BANK'S SUPPLY OF CREDIT AND CORPORATE CAPITAL STRUCTURE IN PAKISTAN

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Abstract:
The aim of this paper is to investigate how the macro-economic factor i.e. the supply constraint of bank credit affects the corporate capital structure of non-financial firms of listed companies of Karachi Stock Exchange (KSE) during the period of 2005 to 2010 in a data set with 558 observations using panel data. This paper investigates the fact that other than the typically observed determinants of capital structure i.e. liquidity, profitability, tangibility and earning volatility etc. (Sheikh and Wang, 2011; Shah&Hijazi, 2004; Shah and Khan, 2007), it is examined how the financial constraints affect the capital structure decision. This paper is one of the first study carried out in Pakistan and is particularly inspired by the research recently conducted by Leary (2009) and Faulkender and Petersen (2006). The significant fluctuations in credit supply that were observed during the last decade offer a very suitable natural scenario to experiment and identify how the capital structure of non-financial firms is influenced by the credit supply in the economy. The results of the study posit that capital structure decisions are not influenced by the monetary or credit conditions prevailing in the Pakistani economy. The distinction of this paper is that it underpins the macro-economic factor deteriorating the decision making process of firms and thus incorporates them in determining the capital structure of firms.

Key words: capital structure, credit supply, systematic risk

1. Introduction

One of the core decisions in financial management includes the one regarding the capital structure of a firm. The other decisions made in financial management as well as in the field of corporate finance pertain to decisions regarding the financing of a project, the dividend policy, issuance of securities, mergers and acquisitions and so on. All these core decisions aim toward the maximization of share holder's wealth and this objective is also insured through achieving a lower cost of capital. This lower cost of capital can also be achieved through, among other tools, an optimum capital structure where the cost of capital is at minimum level. The question arises whether such level of the optimal capital structure can be achieved practically? Are there any potential macro-economic factors existing other than the firm's demand side determinants such as credit supply? And if yes, what is the impact of such factors on the optimal capital structure? These questions are to be investigated by a researcher.

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The job of a researcher, in other words, is to identify any potential determinants of capital structure not only in a given institutional settings, capital markets and/or industries, but also to consider the uncontrollable financial constraints factors in an economy. The corporate financial managers thus have to aim at a target mix of debt and equity keeping in view the firm's specific demand side conditions as well as credit condition and monetary policy of an economy.

There exists a large component of research, both empirical and theoretical since the pioneering work published by Miller and Modigliani in 1958, which has been focusing on the subject of capital structure. Most of the research work, however, has been carried out as a repetition and affirmation on the theories of "Trade-off" and "Pecking order". Most of the research work regarding the capital structure are emphasizing on the determination of the factors of the leverage ratio and the firm's choice to opt for issuance of debt or equity for raining funds (Bradley et al., 1984; Titman and Wessels, 1988; Hovakimian et al., 2004; Marsh, 1982). There is a blend of results and outcomes from both types of studies and there is no definite consensus regarding the validity of both the Pecking order theory and Trade-off theory. The same mixed results were produced by different research works in Pakistan which focus on the same conventional approach of examining the determinants of capital structure as studied earlier i.e. keeping in view the firm's specific demand side factors and avoiding other factors such as financial constraints (Sheikh and Wang, 2011; Shah & hijazi,2004; Shah and Khan, 2007).

The author believes that these mixed and indefinite results regarding these two theories and other theories of capital structure as well are due to the fact that they have ignored some other determinant/factors of capital structure that lies outside the box. The researchers were so keen in determining the capital structure keeping in view only the demand side of the firms needs to adjust their capital structure and thus have been neglecting the fact that the supply side of the capital to the firms may also influence the capital structure. The financial managers may seek to maintain a certain proportion of debt and equity to guard the best interest of the firm but the modern world of imperfection, market inefficiencies, agency costs, asymmetrical information, and the standard path to be followed may not be easy to be pursued. There has been an emerging literature available that has responded to the fact of market imperfection and the presence of frictions and financial constraints in the markets and have incorporated the supply of capital (credit) in their studies in examining the determinants of capital structure (Bougheas et al., 2006; Faulkender & Petersen, 2006; Kisgen, 2006; Leary, 2009). This paper is the first to conduct the same as the afore-mentioned studies and test the same proposition in one of a developing economies namely Pakistan.

The distinction of this paper is that it underpins one of the macro economic factors, namely credit supply available in the economy, tampering the decision making process of financial management and thus incorporate it in determining the capital structure of the firm.

2. Literature Review

The first well established and recognized study regarding the structure of capital was provided by Miller and Modigliani (1958) who posited that the demand for debt is the only factor that determines the leverage of a firm and that firms value is independent

of its leverage ratio while assuming the current market to be efficient as according to the efficient market hypothesis i.e. no transaction costs and perfect information freely available. The study of Miler and Modigliani are regarded as a pioneering work in the field of capital structure. But later on, other studies relaxed some its assumptions that were restrictive. The capital markets are not the only significant sources of capital and bank debt has to be inevitably incorporated by firms in their capital structure (Gorton and Winton, 2002). This has led to the derivation of two main theories that attempt to explain financial policy decisions of firms: the trade-off and the pecking order theories. The trade-off theory specifies that financial managers set target debt ratios by balancing out the cost and benefits of borrowing of each additional unit of debt acquired. Due to the existence of interest rate tax shields, financing with debt instead of equity increases a firm's market value (Miller, 1977; Miller and Modigliani, 1963; Myers, 2001). However, an increase of the firm's debt levels increases financial distress costs (Miller and Modigliani, 1963; Titman, 1984) and agency conflicts between the firm's bondholders and stockholders (Jensen and Meckling, 1976).

The alternative theory is the pecking order hypothesis proposed by Myers (1984) and Myers and Majluf (1984) based on the informational asymmetry prevailing i.e. the pecking order hypothesis assumes that financial managers have information that investors do not. Consequently, firms are likely to prefer internal (retained earnings) to external finance (debt and equity financing), since internal financing does not suffer from information asymmetries, and if external finance is required, the safest security will be issued first. According to the pecking order hypothesis, and contrary to the expectations of the trade-off theory, companies do not have a particular capital structure target. The majority of the capital structure studies that have empirically investigated the validity of these two theories revolve around the examination of the determinants of leverage ratios and the choice by firms of issuing debt versus equity The results from such types of studies are mixed as far as the validity of either the trade-off or the pecking order theory is concerned. The empirical findings on the role of tax shields in capital structure are also inconclusive. More importantly, the profitability factor appears to have a negative association with corporate debt ratios in every single capital structure study. Several studies have presented findings that contradict the existence of a pecking order in capital structure.

Finally, Frank and Goyal (2004) find that the deficit of internal funds is closely related with equity and not debt movements. As the European study of Gaud et al. (2006) verifies, after 40 years research in the area of capital structure a clear winner between the mutually competitive trade-off and pecking order theories has therefore not yet been found and a universal theory that sufficiently explains financial policy decisions has not been established. It is the writers' belief that this is due to the fact that previous capital structure studies have overlooked an important determinant of capital structure. It seems that researchers have been investigating the demand for credit so enthusiastically, that the question of how its supply affects firms' financial decisions got neglected. It is more likely natural that in a world of imperfect markets, information asymmetries and agency costs, the financial managers' desires will not always become reality. Consequently, a small but significant body of capital structure literature has recognized some form of financial constraints. Fazzari et al. (1988) and Hovakimian (2009) have shown that companies do face financial constraints. The studies of Titman (2002) and Graham and Harvey (2001) suggest that mangers of firms consider the supply condition of credit as

important factor in determining the firm's capital structure decision. Furthermore the recent capital structure studies of Faulkender and Petersen (2006), Kisgen (2006) and Leary (2009) have recognized the significance of financial constraints and incorporated the supply of credit in their research. This paper is the first to take into consideration the findings of these aforementioned studies and test this hypothesis on the world's growing and developing capital market, namely that of Pakistan.

Due to the expansion in the supply of credit during the last decade, Pakistan is an attractive testing ground. This study uses a panel data set containing data for 93 private firms from 2005 to 2010 and, similar to Leary (2009).

This paper contributes to the literature in other ways. Kisgen (2006) and Faulkender and Petersen (2006) mainly investigated the effect of credit ratings on capital structure in the US. Bougheas et al. (2006) examined the UK market, while not focusing on specific monetary shocks. As was stated earlier the only study of a similar methodology to the present one is the research work of Leary (2009) examining the US market. Previous studies of capital structure in Pakistan (Sheikh and Wang, 2011; Shah and Hijazi, 2004; Shah and Khan, 2007) carried out only a demand-side investigation of corporate financial policy decisions. The following section of this paper will provide an overview of the Pakistani economy and the two economic events of interest during the last decade.

3. Data and Methodology

Due to the expansion in the supply of credit during the last decade, Pakistan is an attractive testing ground. This study uses a panel data set containing data for 93 private firms from 2005 to 2010 and, similar to Leary (2009). The dependent variable is the leverage ratio. The independent variable is the credit supply and the proxy used to measure it is the net advances by the bank as a percentage of total assets of the bank. Simple OLS estimator is run to analyze the results and the total number of observations in the study is 558.

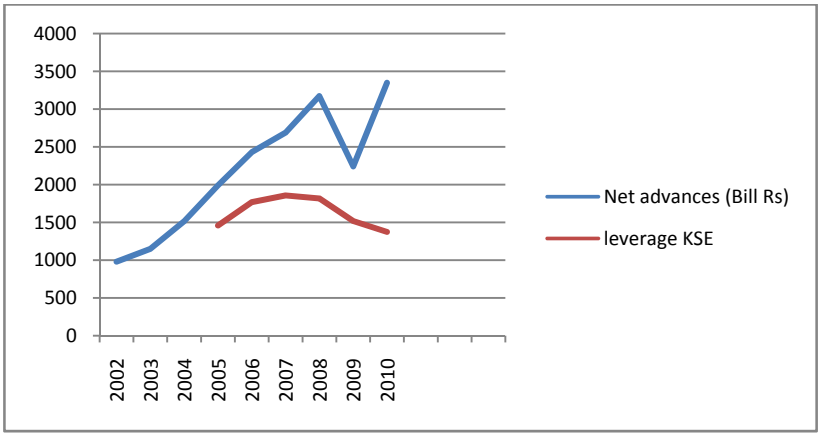
3.1 The Scenario of Pakistan

During the early 2000s, Pakistan witnessed a major economic boom. The stock market index rocketed, real GDP growth expanded and was at maximum of 7.7% during 2005, while the Karachi Stock Index (KSE) 100 rose to a peak. At the same time, Pakistani capital out flows rose to unprecedented volumes. The interest rate during the period was its lowest and the boom of banking sector flourished market causing a significant increase in the credit supply. The KIBOR (Karachi interbank operating rate was also recorded at the minimum of approximately 6% and money seemed to flood the market as the increase in reserves to the level of $ 5 billion plus has happened after September 11. Certain factors have been instrumental in this. First, remittances into Pakistan increased substantially because those who kept money abroad were fearful of their accounts being frozen in the wake of the American anti-terrorist campaign. The second element was one-off budgetary grant inflows from the US, Japan and the EU. The aggregate bank lending throughout the economy rose during the period of 2000 to 2010 from Rs 979 billion to Rs 3349 billion i.e. experienced a growth of more than 300 percent in 8 years, as stated by the economic survey of Pakistan's report.

A couple of years later in 2007 the economy started to tumble and the stock market plummeted during 2007-08 and the KSE-100 reached a lowest and the KIBOR raised approximately 14% and total bank lending started to contract and reached to its peak in 2008 This expansion of economic activity, its sudden halt and its immediate transformation into a recession is one of the most dramatic economic events recorded in the last few decades of the economy.

3.2 The Credit Supply and Leverage Ratio

The credit supply in the economy is provided in "The economic survey of Pakistan" under the heading of total bank advances and the proportionate increase or decrease is observed over the period under observation. There has been an increasing trend in the advances of the commercial banks from 2005 to 2010 though there is tumbling figure in the year 2009.



3.3. Measure of Leverage

Previous studies suggest that the level of leverage depends upon the definition of leverage. Several research studies have used both market and book value based measures of leverage (Titman and Wessels, 1988; Rajan and Zingales 1995). The former measure divides book value of debt by book value of debt plus market value of equity and the later measure divides the book value of debt by book value of debt plus book value of equity. We use the book value measure of leverage. This can be justified with the argument that optimal level of leverage is determined by the trade-off between the benefits and costs of debt financing. The main benefit of leverage is the cash savings generated because of the debt-tax shield. This tax shield benefits are not changed by market value of the debt once it is issued (Banerjee, S. et al 2000). This is why market value of debt becomes irrelevant. On the other hand, if a firm falls in financial distress and goes into bankruptcy, then the relevant value of the debt is the book value of debt. Finally, book value measure provides relative ease and accuracy with which it can be calculated. Another consideration in deciding the appropriate measure of leverage is to take total debt or only long term debt as a percentage of total assets. Though capital structure theories consider long term debt

as a proxy for financial leverage, we use the measure of total debt because in Pakistan firms have mostly short-term financing as the average firm size is small which makes access to capital market difficult in terms of cost and technical difficulties (Shah and Hijazi, 2004). The main sources of debt in Pakistan have been commercial banks, which do not encourage long term loans, with almost no reliance on market based debt until mid 1994 when government moved to remove most of the constraints among which one action was to amend company law to permit corporate entities to raise debt directly from the market in the form of TFCs (Term Finance Certificates). So corporate bond market has limited history and is in the process of development. This explains why firms on average in Pakistan have more short term financing than long term financing. Booth et al (1999) also pointed in their study on determinants of capital structure in developing countries including Pakistan that the use of short term financing is higher than long term financing in developing countries.

3.4 Credit Supply

The proxy used in this study for the credit supply in the economy t the corporate sector is the figures of net advances by all the commercial banks and subsequently the percentage of net advances total assets of the banks.

The regression model used in this paper is as followed.

Leverage = $\beta 0 + \beta 1$Credit supply + μ

Where,

Credit supply = 1) Net advances is used as a proxy for the credit supply, 2) Net advances as a percentage of total assets.

4. Results and Discussion

There is a steady increase of more than 20 percent on average in the assets of commercial banks as well as the net advances during the period of observation but the capital structure of the corporate sectors seems to be indifferent of these changes in the supply of credit in the economy. The results from the OLS estimator show insignificant though positive impact of the credit supply over the corporate capital structure. It means that the corporate capital structure in Pakistan is determined by other firms demand driven factors and not the excess availability of loanable funds in the economy. To test the robustness of the study, other proxies were used to measure the credit supply in the economy such as net advances as a percentage of total assets of the banks and the third proxy used was M2 as a percentage of GDP. The results from using these variables as a measure of credit supply repeated the same insignificant results as shown in Table:2 and Table:3. All this discussion limit us to the realization of the fact that the firms level determinants of the capital structure are the key dominant determinants of capital structure which are: Size, Asset tangibility, Profitability, Non-debt tax shield, Earning volatility, Growth etc.

Table 1:

Dependent Variable: LEV
Method: Panel Least Squares
Total panel (balanced) observations: 558

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16.34378	19.91803	-0.820552	0.4123
NAD	0.008148	0.007407	1.100088	0.2718
R-squared	0.002172	Mean dependent var		5.207509

Table 2:

Dependent Variable: Lev
Method: Panel Least Squares
Total panel (unbalanced) observations: 557

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.26213	23.81397	-0.640890	0.5219
NA/TA	40.97099	47.11441	0.869606	0.3849
R-squared	0.001361	Mean dependent var		5.207971

Table 3:

Dependent Variable: SER01
Method: Panel Least Squares
Total panel (unbalanced) observations: 557

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	37.71379	42.66983	0.883852	0.3772
M2/GDP	-77.40474	101.2444	-0.764533	0.4449
R-squared	0.001052	Mean dependent var		5.207971

References:

1. Aggarwal, R., & Kyaw, N. A. (2010). Capital structure, dividend policy, and multi-nationality: Theory versus empirical evidence. International al Review of Financial Analysis, 19, 140 –150.
2. Atanasova, C. V., & Wilson, N. (2004). Disequilibrium in the UK corporate loan market. Journal of Banking and Finance, 28, 595 – 614.
3. Bhabra, H., Liu, T., & Tirtiloglou, D. (2008). Capital structure choice in a nascent market: Evidence from listed firms in China. Financial Management, 341 – 364.
4. Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. The Journal of Finance, 56, 87 –130.

5. Bougheas, S., Mizen, P., & Yalcin, C. (2006). Access to external finance: Theory and evidence on the impact of monetary policy and firm-specific characteristics. Journal of Banking and Finance, 30, 199 –227.
6. Bradley, M., Gregg, J., & Han, Kim E. (1984). On the existence of an optimal capital structure: Theory and evidence. The Journal of Finance, 39, 857 – 878.
7. Faulkender, M., & Peterse n, M. A. (2006). Does the source of capital affect capital structure? The Review of Financial Studies, 19, 45 – 79.
8. Frank M.Z., Goyal V.K., 2004. Capital Structure Decisions: Which Factors are reliably Important? Unpublished working paper. British Columbia, Vancouver BC.
9. Kisgen, D. (2006). Credit ratings and capital structure. The Journal of Finance, 61, 1035 –10 72.
10. Leary, M. T. (2009). Bank loan supply, lender choice, and corporate capital structure. The Journal of Finance , 64, 1143 –1185
11. Miller, M. H. (1977). Debt and taxes. The Journal of Finance, 32, 261 –275.
12. Miller, M. H., & Modigliani, F. (1958). The cost of capital, corporation finance and the theory of investment. American Economic Review, 48, 261 –297.
13. Myers, S. C. (1984). The capital structure puzzle. The Journal of Finance, 39, 575 –592.
14. Myers, S. C. (2001). Capital structure. The Journal of Economic Perspectives, 15, 81 – 102.
15. Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information which investors do not have. Journal of Financial Economics, 13, 187 – 221.
16. Psillaki, M., & Daskalakis, N. (2008). Are the determinants of capital structure country or firm specific? Small Business Economics, 33, 319 –333.
17. Rajan, R., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. The Journal of Finance, 50, 1421 – 1460.
18. Titman, S. (1984). The effect of capital structure on a firm's liquidation decision. Journal of Financial Economics, 13, 137 – 151.
19. Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. The Journal of Finance, 43, 1–19.
20. Barclay, M.J., Smith C.W. and Watts, R.L. 1995. "The determinants of corporate leverage and dividend policies, Journal of Applied Corporate Finance", Vol. 7 pp. 4-19.
21. Bradley, Jarrell and Kim. 1984. "on the existence of an optimal capital structure: theory and evidence, Journal of Finance", Vol. 39, pp. 857-878.
22. Fama, E and French, K.R. 1998. "Taxes, financing decisions and firm value," Journal of Finance Vol 53 no.3 pp.819-843.
23. Ghani, Waqar. and Junaid Ashraf. 2005. "Corporate governance, business group affiliation, and firm performance: Descriptive evidence from Pakistan ," CMER Working Paper # 05-35
24. Jensen, M. 1986. "Agency costs of free cash flow, corporate finance and takeovers. American Economic Review", Vol. 76 no.2, pp.323-329.
25. Myers, S., and N. Majluf. 1984. "Corporate financing and investment decisions when firms have information investors do not have, Journal of Financial Economics ", Vol. 13, pp.187-222.
26. Rajan, R. and Zingales, L. 1995. "What do we know about capital structure? Some evidence from international data", Journal of Finance, Vol. 50, pp. 1421- 1460.
27. Ross, S.A. 1977. "The Determination of financial structure: the incentive signaling approach", Bell Journal of Economics pp. 23-40.
28. Shah, A. and T. Hijazi. 2004. "The determinants of capital structure of stock exchange-listed non-financial firms in Pakistan, Pakistan Development Review", Vol. 43, pp. 605-618
29. Titman, S. 1984. "The effect of capital structure on the firm's liquidation decision, Journal of Financial Economics", Vol. 13, pp. 137-151.
30. Titman, S. and Wessels, R. 1988. "The determinants of capital structure choice, Journal of Finance", Vol. 43, pp. 1-19.