.0022)	(0.0021)	(0.0046)	(0.0046)	(0.0024)
Tangibility	-2.0910***	-1.5700***	-4.4050***	-3.2890***	-1.3190***
	(0.0457)	(0.0350)	(0.1280)	(0.1080)	(0.0353)
ROA	0.5610***	0.2690***	0.3120***	0.3000***	0.2490***
	(0.0214)	(0.0154)	(0.0333)	(0.0339)	(0.0174)
HHGovernment	-0.9270***	-0.9170***	-0.6450***	-0.4690	-0.9480***
	(0.1420)	(0.1180)	(0.1830)	(0.3070)	(0.1510)
HHNongovernment	0.2390***	0.2010***	0.3880***	0.0705	0.1010***
	(0.0304)	(0.0273)	(0.0445)	(0.0648)	(0.0355)
Constant		-0.4890***			
		(0.0699)			
Observations	189,231	189,231	50,237	43,666	138,994
Year Dummy	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	No	Yes	Yes	Yes

Table 10: **Financial Constraints and Firm With Major Customer**

This table presents the results of a Logit models for the likelihood of firm with major customer to be financially constraints. The model is:

$$FF_{i,t} = X_{i,t-1} + \text{MajorCustomer}_{i,t-1} + \varepsilon_{i,t}$$

The dependant variable is a dummy variable of financial constraints (FF) that takes the value of 1 if the firm financially constraints are based on the measure of the columns and 0 otherwise. Four different measures of financial constraints are used in the regressions. The measures are ratings, MB ratio, size, and dividends. The control variables are size, industry maiden leverage, dividends, return on asset, market-to-book ratio, dummy for ratings and tangibility. This logit models based on firm and year fixed effect. Standard errors are in parentheses. All the standard errors are in parentheses. Significance levels are $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

	Ratings	**MB**	**Size**	**Dividend**
Size	1.100***	-0.1160***		-0.6520***
	(0.007)	(0.0035)		(0.0043)
Industry Leverage	2.457***	-4.1650***	-0.8310***	
	(0.090)	(0.0581)	(0.0591)	
Dividend	-6.713***	13.6100***	-8.8510***	
	(0.492)	(0.3080)	(0.6360)	
MB	-0.099***		0.0730***	0.1910***
	(0.0092)		(0.0036)	(0.0077)
Tangibility	-0.1980***	-0.6970***	-0.5120***	
	(0.0400)	(0.0257)	(0.0286)	
ROA	0.5820***	-0.8830***	-3.8980***	
	(0.1030)	(0.0175)	(0.0414)	
Ratings		0.0111	-6.4750***	0.4010***
		(0.0197)	(0.2670)	(0.0206)
Age				-0.0501***
				(0.0006)
Leverage				2.1900***
				(0.0311)
Government	0.7180***	-0.45200***	-0.0068	0.3690***
	(0.05490)	(0.04110)	(0.0440)	(0.0402)
Nongovernment	0.25500***	0.03170***	0.1360***	0.3730***
	(0.01990)	(0.01180)	(0.0133)	(0.0138)
				(0.0311)
Observations	178,856	161,035	161,035	189,515
Year Dummy	Yes	Yes	No	No
Industry Dummy	No	No	No	No