Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol.5, No.1, 2014

The Determinants of Capital Structure Choice: Evidence from Libyan Firms

Najeb Masoud
School of Accounting and Finance, Middle East University, PO box 383, Amman 11831, Jordan
E-mail of the corresponding author: najeb2000@gmail.com

Abstract
This study investigates the determinants of capital structure of Libyan firms listed in the stock exchange. The investigation is performed using two models Generalised Method of Moments (GMM) for panel data and OLS cross-sectional regression estimator approach for eighth listed firms over the period 2008 to 2013. This study employs two alternative leverage measures including: equity book value (LEVB) and equity market value (LEVM) as dependent variables and three determinant factors including: financial market development variables, banking sector development variables and individual firm leverage variables as determinants of capital structure. Empirical findings reveal that both the trade-off and the pecking order theories can explain in Libyan firms' financing decisions. These results indicate that high price-earnings ratios and high interest rates will cause firms to choose equity over debt, as both of these factors reduce the cost of equity finance. Furthermore, the results suggest an unimportant role for economic growth and inflation rates in explaining the variation in debt-equity ratios. Results show that further development in the stock market indicators are negatively and significantly related to the leverage ratios in (Libyan firms) suggesting that as equity markets become more developed and their liquidity improves, their importance as tools for corporate financing increase by allowing firms to issue more equity and reduce their reliance on debt, which implies that transaction costs for equity are high relative to debt, firms are credit constrained or that the issue cost of equity high due lack of competition among investment banks, or it is possible that improved information dissemination, monitoring and risk sharing, market firms better credit risks for bank loans, while banking sector variables (especially bank deposits) are significantly and positively associated with debt equity ratio.
Keywords: Capital Structure, Stock Exchange, Trade-off Theory, Pecking Order Theory, Agency Theory, OLS Cross-sectional Regression, GMM Estimation, Libyan Emerging Markets.

1. Introduction

There are numerous empirical studies that examine how specific imperfections affect a firm's optimal capital structure; the fact that to date there is little empirical evidence, if any, to support any of the effect of stock market development on the capital structure choices made by firms, especially in emerging market countries like Libya. However, there is a limited empirical study, for instance, Demirgüç-Kunt & Maksimovic (1996) examined this issue for developed and developing counties during the 1980s period using cross-country regressions. Our knowledge of capital structures has mostly been derived from data from developed market countries that have several institutional similarities, such as the UK (Marsh 1982; Bevan & Danbolt 2000, 2002), the USA (Titman & Wessels 1988; Shyam-Sunder & Myers 1999; Fama & French 2002), Rajan and Zingales (1995) use data from the G-7 countries, Antoniou *et al*. (2002) investigate data from the UK, Germany and France, while Hall *et al*. (2004) used data from European SMEs, and Antoniou *et al*. (2007) Germany, France, Japan, the UK and the USA. However, there are few studies that provide evidence from developing countries; for instance, Booth *et al*. (2001) examine data from ten emerging markets (Brazil, India, Jordan, Malaysia, Mexico, Pakistan, South Korea, Thailand, Turkey and Zimbabwe), Pandey (2001) use data from Malaysia, Omet & Nobanee (2001) use data from Jordan, Al-Sakran (2001) use data from Saudi Arabia, Chen (2004) analyse data from China and Deesomsak *et al.* (2004, 2009) investigate data from four Asia Pacific countries, namely Australia, Malaysia, Singapore and Thailand. The contribution of this study is to investigate the capital structure choice made by firms from emerging countries that have different institutional structures such as Libyan firms. For instance, Mayer (1999) argues that financial decisions in developing countries are someway different1. We examine how the stock market development affects the ability of Libyan firms to raise capital for new growth and how this development affect it's the capital structure choices these firms made.

In a fundamental logic behind a firm's value is independent of its mix of debt and equity funds (leverage) employed by a firm define its capital structure. Since 1960s, this kind of hypothesis is embodied in the original work by Modigliani and Miller (1958) value-invariance suggestion. Consequently, the cost of capital is independent of capital structure, therefore that the choice between debt and equity is irrelevant and does not

[1] Booth *et al*. (2001: 118) state that: *"In general, debt ratios in developing countries seem to be affected in the same way and by the same types of variables that are significant in developed countries. However, there are systematic differences in the way these ratios are affected by country factors, such as GDP growth rates, inflation rates, and development of capital markets."*

affect a firm's value. However, if corporate income is taxed and interest payments are tax deductible, than leverage has a tax advantage and firms may emphasise debt financing. Thus, four theoretical approaches of capital structure have been developed. They are namely, models based on financial distress costs, bankruptcy, trade-off (also referred to as the tax advantages) and pecking order hypothesis (also referred to as the symmetric information issues). These theories identify many firm-specific factors that may affect a firm's optimal structure. Unlike greatest pervious capital structure studies which study the determinants of capital structure using a non-dynamic model. Thus, to the authors' best knowledge; none of the extant studies combine the dynamics of the capital structure decision with the impact of stock market development on firms financing choices. Therefore, our approach further contributes to the understanding of this issue by Joint Modelling a dynamic adjustment and cross-sectional regression, taking into account the effect of stock market development on corporate capital structure in the selected countries. Thus modelling provide a unique opportunity to construct realistic capital structure models and thus to shed light nature of dynamic capital structure adjustment by firms; our empirical analysis is carried out with the two models Generalised Method of Moments (GMM) for panel data utilising instrumental variables and OLS cross-sectional regression estimator approach for eighth listed Libyan firms over the period from 2008 to 2013 is employed. These estimators precisely address the econometric problems produced by firm-specific effects and endogeneity. Furthermore, very few studies (Rajan & Zingales 1995; Booth *et al*. 2001; Pandey 2001; Deesomsak *et al*. 2004, 2009) have used a cross-sectional country comparison to test the theories of corporate capital structure in emerging capital markets. In this study, six determinants of capital structure including tangibility, growth opportunities, size, profitability, liquidity and cost of equity capital. In addition, the study uses four stock market development indicators (the ratio of stock market capitalisation, total value traded ratio, total value of shares traded ratio, volatility) and two banking sector indicator development such as domestic credit to the private ratio and the ratio of total bank assets to GDP. In the case of micro-economic use three variables as follow, real growth of GDP, inflation and interest rate, are considered. Our results suggest that both trade-off and pecking order theories can explain Iranian firms' financing decisions. In the other words, none of these theories could be rejected.

2. Literature Review

Theories of capital structure have been well documented in the literature, and numerous studies have been working on the effect of introducing into the pioneering work of Modigliani and Miller (MM) 1958 framework model. Other studies have introduced the costs associated with bankruptcy and financial distress, while others have introduced agency costs and asymmetric information. MM emphasise that in an ideal world without taxes a firm's value in capital markets is independent of its debt-equity mix, so that the choice between debt and equity is irrelevant and does not affect a firm's value. However, in a world of imperfect and incomplete capital market structure, this theory cannot explain the differences in corporate capital structure across countries2, which gave birth to other theories (call trade-off theory).

The unrealistic assumptions in MM model there are no bankruptcy costs. In the Trade-off theory (also referred to as the tax based theory) states that firms are supposedly choosing their level of debt financing balances leverage by trading off these bankruptcy costs of debt against tax benefits of debt (see Baxter 1967; Altman 1984 2002; Huang & Song 2006; Tang & Jang 2007; Karadeniz *et al*. 2009; Chakraborty 2010). In other words, since interest payments are tax deductible, raising more debt increases tax benefits. However, an increase in debt also increases the probability of default and hence the expected cost of bankruptcy, that is, higher risk, has a higher probability of bankruptcy for a given level of debt and cost of equity. Firms that adjust their capital structure away from excessive debt reduce the risk exposure of debt-equity mix, and thus lower their cost of finance.

The next generation of capital structure theories is the pecking order theory (also referred to as the asymmetric information theory) founded by Myers & Majluf (1984), Myers (2003). The most a significant implication according to asymmetric information theories is that the underinvestment problem is least severe after information releases such as annual reports and earning statements. Myers (2001) argues that if the managers have more information asymmetry about the firm's value than do investors. Investors, knowing this, infer that managers are more likely to raise equity when share prices are over-valued. With this argument, investors price equity issues at a discount. This discounting of share issues can force firms to reject projects even when they have positive net present values. Shyam-Sunder & Myers (1999) determine that the pecking order offers a good estimation to firms' financing behaviour. Their implication is challenged by Fama & French (2002), Frank & Goyal (2003). Lemmon *et al*. (2008) counter this challenge by controlling for the value of maintaining financial slack for future investment opportunities and to avoid financial suffering. While *et al*. (2005) incorporate financial slack in their clear analysis of the order of financing policies generated by the asymmetric information theories and do not find support for it. In addition, the existing evidence on the pecking order is mixed.

2 Most empirical studies of capital structure, tax variables are not significant in explain leverage rates (see, for instance Bradley *et al*. 1984; Mayer 1988; Rajan & Zingals 1995; Karadeniz *et al*. 2009).

The final theory to be considered in this study is the agency cost theories of capital structure were introduced by Jensen & Meckling (1976), developed their approach on the earlier work of Fama & Miller (1972). Under the agency cost theory, the optimal capital structure will be determined by minimising the costs arising from conflicts between the parties involved. The framework of this theory, there is a strand of literature that studies the impact of debt on sub-optimal managerial decision making. The arguments are that debt financing reduces the amount of free cash available at the managers and shareholders (Jensen 1986; Hart & Moore 1995), even however, managers may continuously need to stay the firm's current operation, whereas shareholders may be better off by liquidating current operations. Jensen & Meckling (1976) argue that in a highly leveraged firm, the incentives for shareholders to thrust mangers to pursuer riskier projects can result in an asset substation problem as shareholders have limited liability, leverage may cause another adverse incentive which is the so-called underinvestment problem, in which circumstance mangers, acting in the shareholders' interest, might reject investment which increase the firm's value, since the expected gains would accrue largely to creditors (Myers 1977). While, there is majority of empirical models literature testing the validity of these theories has also failed to reach firm conclusions but, with controversial analysis results. For instance, Shyam-Sunder & Myere (1999) in their study reject the trade-off theory and conclude that the pecking order model has much greater explanatory power, Fama & French (2005) finds that both theories can explain some aspects of firms financing behaviour and also can be rejected or uniformly accepted. Mayers (2003) argues that there is no universal theory to explain firm financing choices and all of the theories are conditional (Huang & Song 2006).

Although, in this study we address the common approach in most empirical capital structure studies on the determinants of optimal leverage by studying the relation between the observed leverage and a set of explanatory variables using non-dynamic models. However, this approach has two obvious shortcomings: First, the observed leverage may not necessarily be the optimal one. As Myers (1977) points out, changes in capital structure are costly to implement. Hence, the observed leverage at any point in time may significantly differ from its optimal level. Likewise, Myers and Majluf (1984) suggest that the observed leverage may differ from the optimal level predicted by a trade-off of the costs and benefits of debt, and secondly, the empirical analysis, being non-dynamic, is unable to shed any light on the nature of dynamic capital structure of firms. To address, these issues, we use two GMM dynamic and cross-sectional regression models within panel data estimators. These models allow us to capture the dynamic of capital adjustments, i.e. if the firms indeed move toward optimal leverage ratios or away from them, and the speed with which they do that. According to Rajan and Zingales (1995), which point out future research, should proceed in two ways: Firstly, by continuing to develop the relationship between theoretical models and empirical findings analysis by widely applying the models to different circumstances, and secondly, by incorporating the institutional differences between countries when specifying the theoretical models. In addition, the following framework of this study will be presented.

3. Empirical Methodology

The principal idea in the theory of capital structure is that in a world of imperfect and incomplete financial markets, firms could increase value by changes in their leverage. However, there are costs involved as well in changing leverage and it is trade-off between the costs and benefits of leverage that can imply an interior optimal debt level for a firm. Therefore, the value corresponding to this optimal debt level is the maximum value of the firm given a level of operating cash flow, while the value of firms that are not at their optimal leverage level will be less than the maximum possible. Let the optimal leverage ratio (debt to total capital) $LVR_{i,t}$, is a function of financial development indictors, firm characteristics and macro-economic variables, for i , at time t ; the cross-sectional regression used in the following equation is based on models used in Rajan & Zingales (1995), and Bevan & Danbolt (2002), with some modifications in both the leverage and explanatory measures due to economic condition and its related components. We can formalise this by the subsequent regression equation:

$$LVR^{*}_{i,t} = \alpha_i + \beta_{1-6} FIRM_{i,t} + \beta_{7-10} SMF_{i,t} + \beta_{11-12} BANK_{i,t} + \beta_{13-15} MACR_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$(i = 1,...,N ; t = 1,...,T)$$

Where $\beta_1 ... \beta_6$, the coefficient of the six firms specific characteristics variables. $\beta_7 ... \beta_{10}$ and $\beta_{11} ... \beta_{12}$, the coefficient of the four and two measures the stock market and banking sector development variables, respectively. $\beta_{13} ... \beta_{15}$, the coefficient of the three measures the macro-economic variables. α_i , is an unobserved firm specific effect with proxy any common period specific effects. ε_{it} is the time-varying error term $\varepsilon_{it} \approx iidN(0, \sigma^2_{\varepsilon})$.

Since the role and effects of the factors influencing firms' capital structure decisions change over time, a cross-sectional analysis of leverage ratios alone would not be sufficient to understand the dynamism of capital structure. This is particularly a significant in emerging markets economy where financial markets go through regular changes and thus firms may have to move faster in the light of market changes. Thus the optimal leverage is allowed to vary across firms and over time. Since the role and effects of the factors that determine a firm's optimal leverage may change over time, it is possible that the optimal debt ratio may move over time for the same firm. Research employing aggregate time series does not make use of firm heterogeneity.

Under ideal conditions, as can be seen from Eq. 1, with no adjustment costs, the firm would directly respond to a variation in the independent variables by varying its existing leverage ratio to equal its optimal leverage (complete adjustment). The observed leverage of firm $LVR_{i,t}$ at time t , should not be different from the optimal leverage, i.e. $LVR_{i,t} = LVR^*_{i,t}$. In a dynamic setting, This implies that the change in the existing leverage from the previous to the current period should be exactly the change required for the firm to be at optimal leverage at time t , *i.e.* $LVR_{i,t} - LVR_{i,t-1} = LVR^*_{i,t} - LVR_{i,t-1}$. In practice, however, the existence of significant adjustment costs (for instance, legal fees in case of issuing new debt or equity) means that the firm will not fully adjust its actual leverage, as reflected in LVR^* then firms may not find it optimal to adjust fully, but only adjust partially, Following previous work in this study, Marc Nerlove provided the following model in 1958 (more detailed see Gujarati 1995), while this model is most popular used in empirical studies, for instance, Sharpe 1994; De Miguel & Pindado 2001; Hovakimian *et al*. 2001), and Drobetz & Wanzenried 2006; among others. The dynamic capital structure model which is represented as:

$$LVR_{i,t} - LVR_{i,t-1} = \alpha_{i,t}(LVR^*_{i,t} - LVR_{i,t-1}) \qquad (2)$$

Where $\alpha_{i,t}$ is known as the coefficient of adjustment or the speed of adjustment between two subsequent period or the rate of convergence of $LVR_{i,t}$ to its optimal value, LVR^* . Eq. 2, postulates that the actual change in leverage ratio at any point in time for firm i , is the same fraction of the optimal change for that period. The effects of adjustment costs are represented by the restriction that $\alpha_{i,t} < 1$, which is a state that $LVR_{i,t} \to LVR^*$ as $t \to \infty$. Than the Leverage values that are not at their optimal level will be referred to as sub-optimal. If $\alpha_{i,t} = 1$, it means that the entire adjustment is made within one period and the firm at time t , will consistently be at its target leverage. If $\alpha_{i,t} < 1$, then the adjustment from $t-1$ to t falls short of the adjustment required to reach the target leverage. If, however, $\alpha_{i,t} > 1$, then the firm target level (over-adjusts) by making more adjustment than is necessary, but still is not on the. Since $\alpha_{i,t}$ represents the degree of adjustment per period at time t , it can also be viewed as the speed of adjustment. In order to avoid a misspecification error, the Eq. 2 can alternatively be written as:

$$LVR_{i,t} = (1-\alpha_{i,t})LVR_{i,t-1} + \alpha_{i,t}LVR^*_{i,t} + \varepsilon_{i,t} \qquad (3)$$

We assume that the target debt leverage $LVR_{i,t}$ is a linear function of proxy variables, as specified in the cross-sectional regression analysis in Eq. 1. Where $\varepsilon_{i,t}$, is the statistical noise assumed to have mean zero and constant variance. We can now substitute this expression for Eq. 1 into Eq. 3 to remove the unobservable optimal target debt level $LVR^*_{i,t}$, gives the following empirical model used in this study:

$$LVR_{i,t} = \alpha_{i,t}(1-\alpha_{i,t})LVR_{i,t-1} + \alpha_{i,t}(\beta_{1-6}FIRM_{i,t} + \beta_{7-10}SMF_{i,t} + \beta_{11-12}BANK_{i,t} + \beta_{13-15}MACR_{i,t} + \varepsilon_{i,t}) \qquad (4)$$

Since Eq. 1 disaggregated into short-term, long-term of firm leverage along with a set of other control variables, in alternative estimations. While Eq. 4 represents the short-run firm leverage since the actual leverage ratio may not be equal to its optimal leverage. Therefore, when an equation in the form of Eq. 4 is estimated, the coefficient of the observed lagged leverage ratio, $LVR_{i,t-1}$ gives the estimate of one minus the partial adjustment. If the coefficient value of the lagged leverage ratio is $LVR_{i,t-1} > 0$, it can be inferred that the

adjustment from period $t-1$ to t falls short of the adjustment required to attain the firm target, but if the coefficient is $LVR_{i,t-1} < 0$ then the firm over adjusts in the sense that it makes more adjustment than is necessary and still does not reach the target. The coefficients of the remaining explanatory variables are estimates of the long-run impact multiplied by the partial adjustment. A negative coefficient for the stock market development indicates that a firm's leverage decrease with more development in the stock market. If the coefficient is positive, however, this implies complementarities between debt and equity finance. If the coefficient is not significant, that is can be conclude that stock market development does not affect the financing choice of firms.

4. Data and Variables Measure

4.1 Data

The data were collected by Libyan stock market and consist primarily of abbreviated balance sheets and income statements for the financing choice of firms listed with a market capitalisation, which are analysed from 2008 to 2013. Since financial firms and banks operate in a different way, therefore all of them have been excluded from the sample and uses of leverage are substantially different from other firms. The firm sample contains panel data dynamic framework for eighth industrial and determinants listed in the Libyan stock market for which a continuous data set exists over the sample period. Hence the sample consists of eighth firms over 5 years.

4.2 Variables Measure

This study follows the standard practice in the literature findings both theoretically and empirically. There are numerous studies which examine the significant of firm-specific effects in determining a firm's financial structure choices; empirical evidence on the effect of stock market development on capital structure choices made by firms is limited. The choice of suitable explanatory variables is potentially contentious as proposed by Titman & Wessels 1988; Harris & Raviv 1991. In order to identify which of the different theories on capital structure is relevant in the context of the Libyan firm's choices, the study concentrates on a group of variables identified in the previous literature. The selected explanatory variables are firm tangibility, growth opportunities, size, profitability, liquidity and cost of equity capital. In addition, the study uses four stock market development indicators (the ratio of stock market capitalisation, total value traded ratio, total value of shares traded ratio, volatility) and two banking sector indicator development such as domestic credit to the private ratio and the ratio of total bank assets to GDP. In the case of micro-economic use three variables as follow, real growth of GDP, inflation and interest rate, those have been identified as crucial to the capital structure choice. In order to provide a clear view of these variables that have decides to use in this study, they will be divided into two types, the dependent variable and the independent variables, as will be explained later.

4.2.1 Dependent Financial Structure Variables

In this study, we use two alternative measures of financial leverage as dependent variables, including one is the debt to total assets divided by *Equity Book Value (LEVB)* and the other is the debt to total assets divided by *Equity Market Value (LEVM)* as mentioned the similar studies by Marsh 1982; Rajan & Zingales 1995; Booth *et al*. 2001; Bevan & Danbolt 2002; Korajczyk & Levy 2003; Lipson & Mortal 2009; Kayo & Kimura 2011. *Equity market value* is measured as the product of year-end stock price and the number of shares outstanding. They are two reasons behind the choice of both book value and market value leverage. First, various capital structure theories have not specified which leverage measurement should be used. Second, for the purpose of being consistent, most empirical studies have used both book value leverage and market value leverage. In practice, both measures of book and market values are often used to should help analyse the empirical validity of capital structure models (Booth *et al*. 2001; Banerjee *et al*. 2004). The following sub-sections provide a detailed description of these variables.

4.2.2 Independent Financial Structure Variables

4.2.2.1 Financial Market Development Variables

These variables are of particular analytical interest for domestic and international dimensions of stock market development. These indicators are associated with the size, activity and efficiency of the stock market development or market-based system. These are: To measure the stock market size. The *market capitalisation is used as a share of GDP* ratio (MCR), which equals the value of domestic equities. To measure the stock market activity or liquidity. The value traded is used which is measured by the ratio of *total value traded to GDP* (VTR) and it is related to the value of stock market transactions relative to the size of economy. To measure the stock market efficiency. The *turnover ratio* calculated is used as the ratio of total value traded by stock market capitalisation (TOR) it is often measures the value of equity transactions relative to the size of the stock market. The market *volatility* variable (VOL) can be measured as a twelve-month rolling standard deviation of returns. High share price volatility may raise the cost of equity capital and cause the information role of the stock market to deteriorate. Liquid stock market is a significant attribute of stock market development because theoretically

more liquid stock markets improve the share of capital to their best use, influence investment in the long-term and facilitate technological innovation, therefore, enhancing long-term growth rate (see Levine 1991; Miller 1991; Bencivenga *et al*. 1996; Henry 2000). As stock market activity increases, firms' preference for equity over debt also increases.

4.2.2.2 Banking Sector Development Variables

In this study, two indicators of the banking sector development or the bank-based system are used. These have been used by Levine *et al*. (2000) and Beck *et al*. (2008) as the ratio of total bank assets to GDP and the value of credit given by the banking sector to the private sector divided by GDP. These are: The ratio of *total bank assets to GDP* (BAR) provides a measure of the overall size of the banking sector. Boyd and Smith (1996) classified that banks and stock markets may behave as complements rather than substitutes. The ratio of *domestic credit to the private sector divided by GDP* (BCR) provides a measure for financial intermediary development. While the first measure does not point out whether the claims of banks are in the public or the private sector, the second indicators concentrate on claims to the private sector[3].

4.2.2.3 Individual Firm Leverage Variables

In this study, we examine several of the determinants of firm leverage that have been identified by existing theories and empirical implications for micro and small enterprises based on Trade-off theory, agency cost and pecking order theories outlined previously are as follows. The signs '+', '-', '±' and 'n.a.' indicate a positive, negative, unspecified relationship to leverage and not applicable. These factors are namely most commonly used in the empirical studies: tangibility, growth opportunity, profitability, liquidity, size and cost of equity capital.

a. Tangibility (TANG +, +, +)

Tangibility is defined as the ratio of total fixed assets to total assets. Titman and Wessels (1988), Rajan & Zingales (1995), Fama & French (2000) argue that the ratio of total fixed assets to total assets (tangibility) should be a significant factor for leverage. Firms unable to provide collaterals will have to pay higher interest, or will be forced to issue equity instead of debt (Scott 1977). Rajan & Zingales (1995), Wald (1999), Booth *et al*. (2001), Huang & Song (2006), Kayo & Kimura (2011) debated that tangibility is positively related to capital structure since tangible assets can be used as collateral.

It is expected that a positive relationship between tangibility of assets and leverage would exist in empirical studies discovered by Marsh (1982), Long & Malitz (1985), Friend & Lang (1988), Titman & Wessels (1988), Harris & Raviv (1991), Rajan & Zingales (1995), Deesomsak *et al*. (2004), Akhtar (2005) Supanvanij (2006), Akhtar & Oliver (2009) among others. A few empirical studies such as Ferri & Jones (1979), Booth *et al*. (2001), Bauer (2004), Mazur (2007), Huang & Ritter (2009), Karadeniz *et al*. (2009) have shown a negative relationship between leverage and tangibility.

b. Growth opportunity (GROW ±, -, +)

Another important firm characteristic found in the literature is future growth opportunities. *Growth* is defined as the book value of total assets less the book value of equity plus the market value of equity divided by the book value of total assets. The relation between expected growth of a firm and its leverage ratio is predicted to be finding mixed relationships. According to the trade-off theory assumes a negative relation between them due to firms with great growth opportunities cannot put them up as collateral and have more financial distress cots. This view is supported by Smith & Watts 1992; Rajan & Zingales 1995; Lang *et al*. 1996; Supanvanij 2006; Delcoure 2007; Akhtar & Oliver 2009; Karadeniz *et al*. 2009. Rajan & Zingales (1995) argue that firms expecting high future growth should use a greater amount of equity finance, suggesting a negative relationship between expected growth and leverage ratio. Pecking order theory, however, suggests a positive relationship between leverage and growth opportunities because of existence of an asymmetric information problem among insiders and outsiders as shown in Empirical findings by Myers & Majluf 1984; Blommaert & Verschueren 1998; Chen 2004; Myers 2003; Tong & Green 2005; Viviani 2008.

c. Profitability (PROF +, ±, -)

The other determinant incorporated in the model is the *profitability* defined as the ratio of operating profit to book value of total assets, to control for potential heteroscedasticity problems in accordance with Bevan & Danbolt (2000, 2002). The trade-off theory assumes a positive relation between performance and leverage, since profitable firms have been shown to have lower bankruptcy risk and relatively smaller monitoring costs, less volatile cash flows, easier access to credit market, and require more debt to fully benefit from the tax shield. This view is sustained by the free cash flow theory of Jensen (1986). Margaritis & Psillaki (2010) argue that profitability has positive effect on Lev of firm. The pecking order theory states firms with high level of profitability prefer to use fund by retained earnings (internal sources) rather than debt and equity. Myers & Majluf (1984) states that firms tend to prefer use internal to external funds first before resorting to external

3 Levine (1997:705) pointed out "*financial systems that allocate more credit to private firms are more engaged in researching firms, exerting corporate control, providing risk management services, mobilising savings, and facilitating transactions than financial systems that simply funnel credit to the government or state owned enterprises*".

financing expects a negative relationship between profitability and leverage. Therefore, the results of the majority of previous empirical studies showed that leverage is negatively related to profitability found in Friends & Lang 1988; Titman & Wessels 1988; Rajan & Zingales 1995; Wald 1999; Booth *et al*. 2001; Akhtar 2005; Supanvanij 2006; Antoniou *et al*. 2007; Kim & Berger 2008; Akhtar & Oliver 2009. Moreover, Cassar & Holmes 2003; Hall *et al*. 2004; Feidakis & Rovolis 2007 find a negative relationships between profitability and both long-term debt and short-term debt ratios. Although, thus, the prior empirical evidence supports the pecking order theory.

d. Liquidity (LIQ +,-,+)

In the case of liquidity and leverage, *liquidity* is defined as the ratio of current assets to current liabilities. This ratio shows the ability of the firm to cover its short-term financial commitments and it measures the liquidity of the firm. Pecking order theory suggested that, firms with high liquidity will borrow less, as managers can manipulate liquid assets in favour of shareholders against the interest of debt holders, increasing the agency costs of debt. Therefore, the negative relation is expected simply, since using more debt means more liabilities which imply fewer current assets remaining after covering the liabilities. However, few Empirical studies in support of this finding include Deesomsak *et al*. 2004; Mazur 2007; Viviani 2008. Alternatively, the trade-off theory believes that a positive relationship exist between leverage and liquidity because higher liquidity ratio can support a relatively higher debt ratio due to greater ability of a firm to satisfy short-term contractual obligations on time.

e. Size (SIZE +, +, -)

Firm size is measured by the natural log of assets. The trade-off theory assumed that firm size and leverage would have a positive relationship, since larger firms are more diversified, have lower bankruptcy risk and relatively lower bankruptcy cost. Larger firm diversification advantage reduces probability of bankruptcy, which means a positive relation between size and debt capacity of the firm value (Titman & Wessels 1988). The results of empirical studies in support of this view include: Taub 1975; Marsh 1982; Agrawal & Nagarajan 1990; Chkir & Cosset 2001; Fama & French 2002; Deesomsak *et al*. 2004, 2009; Aktar 2005; Supanvanij 2006; Akhtar & Oliver 2009. In developing countries, Booth *et al*. 2001; Pandey 2001; Huang & Ritter 2009 find a significant positive relationship between the leverage ratio and firm size. In addition, Omet & Mashharawe 2002; Deesomsak *et al*. 2004 find mixed results. Pecking order theory is construed as it predicts negative relationship between firm size and leverage, since there is less asymmetrical information about larger firms leads to less incentive to raise debt. This view is supported by Chen 2004; Ezeoha 2008; Frank & Goyal 2009; Rajagopal 2011. Therefore firm with more retained earnings additions should have less leverage.

f. Cost of Equity Capital (CEC, n.a.)

One of the most significant factors that affect a firm's financial decisions is the cost of equity funds. *The cost of equity* is measured by the price-earnings (P/E) ratio. As increase in the P/E ratio indicates a lower cost of equity finance for the firm. Bekaert & Harvey (2003) argue that the cost of equity capital is a difficult concept to define and measure. As a result it is measured in a variety of ways by different firms. However, Modigliani & Miller (1958) confirmed that a firm's cost of equity is an increasing function of its debt ratio. This is further explained by Hamada (1972), and also empirical results supported by Fama & French (1992). Clearly, higher leverage is associated with higher risk and, hence, a higher implied to cost of equity capital. Consistent with this calculation, Gode & Mohanram (2003); Boston & Plumlee (2005) find evidence that leverage is significantly positively related with the implied cost of equity. Therefore, we expect the cost of equity capital to be positively and significantly associated with Leverage.

4.2.2.4 Macro-economic Variables

The capital structure is not only the function of firm's characteristics and financial stock market development indicators or banking sector development variables. Therefore, macro-economic variables are also important for financing patterns. The growth rate of real GDP is a measure of the growth available to domestic firms and since corporate finance theories suggest that growth rate should not be financed by debt, it is predicted that firms with higher rates of growth will rely less on debt tools (Gelb 1989; Zwiebel 1996). Hence, as GDP increases, firms' will continue to be financed by debt. A positive relationship is expected between GDP growth and leverage. Empirical studies by Demirguc-Kurt & Maksimovic (1996), Booth *et al*. (2001), Ariff *et al*. (2008), Kayo & Kimura (2011) find evidence on the positive relationship between leverage and GDP growth.

Specifically, *the growth rate of real GDP* (RGDPG) with two variables that are the most generally used in corporate finance theories are included, *inflation rate* (INFR) and *real interest rate* (RINT)[4]. Therefore, a higher

[4] Most of empirical studies accept that effective inflation and interest rates are an important determinant of capital structure (Bokpin *et al*. 2009; Bass *et al*. 2009). The trade-off theory assumes a positive relation between effective inflation rate and capital structure (Taggart 1986; Demirgüç-Kunt & Maksimovic 1996; Booth *et al*. 2001; Bass *et al*. 2009), while other empirical study find negative relationship, for instance, Taggart (1986), Booth *et al*. (2001), Demirgüç-Kunt & Maksimovic (2002), Bass *et al*. (2009). Therefore, a negative relationship is expected between capital structure and interest rates (Barry *et al*. 2008; Antoniou *et al*. 2008; Bas *et al*. 2009).

rate of inflation will increase the cost of issuing debt and hence, firms will be less likely to rely on debt, that effect of inflation on leverage is ambiguous. In addition, we use the *real interest rate* as a proxy for the cost of debt, defined as the maximum rate charged by commercial banks as recorded by the IMF, which measured as the nominal rate of interest minus the inflation rate. According to bankruptcy costs model, changes in interest rates can affect capital structure, as firms are more likely to use debt when the cost of borrowing is low, while, higher interest rates make borrowing more expensive or even unattainable. However, interest rates also incorporate inflation expectations and thus firms could be expected to shift from equity to debt financing when interest rates are increasing. In this case, the level of interest rates is expected to be positively related to leverage.

5. Empirical Results

5.1 Descriptive Statistics

The descriptive statistics of the variables used in our study analysis are reported in Table 1. The table shows that all the variables have a positive mean during the period 2008-2013. Overall, the sample firms have debt levels, irrespective of whether using book or market value leverage, that is lower than the debt level median reported by Rajan & Zingales (1995) for G7 countries (58 *per cent* for the USA, 69 *per cent* for Japan, 73 *per cent* for Germany, 71 *per cent* for France, 70 *per cent* for Italy, 54 *per cent* for the UK and 56 *per cent* for Canada). This is consistent with Demirgüç-Kunt & Maksimovic (1999) who argue that developing countries have substantially lower amounts of debt. Finally, the probability that the Jarque-Bera statistic exceeds (an absolute value) the observed value is generally low for all the series meaning the rejection of hypothesis of normal distribution at 5 *per cent*.

Table 1. Summary of descriptive statistics of Leverage and its determinants as the dependent variables

Sample period (2008-2013)									
Statistics	Independent Variables								
	LEVB	LEVM	TANG	GROW	PROF	LIQ	SIZE	CEC	MCR
Mean	0.412	0.324	0.523	1.213	0.046	2.701	4.911	5.029	0.702
Median	0.350	0.271	0.561	1.312	0.039	1.290	4.201	4.206	0.398
SD	0.272	0.216	0.424	0.452	0.042	5.590	0.490	0.904	0.807
Jarque-Bera	30.235 (0.000)	26.502 (0.000)	41.621 (0.001)	12.312 (0.000)	11.054 (0.000)	26.012 (0.000)	9.793 (0.302)	11.201 (0.000)	4.882 (0.000)

Notes: (1) p-values are in parentheses; (2) The variables are as defined earlier in the sub-section 4.2.
Source: Data and Summary Statistical Analysis 2013.

Table 1. Continued: Summary of descriptive statistics of Leverage and its determinants as the dependent variables

Sample period (2008-2013)								
Statistics	Independent Variables							
	VTR	TOR	VOL	BAR	BCR	RGDPG	INFR	RINT
Mean	0.196	31.306	0.492	0.249	0.198	0.713	0.757	0.649
Median	0.169	25.571	0.405	0.238	0.190	0.756	0.642	0.667
SD	0.227	21.208	0.308	0.112	0.120	0.358	0.457	0.437
Jarque-Bera	2.820 (0.000)	19.900 (0.000)	5.392 (0.000)	24.305 (0.000)	22.920 (0.000)	15.164 (0.060)	0.689 (0.087)	0.422 (0.012)

Notes: (1) p-values are in parentheses; (2) The variables are as defined earlier in the sub-section 4.2.
Source: Data and Summary Statistical Analysis 2013.

The correlation matrix among the variables used is presented in Table 2. The book and market value leverage ratios are highly correlated with each other (the correlation is 0.692). This is consistent with statistics reported in Bowman (1980) who shows that the correlation between book and market values of debt is very large. Consistent with the predictions of the pecking order theory, the results of correlation analysis reveal a negative association between both book and market value leverage ratios and profitability (PROF). Likewise, the results show that growth (GROW) and size (SIZE) are positively related to profitability, while tangibility (TANG) has a negative relationship with profitability. This implies that larger firms and growing firms tend to have higher profitability; and profitable firms tend to have rarer tangible assets. Furthermore, the size variable has a positive correlation with both book and market value leverage ratios; profitability is negatively correlated with them. This implies that firms employ more debt as their size increases then reduce their debt as their profitability improves. However, a correlation analysis does not give the complete image of the relationship between leverage ratios and

the determinants of capital structure. Consequently, leverage ratios are modelled as a function of different variables. However, therefore, the stock market development indicators fluctuated between negative and positive values, while this is consistent with results reported in Demirgüç-Kunt & Maksimovic (1996), Deesomsak *et al*. (2004), Mitton (2008). Moreover, the correlation between the banking sector development indicator (BCR) and both leverage ratio measures is positive, which suggests that a more developed banking sector will lead to a greater reliance on debt, while bank sector indicator (BAR) is positively related to market value leverage ratio and a negative relationship with book value leverage ratio.

As can see from Table 2, Similarly, three are positive correlation between both the leverage ratio measures and the cost of equity is measured by the price-earnings (P/E) ratio (CEC), the growth rate of real GDP (RGDPG), the inflation rate (INFR). This is in line with the prediction of the trade-off theory. Nevertheless, both leverage ratios measures are negatively correlated with real interest rate (RINT); however, the regional financial market remained volatile. In line with results reported by Barry *et al*. (2008), Antoniou *et al*. (2008) and Bas *et al*. (2009).

Table 2. Correlations Matrix of Variables

Sample period (2008-2013)																	
Variables	LEVB	LEVM	TANG	GROW	PROF	LIQ	SIZE	CEC	MCR	VTR	TOR	VOL	BAR	BCR	RGDPG	INFR	RINT
LEVB	1.000																
LEVM	0.692	1.000															
TANG	0.057	0.067	1.000														
GROW	-0.078	-0.433	-0.043	1.000													
PROF	-0.479	-0.618	-0.350	0.392	1.000												
LIQ	-0.388	-0.368	-0.198	0.146	0.302	1.000											
SIZE	0.139	0.077	0.179	-0.022	0.069	-0.050	1.000										
CEC	-0.022	-0.119	-0.013	-0.070	-0.139	-0.078	0.010	1.000									
MCR	0.019	-0.027	-0.024	0.598	0.290	0.140	0.043	0.012	1.000								
VTR	0.016	-0.048	-0.032	0.442	0.301	0.159	0.044	0.166	0.703	1.000							
TOR	0.002	-0.076	-0.029	0.593	0.270	0.162	0.030	0.078	0.690	0.793	1.000						
VOL	0.010	0.068	0.015	-1.826	-0.070	-0.055	0.020	-0.049	-0.251	-0.420	-0.401	1.000					
BAR	-0.149	0.044	-0.070	-0.054	-0.200	0.193	-0.151	0.102	-0.431	0.201	0.124	-0.102	1.000				
BCR	0.050	0.030	-0.033	-0.012	-0.042	-0.021	0.030	0.019	-0.025	-0.013	0.006	-0.030	0.297	1.000			
RGDPG	-0.602	-0.600	-0.007	-0.089	-0.012	0.182	0.080	-0.138	-0.040	0.103	0.501	0.602	0.701	-0.600	1.000		
INFR	0.322	0.179	0.024	0.014	0.006	-0.042	-0.015	-0.048	-0.022	-0.103	-0.402	-0.350	-0.366	0.200	-0.139	1.000	
RINT	-0.403	-0.166	-0.069	-0.419	0.020	-0.167	-0.068	-0.055	0.027	-0.039	-0.330	-0.340	-0.406	0.125	-0.244	-0.170	1.000

Notes: (1) The variables are as defined earlier in the sub-section 4.2.

Source: Data and Summary Statistical Analysis 2013.

5.2 Cross-Sectional Analysis Results for Individual Country

The cross-sectional results from estimating Eq.1 for eight firms are presented in Table 3. The book and market value leverage ratios are regressed on the following independent variables: firm tangibility (TANG), growth (GROW), profitability (PROF), liquidity (LIQ), size (SIZE) and the cost of equity (CEC). In general, the results are consistent with the theoretical predictions and previous empirical studies. As predicted, the signs of tangibility, growth, profitability, liquidity and the cost of equity are consistently negative and highly significant; while firm size appears positive and consistently significant. In the model, the adjusted R squares looks reasonable between 36 *per cent* and 39 *per cent*; and are consistently higher for the market value leverage ratio than the book value leverage ratio. The F-statistics confirm the validity of the estimated model, while the following results will be discussed in more detail.

The results show that there is a negative relationship between *firm growth (GROW)* and both the book and market value leverage. This is in line with the prediction of the trade-off theory. This negative coefficient shows that growing firms do not use debt financing. This finding conforms to the results of Titman & Wessels (1998), Rajan & Zingales (1995), Shah & Khan (2007) among others. The explanation is that growing firms have more options of choosing between safe and risky firms (Shah & Khan 2007). It is confirmed that since managers are agents of shareholders, they will want to invest on risky projects so as to enhance shareholders' returns. Nonetheless, creditors will not be willing to give funds for such firms as they will bear more risk for the same returns. In order to compensate for additional risk in growth, firms' creditors will demand risk premium. Hence, in the face of extra cost of debt, growing firms will use less debt and more equity.

Statistically negative relationship of *firm profitability (PROF)* with both the book and market value leverage in the Libyan firms confirms the implication of pecking order hypothesis which argues that highly profitable firms prefer to finance new investment with internally available funds than through debt finance. This means that good profitability reduces the need for external debt. This finding supports several previous ones including Rajan &

Zingales (1995), Wald (1999), Fama & French (2002), Zou & Xiao (2006), Antoniou *et al*. (2007), Sheikh & Wang (2010).

Firm Tangibility (TANG) is negatively related to both the book and market value leverage. This finding is consistent with the pecking order theory which suggests a negative relationship between short term debt and asset structure. This can be due to the fact that a firm with an increasing level of tangible assets may have already found a stable source of income, which provides it with more internally generated funds and avoid using external financing. Alternative, the argument for this relationship could be the view that firms with higher operating leverage (high fixed assets) would employ lower financial leverage. Although, overall the results are entirely consistent with Cornelli *et al*. (1996), Hussain & Nivorozhkin (1997), Booth *et al*. (2001), Nivorozhkin (2002) who also suggest a negative relation between tangibility and debt ratio.

Firm liquidity (LIQ) is consistently negative and significant with both the book and market value leverage. This result suggests that firms with higher liquidity tend to avoid raising external loan capital. As discussed previous, a negative relation may indicate that firms operating in these markets finance their activities according to the financing order of the pecking order theory. This is consistent with results reported in Deesomsak, *et al*. (2004), Jong *et al*. (2008), Sbeiti (2010).

Firm size (SIZE) and leverage are positively related and statistically significant with both the book and market value leverage. This result supports the trade-off theory which suggests that firm size should matter in deciding an optimal capital structure as bankruptcy costs constitute a small percentage of the total firm value for larger firms and greater percentage of the total firm value for smaller firms. Thus, as debt increases the chances of bankruptcy, smaller firms should have lower debt or equity ratio. Empirical results reported by Rajan & Zingales (1995), Wald (1999), Fama & French (2006), Huang & Song (2006), Zou & Xiao (2006), Antoniou *et al*. (2007), Sheikh & Wang (2010) have reported significant positive relationship between size and for both measures of leverage.

The cost of equity (CEC) is consistently negative and significant with both the book and market value leverage. This result suggests that high price-earnings ratios will cause firms to choose equity over debt, as this factor reduces the cost of equity finance. The findings of the current study are inconsistent with those of Gode & Mohanram (2003), Boston & Plumlee (2005) find evidence that leverage is significantly positively related with the implied cost of equity. However, our results generally indicate that both the trade-off and the pecking order theories can explain in Libyan firms' financing decisions.

Table 3. Results for Eq.1. The Regression Results using the dependent variable Leverage (LEVB, LEVM)

Sample period (2008-2013)				
Independent Variables	Code	Exp. Sign.	LEVB	LEVM
Constant	C	(?)	1.750* (0.000) [10.201]	1.724* (0.000) [9.502]
Tangibility is defined as the ratio of total fixed assets to total assets	TANG	(-)	-0.193* (0.000) [-4.650]	-0.201* (0.000) [-3.012]
Growth is defined as the book value of total assets less the book value of equity plus the market value of equity divided by the book value of total assets	GROW	(-)	-0.360* (0.000) [-9.897]	-0.358* (0.000) [8.079]
Profitability defined as the ratio of operating profit to book value of total assets	PROF	(-)	-0.177* (0.000) [-4.708]	-0.429* (0.000) [-9.196]
Liquidity is defined as the ratio of current assets to current liabilities	LIQ	(-)	-0.397* (0.000) [-11.874]	-0.413* (0.000) [10.012]
Firm size is measured by the natural log of assets	SIZE	(+)	0.160* (0.066) [2.370]	0.171* (0.003) [3.079]
The cost of equity is measured by the price-earnings (P/E) ratio	CEC	(-)	-0.123* (0.000) [-4.632]	-0.110* (0.000) [-3.709]
Adjusted R-squared	R^2-adj.		0.36	0.39
Observations	OBS		282	282
F-statistics	F		49.72	58.43

Notes: (1) p-values are in parentheses; (2) The absolute values of the t-statistics are in brackets; (3) *significant at the 1% level, **significant at the 5% level, ***significant at the 10% level; (4) The variables are as defined earlier in the sub-section 4.2.

Source: Data and Summary Statistical Analysis 2013.

5.3 Asymmetric panel regression adjustment model Cross-Sectional Analysis

As discussed previous, in addition to investigating the determinants of capital structure the paper aims to explore the dynamism of capital structure and the impact of stock market development on firms' financing choice. Therefore, model (4) is estimated using two alternative versions of dependent variables lagged values of book

and market leverage ratios with explanatory variables that are likely to be endogenous/ or correlated with firm-specific effects. Table 4 shown that the results from both values of book and market leverage ratios with same alternative specifications of (stock market development, banking sector development and micro-economic variables) as crucial to the capital structure choice during 2008-2013. As shown in Table 4 the results of Sargan statistic test indicate that the null-hypothesis for instrumental variables are uncorrelated with residuals for all models, therefore, it is more useful to consider the firm-specifics as exogenous. However, the Sargan tests for the validity of additional instruments do not support the use of the system dynamic panel estimators for the leverage measure regression is not significant in which the data reject the orthogonally conditions at the five-percent level. Table 4 present the results of the estimation of the dynamic Eq. 4 for Libyan firms. The results reveal the coefficients of book and market value measures of leverage statistically significant and positive for the one-period lagged dependent variables. These results clearly indicate that positive effects of the one-period lagged dependent variables of leverage on the capital structure in the Libyan firms are consistent with the results reported by Rajan & Zingales (1995), De Miguel & Pindado (2001), Antoniou *et al*. (2007), Frank & Goyal (2009) and allow the assessment of whether firms' observed leverage is different from their target leverage levels and whether firms indeed move towards their target leverage ratio and at what speed. Regarding the speed of adjustment, the result, therefore, did not provide us with a clear image of the speed with the target ratios. In these regressions (1 to 3) results show that the coefficient values of lagged book and market leverage ratios are positive, statistically significant and take values between zero and one [0, 1], which suggest the dynamic capital structure exists in Libyan firms. For instance, the values are 0.35 when book value is used as the dependent variable and 0.29 when market leverage ratio is used as dependent variable. They imply that the leverage ratios for Libyan firms converge to their desired level over time and confirm the existence of dynamism in the capital structure decision of firms operating in this market, in the sense that firms adjust their leverage ratio in order to achieve their target. Furthermore, the explanatory power of the model increases remarkably from about 39 *per cent* in the static regression model to 69 *per cent* when the dynamic model is used. This means that about 69 *per cent* of the variations in both book and market value leverage ratios could be explained by the dynamic model. The speed of adjustment with the fastest being that for the lagged value of book leverage in the Libyan firms has a coefficient value of 0.31. These results are significantly higher than those reported in Antoniou *et al*. (2007) for Japan (0.12), Germany (0.24), the UK (0.32) and USA (0.33), however, similar to those reported in other emerging markets. Nevertheless, the fact that the Libyan firms adjust faster to the target leverage ratio which can be explained that, the corporate credit markets being less supply constrained. The results also strengthen the previous argument that a firm's optimal capital structure is influenced by the environment in which it operates and support the findings of Antoniou *et al*. (2007) among others. Thus overall, the results reveal the presence of dynamism in the capital structure decisions of firms, and that they adjust relatively quickly towards their target and seem to adjust slightly more quickly towards market value targets than book value targets since as expected, stock markets place more force on firms. In addition, the book market value is reported annually, while the market value is adjusted daily.

The coefficient values of the size variable remain positive and are statistically significant in relation to both book and market value leverage ratios. These results confirm the significance of the size variable as a determinant of the capital structure decisions of firm operating in the emerging markets. The coefficient values of the liquidity variable retain the same significance and negative signs and confirm previous discussion that firms with high liquidity do not use much debt in their capital structure. The coefficient values of profitability retain the same sign and statistical significance. The results seem to support the pecking order theory that high profit firms use internal financing; while low profit firms use more debt because their internal funds are not adequate. These findings, however, are in contrast to those reported in Cornelli *et al*. (1996) who argue that the use of retained earnings by profitable firms in the European economies should be considered as a bad signal and can be interpreted that firms are unable to achieve their optimal capital structure due to credit rationing. The coefficient values of tangibility retain they become insignificant for Libyan firms. The negative relationship between tangibility and leverage ratio is not in line with the trade-off theory expectations as discussed earlier. The only difference between the LEVB and LEVM regression results is the influence of the market to book ratio variable (growth opportunities) which changes from positive for LEVB to uniformly negative and higher coefficients for LEVM. These results are consistent with Booth *et al*. (2001) who find similar phenomena in 10 developing countries. They argue that this phenomenon is due to spurious correlation introduced by having market values in the numerator of the market to book ratio and the denominator of the market long-term debt ratio. For instance, short-term market movements and non-instantaneous reaction by corporations will automatically induce a negative correlation between the two. It is also important to note that the firm-specific (such as size, liquidity, profitability and tangibility) coefficients are almost identical. However, variables such as market to book ratio reflect the capital market valuation of the firm, which in turn is affected by the conditions of the capital market.

Consequently, the market to book ratio is most closely associated with external country factors. This could partially explain the difference in the sign and magnitude of the coefficients.

Table 4. Results for Eq.4. The Dynamic panel Regression Results using the dependent variable Leverage (LEVB, LEVM)

Sample period (2008-2013)		LEVB			LEVM		
Independent Variables	Code	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	C	-1.0227* (0.107) [-1.660]	-1.1192 (0.062) [-1.808]	-1.0220 (0.350) [-1.699]	-1.0957 (0.000) [-2.527]	-1.3180 (0.000) [-2.392]	-1.4082 (0.000) [-2.470]
Debt to total assets divided by Equity Book Value (dependent Variables)	LEVB	0.3110* (0.000) [7.892]	0.3082* (0.000) [7.667]	0.3079* (0.000) [6.682]			
Debt to total assets divided by Equity Market Value (dependent Variables)	LEVM				0.2962* (0.000) [7.170]	0.2241* (0.000) [6.954]	0.2166* (0.000) [6.940]
Tangibility is defined as the ratio of total fixed assets to total assets	TANG	0.2188* (0.000) [-4.393]	0.2140* (0.000) [-4.273]	0.2173* (0.000) [-4.231]	0.2087* (0.000) [-4.169]	0.2034* (0.000) [-4.119]	0.2033* (0.000) [-4.189]
Growth is defined as the book value of total assets less the book value of equity plus the market value of equity divided by the book value of total assets	GROW	0.2975* (0.079) [5.806]	0.3275* (0.000) [5.210]	0.3196* (0.000) [5.142]	-0.4244* (0.000) [-6.721]	-0.4376* (0.000) [-6.855]	-0.4398* (0.000) [-6.062]
Profitability defined as the ratio of operating profit to book value of total assets	PROF	-0.0308* (0.000) [-3.732]	-0.0540* (0.000) [-3.087]	-0.0552* (0.000) [-3.978]	-0.0619* (0.000) [-3.870]	-0.0610* (0.000) [-3.331]	-0.0521* (0.003) [-3.268]
Liquidity is defined as the ratio of current assets to current liabilities	LIQ	-0.3143* (0.000) [-6.750]	-0.2871* (0.000) [-6.459]	-0.2839* (0.000) [-6.426]	-0.2911* (0.000) [-6.562]	-0.2790* (0.000) [-6.231]	-0.2820* (0.000) [-6.262]
Firm size is measured by the natural log of assets	SIZE	0.4027* (0.000) [6.272]	0.3927* (0.000) [6.308]	0.4032* (0.000) [6.473]	0.4426* (0.000) [7.067]	0.4653* (0.000) [7.520]	0.4682* (0.000) [7.512]
Cost of equity is measured by the price-earnings (P/E) ratio	CEC	-0.0040* (0.000) [-4.687]	-0.0036* (0.000) [-4.463]	-0.0020* (0.000) [-4.911]	-0.0027* (0.000) [-4.840]	-0.0012* (0.000) [-4.421]	-0.0010* (0.004) [-4.386]
Market capitalisation is used as a share of GDP ratio	MCR	-0.4088* (0.000) [-3.621]			-0.3445* (0.000) [-2.892]		
Total value traded to GDP	VTR		0.5125 (0.000) [-4.014]			0.4312* (0.000) [-3.255]	
Turnover ratio calculated is used as the ratio of total value traded by stock market capitalisation	TOR			-0.2134* (0.000) [-3.865]			-0.3221* (0.000) [-2.529]
Volatility variable	VOL			-0.3271* (0.000) [-3.687]			-0.3120* (0.000) [-2.804]
ratio of total bank assets to GDP	BAR	-0.3807* (0.000) [3.198]	0.3771* (0.000) [3.389]	0.4019* (0.000) [3.452]	-0.4283* (0.000) [4.069]	-0.4636* (0.000) [4.540]	-0.4703* (0.000) [4.511]
Ratio of domestic credit to the private sector divided by GDP	BCR	0.3430* (0.011) [-4.224]	0.3169* (0.005) [-4.309]	0.3010* (0.013) [-4.722]	0.2842* (0.003) [-5.677]	0.2805* (0.011) [-5.710]	0.2872* (0.008) [-5.804]
Growth rate of real GDP	RGDPG	0.3340* (0.000) [6.866]	0.3612* (0.000) [6.239]	0.3632* (0.000) [6.120]	-0.5029* (0.000) [-7.795]	-0.4831* (0.000) [-7.880]	-0.4949* (0.000) [-7.140]
Inflation rate	INFR	0.0120* (0.009) [7.450]	0.0810* (0.019) [6.459]	0.0802* (0.011) [7.392]	0.0805* (0.006) [6.546]	0.0780* (0.009) [6.233]	0.0820* (0.005) [5.232]
Real interest rate	RINT	-0.0168* (0.000) [-5.393]	-0.0140* (0.000) [-4.349]	-0.0139* (0.000) [-5.328]	-0.0080* (0.000) [-5.155]	-0.0054* (0.000) [-3.1309]	-0.0040* (0.000) [-5.139]
Adjusted R-squared	R^2-adj.	0.694	0.630	0.634	.682	0.685	0.687
Observations	OBS	247	247	247	247	247	247
F-statistics	F	32.19	29.20	27.80	52.76	49.78	43.89
Sargan Test	ST	[0.698]	[0.696]	[0.772]	[0.453]	[0.526]	[0.602]

Notes: (1) p-values are in parentheses; (2) The absolute values of the t-statistics are in brackets; (3) *significant at the 1% level, **significant at the 5% level, ***significant at the 10% level; (4) The variables are as defined earlier in the sub-section 4.2.

Source: Data and Summary Statistical Analysis 2013.

Table 4 show the results of all regressions leverage is negatively and highly significantly related to the cost of capital (earning ratio). In addition, the real interest rate in most regressions is negatively and significantly related to leverage. These are new contribution in these results in our best knowledge. Although, high price-earnings ratios and high interest rates will cause firms to choose equity over debt as both of these factors reduce the cost of equity finance. Therefore, the coefficients of the macro-economic variables such as the growth rate of real

GDP and inflation rates are significant. The insignificant of the inflation variables suggests that general good price inflation has played little, if any, independent part in the trend towards higher leverage ratios. The significance of the growth rate of real GDP, while suggests the important role of economic growth in determining the capital decisions of the Libyan firms. This result is indicates that both the trade-off and the pecking order theories, which consistent with Zwiebel (1996), Booth *et al*. (2001) and Bas *et al*. (2009). As can see from Table 4 illustrated that the banking sector development indicators is negatively and highly significantly bank asset ratio (BAR) related to the leverage ratios, however, bank credit to the private ratio (BCR) is positively and highly significantly related to the leverage ratios. Thus, firms will rely more heavily on debt as the banking sectors become more developed. This result is extremely consistent with the findings with Kunt & Maksimovic (1996).

Since firms are not exist in a vacuum to operate, they are operating in growing stock markets. It is thus, essential to test the impact of Libyan stock market development on firms' financing choice. For this purpose, four market development indicators (market capitalisation, value-traded ratio, turnover ratio and the market price volatility) are included. The results show that these indicators are negatively and insignificant. A negative relation between leverage ratios and stock market development indicators means that firms decrease debt issues as the stock market becomes more developed. Overall, the findings are consistent with the results reported in Demirgüç-Kunt & Maksimovic (1996), Deesomsak *et al*. (2004) Mitton (2008), De Jong *et al*. (2008), Frank & Goyal (2009), Sbeiti (2010) who find that the relation between the financial activity of stock markets and leverage is negative and significant.

The question may arise, why and how the firms increase debt issues as the stock market becomes more developed? The first point to introduce is that firms are not necessarily substituting debt for equity, therefore, the evidence suggest that the firms are increasing the amount of debt relative to equity. However, the question remains, why more debt? It is possible that further development of stock market leads to chances for risk sharing and aggregation of information that allows firms to increase borrowing. Therefore, firms are assumed to be credit-constrained before the stock market progresses its takeover function, which might probability that their firms will take over in the future. Another possible explanation of this result might be that the cost of equity issue is typically higher than debt issue in Libyan firms due to the lack of competition among investment banks.

6. Summary and Conclusion

This study examines the effect of financial market development on the determinants of capital structure of eighth firms listed on the Libyan stock market during the period 2008-2013. Based on new database availability, six potential determinants of capital structure were analysed using panel data methodology to examine how individual firms make financing choices. In addition, the study uses other factor analyses of the data, with different results, are possible: stock market and banking sector development indicators and macro-economic variables. The empirical finding of this study contribute towards a better understanding of financing decisions of these firms can be explained by the determinants suggested by much of extant the empirical literature. Specifically, it is found that liquidity and profitability are negatively and significantly related to the leverage ratios, which is consistent with pecking order theory. This implies that firms prefer to finance investment with internally returned funds before issuing debt.

As for firm size effect, evidence is presented to indicate that the firm size is positively and significantly related to leverage ratio of firms as an inverse proxy for the probability of bankruptcy. This result supports the trade-off theory which suggests that firm size should matter in deciding an optimal capital structure as bankruptcy costs. In the different way, leverage is negatively related with tangibility. This finding is in tandem with the predictions of pecking order theory, which suggests a negative association between short-term debt and tangibility. Finally, growth opportunities are positively related to book value leverage and negatively related to market leverage, which is consistent with the prediction of the trade-off theory. These results indicate that high price-earnings ratios and high interest rates will cause firms to choose equity over debt, as both of these factors reduce the cost of equity finance. Therefore, the results suggest an unimportant role for economic growth and inflation rates in explaining the variation in debt-equity ratios. However, our results generally indicate that both the trade-off and the pecking order theories can explain the Libyan firms' financing decisions.

Similarly significant, the study additionally investigates the relationship between stock market developments and firms' financing choices. Results show that further development in the stock market indicators are negatively and significantly related to the leverage ratios in (Libyan firms) suggesting that as equity markets become more developed and their liquidity improves, their importance as tools for corporate financing increase by allowing firms to issue more equity and reduce their reliance on debt, which implies that transaction costs for equity are high relative to debt, firms are credit constrained or that the issue cost of equity high due lack of competition among investment banks, or it is possible that improved information dissemination, monitoring and risk sharing, market firms better credit risks for bank loans, while banking sector variables (especially bank deposits) are

significantly and positively associated with debt equity ratio. This finding strengthens the argument that he capital structure decisions of firm are not only determined by their own characteristics, but are also influenced by the external environment in which they operate. Thus, the investigation of the Libyan firms benefits to improve our understanding of how firms operate in different market settings and environments background.

The explanatory power of the capital structure models that are derived from the western setting is limited in the case of emerging countries like Libyan emerging market. This result shows that even though there seems to be some common features in the capital structures of firms in emerging market and those in the advanced economies, further research is necessary to ascertain determinants of capital structure of developing countries based on the institutional settings.

References

Agrawal, A. & Nagarajan, N.J. (1990), "Corporate Capital Structure, Agency Costs and Ownership Control: The Case of All-equity Firms", *Journal of Finance* **XLV**(4), 1325- 31.

Akhtar, S. (2005), "The Determinants of Capital Structure for Australian Multinational and Domestic Corporations", *Australian Journal of Management* **30**(2), 321-41.

Akhtar, S. & Oliver, B. (2009), "Determinants of Capital Structure for Japanese Multinational and Domestic Corporations", *International Review of Finance* **9**(1-2), 1-26.

Al-Sakran, S. (2001), "Leverage Determinants in the Absence of Corporate Tax System: The Case of Non-financial Publicly Traded Corporations in Saudi Arabia", *Managerial Finance* **27**(10), 58-86.

Altman, E. (1984), "A further Empirical Investigation of the Bankruptcy Cost Question", *The Journal of Finance* 39, 1067-89.

Altman, E. (2002), "*Bankruptcy, Credit risk, and High Yield Junk Bonds*", Blackwell, Oxford.

Antoniou, A., Guney, Y. & Paudyal, K. (2002), "Determinants of Corporate Capital Structure: Evidence from European Countries", *Working Paper*, University of Durham.

Antoniou, A., Guney, Y. & Paudyal, K. (2007), "The Determinants of Capital Structure: Capital Market Oriented Versus Bank Oriented Institutions", *Journal of Financial and Quantitative Analysis* **43**(01), 59-92.

Antoniou, A., Guney, Y. & Paudyal, K. (2008), "The Determinants of Capital Structure: Capital Market-oriented Versus Bank-oriented Institutions", *Journal of Financial and Quantitative Analysis* **43**(1), 59-92.

Ariff, M., Taufiq, H. & Shamsher, M. (2008), "How Capital Structure Adjusts Dynamically During Financial Crises", *Corporate Finance Review* **13**(3), 11-24.

Banerjee S., Heshmati, A. & Wihlborg, C. (2004), "The Dynamics of Capital Structure", *Research in Banking and Finance* 4, 275-97.

Barry, C.B., Mann, S.C., Mihov, V.T. & Rodríguez, M. (2008), "Corporate Debt Issuance and the Historical Level of Interest Rates", *Financial Management*, Vol. 37 No. 3, pp. 413-30.

Bas, T., Muradoglu, G. & Phylaktis, K. (2009), "*Determinants of Capital Structure in Developing Countries*", Cass Business School, London.

Bauer, P. (2004), "Determinants of Capital Structure: Empirical Evidence from the Czech Republic", *Czech Journal of Economics and Finance* **54**(1 -2), 1-21.

Baxter, N.D. (1967), "Leverage, Risk of Ruin and the Cost of Capital", *Journal of Finance*, **22**(3), 395-03.

Beck, T., Demirgüç-Kunt, A. & Maksimovic, V. (2008), "Financing Patterns Around the World: Are Small Firms Different?", *Journal of Financial Economics* **89**(3), 467-87.

Bekaert, G. & Harvey, C. (2003), "Emerging Markets Finance", *Journal of Empirical Finance* 10(1-2), 3-65.

Bencivenga, R., Smith, B. & Starr, R. (1996), "Equity Markets, Transaction Costs, and Capital Accumulation: An Illustration", *The World Bank Economic Review* 10, 241-65.

Bevan, A. & Danbolt, J. (2002), "Capital Sstructure and its Determinants in the UK-A Decompositional Analysis", *Applied Financial Economics* **12**(3), 159-70.

Bokpin, G.A. (2009), "Macroeconomic Development and Capital Structure Decisions of Firms: Evidence from Emerging Market Economies", *Studies in Economics and Finance* **26**(2), 129-42.

Booth, L., Aivazian, V., Demirguc-Kunt, A. & Maksimovic, V. (2001), "Capital structures in developing countries", *Journal of Finance* **56**(1), 87-130.

Botosan, C. & Plumlee, M. (2005), ""Assessing Alternative Proxies for Expected Risk Premium", *The Accounting Review* 80, 21-53.

Bowman, R. (1980), "The Importance of Market Value Measurement of Debt in Assessing Leverage", *Journal of Accounting Research* 18, 242-54.

Cassar, G. & Holmes, S. (2003), "Capital Structure and Financing of SMEs: Australian Evidence", *Accounting and Finance* **43**(2), 123-47.

Chakraborty, I. (2010), "Capital Structure in An Emerging Stock Market: The Case of India", *Research in International Business and Finance* **24**(3), 295-14.

Chen, J.J. (2004), "Determinants of Capital Structure of Chinese-listed Companies", *Journal of Business Research* **57**(12), 1341-51.
Chkir, I.E. & Cosset, J. (2001), "Diversification Strategy and Capital Structure of Multinational Corporations", *Journal of Multinational Financial Management* **11**(1-2), 17-37.
Cornelli, F., Portes, R. & Schaffer, M. (1996), "The Capital Structure of Firms in Central and Eastern Europe", *CEPR Discussion Paper No. 1392*, London: Centre for Economic Policy Research.
De Jong, A., Kabir, R. & Nguyen, T.T. (2008), "Capital Structure around the World: The Roles of Firm- and Country-Specific Determinants", *Journal of Banking and Finance* **32**(9), 1954-69.
De Miguel, A. & Pindado, J. (2001), "Determinants of Capital Structure: New Evidence from Spanish Panel Data", *Journal of Corporate Finance* **7**(1), 77-99.
Deesomsak, R., Paudyal, K. & Pescetto, G. (2004), "The Determinants of Capital Structure: Evidence from the Asia Pacific Region", *Journal of Multinational Financial Management* **14**(4-5), 387-05.
Deesomsak, R., Paudyal, K. & Pescetto, G. (2009), "Debt Maturity Structure and the 1997 Asian Financial Crisis", *Journal of Multinational Financial Management* **19**(1), 26-42.
Delcoure, N. (2007), "The Determinants of Capital Structure in Transitional Economies", *International Review of Economics and Finance* **16**(3), 400-15.
Demirgüç-Kunt, A. & Maksimovic, V. (1996), "Stock Market Development and Financing Choices of Firms", *World Bank Economic Review* **10**(2), 341-69.
Demirgüç-Kunt, A. & Maksimovic, V. (1999), "Institutions, Financial Markets, and Firm Debt Maturity", *Journal of Financial Economics* **54**(3), 295-36.
Demirgüç-Kunt, A. & Maksimovic, V. (2002), "Funding Growth in Bank-based and Market-based Financial System: Evidence from Firm-level Data", *Journal of Financial Economics* **65**(3), 337-63.
Drobetz, W. & Wanzeried, G. (2006), "What Determines the Sspeed of Adjustment to the Target Capital Structure?", *Applied Financial Economics* **16**(13), 941-58.
Ezeoha, A.E. (2008), "Firm Size and Corporate Financial Leverage Choice in a Developing Economy", *The Journal of Risk Finance* **9**(4), 351-64.
Fama, E.F. & French, K.R. (2000), "Forecasting Profitability and Earnings", *Journal of Business, University of Chicago Press* **73**(2), 161-75.
Fama, E.F. & French, K.R. (2002), "Testing Trade - off and Pecking Order Predictions About Dividends and Debt", *Review of Financial Studies* **15**(1), 1-33.
Fama, E.F. & French, K.R. (2005), "Financial Decisions: Who Issues Stock?", *Journal of Financial Economic*, **76**(3), Elsevier, 549-82.
Fama, E.F. & French, K. R. (2006), "Profitability, Investment and Average Returns", *Journal of Financial Economics*, **82**(3), Elsevier, 491-518.
Fama, E.F. & Miller, M.H. (1972), "*The Theory of Finance*", New York.
Feidakis, A. & Rovolis, A. (2007), "Capital Structure Choice in European Union: Evidence from the Construction Industry", *Applied Financial Economics* **17**(12), 989-02.
Ferri, M.G. & Jones, W.H. (1979), "Determinants of Financial Structure: A New Methodological Approach", *Journal of Finance* **34**(3), 631-44.
Frank, M.Z. & Goyal, V.K. (2003), "Testing the Pecking Order Theory of Capital Structure", *Journal of Financial Economics* **67**(2), 217-48.
Frank, M.Z. & Goyal, V.K. (2009), "Capital Structure Decisions: Which Factors are Reliably Important?", *Financial Management* **38**(1), 1-37.
Friend, I. & Lang, L.H.P. (1988), "An Empirical Test of the Impact of Managerial Self-interest on Corporate Capital Structure", *Journal of Finance* 47, 271-81.
Gelb, A.H. (1989), "Financial Policies, Growth, and Efficiency", *World Bank* (Washington, DC).
Gode, D. & Mohanram, P. (2003), "Inferring the Cost of Capital Using the Ohlson-Juettner Model", *Review of Accounting Studies* **8**(4), 399-31.
Gujarati, D. (1995), "*Basic Econometrics"*, 3rd. Ed, McGraw-Hill, Inc.; New York.
Hall, G., Hutchinson, P. & Michaelas, N. (2004), "Determinants of the Capital Structures of European SMEs", *Journal of Business Finance and Accounting* **31**(5-6), 711-28.
Hamada, R.S. (1972), "The Effect of the Firm's Capital Structure on the Systematic Risk of Common Stocks", *Journal of Finance* **27**(2), 435-52.
Harris, M. & Raviv, A. (1991), "The Theory of Capital Structure", Journal *of Finance* **46**(1), 297-55.
Hart, O. & Moore, J. (1995), "Debt and Seniority: An Analysis of the Role of Hard Claims in Constraining Management", *American Economic Review* 85, 567-85.
Henry, P. (2000), "Stock market Liberalization, Economic Reform, and Emerging Market Equity Prices", *Journal of Finance* **55**(2), 529-64.

Hovakimian, A., Opler, T. & Titman, S. (2001), "The Debt-equity Choice", *Journal and Financial and Quantitative Analysis* **36**(1), 1-24.
Huang, R. & Ritter, J.R. (2009), "Testing Theories of Capital Structure and Estimating the Speed of Adjustment", *Journal of Financial and Quantitative Analysis* 44(2), 237-71.
Huang, S. & Song, F. (2006), "The Determinants of Capital Structure: Evidence from China", *China Economic Review* **17**(1), 14-36.
Hussain, Q. & Nivorozhkin, E. (1997), "The Capital Structure of Listed Companies in Poland", *IMF Working Paper* WP/97/175, December, 1-27.
Jensen, M. (1986), "Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers", *American Economic Review* **76**(2), 323-29.
Jensen, M. & Meckling, W. (1976), "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure", *Journal of Financial Economics* **3**(4), 305-60.
Jong, A.d., Kabir, R. & Nguyen, T.T. (2008), "Capital Structure around the World: The Roles of Firm- and Country-specific Determinants", *Journal of Banking and Finance* 32, 1954-69.
Karadeniz, E., Kandir, Y.S., Balcilar, M. & Onal, B.Y. (2009), "Determinants of Capital Structure: Evidence from Turkish Lodging Companies", *International Journal of Contemporary Hospitality Management* **21**(5), 594-09.
Kayo, E.K. & Kimura, H. (2011), "Hierarchical Determinants of Capital Structure", *Journal of Banking and Finance* 35, 358-71.
Kim, H. & Berger, P.D. (2008), "A comparison of Capital Structure Determinants: The United States and the Republic of Korea", *The Multinational Business Review* **16**(1), 79-100.
Korajczyk, A.R. & Levy, A. (2003), "Capital Structure Choice: Macroeconomic Conditions and Financial Constraints", *Journal of Financial Economics* 68, 75-109.
Leary, M.T. & Roberts, M.R. (2005), "Do Firms Rebalance Their Capital Structures?", *Journal of Finance* **60**(6), 2575-619.
Lemmon, M.L., Roberts, M.R. & Zender, J.F. (2008), "Back to the Beginning: Persistence and the Cross-section of Corporate Capital Structure", *Journal of Finance* **63**(4), 1575-608.
Levine, R. (1991), "Stock Market, Growth, and Tax Policy", *Journal of Finance* **46**(4), 1445-65.
Levine, R. (1997), "Financial Development and Economic Growth: Views and Agenda", *Journal of Economic Literature* **35**(2), 688-26.
Levine, R., Loayza, N. & Beck, T. (2000), "Financial Intermediation and Growth: Causality and Causes", *Journal of Monetary Economics* **46**(1), 31-77.
Lipson, L.M. & Mortal, S. (2009), "Liquidity and Capital Structure", *Journal of Financial Markets* 12, 611-44.
Long, M. & Maltiz, I. (1985), "The Investment Financing Nexus: Some Empirical Evidence", *Midland Finance Journal* 3, 53-59.
Margaritis, D. & Psillaki, M. (2010), "Capital Structure, Equity Ownership and Firm Performance", *Journal of Banking and Finance*, **34**(3), Elsevier, 621-32.
Marsh P. (1982), "The Choice between Equity and Debt: An Empirical Study", *Journal of Finance* **37**(1), 121-44.
Mayer, C. (1988), "New Issues in Corporate Finance", *European Economic Review* 32, 1167- 89.
Myers S. (1999), "The Search for Optimal Capital Structure". In H. Chew, Jr., ed.: *The new corporate finance: where theory meets practice,* 2ed Ed, Irwin McGraw-Hill.
Myers, S. (2003), "Financing of Corporations", *Handbook of the Economics of Finance* 5, 215-53.
Mazur, K. (2007), "The Determinants of Capital Structure Choice: Evidence from Polish Companies", *International Advances in Economic Research* **13**(4), 495-14.
Miller, M. (1991), "*Financial Innovations and Market Volatility*", Blackwell, Cambridge.
Mitton, T. (2008), "Why have Debt Ratios Increased for Firms in Emerging Markets?", *European Financial Management* **14**(1), 127-51.
Modigliani, F. & Miller, M.H. (1958), "The Cost of Capital, Corporation Finance, and the Theory of Investment", *American Economic Review* **48**(3), 261-97.
Myers, S.C. (1977), "Determinants of Corporate Borrowing", *Journal of Financial Economics* **5**(2), 147-75.
Myers, S.C. (2001), "Capital Structure", *Journal of Economic Perspectives* **15**(2), 81-102.
Myers, S.C. (2003), "*Financing of Corporations*", In Constantinides, G., Harris, M. and Stulz, R. Eds., Handbook of the Economics of Finance: Corporate Finance, Amsterdam, North Holland/Elsevier.
Myers, S.C. & Majluf, N.S. (1984), "Corporate Financing and Investment Decisions when Firms have Information that Investors do not have", *Journal of Financial Economics* **13**(2), 187-21.
Nerlove, M. (1958), "Distributed Lags and the Estimation of Long-run Supply and Demand Elasticities: Theoretical Considerations", *Journal of Farm Economics* 40, 301-11.

Nivorozhkin, E. (2002), "Capital Structures in Emerging Stock Market: The Case of Hungary", *The Developing Economies* 40, 166-87.
Lang, L., Ofex, E. & Stulz, R.M. (1996), "Leverage, Investment, and Firm Growth", *Journal of Financial Economics* 40, 3-29.
Omet, G. & Mashharawe, F. (2002), "The Capital Structure Choice in Tax Contrasting Environments: Evidence from the Jordanian, Kuwaiti, Omani and Saudi Corporate Sectors", *Paper Presented at the Econ. Res. Forum 10th Ann. Conference*, December (Marrakesh, Morocco).
Omet, G. & Nobanee, H. (2001), "The Capital Structure of Listed Industrial Companies in Jordan", *Arabic Journal of Administrative Sciences* 8, 273-89.
Pandey, I.M. (2001), "Capital Structure and the Firm Characteristics: Evidence from An Emerging Market", *IIMA Working Paper*.
Rajagopal, S. (2011), "The Portability of Capital Structure Theory: Do Traditional Models Fit in An Emerging Economy?", *Journal of Finance and Accountancy* 5, 1-17.
Rajan, R.G. & Zingales, L. (1995), "What Do we know about Capital Structure? Some Evidence from International Data", *Journal of Finance* **50**(5), 1421-60.
Sbeiti, W. (2010), "The Determinants of Capital Structure: Evidence from the GCC Countries", *International Research Journal of Finance and Economics* 47, 56-82.
Scott, J. (1977), "Bankruptcy, Secured Debt, and Optimal Capital Structure", *Journal of Finance* 32(1), 1-19.
Shah, A. & Khan, S. (2007), "Determinants of Capital Structure: Evidence from Pakistani Panel Data", *International Review of Business Research Papers* **3**(4), 265-82.
Sharpe, W.F. (1994), "The Sharpe Ratio", *The Journal of Portfolio Management* **21**(1), 49-58.
Sheikh, N. A. & Wang, Z. (2010), "Financing Behaviour of Textile Firms in Pakistan", *International Journal of Innovation Management and Technology* **1**(2), 130- 35.
Shyam-Sunder, L. & Myers, S. (1999), "Testing Static Trade-off against Pecking Order Models of Capital Structure", *Journal of Financial Economics* **51**(2), 219-44.
Smith, C.J. & Watts, R.L. (1992), "The Investment Opportunity set and Corporate Financing, Dividend, and Compensation Policies", *Journal of Financial Economics* **32**(3), 263-92.
Supanvanij, J. (2006), "Capital Structure: Asian firms vs. Multinational Firms in Asia", *The Journal of American Academy of Business, Cambridge* 10, 324-30.
Taggart, Jr. (1986), "Corporate Financing: Too much Debt?", *Financial Analysts Journal* **42**(3), 35-42.
Tang, C.H. & Jang, S.S. (2007), "Revisit to the Determinants of Capital Structure: A Comparison between Lodging Firms and Software Firms", *International Journal of Hospitality Management* **26**(1), 175-87.
Taub, A.J. (1975), "Determinants of the Firm's Capital Structure", *The Review of Economics*, *and Statistics* **57**(4), 410-16.
Titman, S. & Wessels, R. (1988), "The Determinants of Capital Structure Choice", *Journal of Finance* **43**(1), 1-19.
Tong, G. & Green, C.J. (2005), "Pecking Order or Trade-off Hypothesis: Evidence on the Capital Structure of Chinese Companies", *Applied Economics* **37**(19), 2197-2189.
Blommaert, J. & Verschueren, J. (1998), "*Debating Diversity: Analysing the Discourse of Tolerance*", London: Routledge.
Viviani, J.L. (2008), "Capital Structure Determinants: An Empirical Study of French Companies in the Wine Industry", *International Journal of Wine Business Research* **20**(2), 171-94.
Wald, J.K. (1999), "How firm characteristics Affect Capital Structure: An International Comparison", Journal *of Financial Research* **22**(2), 161-87.
Wessels, R. (1988), "The Determinants of Capitals Structure Choice", *The Journal of Finance* **43**(1), 1-19.
Zou, H. & Xiao, J.Z. (2006), "The Financing Behaviour of Listed Chinese Firms", *British Accounting Review* **38**(3), 239-58.
Zwiebel, J. (1996), "Dynamic Capital Structure under Management Entrenchment", *American Economic Review* 86, 1197-15.