Debt Dynamic, Debt Dispersion and Corporate Governance

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Abstract

Why do some firms borrow from multiple creditors and employ multiple debt types? This paper shows that entrenched managers exploit coordination failure and free-riding problem amongst multiple creditors. [1] We find that managerial entrenchment is inversely related to debt specialization and creditors concentration. [2] We find that firms under entrenched management have a higher proclivity to employ multiple debt types and have a dispersed debt structure. Firms that are well-managed have a tendency to concentrate debt and borrow predominantly from a few creditors. [3] We also show that while bank debt is negatively related to debt specialization, market debt is positively related to debt specialization. Overall, our findings suggest that creditors can discipline managers through debt specialization.

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1 Introduction

The decision of whether to borrow predominantly from one lender or multiple lenders is central to the conflict between creditors and management. A plethora of corporate finance literature has focused on the moral hazard arising from the separation of ownership and control, that is, the conflict between shareholders and management. In particular, shareholders should have the ultimate control rights since they are the residual claimants, and corporate governance should maximize shareholders' value.[1]

In this paper, we examine a rather less studied conflict, namely the potential conflict between managers and creditors.[2] The conflict arises because in the presence of information asymmetry and agency costs, entrenched managers may mismanage borrowed funds.[3] Managers optimize private benefits of control while creditors through monitoring minimize managers' expropriation of wealth. In particular, managers can transfer wealth from debt holders by engaging in asset substitution, which increases the likelihood of bankruptcy. Although asset substitution is ex-post, lenders are nevertheless concerned about the likelihood of default because, ex ante, managers have some discretion on the type(s) of debt to employed in a firm's capital structure (Diamond 1984, Jensen and Meckling 1976, Tirole 2009). As a result, optimal debt structure should be designed to minimize expected bankruptcy costs (Bolton and Scharfstein 1996). Moreover, ownership structure should be designed to minimize information asymmetry and maximize creditors' monitoring role (Park 2000). Since the ability of creditors to be effective monitors is positively correlated with the value of claims, effective management should concentrate debt (Diamond 1984, 1991, Tirole 2010). Well-governed firms should engage in debt specialization, which means borrowing predominantly from a few creditors. Concentrated debt structure minimizes extraction of private benefits of control as it facilitates and

[1] See: Jensen and Meckling 1976, Shleifer and Vishny 1997, Zwiebel 1996.

[2] In the absence of market frictions, the value of the firm is independent of its capital structure. Since price mechanism guarantees returns to claimants (Modigliani and Miller 1958).

[3] Broadly, entrenched managers are those who act in their best self-interest at the expense of shareholders, which reduce firm value.

incentives external monitoring. The theoretical implication is that debt specialization should be inversely related to managerial entrenchment.[4]

We test the above conjecture that firms with entrenched management have a higher degree of dispersion in their debt structure. Dispersion implies that, firms with entrenched management borrow from multiple creditors and use multiple debt types. The size of creditors' base matters since the cost of bankruptcy increases with the number of claim holders. The 1939 Trust Indenture Act (U.S.) requires that any change to debt principal, maturity or coupon rate must be unanimously approved by debt holders. Borrowing from a diverse creditors base increases each creditor's costs of external monitoring and facilitates expropriation of wealth by management. Effectively, a diverse creditor base weakens the negotiation position of each creditor and magnifies asset substitution. As a result, debt renegotiation would be difficult in the presence of many creditors, different debt types, public debt, and severe information asymmetry (Haugen and Senbet 1978).

To test these theories and in similar approach to Colla, Ippolitto and Kai (2013), Lou and Otto 2018, we first utilize Capital IQ debt structure and construct a normalized Herfindahl-Hirschman Index (HHI), which proxy for degree of debt specialization and creditors' concentration, i.e., borrowing from a few creditors. Higher levels of HHI are associated with higher degree of debt specialization. Higher degrees of debt specialization are associated with fewer number of creditors (Colla et al. 2013). Lower degrees of debt specialization are associated with higher number of creditors and usage of multiple debt types. Capital IQ defines debt structure as the composition of seven mutually exclusive debt types: commercial paper, capital leases, term loans, revolving credit facilities, senior bonds-and-notes, subordinated bonds-and-notes, and other debt types. We then merge capital IQ data with corporate governance indices (Bebchuk, Cohen and Ferrel 2009, Gompers, Ishii and Metrick 2003) and firm-level data from Compustat database. The first key finding is that firms under entrenched management employ multiple debt types and have a disperse debt structure. That is, there is a negative relationship between managerial

[4]See: Diamond 1984, 1991, Park 2000, Asquith et al. 1994, Tirole 2010, Gertner and Scharfstein 1991.

entrenchment and debt specialization. This result suggests that entrenched managers opportunistically exploit coordination failure and the free riding problem amongst multiple creditors. Conflicts among creditors and coordination failure arise, in part, due to differences in the levels of creditors' protection, cash flow rights, debt seniority, and debt maturity (Haugen and Senbet 1978, Vig 2013, La Porta et al. 2000).

Second, we aggregate debt types into two major types of debts: market debts and bank debts. We show that bank debt is negatively related to debt specialization while market debt is positively related to debt specialization. Our results imply that banks are able to effectively monitor and screen good and bad borrowers (Diamond 1984, 1991, Rajan 1992, Boot, Greenbaum and Thakor 1993). Additionally, we show that the average bank debt decreases with increase in the degree of managerial entrenchment. For bank lenders, effective screening and monitoring is prioritized, and any benefits from debt specialization would be marginal. Banks, through screening and monitoring, are able to reduce or eliminate some agency costs associated with asset substitution and managerial expropriation of funds. This result is consistent with the argument that firms with significant agency conflict (entrenched management) optimally reduce the fraction of bank debt in their capital structure (Park, 2000). The more junior the bank debt, the larger the over-investment problem (Asquith, Gertner and Scharfstein 1994, Gertner and Scharfstein 1991). Overall, reduction of bank debt marginally increases monitoring costs and amplifies extraction of private benefits and expropriation of creditors' wealth.

In contrast, market lenders use debt specialization as a commitment device and as an instrument to enhance their monitoring role. Debt specialization incentivizes market lenders as it transfers some control rights from management to creditors during bankruptcy or financial distress. Because complete contracting is costly,[5] firms have to credibly signal that they can deliver without external enforcement (ex. courts). Debt specialization is an efficient form of signalling to the market lenders that management will honor contractual obligations (Heider 2001). This observation explains the observed positive relationship

[5]See: Grossman and Hart 1986, Holmstrom 1999, Hart and Moore 1990, 2007.

between debt specialization and market debt in the data.

The main contribution of this paper is therefore twofold. First, we show that managerial entrenchment is inversely related to debt specialization and to creditors' concentration. Second, we show that market debt is positively related to debt specialization and that bank debt is negatively related to debt specialization. Our results provide a comprehensive picture on how corporate governance influences firms' debt choices and firms' overall debt structure.

The remainder of this paper is organized into seven sections. Section 2 presents the related literature review and hypothesis development section. The data sample and variables are described in section 3. Section 4 outlines our methodology and the construction of HHI. Section 5 documents our empirical results. Section 6 documents some robustness tests. A summary and conclusion are provided in Section 7.

2 Literature Review and Hypothesis Development

Hypothesis 1:

"Managerial entrenchment is inversely related to debt specialization"

The null hypothesis of this paper is that managerial entrenchment is inversely related to debt specialization. That is, entrenched managers optimally borrow from multiple sources and employ multiple debt types; so as to preserve status and extract private benefits of control. Management can preserve status through control rights since borrowing from multiple creditors increases monitoring costs and weakens the renegotiation position of each creditor (Gertner and Scharfstein 1991, Hoshi, Kashyap, and Scharfstein 1990, Giammarino 1989). A disperse creditor base enhances extraction of private benefits and facilitates expropriation of debt holders' wealth by management.[6]

This paper relates to, and builds on several strands of existing literature. First, we contribute to the growing literature that examines the effect of debt composition on firm's

[6]See: Bris and Welch (2005) for theoretical discussions and a variant of this argument.

capital structure. Sufi (2007) finds that the lead bank in a lending syndicate retains a large share of loan when a borrowing firm require intense monitoring; this result provides some empirical support to the notion of debt specialization in capital structure. Rauh and Sufi (2010) examine types and sources of debt for a randomized selected sample. They find that about three-quarters of firms exhibit changes in debt composition but not in debt levels. They also find that firms spread priority of debt maturity structure across credit rating. Their results are one of the first to empirically establish that debt composition is an important aspect of capital structure choice. Colla et al. (2013) find that firms that borrow predominantly from one source of debt are likely to be small, unrated, have higher bankruptcy costs, and lack access to some segment of the market while firms that borrow from multiple sources of debt are likely to have a large collateral base and have a high credit rating. Lee (2016) examines whether high-growth firms rely on bank debt or market debt. And find that high-growth firms borrow predominantly from bank debt because bank monitoring allows these firms to issue bonds-and-notes. Giannetti (2019), using cross-country analysis, shows that European firms have a highly correlated debt structure. Our results add to this literature which lends support to our main hypothesis that managerial entrenchment is inversely related to debt specialization.

This paper also contributes to the literature on sources of external financing and debt dynamics. Crouzet (2015) shows that imperfect substitution between debt types can generate and amplify transmission of financial shocks. Xiao (2017) shows that sources of external financing, debt composition, debt substitution, and balance sheet adjustment play a key role in transmission of aggregate shocks as well as that imperfect substitution between bank debt and bonds-and-notes can significantly reduce the effectiveness of capital markets. We contribute to this literature by providing empirical evidence on debt heterogeneity and debt substitution. We show that bank debt is negatively related to bonds-and-notes but positively related capital leases and convertible bonds. This result echoes and is consistent with the findings of Detragiache (1994), King, Khang, and Nguyen (2011) that bank debt and bonds-and-notes are substitute for each other. The extant literature on sources of external financing,

debt dynamics, and debt composition is the baseline for our second hypothesis:

Hypothesis 2:

"Bank debt is inversely related to debt specialization while market debt is positively related to debt specialization"

Moreover, this paper contributes to the theoretical and empirical literature on corporate governance and capital structure. Bris and Welch (2005) present an agency model of creditors' concentration in which higher-quality firms endogenously choose to have a concentrated debt structure. In their model, a firm can credibly signal that it is of the "highest quality" by borrowing predominantly from a single creditor. Jensen and Smith (2000) provide a comprehensive survey on the applications of agency theory to the conflicts of interest between managers, stockholders, and creditors. The key take-away from this work is that contracting practices shed lights on the close relationship between financial and organization practices. Panda and Leepsa (2017) provide a comprehensive review of theoretical aspects and empirical works based on the agency theory of capital structure. They show that principal-creditor problems arise because, if a project succeeds, the principals enjoy a large fraction of the benefit, but the return to creditors is limited to a fixed rate interest. But if a project fails, creditors have to share in the loss. Our results contribute to this literature and line of thought by showing that debt specialization can mitigate the conflict between creditors and managers.

Our paper also contributes to the literature on the effect of quality of corporate governance on firms' capital structure. Dimitropoulos (2014) shows that the corporate governance mechanism and more dispersed ownership structure amongst sixty-seven European soccer clubs, result in reduction in debt and reduce the risk of financial instability. Colla et al. (2013) provide evidence suggesting that a small independent board in which the CEO is not also the chair of the board (duality) is positively related to debt specialization. Using an entrenchment index (Gompers et al. 2003, Bebchuk et al. 2009) constructed from Investor Responsibility Research Center (IRRC) provisions that take into

account various aspects of corporate governance including staggered boards, ownership voting rights, and golden parachute, we find that managerial entrenchment is negatively related to debt specialization. This result echoes the finding of Manne (1965) that entrenchment increases extraction of private benefits. In this case, entrenched managers prefer to employ multiple debt types and have a larger creditors' base (lower degree of debt specialization) because a large number of creditors increase the cost of external monitoring and the cost of debt renegotiation. Note that, because each debt type would constitute a small portion of the overall firm debt, we would expect that the marginal cost of monitoring is greater than the marginal benefit. As a result, the overall effect of lower degree of debt specialization is to weaken creditors' incentive to monitor. This in turn amplifies extraction of pecuniary benefits by entrenched management. Our results show that debt specialization can serve as a tool that potentially mitigates the conflict between creditors and managers.

3 Data

The main sample consists of firms incorporated in the U.S., covered by Compustat and that have debt structure data available on Capital IQ for the period 2001-2016. To arrive at the final sample. We carry out the following steps:

(i) We eliminate both financial service firms (SIC 6000-6999) because their liquidity level is difficult to assess and firms in the utility sector (SIC 4900-4949) because their operational activities and governance structure are highly impacted by regulations.

(ii) We also exclude firms whose total assets are either reported as negative, missing, or zero.

(iii) We also exclude firms with missing or zero total debt.

(iv) We also require that a firm must exist throughout the entire sample duration. Furthermore, a firm must have a corporate governance index rating available on both

the G-index based on Gompers et al. (2003) and the E-Index based on Bebchuk et al. (2009). The final sample consists of 824 unique firms.

3.1 Corporate Governance Indices

The G-Index and the E-Index are both constructed from IRRC and use the number of anti-takeover provisions in the firm charter and in the legal codes of the state in which a firm is incorporated to measure degree of managerial entrenchment. Higher provisions are associated with poor governance and weak shareholders' rights. Thus, a higher number of provisions are associated with higher levels of managerial entrenchment.

The G-index is broad and takes into account five governance rules that impact the balance of power between shareholders and managers. The five rules include "delay," which is designed to slow down a hostile take over bid; "protection," which is designed to protect managers, to compensate managers, and to shield them against legal liability; "voting," which limits and outlines shareholders' rights in matters related to elections; "state," which is designed to take into account firms incorporated in states such as Delaware (Bebchuk and Cohen 2003, 2005, Daines 2001), and "others" is designed to take into account other measures that limit shareholders' rights. Each rule consists of a set of provisions. The delay rule consists of four provisions; both the voting and protection rules consist of six provisions each; the state rule consists of two provisions, and "others" contain six provisions. In general, each provision that weakens shareholders' rights is weighted as one; as a result, the index scale starts at a minimum of one and adds up to a maximum of 24. In the final sample, the G-Index has a mean (median) of 8.7(9) with a standard deviation of 2.7 and minimum(max) of 1(18). Firms whose index rating is above median G-Index (9) are classified as "weakly governed" and those below the median G-Index (9) are classified as "strongly governed".[7]

[7]For discussion on some potential weaknesses/strengths to using the G-Index, see Cremers and Nair (2005), Cremers, Litov, and Sepe (2017), Cremers, Masconde, and Sepe (2016) for discussion on staggered boards and supermajority provisions. The E-Index is a more robust measure as it takes into account only the most influential provisions. Nevertheless, the G-Index remains the benchmark measure of takeover defenses/quality of corporate governance. As a result, most of the analysis in this

Since not all 24 provisions in IRRC are strongly negatively correlated with firm value, an ideal composite entrenchment index would consist of those provisions that have the most influence on managerial expropriation of shareholders' rights. In this spirit, Bebchuk, Cohen, and Ferrel (2009) constructed an entrenchment (E-index) based on those provisions in IRRC that account for the most negative effect and drive the documented negative relationship between IRRC provisions and firm value. The E-index consists of IRRC provisions that are considered to have the most impact in weakening shareholders' rights. These provisions are: poison pill, supermajority, staggered board, golden parachute, limits to amend charter, and limits to amend bylaws. Poison pills and golden parachutes are anti-takeover devices design to limit and dilute the voting power of a potential acquirer and to increase the cost of firing existing members of the board. Under staggered boards, members serve in overlapping terms, and the overall effect is to enhance managerial expropriation of shareholders' rights, thereby effectively reducing firm value (Bebchuk and Cohen 2005).

Additionally, the announcement of adoption of staggered board is generally accompanied by negative abnormal stock returns (Faleye 2007). Limitations on amendments of a firm's bylaws and charter constraint the ability of shareholders to favorably make changes. Moreover, under supermajority rule a majority of shareholders is required to approve potential merger or take-over. Overall, these provisions enhance managerial entrenchment and are associated with lower firm value (Gompers et al. 2003, Bebchuk et al 2009). The E-Index is constructed by adding one point for each provision, and because firms tend to keep provisions, there is a tendency for the E-Index to be sticky (Johnson, Karpoff, and Yi 2018). The E-Index has a minimum of "0" and a maximum of "6." In the final sample, E-Index has a mean(median) of 2.25(2), a standard deviation of 1.33, and a minimum(max) 0(6). Firms whose E-Index score fall above the median (=2) are classified as "high-entrenched (HE)" while firms whose index is equal to or below median (=2) are classified as "least-entrenched (LE)". A summary of the G-Index and the

paper is done with the E-index as the primary measure of entrenchment and the G-Index as the secondary measure. Where applicable, analysis include firm or industry fixed effects.

E-Index provisions is provided in Table [I].[8]

[Insert Table I About Here]

3.2 Control Variables

Firm-specific controls that are determinants of capital structure are extracted from Compustat database. These variables include: size, tangibility, cash, market-to-book ratio (M/B), profitability, cash flow volatility, and a dummy for dividend-payer. Firm-specific controls are constructed in similar spirit to Lemmon, Roberts, and Zender (2008), and Colla et al. (2013). Firm size is estimated as the natural logarithm of total book assets and serves as an anti-takeover deterrent (Hartford et al. 2008). Firm size is also a proxy for the cost of issuing securities, investment flexibility, and asset-base diversification and is positively associated with debt financing (Whited 1992, Brennan and Hughes 1991, Fazzari and Petersen 1993, Titman and Wessels 1993). Additionally, firm size proxies for the degree of information asymmetry and the cost of external financing. Hence, small firms have a higher probability of liquidation when under financial distress (Ozkhan 1996), and are more likely to have a concentrated debt structure. As a result, a negative relationship should be expected between firm size and debt specialization.

Tangibility is estimated as net property, plants, and equipment scaled by total assets. Tangibility serves as a proxy for collateral and reduce information asymmetry, and as a result is positively associated with debt financing or leverage (Harris and Raviv 1991). However, in the presence of bank monitoring, tangibility is negatively related to leverage. Firms that borrow predominantly with market debt have more tangible assets than those firms that predominantly employ bank debt in their capital structure (Denis and Mihov 2003, Johnson 1997). Profitability is estimated as operating income before depreciation scaled by total assets. Profitability is negatively related to debt financing (Rajan and Zingales 1995).

[8]See: Gompers et al. 2003 and Bebchuk et al. 2009 for detailed discussion of the provisions and construction of the indices.

Market-to-book ratio (MB) is estimated as the market value of equity plus total debt plus preferred stock liquidation value less deferred taxes and investment divided by total asset. MB proxies for growth opportunities and is negatively associated with leverage for firms that have high growth opportunities (Barclay and Smith 1995); this finding is in part to avoid underinvestment problem (Myers 1977). Cash is estimated as cash and short-term investment scaled by total assets and is a proxy for the amount of internal capital or resources. Cash flow is estimated as the standard deviation of operating income scaled by total assets. On average, cash flow serves as a proxy for financial distress and is negatively associated with bank debt (Sufi 2009). Thus, we would expect cash flow to be negatively associated with leverage. Table [II] Panel A presents summary statistics for firm-specific controls.

3.3 Capital Structure: Debt Composition

Under U.S. Regulation S-X and Regulation S-K of the Security Act of 1933, firms are required to report debt composition and debt instruments in their capital structure. Capital IQ uses firms' 10K SEC filings to extract detailed debt structure of the firm. Capital IQ breaks down total debt into seven mutually excusive sub-debts or types: capital leases, commercial paper, term loans, senior bonds-and-notes, subordinate bonds-and-notes, revolving credit facilities, and "other" debt types. These other debt types include deferred credits, trust-preferred securities and fair value adjustments used in hedging contracts.

Table II Panel B provides some summary statistics for each debt type as a fraction of total debt.[9] A majority of firms in the sample (74%) use senior bonds-and-notes for debt financing. Senior bond-and-notes has a mean of 0.45 and a sample median of 0.44. The second most commonly used debt type are term loans with about 72% of the firms in the sample using this type of debt financing. About two-thirds of the firms in the sample employs positive levels of revolving credit facility. The least commonly used and accessed debt type is commercial paper with only about 15% of firms in the sample reporting positive usage.

[Insert Table II about Here]

[9]Summary statistics are consistent with Colla et al. (2013)

4 Methodology

4.1 Measuring Debt Specialization and Creditors Concentration

To estimate (the degree of) debt specialization, we use a similar identification strategy as Colla et al. (2013). We use normalized HHI to compute, at the firm level, the degree of debt specialization. Capital IQ total debt (TD) data can be decomposed into seven mutually exclusive sub-debts or debt types. These seven debt types are: commercial paper (CP), capital leases (CL), term loans (TL), senior bonds-and-notes (SBN), subordinate bonds-and-notes (SUBN), revolving credit lines or facilities (RC), Other debt (Others). To construct HHI, we first compute the sum of squares of each debt type scaled by total debt as in Equation [1] below and then compute the normalized HHI index.

$$\begin{aligned} SS_{it} = (CP_{it}/TD_{it})^2 + (RC_{it}/TD_{it})^2 + (TL_{it}/TD_{it})^2 + (SBN_{it}/TD_{it})^2 \\ +(SUBN_{it}/TD_{it})^2 + (CL_{it}/TD_{it})^2 + (Other_{it}/TD_{it})^2 \end{aligned} \tag{1}$$

$$HHI_{it} = \frac{SS_{it} - (1/7)}{1 - (1/7)} \tag{2}$$

The normalized HHI is then computed as in Equation [2] above, such that HHI equals to "1" if a firm finances with a single debt type or borrow from a single lender. HHI equals to "0" if a firm employs each debt type in equal proportion. Higher degrees of HHI are associated with higher levels of debt specialization and higher levels of creditors concentration. Lower degrees of HHI are associated with higher dispersion in debt structure and borrowing from multiples lenders. Because different debt types tend to be held by different lenders, HHI is a plausible proxy for creditors concentration.[10] That is, on average a firm tend to borrow each debt type from a single lender (Colla et al. 2013).

[10]Note that this assumption is standard and is consistent with extant literature. See Colla et al. 2013; Lou and Otto 2018.

To assess the empirical importance of debt concentration on firms' capital structure decisions, we examine whether firms with entrenched management have a greater proclivity to use multiple debt types in their capital structure. Specifically, we estimate the following tobit regression model:

$$HHI_{it} = \beta_0 + \beta_1 GovtIndex_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it} \tag{3}$$

Where i indexes firms and t indexes time (years). HHI_{it} is computed as in Equation [2] above. $GovtIndex_{it}$ is a measure of quality of corporate governance. We use both the E-Index and the G-Index to proxy for quality of corporate governance, therefore, the variable $GovtIndex_{it}$ is either the E-Index or the G-Index. $\mathbf{X_{it}}$ is a vector of firm specific controls: size, tangibility, market-to-Book (MB) ratio, profitability, cash, cashflow volatility, an indicator variable equals to "1" if a firm is a dividend payer and equals "0" if otherwise. Firm size is estimated as the natural logarithm of total assets.

Neither the firm nor industry fixed effects have been included since the likelihood estimator of tobit model with fixed effects yields biased and inconsistent estimates.[11] ϵ_{it} is an idiosyncratic error term. For our second hypothesis, we examine sources of debt and we estimate the following tobit regression model (an augmented version of Equation 3 above). In this model "Entrenched" is "Entrenched" is an indicator variable equals to "1" if a firm's E-index is greater than or equal to 3 based on Bebchuk et al. 2009 and "Debt_type" is the source of debt; that is either public lenders (market debt) or private lenders (bank debt) as in the extant literature (Colla et al. 2013, Park 2000). Effectively, the interaction term captures the impact of debt source(s) on debt specialization for firms under entrenched management relative to firms that are well-governed. ϵ_{it} is an idiosyncratic error term.

$$HHI_{it} = \beta_0 + \beta_1 Debt\_type_{it} + \beta_2 Entrenched + \beta_3 Entrenched X Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it} \tag{4}$$

[11] In untabulated results, we use both RE tobit model and CRE tobit model, the estimates are generally consistent with the reported estimates. Note that using RE Tobit and CRE Tobit model allows for correlation between fixed effects and other firm-level controls but, due to difficulty in identifying the distribution of firm specific effects, neither the RE tobit nor CRE tobit necessarily yield the desired asymptotic properties.

5 Empirical Evidence

5.1 Univariate Evidence on Corporate Governance and Debt Specialization

In this section, we first provide univariate evidence on the relationship between debt specialization, creditors concentration, and corporate governance. Consistent with prior literature (Colla et al. 2013, Xiao 2017, Lou and Otto 2018), we compute bank debt as the sum of revolving line of credit and term loans, and we compute market debt as the sum of commercial paper, senior bonds-and-notes, and subordinate bonds-and-notes. Both bank debt and market debt constitute about 88.6% of total debt in the sample. On average, high-entrenched firms' total debt consists of 48.8% market debt and 40.7% bank debt. While least-entrenched firms' total debt consists of 52.3% market debt and 35.6% bank debt.

Table III presents the mean of each sub-debt or debt type by E-Index. Across the E-Index scale, the most commonly used sub-debts or debt types are: senior notes-and-bonds (45%), revolving credit lines (15%), and term loans (23%). On average, debt specialization as measured by HHI is negatively related to the entrenchment index (E-Index). Higher levels of E-Index are associated with lower degrees of debt specialization (HHI).

[Insert Table III About Here]

Following Colla et al. (2013) and in order to demonstrate significant usage of each debt type, we first impose and require that a firm usage of a sub-debt or debt type be at least greater than 30% of a firm's total debt. Note that if a representative firm in the sample were to employ all debt types in equal proportions, each debt type would constitute only 14.3% of total debt. Requiring that a firm usage of a single debt type be at least 30% would imply that a firm usage of a single debt type is at least twice as much as its usage of any other debt type. The goal of this exercise is to test and demonstrate a tendency towards creditors concentration and debt specialization. The key insight is that firms under entrenched management are less likely to have a concentrated debt structure. That is,

relative to well-governed firms, weakly-governed firms employ multiple debt types in their capital structure and as a result have a lower degree of debt specialization.

Table IV A reports the mean of each debt type as a per cent of total debt. Table IV A Panel A reports conditional debt structure for least-entrenched firms. Table IV Panel B reports conditional debt structure for high-entrenched firms. A firm is classified as "least-entrenched" if its entrenchment score is equal to or less than 2 on the E-index scale (Bebchuk et al. 2009), and a firm is classified as "high-entrenched" if its entrenchment score is at least 3 on the E-index scale. In the full-sample, least-entrenched firms constitute about 58.5% (6,205) of firm-year observations and high-entrenched 41.5% (4,671) of firm-year observations.

In the case of least-entrenched firms, the conditional mean usage of each debt type lies between 56% and 83% while the conditional mean usage of each debt type lies between 43% and 82% for high-entrenched firms. These results suggest that high-entrenched firms are less likely to specialize relative to least-entrenched firms. In Table IV Panel A, least-entrenched firms with significant usage of commercial paper are also likely to have high usage of senior bonds-and-notes (30%). Least-entrenched firms with significant usage of term loans are also more likely to employ senior bonds-and-notes (12%). Least-entrenched firms with significant usage of "Other" debt types are also significant users of senior bonds-and-notes (13%). Overall, senior bonds-and-notes are the second most commonly employed debt type by least-entrenched firms that employ more than 30% of their total debt from any single debt type. The results in Panel B also suggest that on average senior bonds-and-notes are the second most commonly employed debt type by high-entrenched firms.

Table IV B presents univariate comparative analysis of each debt type usage between least-entrenched firms and high-entrenched firms. We first examine whether there are differences in the conditional mean usage of each debt type between least-entrenched firms and high-entrenched firms. The condition is the requirement that a firm usage of a debt type be at least 30% of its total debt usage. The conditional mean usage of senior bonds-and-notes are 0.792(0.767) for least-entrenched (high-entrenched) firms with a t-test

of 3.87. The t-statistics for difference in conditional mean usage of subordinate bonds-and-notes, commercial paper, and revolving line of credit are 3.69, 2.63 and 2.11 respectively. The results suggest that least-entrenched firms on average specialize at a higher rate than high-entrenched firms. That is, while least-entrenched firms are more likely to have a concentrated debt structure, high-entrenched firms are more likely to have a dispersed debt structure. Overall, the results support our main hypothesis that managerial entrenchment is inversely related to debt specialization.

[Insert Table IV[A,B] About Here]

5.2 Multivariate Analysis

5.2.1 Corporate Governance and Debt Specialization

In this section, we provide cross-sectional evidence and document the relationship between corporate governance and debt concentration/specialization. The intuition is as follows: when a firm specialize by borrowing predominantly from a few creditors, it incentivizes creditors to invest more in monitoring activities. As a result, creditors can properly curb and moderate managerial expropriation of wealth. And because managers have a strong incentive to extract private benefits of control, we would expect entrenched managers to borrow from multiple creditors and employ multiple debt types, thereby opportunistically exploiting the coordination failure and free riding problem amongst a large number of creditors.

To test this conjecture, we follow a similar estimation method to that of Colla et al. (2013). The dependent variable is HHI constructed as in Equation [2] above. The independent variables include all the commonly used determinants of debt structure: size, tangibility, profitability, market-to-book ratio, cash, cash flow volatility (Colla et al 2013, Rauh and Sufi 2010, Rajan and Zingales 1995). The variable of interest in Table V is the coefficient of the E-Index which proxy for the degree of managerial entrenchment. Higher levels of the index are associated with higher levels of managerial entrenchment (Bebchuk et al. 2009). Model [1] presents the estimates for the full set of firms in the sample while

Model [2] and Model [3] presents sub-sample analysis. Model [2] presents the estimates for least-entrenched (LE) firms and Model [3] presents the estimates for high-entrenched (HE) firms.

Because, by construction the dependent variable HHI is censored, i.e., truncated at zero and one, we employ a tobit regression model. The model is characterized as in Equation [3] above. Our empirical strategy is consistent with extant literature (Colla et al. 2013, Lou and Otto 2018). Model [1] of Table V reveals that there is a negative relationship between the E-Index (Entrenchment) and debt specialization. The coefficient (t-stat) of E-Index is -0.0066(-2.78) and is significant at the 1% level even after controlling for firm-specific characteristics. Economically, for each unit increase in the E-Index, there is a decline of about 0.66 percentage point in HHI. This result that managerial entrenchment is inversely related to debt specialization is the key finding in this paper and reflects existence of high information asymmetry between managers and creditors that confounds the cost of external financing. Entrenched managers optimally choose to have a disperse debt structure so as to increase monitoring cost and maximize private benefits of control. The coefficient of profitability is negative and is statistically significant, indicating that firms have a preference for using retained earnings over debt, a result that is consistent with pecking order theory of capital structure (Myers and Majluf 1984).

Firm size proxies the ability of a firm to issue debt. The coefficient of firm size is negative and statistically significant at 1%, suggesting that large firms are more likely to diversify their debt structure and employ multiple debt types. Large firms have lower cost of debt issuance due to their ability to provide collateral and a lower information cost (Blackwell and Kidwell 1988, Fama 1985). The large collateral base and low cost of debt issuance imply that large firms are less likely to specialize.

Model [2] presents the estimates for least-entrenched firms. A firm is classified as least-entrenched if it has an E-Index score of 2 or lower (Bebchuk et al. 2009). The coefficient (t-stat) of E-Index is 0.0194(3.62). The result suggests that firms with strong corporate governance have a higher bargaining power and are more likely to employ predominantly

one debt type in their capital structure (Colla et al. 2010, Lou and Otto 2018). Model [3] provides estimates for high-entrenched firms, i.e., Firms whose E-Index score is 3 or higher. The coefficient (t-stat) of E-Index is -0.0210(-3.01). The evidence suggests that high-entrenched firms are less likely to specialize. In effect, firms with weak corporate governance have a lower bargaining power, and entrenched managers have strong incentives to extract private benefits of control. Thus, firms under entrenched management are more likely to employ multiple debt types in their capital structure. This is, in part, because entrenched managers can effectively free ride by exploiting the coordination failure amongst multiple creditors (Bris and Welch 2005). This coordination failure results from higher coordination and monitoring costs associated with a large number of creditors (Tirole 2010, Diamond 1984, 1991).

Model [4]-[6] present the estimates with additional firm-specific controls. These controls are: cash flow volatility, an indicator for dividend payer, cash and book leverage. Model [4] presents the estimates for all firm-year observations while Model [5] and Model [6] present estimates for least-entrenched and high-entrenched firms, respectively. Cash, which proxies for internal resources (Lee 2016), is positive and statistically significant across all models. The coefficient of E-Index is negative for the average firm in the sample, the coefficient of E-Index is positive for least-entrenched firms, and the coefficient of E-index is negative for high-entrenched firms. Moreover, the E-Index is statistically significant at the 1% level across all the three models. The results indicate that debt specialization is inversely related to managerial entrenchment. Higher levels of managerial entrenchment are associated with lower degree of debt specialization as measured by HHI. These results are consistent with the extant literature (Colla et al. 2013, Lou and Otto 2018).

Overall, the results are consistent with the notion that entrenched managers prefer to borrow from multiple creditors as it weakens each creditor's ability to monitor intensively and to renegotiate. Under corporate bankruptcy laws, creditors have the power to expropriate firm assets so as to meet outstanding financial claims (Rajan and Zingales 2003, Watson and Ezzamel 2005). Thus, debt covenants are designed to limit managerial over-reach and

to protect creditors in case of bankruptcy or during time of financial distress. High degree of debt specialization implies that a concentrated creditor base has a stronger re-negotiation position. Ex-ante, entrenched managers prefer to use multiple sources of debt financing and employ multiple debt types so as to minimize creditors' ability to assert restrictions on managerial overreach and extraction of private benefits of control.

Furthermore, limited liability insulates managers from direct responsibility for unrecoverable debts (Watson, 2013). As a result, a weakened creditor base may incentivize entrenched managers to undertake excessive debt-financed projects and accrue private benefits of control. Additionally, a concentrated debt structure strengthens the rights protection of creditors and might result in costly external financing for high-entrenched firms. Firms under entrenched management would ex-ante avoid or minimize expected bankruptcy costs via disperse debt structure. This result is consistent with the hypothesis that, when creditors' rights are strengthened, firms are less likely to employ secured debt financing in their capital structure (Vig 2013).

[Insert Table V About Here]

5.3 Effects of Bank Debt and Market Debt on Specialization

The results in Table V establish that debt specialization is inversely related to managerial entrenchment. Nevertheless, both the type of debt and the source of debt financing directly affect managerial decisions whether to specialize or not to. Under the Diamond (1991) life cycle model, firms substitute between market (public) debt and bank debt. Johnson (1997) also finds that firms simultaneously borrow from multiple sources of debt. Furthermore, creditors coordination failure would be more severe amongst public lenders than amongst bank lenders (Asquith et al. 1994, Gertner and Scharfstein 1991). This finding would imply that market (public) debt would be positively related to debt specialization.

In order to examine how a manager's choice of either bank (private) debt or market (public) debt affects debt specialization, we aggregate Capital IQ debt types into two main types of debt: bank debt and market debt. Consistent with the extant literature (Colla

et al. 2010), we compute bank debt as the sum of term loans and revolving credit lines and we compute market debt as the sum of commercial paper, senior notes-and-bonds, and subordinate bonds-and-notes. Our univariate results show that bank debt and market debt combined constitute 88.6% of total debt in the sample. The remaining 11.4% of total debt consists of capital leases and "other" debt types.

To demonstrate heterogeneity in the usage of market debt and bank debt, we first carry out univariate analysis. We test the difference in mean usage of bank debt and market debt conditional on the level of managerial entrenchment (E-Index). The univariate evidence outlined in Table VI A suggests that firms significantly use market debt over bank debt across all entrenchment index values. The results in Table VI A are consistent with those in the extant literature and reflect high contracting cost in bank debt financing (Park 2000, Lee 2016, and Diamond 1984, 1991).The evidence also suggests that both market debt and bank debt are negatively related to managerial entrenchment. Both the average bank debt and the average market debt decline with increase in the E-Index score.

Figure [1] provides time-series evidence of market debt and bank debt utilization conditional on the entrenchment index (E-Index). The evidence demonstrates that market debt constitutes a larger fraction of firm total debt for both the least-entrenched and the high-entrenched firms because obtaining bank debt requires costly state verification via monitoring and screening relative to market debt (Cantillo and Wright 2000, Diamond 1991, Chemmanur and Fulghieri 1994). As a result, firms have relatively higher amount of market debt in their capital structure.

Table VI B examines the effects of bank debt and market debt on debt specialization. Because the current period E-Index is highly correlated with future years E-Index,[12] "Entrenched" is an indicator variable equals to "1" if a firm E-index is greater than or equal to 3.[13] Model [1] presents estimates for all firm-year observations. The coefficient

[12]This assumption is consistent with literature because in general most takeover defenses are sticky (E-Index). See Johnson, Karpoff, and Yi (2018).

[13]To construct a continuous dataset, we follow Bebchuk et al. (2010) and fill the missing years by assuming that the provisions in any given year were in place in the years preceding the publication date.

(t-stat) of entrenched is -0.0238(-3.77) and is statistically significant at the 1% level. The result establishes that managerial entrenchment is inversely related to debt specialization. Firm size is negatively related to debt specialization. A one unit increase in firm size is associated with a 0.0067 unit reduction in the predicted value of HHI. Economically, a one standard deviation increase in firm size is associated with a reduction of 0.0084 (0.012%) in debt specialization. Because of the large collateral base and low cost of debt issuance, large firms are less likely to specialize and instead employ multiple sources of debt in their capital structure. Nevertheless, observe that large firms under entrenched management are less likely to specialize; the result reflects managerial opportunism.

The coefficient of profitability is negative, indicating that a one unit increase in profitability is associated with about 0.0097 reduction in the expected HHI. Economically, an increase of one standard deviation in profitability reduces debt specialization by 0.0041, a decrease of 0.64%. Profitable firms prioritize deployment of internal capital, such as retained earnings over debt issuance (Myers and Majluf 1984). Tangibility proxies for cost of bankruptcy and is positively related to debt specialization, reflecting reduce cost of liquidation and ability of firms to provide collateral (Harris and Raviv 1991). Economically, a one standard deviation increase in tangibility is associated with an increase of 0.0054(0.7%) in the degree of debt specialization. Market-to-book (MB) ratio is a proxy for growth opportunities. The coefficient of MB while negative is not statistically significant. Thus, there is no empirical evidence to support the notion that debt specialization changes with firm growth opportunities.

In Model [2], the coefficient (t-stat) of market debt is 0.0543(7.02), which is statistically significant at 5% level. The result indicates that market debt is positively related to debt specialization. Economically, a one standard deviation increase in market debt increases debt specialization by about 0.2070, which is an increase of 29.6% over the HHI unconditional mean. The results support the theoretical and empirical findings that market debt has fewer restrictive covenants and lower contracting cost (Diamond 1991, Park 2000, Rauh and Sufi 2010, Hackbarth and Mauer 2012). The observe positive relationship between market debt

and debt specialization is, potentially, attributable to the ease of refinancing and of firms finding it more cost effective to employ market debt.

In Model [3], the coefficient of bank debt is -0.0489(-6.13) and the coefficient is statistically significant at the 1% level. The results in Model [3] suggest that bank debt is negatively related to debt specialization. Banks are efficient monitors and mitigate information asymmetry; as a result, significant bank debt in a firm's capital structure minimizes the conflict between managers and creditors (Diamond 1984, 1991). The potential conflict between bank lenders and entrenched managers arises because entrenched managers are less likely to cede control rights while bank debt has restrictive covenants designed to penalize managerial opportunism (Myers 1977).Table VI C shows that the interaction term between bank debt and entrenched is negative, indicating that entrenched managers are less likely to specialize. This result is consistent with the notion that banks' monitoring activities intensify with the presence of other debt types such as subordinate notes-and-bonds (Park 2000). Banks effectively monitor the scope of managerial opportunism; as a result, the propensity to use bank debt decreases as firm's management becomes more entrenched.

The results from Table VI C indicate that Bank debt effectively serves as an instrument that transfer monitoring and control rights from management to creditors (Tirole 2010, Diamond 1984, 1991). Thus, entrenched managers have strong proclivity and incentive to insulate themselves from bank monitoring. Overall, the restrictive covenants and high contracting costs embedded in bank debt financing serve as constraints to debt specialization. Entrenched managers have a strong incentive to accrue private benefits of control, adopt entrenching provisions, and inefficiently allocate corporate resources (Jensen 1986, Jensen and Meckling 1976). The fact that managerial entrenchment is negatively related to firm value (Gompers et al. 2003) while banks' willingness to renegotiate is positively related to firm value suggests that bank debt would be negatively related to debt specialization. Entrenched management optimally choose disperse debt structure so as to minimize external monitoring and maximize extraction of private benefits of control. The estimates in Table VI

B are consistent with the hypothesis that bank debt is inversely related to debt specialization and that market debt is directly related to debt specialization.

[Insert Table VI[A,B,C] About Here]

6 Robustness Checks

6.1 Alternative Measure of Debt Specialization

A potential concern with using HHI in Equation [2] above is that the measure implicitly assumes that the coordination cost is constant across all seven capital IQ debt types. However, it is plausible that there is variation in coordination costs even within one debt type. For example, one might expect that the coordination costs for public debt is greater than the coordination costs for bank debt due to costly state verification embedded in bank debt financing. Motivated by this concern and in similar spirit to Colla et al (2013), we construct a debt concentration measure (EXCL90), which takes the value of "1" if a firm has at least 90% of its total debt in one debt type. An EXCL90 value equals to "1" indicates that a firm employs only a single debt type in its capital structure.

Table VII A presents estimates in which EXCL90 is the dependent variable. All regressions include firm-specific controls. The variables of interest are the interaction of bank debt with the entrenchment index and the interaction of market debt with the entrenchment index. Note that "Entrenched" is an indicator variable equals to "1" if a firm's E-Index score is strictly greater than 2 (median). Model [1] and Model [2] present estimates from probit regression while Model [3] and Model [4] present results from a logit regression model. The estimates across all the four models are consistent with our main hypotheses.

In Table VII B, we address the concern that our results might be upward biased. This bias could either be because of the dispersion in the sources of debt across firms. This is particularly a concern in the case of our second hypothesis that market debt is positively related to debt specialization while bank debt is negatively related to debt specialization.

To address this concern, we use multinomial logit and multinomial probit models as two alternative models and re-test our main hypotheses. The dependent variable in Table VII B is EXCL30. EXCL30 is a categorical variable that is based on debt concentration levels and divides our sample into three main categories: Lower, Middle and Upper. EXCL30 equal to "1" (Lower) if HHI level is less than 33%. EXCL30 is equal to "2" if HHI level is greater than 1/3 but less than 67%, and it is equal to "3" (Upper) if it is greater than 67% of our HHI level. The regression results for category "2" and category "3" are reported in Table VII B. Note that since we are using a multinomial logit and a multinomial probit model, category "1" serves as the referent level or the base model. The results in Table VII B demonstrate that our main results are robust to alternative empirical methods or specifications. Overall, Table VII B supports our first hypothesis that managerial entrenchment is negatively related to debt specialization. The results also support our second hypothesis that market debt is positively related to debt specialization while bank debt is negatively related to debt specialization.

[Insert Table VII-(A,B) About Here]

6.2 Accounting for the 2008 Financial Crisis

Another concern is that the findings in Table VI can be explained away by firms' exposure to uncertainty shocks, i.e., during periods of high uncertainty shocks firms are more likely to concentrate debt. This concentration of debt can be explained by either increase in cost of external financing or increase in the probability of bankruptcy during periods of high uncertainty shocks. To mitigate this concern, we examine the effect(s) of uncertainty shock following the Lehman Brothers' 2008 bankruptcy, , which is generally considered to be the onset of the 2008 financial crisis.

In Table VIII, "Post" is a dummy variable indicating years after the 2008 financial crisis. The coefficient of the variable "Post" is positive across all four models, suggesting that the post-crisis period is characterized by an increase in debt concentration. However, the interaction term "PostxEntrenched" is negative, suggesting that entrenched management continue to have a disperse debt structure. That is, firms with entrenched

management continue to employ multiple debt types in their debt structure. Furthermore, the interaction of post-crisis period term, entrenchment and market debt (bank debt) is negative, which is consistent with the estimates in Table VI. These findings are inconsistent with the explanation that the results in Table VI are potentially attributable to and driven entirely by macroeconomics uncertainty shocks.

[Insert Table VIII About Here]

6.3 Omitted Variable Bias

A potential concern in the analysis is that managers might base their decision whether to specialize on the pre-existing firm debt level. This concern would imply an upward bias in the coefficient of entrenchment index. That is, the effect of managerial entrenchment can be explained away by controlling for the pre-existing debt concentration or trend in firm's debt holding.

To mitigate this concern, we first lag the HHI by two years and by four years.[14,15] We then estimate a tobit model with firm-level controls. Then we document the relationship between lagged HHI and current period debt concentration. The coefficient of entrenchment is negative and the coefficient is statistically significant at the 1% level. The result suggests that our estimations are not significantly impacted by omitted variable bias. Overall, the results are consistent with our main hypothesis that entrenched managers optimally choose to have a disperse debt structure. The estimates are also consistent with the second hypothesis, i.e., while market debt is positively related to debt specialization, bank debt is negatively related to debt specialization, even after controlling for the pre-existing debt or the pre-existing trend in firm's level of debt concentration.

[Insert Table IX About Here]

[14] See Bradley and Chen 2011, Dittmar and Mahrt-Smith 2007.

[15] In untabulated analyses, we also find that the results are consistent when using L1.HHI.

6.4 Further Empirical Evidence on Debt Specialization

A major concern with using the capital IQ data is that there are some missing outstanding debt data. As a result, empirical work using an alternative source of data might provide some additional insight that would bolster our results.[16] To address this concern, we re-investigate the relationship between managerial entrenchment and debt specialization using out-of-sample data, specifically Compustat constructed debt variables. To examine the effect of managerial entrenchment on debt structure, we start by constructing a HHI based on Compustat four sub-debt or debt types. The HHI is constructed as in Equation [1] and Equation [2] above. However, instead of the seven capital IQ debt types, we use the four compustat sub-debt or debt types. These debt types are bank debt, capitalised leases, bonds-and-notes, and convertible debt.

Table X A presents results from a tobit regression model with HHI as the dependent variable. The independent variables are the E-index, firm size, tangibility, profitability, market-to-book ratio, and cash flow volatility. The results in Model [1] show that debt specialization is inversely related to the entrenchment index (E-Index). The coefficient (t-stat) of E-index is -0.0075(-3.37) and is statistically significant at the 1% level. To account for marginal effects of each debt type, we include in Models [2],[3],[4] and [5] bonds-and-notes, capitalised leases, bank notes, and convertible debt, respectively. The results in Model [5] suggest that bank debt is negatively related to debt specialization. These results are consistent with those reported in Table VI above when using capital IQ data. Overall, the empirical evidence in Table X A is consistent with the main hypothesis of this paper, which is that managerial entrenchment is inversely related to debt specialization.

In Table X B, we use the Gompers, Ishii and Metrick index (G-Index) as the proxy for managerial entrenchment. The results are consistent with our main results and supports our main hypothesis. Overall, managerial entrenchment is negatively related to debt specialization across all the Models. In Model [5] the coefficient (t-stat) of bank debt is -0.0897(-11.41), which is statistically significant at the 1% level. This result suggests that

[16] We thank an anonymous referee for pointing this out.

bank debt is negatively related to debt specialization. Firms with high level of bank debt are less likely to concentrate debt. The results are consistent with our key finding in Table V: firms under entrenched management have a higher proclivity to employ multiple debt types and have disperse debt structure.

[Insert Table X A & B About Here]

7 Conclusion

While a vast body of corporate finance literature examines the conflict between shareholders and management, there is little empirical work on the conflict between creditors and management. In this paper, we first explore how managerial entrenchment affects debt structure. The results provide a comprehensive picture of how corporate governance influences debt choice(s). We start by providing cross-sectional evidence on the heterogeneity of debt structure conditional on corporate governance measures. We then construct a HHI which proxies for degree of debt specialization and for degree of creditors concentration. Higher values of HHI are associated with a tendency to concentrate debt and a tendency to employ fewer debt types. Our key contribution is that managerial entrenchment is inversely related to debt specialization. This result suggests that entrenched managers employ multiple debt types in their firms' capital structure and borrow from multiple creditors. Because each creditor has a small claim, the marginal cost of monitoring outweighs the marginal benefit of extracting the full value of claims. As a result, each creditor has little incentive to monitor and renegotiate debt. Hence, entrenched managers exploit the coordination failure and free-riding problem amongst multiple creditors.

Second, we aggregate sources of debt financing into two major types of lenders: Market lenders and Bank lenders. We show that market debt is positively related to debt specialization. This is an important contribution as it shows that by borrowing from a few lenders, firms' managers are credibly signalling and transferring some control rights to

market lenders. As a result, market lenders have an incentive to monitor and participate in debt renegotiation. In contrast, we find that bank debt is negatively related to debt specialization. Bank lenders are able to effectively assess information, monitor, and contractually extract claims. For bank lenders, any additional benefit from debt specialization would be marginal.

Our results imply that the policymakers and practitioners need to account not only for changes in the firm's total debt level but also for changes within firm's debt composition. Understanding managers' choice of debt structure can incentivize creditors to effectively monitor and use debt concentration as a form of commitment device that transfers some control rights from managers to creditors. the findings suggest that creditors can discipline management through debt specialization. Policymakers can also introduce new guidelines or policies that would require that firms make information on debt composition, sources of debt, and any changes in debt composition readily available in the income statement. These policies would supplement the current practice which tends to overemphasize total debt level (Short-term debt+Long-term debt) over debt composition in most reports and communications to shareholders. These policies would lead to more efficient capital markets.

Our study is limited to and mainly focuses on the effects of corporate governance on debt choice and the debt specialization. However, our findings point to potential new directions for future research in this area. Moving forward, there needs to be an examination of the role of corporate governance as it relates to debt structure during business cycles and other market shocks. The ongoing COVID-19 pandemic provides one potential avenue to examine this relationship. Additionally, while we are limited by the availability of data, empirical tests on debt pricing, debt covenants, debt contracts, and debt maturity structure would complement our findings and provide additional insights on the channels through which corporate governance impacts debt structure.

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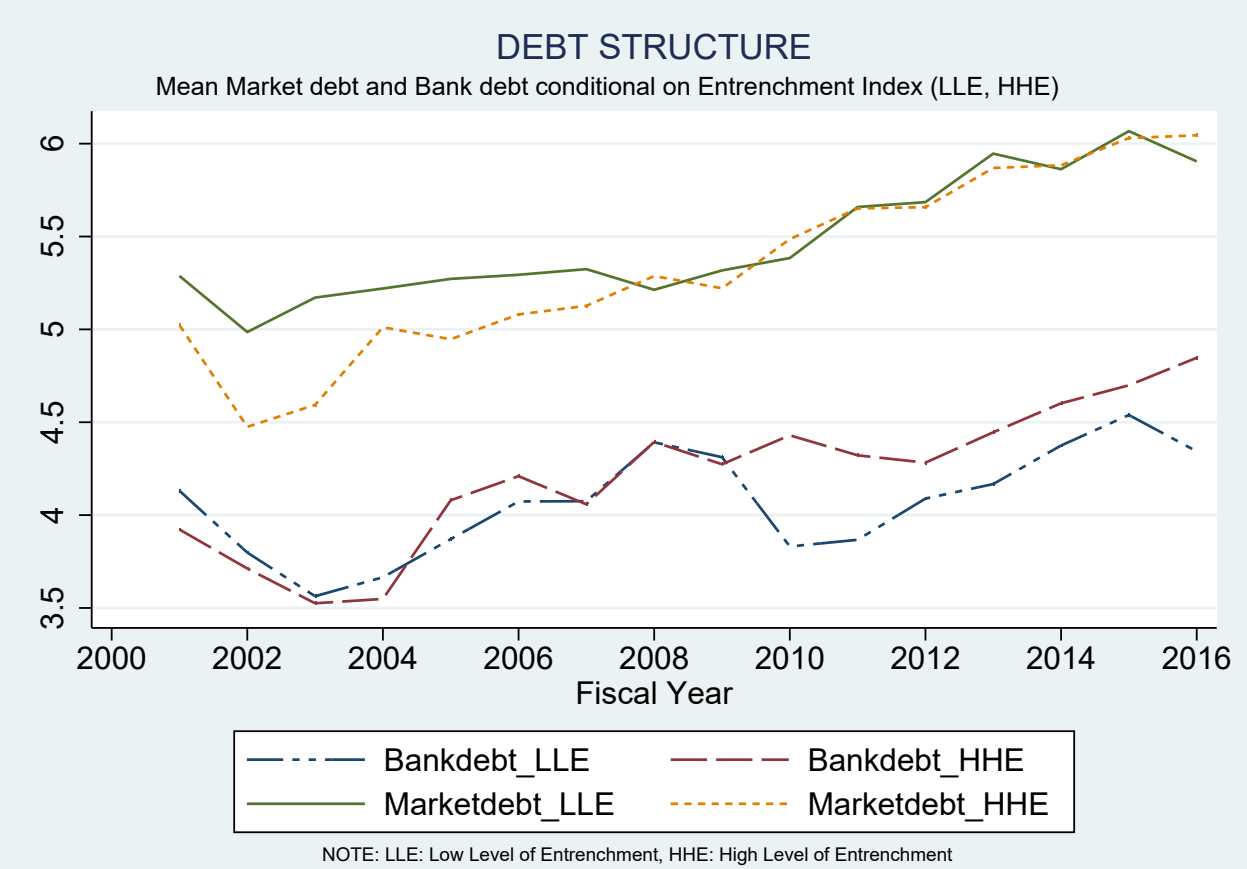

Figure 1: ***Bank Debt and Market Debt***

TABLE I: Summary of the Provisions of the G-Index and the E-Index

Group	Provisions	Key Attribute(s)
G-Index		
Delay	*Blank Check, Classified board, Special meeting, Written consent*	Slow down a hostile bidder
Protection	*Compensation plans, Contracts, Golden parachutes, Indemnification, Liability, Severance*	Compensation/insure managers' against liability
Voting	*Bylaws,Charter, Cumulative voting, Secret ballot, Supermajority, Unequal voting*	Protect shareholders' rights in elections
Other	*Anti-greenmail, Directors' duties, Fair price, Pension parachutes, Poison pill, Silver parachutes*	Uncategorized firm-level provisions
State	*Anti-greenmail law, Business combination law, Cash-out law, Directors' duties law, Fair price law, Control share acquisition law*	State-level laws/Jurisdiction of incorporation laws
E-Index		
Entrenchment Index	*Staggered board, Limits to amend bylaws, Limits to amend charter, Supermajority, Golden parachutes, Poison pill*	Subset of the G-Index/Strongest impact on firm's value.

This table lists all the corporate governance provisions used in computing the G-Index and the E-Index. Our classification and grouping of these entrenchment provisions are based on the extant literature. See Gompers et al. (2003) and Bebchuk et al. (2009) for detailed discussion of these provisions.

TABLE II: Summary Statistics

	Mean	**Median**	**St.dev**	**25**th	**75**th
Firm-Level Variables:		PANEL	A		
Cash	0.1367	0.0834	0.0016	0.0326	0.1823
Profitability	0.1072	0.1315	0.0071	0.0867	0.1796
MB	1.8289	1.2579	0.0943	0.8922	1.8677
Tangibility	0.2987	0.2168	0.0024	0.1050	0.4336
Market Leverage	0.2266	0.1820	0.0020	0.0836	0.0342
Book Leverage	0.2782	0.2383	0.6354	0.1280	0.3644
Ln(Size)	7.8132	7.7668	1.7971	6.6865	8.9673
Cashflow Volatility	0.0813	0.0413	0.0055	0.0257	0.0648
Capital IQ Debt Types:		PANEL	B		
Term Loan	0.2284	0.0027	0.3397	0.0000	0.3894
Commercial Paper	0.0124	0.0000	0.0608	0.0000	0.0000
Sen. Bonds-and-Notes	0.4492	0.4370	0.4057	0.0000	0.8772
Sub. Bonds-and-Notes	0.0466	0.0000	0.1626	0.0000	0.0000
Capital Leases	0.0417	0.0000	0.1645	0.0000	0.0043
Revolving Credit	0.1497	0.0000	0.2804	0.0000	0.1449
Other Debt types	0.0721	0.0000	0.2017	0.0000	0.0140

This table presents the descriptive statistics for the sample. We drop utility sector (SIC codes 4900-4949) and financial sector (SIC codes 6000-6999). We require that a firm exists throughout the whole sample period (2001-2016). We also require that a firm has a governance rating on both Bebchuk et al. (2009) and Gompers et al. (2003) indices. The final data set consists of 824 unique firms. Firm-level variable construction is outlined in section 3. Panel B presents the "Debt Types" and the data is extracted from Capital IQ database.

TABLE III: Corporate Governance and Debt Structure

	TL	**CP**	**SBN**	**SUBN**	**CL**	**RC**	**Others**	**HHI**
E-INDEX	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
0	0.2018	0.01540	0.4395	0.0486	0.0348	0.1717	0.0882	0.6699
1	0.2145	0.01536	0.4815	0.0442	0.0574	0.1266	0.0606	0.7391
2	0.2250	0.01080	0.4596	0.0497	0.0371	0.1336	0.0841	0.7024
LE	**0.2174**	**0.0131**	**0.4622**	**0.0478**	**0.0427**	**0.1389**	**0.0779**	**0.7070**
3	0.2483	0.0067	0.4314	0.0450	0.0472	0.1494	0.0719	0.7092
4	0.2328	0.0161	0.4298	0.0494	0.0283	0.1799	0.0638	0.6615
5	0.2909	0.0087	0.4071	0.0315	0.0460	0.2003	0.0156	0.6459
6	0.0079	0.0117	0.4395	0.0029	0.0166	0.1890	0.0316	0.6778
HE	**0.2431**	**0.0115**	**0.4317**	**0.0449**	**0.0403**	**0.1640**	**0.0645**	**0.6880**

This table presents summary statistics of each debt type conditional on the E-Index scale. The table paints a clear picture of statistical dispersion of each debt type across entrenchment index rating/score. The row "LE" reports the weighted means of least-entrenched (LE) firms. These are firms whose E-Index is =< 2, and the row "HE" reports the weighted means of high-entrenched (HE) firms. These are firms whose E-Index is >= 3. Note that on average HHI decreases with increase in E-Index scale

Table IV A: Conditional Debt Type Usage: Least-Entrenched vs. High-Entrenched Firms

	TL	**CP**	**SBN**	**SUBN**	**CL**	**RC**	**Others**
Least-Entrenched			**Panel**	**A**			
TL> 0.30	**0.71173**	0.01437	0.07137	0.10274	0.07426	0.12179	0.10223
CP> 0.30	0.00209	**0.56433**	0.01720	0.00003	0.00000	0.00136	0.00844
SBN> 0.30	0.12235	0.39228	**0.79213**	0.10287	0.07852	0.11878	0.13449
SUBN> 0.30	0.02355	0.000355	0.01636	**0.67492**	0.00225	0.03185	0.02649
CL> 0.30	0.01957	0.002787	0.01590	0.01223	**0.82826**	0.014822	0.00394
RC> 0.30	0.08349	0.003144	0.05152	0.08958	0.01492	**0.69859**	0.03838
Others> 0.30	0.03722	0.02272	0.03553	0.01763	0.00179	0.01281	**0.68602**
High-Entrenched			**Panel**	**B**			
TL> 0.30	**0.71642**	0.02699	0.08145	0.15344	0.04811	0.09305	0.11253
CP> 0.30	0.00213	**0.43499**	0.01814	0.00008	0.00377	0.00033	0.01484
SBN> 0.30	0.12309	0.43537	**0.76739**	0.10554	0.05629	0.16584	0.12956
SUBN> 0.30	0.03467	0.00000	0.01542	**0.59263**	0.00000	0.03228	0.03099
CL> 0.30	0.01753	0.01386	0.01367	0.00495	**0.82010**	0.02146	0.00831
RC> 0.30	0.07333	0.00771	0.07485	0.09168	0.06391	**0.67128**	0.04197
Other> 0.30	0.032931	0.08107	0.02908	0.05093	0.00778	0.01576	**0.66180**

This table presents conditional usage of each debt type. In each row, we require that a usage of each debt type be greater than 30% of total debt.This requirement means that a conditional usage of a debt type is at least twice as much as when a firm employs all debt types in equal proportions. Diagonal values indicating the degrees of debt specialization are highlighted. Panel A of the table presents statistical means for the least-entrenched firms (E-index <= 2). Panel B presents estimates for high-entrenched firms (E-Index>= 3).

TABLE IV B:Test of Differences in Mean Usage of Debt Type: LE vs HE

	LE	**HE**	**t-test**	**LE**	**HE**	**t-test**
Debt Type:	Mean	Mean	**Conditional**	Mean	Mean	**Unconditional**
TL	0.71173	0.71642	-0.46018	0.21738	0.24307	-3.37164***
CP	0.56433	0.43499	2.63152***	0.01306	0.01149	1.15626
SBN	0.79213	0.76739	3.87323***	0.46223	0.43174	3.35721***
SUBN	0.67492	0.59263	3.69042***	0.04785	0.04489	0.81020
CL	0.82826	0.82010	0.27158	0.04268	0.04035	0.63233
RC	0.69859	0.67128	2.11381**	0.13898	0.16400	-3.99251***
Other	0.68602	0.66180	1.28053	0.07788	0.00645	2.97488***
Aggregation:						
Bank Debt	0.35637	0.40713	-5.72901***	0.88241	0.86033	3.73160***
Market Debt	0.52341	0.48806	3.83161***	0.86485	0.85320	2.44275**

This table presents a test of differences in mean usage of debt type between the least-entrenched (LE) and high-entrenched(HE) firms. Conditional mean(s) debt statistics are extracted from Table IV A and unconditional mean(s) debt statistics are extracted from Table III. t-test are reported in columns 3 and 6. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively.

TABLE V: Managerial Entrenchment and Debt Specialization

$$HHI_{it} = \beta_0 + \beta_1 EIndex_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$$

	(1)	(2)	(3)	(4)	(5)	(6)
	HHI	**HHI**	**HHI**	**HHI**	**HHI**	**HHI**
Sample:	ALL	LE	HE	ALL	LE	HE
E-Index	-0.00658***	0.01941***	-0.02105***	-0.00614**	0.01993***	-0.02206***
	(-2.78)	(3.62)	(-3.01)	(-2.58)	(3.72)	(-3.14)
Ln(Size)	-0.00662***	-0.00095	-0.01694***	-0.00550***	-0.00032	-0.01740***
	(-3.62)	(-0.42)	(-5.23)	(-2.75)	(-0.13)	(-4.87)
Tangibility	0.02223	0.00781	0.04184**	0.02124	0.00640	0.04305*
	(1.64)	(0.45)	(1.97)	(1.56)	(0.36)	(1.95)
MB	-0.00027	-0.00036	-0.00054	-0.00035	-0.00029	-0.00068
	(-0.65)	(-0.05)	(-1.05)	(-0.86)	(-0.45)	(-1.27)
Profitability	-0.01005*	-0.01062	0.03634	-0.00050	-0.00127	0.04674
	(-1.83)	(-1.45)	(0.86)	(-0.08)	(-0.16)	(1.07)
Cash				0.02305**	0.02206***	0.02141**
				(3.08)	(3.12)	(2.89)
Cashflow volatility				0.01852**	0.02173***	-0.11805
				(2.54)	(2.96)	(-1.37)
Dividend Payer				-0.00392	0.00604	-0.01224
				(-0.57)	(0.67)	(-1.09)
Book Leverage				0.00401	0.00316	0.04650**
				(0.92)	(0.72)	(1.97)
Constant	0.76051***	0.68903***	0.87532***	0.74904***	0.67714***	0.88349***
	(47.93)	(34.59)	(25.99)	(45.71)	(32.97)	(24.64)
Model	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
N	7232	4099	3133	7228	4097	3131
pseudo R^2	0.02114	0.02805	0.06570	0.02681	0.04146	0.07509

This table presents multivariate analysis using tobit regression model. The dependent variable is HHI, which proxies for debt specialization and creditors concentration. Column (1) & column (4) report estimates for the whole sample. Column (2) & column (5) report estimates for least-entrenched firms (LE)-(E-Index =< 2) and column (3) & column (6) report estimates for high-entrenched firms (HE) (E-Index >= 3). Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively.

TABLE VI A: Corporate Governance, Market Debt and Bank Debt

	(1)	(2)	(3)
	Market Debt	**Bank Debt**	**Difference**
E-INDEX	Mean	Mean	t-test
0	0.5035	0.3736	6.9725***
1	0.5409	0.3410	12.9370***
2	0.5202	0.3587	13.7392***
3	0.4831	0.3977	6.6905***
4	0.4952	0.4127	5.1727***
5	0.4912	0.4473	-1.2801
6	0.7549	0.1968	7.1141***

This table presents estimates for a test of differences in mean usage of market debt and bank debt conditional on entrenchment index. Columns (1) and (2) present the mean of market debt and bank debt, respectively. Both market debt and bank debt are scaled by total debt. Column (3) presents the test of statistical significance (t-test) of the difference in mean debt usage. Entrenchment Index (E-Index) is based on Bebchuk et al. (2009).

TABLE VI B: Bank Debt, Market Debt and Managerial Entrenchment

$$HHI_{it} = \beta_0 + \beta_1 Entrenched + \beta_2 Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$$

	(1)	(2)	(3)	(4)	(5)
	HHI	**HHI**	**HHI**	**HHI**	**HHI**
Entrenched	-0.0238***	-0.0220***	-0.0216***	-0.0206***	-0.0210***
	(-3.77)	(-3.49)	(-3.41)	(-3.24)	(-3.30)
Market Debt		0.0543***			0.0552***
		(7.02)			(7.13)
Bank Debt			-0.0489***	-0.0496***	
			(-6.13)	(-6.21)	
Constant	0.7562***	0.7406***	0.7811***	0.7695***	0.7260***
	(49.87)	(48.41)	(49.90)	(44.58)	(42.50)
Firm Controls	YES	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit	Tobit
N	7232	7232	7232	7232	7232
pseudo R^2	0.0253	0.0605	0.0522	0.0546	0.0625

This table presents multivariate analysis using tobit regression model. The dependent variable is HHI, which proxies for debt specialization and creditors concentration. Entrenched is a dummy variable equal "1" if the entrenchment index (Bebchuk et al. 2009) is E-Index>= 3. Construction of firm-specific controls are as in Table II. Bank debt is the sum of term loans and revolving credit facilities scaled by total debt. Market debt is the sum of commercial paper, senior bonds-and-notes, and subordinate bonds-and-notes scaled by total debt.

TABLE VI C: Bank Debt, Market Debt and Managerial Entrenchment

$$HHI_{it} = \beta_0 + \beta_2 Entrenched + \beta_1 Debt\_type_{it} + \beta_3 Entrenched X Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}.$$

	(1)	(2)	(3)	(4)	(5)	(6)
	HHI	**HHI**	**HHI**	**HHI**	**HHI**	**HHI**
Entrenched			-0.0275***			-0.0120
			(-3.12)			(-1.19)
Bank Debt	-0.0505***	-0.0414***	-0.0556***			
	(-6.34)	(-4.32)	(-5.24)			
Market Debt				0.0554***	0.0691***	0.0627***
				(7.17)	(7.99)	(6.15)
Bank debtxEntrenched		-0.0195*	0.0155			
		(-1.69)	(0.97)			
Market debtxEntrenched					-0.0343***	-0.0198
					(-3.52)	(-1.27)
Constant	0.7715***	0.7702***	0.7841***	0.7291***	0.7324***	0.7374***
	(50.03)	(49.86)	(48.66)	(48.65)	(48.81)	(47.63)
Firm Controls	YES	YES	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
N	7232	7232	7232	7232	7232	7232
pseudo R^2	0.044	0.046	0.053	0.052	0.060	0.061

This table presents multivariate analysis using a tobit regression model: The dependent variable is HHI, which proxies for debt specialization and creditors concentration. Entrenched is a dummy variable equal "1" if a firm is categorized as entrenched based on the entrenchment index (Bebchuk et al. 2009). Construction of firm-specific controls are as in Table II. Bank debt is the sum of term loans and revolving credit facilities scaled by total debt. Market debt is the sum of commercial paper, senior bonds-and-notes, and subordinate bonds-and-notes scaled by total debt. The interaction term captures the joint effect of aggregate debt source and corporate governance on the HHI. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively

TABLE VII A: Alternative Measure of Debt Specialization

$$Excl90_{it} = \beta_0 + \beta_1 Entrenched + \beta_2 Debt\_type_{it} + \beta_3 Entrenched X Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$$

	(1)	(2)	(3)	(4)
	EXCL90	EXCL90	EXCL90	EXCL90
Entrenched	-0.1403**	-0.1771**	-0.1240**	-0.1544**
	(-2.02)	(-2.22)	(-2.08)	(-2.26)
Bank Debt	-0.0672		-0.1180	
	(-1.44)		(-1.52)	
BankDebtxEntrenched	-0.1152**		-0.1944**	
	(-2.01)		(-2.03)	
Market Debt		0.1126***		0.1871***
		(2.67)		(2.69)
MarketdebtxEntrenched		-0.0982**		-0.1615**
		(-2.06)		(-2.06)
Constant	-0.1340*	-0.2007***	-0.2052	-0.3202**
	(-1.71)	(-2.59)	(-1.60)	(-2.54)
Firm Controls	YES	YES	YES	YES
Model	Probit	Probit	Logit	Logit
N	7051	7051	7051	7051
pseudo R^2	0.004	0.004	0.004	0.004

This table presents multivariate analysis using a probit and logit regression model. The dependent variable EXCL90, which proxies for debt specialization and creditors concentration. EXCL90 is equal to "1" if a debt type or sub-debt constitutes at least 90% of the firm's total debt. The variable debt type stands for bank debt or market debt. Control variables are constructed as in Table II above. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively

TABLE VII B: Alternative Measure of Debt Specialization

$$Excl30_{it} = \beta_0 + \beta_2 Entrenched + \beta_2 Debt\_type_{it} + \beta_3 EntrenchedX Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$$

	(1)	(2)	(3)	(4)
	EXCL30	EXCL30	EXCL30	EXCL30
Middle Category {=2:}				
Entrenched	-0.2851***	-0.0293**	-0.2205***	-0.0373**
	(-3.00)	(-2.28)	(-3.04)	(-2.47)
Bank Debt	-0.4582***		-0.3905***	
	(-4.12)		(-4.46)	
Bank DebtXEntrenched	-0.3210*		- 0.2623**	
	(-1.93)		(-1.99)	
Market Debt		0.7251***		0.6130***
		(6.63)		(7.16)
Market DebtxEntrenched		-0.3885**		-0.3184**
		(-2.36)		(-2.46)
Constant	-0.0119	-0.4653***	0.0146	-0.3771***
	(-0.06)	(-2.65)	(0.11)	(-2.87)
Upper Category {=3:}				
Entrenched	-0.2874***	-0.0177*	-0.2294***	-0.0156**
	(-3.46)	(-1.70)	(-3.46)	(-2.08)
Bank Debt	-0.6522***		-0.5406***	
	(-6.66)		(-6.86)	
BankxEntrenched	- 0.2771*		-0.2314*	
	(-1.89)		(-1.95)	
Market Debt		0.8216***		0.6859***
		(8.52)		(8.85)
Market DebtXEntrenched		-0.3461**		-0.2874**
		(-2.41)		(-2.46)
Constant	1.3160***	0.7382***	1.0792***	0.5942***
	(8.06)	(4.74)	(8.41)	(4.85)
Firm Controls	YES	YES	YES	YES
Multinomial Model(s):	Mult. Logit	Multi. Logit	Multi. Probit	Multi. Probit
N	7232	7232	7232	7232
pseudo R^2	0.007	0.010	0.007	0.010

This table presents multivariate analysis using multinomial logit and multinomial probit regression models. The dependent variable is EXCL30, a categorical variable that is based on debt concentration measure. EXCL30 divides our sample into three main categories: Lower, Middle and Upper. EXCL30 is equal to "1" (Lower) if HHI level is less than 33%. EXCL30 is equal to "2" (Middle) if HHI level is greater than 1/3 but less than 67%, and it is equal to "3" (Upper) if it is greater than 67% of our debt concentration measure. Regression results for category "2" and category "3" are reported above. Note that category "1" is the reference group/base category. All regression models include control variables, which are constructed as in Table II above. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively.

TABLE VIII: Debt Specialization Following the 2008 Financial Crisis

$HHI_{it} = \beta_0 + \beta_1 Post_t + \beta_2 Post_t X Entrenched + \beta_3 Post_t X Entrenched X Debt\_type_{it} + \beta_4 Debt\_type + \psi' \mathbf{X_{it}} + \epsilon_{it}$

	(1)	(2)	(3)	(4)
	HHI	**HHI**	**HHI**	**HHI**
Post	0.0482***	0.0371***	0.0493***	0.0456***
	(6.28)	(5.17)	(6.43)	(6.22)
PostxEntrenched	-0.0394***		-0.0397***	
	(-4.80)		(-4.85)	
PostxEntrenchedxBank Debt		-0.0362***		
		(-2.67)		
PostxEntrenchedxMarket Debt				-0.0609***
				(-4.91)
Bank Debt	-0.0563***	-0.0472***		
	(-6.80)	(-5.12)		
Market Debt			0.0624***	0.0793***
			(7.77)	(9.19)
Constant	0.7636***	0.7574***	0.7151***	0.7080***
	(46.81)	(46.06)	(44.88)	(44.31)
Firm Controls	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit
N	6710	6710	6710	6710
pseudo R^2	0.0858	0.0724	0.0951	0.0969

This table presents multivariate analysis using a tobit regression model. The dependent variable is HHI, which proxies for debt specialization and creditors concentration. HHI is censored below at [0] and above at [1]. An HHI value of "1" implies a firm employs only one debt type in its capital structure. It also implies perfect debt specialization. An HHI value of "0" is associated with equal usage of all seven debt types. Entrenched is a dummy variable equals "1" if the entrenchment index (Bebchuk et al. 2009) E-Index>= 3. "Post" is a dummy equal "1" for years after 2008 Financial Crisis. The interaction terms capture the joint effect of aggregate debt source, corporate governance, and the effect of the financial crisis. Construction of firm-specific controls are as in Table II. Bank debt is the sum of term loans and revolving credit facilities scaled by total debt. Market debt is the sum of commercial paper senior bonds-and-notes and subordinate bonds-and-notes scaled by total debt. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively.

TABLE IX: Accounting for Pre-Existing Debt Trend

$HHI_{it}= \beta_0 + \beta_1 Entrenched + HHI_{i,t-j} + \beta_2 Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$

	(1)	(2)	(3)	(4)	(5)	(6)
	HHI	HHI	HHI	HHI	HHI	HHI
PANEL A:						
Entrenched	-0.0171***	-0.0288***	-0.0147***	-0.0258***	-0.0142**	-0.0255***
	(-3.02)	(-4.15)	(-2.60)	(-3.74)	(-2.51)	(-3.69)
L2.HHI	0.6092***		0.6045***		0.6062***	
	(57.78)		(57.59)		(57.86)	
L4.HHI		0.4757***		0.4692***		0.4726***
		(36.83)		(36.54)		(36.79)
Market Debt			0.0590***	0.0672***		
			(8.51)	(7.86)		
Bank Debt					-0.0590***	-0.0642***
					(-8.22)	(-7.24)
Constant	0.5721***	0.5689***	0.5763***	0.5694***	0.5916***	0.5804***
	(25.18)	(32.01)	(34.28)	(34.57)	(29.81)	(32.68)
Firm Controls	YES	YES	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
N	5721	4644	5721	4644	5721	4644
pseudo R^2	2.5081	1.4313	2.5758	1.5024	2.5713	1.4916
PANEL B: Sub-Sample Analysis: Dependent Variable HHI						
	All	All	HE	HE	LE	LE
E-Index	-0.0064***	-0.0101***	-0.0186***	-0.0287***	0.0069	0.0119**
	(-3.00)	(-3.89)	(-3.01)	(-3.83)	(1.45)	(2.04)
L2.HHI	0.6092***		0.6075***		0.6058***	
	(57.86)		(37.87)		(43.20)	
L4.HHI		0.4765***		0.4792***		0.4668***
		(36.90)		(24.47)		(27.19)
Constant	0.4493***	0.4572***	0.4604***	0.4471***	0.4592***	0.4514***
	(39.73)	(39.81)	(40.09)	(39.16)	(38.76)	(40.21)
Firm Controls	YES	YES	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
N	5721	4644	2506	2050	3215	2594
pseudo R^2	2.5081	1.4284	2.3417	1.3492	2.7604	1.6112

*This table presents multivariate analysis using a tobit regression model. The dependent variable is HHI, which proxies for debt specialization and creditors concentration. HHI is censored below at [0] and above at [1]. An HHI value of "1" implies a firm use only one debt type in its capital structure. It also implies perfect debt specialization. An HHI value of "0" is associated with equal usage of all seven debt types. Entrenched is a dummy variable equals "1" if the entrenchment index (Bebchuk et al. 2009) E-Index>= 3. Construction of firm-specific controls are as in Table II. Bank debt is the sum of term loans and revolving credit facilities scaled by total debt. Market debt is the sum of commercial paper senior bonds-and-notes and subordinate bonds-and-notes scaled by total debt. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively*

TABLE X A: Managerial Entrenchment and Debt Specialization

$$HHI_{it} = \beta_0 + \beta_1 EIndex + \beta_2 Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$$

	(1)	(2)	(3)	(4)	(5)	(6)
	HHI	**HHI**	**HHI**	**HHI**	**HHI**	**HHI**
E-Index	-0.00754***	-0.00754***	-0.00753***	-0.00746***	-0.00754***	-0.00751***
	(-3.37)	(-3.37)	(-3.36)	(-3.36)	(-3.37)	(-3.38)
Bonds-and-Notes		-0.0000225				0.00316
		(-0.02)				(1.35)
Capitalised Leases			-0.0428**			-0.0298
			(-2.28)			(-1.53)
Bank Debt				-0.0897***		-0.0882***
				(-11.41)		(-11.12)
Convertible Debt					-0.00363	-0.00908
					(-0.91)	(-1.12)
Constant	0.850***	0.850***	0.849***	0.857***	0.850***	0.858***
	(57.76)	(57.76)	(57.75)	(58.62)	(57.76)	(58.54)
Firm Controls	YES	YES	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
N	8820	8820	8820	8820	8820	8820
pseudo R^2	0.124	0.124	0.126	0.171	0.124	0.173

*This table presents multivariate analysis using a tobit regression model. The dependent is HHI and is constructed from Compustat four debt types: Convertible debt, capitalized leases, bank debt, and bonds-and-notes. E-Index is the entrenchment index (Bebchuk et al. 2009). Construction of firm specific controls are as in Table II and in the data section. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively.*

TABLE X B: Managerial Entrenchment and Debt Specialization

$HHI_{it}= \beta_0 + \beta_1 GIndex + \beta_2 Debt\_type_{it} + \psi' \mathbf{X_{it}} + \epsilon_{it}$

	(1)	(2)	(3)	(4)	(5)	(6)
	HHI	**HHI**	**HHI**	**HHI**	**HHI**	**HHI**
G-Index	-0.00270**	-0.00270**	-0.00270**	-0.00264**	-0.00270**	-0.00268**
	(-2.47)	(-2.47)	(-2.47)	(-2.44)	(-2.47)	(-2.47)
Bond-and-Notes		-0.0000142				0.00317
		(-0.01)				(1.36)
Capitalised Leases			-0.0429**			-0.0299
			(-2.28)			(-1.54)
Bank Debt				-0.0897***		-0.0882***
				(-11.41)		(-11.11)
Convertible Debt					-0.00361	-0.00911
					(-0.90)	(-1.12)
Constant	0.851***	0.851***	0.851***	0.858***	0.852***	0.859***
	(53.60)	(53.60)	(53.59)	(54.39)	(53.61)	(54.32)
Firm Controls	YES	YES	YES	YES	YES	YES
Model	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit
N	8820	8820	8820	8820	8820	8820
pseudo R^2	0.122	0.122	0.124	0.169	0.122	0.171

*This table presents multivariate analysis using a tobit regression model. The dependent variable is HHI and is constructed from Compustat's four debt types: convertible debt, capitalized leases, bank debt, and bonds-and-notes. G-Index is the entrenchment index (Gompers et al. 2003). Construction of firm-specific controls are as in Table II above and in the data section. Note that the asterisks (*), (**), (***) denote statistical significance at the 10%, 5%, and 1% levels, respectively.*