

# Determinants of Internal Financing: Small and Medium Enterprises in Pakistan

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## Abstract

Internal financing is an indicator of self-reliance, growth, and survival of a firm without help from external sources. It assesses the growth and survival of a firm without raising capital in equity or debt markets. However, internal financing may be a cause of lower dividends, which may discourage investors. This study provides a device to assess the appropriate level of internal equities. From an investment policy point of view, lower return on investment must discourage investment in small and medium enterprises. The study suggests the intervention by monetary and fiscal policy for the survival of small and medium enterprises (SMEs). The study is based on six years of data from 398 companies in Pakistan, while panel least square (PLS) techniques have been applied to estimate the parameters.

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## 1) Importance and Issues of Small and Medium Enterprises (SMEs)

The firm's size in terms of its assets is a considerably important factor for the competitiveness, survival, and profitability of a business. Another important point in this respect is the composition of sources to finance the assets of a firm. The difference between assets and equity shows the size of leverage financing. How leverage financing affects the profitability and value of a firm is a debatable question in financial economics. This question becomes more important in the case of small and medium enterprises (SMEs) because of their limited ability to get financing at competitive prices. Another important concern belongs to the survival of small firms in a competitive environment where big organizations can get the

benefits of scale economies. It is a common opinion that big organizations can use political influence in the formulation of economic policies in their favor, and sometimes those policies may damage the benefits of small and medium enterprises (SMEs).

However, the role of small and medium enterprises (SMEs) cannot be neglected because of their important contribution to economic activities. Their role in economic progress has been widely discussed in economic literature, and it is estimated that these enterprises contribute around 60 percent of total employment and 40 percent of Gross Domestic Product in the global economy. Their contribution to GDP is more than 60 percent in the case of the developing world. The share of SMEs in employment is 80 percent in Bangladesh, 90 percent in Indonesia, 35 percent in Malaysia, and more than 80 percent in Pakistan (OIC: 2008). Their share in exports is 20 percent in Malaysia, 70 percent in Bangladesh, 30 percent in Jordan, 30 percent in Turkey, and 80 percent in Pakistan. (OIC: 2008). Another study (World Bank: 2017) has estimated that there are more than 365 million Small and Medium Enterprises (SMEs) in emerging markets. Out of those, more than 285 million are informal enterprises. While 25 million are formal SMEs and 55 million are formal micro-enterprises. The conversion of informal SMEs into the formal sector can ensure better access to credit, government facilitation, implementation of regulations, and higher contribution to the national exchequer.

The role of SMEs becomes more important in developing and emerging economies, where the roles of large corporations and capital-intensive industries are lesser than those of industrialized countries. The SMEs in developing countries serve as the engine of economic growth. They provide sizeable subsidiary services and economic activities. In emerging markets, more than 80 percent of formal jobs are created by SMEs. According to World Bank (2018) estimates, 600 million jobs will be required in the next 15 years to absorb the growing global workforce. To cater to this requirement, emerging economies will have to depend on SMEs. Another important role of SMEs, which has been discussed in economic literature, is that they reduce poverty and income disparities through trickle-down effects by generating participation and employment opportunities. In this way, they develop the entrepreneurial culture in the economy.

Despite the economic and social importance of small and medium enterprises (SMEs), their survival and perpetual expansion is an important area of concern. These enterprises cannot get those benefits in financial markets that are available to large-scale firms. Due to their goodwill, reputation, and financial and administrative ability to fulfill compliance and regulatory requirements, large firms can expand their size by generating equity and debts in capital markets. Their ability to borrow from financial institutions is always higher than that of small and medium enterprises. These benefits are transformed into lower costs of their capital, while small firms have to pay higher costs of capital. In most cases, small firms have to face difficulties in getting external finances at affordable cost. Similarly, the lower earnings lead to lower corporate savings (internal equities). This situation restricts the expansion of business. Despite lower profits, they have to enhance their internal equities at the cost of dividend payments to their shareholders. Consequently, the return on investment may be lower in small and medium enterprises as compared to large-scale enterprises.

The expansion of the capital base becomes a primary requirement for growth and survival in the competitive environment, where large and well-established companies have several advantages over small entities. The established connection with the market, experienced staff, familiarity with the regulations, and economies of scale are those advantages that are

available to large and well-established companies, while enhancement in capital base is the primary requirement for the survival and growth of new and small entities.

Small and medium enterprises (SMEs) are less likely to obtain bank loans than large companies. The complexities in capital raising through market mechanisms, difficulties in short-term financing, unfavorable government regulations, problems in marketing and image building, deficiency in human resources, lack of harmonization and vertical integration with large-scale enterprises, and lack of technological advancement are common issues that are faced by small and medium enterprises. The issues become more complicated when a small company introduces a new product or service in the market. Large companies may adopt this idea and can offer similar products or services in a better way. The enhancement in the capital base is required to get competitive advantages. Erin (2014) has indicated that in the case of viable startups, these companies are acquired by large companies. The acquisition of small companies by large companies creates unemployment for the workers of small enterprises.

About 50 percent of formal SMEs don't have access to formal credit. The financing gap is even larger in micro and informal enterprises. About 70 percent of micro, small, and medium enterprises (MSMEs) in emerging markets do not have access to credit. This gap is much wider in Africa and Asia. Naoyuki and Farhad (2019) have identified some difficulties of SMEs in accessing finance and suggested to mitigate these challenges. They provided a mechanism to ease the access of SMEs to finance. They suggested several ways to address the financial issues of SMEs. To develop credit information infrastructure, improve credit guarantee schemes, and proper utilization of credit rating techniques are included in the suggested measures.

In these circumstances, small and medium enterprises (SMEs) have to rely on internal financing. Internal financing is created through the retention of profits for expansion in owners' equity. For small and medium enterprises, it is easier to create internal equities by retaining profits because of steady and frictionless approval from the corporate board.

Another important aspect of this discussion is that the quantum of internal financing implies the quantum of an organization's share in earnings. It is quite obvious that internal financing is used for expansion, which reflects less reliance on external sources: equity and debt. It assesses the growth and survival of a firm without raising capital in equity or debt markets. This is a neglected area in economic literature. This study fills this gap. Determining the organization's share in income is the core area of this study.

The study has been divided into five sections. The next section discusses the views of economists and experts on the role of external financing. This section summarizes the previous studies on the role of leverage financing. The research methodology to identify the factors of internal equities has been explained in section 3. This section establishes a model to estimate the internal equities (surplus and reserves), payment of bonus shares, and retained earnings for a certain year. It describes the factors that contribute to the reserves and surplus, payment of bonus shares, and retained earnings for a certain year. The suggested methodology differentiates between the impacts of large business units and small and medium enterprises. The results and conclusions have been explained in section 4. Finally, section 5 recommends some policy measures based on the empirical evidence in this study.

## 2) Review of Literature: Firm Size and Financing

Substantial, plentiful, and rich studies on the role of leverage financing are available in the literature of financial economics. Fairly a large number of studies have discussed the effects of debt financing on the profitability and value of a firm (Gordon: 1962a, Myers and Majluf: 1984, Miller and Modigliani: 1958, Miller and McConnell: 1995, Shleifer and Vishny: 1986, Glen and Pinto: 1994, and Harriss and Raviv: 1991). Several aspects of debt financing have been covered in these studies. Miller and Modigliani (1958) have covered the consequences of changes in the magnitude of the debt-equity combination. The debt about the risk of default has also been covered in these studies. Several studies have identified the factors of equities' prices and firm's value. Myers (1989), Myers and Majluf (1984), and Miller and Modigliani (1958) have explained how debt financing affects the profitability and value of a firm. In another study, Miller (1977) concluded that the debt-equity ratio becomes irrelevant in the absence of corporate taxes. So, it is the fiscal policy or tax rates that differentiate the effect of debt-equity ratios on a firm's value. The impacts of monetary policy on firm valuation have also been discussed broadly by Miller and Modigliani (1961), Gordon (1962a), Miller (1982), and Mehar (2002). Miller and Modigliani (1961), Gordon (1962b), Sharpe (1964), Linter (1965), and Miller (1982) have explained the role of dividend policy in a firm's valuation.

The factors of debt financing have also been analyzed in the literature by several dimensions. The studies on the determinants of debt financing (Miller: 1982, and Fischer and Merton: 1984) have identified interest rates, access to the credit market, size of the firm, and sales revenue as factors of debt financing. Some studies have pointed out that corporate governance plays a significant role in debt financing. Fama and Jensen (1983), Grossman and Hart (1983), and Jensen, Solberg, and Zorn (1992) are included in these studies, which discuss debt financing from the governance point of view. These studies recognize the role of institutional investment, the size and structure of the corporate board, the regulatory environment, and the industry's characteristics in debt financing. The role of insiders and governance in debt financing has been widely covered in these studies under the implications of agency theory. Similarly, the pecking order theory establishes the relations between types of assets and sources of financing. The pecking order theory categorizes financing into three major classes: Equity financing, long-term debt, and short-term debt. Equity is further classified into paid-up capital and retained earnings. According to this theory, the preferable source of financing may be varied for working capital, intangible assets, and fixed assets.

Despite all these issues and complications, it is very interesting in the South Asian context that the majority of investors prefer to establish their own business or launch a small or medium enterprise instead of participating in a large corporation. This tendency promotes family ownership of companies. Singh and Hamid (1992) and Singh (1995) have reported these trends in South Asian countries. One of the major reasons behind this tendency is receiving those monetary and non-monetary benefits that are associated with the directorship of companies. Enjoying administrative powers, accommodating their family members and relatives in the employment of the company, drawing non-salary monetary benefits, and participating in social and political gatherings as owners or directors of an enterprise are included in the incentives that induce small investors to establish their own business (Mehar: 2005). The retention of profits and creating internal equities is easier in the case of family-owned enterprises because of steady and frictionless approval

from the corporate board.

Despite a large number of studies on debt financing, internal financing is a relatively neglected area in corporate finance. The identification of the factors of internal financing has not been discussed in detail in financial literature. Retained earnings are the profits of entrepreneurs. In accounting and finance, the 'Entrepreneur' is recognized as a separate entity from owners, while retained earnings are the only part of income that remains with the entrepreneur. The long-term debt and shareholders' equity are part of employed capital. The payment of dividends to shareholders and interest on debts are considered as income of capital. So, undistributed profit is the only income that is retained with the firm, and in fact, it is the profit of the entrepreneur.

The previous studies in economic literature have discussed the role of leverage financing, the size of the firm, and the types of investors on the profitability and value of the firm. Identifying the factors of internal financing is a relatively ignored area in the literature. In the contemporary world, a firm is considered a separate entity from its owners or shareholders. To finance the growth in assets through internal sources indicates less dependency on external capital: increase in shares' capital or debt financing. In this background, it is important to discuss the determinants of internal financing. This study is mainly concerned with identifying the factors of enhancement in internal equities. The internal equities are defined as 'Accumulated retained earnings' or 'Surplus and Reserves' in financial accounting. These are the residual part of profits that have not been distributed to the shareholders for several reasons, including expansion plans for the future and contingencies. This study also differentiates the patterns of dividend payments between small and large size companies.

### 3) Determinants of Internal Financing: Data and Research Methodology

It has been mentioned in the earlier sections that this study is mainly concerned with the determinants of internal financing of companies. Internal financing is defined as internal equities which are created by the companies from earnings after tax. Internal equities are the residual earnings after the payment of cash dividends (DVDND) to the shareholders. These residual earnings are used for payment of bonus shares (BNUS) and for forming various types of reserves and surplus funds (SURPLUS). The reserves and surplus funds are the accumulated retained earnings in the balance sheet of a company at the end of the year. These are residual profits that have not been paid to the shareholders in cash or bonus shares. The residual profits after payment of dividends as a percentage of earnings after tax is defined as the retention ratio (RTNR). The higher retention ratio (RTNR) means lower payment of dividends. The reserves and surplus funds (SURPLUS), retained earnings (RE), and dividend payout (PAYOUT) can be defined in the following expressions:

$$\text{SURPLUS}_{it} = \text{RE}_{(i(t-1))} + \text{RE}_{it}$$

$$\text{While, RTNR}_{it} = (\text{EAT}_{it} - \text{DVDND}_{it}) / \text{EAT}_{it}$$

$$\text{PAYOUT}_{it} = \text{PAYOUT}_{it} / \text{EAT}_{it}$$

$$\text{So, RTNR}_{it} = 1 - \text{PAYOUT}_{it}$$

Where 'SURPLUS<sub>it</sub>' is the reserve and surplus funds of company 'i' in year 't', which have been created by accumulated

retained earnings. 'RE<sub>it</sub>' is retained earnings of company 'i' in year 't', 'RE<sub>i(t-1)</sub>' is retained earnings of company 'i' at the end of last year 't-1', 'RTNR<sub>it</sub>' is the retention ratio of company 'i' in year 't', 'EAT<sub>it</sub>' is earning after tax of company 'i' in year 't', 'DVDND<sub>it</sub>' is the payment of dividend to the shareholders of company 'i' in year 't', and 'PAYOUT<sub>it</sub>' is a payout ratio of company 'i' in year 't'.

The size of a firm (TOTAST), internal equities (SURPLUS), and payment of bonus shares (BNUS) are mutually determined variables. Their simultaneity has been shown in Figure 1, while the reasoning of these relationships has been explained in the subsequent paragraphs.

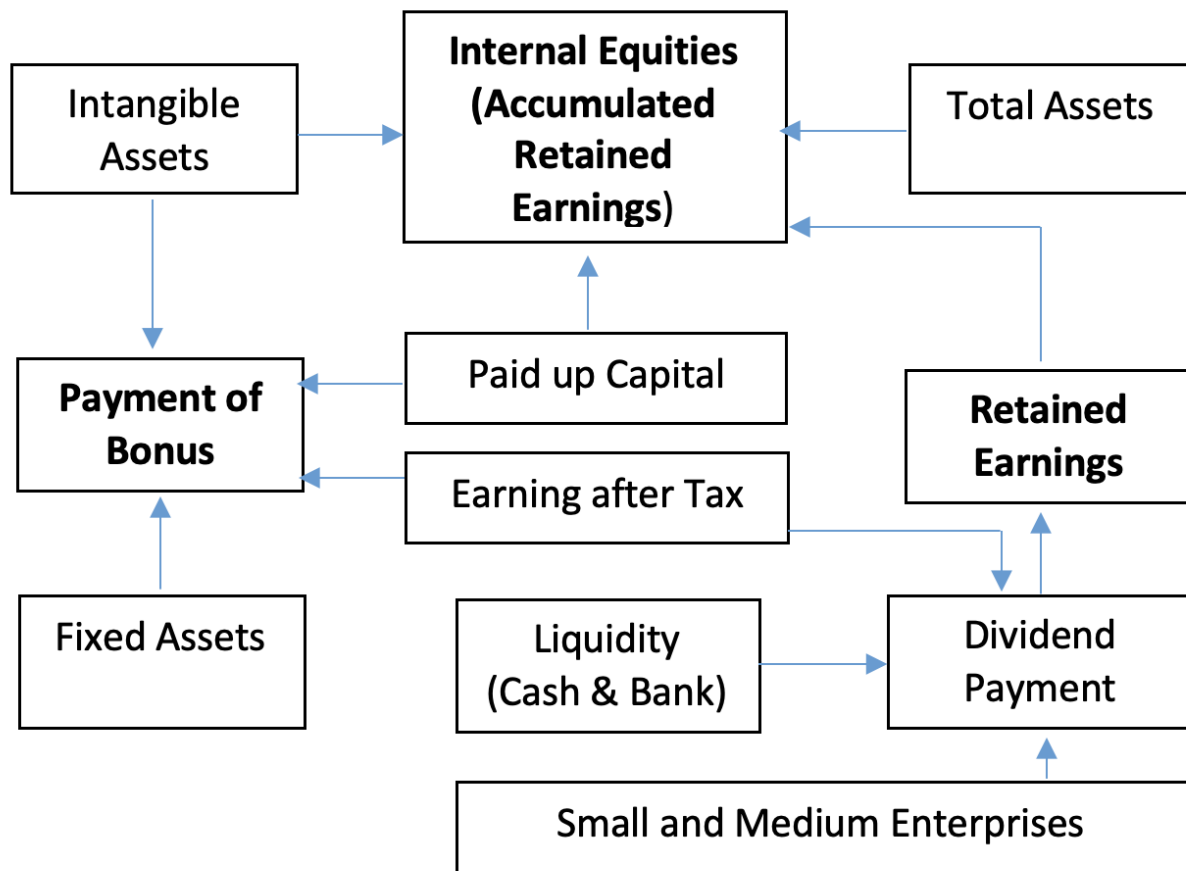


Figure 1. Determinants of Internal Financing

The retention ratio (RTNTR), accumulated retained earnings (SURPLUS), and payment of bonus shares (BNUS) are indicators of internal financing. These indicators have been estimated through an empirical model consisting of 3 equations. These three equations explain the impacts of explanatory factors on accumulated retained earnings (SURPLUS), payment of bonus shares (BNUS), and dividend payout ratio (PAYOUT) in the following expression:

$$\begin{aligned}
 \text{SURPLUS}_{it} &= \beta \text{PAIDUP}_{it} + \gamma \text{INTNGBL}_{it} + \Omega \text{TOTAST}_{it} + \delta X_{it} + \mu_i + \tau_t + \epsilon_{it} \\
 \text{BNUS}_{it} &= \beta \text{PAIDUP}_{it} + \gamma \text{INTNGBL}_{it} + \Omega \text{FXDAST}_{it} + \delta X_{it} + \mu_i + \tau_t + \epsilon_{it} \\
 \text{PAYOUT}_{it} &= \beta \text{CASH}/\text{EAT}_{it} + \gamma \text{SME}_i + \delta X_{it} + \mu_i + \tau_t + \epsilon_{it}
 \end{aligned}$$

Where 'PAIDUP<sub>it</sub>' is paid up capital of company 'i' in year 't', 'INTNGBL<sub>it</sub>' is intangible assets of company 'i' in year 't', 'TOTAST<sub>it</sub>' is total assets of company 'i' in year 't' and 'FXDAST<sub>it</sub>' is fixed assets of company 'i' in year 't'. 'CASH<sub>it</sub>' indicates the cash and bank balance of company 'i' in year 't', while 'SME<sub>i</sub>' is a dummy variable equal to '1' if a company 'i' is classified as a small or medium enterprise. 'X<sub>it</sub>' is a vector of exogenous control variables; 'μ' denotes unobserved time-invariant heterogeneity at the company level; 'τ<sub>i</sub>' is a company-fixed effect; and 'ε<sub>ijt</sub>' is an independent disturbance term.

Several control variables to estimate the net effects of the size of a company (TOTAST), paid-up capital (PAIDUP), and liquidity position (CASH/EAT) on reserves and surplus funds (SURPLUS), payment of bonus shares (BNUS) and dividend payout ratio (PAYOUT) have been included in the estimations. For estimation purposes, the above-mentioned expressions have been transformed in the following equations:

$$\text{SURPLUS}_{it} = \alpha_i + \beta_1 \text{PAIDUP}_{it} + \beta_2 \text{INTNGBL}_{it} + \beta_3 \text{TOTAST}_{it} + \varepsilon_{it} \quad (1)$$

$$\text{BNUS}_{it} = \alpha_i + \beta_1 \text{PAIDUP}_{it} + \beta_2 \text{INTNGBL}_{it} + \beta_3 \text{FXDAST}_{it} + \varepsilon_{it} \quad (2)$$

$$\text{PAYOUT}_{it} = \alpha_i + \beta_1 (\text{CASH/EAT})_{it} + \beta_2 \text{SME}_i + \varepsilon_{it} \quad (3)$$

Equation 1 determines the causes of accumulated retained earnings. These retained earnings are mentioned as reserves and surplus (SURPLUS) in companies' financial statements. Equation 2 explains the factors of the payment of bonus shares (BNUS) to the shareholders. The distribution of bonus shares (BNUS) to the existing shareholders indicates the utilization of profit for enhancing paid-up capital (PAIDUP) to finance the assets of a company (TOTAST). The size of a company in this study is defined by the magnitude of total assets (TOTAST). The bonus shares (BNUS) may be a cause of dilution in earnings per share in forthcoming years. Equation 3 estimates the payout ratio (PAYOUT). A payout ratio (PAYOUT) shows the payment of dividends to shareholders as a percentage of earnings after tax. There is an inverse relation between the retention ratio (RTNR) and payout ratio (PAYOUT). So, a higher payout ratio (PAYOUT) indicates a lower retention ratio (RTNR), while the lower dividend payment (DVDND) may affect the shares' prices adversely.

The above-mentioned equation (1) explains the impacts of explanatory factors on accumulated retained earnings (SURPLUS). The effects of paid-up capital (PAIDUP), total assets (TOTAST), and intangible assets (INTNGBL) on accumulated retained earnings (SURPLUS) have been tested through this equation. The positive effects of total assets (TOTAST) and paid-up capital (PAIDUP) imply that large-size companies are more likely to expand their business through internal financing. It is hypothesized that companies that have more intangible assets (patents, copyrights, goodwill trademarks, etc.) cannot retain a large part of their earnings because of the cost of amortization of these assets. The cost of intangible (INTNGBL) assets is usually charged as rental of these assets. It may be reimbursed in installments, which adversely affect the profitability of the companies.

The effects of small and medium enterprises (SME) on accumulated retained earnings (SURPLUS) have been tested through a dummy variable (SME), which is equal to '1' if a company is categorized as a small or medium enterprise according to the Small and Medium Enterprises Authority's definition (Government of Pakistan: 2021). This definition is not based on the size of a company in terms of its total assets (TOTAST). According to the Small and Medium Enterprises Authority, a company will be classified as a small or medium enterprise if its annual sales revenue is less than Rs.800 million. This categorization is based on the latest SME policy formulated by the Government of Pakistan (2021). A small or



medium enterprise can avail those benefits which are available to small and medium enterprises in Pakistan. The lower interest rate on borrowing from commercial banks, flexibility in listing and regulatory requirements, and special facilitation by the Small and Medium Enterprises Authority (SMEDA) are included in these benefits. To capture the effect of this policy, the above-mentioned dummy variable (SME) has been created.

The second equation estimates the payment of bonus shares (BNUS) to the shareholders of company 'i' in year 't'. The paid-up capital (PAIDUP) of company 'i' in year 't', intangible assets (INTNGBLE) of company 'i' in year 't', fixed assets (FXDAST) of company 'i' in year 't', and earnings after tax (EAT) of company 'i' in year 't' have been taken as explanatory variables. The dummy variable to capture the effect of the special status of small and medium enterprises (SMEs) has also been introduced in this equation.

To estimate the retained earnings (RE) of company 'i' in year 't', an indirect approach has been adopted in this study. The retention ratio (RTNR) of company 'i' in year 't' indicates how much profit of company 'i' in year 't' was retained by the company. The retention ratio (RTNR) is inversely proportionate to the payout ratio (PAYOUT), while the payout ratio (PAYOUT) describes how much profit was distributed in dividends (DVDND) or bonus shares (BNUS). Through equation 3, this study identifies the determinants of payout ratio (PAYOUT). This equation determines the dividend policy of a firm.

The dividend payout ratio (PAYOUT) has been taken as an indicator of dividend policy in this study. We have considered that the liquidity position of a firm is a determinant of the payout ratio (PAYOUT). The ratio of cash and bank balance (CASH) at the end of the year to earnings after tax (EAT) for the year has been taken as an indicator of the liquidity position of firm 'i' in year 't'. A positive association between the payout ratio (PAYOY) and cash-to-earnings ratio (CASH/EAT) was assumed. In simple words, the availability of sufficient cash (CASH) can improve the payment of dividends (DVDND). A lower payout ratio (PAYOUT) of small and medium enterprises (SMEs) was also expected. Because of lower paid-up capital and difficulties in borrowing, small and medium enterprises have to rely on retained earnings (RE) for their expansion. So, their payout ratio (PAYOUT) will be lower.

Mehar (2005) and Mehar (2022) have noted that the majority of large-scale units in Pakistan are engaged in the production of industrial raw materials and intermediate goods, while small and medium enterprises (SMEs) convert these intermediate goods into finished products. So, small and medium enterprises (SMEs) have to invest their capital in inventories and trade credits. The lower balance of cash (CASH) in small and medium enterprises (SMEs) reflects this phenomenon. The payment of dividends (DVDND) is affected by the lower balance of cash (CASH).

Two dummy variables to capture the sector-specific effects of companies in information and communication (ICT) and services sectors (SRV) have been included in the above-mentioned equations. To test the macroeconomic factors, the rate of inflation (INFLCPI) and domestic credit to the private sector as a percentage of GDP (DCPS) have also been considered as explanatory factors. Transparency, accountability and corruption in the public sector (CRPTN) and the rule of law (LAW) have also been considered in the determination of the dividend policy.

The above-mentioned equations show the direct effects of the size and liquidity position of a firm on internal financing, while the indirect effects of the size and liquidity position can be expressed as follows:



$$\frac{\frac{\partial \text{SURPLUS}}{\partial \left( \frac{\text{CASH}}{\text{EAT}} \right)}}{\frac{\partial \text{SURPLUS}}{\partial \text{SME}}} = 1 - \frac{\frac{\partial \text{PAYOUT}}{\partial \left( \frac{\text{CASH}}{\text{EAT}} \right)}}{\frac{\partial \text{PAYOUT}}{\partial \text{SME}}}$$

The firm-level data was required to analyze the factors of internal financing. The 6-year data of 398 listed companies of Pakistan have been extracted from their annual reports (SBP: 2023). Table 1 shows the classification of those companies. However, 324 out of those 398 companies have been included in the analysis because of consistency and availability of required data. The data for some variables are not available in some cases. The number of observations for each regression has been reported in the results. All data has been reported in thousand rupees (PKR) unless specified.

The reported data in annual accounts are based on standard accounting policies and procedures. The definitions of some variables in accounting procedures are different from those in finance theory. So, before applying the statistical techniques for empirical analysis, some variables have been re-calculated. In this analysis, preference shares capital is not a part of owners' equity (EQ). Similarly, the surplus on the revolution of assets is not included in accumulated retained earnings (SURPLUS). In financial statements of companies, total assets (TOTAS) will be slightly greater than current assets (CURAST) plus fixed assets (FXDAST) because of the inclusion of those non-current assets that cannot be treated as fixed operating assets (FXDAST). The intangible assets (INTNGBL) are those assets that have been taken separately from fixed operating assets (FXDAST). The descriptions of variables and sources of data have been shown in Table 2.

Panel least square (PLS) techniques have been applied to estimate the parameters. The Hausman (Cross-sectional random chi-square) and Lagrange Multiplier (Breusch-Pagan, Honda, King-Wu) tests have been applied to test the appropriateness of panel least square (PLS) techniques. Based on these criteria, the fixed effect models have been used for the estimation of accumulated retained earnings (SURPLUS), while the common effect model was suggested for the estimation of bonus shares (BNUS) and dividend payout ratio (PAYOUT). To test the robustness of parameters, every equation has been estimated in 3 alternative scenarios. To select the appropriate model, the Akaike, Schwarz, and Hannan-Quinn information criteria have also been reported. These criteria suggest the most appropriate models to minimize information losses. The estimated parameters have been presented in Tables 4 to 6.

**Table 1.** Companies in Sample (Year: 2016-21)

Sector	No. of Companies
Manufacturing, processing, and trading of goods	371
Information, communication, and transport services	16
Other services activities	11
Total	398
Small and medium enterprises (SMEs)	116

Source: State Bank of Pakistan (2023) / Author's presentation

**Table 2.**  
Descriptive Statistics: Financial and Operational Indicators  
(Million PKR unless specified)

Variable	Large Scale Companies			Small and Medium Enterprises		
	Mean	Median	Standard Error	Mean	Median	Standard Error
Bonus shares	194.3	29.3	58.4	48.1	13.2	15.0
Cash and bank balance	758.6	62.8	86.1	124.1	9.8	19.4
Current assets	9276.4	1605.2	985.6	1557.9	249.1	243.0
Dividend paid	831.1	68.9	95.3	219.1	17.7	39.1
Earning after tax	1024.1	96.7	213.8	256.8	2.6	117.1
Fixed Assets at cost	9461.7	1754.7	862.4	2186.9	422.6	245.2
Intangible assets	482.6	6.4	90.9	71.3	2.9	22.9
Leverage Ratio	2.3	2.2	0.4	1.6	1.9	0.6
Operating assets at cost	10762.2	2258.3	1045.2	2408.0	443.4	245.3
Paid up capital	1582.1	122.7	173.6	469.2	28.7	85.0
Payables	5576.7	553.1	731.4	654.1	122.3	99.7
Reserves and surplus	7238.9	761.8	1389.1	715.1	38.8	146.4
Total assets	21653.6	3453.1	2231.7	4626.8	569.5	1041.2

Source: Author's estimations

**Table 3.** List of Variables and Sources of Data

Abbreviation	Description	Source
BONUS	Issuance of bonus shares or stock dividends	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
CASH	Cash and bank balance	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
CRPTN	Transparency, accountability and corruption in the public sector index (in units of standard normal distribution, ranging from approximately -2.5 to 2.5)	Worldwide Governance Indicator; World Bank (2022)
DCPS	Domestic credit to private sector as % of GDP	International Financial Statistics, International Monetary Fund (2023)
EAT	Earning after tax	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
FXDAST	Fixed assets at cost	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
ICT	The dummy variable equal to '1' if a company belongs to information and communication technology and '0' otherwise	Author's depiction based on State Bank of Pakistan (2023)
INFLCPI	Rate of inflation based on consumer prices (annual %)	World Development Indicators; World Bank (2023)
INTNGBL	Intangible assets that cannot be seen, touched, or physically measured. These are created through time and/or effort. Copyrights, patents, goodwill, trademarks, and software accounts are included in these assets.	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
LAW	Rule of law index (in units of a standard normal distribution, ranging from approximately -2.5 to 2.5)	Worldwide Governance Indicator; World Bank (2022)
LVRG	Leverage ratio: Ratio of total assets to shareholder's equity	Author's calculations
OPRASC	Operating fixed assets at cost	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
PAIDUP	Paid-up capital (Ordinary shares capital)	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
PAYBLS	Trade credit and other accounts payables	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
PAYOUT	Cash dividend to earning after tax	Author's calculations
RTRNR	Retained earnings to earning after tax	Author's calculations
SME	The dummy variable is equal to '1' if the annual sales revenue of the company is less than Rs.800 million, and '0' otherwise.	Author's depiction based on the Government of Pakistan (2021)
SRV	The dummy variable equal to '1' if a company belongs to the services sector and '0' otherwise	Author's depiction based on State Bank of Pakistan (2023)
SURPLUS	Accumulated retained earnings (Reserves and surplus)	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)
TOTAST	Total Assets (Equity and Liabilities)	Financial Statement Analysis; State Bank of Pakistan/ Pakistan Stock Exchange (2023)

#### 4) Results and Conclusion

Tables 4 to 6 show estimated quantifications of the impacts of explanatory variables on accumulated retained earnings (SURPLUS), issuance of bonus shares (BNUS), and dividend payout ratio (PAYOUT). These results are based on panel least square (PLS) techniques, while estimated parameters of Hausman tests, Lagrange multipliers, and information criteria have also been reported in these tables. The results show the significance of parameters and overall goodness of fit. However, some results are against the common intuition. For instance, the impact of small and medium enterprises (SME) is not significant in the determination of accumulated retained earnings (SURPLUS) and payment of bonus shares (BNUS), though it is a significant determinant of the dividend payout ratio (PAYOUT).

The robustness of estimated parameters has been checked by using three alternative options. For this purpose, some control variables have been added to the regression analysis. The robust and significant impacts of paid-up capital (PAIDUP), total assets (TOTAST), fixed assets (FXDAST), intangible assets (INTNGBL), earning after tax (EAT), and cash balance at the end of the year (CASH) have been noted.

The empirical evidence in this study shows that the magnitude of internal financing is largely determined by the nature and size of assets: Total assets (TOTAST), fixed assets (FXDAST), intangible assets (INTNGBL), and paid-up capital (PAIDUP). According to the statistical evidence, paid-up capital (PAIDUP) and fixed assets play an important and significant role in creating internal equities. The firms with higher paid-up capital (PAIDUP) and assets (TOTAST or FXDAST) will retain more profits. These firms will issue more bonus shares (BNUS) to expand their paid-up capital (PAIDUP). However, intangible assets (INTNGBL) will affect accumulated retained earnings (SURPLUS) and payment of bonus shares (BNUS) negatively. These results are confirmed by three alternative scenarios.

In interpreting the significant negative impact of the small and medium enterprises' dummy variable (SME) on dividend payout ratio (PAYOUT), it is notable that the Small and Medium Enterprises Development Authority (SMEDA) provides very limited facilitation to the small and medium enterprises (SMEs). Such facilitations do not help generate the capital at a competitive and affordable cost. Large corporations can issue new equities and debt instruments and can arrange institutional financing. However, small and medium enterprises (SMEs) have to retain their profits to enhance their equities for expansion in their assets (TOTAST). It is also notable that small and medium enterprises (SMEs) have been defined based on sales revenue. It corroborates that dividend policy cannot be independent of the size of the business. Because of reliance on internal equities, small and medium enterprises (SMEs) have to retain their profits. The expected rate of return on investment in small-size firms will be lower than in large corporations. Consequently, their shareholders may have to face lower market value of their assets. This situation creates a bias against the small firms. This is one of the barriers to the growth and survival of small and medium enterprises (SMEs).

**Table 4.**

Dependent Variable: Accumulated retained earnings (SURPLUS)

Method: Panel Least Squares (Fixed Effect Model)

Sample: 2016-2021

Periods included: 6; Cross-sections included: 173; Total panel (unbalanced) observations: 855

Independent Variable/ Option	I	II	III
Constant	3263639.0** (2.305)	3118552.0** (2.161)	3276632.0** (2.300)
INTNGBL: Intangible assets	-2.624*** (-3.260)	-2.630*** (-3.246)	-2.629*** (-3.254)
TOTAST: Total Assets	0.084*** (4.409)	0.086*** (4.476)	0.085*** (4.262)
PAIDUP: Paid-up capital	1.281** (2.080)	1.292** (2.084)	1.282** (2.079)
SME: Dummy variable equal to '1' for SMEs	-1557704.0 (-0.703)	483362.4 (0.195)	-1556299.0 (-0.686)
SME*ICT: Dummy variable for SMEs *Dummy variable for companies in ICT	56946.3 (0.007)	-817014.3 (-0.103)	39960.8 (0.005)
SME*SRV: Dummy variable for SMEs *Dummy variable for companies in the services industry		-2.528* (-1.944)	-77374.7 (-0.007)
LVRG: Leverage ratio			-10436.3 (-0.094)
<b>Overall Significance</b>			
R-squared	0.569	0.571	0.569
Adjusted R-squared	0.457	0.458	0.455
F-statistic	5.081	5.065	5.008
<b>Criteria for Model Selection</b>			
Akaike information criterion	36.864	36.877	36.868
Schwarz criterion	37.846	37.866	37.862
Hannan-Quinn criterion	37.240	37.256	37.249
<b>Testing for Fixed/ Random/ Common Effect</b>			
Lagrange Multiplier Test: Breusch-Pagan	205.720***	205.737***	200.616***
Lagrange Multiplier Test: Honda	14.3429***	14.343***	14.163***
Lagrange Multiplier Test: King-Wu	14.34297***	14.343***	14.163***
Hausman Test (Cross-section random Chi-Square)	50.529***	57.763***	57.763***

# T-Statistics in parenthesis

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

Source: Author's Estimations

**Table 5.**  
 Dependent Variable: Issuance of bonus shares or stock dividends (BNUS)  
 Method: Panel Least Squares (Common Effect Model)  
 Sample: 2016-2021  
 Periods included: 6; Cross-sections included: 57; Total panel (unbalanced) observations: 116

Independent Variable/ Option	I	II	III
Constant	22454.8 (0.969)	515477.3 (1.096)	9775.9 (0.354)
INTNGBL: Intangible assets	-0.029*** (-3.398)	-0.029*** (-3.520)	-0.043*** (-5.233)
FXDAST: Fixed assets at cost	0.006*** (3.017)	0.006*** (3.037)	
OPRASTC: Operating fixed assets at cost			0.003 (1.251)
PAIDUP: Paid-up capital	0.061*** (5.231)	0.061*** (5.334)	0.081*** (8.099)
EAT: Earning after tax	0.026*** (5.142)	0.026*** (5.165)	0.034*** (8.186)
SME: Dummy variable equal to '1' for SMEs	-31079.7 (-0.779)	-22473.8 (-0.599)	-9841.6 (-0.252)
SME*ICT: Dummy variable for SMEs*Dummy variables for companies in ICT	59289.0 (0.663)		
SME*SRV: Dummy variable for SMEs* Dummy variable for companies in the services industry	108493.0 (0.946)		
		-31365.7	

DCPS: Domestic credit to private sector as % of GDP		(-1.050)	
<b>Overall Significance</b>			
R-squared	0.884	0.884	0.875
Adjusted R-squared	0.876	0.877	0.869
F-statistic	116.480	136.986	152.845
<b>Criteria for Model Selection</b>			
Akaike information criterion	27.171	27.155	27.210
Schwarz criterion	27.362	27.322	27.353
Hannan-Quinn criterion	27.249	27.223	27.268
<b>Testing for Fixed/ Random/ Common Effect</b>			
Lagrange Multiplier Test: Breusch-Pagan	0.022	0.015	0.408
Lagrange Multiplier Test: Honda	-0.147	-0.122	0.639
Lagrange Multiplier Test: King-Wu	-0.147	-0.122	0.639

*#T-Statistics in parenthesis*

*\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$*

*Source: Author's Estimations*

**Table 6.**

Dependent Variable: Payout Ratio (PAYOUT)

Method: Panel Least Squares (Common Effect Model)

Sample: 2016-2021

Periods included: 6; Cross-sections included: 236; Total panel (unbalanced) observations: 972



Independent Variable/ Option	I	II	III
Constant	3.804** (2.094)	-18.353 (-0.910)	19.363 (0.523)
SME: Dummy variable equal to '1' for SMEs	-7.817** (-2.340)	-7.995** (-2.398)	-7.696** (-2.295)
CASH/EAT: Cash to Earing after tax	0.283*** (8.204)	0.283*** (8.223)	0.283*** (8.213)
PAYBLS/EAT: Trade credit and other accounts payables to Earing after tax	0.002 (1.097)	0.002 (1.039)	0.002 (1.083)
INFLCPI: Rate of inflation based on consumer prices		-0.771 (-1.323)	-1.189* (-1.944)
LAW: Rule of law index		-37.697 (-1.427)	
CRPTN: Transparency, accountability and corruption in the public sector index			11.260 (0.261)
TOTAST: Total Assets			1.38E-08 (0.640)
<b>Overall Significance</b>			
R-squared	0.100	0.105	0.104
Adjusted R-squared	0.097	0.101	0.098
F-statistic	35.181	22.439	18.389
<b>Criteria for Model Selection</b>			
Akaike information criterion	10.541	10.539	10.543
Schwarz criterion	10.562	10.569	10.578
Hannan-Quinn criterion	10.549	10.551	10.556
<b>Testing for Fixed/ Random/ Common Effect</b>			
Lagrange Multiplier Test: Breusch-Pagan	0.225	0.185	0.199
Lagrange Multiplier Test: Honda	-0.474	-0.430	-0.446
Lagrange Multiplier Test: King-Wu	-0.474	-0.430	-0.446

#T-Statistics in parenthesis

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

Source: Author's Estimations

## 5) Policy Implications and Limitations

It is important that internal financing is an indicator of self-reliance, growth, and survival of a firm without help from external sources. However, internal financing may be a cause of lower dividends, which may discourage investors. This study provides a device to assess the appropriate level of internal financing.

From an investment policy point of view, small and medium enterprises (SMEs) must pay lesser dividends as compared to large enterprises. It has been discussed that small and medium enterprises (SMEs) play an important role in improving financial liquidity in the market. They help the large-scale units by purchasing their products in cash while they supply these products to the consumers on credit. They manage the inventories and storage facilities for these products. These enterprises work as corresponding parts of the big corporations. So, the existence of small and medium enterprises is important for large-scale industries. The lower return on investment discourages investors from investing in small and medium enterprises. Monetary and fiscal policy intervention is required for the survival of small and medium enterprises (SMEs). The exemption and rebate on dividend income from small and medium enterprises may be the right option.

Because of their large contribution to the economy, small and medium enterprises (SMEs) cannot be neglected in economic policies. One of the possibilities to remove the bias against small and medium enterprises is to provide financing for expansion to the small and medium enterprises (SMEs) through a different window. The specialized financial institutions for SMEs can provide financing facilities to SMEs at a lower rate of interest and different criteria for financing.

There are some limitations of this study. The statistical results of this study are based on the data of companies in Pakistan. Before generalizing the conclusion, it will be better to examine these empirical relations in the larger context. The study must be expanded and enhanced in the larger context. Due to constraints of data, the effects of fiscal policies, including tax rates and subsidies, are not covered in this research. The insufficient panel data in the context of Pakistan cannot identify the net effects of the COVID-19 pandemic. Though earnings after tax capture the effect of COVID-19. The study determines the effects of liquidity and earnings on dividend payout. It is a common opinion that a higher payout can affect the employees' benefits adversely. Testing this intuition can be an interesting area for future studies. It has been referred to in this study that small and medium enterprises (SMEs) play an important role by investing in working capital, while large-scale units focus on investment in fixed assets. This linkage between small and medium enterprises (SMEs) and large-scale units may be tested in future studies.

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