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Macro-economic variables and financing decisions of Nepalese non-financial firms

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Abstract

Purpose - The purpose of this paper is to examine the macro-economic indicators and firm characteristics that impact the financing decision of the Nepalese enterprises.

Methodology - To evaluate the fundamental issues related to firm-specific variables on financing decision of Nepalese enterprises, the study used descriptive, and causal comparative research designs. The study used secondary data from 19 enterprises from 2001 to 2019 listed in NEPSE.

Findings - The findings show that liquidity, inflation, profitability, growth opportunity, and gross domestic product are the major indicators for leverage measures. More specifically, it is found that firm size is more statistically significant for total debt financing, suggesting that firms with greater assets or turnover likely to have easier access to borrowing more fund from the capital market.

Implication: As the linkage between growth opportunity and short-term debt is significant and negative implies that growth upsurges cost of financial distress, decreases free cash flow problems, and intensifies debt related issues. Thus, it is advised to the managers to use less debt and place larger value on stakeholder co-investment. Further, the finding also suggests that firms should employ less debt during the time of inflationary trend in the economy as inflation shows negative indication to debt financing.

Limitations: The scope and sample size are the primary limitation of this study. The study comprises only non-financial firms of the NEPSE base listed firms. It also limits to secondary data analysis. Primary survey may produce recent scenario of the enterprises that they face in their financing decision.

Originality/value: One field of study is believed to be the unique paradigm of macro-level indicators impacting leverage. The second is a piece of work that attempts to compare the results based on both the ratio of long-term to short-term debt and the total amount of overall debt.

Keywords: Short-term debt, long-term debt, liquidity, inflation, market-to-book ratio, payout ratio

I. Introduction

One of the most contentious issues in both the theory and practice of corporate finance is the issue of the influencing elements that define an organization's optimal financing decision (Wippern, 1966). In recent years, the major issue for the enterprise is to enhance the market value of firm through the choice of capital (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Frank, Goyal, & Shen, 2020). Maintaining a trade-off between debt and equity that optimizes an enterprise value (Kayhan & Titman, 2007). Researchers have focused their attention on the choice to employ debt capital, studying the market and directing the growth of a range of theories to choose the optimal capital structure and the factors influencing such a choice. Therefore, the question of how to ease the funds and optimize the firm's value is the central issue of the capital structure decision. According to Titman and Wessels (1988), firms choose funding sources based on a variety of exogenous variables that influence the costs and benefits of types of financing. The existence of recent theory of capital structure instigated with the landmark seminal paper of Modigliani and Miller (1958). Capital structure, they argue, is immaterial because perfect markets exist and there is no discrepancy between internal and external finance, making them perfectly interchangeable. Thus, it does not matter whether investment is funded by internally or externally generated funds. This theory has been developed based on unrealistic assumptions like capital markets are perfect, firms are homogeneous in nature, taxes, transaction and bankruptcy costs do not exist, therefore firms' access to capital market is unrestricted. Because of these impractical assumptions, there is increasing consciousness among researchers and economists alike as the capital markets are characterized by market imperfection, namely financial distress, information asymmetry and that the firms are heterogeneous in nature.

Financial executives focus more on book debt (Myers, 1977), as debt is rightly backed by existing property than it is by growth potentials. Book debt is also on priority because financial markets swing an excessive deal and financial executives are supposed to trust the market leverage numbers are fly-by-night as a direction to commercial financial strategy. In line with the theoretical thoughts of manager, in the study of Graham and Harvey (2001), two third of financial executives specify that they do not readjust their financing decision influenced by the stock market turmoil. Rajan and Zingales (1995) used the variable market to book ratio as a proxy for the extent of growth prospects accessible to businesses. They further claim that, a priori, there should be an inverse association between growth opportunities and debt ratios. This conforms to the theoretical estimation of Jenson and Meckling (1976) grounded on agency cost theory, as well as the empirical study of Myers (1977), which claims that corporations with high leverage have a propensity to work with investment opportunities that have a positive net present value due to information asymmetries. Myers, therefore, argue that firms with potential investment opportunities would incline to have low leverage. Moreover, there is a wide range of empirical evidence supporting the linkage between leverage and growth prospects, for example Titman and Wessels (1988), Chung (1993) and Barclay, Smith, and Watts (1995) show an inverse relation, but Kester (1986) finds no support for the estimated negative association between them.

Considering that equity issuance and profitability have a positive association, Almeida and Campello (2010) show that debt ratio reduces unconsciously with profitability for less active firms (potentially small, less liquid firms). In other words, enterprises with higher external borrowing costs may find it more efficient to allocate capital flows to liquid assets when profits are getting larger (Fazzari and Petersen 1993) and (Almeida, Campello, & Weisbach, 2004)). Contrarily, when the return on asset is lower, firms facing financing difficulty may use their holdings of liquid assets to avoid issuing costly external financing.

In sum, various theories have been investigated to explain the variables that influence the external financing decision in developed countries. However, few studies in Nepal have focused on the firm characteristics that impact financing decision. As a result, there is a scarcity of recent information on the financing behavior of Nepalese firms based on macroeconomic characteristics such as interest rate, inflation, and GDP. As these indicators have been found to be important in predicting debt financing choice (Shekarkhah & Ghasedi Dizaji, 2016).

Hence, the capital structure decisions due to nine reliable factors have to be explored properly in order to understand how corporate firms should make financing decision. In this perspective, the study denotes to determine reliable factors for corporate capital structure decision that may be rewarding and relevant one.

II. Capital structure theories and their predictions

This section includes a brief discussion of the trade-off, pecking order theory, and market timing theory, followed by a review of prophecies on how the theories relate to observable leverage characteristics.

A. Capital structure theories

Trade-off theory

Trade-off theory establishes the presence of an optimal capital structure by balancing the costs and benefits of a firm. The benefits and costs can be achieved in a variety of ways (Fama & French, 2002; Frank & Goyal, 2009; Shyam-Sunder & Myers, 1999). In general, trade-off theory envisages that a corporation will uphold a target debt-to-equity ratio that increases the firm value with lowering the cost of market imperfection. Until the worth of firm is maximized, debt is substituted for equity or equity is substituted for debt. The optimal point is achieved when the incremental value of the benefits related to debt issuance precisely offsets the rise in the present value of the costs related with issuing more debt (Myers, 2001). As evinced by Benito (2003) that debt capital is used by businesses to restrain managers' interests from conflicting with those of shareholders. In fact, rather than managers using internal cash flow to spend privileges, the company utilizes it to refund debt (Fama & French, 2002).

Pecking order theory

Financial executives have a superior information of the firm's internal profit and the availability of business potentials (Harris & Raviv, 1991). (Harris & Raviv, 1991). Several theories have been established in an attempt to elucidate this private information, and theories other than trade-off and agency costs have since grown in popularity. Pecking order theory assumes inherent asymmetry information that exists among the stakeholders (Myers, 1984; Myers & Majluf, 1984). They claim that if a corporation uses its available funds to finance positive net present value projects, then all positive net present value (NPV) projects would be accepted because no external equity would be raised, resolving the information asymmetry issue. According to this theory, corporations use capital in a hierarchical order to finance their operations. Due to the asymmetry of information between the enterprise and perspective investors, the firm favors internal profits over debt, and debt over equity.

Market timing theory

The market timing theory (Baker & Wurgler, 2002) explains how firms, in the economy, manage their fund in their project with equity or with debt instruments. The corporate finance theory is often distinguished from the trade-off and pecking order theories. This hypothesis is influenced by behavioral finance and assumes that organizations choose financing sources that are the most cost-effective at the time external financing is needed. Baker and Wurgler (2002) claims that firms do not usually care whether they finance

with debt or equity, they just make the decision based on market-to-book ratio. The firm is motivated to raise the capital after issuing equity and repurchased the stocks when this ratio seems to be lower. They suggest that the consequences on capital structure as a result are persistent. Thus, there is a strong correlation between the current capital structure and previous market prices.

B. Predictions

From the discussion of literature and theories of capital structure, it is extracted the components that influence financing decision of the firm. The components include liquidity, growth opportunity, inflation, profitability, dividend payout ratio, size of the firm, gross domestic product, and market interest rate.

1. Leverage and liquidity

Liquidity position of the corporate firm has mixed impact on the leverage. First, firms with higher liquidity ratios might support a relatively higher leverage ratio due to larger ability to satisfy short term debt obligation which would imply positive relation between firm's liquidity and debt. On the other hand, firms with greater liquidity may use these assets to finance their investment, if so then firms' liquidity and leverage would have negative relation. (Antoniou, Guney, & Paudyal, 2002; Krenusz, 2004; Ozkan, 2001; Wu, 2007) predict that higher liquidity will support the firms to finance their undertakings from internally generated funds and reduce the amount of debt.

2. Leverage and growth opportunity

According to Baker and Wurgler (2002), the market to book ratio shows that high leverage firms raised money when market valuations were low, but low leverage firms provided funds when market valuations were high. There is negative association between leverage and market to book ratio ((Barclay & Smith, 2005; Barclay et al., 1995; Bevan & Danbolt, 2002; Myers, 1977; Rajan & Zingales, 1995) when leverage is measured at market value terms. Adam and Goyal (2008) observe that higher the market to book ratio lower the market-based leverage. Conversely, pecking order theory shows direct connection of growth opportunities with debt as high growth firms require large amount of additional financing for their investment, and this means that firm tend to employ more debt rather than equity. Other studies reveal negative association (Frank & Goyal, 2009; Rajan & Zingales, 1995) and some other finds positive ((Bevan & Danbolt, 2002; Myers & Majluf, 1984).

3. Leverage and inflation

Taggart (1985) reveals that when inflation is expected to be strong, the real value of tax cuts on debt is higher. Thus, trade off theory envisages that leverage is directly connected to anticipated inflation. Market timing theory in debt markets also results in a positive association between leverage and inflation if firms issue debt when expected inflation is high compare to current interest rate (Barry, Mann, Mihov, & Rodriguez, 2008; Frank & Goyal, 2009; Ritter & Warr, 2002) show that firms raise more debt when recent interest rates are low compared to previous levels. Besides, inflationary trend increases business risk that results more volatility in operating income, cash flows to the firm, and leads to uncertainty to interest tax shields. This reduces the benefits of employment of debt.

4. Leverage and profitability

There are large number of studies on the financing decision employing profitability as key determinant since the seminal paper of (Modigliani & Miller, 1958) but the theoretical prediction remain to be ambiguous. Trade off theory envisages that more profitable firms tend to use more debt as they have more income to save taxes. In a dynamic trade-off model, leverage may appear to be adversely correlated with profitability. The pecking order hypothesis also suggests a contradiction between leverage and

profitability. As argued by Kayhan and Titman (2007) profitability is negatively associated with leverage due to passively accumulated profits. Bevan and Danbolt (2002) predicts that more profitable firms hold less amount of debt since more profits provide large amount of financing from internal funds.

5. Leverage and firm size

Larger, more diversified, and more established firms had lower bankruptcy rates (Almeida & Campello, 2010). Furthermore, more mature firms with a better reputation in leveraged markets have lower interest-related agency costs. As a result, trade-off theory foresees that larger and more mature firms will have higher debt. Lenders may also be more willing to lend to a large firm since they believe the likelihood of the company going bankrupt is very low. There is positive association between leverage and size of the firm (Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Frank & Goyal, 2003; Hovakimian, 2006; Rajan & Zingales, 1995). However, it can also be argued that size is negatively associated with leverage. For instance, pecking order hypothesis states the importance of internal funds. The larger the size of the firm, the larger could be the profit and larger amount could be the retained earnings. Thus, firms that have larger accumulated profits, would prefer to use more internal fund rather than debt

6. Leverage and asset tangibility

Leverage tends to increase when size of property, plant, and equipment increases for businesses. Tangible assets are more likely to have an impact on a company's borrowing decisions since they are less susceptible to asymmetries and have a higher value in the event of bankruptcy. It also makes it harder for investors to switch from high-risk to low-risk products. A direct association between asset tangibility and leverage is predicted by the lower estimated financial distress cost and less debt-related agency problems. Frank and Goyal (2008); Rajan and Zingales (1995); Scott (1977) observed that a company can improve the value of its equity by issuing collateralized debt when current creditors do not have such a guarantee. As a result, corporations have an incentive to do so, and a positive relationship between asset tangibility and leverage would be expected. Pecking order theory, on the other, predicts that due to low information asymmetry firms have inverse relation between asset tangibility and debt.

7. Leverage and dividend payout ratio

Another element that could have an impact on leverage is the dividend payout. According to (Rozeff, 1982) there should be a negative correlation between payout ratio and leverage because dividend payments are a signal that future earnings are likely to increase, which lowers the cost of equity financing (Antoniou, Guney, & Paudyal, 2008). An increase (decrease) in the payout ratio would lead to a decrease (increase) in leverage usage. In the case of mature firms with consistent earnings, the payout ratio is high, while in the case of growth firms, it is low (Lintner, 1956).

8. Leverage and gross domestic product

It is considered as another important determinant of financing decision of Nepalese non-financial firms as mentioned by several studies (Booth et al., 2001; Cook & Tang, 2010; Hackbarth, Miao, & Morellec, 2006; Leary, 2009). These authors employ the expected GDP and result a positive association with debt financing of the firms. Booth et al. (2001) show that GDP increases over time in most countries reflect that non-financial firms tend to use more debt however, in some countries the trend found to be unnoticeable. The growth of GDP as determined by CBS (Central Bureau of Statistics) has been used as expected GDP in this study as a macro-economic variable. The study used real GDP growth rate over a year as an indicator of market economy. It is expected a faster adjustment speed in good macro-economic conditions as indicated by a larger concurrent growth of GDP.

9. Leverage and market interest rate

In addition, interest rate influences the debt financing on each firm as it is the cost of borrowing. The cost of debt capital is the interest rate of borrowing fund that leads the firms to use in their potential project. Barry et al. (2008) find the firms issue more debt when current interest rate are low relative to past levels (Frank & Goyal, 2009). Similarly, the monetary policy influences the interest rate (Friedman, 1959), which ultimately impact the decision of debt financing. The development of capital market determines the supply level of financing resources which directly interact the interest rate and level of debt capital and indirectly impact the demand capacity of business firm (Booth et al., 2001).

III. Data Description

The published financial reports of the selected enterprises are the main source of data. Such data are collected from the NEPSE and SEBON data base, and yearly report of selected enterprises from 2001 to 2019. In addition, macro-economic variables are extracted from the database of the central bank and the central statistics bureau. The non-financial firms were chosen from the NEPSE database as financial enterprises do not provide a good platform for the study of capital structure and financial constraints. Most of the studies on capital structure of firms have included all firms in the economy except financial firms (Rajan & Zingales, 1995). The cause for this is that the capital structure of financial firms is profoundly governed by the regulatory requirements. There were 64 non-financial firms (Manufacturing and processing, trading, hotels, hydro and others) listed in NEPSE data base by the mid July 2019 where these firms were considered as the population of this study, and out of these based on the availability of financial report, 19 firms were selected as sample of this study. The study followed convenient sampling method for collecting data and analyzing the reports. The ratios of data used in this study are winsorized at the 1% in both tails of the distribution.

A. Leverage measures

Several measures of leverage have been used in the literature. Some used book measure and some market measure. The book measure also differs whether total debt, debt ratio, long-term debt ratio or short-term debt ratio or coverage ratio is employed. In this study, we employed (1) the absolute value of total debt (TD), (2) the long-term debt ratio (LTDR), and (3) the short-term debt ratio (STDR). We take TD to be the main focus as most of the business entrepreneurs examine their leverage with the amount of loan that they are using in their business.

B. Descriptive statistics

Table 1 exhibits the summary statistics of dependent variables and explanatory variables for overall sample firms. The table provides the mean, median, standard deviation, 10th, 50th, 90th percentile and number of firm year observations. The table further reveals that there is a wide variation of total debt level that employed by sample firms. It is Rs 78 million in 10th percentile to Rs 3239 million in 90th percentile and on an average these firms have Rs 1657 million (median Rs 596 million). It indicates that Nepalese non-financial firms employed significant amount of debt in their external financing. Based on the lower and upper percentile of distribution of short-term debt ratio, which ranges from 8 per cent to 75 per cent of total assets with average ratio of 36 per cent. Based on average value and standard deviation, Nepalese firms use 36 per cent of their financing from short term debt and it is fluctuated by 24 per cent. Similarly, the range of lower and upper percentile values with respect to long-term debt ratio has been observed as zero per cent to 49 per cent of total assets and the average of 18 per cent with 10 per cent on 50th percentile indicates that there are firms using long-term debt ratio in financing their asset.

Table 1: Descriptive statistics

The table displays the summary statistics of leverage measures and firm characteristics of nineteen non-financial firms from 2001 to 2019 listed in NEPSE. *The total leverage is defined as the sum of long-term debt and short-term debt, SDR is the short-term debt scaled by total assets, LDTR is the ratio of long-term debt to total assets. Liquidity is the current asset scaled by current liabilities, Growth is the sum of book debt and market equity scaled by total assets, PPE is property, plant and equipment scaled by total assets, inflation is the rate of change in consumer price index, profitability is operating income scaled by total assets, DIV/EBIT is payment of dividend scaled by operating income, firm size is the natural log of sales, GDP is the gross domestic product, and Mrate is the market interest rate. Data are extracted from annual report of respective sample firms.*

Variables					Distribution			
		Mean	Median	SD	10th	50th	90th	N
TD	Million in Rs	1657.2	596.83	4104.0	78.16	596.83	3239.1	337
SDR	times	0.3589	0.3004	0.2423	0.0769	0.3004	0.7532	337
LTDR	times	0.1838	0.1011	0.2376	0.0000	0.1011	0.4940	337
LIQ	times	2.1112	1.1788	3.3042	0.3699	1.1788	4.8467	337
Growth	times	2.0042	1.2183	1.7926	0.7176	1.2183	4.5755	337
PPE	times	0.7313	0.4651	3.9064	0.1245	0.4651	0.9154	337
INF	Percentage	7.0004	7.7000	2.7640	4.0000	7.7000	9.9300	337
PRO	Percentage	8.0508	5.4327	11.937	-2.0947	5.4327	21.787	337
DIVEBIT	Times	0.2606	0.0585	1.3369	0.0000	0.0585	0.5680	337
Lnsize	Rs in million	6.5042	6.4251	1.4223	4.7098	6.4251	8.4074	337
GDP	Percentage	4.2615	3.7000	2.0222	0.5900	3.7000	6.9900	337
Mrate	Percentage	11.125	11.000	1.0298	9.6200	11.000	12.470	337

Liquidity ratio ranges from 0.37 times to 4.85 times, leading the average liquidity to 2.11 times which indicates that Nepalese non-financial firms maintain 2 times liquid assets in their respective firm and the result is consistent with conventional rule. Theoretically, as a rule of thumb, the ratio of 2 for the current ratio considered as good. Likewise, the growth opportunity is ranged from 0.72 times to 4.58 times on the distribution of 10th and 90th percentile and on an average the growth opportunity is 2 times. Asset tangibility ranges from 0.12 times to 0.91 times, leading to 0.73 times with standard deviation 3.90 times.

Table 2 presents the correlation matrix among the variables selected in this leverage measures. The explanatory variables should not be highly correlated with each other to have realistic outcome from the regression analysis. If correlation value exceeds 0.80 indicates the collinearity issues among the independent variables (Brooks, 2005). The higher the linear relationship, the more likely it is that explanatory variables may be misinterpreted. It is apparent that none of the variables have been observed high correlation. The correlation coefficient is more than 0.80 is considered as the issue of multicollinearity. The table reveals the largest value of correlation has been observed to be 0.61among firm size and total debt. Thus, all the variables included in the study can be incorporated into further analysis.

Table 2: Correlation coefficients

The table displays correlation coefficients between leverage measures and firm characteristics employed in this study. The sample consists of 337 firm years from the annual report of listed firms in NEPSE for the period of 2001 to 2019. The TD is defined as sum of short term and long term debt, SDR is defined as short term scaled by total assets, and LTDR is long term debt scaled total assets, LIQ is the current assets scaled by current liabilities, Growth is the sum of book value of debt and market value of equity scaled by total assets, PPE is the ratio of property, plant and equipment to total assets, INF is the change in ratio of consumer price index, Pro is the operating income scaled by total assets, DIVEBIT is the ratio of dividend to operating income, Lnsize is the natural log of firm sales, GDP is the gross domestic product and Mrate is the market interest rate.

	TD	SDR	LTDR	LIQ	Growth	PPE	INF	PRO	DIVEBIT	Lnsize	GDP	Mrate
TD	1											
SDR	-.184**	1										
LTDR	0.013	-.204**	1									
LIQ	.167**	-.401**	-.130*	1								
MB	-.128*	-.129*	-0.105	.157**	1							
PPTTA	-0.02	-0.068	0.064	-0.023	-0.034	1						
INF	0.038	0.101	-.138*	-0.023	.114*	-0.054	1					
PRO	-0.01	-0.081	-.267**	.128*	.509**	0.008	0.104	1				
DIVEBIT	-0.004	0.036	-0.095	0.014	.188**	-0.004	0.012	0.092	1			
Lnsize	.614**	-0.048	-.138*	.107*	-0.034	0.024	0.091	.283**	0.008	1		
GDP	0.059	-0.055	-0.093	0.071	0.014	0.07	-.156**	0.03	-0.018	.148**	1	
Mrate	-0.039	0.024	-0.044	0.013	-0.075	0.047	-.141**	0.037	-0.01	0.048	.476**	1

** Correlation is significant at the 0.01 level (2-tailed).*correlation is significant at the 0.05 level (2-tailed)

IV. Empirical evidence of leverage measures

Based on the total debt, long-term debt and short-term debt as prescribed in the theoretical framework, the analysis of data is based on the OLS regression model. The stepwise regression method has been adopted to examine the independent variables explaining the level of debt. In this steps, nine different models with different sets of independent variables have been regressed on each of the three leverage measures namely, absolute value of total debt and relative value of short-term and long-term debt. The OLS results of total debt, long-term debt ratio and short-term debt ratio are reported in Table 3, 4 and 5 respectively. The results are presented in the table based on entire sample consisting of 19 listed non-financial firms during the period of 2001 to 2019.

Liquidity

Liquidity is the capacity of the firm to pay its short-term liabilities. The variable is more concerned with short-term debt rather than long-term debt. Antoniou et al. (2002); Krenusz (2004); Wu (2007) present liquidity is a major variable in determining debt ratio. They found that liquidity is negatively associated to debt ratio. Besides, Anderson (2002) reveals a direct connection between liquidity and debt capital. The current asset to current liability is used as proxy for liquidity in this study and the results are found to be positively significant in the case of absolute measure of total debt and negatively significant in the case of long-term and short-term debt ratio. However, the significant level is much larger in the case of short-term debt ratio.

Table 3: Regression result of explanatory variables on total debt ratio for the entire sample

The table displays the regression coefficients from pooled cross-sectional OLS of nineteen non-financial firms from 2001 to 2019 listed in NEPSE and SEBON data base. The estimated model is $TD = a + b_1 LIQ + b_2Growth + b_3PPE + b_4INF + b_5PRO + b_6 + DivEbit + b_7Lnsize + b8GDP + b9Mrate + U_{it}$

The dependent variables, TD is the sum of long-term and short-term debt. The LIQ is the current assets to current liabilities, Growth is the sum of book debt and market equity to book value of total assets, PPE is the property, plant and equipment to total assets, INF is the rate of change in consumer price index, PRO is the operating income to total assets, Div/EBIT is the payment of dividend to operating income, Lnsize is the natural log of sales, GDP is the gross domestic product, and Mrate is the market interest rate.

Model	Intercept	LIQ	Growth	PPE	INF	PRO	DivEbit	Lnsize	GDP	Mrate	Adj-R^2	F-stat	P-value
1	1220	0.167***									0.025	9.58	0.002
	(4.655)	(3.095)											
2	1878	0.191***	-0.158***								0.046	9.169	0.000
	(5.47)	(3.549)	(-2.923)										
3	1907	0.191***	-0.159***	-0.021							0.053	6.151	0.000
	(5.47)	(3.533)	(-2.938)	(-0.38)									
4	1295	0.194***	-0.166***	-0.017	0.061						0.045	4.94	0.001
	(2.02)	(3.58)	(-3.052)	(-0.326)	(1.136)								
5	1306	0.191***	-0.196***	-0.019	0.058	0.059					0.045	4.13	0.001
	(2.037)	(3.516)	(-3.124)	(-0.357)	(1.079)	(0.952)							
6	1304	0.191***	-0.20***	-0.019	0.058	0.059	0.025				0.042	3.469	0.002
	(2.031)	(3.518)	(-3.152)	(-0.357)	(1.082)	(0.953)	(0.451)						
7	-10352	0.125***	-0.027	-0.032	0.003	-0.19***	0.013	0.657***			0.418	35.396	0.000
	(-10.99)	(2.94)	(-0.531)	(-0.756)	(0.075)	(-3.856)	(0.296)	(14.612)					
8	-10075	0.127***	-0.025	-0.029	-0.004	-0.2***	0.012	0.663***	-0.04		0.419	31.06	0.000
	(-10.19)	(2.98)	(-0.488)	(-0.698)	(-0.083)	(-3.878)	(0.273)	(14.573)	(-0.926)				
9	-11847	0.127***	-0.019	-0.03	-0.001	-0.21***	0.011	0.666***	-0.06	-0.042	0.417	27.678	0.000
	(-5.235)	(2.987)	(-0.372)	(-0.704)	(-0.026)	(-3.95)	(0.259)	(14.593)	(-1.226)	(0.871)			

***,**,* denote significant level at 1%, 5%, and 10% respectively, and figures in the parenthesis are t-values.

Table 4: Regression result of explanatory variables on long term debt ratio for the entire sample

The table displays the regression coefficients from pooled cross-sectional OLS of nineteen non-financial firms from 2001 to 2019 listed in NEPSE and SEBON data base.

The estimated model is $LTDR = a + b_1 LIQ + b_2Growth + b_3PPE + b_4INF + b_5PRO + b_6DivEbit + b_7Lnsize + b_8GDP + b_9Mrate + U_{it}$

The dependent variables, LTDR is the long-term debt scaled by total assets. The LIQ is the current assets to current liabilities, Growth is the sum of book debt and market equity to book value of total assets, PPE is the property, plant and equipment to total assets, INF is the rate of change in consumer price index, PRO is the operating income to total assets, Div/EBIT is the payment of dividend to operating income, Lnsize is the natural log of sales, GDP is the gross domestic product, and Mrate is the market interest rate.

Model	Intercept	LIQ	Growth	PPE	INF	PRO	DivEbit	Lnsize	GDP	Mrate	Adj-R^2	F-stat	P-value
1	0.204	-0.13**									0.014	5.15	0.017
	(13.34)	(-2.398)											
2	0.225	-0.12**	-0.087								0.018	4.15	0.017
	(11.132)	(-2.125)	(-1.589)										
3	0.222	-0.12**	-0.086	0.058							0.019	3.16	0.025
	(10.859)	(-2.104)	(-1.569)	(1.07)									
4	0.297	-0.12**	-0.07	0.051	-0.13**						0.033	3.85	0.004
	(7.96)	(-2.22)	(-1.285)	(0.953)	(-2.403)								
5	0.294	-0.11**	0.066	0.059	-0.12**	-0.28***					0.087	7.35	0.000
	(8.198)	(-2.011)	(1.081)	(1.127)	(-2.21)	(-4.522)							
6	0.295	-0.11**	0.082	0.059	-0.11**	-0.27***	-0.082				0.091	6.55	0.000
	(8.134)	(-2.039)	(1.326)	(1.133)	(-2.23)	(-4.536)	(-1.552)						
7	0.339	-0.10*	0.071	0.06	-0.11**	-0.26***	-0.082	-0.043			0.089	5.69	0.000
	(4.963)	(-1.946)	(1.112)	(1.147)	(-2.152)	(-4.00)	(-1.536)	(-0.758)					
8	0.38	-0.10*	0.076	0.066	-0.13***	-0.26***	-0.084	-0.025	-0.10*		0.097	5.48	0.000
	(5.331)	(-1.862)	(1.203)	(1.268)	(-2.455)	(-4.065)	(-1.591)	(-0.449)	(-1.922)				
9	0.387	-0.09*	0.076	0.066	-0.13***	-0.26***	-0.084	-0.026	-0.101*	-0.003	0.094	4.86	0.000
	(2.37)	(-1.859)	(1.184)	(1.266)	(-2.449)	(-4.031)	(-1.587)	(-0.45)	(-1.673)	(-0.049)			

***,**,* denote significant level at 1%, 5%, and 10% respectively, and figures in the parenthesis are t-values.

Table 5: Regression result of explanatory variables on short term debt ratio for the entire sample

The table displays the regression coefficients from pooled cross-sectional OLS of nineteen non-financial firms from 2001 to 2019 listed in NEPSE and SEBON database. The estimated model is $SDR = a + b_1 LIQ + b_2 Growth + b_3 PPE + b_4 INF + b_5 PRO + b_6 DivEbit + b_7 Lnsize + b_8 GDP + b_9 Mrate + U_{it}$. *The dependent variables, SDR is the short-term debt scaled by total assets. The LIQ is the current assets to current liabilities, Growth is the sum of book debt and market equity to book value of total assets, PPE is the property, plant and equipment to total assets, INF is the rate of change in consumer price index, PRO is the operating income to total assets, Div/EBIT is the payment of dividend to operating income, Lnsize is the natural log of sales, GDP is the gross domestic product, and Mrate is the market interest rate.*

Model	Intercept	LIQ	Growth	PPE	INF	PRO	DivEbit	Lnsize	GDP	Mrate	Adj-R2	F-stat	P-value
1	0.421	-0.40[a]									0.159	64.29	0.00
	(29.29)	(-8.02)											
2	0.438	-0.39[a]	-0.068								0.161	33.125	0.00
	(23.011)	(-7.72)	(-1.34)										
3	0.444	-0.39[a]	-0.073	-0.08							0.166	23.22	0.00
	(23.154)	(-7.78)	(-1.44)	(-1.60)									
4	0.387	-0.39[a]	-0.08[c]	-0.075	0.097[c]						0.173	18.49	0.00
	(11.013)	(-7.73)	(-1.66)	(-1.51)	(1.93)								
5	0.387	-0.39[a]	-0.085	-0.075	0.097[c]	0.001					0.17	14.745	0.00
	(10.995)	(-7.71)	(-1.45)	(-1.50)	(1.92)	(0.02)							
6	0.387	-0.39[a]	-0.096[c]	-0.075	0.097[c]	0.001	0.058				0.171	12.515	0.00
	(10.993)	(-7.68)	(-1.63)	(-1.51)	(1.93)	(0.02)	(1.14)						
7	0.413	-0.39[a]	-0.102[c]	-0.075	0.099[b]	0.011	0.058	-0.025			0.169	10.73	0.00
	(6.226)	(-7.58)	(-1.68)	(-1.49)	(1.97)	(0.18)	(1.15)	(-0.46)					
8	0.414	-0.38[a]	-0.10[c]	-0.074	0.099[c]	0.011	0.058	-0.024	-0.004		0.166	9.362	0.00
	(5.946)	(-7.56)	(-1.67)	(-1.48)	(1.92)	(0.17)	(1.14)	(-0.44)	(-0.07)				
9	0.297	-0.38[a]	-0.096	-0.075	0.101[b]	0.005	0.057	-0.021	-0.026	0.047	0.167	8.388	0.00
	(1.861)	(-7.55)	(-1.55)	(-1.49)	(1.97)	(0.09)	(1.13)	(-0.39)	(-0.45)	(0.82)			

a,b,c denote significant level at 1%, 5%, and 10% respectively, and figures in the parenthesis are t-values.

The positive association of liquidity to total debt may indicate, to some extent, higher liquidity could backup to increase total debt. The relation between absolute value of total debt and liquidity is somewhat puzzling. On the other hand, liquidity has been found to be negatively significant to short term and long-term debt ratio which indicates that firms having larger liquidity tend to use less short and long-term debt. The coefficient of determination in terms of adjusted R2 indicate that initial models are generally poor, however, the overall result seems to be strong as indicated by F-statistics and sig-value presented in the table.

Growth opportunity

Growth opportunity increases the cost of financial distress, decreases the issue of free cash flow, and exacerbates debt related agency problem (Frank & Goyal, 2009). Growth opportunity place a larger value of the investment to stakeholder thus reduces the level of debt. According to Adam and Goyal (2008), growth opportunity is one of the good predictor of leverage as it increases that leads to decline the level of debt if market timing drives financing decision. According to trade-off theory, firms with greater growth potential have lower levels of debt because they are better able to avoid underinvestment, which could lead to stockholder-bondholder agency problems.

The argument is further supported by (Jensen, 1986) free cash flow theory, which predicts that firm tend to use less debt with more investment opportunities. Similarly, Titman and Wessels (1988) argue that the growth opportunity as measured by change in fixed asset to total assets is directly linked to long-term debt ratio and negatively related to both short-term and total debt ratio. However, it is observed from Table 3, 4 and 5 that every aspect of leverage is negatively associated to growth opportunity. The result is in line with trade-off theory. But the result is found to be statistically significant in model 2 to 6 only. The

result is consistent with (Kayhan & Titman, 2007). According to them, growth firm can issue equity at lower cost of information asymmetries. As indicating by t-values, the null hypothesis of short-term and long-term debt ratio is accepted however alternate hypothesis is accepted in the case of absolute value of total debt in the model 2 to 6 presented in Table 3.

Asset tangibility

A positive relationship between asset tangibility and leverage is predicted by the lower estimated cost of financial distress and the smaller amount of debt-related agency issues. Frank and Goyal (2008); Rajan and Zingales (1995); Scott (1977) believe that when the current creditors do not have such a guarantee, a company can raise the value of the equity by issuing collateralized debt. Conversely, pecking order theory foresees a inverse link between asset tangibility and firm leverage. Based on the result presented in Table 3, 4 and 5, it has been observed that asset tangibility is negatively and insignificantly associated with all measure of leverage.

Theoretically, if debt is secured by existing assets, creditors have an assurance of guarantee of repayment which leads to have higher recovery rate. The lower cost of financial distress and debt-related agency problem predict a positive association between debt and asset tangibility. The result is in line with pecking order theory. Based on this theory, the monitoring costs are generally higher for firms with less assets that can be used for collateral, thus firms may voluntarily to have more debt to maintain the basic requirement. This view implies a negative association between asset tangibility and debt level. The negative coefficient of tangibility is consistent with (Ferri & Jones, 1979).

Inflation

When the macro-economic variable, inflation is expected to rise, the real value of tax deduction on debt to be increased (Taggart, 1985). Based on this notion, trade-off theory predicts a direct connection between debt ratio and expected inflation. Ritter and Warr (2002) claim that if managers issue debt when expected inflation is high in comparison to the existing interest rate, market timing in the debt markets results in a direct link between debt measures and expected inflation. However, the result shown in Table 3, 4, and 5 evinced that there is an inverse association between debt measures and expected inflation. It is interesting to observe the negative coefficient of inflation variable for the leverage which may imply that small and growing firms use lesser debt when they expect inflationary trend in the economy. The result is inconsistent with (Taggart, 1985). The macro-economic variable-inflation should play decisive role in determining the level of debt. The coefficient as observed in table reveals that macroeconomic variable-inflation is found to be significant only in determining the level of long-term debt ratio. In other two measures, in absolute value of debt and short-term debt ratio, it seems to be insignificant. It is apparent that inflationary trend may produce long-term impact in the economy thus Nepalese managers prefer to use less debt in their external financing decision.

Profitability

Profitable companies anticipate fewer expenses associated with financial distress and are more receptive to the interest tax shield (Frank & Goyal, 2009; Jensen & Meckling, 1976; Kraus & Litzenberger, 1973). Thus, from a tax and bankruptcy perspective, profitable businesses are likely to use more debt. Similarly, Jensen (1986) contends that profitable companies should choose debt because they are more likely to suffer serious free cash flow issues (Frank & Goyal, 2009). Conversely, the dynamic trade-off theory suggests profitability issues may be more complicated than those based on the static trade-off theory (for example (Strebulaev, 2007)). Correspondingly, hierarchy theory forecasts a firm that prefer internal

funding first and if it is not sufficient then raise capital by issuing debt (Myers & Majluf, 1984). The coefficient observed in this study is negatively and significantly associated with total debt and long-term debt ratio, nonetheless, it has insignificant coefficient on the short-term debt ratio. The negative and significant result is consistent with dynamic trade off theory and hierarchy theory. Perhaps it would suggest that firms that are more successful typically employ more long-term debt and absolute value debt. In some models, it has been found to be positive, but the coefficients are insignificantly related.

Dividend payout ratio

Payment of dividend to shareholders is the indication of firms' financial performance. Antoniou et al. (2002) explore a negative association between payout ratio and leverage because dividend payment is a signal of an expected increase of future earnings and this results to decline in the cost of stock financing leads to raise capital by equity. The empirical result indicates that the dividend payout ratio has a positive relationship with the total amount of debt and the short-term debt ratio and a negative association with the long-term debt ratio. The t-value indicates that there is a negligible impact on total debt and short term debt, however, somewhat strong negative impact on long-term debt ratio. It indicates that high payout firms have larger profit that lead the firm to use less external financing in terms of long-term debt. The result supports the theoretical considerations (Antoniou et al., 2002) and hypothesis as predicted in chapter three.

Size of the firm

The impact of firm size on debt measurement is inconclusive. The trade-off argument states that bigger, more established companies are using more debt because they are more diversified and less prone to default risk. To put it differently, analysts pay more attention to large companies because they are more sensitive to managing information sensitive equity. Conversely, Myers and Majluf (1984) interpret that larger firm tend to use less debt as larger firms preferred to raise capital by issuing equity. The firm size, as measured by the log of sales in this study, has been found to be positively and strongly (significant at the 1 percent level) linked to the absolute value of total debt as per the priori hypothesis and in inversely weak relation to the short-term and long-term debt ratios. It shows that the larger the firm is, the more debt the firm will use. The result is in line with trade-off theory. Based on this theory, larger firm, basically, are more diversified, less prone to default with better reputation tend to employ more debt. The result is consistent with (Bevan & Danbolt, 2004; Booth et al., 2001; D'Amato, 2019; Hovakimian, 2006; Rajan & Zingales, 1995) where they find a positive association between debt and size of the firm. They argue that larger firms are more diversified and less vulnerable to bankruptcy, which enables them to borrow funds at lower interest rates. The observed negative relationship of long-term debt with size of the firm is consistent with (Titman & Wessels, 1988) as they find an inverse linkage between firm size and debt ratio.

Expected Gross domestic product

Market changes, in general, are out of control of any single firm, are highly volatile, and can have a considerable effect on corporate success. Campello (2003) explore the indication on the fluctuation of largely levered organizations to change in economic perspectives. His findings reveal that largely levered firm will basically lose market share. Thus another macro-economic variable, GDP has been used in this study as a proxy for debt financing. In aggregate, the economic development of the country influence on firms' leverage financing (Booth et al., 2001; Rajan & Zingales, 1995), in which the risk of financial distress is reduced that encourages the firm to use more debt financing. Therefore, in a macro-economic perspective, the debt financing is the function of gross domestic product. It is observed that expected

GDP is negatively associated to debt financing i.e. absolute value of debt, long-term debt ratio and short-term debt ratio. The result is consistent with (Booth et al., 2001) as they revealed in their cross-sectional study that debt is negatively influenced by GDP. The coefficient of GDP is negatively significant at 10 per cent for long-term financing implying that the firm with larger GDP intend to induce less long-term debt. The negative coefficient of GDP shows that increase in economic activity diminishes long-term debt financing. It may further be interpreted as the negative coefficient reflects the firms' growth and an increase in retained earnings that may lead the positive association of economic growth and indebtedness of the sample firms. The result supports the theoretical considerations (Pepur, Ćurak, & Poposki, 2016).

Market interest rate

The model nine has been derived by regressing absolute value of debt in table 3, long-term debt ratio in table 4, and short term debt ratio in table 5 on explanatory variables as specified in the model. Except the model based on short-term debt ratio, the coefficient of market interest rate has been found to be negative. The negative coefficient of market interest implies that firm tends to use less debt while market interest rate expect to rise. The result is consistent with priori hypotheis and with the study of (Barry et al., 2008; Friedman, 1959). They argue that when current interest rates are low in comparison to historical levels, firms issue more debt. The data clearly shows that no coefficient has been determined to be significantly related to debt financing.

The overall model is found to be significant as the F-statistics along with p-value at 1 per cent level for all models. All response variables, including liquidity, growth opportunity, asset tangibility, inflation, profitability, payout ratio, size of the firm as measured by the log of sales, increase in GDP, and market interest rates on total debt, long-term debt ratio, and short-term debt ratio, have been regressed in model nine of each of the equations. The adjusted R2, F-statistics, and p-value of this model indicate that the overall models are highly significant. The explanatory power of the models are 41.7%, 9.40% and 8.39% for absolute value of debt, long-term debt ratio and short term debt ratio.

V. Conclusion

The importance of financing decisions in deciding a firm's valuation is a contentious issue in finance research, with a large body of literature on the subject. The major purpose of this study is to uncover the major elements that affect debt financing decisions. Nepalese businesses use more short-term debt (36%) and far less long-term debt (18%) than businesses in established capital markets, which is a remarkable distinction between the two types of financing. This distinction between long-term and short-term debt may restrict the ability of financial theories to explain financing decisions made by businesses in Nepal. It suggests that the theories underlying the relationships that have been observed are still substantially unsettled. The empirical result shows that liquidity, profitability, and size of firm are the most significant predictors of debt financing choices. In addition, the analysis has been made based on long-term and short-term debt as well. The result shows that liquidity, inflation, profitability, and GDP have been found to be negatively significant in long-term financing decisions. The negative coefficient of GDP implies that firms tend to use less debt as the GDP of the country increases, implying that a larger GDP produces higher inflation that leads to higher interest rates and lower long-term debt. The result of GDP is inconsistent with (Booth et al., 2001; Rajan & Zingales, 1995), in which the risk of financial distress is reduced that encourages the firm to use more debt financing. The study also shows that firms that are more profitable and have better liquidity tend to employ less debt. The result supports the pecking order hypothesis, which states that more liquid and profitable firms will have more internal resources available to them for outside financing decision.

The study has laid some groundwork to examine the influencing components of Nepalese listed non-financial firms which a more detailed evaluation could be based. Further study is required to identify new hypothesis for debt issue and to design new components to reflect organizational influence. Since the data base of this study is limited to 19 firms, future research could be conducted using more sample firms including government and private firms.

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