Critique of Abdullah, AK (2005) Journal Article on Capital Structure and Debt Maturity: Evidence from Listed Companies in Saudi Arabia

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1.0 Context of the Study

Abdullah (2005) studied the determinants of capital structure in general and the determinants of corporate debt maturity in particular, for 56 listed companies in Saudi Arabia. The study reviewed the firms operating in an emerging stock market whose features like thin trading, inefficiency, weak organization and poor information disclosure are quite different from those prevailing in the developed markets. The Arab stock markets including the Saudi Stock Market are still smaller and less active than the developing countries average. The economy in which the listed companies operate is assumed to be an interest-free economy. In addition, the market for finance in the Saudi Market is considered to be inefficient as manifested by a number of phenomena among which are the concentration of commercial bank lending to the trade sector at the expense of the industrial, service and agricultural sectors and the absence of a bond market in addition to the higher rates of defaults among firms.

1.1 Statement of the problem

There has been minimal research on debt maturity in Saudi Arabia. Apart from the work of ALsakran (2001) and Abdullah and EL-Siddig (2002) on the general determinants of capital structure, no empirical work was found in this field.Abdullah's (2005) paper therefore, addressed the determinants of corporate debt maturity structure of listed companies in Saudi Arabia.

1.2 Research Question

i. What are the determinants of capital structure in general and those of debt maturity in particular?

1.3 Research Objective

i. To find out the determinants of capital structure in general and those of debt maturity in particular.

1.4 Hypotheses

H_1: Profit is negatively and significantly related to both short-term and long-term debt.
H_2: Growth opportunities are positively and significantly related to short-term debt and negatively and significantly related to long-term debt.
H_3: Size of the firm is positively and significantly related to long-term debt and negatively and significantly related to short-term debt.
H_4: Age of the firm is negatively and significantly related to both short-term and long-term debt.
H_5: Asset maturity is positively and significantly related to total debt.
H_6: Liquidity is negatively and significantly related to all measures of debt maturity.

2.0 Literature review

Modiligliani and Miller (1958), under the assumptions of perfect capital market, concluded that capital structure is irrelevant to a firm's valuation, i.e., the market value of the firm and its cost of capital are independent of its capital structure and as a result there is no optimal capital structure.

However, in the absence of such prefect market and in the presence of taxes and floatation costs, they argued that the value of the firm would be maximized by using as much debt as possible.Gupta (1969), in his study on the determinants of financial structure of manufacturing companies found a positive relationship between debt ratio and fixed assets turnover. This finding explained partially the effects of size and growth on capital structure i.e. firms with higher fixed asset turnover tend to have higher debt in their financial structure. Titman and Wessels (1988) argued that larger firms have higher leverage ratios because they are more diversified and enjoy easier access to capital markets and can borrow at favorable interest rates. On the other hand smaller firms tend to have lower leverage ratios because they are more likely to be liquidated when they are in financial distress and they face higher failure rates compared to larger firms. Therefore a positive relationship is expected between the firm' size and the total debt ratio. Myers and Majluf (1984) argued that firms prefer retained earnings as the main source of finance followed by debt financing and last come new equity issues due to the floatation costs and the agency problems that result from issuing new equity. This is also in line with the pecking order theory (POT) of capital structure. In this respect profitability allows the firm to employ retained earnings rather than external finance. As a result, they found that a negative relationship is expected between profitability on the one hand and short- and long-term debt ratios on the other hand.

3.0 Research Methodology

The paper used descriptive statistics of the dependent and independent variables to obtain the mean, standard deviation, maximum, minimum and median of the variables under study.The study adopted a correlation study as it sought to establish the relationship between independent and dependent variables. The study is cross-sectional as data was gathered at one point in time, i.e., over a period of 6 years. The 6 year data (1995-2000) was collected on total debt, shortandlong-term debt, profitability, liquidity, size, age, asset structure andgrowth opportunities. Companies in the industrial, service, cement and agricultural sectors were the participants/ unit of observation.The study sampled56 firms which represent 74% of the total listed companies operating in Saudi Stock Market in 2001 and they were selected according to the availability and continuity of data for the period 1995-2000. Companies in the financial sector were excluded because of the nature of their financial structure where their asset structure is different from those of the non-financial firms (different regulatory requirements in financial disclosure). The study therefore, used stratified sampling technique to select the firms from the4 sectors: industrial, cement, service and agricultural.

4.0 Data Analysis Techniques

The following three models were formulated to define the dependent and independent variables:

H_1: $Rtd = \alpha + \beta_1 Roa + \beta_2 G = \beta_3 Size + \beta_4 Age + \beta_5 Mat + \beta_6 Lq$

H_2: $Rsd = \alpha + \beta_1 Roa + \beta_2 G = \beta_3 Size + \beta_4 Age + \beta_5 Mat + \beta_6 Lq$

H_3: $Rld = \alpha + \beta_1 Roa + \beta_2 G = \beta_3 Size + \beta_4 Age + \beta_5 Mat + \beta_6 Lq$

Where;

Rtd is the ratio of total debt to total assets where total debt includes both short-term and long-term debt.

Rsdis the ratio of short-term debt to total debt, where short-term debt includes all types of debt that mature in less than a year (i.e. repayable within a year).

Rld is the ratio of long-term debt to debt, where long-term debt includes all types of debt that mature beyond one year.

Roa is the return on total assets as a measure of profitability and defined as a ratio of operating profit to total assets.

G is the growth opportunities facing a firm and they are measured by the percentage change in the total assets over the last three years.

Size refers to the size of the firm and is measured by the natural logarithm of total assets i.e., ***LnTA.***

Age refers to the age of the firm and is expressed in the number of years and is calculated as the present year (2000) minus the year of inception.

Mat refers to the asset structure or asset maturity and is expressed as a ratio of fixed assets to total assets and serves as collateral

Lqrefers to liquidity of the firm and is defined as a ratio of current assets to current liability.

The descriptive statistics applied in the study may have suggested that some variables were skewed and as a result the normality test was applied which indicated that apart from the size factor, all variables appeared to be normally distributed.Pearson correlation matrix was used to test for the presence of first-order co linearity between the independent variables. Apart from the correlation between profitability and age and profitability and fixed assets, there is little evidence of a co linearity problem. Moreover, the correlation coefficient between any two independent variables did not reach 50% necessary for co linearity.Linear regression models were employed to identify the main determinants of capital structure and test the hypotheses formulated earlier where three dependent variables were used: The ratio of total debt to total assets(Rtd), the ratio of short- term debt to total debt (Rsd) and the ratio of long-term debt to total debt (Rld). The regression analysis shows that total debt is positively and significantly related to growth opportunities and negatively and significantly related to both liquidity and asset structure. On the other hand, the long term debt ratio is found to be positively and significantly related to the growth opportunities and size variables and negatively and significantly related to maturity. For the short term debt the only two significant variables are growth opportunities and size variables which are both negatively related.The one way analysis of variance (ANOVA) shows no significant differences in the use of debt, whether total, short-term or long-term debt among sample companies in the four different economic sectors namely industrial, cement, service and agricultural. The results of the ANOVA indicate significant differences among the companies in the sample with respect to growth opportunities, size, liquidity and age as determinants of capital structure.

5.0 Main Findings and Conclusion

Total debt ratio was found to be positively and significantly related to the percentage growth in total assets and negatively and significantly related to liquidity and asset structure. The growth opportunities variable was found to be positively and significantly related to long-term debt and was negatively and significantly related to short term debt. The relationship between asset maturity and long term debt was found to be negative and significant.Size was found to be positively and significantly related to long term debt and negatively and significantly related to short term debt implying that larger firms borrow on long term and small ones borrow on short term. Profitability, age liquidity appeared to have no statistical significance on the different types of debt.The main findings of the paper therefore, indicate that in general the use of debt among the Saudi listed companies is low compared to the reported debt ratios in other countries in and outside the region. Among the Saudi stock companies, the industrial companies have the higher total debt ratio followed by the services, cement and agricultural companies.

6.0 Critical Evaluation of the Paper

The study undertook a cross-sectional study which helped account for the differences in the mean asset structure requirements from one sector to the next. As rightly observed, the agricultural sector displayed the lowest total debt and long term debt ratios, but the highest short-term debt ratio compared to industrial and service sectors. However, the Agricultural sector preferred short-term debt owing to the nature of business. Since cement and manufacturing were in a nearly similar industry, their debt structures were similar. These findings were, however, insignificant pointing to sampling or systematic error in the sample. The study also advances the pecking order theory (POT) stipulations that firms prefer retained earnings as the main source of finance followed by debt financing as profitability had insignificant influence on the capital structure and debt maturityThe study results show that total debt is positively and significantly related to growth opportunities. This is in line with the economic theory which suggests that reasonable levels of borrowing by a country are likely to enhance its economic growth.However, while the study assessed co linearity issues in its analysis, it failed to look at multicollinearity problems (collinearity between one independent variable and the rest) measured using tolerance and variance inflation factor (VIF). Multicollinearity has the potential of producing spurious regression results. The study failed in its interpretation of KSS test of normality. The computed p-value is for size is large ($0.200 > 0.05$), so there is no reason to conclude that *size* data is not normally distributed. On the other hand, all the other data is not normally distributed.Nevertheless, this study has immensely contributed, empirically to other studies on asset structure and debt maturity. The study, further, confirms theoretical postulations of Miller and Modigliani theory on capital structure.

7.0 Major Extensions to the Paper

Widawati, Sudarma, Djumahir and Rahayu (2015) extensively used the Abdullah's studyin their *Determinants of Debt Financing Structure and Debt Maturity* paper.They did their study on 32manufacturing companies listed in Indonesia Stock Exchange (IDX) for 2005-2011period.SEM was used in the analysis. Widawati*et al.* however took great exception to Abdullah's findings that growth has positive significant effect on the leverage.Mouamer (2011) did study on determinants of capital structure of 53TelecommunicationCompanies in Arabian World for 2006 to 2010 period. The study compared most of its findings to Abdullah's (2005) establishing areas of same and contradictory conclusions. Mouamer found debt ratio is 51% which was higher than that established by Abdullah in Qatar companies.The maximum growth opportunities were 136% opportunities were exit. This relationship is contradicted with the finding of Qatar companies 18 % growth opportunities (Abdullah, 2005).There was negative significant relationship between debt ratios and Age in the international companies. The result from developed markets uniformly confirms this relationship.

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