Determinants of Capital Structure Choice: A Case Study of Jordanian Industrial Companies

محددات اختيار هيكل رأس المال: دراسة حالة في الشركات الصناعية الاردنية

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Abstract

This paper analyzes the explanatory power of some of the recent theories of optimal capital structure. In this paper, an attempt has been made to examine the determinants of capital structure –age of firm, size of firm, asset structure (tangibility and liquidity), business risk, growth rate, earning rate (ROA), non tax shield as independent variables and degree of operating leverage-of the industrial companies listed to Amman Stock Exchange from the period 2004-2007. The results of this study have delivered some insights on the capital structure of Jordanian industrial firms. The issue of capital structure is an important strategic financing decision that firms have to make. It is therefore important for policy to be directed at improving the information environment. The simple and multiple regression test used to analysis the determines of capital structure independent variables and leverage, the multiple regression test results indicate from the period 2004 to 2007, and there is a positive significant relationship between the firm size, asset structure/ tangibility, growth rate, and non tax shield and the degree of leverage at different sign level 1% and 5%. But there is a negative significant relationship between earning rate (ROA) and leverage at sign level 5%. Also the model is significant as overall variables independent variables

and leverage at highly significant at level 1%. Finally, the results show there is no significant relationship between the number of age firm, assets structure / liability and business risk as independent variables and degree of leverage. The study provides useful recommendations for policy direction and management of these firms through emphasis on the facilitation of equity capital since it provides a base for further borrowing, reduces businesses' sensitivity to economic cycles. There could also be policies intended to encourage establishing financing schemes to assist firms in specific industries. There is a need to develop validated databases as more data becomes available in future. Using such databases can help examining and identifying additional variables that could influence the financing behavior of Jordanian companies. Finally, focus should be placed on the ownership structure of Jordanian companies to examine how firms make their financing decisions.

ملخص

تقوم هذه الدراسة على تحليل القوة التفسيريه لبعض النظريات الحديثه للهيكل الأمثل لرأس المال، حيث تحاول هذه الدراسة فحص محددات هيكل رأس المال مثل (عمر الشركة، حجم الشركة، هيكل الأصول (السيولة – الملموسة)، مخاطر الأعمال، معدل النمو، معدل الايرادات (العائد على الأصول) والضريبه كمتغيرات مستقله مع درجة الدين التشغيلي وذلك للشركات الصناعية الأردنية المدرجة في سوق عمان المالي للفترة مابين ٢٠٠٤ ولغاية ٢٠٠٧. تركزت نتائج هذه الدراسة حول هيكل رأس المال في الشركات الصناعية الأردنية من حيث اصدار هيكل رأس المال ومحدداته وأهمية ذلك في القرار المالي الاستراتيجي الذي تتخذه الشركة بالاضافه الى أهميته في الاشراف وتحسين بيئة المعلومات. تم استخدام اختبار الانحدار البسيط والمتعدد لتحليل محددات هيكل رأس المال كمتغيرات مستقله مع الدين وتضمنت نتائج الانحدار المتعدد وذلك للفترة مابين ٢٠٠٤ ولغاية ٢٠٠٧ وجود علاقة ايجابية ذو دلالة احصائيه مابين حجم الشركة ، هيكل الأصول (الملموسه)، معدل نمو والضريبه مع درجة الدين وذلك عند مستويات مختلفه مابين ١% و٥%، كما أظهرت وجود علاقة سالبه وذو دلالة احصائيه مابين العائد على الأصول ودرجة الدين عند مستوى دلالة ٥%، أظهر النموذج علاقة ذو دلالة احصائيه بين المتغيرات المستقله مجتمعه ودرجة الدين عند مستوى دلالة مرتفع ١%. أخيرا، أظهرت النتائج عدم وجود علاقة ذو دلالة احصائيه مابين (عمر الشركة، هيكل الأصول (السيوله) ومخاطر الشركة كمتغيرات مستقله مع درجة الدين. يوصي الباحث بضرورة الاهتمام في اتجاه السياسة وادارتها في الشركات من خلال التاكيد على التسهيلات في ملكية رأس المال وخاصة أنها تؤثر على الأقتراض، تقليل حساسية الأعمال للدورات الأقتصادية،

بالاضافه الى أن السياسات تميل للتشجيع على تأسيس مخططات مالية تساعد الشركات في بعض الصناعات المحددة، بالاضافه الى الحاجة الى تطوير شرعية وقوة قاعدة البيانات بشكل يعكس مدى توفرها في المستقبل، حيث أن استخدام هذه البيانات تساعد في تحديد وفحص عدد أضافي من المتغيرات التي من الممكن أن تؤثر على السلوك المالي في الشركات الاردنية. أخيرا، يجب التركيز على هيكل الملكية للشركات الأردنية وذلك لفحص كيفية قيام الشركة باتخاذ القرارت المالية.

Operational Definitions

Capital Structure: the concept of optimal capital structure is expressed by (Myers, 1984, pp. 575-592) and (Myers & Majluf, 1984, pp. 187-221) based on the notion of asymmetric information. The existence of information asymmetries between the firm and likely finance providers causes the relative costs of finance to vary among different sources of finance**.**

Leverage: apart from identifying the determinants of capital structure an important issue is defining what is meant by capital structure or leverage (Doukas & Pantzalis, 2003, p. 59) and (Mittoo & Zhang, 2005) amongst others define leverage as long-term debt scaled by total debt plus market value of equity.

Ownership Structure: (Berle & Means, 1932) initially developed the agency theory and they argued that there is an increase in the gap between ownership and control of large organizations arising from a decrease in equity ownership in theory, shareholders of a company of the only owners and the duty of top management should be solely to ensure that shareholders interests' are met. In other words, the duty of top managers is to manage the company in such a way that returns to shareholders are maximized thereby increasing the profit figures and cash flows (Elliot, 2002)

Behavior Finance: in studies of (Kahneman & Tversky, 1979, p. 263) who contributed most in development of behavioral finance, they present their findings which they found over various samples on decision making in the field of experimental psychology. Starting from the results obtained in studies of Kahneman and Tversky, individuals tend to avoid

distress and regret which likely occur as a result of a wrong decision according to the approach which is called "prospect theory". This finding is a result which contradicts rationality-based descriptions of the traditional approach of risk assumption on risk yield relation. Tendency of "avoiding from regret" which is shown frequently by decision makers may be expressed by the finding that regret pain is stronger than the pleasure caused by feeling of pride.

Introduction

An ongoing debate in corporate finance concerns the question of a firm's optimal capital structure. Specifically, is there a way of dividing a firm's capital into debt and equity so as to maximize the value of the firm?

Corporate capital structure remains a controversial issue in modern corporate finance. Directors to make decision on capital structure should make a choice between debt and equity. Many studies were carried out on description of factors influencing capital structure decisions since Modigliani-Miller as an expression of a choice between debt and equity. As a result of these studies based on rationality within the framework of traditional finance, different theories were seen regarding description of capital structure in parallel with change in expectations and preferences of firm directors and shareholders. I may collect descriptions of traditional finance on formation of capital structure mainly in three groups: Trade-off Theory, Agency Theory and Pecking Order Theory.

The static trade-off theory of capital structure (also referred to as the tax based theory) states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant (e.g., Baxter, 1967, pp. 395-403 and Altman, 2002). In view of this theory, issuing equity means moving away from the optimum and should therefore be considered bad news. According to (Myers, 1984, p. 575), firms adopting this theory could be regarded as setting a target debt-to-value ratio with a gradual attempt to

achieve it. (Myers, 1984, p. 578), however, suggests that managers will be reluctant to issue equity if they feel it is undervalued in the market.

Pecking order theory (also referred to as the information asymmetry theory) proposed by Myers states that firms prefer to finance new investment, first internally with retained earnings, then with debt, and finally with an issue of new equity. Myers argues that an optimal capital structure is difficult to define as equity appears at the top and the bottom of the 'pecking order'. Internal funds incur no flotation costs and require no disclosure of the firm's proprietary financial information that may include firm's potential investment opportunities and gains that are expected to accrue as a three result of undertaking such investments. The agency cost theory of capital structure states that an optimal capital structure will be determined by minimizing the costs arising from conflicts between the parties involved. (Jensen & Meckling, 1976, p. 305) argue that agency costs play an important role in financing decisions due to the conflict that may exist between shareholders and debt holders. If companies are approaching financial distress, shareholders can encourage management to take decisions, which, in effect, expropriate funds from debt holders to equity holders. Sophisticated debt holders will then require a higher return for their funds if there is potential for this transfer of wealth. Debt and the accompanying interest payments, however, may reduce the agency conflict between shareholders and managers.

The remainder of the paper is organized as follows: Section two provides a problem definition Section three discusses the hypotheses employed and Section four present importance and contribution Section five discuss theoretical framework and previous studies Section six population and sample of study Section seven present research design and hypotheses Section eight presents and discusses the empirical results. Section nine concludes the discussion and provides some implications based on the findings of the study.

Problem Definition

Since the seminal (Modigliani & Miller, 1958, pp. 261-297) paper showing that subject to some restrictive conditions the impact of financing on the value of the firm is irrelevant, the literature on capital structure has been expanded by many theoretical and empirical contributions.

Three principal theories aim to explain corporate leverage and it's dynamic. According to the traditional (or static) tradeoff theory, firms select optimal capital structure by comparing the tax benefits of the debt, the costs of bankruptcy and the costs of agency of debt and equity, that is to say the disciplinary role of debt and the fact that debt suffers less from informational costs than outside equity. So optimal leverage minimizes cost of capital and maximizes firm value.

In the static approach of the theory of the trade off, it is a question of explaining the target debt ratio, the debt ratios of the companies are supposed to converge towards the target debt ratio, but the process of convergence is not explicitly taken into account. The empirical tests are carried out only on samples out of instantaneous cut. Dynamic approaches explicitly model the process of adjustment dynamic of the debt ratio towards the target debt ratio. This approach raises several questions: do the companies have they a target debt ratio? If the answer is positive, which is the speed of adjustment towards this ratio? Lastly, which are the determinants this speed of adjustment?

This study examines the determinants of capital structure of industrial Jordanian firms. A study on the determinants of the capital structure is an important research area that needs to be explored.

Hypotheses

This study has tested the following null hypotheses on relation between the defined variables and capital structure of listed companies:

H01: There is no significant relation between the age of the firm and financial leverage in the Jordanian industrial companies.

H02: There is no significant relation between the firm size and financial leverage in the Jordanian industrial companies.

H03: There is no significant relation between the asset structure (tangibility) and financial leverage in the Jordanian industrial companies.

H04: There is no significant relation between the asset structure (liquidity) and financial leverage in the Jordanian industrial companies.

H05: There is no significant relation between the earning (profitability) and financial leverage in the Jordanian industrial companies.

H06: There is no significant relation between the firm growth and financial leverage in the Jordanian industrial companies.

H07: There is no significant relation between the business risk and financial leverage

H08: There is no significant relation between the non tax shield and financial leverage in the Jordanian industrial companies.

Importance and Contribution of this Study

Capital Structure is a mix of debt and equity capital maintained by a firm. Capital structure is also referred as financial structure of a firm. The capital structure of a firm is very important since it related to the ability of the firm to meet the needs of its stakeholders. (Modigliani & Miller ,1958) were the first ones to landmark the topic of capital structure and they argued that capital structure was irrelevant in determining the firm's value and its future performance. (Modigliani & Miller ,1963,pp.443-453) showed that their model is no more effective if tax was taken into consideration since tax subsidies on debt interest payments will cause a rise in firm value when equity is traded for debt.

Capital structure is very important decision for firms so that they can maximize returns to their various stakeholders. Moreover an appropriate capital structure is also important to firm as it will help in dealing with

the competitive environment within which the firm operates. (Modigliani & Miller, 1958) argued that an 'optimal' capital structure exists when the risks of going bankrupt is offset by the tax savings of debt. Once this optimal capital structure is established, a firm would be able to maximize returns to its stakeholders and these returns would be higher than returns obtained from a firm whose capital is made up of equity only (all equity firm).

It can be argued that leverage is used to discipline mangers but it can lead to the demise of the firm. (Modigliani & Miller, 1963) argued that the capital structure of a firm should compose entirely of debt due to tax deductions on interest payments. Therefore, they argue that that an optimal capital structure can only be attained if the tax sheltering benefits provided an increase in debt level is equal to the bankruptcy costs. In this case, managers of the firms should be able to identify when this optimal capital structure is attained and try to maintain it at the same level. This is the only way that the financing costs and the weighted average cost of capital (WACC) are minimized thereby increasing firm value and corporate performance.

Corporate sector growth is vital to economic development. The issue of finance has been identified as an immediate reason why businesses in developing countries fail to start or to progress. Growing SMEs will also contribute to expanding the size of the directly productive sector in the economy; generating tax revenue for the government; and, all in all, facilitating poverty reduction through fiscal transfers and income from employment and firm ownership (Prasad et al., 2001). Given the level of total capital necessary to support a company's activities, is there a way of dividing up that capital into debt and equity that maximizes current firm value? And, if so, what are the critical factors in setting the leverage ratio for a given company?

There are different theories of capital structure. David Durand propounded the net income approach of capital structure in 1952 (Durand, 1952). This approach states that firm can increase its value or lower the cost of capital by using the debt capital. Net operating income approach is converse to this approach. This approach contends that the

value of a firm and cost of the capital are independent to capital structure. Thus, the firm can not increase its value by judicial mixture of debt and equity capital. These are two extreme approaches to capital structure.

Solomon developed the intermediate approach to the capital structure in 1963. This traditional theory of capital structure pleads that value of the firm goes increase to a certain level of debt capital and after then it tends to remain constant with a moderate use of debt capital, and finally value of the firm decreases (Solomon, 1963). Thus, this theory holds the concept of optimal capital structure.

Theoretical Framework

Our discussion of the literature on capital structure first considers definitions and the general theory of capital structure. This is followed by a review of the empirical literature on the determinants of capital structure choice.

Theory on capital structure

Capital structure is defined as the specific mix of debt and equity a firm uses to finance its operations. Four important theories are used to explain the capital structure decisions. These are based on asymmetric information, tax benefits associated with debt use, bankruptcy cost and agency cost. The first is rooted in the pecking order framework, while the other three are described in terms of the static trade-off choice. These theories are discussed in turn. For example, an internal source of finance where the funds provider is the firm will have more information about the firm than new equity holders, thus these new equity holders will expect a higher rate of return on their investments. This means it will cost the firm more to issue fresh equity shares than to use internal funds. Similarly, this argument could be provided between internal finance and new debt-holders. The conclusion drawn from the asymmetric information theories is that there is a certain pecking order or hierarchy of firm preferences with respect to the financing of their investments (Myers &Majluf, 1984).

This "pecking order" theory suggests that firms will initially rely on internally generated funds, i.e., undistributed earnings, where there is no existence of information asymmetry; they will then turn to debt if additional funds are needed, and finally they will issue equity to cover any remaining capital requirements. The order of preferences reflects the relative costs of various financing options. Clearly, firms would prefer internal sources to costly external finance (Myers & Majluf, 1984). Thus, according to the pecking order hypothesis, firms that are profitable and therefore generate high earnings are expected to use less debt capital than those that do not generate high earnings.

Capital structure of the firm can also be explained in terms of the tax benefits associated with the use of debt. Others observe that tax policy has an important effect on the capital structure decisions of firms. Corporate taxes allow firms to deduct interest on debt in computing taxable profits. This suggests that tax advantages derived from debt would lead firms to be completely financed through debt. This benefit is created, as the interest payments associated with debt are tax deductible, while payments associated with equity, such as dividends, are not tax deductible. Therefore, this tax effect encourages debt use by the firm, as more debt increases the after tax proceeds to the owners (Modigliani & Miller, 1963; Miller, 1977). It is important to note that while there is corporate tax advantage resulting from the deductibility of interest payment on debt; investors receive these interest payments as income. The interest income received by the investors is also taxable on their personal account, and the personal income tax effect is negative. (Miller, 1977) and (Myers ,2001) argue that as the supply of debt from all corporations expands, investors with higher and higher tax brackets have to be enticed to hold corporate debt and to receive more of their income in the form of interest rather than capital gains. Interest rates rise as more and more debt is issued, so corporations face rising costs of debt relative to their costs of equity.

(Haugen & Senbet, 1978, p. 383) argue that bankruptcy costs must be trivial or nonexistent if one assumes that capital market prices are competitively determined by rational investors. Customer dependency on

a firm's goods and services and the high probability of bankruptcy affect the solvency of firms (Titman, 1984). If a business is perceived to be close to bankruptcy, customers may be less willing to buy its goods and services because of the risk that the firm may not be able to meet its warranty obligations. Also, employees might be less inclined to work for the business or suppliers less likely to extend trade credit. These behaviors by the stakeholders effectively reduce the value of the firm.

Therefore, firms that have high distress cost would have incentives to decrease outside financing so as to lower these costs. (Warner, 1977) maintains that such bankruptcy costs increase with debt, thus reducing the value of the firm. According to (Modigliani & Miller, 1963), it is optimal for a firm to be financed by debt in order to benefit from the tax deductibility of debt. The value of the firm can be increased by the use of debt since interest payments can be deducted from taxable corporate income, but increasing debt results in an increased probability of bankruptcy. Hence, the optimal capital structure represents a level of leverage that balances bankruptcy costs and benefits of debt finance.

The greater the probability of bankruptcy a firm faces as the result of increases in the cost of debt, the less debt they use in the issuance of new capital (Pettit & Singer, 1985, p.47). The use of debt in the capital structure of the firm also leads to agency costs. Agency costs arise as a result of the relationships between shareholders and managers, and those between debt-holders and shareholders (Jensen & Meckling, 1976). (Harris & Raviv, 1990, p.321) confirm that managers have an incentive to continue a firm's current operations even if shareholders prefer liquidation.

On the other hand, the conflict between debt-holders (creditors) and shareholders is due to moral hazard. Agency theory suggests that information asymmetry and moral hazard will be greater for smaller firms. According to (Jensen & Meckling, 1976), the conflict between debt-holders and equity-holders arises because debt contract gives equity-holders an incentive to invest sub optimally.

The agency costs of debt can be resolved by the entire structure of the financial claim. (Barnea et al., 1980) argue that the agency problems associated with information asymmetry, managerial (stockholder) risk incentives and forgone growth opportunities can be resolved by means of the maturity structure and call provision of the debt. For example, shortening the maturity structure of the debt and the ability to call the bond before the expiration date can help reduce the agency costs of underinvestment and risk shifting. (Barnea et al., 1980) also demonstrate that both features of the corporate debt serve as identical purposes in solving agency problems.

Behavioral Finance and Capital Structure Decisions

Traditional finance approach was built on three main concepts: (1) Rational Behavior, (2) CAPM (Capital Asset Pricing Model), (3) Market Efficiency (Shefrin, 2001, p.10). Behavioral Finance approach, however, is an approach which also considers influence of psychological factors in financial decisions. This approach allows considering basic concepts of traditional finance with psychological factors. This helps decision makers in understanding and expressing casual processes including influence of emotional processes on these decisions. It is not compulsory for financial decisions to be made by directors which are also to be affected by psychological factors to overlap rationality-based expectations of both the market and others concerned with business. The fact that decision makers often diverge from rational evaluation is a case known for a long time. (Olsen's , 1998, p. 18) study includes a very long list of causes in this respect. This detection of behavioral finance may cause the directors who seek optimal capital structure to show a behavior that we may called as "herd behavior" in capital structure decisions. Thus, since they will act with their group, digesting a possible failure or wrong decision will be easier in comparison with digesting a failure in case of avoiding the herd.

Previous Empirical Evidence

(Boodhoo, 2009) there have always been controversies among finance scholars when it comes to the subject of capital structure. So far,

researchers have not yet reached a consensus on the optimal capital structure of firms by simultaneously dealing with the agency problem. This paper provides a brief review of literature and evidence on the relationship between capital structure and ownership structure. The paper also provides theoretical support to the factors (determinants) which affects the capital structure.

(Mehmet & Eda, 2009) they tested whether average leverage level of sector and leverage level of sector leader are effective on capital structure decisions of selected firms and sectors listed in ISE. We depended on the Approach of Behavioral Finance to this matter as a supplementary approach of traditional finance to capital structure. In respect of its influence on leverage levels of the firms in four sector we addressed for the period of 1999- 2006 (White Goods and Electronic, Banking, Cement, Paper and Packing), while sector averages are effective at a meaningful extent in white goods sector, it was seen that it affects leverage level of sector leader considerably. In the study we carried out by using panel data analysis method, when we consider the firms we addressed as a whole without discrimination in sector-specific terms, however, it was seen that both sector average and sector leader display a positive relation with leverage level of firms with a significance of 10%.

(Joshua, 2008) this study compares the capital structures of publicly quoted firms, large unquoted firms, and small and medium enterprises (SMEs) in Ghana. The results did not show significant difference between the capital structures of publicly quoted firms and large unquoted firms. The results reveal that short-term debt constitutes a relatively high proportion of total debt of all the sample groups. The regression results indicate that age of the firm, size of the firm, asset structure, profitability, risk and managerial ownership are important in influencing the capital structure decisions of Ghanaian firms. For the SME sample, it was found that factors such as the gender of the entrepreneur, export status, industry, location of the firm and form of business are also important in explaining the capital structure choice

(Fakher, et al, 2005) this paper provides further evidence of the capital structure theories pertaining to a developing country and examines the impact of the lack of a secondary capital market by analyzing a capital structure question with reference to the Libyan business environment. The results of cross-sectional OLS regression show that both the static trade-off theory and the agency cost theory are pertinent theories to the Libyan companies' capital structure whereas there was little evidence to support the asymmetric information theory. The lack of a secondary market may have an impact on agency costs, as shareholders who are unable to offload their shares might exert pressure on management to act in their best interests.

(Keshar. & Baral, 2004) in this paper, an attempt has been made to examine the determinants of capital structure -size, business risk, growth rate, earning rate, dividend payout, debt service capacity, and degree of operating leverage-of the companies listed to Nepal Stock Exchange Ltd. as of July 16, 2003. Eight variables multiple regression model has been used to assess the influence of defined explanatory variables on capital structure. In the preliminary analysis, manufacturing companies, commercial banks, insurance companies, and finance companies were included. However, due to the unusual sign problem in the constant term of the model, manufacturing companies were excluded in final analysis. This study shows that size, growth rate and earning rate are statistically significant determinants of capital structure of the listed companies.

(Wolfgang & Roger, 2003) they test leverage predictions of the trade-off and pecking order models using Swiss data. At an aggregate level, leverage of Swiss firms is comparatively low, but the results depend crucially on the exact definition of leverage. Confirming the pecking order model but contradicting the trade-off model, more profitable firms use less leverage. Firms with more investment opportunities apply less leverage, which supports both the trade-off model and a complex version of the pecking order model. Leverage is also closely related to tangibility of assets and the volatility of a firm's earnings. Finally, estimating a dynamic panel model, we find that Swiss

firms tend to maintain target leverage ratios. The results are robust to several alternative estimation techniques.

(Philippe, et al, 2003) in this paper, they analyze the determinants of the capital structure for a panel of 106 Swiss companies listed in the Swiss stock exchange. Both static and dynamic tests are performed for the period 1991-2000. It is found that the size of companies, the importance of tangible assets and business risk are positively related to leverage, while growth and profitability are negatively associated with leverage. The sign of these relations suggest that both the pecking order theory and trade off hypothesis are at work in explaining the capital structure of Swiss companies, although more evidence exists to validate the latter theory. The analysis also shows that Swiss firms adjust toward a target debt ratio, but the adjustment process is much slower than in most other countries. It is argued that reasons for this can be found in the institutional context.

(Dev, et al, 1997) in the increasingly turbulent environment facing business the strategic management of the firm has become more predominate. However to date, the linkage between strategic management and financial management of the firm has largely not been explored. This research utilizes two different methods of analysis to confirm the linkage between capital structure and strategic posture of the firm. Specifically, managers were found to structure the selection of debt and capital intensity in a means consistent with the strategic goal of long-run control of systematic risk.

(Sheridan & Roberto, 1988) this paper analyzes the explanatory power of some of the recent theories of optimal capital structure. The study extends empirical work on capital structure theory in three ways. First, it examines a much broader set of capital structure theories, many of which have not previously been analyzed empirically. Second, since the theories have different empirical implications in regard to different types of debt instruments, the authors analyze measures of short-term, long-term, and convertible debt rather than an aggregate measure of total debt. Third, the study uses a factor-analytic technique that mitigates the measurement problems encountered when working with proxy variables.

The studies on developing countries have not even agreed on the basic facts. They found that firms in developing countries made significantly more use of external finance to finance their growth than is typically the case in the industrialized countries. They also found that firms in developing countries rely more on equity finance than debt finance. These findings seem surprising given that stock markets in developing countries are invariably less well developed than those in the industrial countries, especially for equities. However, this paper provides further evidence of the capital structure theories and recent work has benefited from the advances in studies. They provide further evidence that the institutional framework is important when analyzing the determinants of the capital structure.

Population and Sample Selection

The empirical investigation on the determinants of capital structure sampled industrial of firms. All firms that have been listed on the Amman Stock Exchange (ASE) during the four-year period, 2004–2007, were sampled. Ninety five firms qualified to be included in the study sample. The data for the empirical analysis were derived from the financial statements of these firms.

Research Design and Hypotheses

1. Data Specification

Following from these theoretical standpoints, a number of empirical studies have identified firm-level characteristics that affect the capital structure of firms. Among these characteristics are age of the firm, size of the firm, asset structure, profitability, growth, firm risk and Non-debt tax shield.

1. Age of Firm

Age of the firm is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt; hence age is positively related to debt. If the investment is

profitable, shareholders will collect a significant share of the earnings, but if the project fails, then the creditors have to bear the consequences (Myers, 2001,pp.81-102).

To overcome problems associated with the evaluation of creditworthiness, (Diamond ,1989) suggests the use of firm reputation. (Petersen & Rajan 1994,p.3-83) show that leverage decreases with age of the firm, although they cite agency issues as a potential explanation, age of the firm may also proxy for lower information asymmetries. As firms grow older more information regarding their future viability becomes available. Lower information asymmetries imply higher leverage. Bondholders would be more likely to lend to firms they know more about than lending to firms they know less about.

2. *Firm Size*

Size has been viewed as a determinant of a firm's capital structure. Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Wald, 1999, p.161). Smaller firms, on the other hand, may find it relatively more costly to resolve information asymmetries with lenders, thus, may present lower debt ratios (Castanias, 1983). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency costs associated with debt. Therefore, larger firms will have higher debts. Another explanation for smaller firms having lower debt ratios is if the relative bankruptcy costs are an inverse function of firm size (Titman &Wessels, 1988,pp.1-19). It is generally believed that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms, as shown in (Prasad et al. 2001). (Castanias ,1983) also states that if the fixed portion of default costs tends to be large, then marginal default cost per dollar of debt may be lower and increase more slowly for larger firms.

Facts about larger firms may be taken as evidence that these firms are less risky (Kim & Sorensen, 1986, p. 335). (Cosh & Hughes, 1994) add that if operational risk is inversely related to firm size, this should rather predispose smaller firms to use relatively less debt. Empirical

evidence on the relationship between size and capital structure supports a positive relationship. Several works show a positive relationship between firm sizes and leverage (Kim et al., 1998; Al-Sakran, 2001, Hovakimian et al., 2004, p. 517). Their results suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock.

3. Asset Structure

The asset structure of a firm plays a significant role in determining its capital structure. The degree to which the firm's assets are tangible should result in the firm having greater liquidation value (Titman & Wessels, 1988). (Bradley et al., 1984) assert that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. It is believed that debt may be more readily used if there are durable assets to serve as collateral (Wedig et al., 1988, p. 337). It is further suggested that bank financing will depend upon whether the lending can be secured by tangible assets (Storey 1994; Berger & Udell 1998).

Empirical evidence suggests a positive relationship consistent with theoretical argument between asset structure and leverage for the firms (Bradley et al., 1984; Wedig et al., 1988; Rajan & Zingales, 1995; Shyam-Sunder & Myers, 1999; Hovakimian et al., 2004). However, found a significant and negative coefficient between depreciation expense as a percentage of total assets and financial leverage. Other studies specifically suggest a positive relationship between asset structure and long-term debt, and a negative relationship between asset structure and short-term debt.

4. Profitability

The relationship between firm profitability and capital structure can be explained by the pecking order theory (POT) discussed above, which holds that firms prefer internal sources of finance to external sources. The order of the preference is from the one that is least sensitive (and least risky) to the one that is most sensitive (and most risky) that arise because of asymmetric information between corporate insiders and less

well-informed market participants (Myers, 2001). By this token, profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). (Murinde et al. ,2004) observe that retentions are the principal source of finance. (Titman & Wessels, 1988) and agree that firms with high profit rates, all things being equal, would maintain relatively lower debt ratios since they are able to generate such funds from internal sources.

Empirical evidence from previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and capital structure. (Cassar & Holmes, 2003), (Esperança et al., p. 62, 2003), and (Hall et al., 2004, p. 711) also suggest negative relationships between profitability and both long-term debt and short-term debt ratios. (Petersen & Rajan, 1994), however, found a significantly positive association between profitability and debt ratio.

5. *Firm Growth*

Growth is likely to place a greater demand on internally generated funds and push the firm into borrowing (Hall et al., 2004,pp.711-728). Firms with high growth will capture relatively higher debt ratios. In the case of small firms with more concentrated ownership, it is expected that high growth firms will require more external financing and should display higher leverage. (Heshmati, 2001, p. 199) maintain that growing SMEs appear more likely to use external finance – although it is difficult to determine whether finance induces growth or the opposite (or both). As enterprises grow through different stages, i.e., micro, small, medium and large scale, they are also expected to shift financing sources.

They are first expected to move from internal sources to external sources. There is also a relationship between the degree of previous growth and future growth. (Michaelas et al., 1999) argue that future opportunities will be positively related to leverage, in particular short term leverage.

Empirical evidence seems inconclusive. Some researchers found positive relationships between sales growths and leverage (Titman & Wessels, 1988). Other evidence suggests that higher growth firms use

less debt (Al-Sakran, 2001). (Michaelas et al., 1999) found future growth to be positively related to leverage and long-term debt. (Cassar & Holmes, 2003) and (Hall et al., 2004) showed positive associations between growth and both long-term debt and short-term debt ratios.

6. *Firm Risk*

The level of risk is said to be one of the primary determinants of a firm's capital structure. The tax shelter-bankruptcy cost theory of capital structure determines a firm's optimal leverage as a function of business risk (Castanias, 1983). Given agency and bankruptcy costs, there are incentives for the firm not to fully utilize the tax benefits of 100% debt within the static framework model.

The more likely a firm is exposed to such costs, the greater their incentive to reduce their level of debt within its capital structure. One firm variable that affects this exposure is the firm's operating risk; in that the more volatile the firm's earnings stream, the greater the chance of the firm defaulting and being exposed to such costs. According to (Johnson, 1997, p. 47), firms with more volatile earnings growth may experience more situations in which cash flows are too low for debt service. Kim & Sorensen, 1986) also observe that firms with a high degree of business risk have less capacity to sustain financial risks and thus use less debt.

Despite the broad consensus that firm risk is an important determinant of corporate debt policy, empirical investigation has led to contradictory results. A number of studies have indicated an inverse relationship between risk and debt ratio (Bradley et al., 1984; Titman & Wessels, 1988; Kim et al., 1998). Other studies suggest a positive relationship (Michaelas et al., 1999). (Esperança et al. 2003) also found positive associations between firm risk and both long-term and short-term debt.

7. *Non-Debt Tax Shield*

Numerous empirical studies have explored the impact of taxation on corporate financing decisions in the major industrial countries. Some are concerned directly with tax policy, (Graham, 1999, p.41). (MacKie-

Mason, 1990) studied the tax effect on corporate financing decisions and provided evidence of substantial tax effect on the choice between debt and equity. He concluded that changes in the marginal tax rate for any firm should affect financing decisions.

(Titman & Wessels, 1998) argue that there is also an income effect when investment decisions are made simultaneously with financing decisions. They suggest that increases in allowable investment-related tax shields due to changes in the corporate tax code are not necessarily associated with reduction in leverage at the individual firm level when investment is allowed to adjust optimally. They explain that the effect of such an increase depends critically on the trade off between the "substitution effect" advanced by (DeAngelo & Masulis, 1980, pp. 383-405) and the "income effect" associated with an increase in optimal investment.

Non-debt tax shield like tax deduction for depreciation and investment tax credits are substitutes for the tax benefit of debt financing (DeAngelo &Masulis, 1980). Therefore, the tax advantage of leverage decreases when other tax deduction increases.

2. Specification of the Model

Following from these theoretical standpoints, a number of empirical studies have identified firm-level characteristics that affect the capital structure of firms. Among these characteristics are age of the firm, size of the firm, asset structure, profitability, firm growth, firm risk, non tax shield of the firm may explain their capital structure.

The general form of the model can be specified as:

$$Y_{it} = \alpha + \beta X_{it} + e_{it}$$

With the subscript i denoting the cross-sectional dimension and t representing the time series dimension. The left-hand variable, Y_{it}, represents the dependent variable in the model, which is the firm's debt ratio. X_{it} contains the set of explanatory variables in the estimation model, α is the constant and β represents the coefficients.

The model for the empirical investigation for both quoted and unquoted firms is therefore given as follows:

$$LEV = \beta_0 + \beta_1 AG_{it} + \beta_2 SZ_{it} + \beta_3 AST_{it} + \beta_4 ASL_{it} + \beta_5 PR_{it} + \beta_6 GR_{it} + \beta_7 BR_{it} + \beta_8 TX_{it} +$$

Where:

LEV_{it} = total liabilities divided by total assets for firm i in time t

AG_{it} = number of years in business

SZ_{it} = the size of the firm (total assets) for firm i in time t

AST_{it} = tangible fixed assets + stock divided by total assets for firm i in time t

ASL_{it} = cash divided by total assets for firm i in time t

PR_{it} = earnings before interest and taxes divided by total assets for firm i in time t

GR_{it} = market capitalization divided by equity for firm i in time t

BR_{it} = sales divided by operating income for firm i in time t

TX_{it} = depreciation divided by total assets for firm i in time t

e = the error term

Table (1): Abstract of Measures of Capital Structure Determinants.

Determinants	Measures	Some References
Age	Date of Birth	Petersen & Rajan, 1994; Michaleas *et al.*, 1999
Size	Ln(Total Sales) Ln(Total Assets	Holmes, 2003; Panno, 2003; Deesomsak 2004; Akhtar, 2005; Fattouh *et al.,* 2005; Gaud *et al.*, 2005 Song, 2005
Asset Structure (Tangibility)	Fixed Assets + Stock/Total Assets	Titman & Wessels 1988; Gaud *et al.,*2005

Determinants	Measures	Some References
Asset Structure (Liquidity)	Cash∕ Total Assets	Titman & Wessels, 1988; Panno,2003; Akhtar 2005
Profitability	EBIT/ Total Assets	Cassar & Holmes, 2003; Deesomsak, 2004; Voulgaris *et al.*, 2004; Fattouh *et al.*, 2005; Gaud *et al.*, 2005; Song, 2005
Risk	Sales/Operating Income	Cassar & Holmes, 2003; Deesomsak, 2004; Gaud *et al.*, 2005; Song, 2005
Growth	Market Capitalization / Equity	Cassar & Holmes, 2003; Akhtar, 2005; Fattouh *et al.*, 2005
Non-Debt Tax Shield	Depreciation/ Total Assets	Sogorb Mira, 2002; Deesomsak, 2004; Akhtar, 2005; Fattouh *et al.*, 2005

Data and main Empirical Results

The empirical investigation on the determinants of capital structure sampled 59 Jordanian industrial firms' .All firms that have been listed on the Amman Stock Exchange (ASE) during the four-year period, 2004-2007, were sampled.

Tables (2 and 3) present the descriptive statistics for the 59 sample of firms, and indicates the results from 2004 to 2007,and overall variables observations and show, the average of number age 22 years of firms and standard deviation. 13, and the average firm size 38621072 and the standard devotion 81057547, and the average of asset structure tangibility. 61 standard deviation. 36 and average asset structure liability. 06, standard deviation. 16 and average return on assets. 039, standard devotion. 084 and average growth rate. 019, standard deviation. 018 and average business risk. 11, standard deviation. 66 and average tax. 03, standard deviation .04 and average leverage. 31, standard deviation. 20.

Table (2): Summary of Descriptive Statistics.

year	description	N-AGE	FIRM- SIZE	AS-TA	AS-LI
2004	Mean	21.3898	31863848	.7008	.0664
	N	59	59	59	59
	Std.Dev	13.74399	68438482	.61083	.09242
2005	Mean	292.3898	38683999	.5967	.0528
	N	59	59	59	59
	Std.Dev	13.74399	80168323	.24016	.08176
2006	Mean	23.4068	28916691	.5916	.0862
	N	59	59	59	59
	Std.Dev	13.75665	78414997	.23082	.30557
2007	Mean	24.4068	45019749	.5873	.0425
	N	59	59	59	59
	Std.Dev	13.75665	96297776	.23147	.05166
2004 TO 2007	Mean	22.8983	38621072	.6191	.0620
	N	236	236	236	236
	Std.Dev	13.70876	81057547	.36734	.16652

Table (3): Summary of Descriptive Statistics.

year	description	ROA	GR	BR	Non-TAX	Lev
2004	Mean	4.1544	1.8900	5.4929	.0492	.3404
	N	59	59	59	59	59
	Std.Dev	7.23285	1.77456	21.38384	.08371	.25338
2005	Mean	4.6478	2.0942	14.3182	.0362	.2923
	N	59	59	59	59	59
	Std.Dev	8.70676	1.89150	37.19574	.02937	.18709
2006	Mean	3.0427	1.9532	24.3959	.0330	.3039
	N	59	59	59	59	59
	Std.Dev	8.38327	1.98857	120.28719	.02294	.18416
2007	Mean	3.8214	2.0401	1.0510	.0286	.3286
	N	59	59	59	59	59
	Std.Dev	9.45435	1.86252	23.55797	.02177	.19098
2004 TO 2007	Mean	3.9166	1.9944	11.3145	.0367	.3163
	N	236	236	236	236	236
	Std.Dev	8.44810	1.87045	66.20817	.04742	.20548

Table (4) present the analysis for simple regression between the variables determinates and degree of operating leverage in year 2004, and indicates there is a positive significant relationship between the variable asset structure tangibility and leverage of firms with t-test 3.973; with p-value of (.000), adjusted R^2 .203. The result is highly significant at ά. = 1%, it means the degree to which the firms' assets are tangible and generic should result in the firm having a greater liquidation value Liquidity ratios may have a mixed impact on the capital structure decision. Companies with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short-term obligations. On the other hand firms with greater liquidities may use them to finance their investments.

There is a negative significant relationship between the return on assets and leverage of firms, it means if firm increase in leverage, the ROA ratio decrees with t- test -3.291 with p-value of (.002), adjusted R^2 .145. The result is highly significant at ά. = 1% and also there is a positive relationship between the tax and leverage with t- test 2.264 with p-value of (.027), adjusted R^2 .066. The result is highly significant at ά. = 5%, it means Non-debt tax shield like tax deduction for depreciation and investment tax credits are substitutes for the tax benefit of debt financing. Therefore, the tax advantage of leverage decreases when other tax deduction increases. Finally, the multiple regression indicate there is a significant relationship between overall variables of determines of capital structure degree of operating leverage with F-test 5.296; with p-value of (.000), adjusted R^2 .372. The result is highly significant at ά. = 1%.

Table (4): Results of OLS and Multiple Regression Test Analysis over Different Measures of Leverage in year 2004.

year	Index	Dependent Variable : Leverage								
		N-AGE	F-SIZE	AS-TA	AS-LI	ROA	GR	BR	Non-TAX	All-V
2004	R	.007	.098	.466	.059	.400	.122	.064	.287	.677
	R^2	.000	.010	.217	.003	.160	.015	.004	.083	.459
	Adj-R^2	.018	-.008	.203	-.014	.145	-.002	-.013	.066	.372
	F- test	-	-	-	-	-	-	-	-	5.296
	SIG	.961	.459	.000***	.657	.002***	.358	.631	.027**	.000***
	T-test	-.049	.745	3.973	-.446	-3.291	.926	-.484	2.264	-
	Constant (B)	.343	.329	.205	.351	.399	.308	.345	.298	.196
	Constant (SE)	.062	.037	.045	.045	.035	.048	.034	.037	.064

* Significant at $p < 0.10$ ** Significant at $p < 0.05$ *** Significant at $p < 0.01$

Table (5) present the analysis for simple regression between the variables determinates and degree of operating leverage in year 2005, and indicates there is a positive significant relationship between the firm size and leverage of firms with t-test 1.835; with p-value of (.072), adjusted R^2 .039. The result is significant at ά. = 10%, it means that the smaller firms to have lower leverage ratios is that smaller firms are more likely to be liquidated when they are in financial distress (Ozkan, 2001). Finally, the multiple regression results indicate there is a significant relationship between overall variables of determines of capital structure and degree of operating leverage with F-test 2.736; with p-value of (.014), adjusted R^2 .193. The result is significant at ά. = 5%.

Table (5): Results of OLS and Multiple Regression Test Analysis over Different Measures of Leverage in year 2005**.**

	Dependent Variable: Leverage									
year	Index	N-AGE	F-SIZE	AS-TA	AS-LI	ROA	GR	BR	Non-TAX	All-V
2005	R	.034	.236	.210	.099	.088	.093	.030	.091	.552
	R^2	.001	.056	.044	.010	.008	.009	.001	.008	.304
	Adj- R^2	-.016	.039	.027	-.008	-.010	-.009	-.017	-.009	.193
	F- test	-	-	-	-	-	-	-	-	2.736
	SIG	.796	.072*	.110	.457	.507	.482	.621	.491	.014**
	T-test	-.259	1.835	1.623	.749	-.668	.708	-.227	-.693	-
	Constant (B)	.303	.271	.195	.280	.301	.273	.294	.313	.145
	Constant (SE)	.047	.027	.065	.029	.028	.037	.026	.039	.090

*   Significant at p <0.10 ** Significant at p< 0.05 *** Significant at p< 0.01

Table (6) present the analysis for simple and multiple regression between the variables determinates and degree of operating leverage in year 2006 , and indicates there is no significant relationship between the any independent variable and leverage of firms and no significant relationship between overall variables of determines of capital structure and degree of operating leverage.

Table (6): Results of OLS and Multiple Regression Test Analysis over Different Measures of Leverage in year 2006**.**

	Dependent Variable: Leverage									
year	Index	N-AGE	F-SIZE	AS-TA	AS-LI	ROA	GR	BR	Non-TAX	All-V
2006	R	.051	.145	.168	.043	.049	.053	.030	.000	.303
	R^2	.003	.021	.028	.002	.002	.003	.001	.000	.092
	Adj- R^2	-.015	.004	.011	-.016	-.015	-.015	-.017	-.018	-.053
	F- test	-	-	-	-	-	-	-	-	.633
	SIG	.702	.275	.204	.744	.711	.688	.821	.999	.747
	T-test	.385	1.103	1.285	.329	-.373	404	-.227	.001	-
	Constant (B)	.288	.291	.225	.302	.307	.294	.305	.304	.163
	Constant (SE)	.048	.027	.066	.025	.026	.034	.025	.043	.107

*   Significant at p <0.10 ** Significant at p< 0.05 *** Significant at p< 0.01.

Table (7) present the analysis for simple regression between the variables determinates and degree of operating leverage in year 2007, and indicates there is a positive significant relationship between the variable asset structure tangibility and leverage of firms with t-test 2.431; with p-value of (.018), adjusted R^2. 078, the result is significant at ά. = 5%, Companies with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short-term obligations. On the other hand firms with greater liquidities may use them to finance their investments and the positive relationship between growth rate and leverage of firms with t- test 2.594 with p-value of (.012), adjusted R^2 .090. The result is highly significant at ά. = 5%, firms with relatively high growth will tend to issue securities less subject to information asymmetries, i.e. shot-term debt. This should lead to firms with relatively higher growth having more leverage. Finally, multiple regression test used and indicate there is a significant relationship between overall variables of determines of capital structure degree of operating leverage with F-test 2.320; with p-value of (.033), adjusted R^2 .154. The result is significant at ά. = 5%.

Table (7): Results of OLS and Multiple Regression Test Analysis over Different Measures of Leverage in year 2007**.**

year	Index	N-AGE	F-SIZE	AS-TA	AS-LI	ROA	GR	BR	Non-TAX	All-V
2007	R	.123	.054	.306	.105	.042	.325	.048	.099	.520
	R^2	.015	.003	.094	.011	.002	.106	.002	.010	.271
	Adj-R^2	-.002	-.015	.078	-.006	-.016	.090	-.015	-.008	.154
	F- test	-	-	-	-	-	-	-	-	2.320
	SIG	.354	.684	.018**	.428	.754	.012**	.719	.458	.033**
	T-test	-.934	.409	2.431	-.799	-.315	2.594	-.362	-.748	-
	Constant (B)	.370	.324	.180	.345	.332	.261	.329	.353	.188
	Constant (SE)	.051	.028	.066	.032	.027	.035	.025	.041	.094

* Significant at p <0.10 ** Significant at p< 0.05 *** Significant at p< 0.01.

Table (8) present the analysis for simple regression between the variables determinates and degree of operating leverage from year 2004 to 2007, and indicates there is a positive significant relationship between the variable firm size and leverage t-test 1.882; with p-value of (.061), adjusted R^2 .011. The result is highly significant at ά. = 10% , smaller firms to have lower leverage ratios is that smaller firms are more likely to be liquidated when they are in financial distress (Ozkan, 2001) and there is a positive significant relationship between asset structure tangibility and leverage of firms with t-test 5.573; with p-value of (.000), adjusted R^2 .117. The result is highly significant at ά. = 1%, and the negative relationship between the return on assets and leverage of firms, it means if firm increase in leverage , the ROA ratio decrees with t- test -2.264 with p-value of (.025), adjusted R^2 .017. The result is highly significant at ά. = 5%, and a positive significant relationship between the growth rate and leverage with t- test 2.174 with p-value of (.031), adjusted R^2 .016. The result is highly significant at ά. = 5%, it means Applying pecking order arguments, growing firms place a greater demand on the internally generated funds of the firm. Consequentially, firms with relatively high growth will tend to issue securities less subject to information asymmetries, i.e. shot-term debt. This should lead to firms with relatively higher growth having more leverage. Also there is a positive relationship between the tax and leverage with t- test 2.131 with p-value of (.034), adjusted R^2 .015. Therefore, the tax advantage of leverage decreases when other tax deduction increases. The result is highly significant at ά. = 5%, .Finally, multiple regression used and indicate there is a significant relationship between overall variables of determines of capital structure degree of operating leverage with F-test 7.792; with p-value of (.000), adjusted R^2 .188. The result is highly significant at ά. = 1%

Table (8): Results of OLS and Multiple Regression Test Analysis over Different Measures of Leverage in year 2004 to 2007.

Dependent Variable : Leverage										
year	Index	N-AGE	F-SIZE	AS-TA	AS-LI	ROA	GR	BR	Non-TAX	All-V
2004 to 2007	**R**	.028	.122	.342	.010	.146	.141	.037	.138	.464
	R^2	.001	.015	.117	.000	.021	.020	.001	.019	.215
	Adj- R^2	-.003	.011	.113	-.004	.017	.016	-.003	.015	.188
	F- test	-	-	-	-	-	-	-	-	7.792
	SIG	.671	.061*	.000***	.884	.025**	.031**	.572	.034**	.000***
	T-test	-.425	1.882	5.573	.146	-2.264	2.174	-.566	2.131	-
	Constant (B)	.326	.304	.198	.316	.330	.285	.318	.294	.174
	Constant (SE)	.026	.015	.025	.014	.015	.019	.014	.017	.037

*   Significant at p <0.10 ** Significant at p< 0.05 *** Significant at p< 0.01.

Conclusion and Recommendations

The aim of this paper is to analyze the determinants of the capital structure in industrial Jordanian firms. This study adds to the relatively limited literature on the dynamics of the capital structure decision by examining the dynamics of the relationship between leverage and a set of explanatory variables. The analysis is conducted using panel data pertaining to 59 industrial Jordanian companies for the period 2004-2007.

The simple and multiple regression analysis test used in every year and overall years for the relation between every independent variable of determines of capital structure and degree of financial leverage and also used test for the overall independent variables and leverage, and the results indicate for the period 2004 to 2007 there is a positive significant relationship between firm size and leverage at t-test 1.882 at p. 061 at level sign 10%, and positive significant relationship between asset structure – tangibility and leverage at t-test 5.573 at p.000 at level highly sign 1%, there is a negative significant relationship between return on asset and leverage at t-test -2.264 at p.025 at level sign 5%, there is a positive significant relationship between growth rate of firm   and

leverage at t-test 2.174 at p.031 at level sign 5%, there is a positive significant relationship between non- tax and leverage at t-test 2.131 at p.034 at level sign 5%, and the test used as overall independent variables and leverage for all years and result show there is a significant relationship with F-test 7.792 at p .000 at highly level sign 1%. Further, statistically insignificant coefficients associated between business risk, the number of age firms and asset structure liability and leverage for every year and all years.

The study provides useful recommendations for policy direction and management of these firms. Policy makers should place greater emphasis on the facilitation of equity capital since it provides a base for further borrowing, reduces businesses' sensitivity to economic cycles, and provides firms with access to syndicates of private and institutional venture capital suppliers. There could also be policies intended to encourage establishing financing schemes to assist firms in specific industries. Considering that export-oriented firms and limited liability companies have easier access to finance, firms should think about entering the international markets and sole-proprietorships are encouraged to consider more organized forms of business. The lack of high-quality databases might constitute the major barrier on conducting capital structure research in Jordanian. Consequently, there is a need to develop validated databases as more data becomes available in future. Using such databases can help examining and identifying additional variables that could influence the financing behavior of Jordanian companies. Finally, focus should be placed on the ownership structure of Jordanian companies to examine how firms make their financing decisions.

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