



Does the Internal Borrowing of the Pakistani Government affect Corporate Leverage?

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Abstract

For the past few years, the government of Pakistan has increased its domestic borrowing to a record level. This increased government internal borrowing could have reduced funds for non-financial corporate sector. In this study, we empirically examined the influence of government domestic debts on corporate leverage in Pakistan. This study examined the data of 07 non-financial major sectors listed at Pakistan Stock Exchange from 2009 to 2018. The firm-level panel data was analyzed through the fixed-effect method. Results revealed that government domestic borrowings have a negative influence on corporate borrowings. Commercial banks in Pakistan have heavily invested in government debt securities which are the substitute for corporate debts due to the high rate of return and low risk of default. This study recommends that the government of Pakistan should strengthen Fiscal Responsibility & Debt Limitation Act 2005 to safeguard against the adverse effects of government internal borrowing on the financing of the corporate sector. Further, the government should prepare effective fiscal and monetary policies to promote the growth of corporate sector.

Key Words: Capital structure, Corporate leverage, Crowding out, Deficit budget, Government domestic borrowing

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1 Introduction

Government debts and their impacts on economy have always got much attention of policy makers and researchers in developed countries in recent years. Government borrowings have positive effects on the development of country as long as the benefit of debts are more than cost of debts. Higher domestic government borrowing could have three adverse outcomes on the economy of country. First, when public debts are borrowed from domestic market, then there are less funds for private sector which also depends upon same local market. Secondly, increase in government borrowing sends a signal of unsustainability and uncertainty which increases rate of interest to justify this default risk. Third, general public and corporate sector perceive that higher government borrowing will be compensated through higher taxes in future.

Borrowing of Pakistani government is increasing rapidly due to many factors including budget deficit, depreciation of Pakistan Rupee and redemption of its previous debts. Pakistan total public borrowing climbed to 72.5% of GDP at the end of June 2018. In the last few years, government have diverted from external borrowing to internal borrowing. In year 2010 total domestic borrowing was recorded 26.3% of GDP while in year 2018 it reached to 47.6% of GDP (Economic Survey Pakistan, 2018, p. 138). In Pakistan, there are three major sources of government borrowings, first, permanent debts which consist of Pakistan Investment Bonds, Government Ijara Sukuk & prize Bonds, second source is floating debt which consist of Market Treasury Bills and third source is unfunded debt like National Saving Certificates etc. On the other side, major source of corporate sector borrowing is from commercial banks.

Monetarist claim that government borrowings have negative influence on private sector investment. Government can only shift out resources from corporate sector to government pocket through debts. When demand for debt increases, interest rate also increases due to limited resources and this phenomenon is called crowding out. Keynesian claim that government

spending's have positive influences on private sector investment. When there is unemployment, recession and under-utilization of resources, government spending could increase the economic activities in the country and private sector investment will boost up due to an increase in demand for goods.

Generally, deficit financing has multiple effects on economy of country. Government can only cover this deficit by way of debts, higher taxation, and money creation. Corporate sector and government domestic borrowing compete in local market due to limited availability of funds. When demand for debts increases in financial market in the absence of an increase in money supply, consequently, interest rates will go up. When interest rate increases more than economic benefit of debt, then these firms reduce their borrowing. In past few years, the domestic debts of government of Pakistan have climbed up. This higher level of domestic borrowing created hype in the electronic & print media and forced policymakers to evaluate the consequences. Few studies in the context of Pakistan (Zaheer et al., 2019; Khan and Gill, 2009; Saeed et al., 2006) have investigated the impact of Pakistani government borrowing on private sector investment, however, government domestic debts which are close substitute of corporate debts for investors in Pakistan have not been examined yet.

2 Literature Review

The issue of crowding-out has been widely debated by many renowned researchers since (Blinder & Solow, 1972; Tobin & Buiter, 1976; Friedman 1978; Graham et al., 2014). Many empirical studies in the past revealed that corporate financing is influenced by firm-specific microeconomic factors. Khaki & Akin (2020) examined the firm specific factors effects on capital structure choice in Middle Eastern countries. Results of their study indicated that firms' growth, size, and tangibility have significant positive influence on firms leverage. Kyissima et al. (2019) examined factor affecting capital structure of corporate sector in China. Study concluded that firm size, return on assets and tangibility has significant relationship. Similarly, capital structure theories like trade off, pecking order, market timing and

information asymmetry have claimed that firm specific microeconomic factors, firm size, growth, risk, tangibility, and profitability have significant influence on firms financing options.

In the last few years, many global studies indicated that macroeconomic factor of government borrowing also influences the companies' financing choices (Demirci et al., 2019 & Ayturk, 2017). Fayed (2013) examined the influence of government borrowing and private lending in Egypt through co-integration approach. Findings suggested that domestic government borrowing positively influence the banking sector credit. Graham et al. (2014) investigated the relationship between federal government debts and non-financial firms borrowing through two categories regulated and non-regulated listed with New York stock exchange in the USA. Authors claimed that federal government debts have significant negative effects on corporate sector. Shetta & Kamaly (2014) examined the impact of government debts and banking sector credit in Egypt. Findings of study claimed that government borrowing and banking sector lending has a positive relationship.

Demirci et al. (2019) investigated the crowding-out effects in OECD countries through country level and firm-level panel data. Results suggested that government borrowing have a strong negative influence on large firms as compared to small firms. Similarly, government domestic borrowings have strong crowding-out effects than government external borrowings. Hasnat & Ashraf (2018) examined the effects of government debts on bond market in India. Authors' findings indicated that government borrowing increases the interest rate in financial market which discourage private sector borrowing and resulted in financial crowding out. Huang et al. (2016) examined the influence of local government borrowing on private sector at city level in China. This investigation found that government borrowing has crowding out effects on manufacturing firms, while no influence on multinational companies and positive influence on state owned firms. Mahmoudzadeh et al., (2017) investigated the crowding out effects in developed and developing countries. Findings of study suggested that crowding out effects are stronger

in developed countries than developing country. Previous literature provides mixed results of crowding-out and crowding-in effects of government borrowing on private investment. In the context of Pakistan, there is scarcity of literature that how much and what type of government debts have negative or positive effects on the corporate sector of Pakistan? Therefore, this study will address the domestic debts influence on corporate financing.

3 Data, and Methodology

3.1 Sample and Data

In this study, firm level quantitative secondary data for 7 major non-financial sectors which are cement, fertilizer, textile composite, oil & gas exploration, oil & gas marketing, chemical and pharmaceutical listed with Pakistan Stock have been tested. All sample firms are listed with Pakistan stock exchange and sample period is from 2009-2018. This study selected convenience sampling method due to unavailability of annual audited reports of few firms. Sample data is unbalanced panel because firms enter and exit.

Government domestic borrowing data has been collected from Economic survey of Pakistan, Ministry of finance & State Bank of Pakistan website. Firm's level data of Book leverage, market leverage & Control variables have been collected from respective company website. Aggregate data of firms borrowing from commercial banks has been gathered from State Bank of Pakistan and World Bank website.

The main variables of this investigation are Govt. domestic debt and corporate leverage. Independent variable Govt. domestic debt is calculated by percentage of GDP (Demirci et al., 2019; Liang et al., 2017). Two independent variables, book leverage and market leverage are used separately in this study. In case of non-availability of market value of assets of any company, book value of assets is considered. Book leverage is measured by total liabilities of individual firm over its total book value of assets (Demirci et al., 2019; Liang et al., 2017; Ayturk, 2017). Market leverage is calculated by total liabilities of a firm over its total market value of assets (Demirci et al., 2019; Welch, 2011). Two

control variables, tangibility of firm and return on assets are also incorporated in this study. Tangibility is the ratio between property, plant & Equipment (PPE) and total assets (Liang 2017; Sharma, 2018; Rajan & Zingales, 1995). Return on assets is measured by operating profit of firm over its total book value of assets (Demirci et al. 2019; Sharma, 2018).

3.2 Econometric Model

After studying the existing theoretical and empirical literature, we construct this model to test the crowding out effects of government domestic borrowing on corporate leverage.

$$Leverage_{c,t} = \beta_1 Govt.Domestic\ debt - to - GDP_{c,t-1} + \beta_2 X_{c,t-1} + \eta_c + \delta_t + \varepsilon_{c,t}$$

Leverage c, t denotes book leverage and market leverage separately for company c and year t . Govt. Domestic debt-to-GDP $_{c,t-1}$ shows government domestic debt percentage of gross domestic product one period lag. $X_{c, t-1}$ shows firm’s capital structure determinants which are return on assets and tangibility with one period lag. η_c and δ_t show firm fixed effect & year fixed effect respectively, in order to control omitted variable and correlation among error terms, year and firm fixed effects have been employed.

4 Empirical Results

4.1 Descriptive Statistics

Table 1

Descriptive Statistics

Variables	Mean	Med.	Max	Min	Std. Dev.	Skewness	Kurtosis	Obs.
BLEV	0.483	0.475	0.931	0.108	0.186	0.195	2.208	386
MLEV	0.467	0.457	0.931	0.096	0.183	0.241	2.227	386
DDGDP	0.386	0.418	0.476	0.263	0.075	-0.47	1.704	386

ROA	0.136	0.120	0.539	-0.13	0.099	0.747	4.095	386
TANG	0.445	0.419	0.954	0.011	0.215	0.314	2.207	386

Source: Author's own calculations

This table depicts the summary of firm level data. BLEV is the ratio of total liabilities to total book value of assets. MLEV shows the total liabilities to total market value of assets. DDGDP shows the government domestic debts percentage of gross domestic product. ROA shows the operating profit to total book value of assets. TANG shows the value of property, plant & equipment to total book value of assets.

Table 1 shows the summary of our firm's level data. Book Leverage & Market leverage mean values indicate that average borrowing of selected non-financial firms is 48.3% & 46.7% respectively. Standard deviation of firms borrowing is almost 18%. Government domestic borrowing percentage of GDP shows that average domestic borrowing is 38.6% for sample period. Standard deviation of government domestic borrowing is 7.5%. Majority of our sample companies are profitable and average return on assets is 13.6% while standard deviation is 10 percent. Value of PPE is 44.5 % of total assets of our sample firms. Value of kurtosis and skewness is in acceptable range except for ROA, because profit of firms fluctuates rapidly due to economic conditions & many other factors.

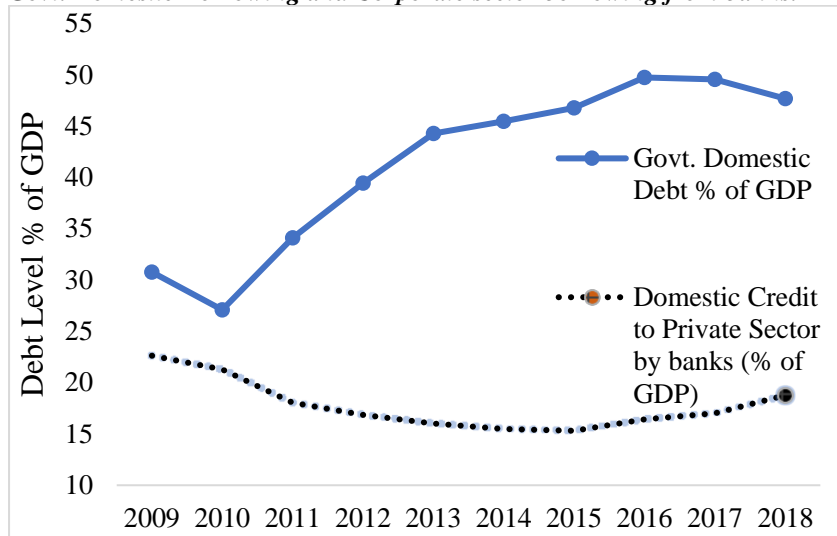
4.2 Government domestic Debts & Corporate debts from banks

Figure 1 present that government domestic borrowing percentage of GDP was 30.7 % in 2009, afterward it increased except year 2009 & 2018. Government domestic borrowing climbed to 47.7% at the end of June 2018. This data shows that net domestic debt increased by 16.9%. On other hand, corporate sector borrowing has declined up to year 2015. Corporate sector borrowing was 22.6% in year 2009 while borrowing of corporate sector in 2018 was 18.7%, therefore, net decline in corporate

borrowing is 3.9%. This relationship indicates negative influence of government internal borrowing on corporate borrowing.

Figure 1

Govt. Domestic Borrowing and Corporate sector borrowing from banks.



Source: Authors' compilations from World Bank & Economic Survey of Pakistan

4.3 Correlation analysis

Table 2

Correlation Analysis

	BLEV	MLEV	DDGDP	ROA	TANG
BLEV	1.000 -----				
MLEV	0.975 (0.0000)	1.000 -----			
DDGDP	-0.165 (0.0011)	-0.149 (0.0032)	1.000 -----		
ROA	-0.406 (0.0000)	-0.374 (0.0000)	-0.0133 (0.7933)	1.000 -----	
TANG	0.00465 (0.9274)	-0.058 (0.2486)	-0.0577 (0.2574)	-0.176 (0.0005)	1.000 -----

Source: Authors' computation with probability value shown in parenthesis

This table shows correlation among the variables of our study to see the strength and direction of relationship. Relationship between corporate leverage and government borrowing in our model is significant negative because probability value is less than 5%. While control variables ROA has significant negative relationship while tangibility has insignificant positive relationship. One percent addition in government domestic debt has 0.16 percent reduction in corporate borrowing. One percent increase in return on assets has 0.40 percent decline in corporate borrowing.

4.4 Regression Results

Table 3

Regression Results

Variables	Fixed-Effect Method		Random-Effect Method	
	BLEV	MLEV	BLEV	MLEV
DDGDP _{c,t-1}	-0.2924*** (-4.596)	-0.263*** (-4.127)	-0.295*** (-4.657)	-0.2675*** (-4.205)
ROA _{c,t-1}	-0.3983*** (-6.091)	-0.390*** (-5.952)	-0.4251*** (-6.647)	-.4123*** (-6.433)
TANG _{c,t-1}	0.1450*** (2.866)	0.1223** (2.412)	0.105** (2.286)	0.077 (1.68)
Firm Fixed-Effect	Yes	Yes	--	--
Year Fixed-Effect	Yes	Yes	--	--
Adj. R2	0.78	0.77	0.18	0.159
Observations	396	396	396	396
Companies	40	40	40	40
Hausman Test	---	---	0.0053	0.0061

Note: This model is estimated through panel data fixed effect method to avoid omitted variable and correlation bias, however random effect model result is also shown. t-statistics values are given in parenthesis while *, **, ***

represent 10%, 5% and 1% significance level in this table. Diagnostic tests for multicollinearity, heteroscedasticity were applied to test the normality of data and results indicated normal distribution.

Regression results shows that all variables of study have significant relationship and adjusted R² is also sufficient to explain the influence of explanatory variable on dependent variable. Hausman test was applied to choose the appropriate model for data analysis. Hausman test value recommends that fixed effect model is consistent for this study. Coefficient estimate of book leverage predicts that one percent increase in government domestic borrowing will reduce 0.29 percent in corporate leverage in Pakistan. Coefficient estimate of Market leverage also indicates that one percent increase in government domestic borrowing will reduce 0.26 percent in corporate borrowing. In Pakistan, commercial banks which are major financing source of corporate sector have invested heavily in government debt securities instead to lend corporate sector. The interest of these commercial banks to invest in government securities is due high rate of return and less default risk. Findings of this study are consistent with studies like (Demirci et al., 2019; Ayturk, 2017; Hasnat & Ashraf 2017). In theoretical perspective, results are consistent with monetarist theory.

Return on assets and company leverage have negative significant relationship which shows that one percent increase in the return of company will reduce 0.39 percent in borrowing. Tangibility and company borrowing has also significant positive relationship which shows that one percent increase in tangibility will increase 0.14 percent in company borrowing. Results of both firms' specific control variables are consistent with capital structure theories, pecking order and trade off.

5 Conclusion and Policy Recommendations

Government of Pakistan borrowed aggressively from local market to redeem its external debt & to cover its fiscal deficit. Major borrowing of government is from commercial banks which are also a source of financing to corporate sector. This study has tested the crowding out effects of government domestic debts on corporate leverage in 7 major non-financial sectors of Pakistan

from 2009-2018. The results indicated that domestic government debt has significant negative influence on corporate leverage in Pakistan. One percent increase in government domestic borrowing reduces 0.23 percent of corporate borrowing. Government domestic debts and corporate debts are close substitutes and therefore investors in Pakistan specifically commercial banks are investing in government debt securities which are more secured and offer higher return than corporate debts. These results are consistent theoretically with monetarist theory and empirically with (Demirci et al., 2019; Huang et al. 2019; Ayturk, 2017).

This study recommends that government should strengthen Fiscal Responsibility & Debt Limitation Act 2005. In year 2017-18, government fiscal deficit was 6.5 percent of GDP which is higher than the threshold of 4 percent. Another violation in year 2018 observed where public debt reached to 72.5 percent of GDP while threshold requires that public debt could not be more than 60 percent. Secondly, government & State Bank Pakistan should prepare effective fiscal and monetary policy to avoid adverse effects of borrowing on corporate sector. This study will also give insights to corporate executives to make better financing decisions.

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