FINANCIAL FLEXIBILITY AND CAPITAL STRUCTURE

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ABSTRACT

This study examines the relation between financial flexibility through share repurchases and capital structure. Financial flexibility has been shown to be the top consideration among CFOs when determining firm debt levels (Graham and Harvey (2001)). Additionally, Graham and Harvey (2001) identify share repurchases instead of dividends as one method to improve financial flexibility. I find that higher levels of financial flexibility through share repurchases are positively related to higher levels of firm debt. The positive relation is greatest among firms with debt levels above the median for their industry, which may be lacking additional debt capacity. These results indicate that firms achieving greater financial flexibility through share repurchases may be willing to accept less financial flexibility through higher debt levels.

Keywords: financial flexibility, trade credit, payout policy

JEL Classification G31 G32 G35

INTRODUCTION

A substantial amount of research has addressed the issue of firm capital structure and its determinants. Much of the literature focuses on the trade-off theory of debt which assumes firms decide on a target debt level by balancing the costs of bankruptcy associated with debt against the tax benefits of debt [Kraus and Litzenberger (1973); Myers and Majluf (1984)] and the pecking order theory of debt (Myers and Majluf (1984)) that retained earnings are preferred to debt and that debt is preferred to issuing equity. An additional concern when issuing debt is discussed by Graham and Harvey (2001), which provides survey results from CFOs that shows the number one consideration affecting the decision to issue debt is the ability to maintain financial flexibility. Once the firm issues debt, there is a financial commitment that removes a portion of flexibility available to the firm. Firms have a high interest in both maintaining and improving financial flexibility [Graham and Harvey (2001); Denis (2011); Brav et al (2005)], which enhances the ability to take advantage of positive NPV projects as well as assists firms in avoiding financial distress. This study focuses on financial flexibility through share repurchases, and how it affects firm capital structure decisions. I find that greater financial flexibility in payout policy is positively related to firms' debt levels. Additionally, I find that this positive relation is especially focused among firms that may be lacking additional debt capacity. These results are consistent with prior research which demonstrate share repurchases as a method to improve financial flexibility [Brav et al (2005); Bonaime et al (2014)], and identify one potential outcome of this improved flexibility to be an increased willingness to accept lower financial flexibility through higher debt levels.

This study is significant because prior literature emphasizes both the desire for firms to possess financial flexibility and how this desire impacts individual areas of decision making including capital structure [Byoun (2008); Lins et al (2010)], financial flexibility [(Guay and Harford (2000); Jagannathan, Stephens and Weisbach (2000)] and cash management policies [Opler et al (1999); Bates et al (2009)]. While this prior research has effectively identified flexibility's impacts on individual areas for decision making, it has not explored how trade-offs in flexibility between these areas may occur based on the firm's overall objectives. It may be understood that less debt and a higher percentage of repurchases can both result in greater financial flexibility, but this paper explores whether an increase in flexibility in one of these areas of financial decision making (payout policy) effects the firm's decision making in the other (capital structure). This is, to my knowledge, the first paper to make such a connection.

LITERATURE REVIEW

DeAngelo and DeAngelo (2007) provide evidence of financial firms' financial decisions being influenced and made with the desire of maintaining financial flexibility. Empirical evidence discusses one of these financial decisions as the tendency for managers to choose share repurchases as the method for paying out profits that are cyclical or derived from higher levels of non-operating cash flows [Guay and Harford (2000); Jagannathan, Stephens and Weisbach (2000)]. This potential flexibility from repurchases stands in contrast to the possibility of dividends being a financial constraint that could motivate managers to reduce investments when

facing cash shortfalls (Daniel, Denis and Naveen (2010)). Using a survey of CFOs, Graham and Harvey (2001) provide further evidence that managers may favor share repurchases over dividends because the repurchases are viewed as providing greater financial flexibility. Graham and Harvey's (2001) analysis finds that the desire to maintain financial flexibility is one of the most important factors affecting capital structure.

Capital structure refers to the level of firm financing derived from either debt or equity. When firms decide to use debt as opposed to equity, they are making the decision to receive cash up front that must then be repaid using future cash flows (Frank and Goyal (2009)). The decision to use debt can be problematic to firms because they are then committed to a financial obligation that may not be met if there are changes to either the economic environment or the fortunes of the firm. This explicit financial obligation could be restrictive to the firm's growth opportunities and may reduce its financial flexibility. The question remains as to how firms decide what proportion of their financing should be composed on debt versus equity. Two theories have predominantly determined the research and motivations of capital structure. Kraus and Litzenberger (1973) and Myers and Majluf (1984) propose a trade-off theory of capital structure where firms choose the level of debt that balances the tax benefits of debt with the increased costs of potential bankruptcy. Myers and Majluf (1984) discusses the pecking order theory of capital structure which states firms should first elect to use retained earnings for financing, followed by debt issues and finally equity issues. A variety of both theoretical and empirical studies have taken place to identify the determinants of capital structure. Frank and Goyal (2009) examine many of the determinants previously discussed in prior literature and identify the six factors that are most reliable in explaining market leverage. These factors are median industry leverage, market-to-book ratio, asset tangibility, firm profits, firm size and expected inflation. I follow the model of Frank and Goyal (2009) when using the determinants of capital structure in this study.

This paper seeks to identify a specific link between financial flexibility through repurchases and a firm's capital structure. Debt in capital structure is a financial obligation often viewed as a limitation on the ability of the firm to maintain its flexibility. Similarly, dividends have been viewed as another form of financial commitment that may reduce flexibility (Daniel, Denis and Naveen (2010)). However, instead of looking at either payout policy or capital structure as an individual decision, firms may instead be balancing the flexibility benefits of either in an effort to help the firm achieve its overall flexibility goals. Increases in debt may be an opportunity for the firm to take advantage of positive NPV projects. However, if the firm perceives the necessary increase in debt as too costly based on the lost financial flexibility, then the project may be passed over. One solution to this problem may be an improvement in financial flexibility through payout policy decisions, which may then allow the firm to maintain its total flexibility goals. This flexibility through payout policy would be reflected by a higher percentage of total payout in the form of share repurchases. Overall, I hypothesize a direct relation between financial flexibility through repurchases and capital structure.

H1: Financial flexibility and capital structure have a positive and significant relation.

Prior literature has identified leverage as one tool for maintaining financial flexibility [Byoun (2008); Lins et al (2010); Billet et al (2007)]. Graham (2000) provides evidence that one method firms may use to provide financial flexibility is to maintain debt capacity. Firms with additional debt capacity may experience less financial flexibility benefit from electing share

repurchases than firms without additional debt capacity. To identify firms with additional capacity, I identify each firm's debt level in comparison to the industry median. If a firm is below the industry median they are identified as having additional capacity. Firms above the industry median are considered to be lacking additional capacity. I follow the identification of Arslan-Ayaydin, Florackis and Ozkan (2014) and identify firms lacking additional debt capacity as high leverage or 'HL' firms. I expect financial flexibility through repurchases to have a greater effect on debt levels among HL firms.

H2: The relation between financial flexibility and capital structure is greater among HL firms.

Finally, Frank and Goyal (2009) explore changes to firms' balance sheets and cash flow statements over time and identify changes in the determinants of capital structure. I similarly identify the effect of financial flexibility through time. Grullon and Michaely (2002) demonstrate the increase in repurchase activity that is coming from both the increased propensity for young firms to initiate repurchases instead of dividends and the increase in repurchases from larger firms that have established dividend programs. As repurchases have become a more regular part of payout policy, there may be less recognizable benefit to financial flexibility by electing share repurchases. Thus, I expect the benefit of financial flexibility through share repurchases to be declining over time. However, I expect the relation to remain greater among firms without additional debt capacity, or HL firms.

H3: The relation between financial flexibility and capital structure is declining over time.

H3a: The relation between financial flexibility and capital structure is greater among HL firms.

DATA & METHODOLOGY

The sample for this study comes from all firms in Compustat from fiscal years 1970-2013, excluding financial firms (SIC codes 6000-6999) and regulated utilities (4900-4999). While prior data for capital structure is available in Compustat, repurchase activity is not included until 1970. I drop all firms with either sales or total assets that are less than zero. The total number of firm-year observations for which my dependent variable is present is 276,579. Missing observations in other variables may lead to fewer observations for the regressions. Table 1 presents summary statistics for the data set. All ratios are winsorized at the one percent level for each tail to reduce the effect of outliers.

Table 1
Summary Statistics

Table 1 presents summary statistics for firms in the sample. The sample includes all nonfinancial and nonutility firms in Compustat for fiscal years 1970 through 2013. *DTA and TDM* are both measures for firm debt. *Industry Debt* is the median debt level for a firm's industry in a given year. *Market to Book* is the market-to-book ratio. *Tangibility* refers to asset tangibility. *Profitability* is firm profitability. *Size* is the log of firm assets. *Flexibility* is the percentage of total payout from share repurchases.

Variable	Mean	Standard Deviation
DTA	0.255	0.273
TDM	0.252	0.253
Industry Debt	0.203	0.097
Market to Book	2.230	4.120
Tangibility	0.312	0.274
Profitability	0.037	0.291
Size	4.500	2.480
Flexibility	0.366	0.436

I use the model of Frank and Goyal (2009) to identify the independent variables in my regressions and include *Flexibility* as the independent variable of interest. *Flexibility* is measured following Bonaime et al (2014), which measures repurchases as a percentage of total payout. The following equation is used to identify the relationship between capital structure and financial flexibility:

$$(Debt)_{it} = \alpha_i + \beta_1 IndustryDebt_{t-1} + \beta_2 MB_{t-1} + \beta_3 Tangibility_{t-1} + \beta_4 Profit_{t-1} + \beta_5 Size_{t-1} + \beta_6 Inflation_{t-1} + \beta_7 Flexibility_{t-1} + \varepsilon_{i,t} \quad (1)$$

Similar to Frank and Goyal (2009) I use more than one measure for debt. Table 2 presents the major variables used (including both measures for debt), as well as how they are created.

Table 2
Variable Definitions

Table 2 presents variable definitions for this study. The sample includes all nonfinancial and nonutility firms in *Compustat* for fiscal years 1970 through 2013. The variables have a definition provided as well as the calculation of the variable using *Compustat* variables.

Variable	Definition
TDM	Total debt to market value of assets. (DLC+DLTT)/[(PRCC_F*CSHPRI)+ DLC + DLTT + PSTKL - TXDITC]
DTA	Total debt to total assets (DLC+DLTT)/AT
Industry Debt	Median industry leverage represents the median value of total debt to the market value of assets by Fama French Industry
MB	Market-to-Book ratio is the ratio of market value to total assets. [(PRCC_F*CSHPRI)+ DLC + DLTT + PSTKL - TXDITC]/AT
Tangibility	Asset tangibility. (PPENT/AT)
Profitability	Firm profitability. (OIBDP/AT)
Size	Log of total assets.
Rate	Expected inflation rate over the next year as reported in the Livingston Survey.
Flexibility	Share repurchases as a percentage of total payout. PRSTKC/(PRSTKC+DV)
HL	Indicator variable equal to 1 if a firm is above the median level of leverage for its industry.

MULTIVARIATE RESULTS

I estimate Equation (1) using a fixed effects model. The results are in Table 3, with Column A reporting results using TDM and Column B using DTA as the measures for firm leverage. The coefficient for the *Flexibility* variable is positive and significant, indicating that firms with greater financial flexibility through share repurchases are willing to accept a higher level of leverage in their capital structure. These results are consistent with my hypothesis that firms may increase financial flexibility by choosing to make a higher percentage of payouts

through share repurchases and that this allows the firm the ability to increase its debt levels. The results for the six original determinants are similar to the findings of Frank and Goyal (2009).

Table 3
The Effect of Financial Flexibility on Capital Structure

Table 3 presents a firm fixed effect regression with firm debt as the dependent variable. *Industry Debt* is the median debt level for a firm's industry in a given year. *Market to Book* is the market-to-book ratio. *Tangibility* refers to asset tangibility. *Profitability* is firm profitability. *Size* is the log of firm assets. *Flexibility* is the percentage of total payout from share repurchases. *Rate* is the expected rate of inflation over the next 12 months as reported from the Livingston Survey. The regression also includes industry effects, with standard errors adjusted for within firm clustering. *, ** and *** identify estimates that are statistically significant at 10%, 5% and 1% levels, respectively.

Variable	Results using TDM	Results using DTA
Industry Debt	0.34***	0.25***
MB	-0.01***	0.01***
Tangibility	0.18***	0.14***
Profitability	-0.32***	-0.16***
Size	0.04***	0.02***
Rate	1.19***	0.25***
Flexibility	0.01***	0.01***

As repurchases have become more valuable through time for both established firms as well as younger firms electing to begin profit payouts (Grullon and Michaely (2002)), this may eliminate the flexibility benefits associated with repurchases over dividends. To identify the effect of *Flexibility* over time, I repeat Equation (1) over four sub-samples based on date. The first is for all observations in years 1970-1979, with the second, third and fourth groups being the 1980's, 1990's and 2000's, respectively. Results are presented in Table 4, with results using TDM and DTA presented in Panels A and B, respectively.

Table 4
The Effect of Financial Flexibility on Capital Structure

Table 4 presents firm fixed effect regressions through time with firm debt as the dependent variable. Results in Panel A and Panel B display results with two measures for firm debt; total debt to total market value and total debt to total assets, respectively. *Industry Debt* is the median debt level for a firm's industry in a given year. *Market to Book* is the market-to-book ratio. *Tangibility* refers to asset tangibility. *Profitability* is firm profitability. *Size* is the log of firm assets. *Flexibility* is the percentage of total payout from share repurchases. *Rate* is the expected rate of inflation over the next 12 months as reported from the Livingston Survey. The regression also includes industry effects, with standard errors adjusted for within firm clustering. *, ** and *** identify estimates that are statistically significant at 10%, 5% and 1% levels, respectively.

Panel A: Total Debt to Total Market Value

Variable	1970's	1980's	1990's	2000's
Industry Debt	0.33**	0.20***	0.26***	0.49***
MB	-0.01***	-0.01***	-0.01***	-0.01***
Tangibility	0.25***	0.20***	0.18***	0.19***
Profitability	-0.48***	-0.37***	-0.25***	-0.15***
Size	0.05***	0.09***	0.08***	0.07***
Rate	2.64***	1.46***	2.51***	2.46***
Flexibility	0.03***	0.02***	0.02***	0.01

Panel B: Total Debt to Total Assets

Variable	1970's	1980's	1990's	2000's
Industry Debt	0.33***	0.12***	0.15***	0.27***
MB	0.01***	0.01***	0.00	0.01***
Tangibility	0.25***	0.08***	0.15***	0.13***
Profitability	-0.26***	-0.22***	-0.11***	-0.07***
Size	0.06***	0.06***	0.04***	0.03***
Rate	1.33***	0.43***	0.55***	1.28***
Flexibility	0.02**	0.02***	0.01**	0.00

The results in Table 4 show a decline in the coefficient value for *Flexibility* over time from a high of .03 to a low of 0. For both measures of firm debt, *Flexibility* has no significant relation to capital structure in the final time period. These results are consistent with the idea that as more firms have adopted the use of share repurchases there may be less flexibility benefit from the repurchases which may remove the incentive for firms to be willing to accept higher debt levels.

Graham (2000) provides evidence that firms may maintain financial flexibility by keeping additional debt capacity in the event the firm needs access to capital. Firms that are able to maintain this additional capacity may have less incentive to utilize repurchases as a tool for flexibility. Firms without additional capacity, or low cost additional capacity, may elect a payout policy that utilizes higher levels of repurchases in an effort to improve financial flexibility. In an

effort to identify firms that may be lacking additional debt capacity, I follow the identification of Arslan-Ayaydin, Florackis and Ozkan (2014) by labeling firms with debt levels above the industry median as high leverage or 'HL'. These firms have an indicator variable equal to one for any year in which their debt level was above their industry's median debt level in the same year. Similarly, firms not identified as 'HL' are considered low leverage or 'LL' firms which may have additional debt capacity.

In Table 5 I estimate Equation (1) on two sub-samples which are based on firms classified as either HL or LL. I again estimate Equation (1) based on time periods to compare the effect of *Flexibility* over time. I expect that more financial flexibility through share repurchases will have a greater impact on HL firms which should persist through time. Results are shown in Panels A and B for HL and LL firms, respectively.

Table 5

The Effect of Financial Flexibility on Capital Structure

Table 5 presents firm fixed effect regressions with firm debt (total debt to total market value) as the dependent variable. Results in Panel A and Panel B display results for HL and LL firms, respectively. *Industry Debt* is the median debt level for a firm's industry in a given year. *Market to Book* is the market-to-book ratio. *Tangibility* refers to asset tangibility. *Profitability* is firm profitability. *Size* is the log of firm assets. *Flexibility* is the percentage of total payout from share repurchases. *Rate* is the expected rate of inflation over the next 12 months as reported from the Livingston Survey. The regression also includes industry effects, with standard errors adjusted for within firm clustering. *, ** and *** identify estimates that are statistically significant at 10%, 5% and 1% levels, respectively.

Panel A: HL Firms

Variable	1970's	1980's	1990's	2000's
Industry Debt	0.95***	0.14**	0.22***	0.48***
MB	-0.02***	-0.01***	-0.01***	-0.01***
Tangibility	0.19***	0.15***	0.11***	0.13***
Profitability	-0.45***	-0.49***	-0.41***	-0.28***
Size	0.03***	0.09***	0.08***	0.08***
Rate	0.83***	1.64***	1.62***	2.86***
Flexibility	0.04***	0.03***	0.02***	0.01**

Panel B: LL Firms

Variable	1970's	1980's	1990's	2000's
Industry Debt	-3.46***	-0.01	0.03	0.13***
MB	-0.01	-0.01***	-0.01***	-0.01***
Tangibility	0.11***	0.14***	0.10***	0.11***
Profitability	-0.17***	-0.12***	-0.06***	-0.04***
Size	-0.01	0.03***	0.02***	0.02***
Rate	2.97***	0.76***	0.96***	0.34***
Flexibility	0.02**	0.00	0.00	0.00

Results in Table 5 demonstrate that the relation between *Flexibility* and capital structure has been driven by HL firms. In fact, while every time period has a positive and significant relation among HL firms, there is no significant relationship between *Flexibility* and capital

structure for LL firms after the 1970's. These results provide evidence that the relation between financial flexibility through share repurchases and capital structure is greatest for HL firms. Additionally, these results provide evidence that while financial flexibility through repurchases may have a declining impact on capital structure decisions, it is still of importance among firms that may lack flexibility from additional debt capacity. When considering lost financial flexibility as a cost of debt, it would make sense that HL firms view an increase in debt as more costly than LL firms due to the greater loss in flexibility. Thus, the relation between capital structure and repurchases is greatest for firms that would otherwise view this increase in debt as most costly.

CONCLUSION

In this study, I seek to establish a link between capital structure and payout policies that exists because of managers' efforts to maintain financial flexibility. I provide evidence that flexibility through payout policy may play a role in capital structure decision making by empirically examining the relation between capital structure and financial flexibility through share repurchases, and results indicate it is positive and significant. Further evidence indicates that this positive relation is specifically observed among high leverage firms which may otherwise lack financial flexibility in the form of additional debt capacity. These results indicate that while managers do consider both capital structure and payout policies to maintain flexibility.

Because firms have increased their flexibility through payout policy decisions, there appears to be a willingness to accept less flexibility through increased debt levels. While prior literature has examined manager's desires to maintain financial flexibility, this is the first paper to identify how a firm may be willing to make trade-offs in flexibility between different financial decisions within the firm. Overall, this study is unique because it extends prior literature that explores financial flexibility within specific areas of firm decision making, and finds that when making financial decisions, firms have a willingness to take a more holistic approach that balances the total level of flexibility available. Because both debt and dividends may be viewed as financial constraints that restrict flexibility [Graham (2000); Daniel, Denis and Naveen (2010)], firms appear to consider both payout policy and capital structure decisions together when striving to maintain a necessary level of financial flexibility.

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