Dual Class Firms and Debt Issuance

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A Thesis

in

The John Molson School of Business

Master of Science in Administration program

(Finance option)

Presented in Partial Fulfillment of the Requirements

For the Master of Science in Administration at

Concordia University

Montreal, Quebec, Canada

April 2015

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

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Entitled: Dual Class Firms and Debt Issuance

and submitted in partial fulfillment of the requirements for the degree of

Master of Science (Finance)

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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ABSTRACT

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Concordia University, 2015

We examine the impact of dual class share structures on the parameters of debt issuance. We find that, as compared to single class firms, the debt in dual class firms is associated more use of covenants especially performance based covenants, and is more likely to be secured. In addition, the impact of dual class share structure differs based on the severity of the agency costs of debt. We find that many of these issuance parameters are differently affected for large, profitable and low leverage firms (which face lower agency costs of debt) as opposed to small, less profitable and highly levered firms. These results are robust when we control the endogeneity of ownership structure and simultaneous changes in these issuance parameters. These results suggest that dual class share structures exacerbate the conflicts between controlling shareholders and lenders. However, the link between dual class share structures and debt issuance is not as clear for other issuance parameters such as the maturity and interest cost of debt.

Acknowledgements

I am particularly grateful for the assistance given by Professor Nilanjan Basu. His suggestions during the planning and development of this thesis are valuable and constructive. And his willingness to give his time so generously has been very much appreciated.

Then, I want to thank my committee members for their patience and guidance: Dr. Harjeet S. Bhabra and Dr. Yuan Wang. I would also like to extend my thanks to the technicians of the training room of the JMSB department for their help in offering me the resources in running the program.

Finally, I wish to thank my parents and my fiancée for their support and encouragement throughout my study.

Contents

I. Introduction

Dual class share structures have existed for a long time. Controlling shareholders may often use a dual class structure to maintain control over a firm when it transitions from private to public. Such firms issue two classes of shares: one class is for public shareholders and the other one is for insiders, like company founders and executives. The class offered to the general public has limited voting rights, while the class available to founders and executives has more voting power and often provides a majority control of the company. But both classes of shares have the same cash flow rights. In this way, dual class policy often results in a significant difference between insider voting rights and cash flow rights. This divergence exacerbates the agency conflicts in the dual class firms. In this essay we focus on two different forms of the agency conflict: one is between controlling shareholders and external debtholders, the other one is between majority (controlling shareholders) and minority shareholders. Since insiders control disproportionately more voting rights than cash flow rights, when they make bad financial decisions, they suffer less than other investors. Moreover, they have more power to reject a promising project, which benefits the firm but would threaten their private benefits or continued employment in the firm. In support of this reasoning, Gompers, Ishii, and Metrick (2010) document that when the divergence of voting and cash flow rights becomes larger, the stock returns and firm values are lower.

Specifically, Gompers, Ishii, and Metrick (2010) analyze the relationship between insider ownership and firm value by using a list of dual class firms in US. According to their list of dual class firms, they find that about 6% of all firms in the Compustat database are dual class firms, which contribute to 8% of the market capitalization. On average, insiders have about 60% of the voting rights and 40% of the cash flow rights in dual class firms. Moreover, for up to 40% of these dual class firms, insiders have more than half of the voting rights so that they are able to provide effective control over the firm. However, insiders possess less than half of the cash flow rights. Finally, they discover that dual class share structures significantly affect firm performance and valuation, as firm value is positively related to insiders' cash flow rights, negatively related to insiders' voting rights, and also negatively related to the difference between them.

In addition to the negative effect of dual class policy on the firm's value, Masulis et al. (2009) explain the reason why firm value decreases when a divergence exists between the insiders' voting and cash flow rights. Their findings suggest that when the difference between

insider voting rights and cash flow rights grows larger, the consequences are that the CEOs will receive higher compensation, the managers tend to make more acquisitions that destroy value for shareholders, and capital expenditures contribute less to shareholder value. These findings are consistent with the agency hypothesis, which indicates that greater excess control rights over cash flow rights encourage the controlling shareholders to pursue private benefits at the minority shareholders' expense.

On one hand, the disparity between voting and cash flow rights affects firm value by creating an agency conflict between insiders and public shareholders (Gompers, Ishii, and Metrick, 2010). On the other hand, compared to single class firms, dual class structures can also bring considerable benefits by alleviating some problems present in widely held companies: lowering the monitoring cost, and allowing insiders to make discretionary decisions that enhance firm value (see Burkart and Lee, 2008).

The private cost of issuing equity is higher when votes are tied to cash flow rights. Therefore, considering the risk of losing control, insiders may choose not to go public with the one share - one vote policy. Instead, they may turn to inferior forms of financing, which is more expensive and thus increase the investment cost, slow the firm's growth and lower the firm's value. However, in widely- held firms, it is more difficult and expensive to transfer control and the free-rider problem is more universal.

In conclusion, although a dual class share structure can result in greater conflict between controlling and minority shareholders, it can also, in certain situation, lead to a higher value for the firm.

Dey, Wang and Nilolaev (2012) show a link between dual class firms and leverage. They suggest that the use of debt is a useful way to control insiders' behavior, so that it can further reduce the agency conflicts among shareholder classes. In the presence of significant leverage, insiders will not have as much excess cash to invest in unprofitable projects or to extract private benefits. In addition, prospective debtholders are expected to carefully evaluate a firm before debt issuance and, as a result, are efficient monitors. In cases where the firm has poor performance or goes bankrupt, the lenders can take control of the firm and replace the management based on the covenants in the loan contract. As a result, Dey, Wang and Nikolaev (2012) find that dual class firms often choose to use more debt in the capital structure due to the efficient governance role of debt.

Although Dey, Wang and Nilolaev (2012) show a link between dual class firms and leverage, they do not explore the debt issuance process. In this paper we fill that gap: we examine the impact of dual class share structures on the parameters of debt issuance. The role of debt may attract dual class firms to use debt more frequently but the agency problem may impact every aspect of a loan contract, including interest spread, maturity, syndication and the use of covenants. Moreover, the agency problems that arise as a result of dual-class shares could result in two distinct and opposing effects on the terms of lending. First, controlling shareholders in dual class firms could have more power and therefore have more opportunities to expropriate debt holders. Second, as noted by Anderson and Reeb (2003) controlling shareholders such as founding families have a greater interest in the long term survival of the firm and therefore favor the interests of debt holders over those of minority shareholders. Dual class share structures in such situations would, in fact, better safeguard the interests of the lenders. In either case, lenders may propose different loan contracts for dual class firms and single class firms in terms of interest spread and maturity. Specifically, we focus on two issues:

- Comprehensive analysis of the manner in which dual class policy affects debt issuance: specifically, maturity, spread, syndication and the use of secured vs. non-secured loans. We also examine the use of covenants, following the research of Dey, Wang and Nilolaev (2012).
- We hypothesize that the manner in which dual class share structures affect these issuance parameters differs for large, profitable and low leverage firms (that we hypothesize face lower agency costs of debt as per Jensen and Meckling 1976) as opposed to small, less profitable and highly levered firms. In other words the impact of dual class share structure differs based on the severity of the agency costs of debt.

The rest of the paper is organized as follows. Section II describes the development of the five hypotheses. In this section, we also introduce the model and control variables. Section III describes the sample of dual class companies used in this study. Section IV shows results for the basic OLS regressions, subsample tests and robustness tests. Section V concludes.

II. Prior research and hypotheses

In this section, we do the literature review and provide our hypotheses about dual class firms and debt issuance. For each aspect of the issuance process, we provide some prior research results, introduce the specific hypothesis and explain the model used to test that hypothesis.

1). Dual class firms and interest spread

We firstly focus on the cost of debt. As we know, when the insiders hold large control rights over the firm, they have the incentives to expropriate other investors by increasing the compensation and personal welfare, transferring assets and profits out of companies and engaging in unprofitable projects for their personal interests. This phenomenon is more universal when the wedge between the inside voting and cash flow rights is large. According to Shleifer and Vishny (1997) and Johnson, Simon, et al (2000), because insiders with super voting rights have strong control of the firm, they have greater ability to pursue their own interest and bear a smaller proportion of the financial consequence of such activities. These activities will increase the probability of lower-tail outcomes which cost more, and these outcomes can increase the expected costs associated with financial distress and bankruptcy. In this way, the value of the collateral will also decrease. Considering the higher possibility of negative outcomes and the lower value of the collateral, lenders often propose higher interest spread and increase the cost of debt financing. In the prior research, Lin et al. (2011) also find that the cost of debt financing is significantly higher for companies with a wider divergence between the largest ultimate owner's control rights and cash flow rights. Moreover, Shleifer and Vishny (1997) argue that the problem of expropriation by controlling shareholders might become more severe when the investors include the creditors. With greater control rights, insiders are able to divert the upside gains for private benefits while leaving the costs of failure to creditors. Thus, the lenders face more severe agency problem, and in turn will increase the financing cost.

Therefore, our first hypothesis is as follows:

H1: The debt in dual class firms will have larger interest spread.

We test our hypothesis using the following specification:

$$INTEREST = \alpha_0 + \alpha_1 \times DUAL + \alpha_2 \times LOANSIZE + \alpha_3 \times FIRMSIZE + \alpha_4 \times CREDITRATING + \alpha_5 \times REVOLVER + \alpha_6 \times PURPOSE + \alpha_7 \times INSTITUTIONAL + \alpha_8 \times BTM + \varepsilon \quad (1)$$

In the above model (1), the dependent variable is interest spread. The interest spread is based on the all-in-spread-drawn measure reported by Dealscan. This measure is equal to the amount the borrower pays in basis points over LIBOR for each dollar drawn down, so it accounts for both the spread of the loan and the annual fee paid to the bank group. Our variable of interest is the indicator variable DUAL, which equals 1 for dual class firms and 0 otherwise. The control

variables in equation (1) are based on the literature on the determinants of interest spread (Titman and Wessels, 1988; Lemmon et al., 2008, Frank and Goyal, 2009). See Appendix for a description of all dependent and independent variables for this as well as subsequent hypotheses.

2). Dual class firms and debt maturity

In developing the first hypothesis, the lenders tend to increase the interest spread to protect themselves against the severe agency problem in dual class firms. Consistent with this view, the lenders will also shorten the debt's maturity to avoid agency problems, because longer maturity increases uncertainty and risk.

However, prior studies also suggest that dual class firms are more likely to subject themselves to private debt as a way to build lending relationships. Since private lenders are superior monitors (Diamond, 1984), they often have access to more information (Fama, 1985). In certain environments, they are able to exercise control rights over internal decisions (Dichev and Skinner, 2002; Baird and Rasmussen, 2006). Moerman (2009) finds that in the presence of information asymmetry, it is useful to reduce debt maturity. Conversely, if the (private) lenders have access to more information, they will provide dual class firms debt with longer maturity.

We can develop our second hypothesis on the basis of the first hypothesis. Taking maturity into consideration, we believe that the debt's maturity should be affected by the agency problem, which is consistent with the first hypothesis. Therefore, our second hypothesis is as follows:

H2: The debt in dual class firms is associated with a shorter maturity.

For the model, we'd like to use the following one:

$$\text{MATURITY} = \alpha_0 + \alpha_1 \times \text{DUAL} + \alpha_2 \times \text{FIRMSIZE} + \alpha_3 \times \text{CREDITRATING} + \alpha_4 \times \text{ASSETMATURITY} + \alpha_5 \times \text{ASSETTANGIBILITY} + \alpha_6 \times \text{PURPOSE} + \alpha_7 \times \text{BTM} + \varepsilon \quad (2)$$

In this model, the dependent variable is maturity, which is the number of months between the debt's issue date and the date when the debt matures. The independent variable of interest is DUAL, and we also include the following control variables: firmsize, creditrating, assetmaturity, assettangibility, purpose and btm.

Barclay et al. (2003) and Johnson (2003) find that firms tend to match the maturity of their assets with the maturity of their liabilities. Because matching maturity choices may assist

borrowers to issue longer maturity debt without significantly increasing the agency costs associated with longterm liabilities. We use the asset maturity measure based on empirical knowledge (Stohs and Mauer, 1996, Johnson, 2003). Details of the measure are described in the appendix.

Prior research shows that short-term debt is popular for firms with higher growth options (Barclay et al., 2003, and Johnson, 2003). This finding is consistent with Myers' (1977) prediction that firms with greater growth opportunities can control for underinvestment problem by shortening debt maturity. Following previous studies, we estimate growth options by the borrower's asset tangibility. In the debt maturity estimation, we also incorporate other contractual terms of a loan (such us purpose) and some firm-level variables (firm size, rating and btm).

3). Dual class firms and covenants

The use of financial covenants can control the conflicts of interest between lenders and borrowers. Christensen and Nikolaev (2012) study this topic and they argue that splitting financial covenants into performance and capital covenants is central to understanding the way accounting is used to control agency problems. P-covenants (or performance based covenants) rely on measures of a firm's profitability and efficiency, while C-covenants (or capital based covenants) rely on balance sheet information about sources and uses of capital. In other words, performance covenants put more weights on firm's accounting information, while capital based covenants focus on the firm's capital structure. Companies will balance the benefits and drawbacks of these two kinds of covenants when they engage into the debt contract.

They also suggest that, on one hand, performance-based covenants act as tripwires that transfer control to lenders when the firm has worse performance and the severe conflicts of interest between shareholders and lenders appear. On the other hand, capital based covenants align the bondholder-shareholder interests by requiring shareholders to have adequate wealth inside the firm. Because controlling insiders in dual class firms only have a small amount of their wealth in their firms, c-covenants are unlikely to be as effective as p-covenants in effectively restraining them from actions that diminish firm value.

Hence, dual class firms are more likely to rely on tripwire-type performance based covenants, whereas they are less likely to use capital based covenants. And our third hypothesis is:

H3: The debt in dual class firms uses less capital based covenants, but more performance-based covenants.

Based on prior research, the model below is suitable for our study:

$$COVENANT = \alpha_0 + \alpha_1 \times DUAL + \alpha_2 \times FIRMSIZE + \alpha_3 \times REVOLVER + \alpha_4 \times SECURITY + \alpha_5 \times LOANSIZE + \alpha_6 \times ROA + \alpha_7 \times LEVERAGE + \varepsilon \quad (3)$$

In the above model (3), the dependent variable is covenant, c_covenant or p_covenant. We define covenant as the total number of covenants used in the contract, c_covenant as the number of capital based covenants, and p_covenant as the number of performance based covenants. We will study covenants first, and then split it as c_covenant and p_covenant to see the specific difference.

4). Dual class firms and loan syndication

As we discuss before, dual class firms have more serious agency problems than single class firms. These problems often comes with higher credit risks and require more due diligence and monitor when the firm engage into a loan contract. In order to diversify the credit risks and share the monitor cost, lenders tend to find other participants to syndicate a loan (Lin et al. 2012). Therefore, we propose our forth hypothesis:

H4: The debt in dual class firms is more likely to be syndicated.

Dennis and Mullineaux (2000) are the first to systematically study factors determining the decision to syndicate a loan using data from the DealScan database maintained by Loan Pricing Corporation. Their research suggests that the determinants of the decision to syndicate a loan are the quality of information about the firm, variables involving agency problems, loan and agent characteristics. They find that a loan will be more likely to be syndicated (and not end up as a lending relationship between a single lender and the borrower) as information about the firm becomes more transparent, as the reputation of the lead bank grows and as the loan's maturity increases. Based on this research, we will use following logistic model:

$$SYNDICATION = \alpha_0 + \alpha_1 \times DUAL + \alpha_2 \times LEVERAGE + \alpha_3 \times LOANSIZE + \alpha_4 \times BTM + \alpha_5 \times FIRMSIZE + \varepsilon \quad (4)$$

The SYNDICATION dependent variable is a (0, 1) dummy which reflects the originator's decision to syndicate (1) or not (0). Therefore, logistic model is suitable in this case. Although longer maturity will increase the probability of syndicating a loan, we choose not to include maturity in this model because we have already used it as dependent variable in model (2). We will address this problem of the simultaneous changes in dependent variables later in the FIML test.

5). Dual class firms and secured loans

The use of secured debt may benefit borrowers and lenders in several ways: to alleviate the problems of asset substitution and underinvestment, to reduce foreclosure costs, to mitigate the problem of claim dilution, to limit possible claims in bankruptcy, and at last to minimize the problem arising from information asymmetries between borrowers and lenders (Chen, Yeo and Ho, 1998). However, the use of secured debts also is costly since it requires security registration and valuation and monitoring of collateral, and imposes restrictions on asset usage. In this way, lenders may consider thoroughly to balance the advantages and disadvantages of secured debt.

Chen, Yeo and Ho (1998) argue that the use of secured and unsecured loans is determined by the firm size and loan size. More specifically, smaller firms with large loan size are more prone to use secured loans. In contrast, Leeth and Scott (1989), using survey data on small firms, find an insignificant firm size effect. They find that the use of secured debt is positively related to probability of default, loan size and loan maturity. According to these findings, we provide our last hypothesis that

H5: The debt in dual class firms is more likely to be secured.

In this paper, we use the firm's BTM, Leverage and its zscore to measure the probability of default. And the final model is as follows:

$$SECURED = \alpha_0 + \alpha_1 \times DUAL + \alpha_2 \times FIRMSIZE + \alpha_3 \times LOANSIZE + \alpha_4 \times BTM + \alpha_5 \times LEVERAGE + \alpha_6 \times ZSCORE + \varepsilon \quad (5)$$

In model (5), SECURED is the dependent variable, which is a dummy variable and equals to one when the loan is secured, zero otherwise. Here, we also use logistic regression as the syndication model.

Above all, the hypotheses are summarized as follows: compared to the debt in single class firms, the debt in dual class firms tends to have higher interest spread, shorter maturity, more use of p_covenant, more likely to be syndicated and secured. These hypotheses are based on the point of severe agency problem in dual class firms, which means that dual class firms could worsen the conflict of interests between equity holders and debt holders due to the excess power of equity holders. This kind of agency conflict is only one example of agency problems. However, there is a possible second kind of agency problem: dual class firms may also deteriorate the conflict between majority and minority equity holders. As we know from Anderson and Reeb (2003)[1], insiders with higher control rights focus on the investment with a longer horizon, and tend to align their interests with debt holders, rather than with other shareholders so as to expropriate minority shareholders. This bonding relationship reconciles the agency problems and benefits the insiders with lower cost of debt. In this way, we will get five reversing predictions with respect to DUAL above. Specifically, for dual class firms, the lenders will lower the cost of debt, extend the maturity, and require less p_covenants and collateral and less syndication will occur.

Our results below will provide evidence with respect to these two competing explanations above.

III. Data

We obtain a comprehensive list of dual-class companies that Gompers, Ishii, and Metrick (2010) construct from the universe of U.S. public firms over the 1994–2002 periods[2]. More than 6% of firms covered by Compustat have a dual class structure, and they represent about 8% of the total market capitalization of Compustat firms. A typical dual class company has two classes of stock: the superior class, which has multiple votes per share and is not publicly traded, and the

[1] Anderson, Ronald C., and David M. Reeb. "Founding-family ownership and firm performance: evidence from the S&P 500." The journal of finance 58.3 (2003): 1301-1327.
[2] We thank Andrew Metrick for making this data widely available.

inferior class, which has one vote per share and is generally publicly traded. There are 741 dual class firms and 3730 firm-year observations in this dataset.

We search the entire Compustat database for firms from year 1994 to 2002 and merge them to GIM sample. Then we use Compustat-dealscan link[3] to merge our sample with dealscan dataset. Dealscan database comes from Loan Pricing Corporation, which contains publicly available information on more than fifty thousand corporate loans booked since 1986. The database provides the name of the lead lender as well as the details of loans (purpose, size, maturity, etc.).

By merging these two dataset, we get the final sample of firms with debt issuances for which the details are available on Dealscan. It contains 389 firm-year dual-class firms' observations and 6064 firm-year single-class firms' observations from year 1995[4] to year 2002. The detailed observations distribution for each year is presented in table 1. More than half observations are concentrated in year 2002[5]. We also present the mean firm size, leverage and profitability for each year in Table 1.

Table 1 shows the data description for all firms in our sample. We show the size, leverage and profitability for each kind of firms. In our sample, out of 6453 observations, there are 389 (about 6%) dual class firm-year observations. This proportion is consistent with the finding in Dey, Nilolaev and Wang (2012), who study the relationship between dual class share structure and loan contracts for year 1994-2010. Generally speaking, these dual class firms have larger size, higher leverage but lower profitability, compared to single class firms. This finding is also consistent for each year from 1995 to 2002. As time passes, all firms increase the firm size and leverage, but dual class firms keep more stable profitability.

IV. Results

1) Univariate test

[3] We thank Michael Roberts for sharing this data on his website at: http://finance.wharton.upenn.edu/~mrrobert/styled-9/styled-12/index.html. The related paper is Chavaand Roberts (2008).

[4] We start our study from 1995 because no dual class firms issue loans in 1994; we also drop observations of the single class firms in year 1994.

[5] A possible explanation is that the information in Dealscan is less exhaustive in the early years and improves over time. In conjunction with the increase in the number of listed firms, this gives us a sample that has few observations in the early years and many more in the latter years.

In the first test, we want to examine whether there exist some differences in the basic characteristics of dual class firms and single class firms. Table 2 reports descriptive statistics for the sample firms. We present the mean and median of firm characteristics across the two samples, and test for differences between single and dual class firms. The dual class firms differ significantly from the single class firms in several aspects. Specifically, compared to single class firms, dual class firms are larger, less profitable and have higher leverage. In addition, we observe at the deal level that dual class firms have loans with larger amounts and longer maturities as compared to single class firms. Dual class firms are more likely to syndicate loans and include more performance based covenants in their loan contracts. At first glance, these results suggest that dual class firms suffer from greater conflicts of interests as outlined in our hypotheses.

2) Multivariate test

In our second test, we check the effects of dual class share policy on the debt parameters. In table 3, we construct twelve regressions. The dependent variables are interest spread, maturity and covenant. For each dependent variable, we do four regressions: with and without control variables, with and without year fixed effects. Our focus is on the independent variable: DUAL. The coefficient of DUAL for interest spread (in the model (2) with control variables) is positive but not significant, which implies that the cost of debt issuance is a little higher for dual class firms, but once controlled for other variables it is not significantly different. Hence, our first hypothesis is only correct for some degree (due to positive but insignificant coefficient). Moreover, the magnitude of the impact of dual class share structures on the spread appear to be fairly small – even in the specifications where DUAL is significant, the impact on the spread is only about 10 basis points. Overall, our OLS tests do not indicate any important relationship between dual class shares structures and the cost of debt.

From table 3, we also find that DUAL is positive and significant for maturity. For dual class firms, the issued debt has longer maturity; this result indicates that dual class policy positively affects the length of maturity. Lenders tend to provide dual class firms with longer maturity. This finding differs from our predications in hypothesis 2, because the conflict between the insiders and debt holders due to the larger agency problems should result in shorter maturity according to the hypothesis. But this reversing result can be explained by the alignment of

insiders (large shareholders) and debtholders. The lenders provide benefits to the insiders by providing longer maturity of debt. We also find that, the coefficient of DUAL for maturity is 9.396, which is much larger than the coefficients of other control variables. It indicates a larger impact of dual class share structure than other controls for each incremental unit in these variables. Therefore, the dual class structure impacts the maturity of a firm's debt with economical and statistical significance. All the findings are consistent whether we include year fixed effects or not in our regressions.

The issued debt typically has more covenants as we can see from table 3.The coefficient of DUAL is positive and significant, which means that the lenders require stronger guarantee against default from dual class firms due to the larger agency problem. In table 4, we further study the use of covenants and split covenants into capital based covenant and performance based covenant. The interesting thing is DUAL is significant for p_covenant but not for c_covenant. Since dual class firms have more covenants as we shown in table 3, we can conclude that the difference in covenant attribute to the difference in performance based covenant. This finding is consistent to the third hypothesis, which is dual class firms use more performance based covenants. It indicates that, compared to capital-based covenants, tripwire-type performance-based covenants work better in dual class firms to discipline the insiders. However, we don't find a significantly less use of capital based covenants, then we cannot show any relationship between dual class share structure and capital based covenants.

In addition to above dependent variables, we also investigate two dummy variables: syndication and secured. We get the logistic results from SAS and show them in table 5. We find that DUAL is positive for both syndication and secured, but only significant for secured, which means that dual class structure has important impact on the use of secured loans, but cannot affect the decision to syndicate the loan. This finding is consistent to our fifth hypothesis that the debt in dual class firms is more likely to be secured. The debt holders require collaterals to protect themselves from larger agency problems in dual class firms. In a word, our results imply that the issued debt need to be secured for dual class firms, syndication or not doesn't matter.

Overall, these OLS results show that the dual class share structure could have an impact on the debt issuance parameters. However, it remains unclear whether dual class share structures improve or worsen the conflicts between majority shareholders and lender.

3) Subsample test

Till now, our results indicate that the debt in dual class firms has a longer maturity, higher possibility to be secured and contains more performance based covenants. And we show that the conflicts and alignments between the insiders and debtholders exist at the same time. To further prove their existence, we do the subsample test as below.

If the differences come from the severe agency problem in dual class firms, then the effects should be more significant for certain firms like small, less profitable and highly levered firms, because these kinds of firms often face more severe agency problems (Jensen and Meckling 1976). It is also possible that the agency problems may come from these firm characteristics instead of the dual class share structure. Although we control for firm characteristics in our OLS tests earlier, it is possible that the effect of these firm characteristics is not linear. Therefore, we use subsamples to test this and divide the whole sample into subsamples by the median of full sample's firm size, leverage and profitability[6]. In each subsample, the dependent variables are the same: Interest, maturity, c_covenant, p_covenant, syndication and secured. We use the same regression equations with control variables as we describe in the hypotheses part. But for brevity, we suppress control variables and only show the results of variable DUAL.

Table 6 shows the results. We find that in highly leveraged, low profit firms, the coefficient of DUAL for maturity is positive and significant while the coefficient of DUAL for secured is negative and significant. This indicates that lenders provide dual class firms the debt with longer maturity and use less secured loans. This is consistent with the explaining of alignment between insiders and debtholders. Moreover, the coefficient of DUAL for p_covenant is positive and significant, which is the result of larger agency problems. But from this result we cannot conclude that the agency problems come from the dual class share structure, because firms with higher leverage and low profitability are observed to have larger agency problems.

When we look at the subsample of large firms, we are surprised to find that the coefficient of p_covenant is positive and significant, which means the dual class share structure has a significant impact on the use of p_covenant. Since the increasing use of p_covenant can be explained by larger agency problems, and large firms face less agency problems, we can

[6] We also divide the firms by the mean and quartiles of full sample's firm size, leverage and profitability for robustness. The results are qualitatively similar, so we don't present them here.

conclude that the agency problems result from the dual class share structure. In other words, this finding suggests that dual class share structure result in larger agency problems and these agency problems finally result in the increasing use of p_covenant in the loan contracts. We also test the equal slope for each subsample. The slopes are significantly different for maturity and p_covenant across each subsample while interest spread and syndication have the same slopes. The results for c_covenant and secured vary.

Overall, the subsamples further indicate that the influence of dual class share structures on debt issuance parameters can be attributed to a combination of the agency conflict between insiders and debtholders and the agency conflict between majority and minority shareholders.

4) Robustness tests

Robustness tests are provided in tables 7 and 8. We focus on two problems: endogeneity and simultaneous changes in dependent variables. The endogeneity problem comes with the possibility that these dual class firms issued loans first, and then they choose to transform to dual class firms to benefit from the large controls over the firm. It means that lenders provide the loans in the environment when the firm face less agency problems, after the choice of dual class policy, the firms exacerbate agency conflicts, which should match to loans issued for large agency conflicts firms. In this way, our OLS results may be biased due to this kind of causality between dual class share structure and issued loans. An effective way to cure this problem is to use instrumental variables (IV) that are correlated with dual class structure choice but do not affect debt issuance directly. Since valid instruments are very difficult to find, we follow Gompers, Ishii, and Metrick (2010) and use the following instruments that they propose: an indicator for being in the media industry at the IPO year (*MEDIA IPO*), the percentile ranking of the IPO-year sales of the firm relative to other firms with the same IPO year (*SALESRANK IPO*), the percentile ranking of the IPO-year profits of the firm relative to other firms in the same IPO year (*PROFITRANK IPO*), the percentage of all Compustat firms located in the same metropolitan or micropolitan statistical area (MSA) as the firm in the year before the firm's IPO (*%FIRM MSA IPO*), the percentage of all Compustat sales by firms located in the same MSA as a firm in the year before the firm's IPO (*%SALE MSA IPO*), and the ratio of the firm's sales to the sales of all firms in the same region (*SALE/REG SALES*). Following Gompers, Ishii, and Metrick (2010), we argue that each of these variables are likely to be related to the value of

control and therefore to the likelihood of adopting dual class share structures but are unlikely to be related to debt issuance parameters.

The results of 2SLS analysis are presented in Table 7[7]. Panel A shows the second stage regression results. We have two surprising findings. First, for Interest, the coefficient of DUAL becomes significant for the first time, which indicates that, after controlling the endogeneity, the debt in dual class firms has higher interest spread. Our first hypothesis is supported here. Second, for Syndication, the coefficient of DUAL becomes negative with high significance. This result runs counter to our fourth hypothesis about syndication, which indicates that the debt in dual class firms is more likely to be syndicated. The other results about maturity, c_covenant, p_covenant and secured are almost the same as we get from tables before. Besides, Panel B shows the diagnostics for instrumental variables. We use Sargan, Cragg-Donald and Stock-Yogo tests to check the effectiveness of our instrumental variables. All these test statistics show that the instrumental variables we use are effective.

However, the variables may also affect each other as shown by Billett et al. (2007). It may be interesting to estimate the full system of simultaneous equations by full information maximum likelihood method (FIML). It includes three equations as a system and estimates them at the same time. From table 8, we find that DUAL is negative and significant for interest spread for the first time. This result is consistent with the finding of Anderson and Reeb (2003)[8], which indicates that the alignments of insiders and debtholders benefit the insiders with lower cost of debt. Moreover, the coefficient of DUAL is negative and significant for maturity, and it is positive and significant for covenant. These two coefficients can be explained by the larger agency problems in dual class firms between insiders and debtholders. The details about FIML are illustrated below the table 8. However, it should be noted that the maximum likelihood estimates for the FIML estimation were not very stable to alternate specifications. Also, the relation between DUAL and maturity is opposite to that observed in all the other tests suggesting that the results from the FIML estimations may not be very reliable. The only conclusion that is robust to all specifications is that of greater use of covenants by dual class firms.

[7] The endogenous variable of interest is DUAL which is an indicator variable. As a result, the standard instrumental variables procedures may not in general give reliable results. The conclusions of table 7, therefore, should be treated as indicative.

[8] Anderson, Ronald C., Sattar A. Mansi, and David M. Reeb. "Founding family ownership and the agency cost of debt." Journal of Financial economics68.2 (2003): 263-285

Overall, our results suggest a robust relationship between covenant usage (especially p-covenant usage) and dual class firms. At least in this respect it appears that dual class share structures exacerbate the conflict between controlling shareholders and lenders. However, our remaining results provide conflicting evidence. As a result, we are unable to draw clear conclusions with respect to the rest of our hypotheses.

V. Conclusion

While Dey, Nilolaev and Wang (2012) show a link between dual class firms and leverage, they do not explore the debt issuance process. We contribute to the prior literature by filling this gap: examine the impact of dual class share structures on the parameters of debt issuance. We find that, as compared to the debt in single class firms, the debt in dual class firms is associated with more use of secured loans and covenants especially performance based covenants. However, our results are mixed for the remaining parameters of debt issuance. We start with two sets of hypotheses that could explain the behavior of dual class firms. On one hand, dual class firms deteriorate the conflict of interests between equity holders and debt holders due to the excess power of equity holders (first kind of agency problem), which results in more use of performance based covenants and secured loans. On the other hand, dual class firms also deteriorate the conflict between majority and minority equity holders (second kind of agency problem). Insiders align their interest with debtholders to expropriate minority equity holders. This bonding relationship benefit dual class firms with longer maturity. In the subsample tests, we observe the same findings in highly leveraged while less profitable firms as in OLS. The result in large firms give us confidence that dual class share structure will result in larger agency problems and further affect the debt issuance parameters .

Overall, the net effect of dual class shares on debt issuance is a complex one and neither effect appears to dominate. Moreover, the findings appear to be somewhat sensitive to the econometric specification. We believe future further research is required to better understand the conditions under which one or the other effect could dominate.

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Appendix I: Variable Definitions

Variables	Definitions
Firm level variables	
Dual	An indicator variable taking the value of one if a firm is a dual class firm.
Firmsize	Log of the book value of total assets
Btm	The ratio of the book value of equity over market value of equity
Roa	The ratio of the income before extraordinary items over average total assets
Profitability	The ratio of EBITDA to total assets, estimated in the year prior to entering into a loan contract.
Zscore	An indicator variable taking the value of one if Z-score is smaller than 1.8. Z-score=3.3*EBIT/AT+1.0*SALE/AT+1.4*RE/AT+1.2*WCAP/AT +0.6*PRCC_F*CSHO
Leverage	The ratio of the long-term debt to total asset, estimated in the year prior to entering into a loan contract.
Loss	An indicator variable that equals 1 if net income before extraordinary items(UNIAMI) is negative, and 0 otherwise
Freecash	ratio of operating cash flows(OANCF) to total assets
Creditrating	SPCSRC, S&P Quality Ranking
Assettangibility	The ratio of net PPE to total assets, estimated in the year prior to entering into a loan contract.
Asset-maturity	$= \frac{\text{CA}}{CA+PPE} * \frac{\text{CA}}{COGS} + \frac{\text{PPE}}{CA+PPE} * \frac{\text{PPE}}{Depriciation}$ where CA is the current assets of a firm , PPE is the net property, plant and equipment, COGS is the cost of goods sold, and Deprecation is the depreciation and amortization expense. The asset maturity measure is estimated in the year prior to entering into a loan contract.
Dealscan variables	
Purpose	An indicator variable taking the value of one if the facility's primary purpose is Takeover, LBO/MBO or recapitalization, zero otherwise. A loan with a primary purpose of recapitalization is a loan to support a material change in a firm's capital structure, often made in conjunction with other debt or equity offerings.
Revolver	An indicator variable taking the value of one if the facility's type is revolver, zero otherwise.
Interest	The interest rate spread is based on the all-in-spread-drawn measure reported by dealscan. This measure is equal to the amount the borrower pays in basis points over LIBOR for each dollar drawn down, so it accounts for both the spread of the loan and the annual fee paid to the bank group.
Itcb	An indicator variable that takes value of one when investment tax credit is present, zero otherwise

Netoperating	TLCF, an indicator variable taking the value of one if the firm's net operating is negative, zero otherwise
Institutional	An indicator variable taking the value of one if the loan's type is term loan B,C or D (institutional term loans), zero otherwise
Loansize	Log of the facility amount
Maturity	is estimated by the number of months between the facility's issue date and the date when the facility matures
Secured	An indicator variable taking the value of one if the facility is backed by collateral, zero otherwise
Syndication	An indicator variable taking the value of one if the distribution style is syndication, zero otherwise
C_covenant	the number of capital based covenants
P_covenant	the number of performance based covenants
Performance-covenants	(1) Cash interest coverage ratio, (2) Debt service coverage ratio, (3) Level of EBITDA, (4) Fixed charge coverage ratio, (5) Interest coverage ratio, (6) Ratio of debt to EBITDA, and (7) Ratio of senior debt to EBITDA.
Capital-covenants	(1) Quick ratio∗, (2) Current ratio∗, (3) Debt-to-equity ratio, (4) Loan-to-value ratio, (5) Ratio of debt to tangible net worth, (6) Leverage ratio, (7) Senior leverage ratio, and (8) Net worth requirement

Appendix II: Tables

Table 1: Data description

Year	Dual				Single			
	#	Firmsize	Leverage	Profitability	#	Firmsize	Leverage	Profitability
1995	1	4.75131	0.08076	-0.0527	302	4.15297	0.17173	-0.0179
1996	1	6.04645	0.18345	0.1279	422	4.26278	0.18694	0.87902
1997	6	6.3665	0.11759	0.17168	534	4.41472	0.15728	1.39416
1998	32	5.62072	0.18998	0.09118	647	4.76614	0.19227	0.64379
1999	46	6.24805	0.27591	0.08469	693	5.30513	0.20524	-0.0081
2000	63	6.4782	0.26815	0.03788	684	5.62256	0.23861	0.00563
2001	47	6.41943	0.26125	0.08638	660	5.60271	0.24812	0.00913
2002	193	7.49042	0.43202	0.08502	2122	6.42913	0.31147	0.11003
Total	389	6.8682808	0.3400848	0.0791106	6064	5.5008119	0.2422950	0.2909446

Table 1 shows the data description for all firms in our sample. The second and sixth column is the number of observations in each year from 1995 – 2002. Columns 3, 4, 5 and 7, 8, 9 show the mean value of each variable: firm size, leverage and profitability. Firmsize is the log of the book value of total assets; Leverage is the ratio of the long-term debt to total asset; Profitability is the ratio of EBITDA to total assets.

Table 2 Univariate test

VARIABLE	SINGLE	DUAL	DIFFERENCE	P-VALUE
Variable name	Mean (S) Median(S)	Mean (D) Median (D)	Mean (S)- Mean (D) Median(S)-Median(D)	P-value
Interest	252.7 250	242.1 250	10.6 0	0.1238 0.5204
Maturity	46.2328 46	59.0386 60	-12.8058 -14	<.0001 <.0001
Covenant	2.5831 2	3.0437 3	-0.4606 -1	<.0001 <.0001
P_covenant	1.8151 2	2.3702 2	-0.5551 0	<.0001 <.0001
C_covenant	0.7680 1	0.6735 1	0.0945 0	0.0068 0.0028
Syndication	0.8435 1	0.9203 1	-0.0768 0	<.0001 <.0001
Secured	0.8041 1	0.8458 1	-0.0417 0	0.0291 0.0437
Firmsize	5.5008 5.5394854	6.8683 7.173893	-1.3675 -1.63441	<.0001 <.0001
Loansize	17.6642 17.72753	18.3910 18.64382	-0.7268 -0.91629	<.0001 <.0001
Creditrating	2.3676 3	2.4550 3	-0.0874 0	0.0956 0.0674
Revolver	0.5703 1	0.5347 1	0.0356 0	0.1701 0.1701
Purpose	0.1826 0	0.1979 0	-0.0153 0	0.4472 0.4472
Institutional	0.1209 0	0.2339 0	-0.113 0	<.0001 <.0001
Assetmaturity	17.4812 3.654602	6.2685 4.4024366	11.2127 -0.74783	0.0106 0.0114
Assettangibility	0.2799 0.187237	0.2948 0.227307	-0.0149 -0.04007	0.4038 0.0256
Bondrate	0.9286 1	0.9383 1	-0.0097 0	0.4694 0.4694
Leverage	0.2423 0.176214	0.3401 0.270789	-0.0978 -0.09458	<.0001 <.0001
BTM	4.1948 0.444166	0.4830 0.539672	3.7118 -0.09551	<.0001 0.0686

ROA	-0.0782	-0.0986	0.0204	0.8803
	0.013947	-0.01963	0.033577	<.0001
Netoperating	0.4507	0.5887	-0.138	0.0002
	0	1	-1	<.0001
ITCB	1.6613	0	1.6613	0.1614
	0	0	0	0.0195
Z-score	0.4763	0.6195	-0.1432	<.0001
	0	1	-1	<.0001
Convertible	0.0996	0.1362	-0.0366	0.0205
	0	0	0	0.0206
Profitability	0.2909	0.0791	0.2118	0.1233
	0.101575	0.079789	0.021786	0.0101

Table 2 presents the comparisons of the mean and median firm-level and deal-level variables between dual class firms and the single class firms. The variables are defined as follows (see Appendix I for detailed definitions and their sources): Interest is the interest rate spread based on the all-in-spread-drawn measure reported by dealscan; Maturity is estimated by the number of months between the facility's issue date and the date when the facility matures; Covenant is the total number of covenants; P_covenant is the number of performance based covenants; c_covenant is the number of capital based covenants; Syndication is an indicator variable taking the value of one if the distribution style is syndication, zero otherwise; Secured is an indicator variable taking the value of one if the facility is backed by collateral, zero otherwise; Firmsize is the log of the book value of total assets; Loansize is the log of the facility amount; Creditrating is S&P Quality Ranking; Revolver is an indicator variable taking the value of one if the facility's type is revolver, zero otherwise; Purpose is an indicator variable taking the value of one if the facility's primary purpose is Takeover, LBO/MBO or recapitalization, zero otherwise; Institutional is an indicator variable taking the value of one if the loan's type is term loan B,C or D (institutional term loans), zero otherwise; Assetmaturity is the maturity of assets; Assettangibility is the ratio of net PPE to total assets; Leverage is the ratio of the long-term debt to total asset, estimated in the year prior to entering into a loan contract; BTM is the ratio of the book value of equity over market value of equity; ROA is the ratio of the income before extraordinary items over average total assets; Netoperating is an indicator variable taking the value of one if the firm's net operating is negative, zero otherwise; ITCB is an indicator variable that takes value of one when investment tax credit is present, zero otherwise; Z-score is an indicator variable taking the value of one if Z-score is smaller than 1.8; Convertible is an indicator variable taking the value of one if the firm has convertible debt, zero otherwise; Profitability is the ratio of EBITDA to total assets. The comparison of means is based on a two-sided t-test, and the comparison of medians is based on a Wilcoxon rank-sum test. P-value of each test is provided.

Table 3 Regression Analyses of Debt Issuance

VARIABLES	(1) Interest 1	(2) Interest 2	(3) Interest 3	(4) Interest 4	(5) maturity 1	(6) maturity2	(7) maturity3	(8) maturity 4	(9) covenant 1	(10) covenant 2	(11) covenant3	(12) covenant4
dual	-10.60**	5.215	-11.27*	2.055	12.81***	9.396***	11.46***	9.392***	0.461***	0.397***	0.416***	0.385***
	(5.307)	(4.976)	(5.864)	(3.108)	(1.513)	(1.451)	(2.410)	(2.552)	(0.0671)	(0.0664)	(0.0557)	(0.0556)
loansize		-26.55***		-26.67***						0.0923***		0.0910**
		(1.319)		(1.698)						(0.0100)		(0.0323)
firmsize		-4.416***		-6.840***		2.496***		2.120***		-0.0722***		-0.0806***
		(1.089)		(1.665)		(0.170)		(0.433)		(0.00995)		(0.0129)
creditrating		-10.23***		-11.06**		-0.645**		-0.803**				
		(1.466)		(3.745)		(0.311)		(0.256)				
revolver		-24.67***		-22.12**						-0.199***		-0.186**
		(3.751)		(8.078)						(0.0305)		(0.0639)
purpose		17.04***		20.02***								
		(3.600)		(1.539)								
institutional		80.76***		77.30***								
		(5.618)		(12.30)								
btm		-0.0386		-0.0333						-0.00120***		-0.00116**
		(0.0445)		(0.0224)						(0.000436)		(0.000397)
assetmaturity						0.000317		0.000147				
						(0.000287)		(0.000302)				
assettangibility						3.821*		3.475				
						(1.968)		(2.039)				
leverage										0.854***		0.841***
										(0.0682)		(0.126)
roa										0.000221		0.000490
										(0.00594)		(0.00705)
Constant	252.7***	771.5***	252.8***	787.8***	46.23***	32.96***	46.31***	35.53***	2.583***	1.261***	2.586*	1.328*
	(1.714)	(19.66)	(0.353)	(31.65)	(0.316)	(1.186)	(0.145)	(2.296)	(0.0154)	(0.147)	(0.00336)	(0.624)
Observations	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453
R-squared	0.000	0.215	0.000	0.220	0.015	0.058	0.012	0.040	0.008	0.056	0.007	0.050
Number of year			8	8			8	8			8	8
year FE			YES	YES			YES	YES			YES	YES

Table 3 shows the basic regression results. The dependent variables are interest spread, maturity and covenant. For each dependent variable, we do four regressions: with and without control variables, with and without year effect. Interest is the interest rate spread based on the all-in-spread-drawn measure reported by dealscan; Maturity is estimated by the number of months between the facility's issue date and the date when the facility matures; Covenant is the total number of covenants; Dual is an indicator variable taking the value of one if a firm is a dual class firm; Loansize is the log of the facility amount; Firmsize is the log of the book value of total assets; Creditrating is S&P Quality Ranking; Revolver is an indicator variable taking the value of one if the facility's type is revolver, zero otherwise; Purpose is an indicator variable taking the value of one if

the facility's primary purpose is Takeover, LBO/MBO or recapitalization, zero otherwise; Institutional is an indicator variable taking the value of one if the loan's type is term loan B,C or D (institutional term loans), zero otherwise; BTM is the ratio of the book value of equity over market value of equity; Assetmaturity is the maturity of assets; Assettangibility is the ratio of net PPE to total assets; Leverage is the ratio of the long-term debt to total asset; ROA is the ratio of the income before extraordinary items over average total assets. ***Significant at the 1% level;**Significant at the 5% level; *Significant at the 10% level. ; Robust standard errors in parentheses.

Table 4 Regression Analyses on Financial Covenants

VARIABLES	(1) c_covenant 1	(2) c_covenant 2	(3) c_covenant 3	(4) c_covenant 4	(5) p_covenant 1	(6) p_covenant 2	(7) p_covenant 3	(8) p_covenant 4
dual	-0.0945***	0.00496	0.00274	0.00274	0.555***	0.392***	0.382***	0.382***
	(0.0353)	(0.0343)	(0.0306)	(0.0306)	(0.0655)	(0.0626)	(0.0824)	(0.0824)
leverage		-0.0713**		-0.0693		0.925***		0.910***
		(0.0341)		(0.0981)		(0.0613)		(0.0850)
firmsize		-0.0151***		-0.0153*		-0.0571***		-0.0654***
		(0.00536)		(0.00785)		(0.00918)		(0.0150)
btm		0.000790***		0.000804***		-0.00199***		-0.00196***
		(0.000238)		(0.000188)		(0.000367)		(0.000447)
roa		2.68e-05		0.000172		0.000194		0.000318
		(0.00289)		(0.00274)		(0.00466)		(0.00662)
loansize		-0.0960***		-0.0946***		0.188***		0.186***
		(0.00538)		(0.0118)		(0.00909)		(0.0417)
revolver		-0.0270*		-0.0288		-0.172***		-0.157***
		(0.0160)		(0.0325)		(0.0281)		(0.0333)
Constant	0.768***	2.577***	2.553***	2.553***	1.815***	-1.316***	-1.225	-1.225
	(0.00855)	(0.0800)	(0.178)	(0.178)	(0.0147)	(0.134)	(0.772)	(0.772)
Observations	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453
R-squared	0.001	0.093	0.080	0.080	0.013	0.137	0.116	0.116
Number of year			8	8			8	8
year FE			YES	YES			YES	YES

Table 4 presents the regressions of c_covenant and p_covenant. The dependent variables are c_covenant and p_covenant. For each dependent variable, we do four regressions: with and without control variables, with and without year effect. P_covenant is the number of performance based

covenants; c_covenant is the number of capital based covenants; Dual is an indicator variable taking the value of one if a firm is a dual class firm; Leverage is the ratio of the long-term debt to total asset, Loansize is the log of the facility amount; Firmsize is the log of the book value of total assets; BTM is the ratio of the book value of equity over market value of equity; ROA is the ratio of the income before extraordinary items over average total assets; Revolver is an indicator variable taking the value of one if the facility's type is revolver, zero otherwise; ***Significant at the 1% level;**Significant at the 5% level; *Significant at the 10% level. ; Robust standard errors in parentheses.

Table 5 Regression Analyses of Syndication and Secured

VARIABLES	(1) syndication 1	(2) syndication 2	(3) syndication 3	(4) syndication 4	(5) secured 1	(6) secured 2	(7) secured 3	(8) secured 4
dual	0.762***	0.0181	0.4224**	0.1307	0.290**	0.691***	0.3691**	0.6731***
	(0.191)	(0.241)	(0.1954)	(0.2397)	(0.144)	(0.153)	(0.1451)	(0.1533)
firmsize		0.144***		0.0735***		-0.330***		-0.3484***
		(0.0308)		(0.0302)		(0.0285)		(0.0248)
loansize		0.914***		0.9252***		-0.272***		-0.2829***
		(0.0423)		(0.0340)		(0.0330)		(0.0274)
btm		0.000857		0.00149		-0.00196**		-0.00186*
		(0.00238)		(0.00286)		(0.000765)		(0.00103)
leverage		1.009***		0.9696***		1.926***		-1.8460***
		(0.233)		(0.2367)		(0.182)		(0.1860)
zscore						0.126*		0.1421*
						(0.0757)		(0.0783)
Constant	1.685***	-14.49***	2.8768***	-13.7355***	1.412***	7.789***	1.1936***	-8.2418***
	(0.0353)	(0.671)	(0.0945)	(0.5353)	(0.0324)	(0.508)	(0.0506)	(0.4511)
Observations	6,453	6,453	6,453	6,453	6,453	6,453	6,453	6,453
Number of year			8	8			8	8
year FE			YES	YES			YES	YES

Table 5 presents the regressions of syndication and secured. The dependent variables are syndication and secured. For each dependent variable, we do four regressions: with and without control variables, with and without year effect. Syndication is an indicator variable taking the value of one if the distribution style is syndication, zero otherwise; Secured is an indicator variable taking the value of one if the facility is backed by collateral, zero otherwise; Dual is an indicator variable taking the value of one if a firm is a dual class firm; Loansize is the log of the facility amount; Firmsize is the log of the book value of total assets; BTM is the ratio of the book value of equity over market value of equity; Z-score is an indicator variable taking the value of one if Z-score is smaller than 1.8; ***Significant at the 1% level;**Significant at the 5% level; *Significant at the 10% level. ; Robust standard errors in parentheses.

Table6 Subsample test

Panel A: subsample for leverage (median)						
Low leverage						
	interest	maturity	c_covenant	p_covenant	syndication	secured
DUAL	5.44554	-2.37725	0.05897	0.2522	-0.3727	-0.2153
P-value	0.5382	0.1715	0.1725	0.0006	0.1359	0.3239
high leverage						
DUAL	12.0942	12.26392	0.04363	0.4641	-0.0269	-1.1678
P-value	0.1067	<.0001	0.1612	<.0001	0.9297	<.0001
F value	0.29	22.94	0.26	6.28	0.8744	6.4738
Pr > F	0.5886	<.0001	0.6121	0.0122	0.3497	0.0109
Panel B: subsample for size (median)						
small size						
	interest	maturity	c_covenant	p_covenant	syndication	secured
DUAL	-0.7294	0.1496	0.0959	0.0427	0.0908	-0.6538
P-value	0.947	0.9359	0.0743	0.6455	0.7095	0.162
large size						
DUAL	8.79932	8.2566	0.0199	0.5254	-0.836	-0.7468
P-value	0.176	<.0001	0.4444	<.0001	0.0369	<.0001
F value	0.66	19.61	3.76	8.78	1.4046	0.1054
Pr > F	0.4166	<.0001	0.0527	0.0031	0.2360	0.7454
Panel C: subsample for profitability (median)						
low profitability						
	interest	maturity	c_covenant	p_covenant	syndication	secured
DUAL	10.7505	7.6292	-0.026	0.5374	-0.301	-0.9071
P-value	0.1574	<.0001	0.4693	<.0001	0.238	<.0001
high profitability						
DUAL	-5.7794	3.8313	0.1503	0.1163	-0.3333	-0.3634
P-value	0.5157	0.0277	<.0001	0.1373	0.2688	0.1223
F value	2.3	20.61	14.73	27.8	1.1349	4.4342
Pr > F	0.1292	<.0001	0.0001	<.0001	0.2867	0.0352

Table 6 is the result for subsample tests. Firms are divided into subsamples by the median of full sample's leverage, firm size and profitability. In each subsample, the dependent variables are the same: Interest, maturity, c_covenant, p_covenant, syndication and secured. The regression equations include the DUAL and control variables. For brevity, only the coefficient of Dualclass and its p- value are provided for each subsample. F value is the statistics for the test of equal slopes in two subsamples.

Table 7 Robustness test 1: Endogeneity test

Panel A: Endogeneity test						
	Continuous dependent variable				Dummy dependent variable	
VARIABLES	(1) Interest	(2) Maturity	(3) C_covenant	(4) P_covenant	(5) Syndication	(6) Secured
dual	250.2***	51.36***	-0.0743	2.422***	-2.214***	3.613***
	(35.16)	(6.970)	(0.174)	(0.324)	(0.449)	(0.145)
firmsize	-8.304***	1.525***	-0.00918	-0.0971***	0.115***	-0.166***
	(1.347)	(0.217)	(0.00660)	(0.0123)	(0.0156)	(0.0118)
loansize	-25.81***		-0.0961***	0.204***	0.415***	-0.0875***
	(1.258)		(0.00588)	(0.0110)	(0.0339)	(0.0137)
institutional	69.67***					
	(6.161)					
purpose	17.50***					
	(4.622)					
creditrating	-11.47***	-0.775**				
	(1.716)	(0.346)				
btm	0.00399		0.00102***	-0.000919	-0.00136	0.000126
	(0.0669)		(0.000325)	(0.000607)	(0.00116)	(0.000613)
revolver	-28.80***		-0.0137	-0.193***		
	(3.988)		(0.0170)	(0.0317)		
assetmaturity		0.000672				
		(0.00101)				
assettangibility		3.506***				
		(0.991)				
leverage			-0.0718*	0.835***	0.499***	0.547***
			(0.0371)	(0.0691)	(0.116)	(0.0944)
roa			0.000303	0.0206**		
			(0.00535)	(0.00997)		
zscore						-0.0315
						(0.0368)
Constant	772.6***	36.22***	2.545***	-1.457***	-6.648***	2.762***
	(18.45)	(1.331)	(0.0872)	(0.163)	(0.511)	(0.264)
Observations	5,866	5,866	5,866	5,866	5,866	5,866
First stage R-squared	0.0698	0.0679	0.0681	0.0681		
Second stage R-squared	0.020	-0.1198	0.087	-0.0262		
Panel B: Diagnostics for instrumental variables						
Sargan	85.882***	321.310***	110.926***	116.256***		
F-value	44.047	45.412	42.097	42.097		
Stock-Yogo	29.18	29.18	29.18	29.18		

Table 7 test the endogeneity problem in these models. Panel A shows the results. Panel B reports diagnostics: Sargan, F-value and stock-yogo. Sargan is Sargan statistic for overidentification test of all instruments. F-value is the Cragg-Donald Wald F statistic for Weak identification. Stock-Yogo is the Stock-Yogo weak ID test critical value of 10% maximal IV size. Interest is the interest rate spread based on the all-in-spread-drawn measure reported by dealscan; Maturity is estimated by the number of months between the facility's issue date and the date when the facility matures; P_covenant is the number of performance based covenants; c_covenant is the number of capital based covenants; Syndication is an indicator variable taking the value of one if the distribution style is syndication, zero otherwise; Secured is an indicator variable taking the value of one if the facility is backed by collateral, zero otherwise; Dual is an indicator variable taking the value of one if a firm is a dual class firm; Loansize is the log of the facility amount; Firmsize is the log of the book value of total assets; Institutional is an indicator variable taking the value of one if the loan's type is term loan B,C or D (institutional term loans), zero otherwise; Purpose is an indicator variable taking the value of one if the facility's primary purpose is Takeover, LBO/MBO or recapitalization, zero otherwise; Creditrating is S&P Quality Ranking; BTM is the ratio of the book value of equity over market value of equity; Revolver is an indicator variable taking the value of one if the facility's type is revolver, zero otherwise; Assetmaturity is the maturity of assets; Assettangibility is the ratio of net PPE to total assets; Leverage is the ratio of the long-term debt to total asset; ROA is the ratio of the income before extraordinary items over average total assets; Z-score is an indicator variable taking the value of one if Z-score is smaller than 1.8.R-squared 1is the first stage R-square. R-squared 2 is the second stage R-squared. ***Significant at the 1% level;**Significant at the 5% level; *Significant at the 10% level. ; Robust standard errors in parentheses.

Table 8 Robustness test 2: FIML

Three equation system: (Interest, maturity, covenant)

Panel A : OLS			
	Interest	Maturity	Covenant
DUAL	5.215	9.396***	0.397***
	(4.976)	(1.451)	(0.0664)
Panel B: FIML			
DUAL	-61.6486***	-4.56301**	0.207789***
	(22.8466)	(2.1135)	(0.0636)
Interest		-0.03127***	0.002629***
		(0.0104)	(0.000691)
Maturity	-6.37331**		0.020563***
	(3.0719)		(0.00323)
Covenant	297.9993***	33.26515***	
	(99.9675)	(1.8549)	
Root MSE	350.1	40.0553	1.1571
Observations	6453	6453	6453
Log Likelihood		-78176	

Table 8 shows the result of full information maximum likelihood estimation (FIML). It focuses on the problem of simultaneous changes in these dependent variables: interest, maturity and covenant. OLS results are shown in Panel A as a comparison. For brevity, we suppress control variables. For Panel A, these regressions use the same model as in equations (1) to (3). For Interest, the control variables are loansize, firmsize, creditrating, revolver, purpose, institutional and btm. For Maturity, the control variables are firmsize, creditrating, assetmaturity, assettangibility, purpose and btm. For covenant, the control variables are firmsize, revolver, security, loansize, roa and leverage.
Panel B shows the results for FIML and run the three equations as a system. For Interest, the independent variables are DUAL, Maturity, Covenant and controls. For Maturity, the independent variables are DUAL, Interest, Covenant and controls. For Covenant, the independent variables are DUAL, Interest, Maturity and controls. All controls used are the same as in OLS. Interest is the interest rate spread based on the all-in-spread-drawn measure reported by dealscan; Maturity is estimated by the number of months between the facility's issue date and the date when the facility matures; Covenant is the total number of covenants; DUAL is an indicator variable taking the value of one if a firm is a dual class firm; ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. ; Standard errors in parentheses.