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ABSTRACT

This study empirically identifies the factors that explain the capital structure choice pattern of listed companies during 1964–2000. Three measures of debt (total debt ratio, long term book debt ration, and long term market debt ratio) are explained by a set of independent fundamental variables such as growth of firm, size of firm, tangible asset, profitability, earning variability, market to book ratio, and reforms. The analysis is also done to identify any capital structure pattern prevail across various industries in Pakistan. Most of the results are consistent with theory and similar to other empirical studies. The growth and profitability of the firm have negative impact on leverage whereas, size of the firm, tangible asset, earning variability and market to book ratio have positive impact on leverage. The extent of leverage has declined during reform period. However, the coefficient of reform dummy is statistically insignificant. The pattern of leverage is significantly different across most industries due to variation in industry specific policies in Pakistan.

Financial Market Development and Capital Structure Pattern in Pakistan: An Aggregate Level Analysis[1]

1. Introduction

In Pakistan like many developing countries the importance of corporate financial structure choices heavily depend firstly on the existence of functioning markets in which investors can diversify risks and secondly the existence of legal system in which a broad range of property rights can be enforced. Before 1990s the financial sector mainly accommodated the financial needs of the government, public enterprises and private sectors (Khan, 1995; Khan and Khan, 2007). As a result economic efficiency remained low and growth suffered from poor mobilization of resources. The financial markets in Pakistan are going through early stage of development where only small proportion of risk is traded. The markets historically have been relatively illiquid and regulated. However, since 1985 financial structure in Pakistan has been under reforms process and

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later we observe institutional development in financial market particularly in banking sector, equity market as well as in bond market. The objectives of these reforms have been towards improving the financial intermediations and maintaining stability and boosting sustainable growth (Faruqi, 2007; Qayyum, 2007). In addition, the reforms and institutional developments were initiated to remove the inefficiencies and market distortions to support the economic growth in the country (Eatwell, 1996; Nishat, 1999; Khan and Khan, 2007). Moreover, in order to improve the efficiency of financial sector to pace with the global development, the macroeconomic and financial sector restructuring program are undertaken. These restructuring reforms included privatization of nationalized banks, corporate governance, capital market strengthening, improving asset quality, consumer financing, legal reforms, prudential regulations, credit rating and reduction in corporate taxation etc.. Moreover, these reforms were aimed at reducing segmentation of financial markets, introducing competition in financial sector, strengthening capital base of financial institutions and switching over to indirect, market-based and relatively more efficient monetary and credit policy (Husain, 2003).

The existing literature describes and empirically determines the capital structure choices in both developed and developing markets (Harris and Raviv, 1990). In developed countries normally we observe the existence of well functioning liquid financial markets in which investors can diversify risks and the same is supported by efficient legal system in which a broad range of property rights can be enforced (see Bradly, Jarrell and Kim, 1984; Titman and Wessels, 1988; Ragan and Zingales, 1994). In advanced economies these assumptions are appropriate but for the developing countries like Pakistan these are far from reality. In developing countries most financial markets are continuously going through development process and are only a small proportion of risks is traded, and the markets are relatively illiquid and heavily regulated (Booth, Aivazian, Demirguc-Kunt and Maksimovic, 1995). However, due to pressure of attracting investments through FDI or privatization and capital inflows through capital markets institutional development and financial reforms are undertaken for global competition (Nishat, 2004).

In Pakistan earlier in capital market, certain pricing decisions are much frequently more heavily regulated, whereas there are often fewer protections for investors. There had been restrictions on the pricing or issue of bonds or stocks. There have been restrictions for companies who could not offer shares at above the book value (Mirza, 1993). Earlier the accounting standards were not adequate or of internationally acceptable quality and had no rating agencies for funds and bonds etc.. In Pakistan the financial intermediations are required to provide directed long-term credit to selected firm/ sectors like observed in many developing countries identified in Baer et. al. (1994)

The first notable step towards financial system reforms was to phase out interest rate controls during the 1980's. Since January 1985 all new banks providing financing to government, public sector corporations and joint stock companies moved to Islamic modes of financing. This was implemented gradually and included profit and loss sharing

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(PLS) banking, PTC, and several ordinances for permission to register Modarabahs and leasing companies. During May 1985 a national deregulation commission was also set up to look into the possibility of deregulation of the economy.[2]

To facilitate the working of stock markets an amendment was made to in annual listing fees and the dispatch of a dividend warranty was made obligatory for listed companies.

To strengthen the domestic investment environment and encourage the participation of private investors including overseas Pakistanis, the task of the National Deregulation Commission was further defined. This included divestments of the public sector to the general public and restriction of investment allowances to the individual only if he invested in stock and shares of listed companies or companies owned by government. Incentives and concessions were given to foreign private investors under the Foreign Private Investment Act 1976. In addition, provision of an adequate legal framework and security against expropriation was also provided to foreign investors. They were allowed to remit profits and capital appreciation and capital investment. They were given relief from double taxation in the case of specific countries, and were permitted monthly remittances and transfer of savings on return. The investment policies observed during the last regime continued with more incentives and more liberal policies during this third phase. We observed lots of reforms between July 1988 to June 1991 and then follow-up policies during July 1991 to December 1994, which was termed the extended reform period (World Bank, 1995).

During 1988-89 listed companies were allowed to mobilize long-term funds by issuing term certificates. An investment incentive scheme was announced to tap undeclared wealth in 1988-89 budget. Other policies included permission for DFI's to float part of their capital in the stock market, formulation of a National Disinvestments Authority, the decision to denationalize NCB's and permission for six new investment banks in the private sector. Later some restrictive provisions were also relaxed to attract repatriable investment against shares in the stock market. A competitive environment was encouraged through the curtailing of the reserve quota of institutional investors to purchase the initial share at par value, and allowing the firms to issue the new shares at a par value determined by the market. Under the financial reforms of 1991, the government decided to hand over some nationalized banks to the private sector. At this stage Foreign Exchange and Payments Reforms also facilitated the inflow of capital into the stock market through non-residents and overseas Pakistanis accounts. During this period the government also started its borrowing of funds from the open market under an auctioning system; treasury bills and Federal Investment Bonds of different maturity period During August 1991, the government announced the establishment of 10 commercial banks in the private sector. The investors were also allowed to bring capital, issue shares, remit dividends or interest and transfer capital out of Pakistan without any restrictions. The foreign investor could retain funds in foreign currency

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[2]*However, in most cases all steps in this period seemed to be at very initial stage where the setting of policy guidelines and its implementation was far from the facts. Moreover, for Islamic modes of financing people and institutions required a lot of clarification.*

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accounts in Pakistan and if required could use them as collateral for local currency loans. They were also allowed 100 per cent foreign currency equity in a project, and there was no compulsion for the foreign investors to go public even if the paid-up capital exceeded Rs. 100 million, provided his equity in projects was 51 per cent or more. To further facilitate foreign investors the KSE was also linked with an international network through Reuters during mid 1992.

To deregulate the direct control of the government on the financial system, amendments in the Prudential Regulations were implemented during July 1992. Foreign exchange control was abolished, financing against shares was allowed and the corporate financing strategy was modified. Moreover, for competition mutual funds in the private sector were allowed, and the institutional quota was further curtailed. The same allowed market forces to determine the issue prices for all shareholders. The securities department was also established under this regulation to implement debt management policies and to develop a secondary market in the economy. Later during August 1992, a credit-deposit ratio was introduced for commercial banks as an instrument of private sector credit control, replacing a credit ceiling system. The liquidity ratio was raised from 35 to 40 per cent and this ratio was again raised to 45 per cent at the end of 1992. Later the SBP lowered the liquidity ratio to 35 per cent, and the credit-deposit ratio was increased from 30 per cent to 32 per cent. The SBP issued Prudential Regulation regarding defaults of loans, recovery, and rescheduling or restructuring of outstanding liabilities. During 1994 this liberalization policy extended further to boost investment in the equity market, which allowed the investment of provident and gratuity funds in the equity market. Further facilities were given for non-residents including overseas Pakistanis to attract investment in corporate debt instruments against payment in foreign exchange. In addition, the Pakistani rupee became convertible on current international transactions. Moreover, foreign investors were allowed to negotiate loans in foreign currency without government approval. Similarly, the regulatory changes in the stock market continued during this phase to support and match the required role of the stock market to facilitate capital inflow in Pakistan.

On the capital financing side, one of the major changes in Pakistan was observed on the part of declining financing through debt and equity. During early 80s the ratio of debt to equity was 80:20 when bridge financing was available through institutional investors and equity financing was done through issuance of IPO at book value rather than market value. Later this ratio gradually declined to 70:30, 60:40 and now it is 50:50. It resulted in growing importance of equity and reflected and approximated by stock market capitalization to GDP ratio which substantially increased overtime and has negative impact on debt to equity ratio. However, for effective role of equity market in corporate financing is very much supported by the active trading of number of equities.

Very little is known about the impact of these reforms and financial market development on financing pattern or capital structure of the corporate sector in Pakistan.

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Therefore, there is a need to empirically identify the determinants of capital structure choice in Pakistan. Since we observe varying sectoral financing policy for priority sector, manufacturing and agricultural sector and sectors in which external financing is significant. The study also distinguishes the pattern of capital structure across industries during 1964 to 2000. The study considers only financial variables as the analysis is done at aggregate level pooling the sectoral data published by State Bank of Pakistan in their Balance Sheet Analysis document.

The rest of the paper is organized as section 2 describes the methodology and econometric model followed by data in section3. The interpretation of results is presented in section 4. The summary and concluding remark is given in section 5.

## 2. Theoretical Framework and Econometric Methodology

The capital structure choice deals with effects of various policy instruments. Since various capital structure theories have not explicitly mentioned in leverage measurement literature for consistency purposes, we consider the leverage variable measured and used in most empirical studies in literature. In this study three measures of capital structure choice namely; total debt ratio as total liabilities divided by total liabilities plus net worth are used. The second measure defined as long-term book-debt ratio as total liabilities minus current liabilities plus net worth. The third measure of debt equity ratio is taken as the long-term market debt ratio substitute's equity market value for net worth in the long-term book-debt ratio definition. Our empirical determinants of capital structure behavior investigate the relevance of different capital structure theories in Pakistan. In this context, five theoretical approaches distinguished namely models based on tax considerations, agency costs, asymmetric information, product/input market interactions, and corporate control issues (Harris and Raviv, 1991). For empirical estimation we focus on following six attributes namely: asset tangibility, growth, size, earnings volatility, profitability and market to book ratio.

The first explanatory variable is asset tangibility represents the asset structure of the firms and it has a direct impact on its capital structure choice. The tangible asset is most widely accepted parameter for banks borrowing and raising debt financing. The firms with little tangible assets have difficulty in raising funds from market via debt financing. We expect a positive relationship between asset tangibility and leverage implies the existence of imperfect information for explaining capital structure choice of Pakistani firms. Another variable growth is related to leverage of firms. According to the agency theory, a negative relationship is expected between growth and long term debt. The reason that a firms' growth opportunity is intangible asset rather than a tangible asset; the liquidity effect of high leverage may reduce the firms' ability to finance its future growth. This suggests that firms with valuable growth opportunities should opt for low leverage (Mayers, 1977).

The firm size is positively related to leverage as the informational asymmetries are less severe for larger firms as compared to smaller firms. The common investors are more aware about larger firms compared to smaller firms; as a result, larger firms will find it easier to raise funds. The larger firms also can diversify their risks and for them the financial distress risk is lower for large firms. If the earning of the firm is volatile due to some seasonal or cyclical reasons, and or, due to mismanagement of resources, then these firms have to pay extra premium for debt financing. The firm prices are discounted for their variability of their earnings. Moreover, these firms face difficulty for raising external funds. In theory the earning volatility is negatively related to leverage. According to agency theory it suggests a positive relationship between earnings volatility and leverage.

The relationship between profit and leverage is mixed. According to the Pecking order theory it indicates a negative relationship between leverage and profitability. For example, if a firm has more retained earnings that can be used for future project financing rather than looking for external financing. There are other approaches regarding the choice of firms' capital structure giving signals to investors in the market. In this case larger debt level is taken as indication for good performance (Ross, 1977; Leland and Pyle, 1977). As a result one can expect that firms' profitability and leverage have positive relationship. The book to market ration variable is used to explain the leverage and treated as a proxy for Tobin' q ratio. This book to market ratio is indirectly supporting the growth of firm and leverage through the concept that growth companies have higher Tobin's q ratio.

Based on above discussion the following empirical model is used by using panel data for 12 industries for the period from 1964 to 2000.

$$n = 1, 2, 3; \quad i = 1,…, 482; \quad j = 1, 2……11; \quad t = 1, …….37$$
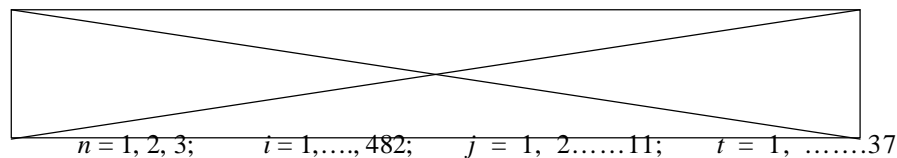
Where

    LEV = leverage measured as debt equity ratio (three different definition of leverage is considered: total debt equity ratio; long term debt equity ratio; and short term debt-equity ratio)

    GRW = growth of the firm measured as percentage change of sales

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FS =   firm size measured as logarithm of sales

TAN =   asset tangibility measured as ratio of tangible asset to total asset. The sum of fixed asset and inventories are used as tangible asset.

EV =   earning variability measured as the first difference of operating income

PRF =   profitability measured as the ratio of operating income to total assets

MTB =   market to book ratio

LEV_{t-1}= lag of leverage

DR =   Dummy for financial reforms; DR =1 for period 1985 to 2000; otherwise = 0

D_j =   Dummy for industries, j = 1,……..,11

      =   error term

The above model is estimated under assumption for consistency and efficiency of OLS estimation. These assumptions are as follows: (i) $E($ for all i; (ii) for all i; (iii) . are all BLUE under above assumptions.

3. Data

The data used in this study are published by State Bank of Pakistan in their publication " Balance Sheet Analysis of Joint Stock Companies listed on the Karachi Stock Exchange" various issues during 1964 to 2000.

4. Discussion of Results

The empirical results of the model in equation 1 are presented in table 1. As presented the first model which takes total debt to equity ratio as dependent variable (LEV) is explained 30 percent variation in leverage by the explanatory variable. The

first explanatory variable that is growth (GRW) has a negative impact on total debt equity ratio as the coefficient is negative and statistically significant at 95 percent confidence interval. This indicates that in Pakistan the agency theory predicts a negative relationship between growth and the leverage. This finding suggests that managers of firms with growth potentials should opt for low level of long term debt to equity ratio.

The sign of the coefficient of size (FS) is positive and statistically significant at 95 percent confidence interval. The result is consistent with theory and it indicates that for larger firm the total debt equity ratio is higher. This suggests that in Pakistan it is easier for larger firm to raise debt financing. Moreover, it is understood that larger firms can diversify their risks easily and financial distress risks is lower for larger firms. The tangible asset variable (TAN) indicates a positive relationship with total debt to equity ratio which implies that imperfect information for explaining capital structure choice in Pakistan. However, the coefficient of tangible asset is statistically insignificant that infers that in Pakistan information problems do not play important role in capital structure option decisions.

Te empirical results indicate a positive relationship between total debt equity ratio and earning variability (EV) as suggested in agency theory. The reason could be that the underinvestment problem decreases when the volatility of firms' earnings increases. However, for this sample the coefficient of earning variability is statistically insignificant. According to our results, in case of Pakistan the relationship between total debt equity ratio and profitability (PRF) is consistent with the pecking order theory. The coefficient of profitability is statistically significant at 95 percent confidence level. This supports that if those Pakistani firms which have more retained earnings are in a better position to finance their projects through retained earnings rather than external financing.

The market to book ratio (MTB) variable indicated a positive relationship with total debt equity ratio but the coefficient is statistically insignificant. The financial reforms dummy variable indicated no impact on capital structure as the coefficient is statistically insignificant. On industry differential, most of the dummies indicated a negative but statistically significant shift on capital structure defined by total debt equity ratio. The reason that on annual basis there is industry-specific policies announced by the government which motivates the corporate manager to exploit these industry-specific subsidy and tax exemptions or favorable credit policy etc.

Variables	Total Debt-Equity Ratio	Long-run Debt Equity Ratio	Short-run Debt Equity Ratio
C	-1.0986	(0.3881)*	-1.9696
	(0.5993)*	-1.8803	(0.4423)*
GRW	-0.3785	(0.1649)*	-0.6141
	(0.2594)*	-0.6203	(0.1872)*
FS	1.4776	(0.5960)*	2.7242
	(0.9305)*	2.4978	(0.6787)*
TAN	0.0598	(0.2192)	0.3465
	(0.3412)	-0.2894	(0.0251)
EV	0.0007	(0.7238)	0.0008
	(0.0015)	0.0007	(0.0011)
PRF	-0.3938	(0.1283)*	-0.5397
	(0.2093)*	-0.3458	(0.1436)*
MTB	0.6532	(0.2081)	0.2595
	(0.3263)*	-0.3865	(0.2371)**
LEVt-1	0.3652	(0.0428)*	0.7020
	(0.0328)*	0.2794	(0.0442)*
DR	-0.0260	0.0485	0.1029
	(0.0781)***	0.0128	0.0548
D1 (Textile)	-0.1631	(0.0997)**	-0.2258
	(0.1546)***	-01714	(0.1123)**
D2 (Chemical)	-0.1488	(0.0858)**	-0.3059
	(0.1335)*	-0.1832	(0.0970)*
D3 (Engineering)	-0.1296	(0.0945)***	-0.4682
	(0.1491)*	0.0202	(0.1066)
D4 (Sugar and allied)	-0.2408	(0.0841)*	-0.2665
	(0.1307)*	-0.3983	(0.0959)*
D5 (Paper)	-0.2799	(0.1021)*	-0.2289
	(0.1608)***	-0.3068	(0.1186)*
D6 (Cement)	-0.2495	(0.0962)*	-0.2210
	(0.1489)*	-0.3773	(0.1095)*
D7 (Fuel & Energy)	-0.0973	(0.0986)	-0.0248
	(0.1534)	-0.2902	(0.1127)*
D8 (Transport)	-0.3070	(0.1089)*	-0.3098
	(0.1677)**	-0.5119	(0.1247)*
D9 (Tobacco)	-0.3108	(0.1097)*	-0.8636
	(0.1797)*	-0.1021	0.1226
D10 (Jute)	-0.1235	(0.0811)***	0.2263
	(0.1269)**	-0.1624	(0.0914)**
D11 (Vanaspati)	0.0070	(0.0891)	-0.5198
	(1441)*	0.2022	(0.1017)*
R²	0.301	0.747	0.455
Adj-R²	0.271	0.735	0.431
D.W	2.09	1.93	2.057
F-Statistics	9.8781	66.1721	18.996

Figures in parentheses are standard errors
*   significant at 0.05 level
**   significant at 0.10 level
***   significant at 0.15 level

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5. Summary and Concluding Remarks

This study empirically assesses whether capital market structure theory is persistent in Pakistan with changing institutional structures observed overtime during last three decades during which the debt equity ratio changed from 80:20 to 50:50. The study identifies the factors that explain the financing pattern of listed companies during 1964–2000. Three measures of capital structure choice (total debt ratio, long term debt ratio, and short term market debt ratio) are explained by a set of independent fundamental variables such as growth of firm, size of firm, tangible asset, profitability, earning variability, market to book ratio, and reforms. The analysis is also done to identify any capital structure pattern prevail across various industries in Pakistan. The study also distinguishes the capital structure pattern during non-reform (1964-85) and reform period (1986-2000). Most of the results are consistent with theory and similar to other empirical studies. The growth and profitability of the firm have negative impact on leverage whereas, size of the firm, tangible asset, earning variability and market to book ratio have positive impact on leverage. The extent of leverage has declined during reform period. However, the coefficient of reform dummy is statistically insignificant. The pattern of capital structure choice is significantly different across most industries due to variation in industry specific policies in Pakistan.

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First and last, Peter Drucker is a moralist of our business civilization. And just as we don't read George Orwell for his answers to the social and political problems he explores but for his moral clarity and depth, so we don't come to Drucker looking for three-point plans to fix creation. He offers suggestions, he affirms the values at stake, some times he points in the right direction; but he offers few solutions and Montaigne offered no solutions, either. It is enough for the moralist to make the distance between what is and what could be.

Jack Beatty
The World According to Drucker

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