CAPITAL STRUCTURE DETERMINANTS, DYNAMICS AND SPEED OF ADJUSTMENT TOWARDS TARGET LEVERAGE: A SYSTEMATIC LITERATURE REVIEW OF EMPIRICAL AND THEORETICAL DISCIPLINES

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INTRODUCTION
The choice of the source of finance is always the most important and complex decision for financial managers due to its impact on the firm’s cost and availability of capital. By definition, capital structure is the mix of debt and equity a firm chooses to finance its operations. Debt financing takes different forms according to its maturity (short and long terms) and its proceeds’ periodicity (bonds and notes payable). Equity financing is classified as common stocks, preferred stocks and retained earnings.

Capital structure is usually referred to as the firm’s debt to equity ratio that provides an insight about the riskiness of the firm and the degree to which the firm is able to meet its obligations. This ratio is commonly considered by investors —along with other ratios— in their assessment of the worthiness of investment in the firm in question. Optimal capital structure refers to the one that maximizes the value of the firm. Managers who work in the best interest of shareholders employ the various sources of finance to minimize the weighted average cost of capital (WACC) attempting to reach the higher value for the firm.

Due to its high impact on firms’ investment decisions and the success of the firms, capital structure has been a part of financial managers’ discussions and debates about the key determinants of the capital structure choice and the relevance of the same for the value of the firm.

Capital structure theories have been evolved to explain the firm’s attitude toward choosing the different sources of finance and to find the best mix of debt and equity that maximizes the firm value. Empirical studies about testing the capital structure...
theories are then conducted to test the implications of each theory in different contexts.

Literature covering the capital structure topic is very rich of empirical studies that addressed the determinants of the capital structure of the firms in many aspects including firm characteristics (Cole, 2013; Bebczuk & Galindo, 2010), managerial traits (Murray & Vidhan, 2007; Malmendier et al., 2011) and the ownership structure (Ellul, 2008; Sanvicente, 2011). Empirical studies have concluded a set of determinants of capital structure choice that are essential for managers to understand in order to effectively plan for the firms’ success through undertaking the optimum financing decision. Most of the classical studies in this regard have been criticized due to ignoring adjustment costs that are practically considered by the firms prior to adjusting the debt-equity mix.

Empirical efforts are then directed to study the effect of adjustment cost and investigate the speed of adjustment toward the defined target leverage. Unlike the cross-sectional studies, dynamic models were employed in many studies in order to investigate the evolution of the different firms’ leverage ratiosin adjusting their current debt-equity mix toward a target level. Empirical studies in this regard focused on the speed of adjustment emphasizing on the adjustment cost that managers consider prior to changing the debt-equity mix (see Heshmati, 2001; Emrah & Koray, 2014).

Recent empirical efforts are directed toward studying the determinants of the speed of adjustment (see Drobertz & Wanzenried, 2006; Mahakud & Mukherjee, 2011; Haron et al., 2013). Results showed set of determinants, some of which are firm specific, while others are related to macroeconomic conditions.

The objective of this article is to systematize the available knowledge of determinants and dynamics of capital structure decisions in attempt to provide guidelines and recommendations for future research. Fink (1998) defined the literature review process as follows:

“A literature review is a systematic, explicit, and reproducible design for identifying, evaluating, and interpreting the existing body of recorded documents”

This article aims at defining the main gaps and presenting the results of literature about the determinants of capital structure, capital structure dynamics and the determinants of the speed of adjustment towards target leverage. Beside the effects of firm-specific determinants, the article covers the major macroeconomic events affecting capital structure decisions like the global financial crisis as well as political uncertainty. Too, the article shed the light on the differences between banks and non-financial institutions in terms of rules and regulations that shape the dynamic behavior of utilizing the different sources of finance. Different sides and perspectives of the capital structure literature are reviewed including critical insights about the employed proxies of firm leverage and data analysis techniques.

This article covers empirical work of 70 + papers from international peer reviewed journals for the period from 1998 to 2015, while theoretical base is dated back to 1958 where the classical MM proposition I is introduced by Modigliani and Miller. As a conceptual article, the author employed a reflective stance by counting solely on secondary literature. According to Dzansi and Hoeyi (2013), this stance is consistent with interpretivist reasoning in the social sciences.

Analysis of empirical studies revealed that the decision of capital structure decision is influenced by profitability, size of the firm, asset tangibility, non-debt tax shield, and growth. Too, results from different markets indicated that firms follow the implications of the pecking order theory in a sense that; firms adjust capital structure towards a target leverage ratio. The speed of adjustment is affected by firm characteristics (like size and growth) as well as the distance between current and target leverage ratios.

Despite all the exerted empirical and theoretical efforts in the capital structure literature, further researchers are needed to better understand capital structure dynamics and how firms behave in moving toward the target leverage. There are very few empirical studies considering the effect of political uncertainty and the global financial crisis on the dynamic process of capital structure. Too, industry level analysis is not investigated heavily despite the evident distinction in capital structure decisions across industries (see Mary et al., 2011; Tesfaye & Negash, 2014).

The next sections outline theories of capital structure, followed by empirical evidences of the same. Determinants of capital structure are then discussed highlighting criticism that opened the door for considering capital structure dynamics. Then, determinants of speed of adjustment are discussed covering firm-specific, macro-economic and institutional determinants. Finally, the effect of political uncertainty and the global financial crisis are reviewed, followed by the distinct differences between financial and non-financial intuitions.

**Capital Structure Theories**

The classical MM proposition I by Modigliani and Miller (1958) questioned the relevance of the capital structure for the firm value. The proposition stated that firm value and the weighted average cost of capital (WACC) are independent of the leverage ratio. MM proposition I is derived based on the assumptions that markets are perfect and frictionless, no bankruptcy cost, and no taxes. In 1963, Modigliani and Miller developed MM Proposition II. They modified their assumption and introduced corporate taxes. Modigliani and Miller (1963) stated that the choice of debt is favoured over equity financing due to the benefit of tax deductibility on interest payments. They concluded that the values of the firms increase in response to increases in debt ratio, where the optimal capital structure can be achieved at 100% debt ratio. Miller (1977) introduced personal taxes and stated that firm value is affected relatively by corporate and personal taxes.

The agency cost theory is developed by Jensen and Meckling (1976). They defined agency costs as those related to conflict of interests that arise due to the existence of debt and outside equity. They argued that optimal leverage can be achieved by minimising the agency cost. Jensen (1986) claimed that firms with insufficient free cash flow whose managers don’t exercise borrowing power tend to go for unsuccessful mergers. This explains how agency cost is reduced as debt ratio increases.
In 1977, Myers developed the static trade off theory that proposed the existence of optimal capital structure. The theory introduced the cost of debt, represented by bankruptcy cost and agency cost. Myers claimed that agency cost appears at higher debt ratios where conflict of interests between stockholders and bondholders arise in financial distress periods. Myers (1977) proposed that value maximisation is achieved by trading off the benefits and costs of debt. Firms choose debt financing to benefit from the tax deductibility on interest payments until the marginal benefit of debt is offset by the cost of debt; at this point the optimal capital structure is achieved.

Ross (1977) proposed the existence of information asymmetry between managers and investors. Using the incentive-signalling approach, Ross concluded that debt increase is interpreted as positive signal to investors that reflects positively on the perception of the firm value. Accordingly, firm value increases as debt increases.

A different explanation is developed by the pecking order theory (Myers, 1984). The pecking order theory (information asymmetry theory) suggests that optimal capital structure doesn’t exist due to existence of information asymmetry. The theory suggests that information asymmetry controls firms’ preferences regarding the choice of the source of finance in a hierarchical order. Firms tend to initially utilise retained earnings as the most preferred choice where there is no information asymmetry. The second preference goes to using debts, while issuing equity is the least preferred due to its association with higher information asymmetry. Myers (1984) explained the consequences of equity financing in line with the existence of information asymmetry. He argued that investors tend to perceive the firm is overvalued if new equity is issued, that shall result in requiring higher rate of return or forcing lower value of the new equity.

Couple of theories supported the non-existence of optimal capital structure. The market timing theory developed by Baker and Wurgler (2002) captured equity market-timing attempts using an external finance weighted average of market to book ratio. The theory suggests that firms slowly adjust toward a target debt ratio while equity financing is only selected when it appears more valued by financial markets. Inertia theory (Welch, 2004) supported that firms adjust toward target leverage ratio at a slow speed. Welch (2004) suggests that firms consider movements of stock price prior to selection of equity financing.

The following figure depicts the evolution of capital structure theories.

As presented, implications of the different theories are opposing. The static trade off theory suggests that there is an optimal capital structure that is targeted by the firms. On the contrary, pecking order, market timing and inertia theories conclude that firms follow a hierarchical preference of sources of financing considering the equity market prices.

**Empirical Evidences of the Capital Structure Theories**

Some empirical efforts attempted to validate and provide empirical evidences about the implications of the different capital structure theories.

The pecking order theory has been highly supported by some empirical studies. Chenet et al. (1998) studied 200 Dutch firms for the period from 1984 to 1995. Results of regression analysis showed that Dutch firms seems to prefer to finance their activities through retained earnings instead of issuing debts or equity. Gunay (2002) analyzed 96 Turkish firms for the period from 1991 to 2001 and concluded that Turkish firms are better represented by the pecking order theory and that the static trade off theory is irrelevant. Sen and Oruc (2008) further confirmed the same findings in their study on 75 Turkish firms for the period from 1993 to 2007. Further evidence has been provided by Schoubben and Hulle (2004) that supported the pecking order theory in their analysis of the Belgian firms for the period from 1992 to 2002. Saeed (2007) studied 22 listed companies in the energy sector of Pakistan for the period from 2001 to 2005 where results confirm the firms’ preference toward the use of internal financing over equity and debt issuing.

Some researchers provided empirical evidences that are not supporting the pecking order theory. Galpin (2004) analyzed firms from the Standard and Poor’s compustat database and concluded that the theory is not applicable on the studied sample. Elsas et al. (2006) studied 185 US firms for the period from 1989 to 1999 and concluded that the pecking order and market timing theories apply to the data set but they are transitory. Vasiliou et al. (2009) found that Greek firms (represented by 89 firms) do not follow the pecking order theory through qualitative (questionnaire) and quantitative analysis. Vasiliou et al. questioned previous empirical efforts that argue that pecking order theory is applicable. They recommended future research in this regard considering that the data set previously used might not fully represent the order of financing preferences of the firms.
Empirical Studies on the Determinants of Capital Structure

Studies on the characteristics of the firms as determinants of the capital structure

Literature is full of empirical studies that investigated firm-specific determinants of capital structure. Profitability, size of the firm, asset tangibility, non-debt tax shield, and growth were the most concluded variables found to significantly affect leverage ratio.

Chiarella et al. (1991) studied 226 Australian firms for the period from 1977 to 1985. They employed linear regression as well as structural model. They concluded that size of the firm and cash holdings are positively correlated with leverage, while profitability and non-debt tax shields affect leverage negatively. The negative effect is consistent with DeAngelo and Masulis (1980) who stated that non-debt tax shields is used by firms to substitute the interest tax shields. Chiarella et al. interpreted the negative relationship between profitability and debt ratio in a sense that firms included in the study might have preferred to rely on the retained earnings before issuing debts. This is concluding that the sample taken in this study follows the pecking order theory. The concluded positive relationship between debt ratios and cash holdings is consistent with the findings of Jensen (1986).

Schoubben and Hulle (2004) analyzed the Belgian firms as a panel data for the period from 1992 to 2002 where all non-financial firms (quoted and non-quoted) that issue financial statements are included in the data set. Schoubben and Hull concluded that leverage is positively correlated with current assets and is negatively correlated with intangible assets, size, profitability, and non-debt tax shield. Song (2005) analyzed the Swedish firms, a list of 600 firms for the period from 1992 to 200. He found that size of the firm holds a positive relationship with both short and total debts, while tangibility effect on long term debts is negative. Song also concluded that non-debt tax shield has a positive effect on short term debt and a negative effect on long term debt. In different market, Buferna et al. (2005) studied 55 Libyan firms for the period from 1995 to 1999. They used cross-sectional OLS regression and found that profitability and size maintain positive relationship with both total debt and short term debt ratios. They also concluded that growth and tangibility have negative relationships with both total debt and long term debt ratios.

Abor (2008) studied the publicly listed firms, unlisted firms and small enterprises in Ghana. He focused on twenty two quoted and fifty five unquoted firms for the period from 1998 to 2003. Abor used Prais-Winsten regression and concluded that leverage of publicly listed firms is positively related to the size of the firm. He found that a higher leverage ratio is employed by the unlisted firms and is positively related to growth. Finally, Abor concluded that leverage of small enterprises is positively correlated with size and growth. Teker et al. (2009) analyzed 42 Turkish firms traded at the Istanbul stock exchange (ISE100 index) for the period from 2000 to 2007. They concluded that size, tangibility, and profitability affect leverage positively, while depreciation is negatively correlated with leverage. Achy (2009) conducted study over 550 non-listed Moroccan firms for the period from 1998 to 2003. Achy found that leverage is positively correlated with growth and is negatively correlated with profitability and size. Bebczuk and Galindo (2010) analyzed 185 listed firms in six Latin American countries for the period from 1993 to 2009. They found that leverage is determined positively by size, tangibility, and market to book ratio, while profitability has a negative effect on leverage. They further analyzed the cost of debt and found it negatively related to growth, size, tangibility, and leverage ratio.

An empirical study by Mary et al. (2011) analyzed 37 Egyptian firms for the period from 1999 to 2007 and found that size and asset growth have positive effect on leverage. They also concluded that leverage is affected negatively by liquidity, business risk, industry average, cost of debt, and profitability. Mary et al. also analyzed the firms on the industry level and concluded that the significance and sign of coefficient of the determinants of capital structure is not the same across the industries. For example, in the food and beverages industry, the leverage ratio depends significantly on profitability (a negative relationship) and business risk (a positive relationship).

Espinosa et al. (2012) analyzed 133 Latin American countries (including Argentina, Chile, Mexico, and Peru) for the period from 1998 to 2007. They concluded that capital structure decision of Chilean firms is impacted positively by tangibility and size, while growth opportunities and performance have negative impact. The rest of Latin American countries showed mixed results. Finally, Cole (2013) examined the privately held firms in USA from 1987 to 2003 and concluded that leverage is negatively correlated with profitability, size, and age of the firm. Cole also detected that leverage ratios for privately held firms and small publicly held firms are similar. Appendix 1 summarizes empirical studies that investigated firm-specific determinants of capital structure.

Impact of dividend policy on the capital structure choice of firms

Considering the effect of dividend policy on the choice of capital structure, Murrayand Vidhan (2009) found a negative relationship between leverage and dividends. In their study of the impact of the dividend distribution on leverage, Mahmud et al. (2009) studied three Asian countries (Japan, Malaysia and Pakistan). They found that companies that adopt the policy of limiting the distribution of earnings tend to prefer equity financing over debt issuance.

Management behavior as determinant of capital structure

Some empirical efforts analyzed management traits as one of the determinants of the firms’ capital structure choice. Hackbarth (2007) studied the managerial traits and how they impact the managers’ financing decisions. The study considered optimism and overconfidence as two main traits as per the psychology literature. Hackbarth claimed that the conflict of interest among claimholders shall be considered in line with the tradeoff between the benefit (tax deductibility) and drawback (cost of bankruptcy) of Debts. Hackbarth argued that optimistic managers are likely to follow the standard pecking order theory. In this case, managers overestimate the firm’s future growth, accordingly they view the current firm’s risky securities as undervalued that is why they tend to prefer issuing debts over equity. On the contrary overconfident managers tend to prefer equity over debt as they underestimate the firm’s future risk and perceive the current debt as undervalued by the investors.
The above charts show the effect of managerial traits on the value of the firm under different controls on the choices of investment, debt and default levels.

Panels A and B refer to the case where investment level is selected by managers, while debt and default levels are determined by shareholders.

Panels C and D refer to the case where investment and debt levels are chosen by managers, while default threshold is determined by shareholders.

Murray and Vidhan (2007) found that firms tend to issue less debts when the chief executive officers (CEOs) compensation plan is tied to the firms’ performance. Bhagat et al. (2011) developed a dynamic principal agent model to study the effect of managerial traits, taxes, and bankruptcy costs on the capital structure decision. Results revealed that characteristics of mangers are highly impacting the firms’ financial decisions. Malmendier et al. (2011) studied the CEOs’ beliefs about future market performance. The study covered 477 CEOs of listed US firms for the period from 1980 to 1994. The CEOs’ personal data have been based on Yermack (1995) and Brian and Jeffrey (1998). Malmendier et al provided evidence that the firms’ financial policies are highly impacted by the managers’ beliefs and early-life experiences.

Ownership structure as determinant of capital structure

Some researchers investigated the ownership structure and its impact of the firms’ financing decisions. Concluding results in this perspective are showing opposing results.

Kim et al. (2007) found a positive relationship between ownership structure and debt ratio. Cespedes et al. (2008) analyzed 806 Latin American firms for the period from 1996 to 2005. Results revealed that there is an inverse relationship between equity financing and ownership concentration, where owners attempt to maintain control over the firms. Ellul(2008) studied 5,975 firms from 38 different countries and found that family firms rely more on debts in financing their operations as they consider debt as a mechanism of controlling firms, while equity financing is threatening their control over the firms. An opposing result is concluded by San vicente (2011). He studied 167 publicly owned Brazilian firms for 2010 and 2011. San Vicente concluded empirically that firms with high ownership concentration tend to prefer equity over debt.

Most of empirical studies analyzing the determinants of capital structure choice have lagged the independent variables in order to avoid the reverse causality problem that exists between the dependent and independent variables (see Titman &Wessels, 1988; Rajan & Zingales, 1995). These cross sectional studies have been criticized that the observed lagged leverage ratio is not necessarily the target leverage that firms are looking forward to reach. This is due to the existence of adjustment costs that firms consider before deciding to change the debt-equity mix. Moreover, in their studies of the speed at which firms adjust toward a target level of leverage ratio, Fama and French (2002), Flannery and Rangan (2005), Leary and Roberts (2005), and Kayhan and Titman (2007) concluded that the speed of adjustment is relatively slow.

Empirical Studies on the Dynamics of Capital Structure

Unlike the cross sectional studies of the determinants of capital structure, some empirical studies analyzed the dynamics of capital structure. Dynamic models are employed in an attempt to explain the evolution of the firms’ leverage ratios, and more specifically conclude the speed of adjustment toward target leverage. Most of empirical efforts in this regard employed the partial adjustment model to grasp the dynamics of leverage movements. The model proposes that firms seek to reach a target capital structure but are not able to do that immediately due to the existence of adjustment or transaction costs. The partial adjustment model implies that firms set a target capital structure to achieve irrespective to the initial/current capital structure.

Heshmati (2001) studied 2,261 micro and small firms in Sweden for the period from 1994 to 1997 using partial adjustment model. Heshmati employed non-linear regression procedures and found that firms adjust slowly toward a target and that the observed leverage exceeds the target.

On a larger scale, Roberts (2002) analyzed 10,057 observations from 23 industries on compustat database for the period from 1980 to 1998. Using partial adjustment model through maximum likelihood estimation, Roberts concluded that firms do adjust their capital structure toward a time-varying target. He further concluded that firms in different industries adjust toward target leverage ratio at different speeds because adjustment costs vary across industries. Roberts also claimed that the financial health as well as the current position relative to the target are the main factors affecting the speed of adjustment of the firms.

Flannery and Rangan (2005) studied all non-financial firms in compustat for the period from 1965 to 2001. They employed the partial adjustment model in order to determine the speed at which firms adjust their capital structure toward a target level. Flannery and Rangan used multiple estimation techniques, among which, the difference GMM estimation developed by Arellano and Bond (1991). This estimation technique is intended to eliminate fixed effects of the dynamic model. They considered profitability, growth (represented by market to book ratio of assets), depreciation, size, tangibility, and R&D expenses as
Determinants of the target leverage ratio of the firms. They showed that difference GMM didn’t provide consistent results due to existence of serial correlation in the error term and the high persistence of the dependent variable. Using OLS estimation, Flannery and Rangan concluded that tangibility and R&D expenses affect target leverage ratio positively, while profitability, growth, depreciation, and size have negative effects. They further concluded that firms achieve annually around one third of the gap between the target leverage and the current one.

Eldomiaty and Azim (2008) studied 99 Egyptian firms that covered 14 non-financial industries for the period from 1998 to 2004. They examined changes in capital structure and its determinants where both short term and long term debt ratios are studied under different classes of systematic risks. Systematic risk classes were categorized based on firm size and growth opportunities. They employed a basic ordinary least square (OLS) regression and concluded that systematic risk highly affects the speed of adjustment toward target leverage ratio. They also concluded that the speed of adjusting both short and long term debts increase as the degree of risk increases. For the sake of measuring the determinants of the changes in capital structure, Eldomiaty and Azim assumed that the achieved capital structure is the target one.

Emrah and Koray (2014) investigated 148 firms listed in Borsa Istanbul for the period from 1998 to 2010. They employed the partial adjustment model with various estimation techniques, among which, system GMM that showed a speed of adjustment around 29%. They also concluded positive impact of all studied determinants of target leverage.

Appendix 2 summarizes empirical studies that employed the partial adjustment model in terms of methodology, variables, proxy of each variable, and the results of each studied relation. It can be noted that most empirical studies employed GMM (generalized method of moments) estimation technique in order to estimate the speed of adjustment and its determinants. GMM estimation is designed to overcome endogeneity problem through modelling the error structure more realistically in order to achieve practical and asymptotically precise estimation results (see Roodman, 2009).

Endogeneity (or dynamic panel bias) is a common symptom of dynamic models where lagged dependent variable is usually correlated with the fixed effects in the error term. The conventional pooled OLS and firm fixed effects estimation techniques have been criticised by Hsiao (2003), Baltagi (2005), Lemmon et al. (2008), Huang and Ritter (2009), and Roodman (2009), where the estimated speed of adjustment would be biased.

**Empirical Studies on the Determinants of Speed of Adjustment**

Some empirical efforts are then directed toward analyzing the determinants of the speed of adjustment to target capital structure.

A comparison between US and UK firms is conducted by Banerjee et al. (2000). They analyzed 426 US firms for the period from 1989 to 1996 and 122 UK firms for the period from 1990 to 1996 in non-linear models. Banerjee et al. concluded that distance from target affects speed of adjustment negatively for UK firms, while in US, distance variable is found to be insignificant. They also concluded that firm size has a positive impact on adjustment speed in both markets, while expected growth has a negative effect.

Drobertz and Wanzenried (2006) analyzed 90 Swiss firms for the period from 1991 to 2001 and applied one step difference GMM estimation as proposed by Arellano and Bond (1991). They used first differences and instrumented endogenous variables through lagging variables twice. Drobertz and Wanzenried concluded that growth and distance affect speed of adjustment positively, while firm size is insignificant. On the macroeconomic level, term spread (a proxy for economic conditions, high term reflects good prospects) showed a positive impact, while ishort (short term interest rate) has negative impact on adjustment speed.

In different market context, Mahakud and Mukherjee (2011) studied 891 Indian manufacturing firms for the period from 1994 to 2008. They employed difference GMM estimation (Arellano & Bond, 1991). They concluded that dividends and tangibility have negative impact on speed of adjustment, while distance, profitability, size, growth opportunities, non-debt tax shield, business group affiliation (ownership structure), and macroeconomic conditions affect speed positively.

Haron et al. (2013) studied 790 non-financial Malaysian firms for the period from 2000 to 2009. They employed partial adjustment model using difference GMM. They concluded that Malaysian firms adjust to a target capital structure at rapid speed (57%). Haron et al. also concluded that the closer the gap between current and target leverages, the higher the speed of adjustment. They also concluded that profitability and firm size have positive impact on adjustment speed, while growth opportunity is insignificant.

Naveed et al. (2015) studied 147 textile sector listed Pakistani companies for the period from 2003 to 2011. They employed difference GMM and system GMM. They concluded a rapid speed of adjustment (51%). Results also indicated insignificant effect of tangibility on speed of adjustment, positive impact of growth opportunities, while profitability, size, and liquidity showed negative impact. Naveed et al. also focused on the crisis period to provide further evidence. They defined the crisis from 2009 to 2011. During this period, 73% speed of adjustment is concluded, only profitability is found to affect speed of adjustment, while all other studied determinants were insignificant.

Appendix 3 summarizes empirical studies that employed partial adjustment model in order to study the determinants of speed of adjustment as well as results of each.

It can be concluded from previous sections that firms from different market characteristics/countries do adjust their leverage ratio towards a target one at a speed that it determined by set of firm-specific determinants.

Distance from target leverage, growth and firm size were the most common concluded significant determinants of speed of adjustment.

**Institutional determinants of speed of adjustment**

Oztekin and Flannery (2011) analyzed 37 countries for 16 years based on Q4 2005 data of Elkins McSherry. Elkins McSherry is
an international leader in financial consulting and provides comparison of costs of securities trading all over the world. They categorized the sample countries into three main categories. First category is related to the legal origin (English, French, German, Civil, Common, Scandinavian), the second category has to do with the financial system structure (market based, bank based), while the last category is based on the financial system development. Results of partial adjustment model showed that legal origin and financial institutions significantly impact the adjustment speed through impacting the costs and benefits of adjusting leverage. Oztekin and Flannery also concluded that better institutional features are considered contributing factor to lowering transaction costs and accordingly higher adjustment speed. This conclusion is consistent with the trade off theory. Tesfaye and Negash (2014) studied different levels of determinants of speed of adjustment (industry, firm-characteristics, macro-economic and institutional). Using system GMM, analysis over 986 firms from nine African countries (including Egypt) for the period from 1999 to 2008 revealed that firms do adjust toward target leverage at speeds that differ across countries, industries, marginal corporate tax and stock market size. Kenya is found to adjust at fast rate of 65%, Egypt at 47%, while Morocco showed the least speed (18%). They further concluded that profitability impacts speed of adjustment positively, while effects of firm size and distance from target leverage depend on the used proxy for firm leverage. 

The use of market and book values of debt ratios

Most of empirical studies investigating the determinants of capital structure used the book value of debt ratio as a dependent variable, while some studies analyzed the market value of debt. Myers (1977) supported the argument of using the book value of debt as it is related to the value of assets in place, while Taggart (1977) found that there is very little to choose between book and market value formulations. Rajan and Zingales (1995) indicated that the use of proxy depends on the purpose of the study.

In a study over Dutch firms, Chen et al. (1998) concluded that testing the relationship between leverage and the various independent variables (size, growth, profitability, market to book ratio, and earning volatility) gives completely different results when considering the market and book values of debt ratio. Espinosa et al. (2012) found that determinants of capital structure of Latin American countries show different results when book value of leverage is used instead of market value of leverage.

On a larger scale, Haron (2014) made a study over emerging and developed markets aiming at comparing results of both static and dynamic capital structure models using six different definitions of leverage. He concluded that results are inconsistent when using same model with different leverage definitions. Inconsistency is also detected when using same leverage definition with different models, but inconsistencies in the first case were more obvious.

The Impact of the Global Financial Crisis

The crisis appeared in the collapse of huge financial institutions in response to the banking sector default in the United States of America started by the bankruptcy of Lehman Brothers in 2008. Literature has addressed the impact of the global financial crisis on firm’s profitability and choice of the capital structure. Gunay (2002) analyzed the Turkish firms and found that low levered firms were immunized during the crisis. Dekle and Hoontrakul (2004) studied Thai firms and concluded that high levered firms had their profitability declined sharply in response to the crisis. In his study about the impact of the global economic crisis on the optimal capital structure of Russian companies, Vashakmadze (2009) concluded that the behavior changed after the crisis. He concluded that minor changes in the debt-equity mix (in the direction of increasing debts) have a high impact on the WACC. Vashakmadze further concluded that value maximization can be reached at 100 % equity. Bebczuk and Galindo (2010) found that large Latin American firms were not impacted by the crisis as they relied on high debts and enjoyed lower interest rates due to their large size and high tangibility.

Morec and Raskovic (2011) analyzed small and medium enterprises (SMEs) in Slovenia for the period from 2006 to 2009 and concluded that SMEs have been hardly affected by the crisis in comparison to the large companies that enjoyed the soft budget constraints that were available by banks. Pattani et al. (2011) studied the UK firms and concluded that banks during the crisis period were less able to provide UK firms with long term loans. Danga et al. (2014) studied a sample of US firms for the period from 2002 to 2012 and employed partial adjustment model. They concluded that the global financial crisis had a negative impact on the speed of adjustment to target leverage. They further analyzed the pre-crisis period and found that firms that are characterized by large investment, small size, high growth, and volatile earnings have a speed of adjustment that is higher than other firms. During the crisis, the speed of adjustment is relatively low where only firms with larger distance to the target attempt to close the gap.

Based on the above empirical results, the global financial crisis has had an impact on the different firms in different ways. The impact on some firms was negative, while others were immune to the crisis depending on the size of the firms as well as their degree of indebtedness.

The Impact of Political Uncertainty

Impact of political uncertainty on the capital structure decision has been extensively researched recently. Desai et al. (2008) analyzed a panel of data for US firms doing abroad direct investment for the period from 1982 to 1999 based on the annual survey of the Bureau of Economic Analysis. Results indicated that US firms tend to lower leverage ratios in countries with high political risk. They measured the political risk based on the international country risk guide (ICRG).

On a larger scale, Durnev (2010) analyzed 47,808 firms from 79 countries for the period from 1980 to 2006. He concluded that election uncertainty significantly reduces firm performance due to inefficient capital allocation. Durnev explained the reason behind the decline in profitability is the reduction in the amount of information contained in the prices of stocks due to election uncertainty. Julio and Yook (2012) found that political uncertainty affects the decisions of firms’ investment negatively. Pastor and Veronesi (2013) claimed that high political uncertainty resulting from political news increases risk premium. They further concluded
that the increase in risk premium in weak economic conditions is higher than in good economic conditions. Smales (2014) studied the effect of political uncertainty on the market uncertainty in the period of Australian federal election. He concluded that high political uncertainty results in a decline in the issuance of government debts. Smales also concluded a decline in outstanding debts, decreasing demand on debt issuance, and demanding higher yields.

Political uncertainty in the Arab region has been investigated by Chaua et al. (2014). They studied the effect of uncertainty on market volatility in the MENA region. Chaua et al. concluded that market volatility increased, especially the Islamic indices due to recent revolutions. Francis et al. (2014) concluded that the cost of debt increases in response to the policy uncertainty. They quantified the impact that 11.90 basis points of additional spread are experienced by firms that are exposed to one standard deviation increase in political exposure. Francis et al. also detected that policy uncertainty significantly decreases the speed of adjustment. Finally, Waisman et al. (2015) analyzed the relationship between corporate bond spread and political uncertainty of US presidential elections. They found that spread of corporate bonds increased by 34 basis point.

Behavior of Financial and Non-financial Firms

Extensive empirical studies were concerned with the capital structure analysis of non-financial firms, while some studies shed the light on the differences in traits and behaviour between banks and non-financial institutions.

Capital structure behaviour of banks is different from non-financial firms due to the fact that banks have to follow some rules and regulations that protect their financial position from instability. One of these strict regulations is the minimum capital requirement that is highly required for deposit insurance. McCoy (2006) stated that benefits of depositors are highly protected by deposit insurance. One major difference has to do with the preference of using debts. Raheman et al. (2007) support the static trade off theory that enables firms to enjoy tax deductibility on interest payments, especially profitable firms that have lower risk of bankruptcy. This behaviour justifies firms' preference to use debts over equity, while non-profitable firms tend to use less debt due to its exposure to higher bankruptcy cost. On the other hand, banks do not enjoy the luxury of choice between debts and equity, instead they have to rely more on debts in order to avoid violating the minimum capital requirements. Too, banks have the unique option to issue debt that is federally insured. Another theory that provided an illustration for the difference between banks and non-financial firms is the agency theory. Banks are exposed to many complicated opportunities that are not easily understood by outsiders (Flannery, 1994).

This creates problems due to information asymmetry and accordingly raises the cost of issuing equity. Diamond and Rajan (2000) explained another difference about capital structure volatility where banks' capital structure is more volatile in their continuous attempt to ensure better liquidity, as opposed to the non-financial firms that have more stable debt-equity mix. Recently, Ukaegbu and Oino (2014) studied the differences between the non-financial firms and financial banks in Nigeria in terms of the determinants of capital structure and the speed of adjustment to target capital structure. They concluded significant differences between the two groups where non-financial firms are likely to follow the pecking order theory since leverage is negatively impacted by profitability. They found that banks tend to be more leveraged when they are profitable following the static trade off theory. They further concluded that non-financial firms adjust their capital structure at slower speed of 41% than banks at 69%.

CONCLUSION AND FUTURE RESEARCH

Literature review of capital structure topic revealed plenty of empirical studies that investigated the financing decision of the firms in different contexts. The use of advanced statistical techniques and the inclusion of various variables with different proxies have differentiated some studies among others. This has been achieved through continuous research effort and constructive criticism of previous work.

Analysis of empirical results indicated that capital structure decision is influenced commonly by profitability, size of the firm, asset tangibility, non-debt tax shield, and growth. Regarding capital structure dynamics, it is evident (from different markets/countries) that firms do adjust towards a target leverage ratio at a speed that it determined by set of firm-specific determinants. Speed of adjustment is significantly affected by the distance between the current and target leverage as well as firm characteristics in terms of growth and firm size. Examination of research design revealed that empirical evidences are sensitive to the use of proxy of firm leverage (see Espinosa et al., 2012; Haron, 2014). It is recommended to use robustness checks by employing more than one proxy in order to provide further evidence on employed models.

Capital structure decision and the speed of adjustment towards target leverage are significantly affected by political uncertainty (see Smales, 2014; Francis et al., 2014) and the global financial crisis (see Pattani et al., 2011; Danga et al., 2014). The effects of these major events have been overlooked in empirical studies analyzing the dynamics of capital structure. Inclusion of these events shall improve statistical power of estimation and would in turn provide robust evidences.

Different industries behave differently in terms of capital structure decisions. Significant determinants of firm leverage are not the same across industries (see Mary et al., 2011). Too, speed of adjustment differs across industries (Tesfaye & Negash, 2014). Analysis of capital structure dynamics over the industry level is not yet investigated comprehensively and would resemble an empirical topic for future research.

Based on the presented discussion in the last section, capital structure of banks and non-financial firms are significantly different in their determinants and dynamic behavior of moving to the target leverage. There is a lack of comparative studies that illustrate the major distinctions and commonalities.

References


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Global Academic Society Journal: Social Science Insight, 2(6), 24-37.
Qualitative Research in Financial Markets, 1(2), 85-96.
Research, 15

Appendices

Appendix 1 Summary of empirical studies that investigated firm-specific determinants of capital structure

<table>
<thead>
<tr>
<th>Study</th>
<th>Firms under Study</th>
<th>Studied Determinants</th>
<th>Concluded Effect Leverage</th>
<th>Study</th>
<th>Firms under Study</th>
<th>Studied Determinants</th>
<th>Concluded Effect Leverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiarella et al. (1991)</td>
<td>226 Australian firms</td>
<td>Size, Cash holdings, Profitability, Non-debt tax shields</td>
<td>Positive, Positive, Negative, Negative</td>
<td>Teker et al. (2009)</td>
<td>42 Turkish firms</td>
<td>Size, Tangibility, Profitability, Depreciation</td>
<td>Positive, Positive, Positive, Negative</td>
</tr>
<tr>
<td>Song (2005)</td>
<td>600 Swedish firms</td>
<td>Size, Tangibility, Non-debt tax shields</td>
<td>Positive on total and short term debt ratios, Negative on long term debt ratio, Positive on short term debt ratio, Negative on long term debt ratio</td>
<td>Bebczak and Galdindo (2010)</td>
<td>185 listed firms in six Latin American countries</td>
<td>Size, Tangibility</td>
<td>Positive, Negative</td>
</tr>
<tr>
<td>Buferna et al. (2005)</td>
<td>55 Libyan firms</td>
<td>Size, Profitability, Growth, Tangibility</td>
<td>Positive on total and short term debt ratios, Positive on total and long term debt ratios, Negative on total and long term debt ratios, Negative on total and long term debt ratios</td>
<td>Mary et al. (2011)</td>
<td>37 Egyptian firms</td>
<td>Size, Tangibility, Profitability, Growth</td>
<td>Positive, Negative, Negative, Negative</td>
</tr>
<tr>
<td>Cole (2013)</td>
<td>Privately held firms in USA</td>
<td>Size, Tangibility, Profitability, Age of the firm</td>
<td>Positive, Negative, Negative, Negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appendix 2 Summary of empirical studies that used partial adjustment model.

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Studied Variables</th>
<th>Used Proxies</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heshmati (2001)</td>
<td>Non-linear regression</td>
<td>Size, Profitability, Non-debt tax shields, Tangibility, Age, Speed of adjustment</td>
<td>Debt/equity, Bankruptcy probability slope</td>
<td>Positive, Negative</td>
</tr>
<tr>
<td>Flannery and Rangan (2005)</td>
<td>OLS &amp; GMM</td>
<td>Growth opportunity, Non-debt tax shields, Tangibility, Speed of adjustment</td>
<td>Debt/equity, Interest &amp; Taxes (EBIT)/total assets, Book-to-market equity ratio, Depreciation &amp; amortization ratio, Ln of total assets, Fixed asset total assets</td>
<td>Positive, Negative, Negative, Positive</td>
</tr>
<tr>
<td>Eldomiaty and Azim (2008)</td>
<td>OLS, regression</td>
<td>Bankruptcy risk, Size</td>
<td>Target leverage, Industry leverage, Growth opportunity, Tangibility, Non-debt tax shields, Profitability</td>
<td>Positive, Negative, Depending on systematic risk class as well as the maturity of debts</td>
</tr>
</tbody>
</table>

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### Appendix 3 Summary of empirical studies about the determinants of speed of adjustment.

<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Firms under Study</th>
<th>Studied Determinants</th>
<th>Used Proxies</th>
<th>Impact on speed of adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banerjee et al. (2000)</td>
<td>Non-linear regression</td>
<td>426 US firms and 122 UK firms</td>
<td>Distance from target leverage</td>
<td>Target leverage - leverage at t-1</td>
<td>Negative for UK firms and insignificant for US firms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Growth opportunities</td>
<td>Annual percentage change in total assets</td>
<td>Negative for both US and UK firms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Size</td>
<td>Ln of total assets</td>
<td>Positive for both US and UK firms</td>
</tr>
<tr>
<td>Drobertz and Wanzenried (2006)</td>
<td>One step difference GMM</td>
<td>90 Swiss firms</td>
<td>Size</td>
<td>Ln of Total Assets</td>
<td>Insignificant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Growth</td>
<td>Book to market ratio of equity</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distance from target leverage</td>
<td>Target leverage - leverage at t</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Term</td>
<td>Yield on bonds - Eurodollar interest rate</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>lnshort</td>
<td>Short term interest rate</td>
<td>Negative</td>
</tr>
<tr>
<td>Mahakud and Mukherjee (2011)</td>
<td>Difference GMM</td>
<td>891 Indian manufacturing firms</td>
<td>Size</td>
<td>Ln of total assets</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Growth Opportunities</td>
<td>Market to book ratio of equity</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non-Debt Tax Shields</td>
<td>Depreciation/total assets</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distance from Target Leverage</td>
<td>Target leverage - leverage at t</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ownership structure</td>
<td>Business group affiliation</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Macroeconomic conditions</td>
<td>Real GDP growth rate</td>
<td>Positive</td>
</tr>
<tr>
<td>Haron et al. (2013)</td>
<td>Difference GMM</td>
<td>790 non-financial Malaysian firms</td>
<td>Distance from target leverage</td>
<td>Target leverage - leverage at t</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Size</td>
<td>Ln of total assets</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Growth opportunities</td>
<td>Market to book ratio of equity</td>
<td>Insignificant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Profitability</td>
<td>Net incomerotal assets</td>
<td>Positive</td>
</tr>
<tr>
<td>Naveed et al. (2015)</td>
<td>Difference and system GMM</td>
<td>147 textile sector Pakistan companies</td>
<td>Liquidity</td>
<td>Current assets/current liabilities</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tangibility</td>
<td>Fixed assets/total assets</td>
<td>Insignificant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Growth opportunities</td>
<td>Market to book ratio of equity</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Size</td>
<td>Ln of total assets</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Profitability</td>
<td>EBIT/total assets</td>
<td>Negative</td>
</tr>
</tbody>
</table>

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