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THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND PERFORMANCE OF NON-FINANCIAL FIRMS LISTED IN AMMAN STOCK EXCHANGE

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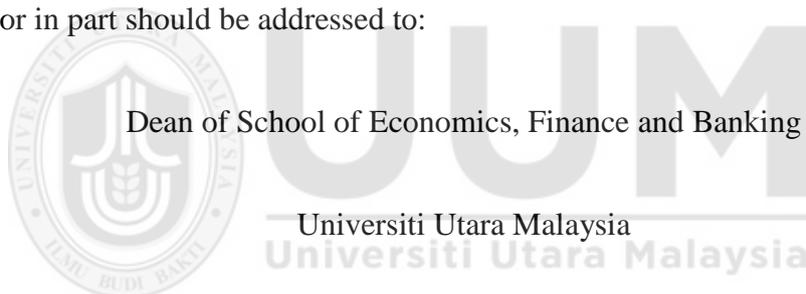
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ABSTRACT

The main objective of the current study is to examine the relationship between capital structure and firm's performance particularly focusing on the Jordanian firms listed on Amman Stock Exchange. The current study uses 95 sample firms from non-financial firms listed on Amman Stock Exchange. The period of study is 5 years (2013-2017). The series of regressions have been shown and the results are reported based on fixed effect model. The findings show that all variables represent capital structure by Long *Term Debt to Total Assets, Total Debt to Total Assets, Size, Sales Growth, Tangibility, and Liquidity* have the relationship with firm's performance represent by *ROA and Tobin's Q*. Total Debt to Total Assets and growth have a positive significant relationship with firm's performance. Meanwhile, The Long-Term Debt to Total Assets and Liquidity show insignificant relationship with firm's performance. Similarly, Tangibility has a significant negative relationship with ROA and Tobin's Q.

Keywords: Capital Structure, Firm's Performance, Non-Financial Firms, Amman Stock Exchange.

ABSTRAK

Objektif utama kajian semasa adalah untuk mengkaji hubungan antara struktur modal dan prestasi firma terutamanya dalam memberi tumpuan kepada firma Jordan yang disenaraikan di Bursa Saham Amman. Kajian semasa menggunakan 95 sampel firma daripada firma bukan kewangan yang disenaraikan di Bursa Saham Amman. Tempoh kajian adalah 5 tahun (2013-2017). Siri regresi telah ditunjukkan dan hasilnya dilaporkan berdasarkan model kesan tetap. Dapatan menunjukkan bahawa semua pembolehubah mewakili struktur modal oleh Hutang Jangka Panjang kepada Jumlah Aset, Jumlah Hutang kepada Jumlah Aset, Saiz, Pertumbuhan, *Tangibility* dan kecairan mempunyai hubungan dengan prestasi firma mewakili *ROA dan Tobin's Q*. Jumlah Hutang kepada Jumlah Aset dan pertumbuhan mempunyai hubungan positif yang signifikan dengan prestasi firma. Sementara itu, Hutang Jangka Panjang kepada Jumlah Aset dan Kecairan menunjukkan hubungan yang tidak penting dengan prestasi firma. Begitu juga, *Tangibility* mempunyai hubungan negatif yang signifikan dengan *ROA dan Tobin's Q*.

Kata kunci: Struktur Modal, Prestasi Firma, Firma Bukan Kewangan, Bursa Saham Amman.

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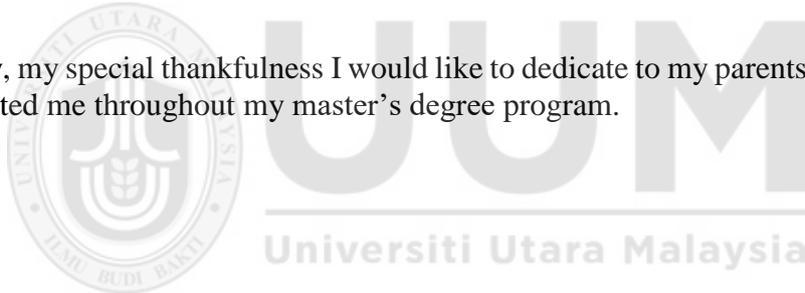
TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CS: Capital Structure

FP: Firm Performance

ASE: Amman Stock Exchange

ROA: Return on Assets

LTDTA: Long-Term Debt to Total Assets

TDTA: Total Debt to Total Assets

Size: Firm Size

Growth: Sales Growth

Tang: Tangibility

LiQ: Liquidity

FA: Fixed Affect

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

The surge of interest amongst shareholders in the dynamic nature of businesses, as well as the growth and evaluation of firm performance (FP), is on the increase. Therefore, monitoring FP using different measurements is vital for business survival and competitiveness (Önel & Gansuwan, 2012). According to Margaritis and Psillaki (2010), a number of studies in the area of financial management have focused on key determinants of FP towards development. Depending on the focus, FP could be linked to the firm's strategies, its capacity to identify and grasp business openings and advancements and the ability to compete and venture into new markets. Firms could also improve their FP by strategically improving their capital structure (CS) and identifying components that could drive performance (Chhaochharia et al., 2016).

Decisions on investment and finance are important strategies for determining the best alternatives for enhancing FP. Business failure can be averted by employing such strategies that involve financing decisions, which can push a firm to higher growth and improved performance. For this reason, appropriate financing decisions are important for the firm to expand its operations and generate higher revenues, which can be translated into higher FP (Ahmed Sheikh & Wang, 2012). One way to measure FP is through the evaluation of differences in share values from the beginning period to the value at the end period (Muzir, 2011). CS is a product of financing decisions, which requires proper optimisation in order to avert corporate failure. The existence of an

optimal CS has continued to pose a challenge to both management and business investors alike. Every personnel responsible for making financial decisions is charged with the objective of maximising wealth and the value of such decisions can be assessed by measuring the influence of the decision on firm's performance (Mwangi, Makau, & Kosimbei, 2014).

The kind of financing decisions employed by a firm to support its daily operations is regarded as its CS. According to Zeitun and Tian (2007), the CS of a firm refers to the proportion of the firm's capital that is obtained from equity or debt. Alkhatib (2012) confirmed that financing decisions have a critical role in driving firms towards greater performance. Firms must make efforts towards ensuring the optimisation of their choices by combining available debt and equity for the purpose of maximising the wealth of shareholders. For the most part, CS is linked to supporting the daily activities and decisions of a firm. Consequently, financing decisions are essential in helping firms to attain improved performance (Alkhatib, 2012). Therefore, the firm must make certain that it chooses the optimal CS because employing an inappropriate CS will result in a high cost of capital and consequently lead to low value of the firm. In contrast, selecting an optimal CS can push firm value up and assist firms to manage the competitive environment by augmenting its operational activities (Al-hmaed et al., 2012).

Dada & Ghazali (2016) and Forbes (2019) stressed that in developing countries, like Jordan, weak economic growth occurs due to lack of adequate capital in terms of equity and debt, which often obstruct the survival and growth of business firms. According to the Companies Control Department (2017), there are fluctuations in the number of registered companies, as a result of the losses suffered by some companies,

which has forced them to shut down and exit from the Amman Stock Exchange (ASE) in recent years. Therefore, to guarantee the maximisation of shareholders' wealth or cost of capital, the firm must ensure the available debt and equity are combined in an optimal manner.

When the right business financing decisions are made, it will influence the overall performance of the firm. Goyal, Rahman, and Kazmi (2013) revealed that there are instances that firms use high debt in order to support their operations, which thereby improves the operations of the firm. However, there are cases whereby the deployment of huge debt is detrimental to the performance because of debt failure. It is therefore vital for a financial manager to evaluate financial regulations and policies of the firm and to evaluate the credibility of the CS of the firm (Dada & Ghazali, 2016). This means that firms may have to employ debt instead of equity in their CS to mitigate the agency cost which arises from ownership separation. According to Barclay et al. (2005), to achieve better performance, it is more advantageous to use debt in the CS as postulated by the trade-off theory or use debt to give a quality signal of firm's value in terms of capacity to use and make repayment, as posited by the pecking order theory.

In previous studies in developed countries, it is empirically proven that the CS decision is influenced by CS theories. According to Alabdullah (2016), the World Bank (2019) and Aljazeera (2019), Jordanian firms face several environment, business and economic development challenges internally which have led to a decline in the firms' performance.

Based on previous studies in developed countries, this study examines the relationship between CS and firms' FP in the Jordanian context. Dasouqi (2017) stated that the

3

main intention of previous studies was to look at the risk factors and their association with FP. In the economy of Jordan, the industrial and service sectors play a vital role, but their performance is influenced by financial restrictions, which thereby affect the overall economy (Khasawneh, 2017). Therefore, the main objective of this work is to investigate debt financing and its influence on Jordanian firms' performance.

Khasawneh et al. (2017) and Nenu et al. (2018) argued that in developed countries, the direct influence of leverage and performance has been investigated, but very few studies have investigated the same in developing countries. As the Jordanian market is considered as one of the attractive emerging markets for international and local investors, and because it has potential for continuous economic growth at rapid and acceptable levels (Alrai ,2019), this study selects Jordan as a developing country. In the preceding literature, the association between a firm's CS and its performance is based on the tax shield to trade-off firms' cost and benefits. Therefore, the researcher is motivated to carry out this study to examine the relationship between CS of Jordanian firms and their performance.

Of late, many studies have scrutinised the CS in firms in developing countries and the results affirm its effects. Jordan, as an emerging market, is facing several internal financial issues and business challenges because of regional instability (Alabdullah, 2016). Besides being motivated by the internal issues facing Jordanian firms, this study looks into the effect of leverage on FP, as according to Dasouqi (2017), such studies are scant. When there is strict limitation of financing for firms, their capability to boost the economy is affected (Khasawneh, 2017). Thus, the main concern of this study is to examine the relationship between debt financing and firms' performance.

As mentioned earlier, Jordan, as an emerging market, is as attractive area for researchers as it is for financial specialists, as this market has the potential for rapid development. Several studies have empirically examined the relationship between CS and FP in developed countries, but this study is directed to an emerging market, i.e., the Jordanian market, where research is scarce and still requires further studies (Khasawneh et al., 2017; Rouf, 2015). Tax shield and trade-off theory among the advantages of utilising debt in a CS. All the above factors motivate the researcher to conduct this study to frame the basis for future investigations on the association between CS and FP, and its resulting influence on the FP of Jordanian firms, specifically.

1.1 Capital Structure (CS) and Firm Performance (FP)

Titan and Zeitun (2007) contended that the association between CS and performance has been examined in quite a few studies. Increasing leverage through acquisition could have positive implications due to increase in the capital and investment, which have led to increasing the revenue of firms and improved their value and performance (Noe, 1988). Denis and Mihov (2003) also affirmed this notion by showing that companies use leverage because they envision a higher return. Abor (2007) mentioned that leverage is the most commonly used approach to expand a firm's performance. A firm's financing decision and its performance can hardly be separated from one another. This is due to the fact that a firm's financing decisions greatly influence its performance. The use of leveraging equity, retained earnings and debt to constitute the CS of a firm, has future implications to the firm's performance. The non-financial sector in Jordan is categorised into two types, namely industrial and services sectors. The Jordanian economy is dominated by the services sector which was responsible for

5

63.9% of Jordan's Gross Domestic Product (GDP) in 2018 and 70% of employment (Central Bank of Jordan, 2018). On the other hand, the industrial sector contributed 25.4% of the GDP (lowest share since 2006) and employed nearly 27% of the workforce (Central Bank of Jordan, 2018).

The industrial and services sectors are known to play a most vital role, given its strong influence in developing the economy of a country, at both the local and international levels (Jordan's Economic and Social Council, 2018). Many countries depend on both the industrial and services sector to add value to their economy. Initiating and implementing good economic development bring such countries to be on par with other developed countries, as the role of these sectors cannot be over-emphasized even at a small level. Improved economic development allows easy achievement of long-term economic planning and helps in combating the hurdles faced in economic development as well contributing to increasing national income, especially when the government focuses on these sectors (Khalifa & Shafii, 2013).

As the non-financial sector plays a vital role in the Jordanian economy, it is important to identify some of the challenges facing the Jordanian's firms in this sector, particularly financing and performance challenges. Jordan's Economic Growth Plan (2018), includes Vision Jordan 2025, which is a crystallization of the industrial and services sector policies, based on the successful experiences of several countries, like Turkey, Egypt and Tunisia. The industrial and services sectors contribute immensely to the economic growth of Jordan (The Ministry of Labour, 2016), but as stated above, these two sectors face several challenges, namely, the difficulty in obtaining funding and the unstable security situation in neighbouring countries due to the closure of the border with Syria and Iraq. All these factors have adversely affected the non-financial

6

sector in Jordan (Alabdullah, 2014; Harris, 2018; The World Bank, 2016). During the four-year period, from 2014 to 2017, the average non-financial value ratio to GDP of Jordan was 62.5 %. The highest GDP was 62.5% in the year 2017, and the lowest was 61.8% in the year 2015 (refer to in Figure 1).
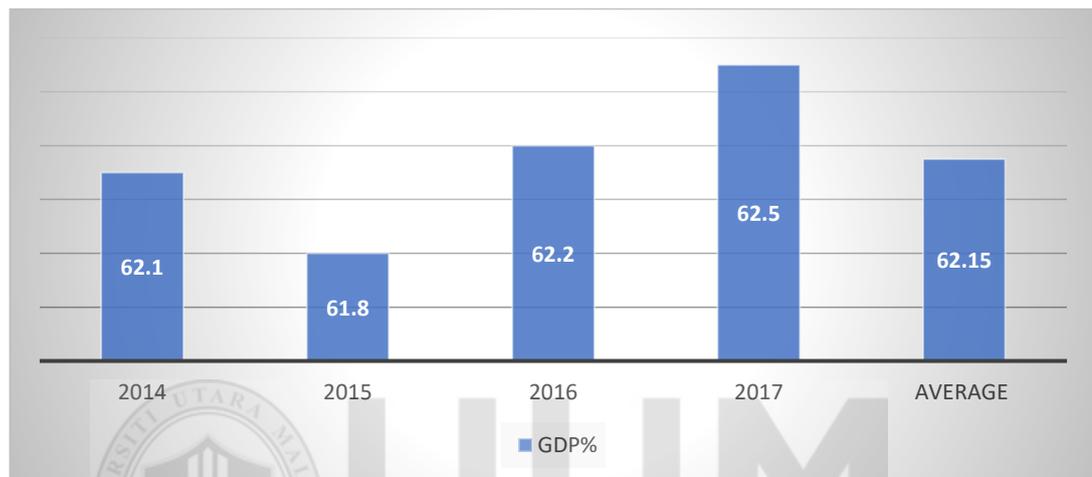
Figure 1
Non-financial sector value ratio to GDP of Jordan (2014-2017)
Source: Central Bank of Jordan 2018.

1.2 Problem Statement

According to the World Bank (2016), the economic situation of the Jordanian capital market is weak. The non-financial sector of Jordan, i.e., the industrial and services firms have been experiencing a reduction in GDP over the last few years, except for 2017 (Central Bank of Jordan, 2018). This has resulted in a decline in performance of the non-financial sector as a consequence of the recent problems and setbacks. (Alabdullah, 2014; Al-Abdullah et al., 2016; Alabdullah, 2018; Daoud & Ibrahim, 2019). In fact, the overall financial functioning of the industrial and services sectors of Jordan is weak, with only a few Jordanian firms showing a positive performance and

7

net positive revenue (Altarawneh, 2018; Matar & Eneizanat, 2018; Al-Abdullah, 2018). As mentioned above, the Companies Control Department (2017) affirms that fluctuations in the number of companies are as a result of the fact that some of these companies suffer losses which force them to shut down and exit from the ASE in recent years. These have contributed to the weakening of the Jordanian economy.

Over the last two decades, the economy of Jordan has suffered huge external tragedies due to the widespread Arab Spring, which compounded the problems of the Jordanian economy. The unrest in Iraq and Syria, as well as other external environmental factors, as a result of the Arab Spring, have affected the performance of Jordanian firms because the Jordanian market depends on markets of these countries. Jordan also faces other challenges, such as a weak business environment, the global financial crisis and social challenges (Tayem et al., 2018; the Central Bank of Jordan, 2017; Zeitun et al., 2016; Alabdullah et al., 2016; Sharabati et al., 2014). The implications of the decline in performance faced by the non-financial sector in Jordan have been highlighted by both the World Bank (2016) and Alabdullah et al. (2016). These issues have had a direct and indirect influence on the growth of the non-financial sector in Jordan and also, have had an important influence on the performance of Jordanian firms (Warrad & Abdelhadi, 2012; Alabdullah, 2018; World Bank, 2016).

Whether to opt for short and long-term financing, commercial debt, bonds or ordinary shares, undistributed profits or compulsory and voluntary reserves, is a major financial decision confronting the financial managers of companies (Ogebe et al., 2013). Unfortunately, Jordanian firms employ a low level of debt in comparison to developed countries (Omet, Shami, & Khalaf, 2015; Khasawneh & Dasouqi, 2017; Tayem, 2018). According to the Jordan Times (2019), nearly 70% of Jordanian companies

8

which need a loan, were either prohibited from applying for the loan or were found to be ineligible when they wanted to get loans from financial institutions in Jordan. According to Alrai (2017), the credit granted by the Jordanian banks to the financial sector is around 21 billion Jordanian Dinars (JD), while non-financial companies listed on the ASE received loans from Jordanian banks amounting to JD 2.3 billion, which is about 10% compared to developed countries where credit granted to the non-financial sector is between 20 to 25%.

In Jordan, the actual interest rate is 4.75%, but the short-term interest rate is 6.22 % and the long-term interest rate is 9%. In comparison to other Arab countries, the interest rate of Kuwait is 3% and the highest is at 7.25 %, and in Oman, the interest rate is 2.99% and the highest is at 5%. According to Trading Economic (2019), this huge difference among the countries makes the financing and CS decisions of Jordanian companies' debt ratio to be very important because it directly affects the efficiency of operations and profitability of the firms. Thus, there seems to be a lack of strategy and vision in Jordanian firms regarding capital utilisation (Khalaf, Omet, Shami, & Bino, 2015). The policy of granting loans or loan eligibility, like credit ratings and financial position, could force firms which need loans, to use optimal CS (Aktan et al., 2019; Ali and Javid, 2015). Additionally, the bond and mutual fund markets in Jordan, which are alternative sources for funds, are underdeveloped and inactive, and for that reason, the firms cannot obtain credit from financial institutions to begin new operations, and thereby, to increase their performance and profitability (Zeitun & Tian, 2014).

Shamsuddin and Almajali (2018) indicated that there is a lack of empirical studies on the relationship between CS and FP in Jordan. There are some studies available on CS

9

and debt ratio. Further, some of the previous studies, like Al Ali (2018) and Ramadan & Ramadan (2015), have investigated CS in the industrial sector. Tayem (2018) examined CS and performance in the banking sector. However, the main limitation in those studies is the inability to generalise the findings on a larger scale. Although Soumadi & Hayajneh (2012) studied the CS and its effect on FP in Jordan, still, there are very few empirical studies undertaken on both the service and industrial sectors regarding firm growth. Besides, analysing the CS in the non-financial sector has also been neglected. Further, previous results are inconclusive since findings have been mixed. Some studies (Duasa, 2014; Taani, 2013; Ramadan & Ramadan, 2015; Matar & Eneiza, 2018) have found a significant and positive association between FP and CS; while others (Hasan et al., 2014; Akeem et al., 2014; Rouf, 2015; Akingunola et al., 2018; Soumadi & Hayajneh, 2012) have documented a negative and significant association between FP and CS. In addition, in other studies, an insignificant association has been found between CS and FP (Ebaid, 2009; Hasan et al., 2014).

Existing studies have highlighted the crucial need to investigate FP of firms and its determinants (Shamsuddin et al., 2018; Aziidah, 2017; Patjoshi, 2016; Kaya, 2015). Therefore, the present study takes a step forward to fill this gap and analyse the CS and FP of the Jordanian non-financial sector, consisting of the industrial and services firms.

1.3 Research Questions

Based on the above discussion, this study answers the following research questions:

1. What is the association between debt ratio and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures?

2. What is the association between firm size and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures?

3. What is the association between sales growth and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures?

4. What is the association between tangibility and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures?

5. What is the association between liquidity and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures?

1.4 Research Objectives

To answer the research questions above, the objectives of this study are as follows:

1. To investigate the association between debt ratios and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures.

2. To evaluate the association between firm size and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures.

3. To assess the association between sales growth and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures.

4. To determine the association between tangibility and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures.

5. To determine the association between liquidity and the performance of non-financial firms listed on the Amman Stock Exchange based on accounting and market measures.

1.5 Scope of the Study

This study investigates the association between CS and performance of firms listed on the Amman Stock Exchange (ASE). The study scope covers 95 of 118 non-financial Jordanian firms for a period of five years (2013-2017) in the industrial and services sector listed on the ASE.

1.6 Significance of the Study

This study examines the relationship between CS and the performance of the non-financial firms listed on the ASE. It is hoped that the findings of this study can provide valuable information regarding the importance of CS and its influence on the FP of non-financial firms in developing countries, like Jordan. Findings and results of this

study will be important to other researchers by providing empirical evidence on the influence of CS on FP.

The study is also significant to managers by presenting the value of an effective and efficient CS to FP, by facilitating them in improving their CS to maximise shareholders' wealth. Future investors can also benefit from the study to plan better strategies for investing in a viable market. The provision of information on the CS and regulatory policies to financial institutions in Jordan and other developing countries is one of the major contributions of the study.

1.7 Organisation of the Study

The study is organised into five chapters. Chapter one introduces the background, the statement of the study problem, research questions and objectives, the significance of the study and the study scope. Chapter two mainly focuses on existing theories from the literature on CS as well as the association between FP and CS, both in the developed and developing (emerging) countries. Chapter three gives an elaborate discussion on the study methodology, the chosen variables, the developed models and the theoretical framework used in this study. Chapter four discusses the findings of the study. Chapters five concludes the study, indicates the limitations of the study and makes recommendations to Jordanian firms and to future researchers.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The association between CS and the performance of non-financial public listed firms on the ASE is investigated in this study. Although there are several studies as well as hypotheses in the area of CS and FP, this study focuses on an emerging market in a developing country, like Jordan, where such a study is scarce.

Established theories are discussed in this chapter. This includes the Modigliani and Miller theory, the trade-off theory and the agency cost theory, which are elucidated in this chapter, including the findings of prior studies on CS and its influence on FP. In addition, this study discusses past research on the association between CS and FP.

2.1 Overview of Firm Performance (FP)

In accordance with the shareholders' perspective, FP is assessed based on how better-off the shareholders are by the end of a particular period compared to how they were at the beginning of the same period. This is measured using ratios that are derived from financial statements of firms, such as the balance sheet, income statement and data on stock market prices (Berger and Patti, 2002). These ratios provide a guide to show the level of achievement of firm owners' objectives, such as the objective of wealth accumulation (Soroush and Aghabagher, 2012), and could also be employed to compare the performance with other firms and observe performance trends across time.

2.2 Overview of Capital Structure (CS)

Debt and equity are two blends of CS that provide the company its source of finance. It models an organisational framework of how to finance assets either by debt (long-term or short-term), equity (common or preferred) or a hybrid of the two (Saad, 2010). CS describes how the organisation finances growth and operations by using different sources of funds (San & Heng, 2011).

2.3 An Overview of Capital Structure (CS) Theories

Selecting a suitable definition for the composition of CS is a non-trivial task, especially when the need to increase FP is considered. Understanding the theories on CS composition may be a suitable guide to understanding the workings of a CS and its values to or influence on firms.

2.3.1 Modigliani and Miller Theory

The modern CS theory was proposed by Modigliani and Miller (1958). The assumptions in the theory are no transaction cost, capital markets are perfect, no bankruptcy cost and no taxes. Hence, the market value of a firm is argued to be independent of its CS. Information symmetry and other changes made in a firm's CS have no long-term effects on a firm's market value.

Modigliani and Miller (1958) suggested that under perfect economic conditions, financing has no influence since the firm's value is not dependent on how debt and equity are structured. In other words, the firm's CS is not affected by equity issuance or selling of debt and the cost of capital will remain constant. However, the market is

never perfect and financing structure does matter, whereby the firm's value would fluctuate, either increase or decrease, depending on its financing structure proportion (Antwi et al., 2012). Debt financing has the advantage of a tax shield, whilst having the disadvantage of bankruptcy cost (Banal-Estanol et al., 2013). Notwithstanding this, debts are still not attractive from the investors' point of view due to the personal tax imposed on the interest income (Harrison et al., 2011).

In 1963, Modigliani and Miller revised the earlier theory by providing a revised assertion that the cost of capital does affect the CS and influence the value of the firm. This was only applicable without the existence of tax and transaction cost. They further opined that debt borrowing provides tax incentive which will reduce the cost of borrowing and maximise FP (Miller, 1977).

2.3.2 Trade-off Theory

The trade-off theory recognises that debt interest is tax deductible. Hence, those companies that use debt financing enjoy this until an optimal CS is attained. However, increased debt in firms is risky and it can lead the firm to use refinancing thus, investors will demand a high premium on stock. Based on the assumption of the trade-off theory, "*a firm has an optimum CS based on the trade-off between costs and benefits of using debt*". *This theory does not explain the conservative nature of firms when using debt finance, leverage is not consistent in most countries, because they have different taxation systems"* (Retief et al., 2013). However, the trade-off among bankruptcy cost and the marginal present value of tax determines the optimal debt ratio of firms. This is why tax benefits, in terms of marginal present value, increase firm value and thereby decrease distress cost (Bradley et al., 1984).

16

Firms with higher profitability tend to borrow less, which is inconsistent with the actual trade-off theory which states that firms with higher profitability should borrow more by reducing tax liabilities (Adair & Adaskou, 2015). Estimated benefit of debt and cost affirms that the profitable firms with little or low financial distress expectation use debt in a conservative manner (Graham, 2000). So, the trade-off theory of CS states that businesses need to carefully consider the benefits gained from taxable income with the bankruptcy risks that arise from the use of excessive leverage.

2.3.3 Agency Cost Theory

Jensen and Meckling (1976) were the first to propose the Agency Cost Theory. This theory assumes that conflicts of interest exist in the organisation or corporation (Elmagrhi, Ntim, 2017), which are not aligned with the effort to maximise the shareholders' wealth (Margaritis & Psillak, 2007).The first conflict is that arising between shareholders and managers due to the decisions made by managers, which may be in their personal interest, and as mentioned above, not in line with the effort to maximise the shareholders' wealth (Chechet & Olayiwola, 2014). The second type of conflict of interest is the conflict which exists as a result of different views on the risks and returns among the debt-holders and shareholders (Amjad et al., 2013). The debt-holders are more interested in current profit since it guarantees their return, whilst the shareholders are more interested in long-term capital appreciation, and therefore, they are willing to relinquish the current profit (Amjad et al., 2013). This conflict creates an agency problem. According to Lee (2015) and Jensen and Meckling (1976), the agency cost theory concurs that optimal CS is materialised whenever the debt value alleviates the conflicts of interest among shareholders and

17

managers and shareholders and debt-holders. Thus, Jensen and Meckling (1976) highlighted the point that the problems arising within the organisation also have a huge influence on the CS of the firms.

2.4 Theoretical Background and Previous Literature

Corporate finance scholars have tried to explain CS transformation from rationalism to empiricism (Aragaw, 2015). In the previous literature, findings on FP and CS are mixed, wherein positive and negative associations have been reported. Therefore, the subject on the relationship between CS and FP is still debatable. Modigliani and Miller (1958) asserted the importance of CS in the light of their theory and subsequently, various theories, like the Pecking Order Theory proposed by Myers and Majluf (1984) and the Static Trade-off Theory developed by Myers and Majluf (1984), have emerged, and several studies have empirically proven the association between CS and FP.

CS is one of main factors that affects FP. Firms having a good CS with appropriate policies, can reduce bankruptcy cost and use tax shield as well as equity. With this, performance of firms can be maximised through the reduction of financing cost, specifically by managing an appropriate CS. In the previous literature, Harris and Raviv (1991) asserted that CS is similar to trade-off from cost of liquidation. Thus, it has been argued that more debt of firms in the CS leads to more benefits for managers and shareholders. In contrast, some previous studies have also stated that the long-term debt to total assets ratio can influence FP. In addition to this, firm size, sales growth, liquidity and tangibility are also important factors that influence performance of firms.

18

2.4.1 Long-Term Debt to Total Assets (LTDTA) and Firm Performance (FP)

Some existing studies have recorded a negative association between FP and CS in Japan and the United States of America (USA) (Friend and Lang, 1988; Kester, 1986; Titman and Wessels, 1988). Sadeghian et al. (2012) investigated the association between long-term debt and FP in Tehran, using a combination of accounting tools (Return on Assets (ROA) and Return on Equity (ROE) and market measures (Tobin's Q) and found the association to be negative.

Minton and Wruck (2001) studied CS in local financial conventional firms over a period of 14 years (1974 -1998) and indicated FP (measured by Tobin's Q and total debt) has negative influences. Likewise, Mesquita and Lara (2003) investigated the association of CS with FP and reached the conclusion of a negative association with firms' profitability. Similarly, Shubita & Alsawalhah (2012) studied the effect of CS on profitability of the industrial companies listed on the ASE and found a negatively significant relationship between firm debt and ROE (profitability of firms).

Rahaman and Hasan (2014), in their study on FP in Bangladesh, employed 36 firms on the Dhaka Stock Exchange for the period of 2007 to 2012. The study investigated the influence of CS on FP. The study measured performance using dependent variables, namely ROA and Tobin's Q, while the independent variable of LDTATA ratio was used to measure CS. The outcome indicates that ROA has a negative association with the debt proxies (LTDTA); whereas Tobin's Q and CS show no statistically significant association.Twairesh (2014) empirically investigated the influence of CS on the performance of non-financial firms operating in Saudi Arabia as one of the transition economies for eight years (2004 -2012). This empirical study

made use of 74 companies as a source for sample data. The study analysed the association among CS proxies, like LTDTA. It was noticed that the operating performance measured by ROA has a significantly negative influence on LTDTA. Taani (2018) studied the association between FP and CS of 45 Jordanian manufacturing firms on the ASE. This study was performed for a period of five years (2005 - 2009). Findings show that there is no statistically significant association between ROA and LTDTA.

Employing two measures of performance (ROA and Tobin's Q), Saeedi and Mahmoodi (2011) investigated the effect of long-term debt, short term debt and total debt ratios on them. The data covered 320 listed companies from 2002 to 2009. The result indicates that CS has a positively significant association with Tobin's Q and a negative association with ROA, which findings are similar to Uwalomwa and Uadiale (2012), Ahmad et al. (2012) and Hassan et al. (2014). A summary of the literature review is as in Tables in next pages.

Table 2.1

The Relationship between Long Term Debt and Performance

NO	Author & year	Independent variable	Dependent variable	Major Findings
1	Sadeghian et al. (2012)	Long-term debt	Accounting (ROA) and market measure (Tobin's Q)	Negative association between firm's debt and profitability
2	Shubita & Alsawalhah (2012)	Long-term debt	ROE	Negative association between FP and long-term debt
3	Toraman, Kihc, and Reis (2013)	Long-term debt	ROA	Negative association between long-term debt and ROA
4	Rahaman and Hasan (2014)	Long-term debt	ROA and Tobin's Q	Negative association between debt and ROA and no relationship with Tobin's Q
5	Twairesh, (2014)	Long-term debt	ROA	Negative association of LTDTA with ROA

2.4.2 Total Debt to Total Assets (TDTA) and Firm Performance (FP)

The TDTA ratio considers the total debt of all maturities to all creditors. TDTA can be defined in varying ways, the easiest definition being total debt divided by total assets (Ross et al., 2010). Berger and Patti (2006) explained the FP of the CS of 588 listed commercial banks in the USA for the 1990-1995 period. The findings indicate a strong correlation and it is economically significant. A similar study was also conducted on 100 Iranian publicly listed firms by Arbiyan and Safari (2009). This study made an analysis of the influence of leverage ratios on the listed firms' performance over a period of six years (2001 to 2007). It was found that total debts correlate positively to profitability measured by ROE. Martis (2013) investigated CS and FP by focusing on the S&P 500 firms. The results show a negative correlation between total debt and ROA, although total debt has a significantly negative influence on Tobin's Q.In Egypt, Ebaid (2009) explained how profitability is affected by debt-to-equity ratio using 64 listed companies in the 1997-2005 period. Multiple regression analysis that was used revealed a weak to no influence.

Mohamad and Abdullah (2012) assessed the influence of CS on firms. The study measured firms' performance using ROA and ROE, while capital ratios were measured by TDTA. Using multivariate regression analysis, the study indicated that the TDTA ratio has a statistically negative and significant association with ROA and ROE. Nawaz, Ali, & Naseem (2011) used a single linear regression and found that the TDTA ratio has a positive and significant effect on ROA, ROE and Tobin's Q.

Rahaman and Hasan (2014) studied FP in Bangladesh by employing 36 firms on the Dhaka Stock Exchange from the period of 2007 to 2012. The study investigated the

22

influence of CS on FP. The study measured performance using three dependent variables, namely ROE, ROA and Tobin's Q; while the independent variable of total debt ratio was used to measure CS. The outcome indicates that ROE and ROA have a significantly negative association with the debt proxies (total debt), whereas Tobin's Q and CS show no statistically significant association.

Twairesh (2014) empirically proved the influence of CS on the FP of the non-financial sector in Saudi Arabia (2004 to 2012). This empirical study made use of 74 companies as a source for sample data. The study analysed the association among CS proxies, like Total Debt, and the operating performance was measured by ROA and ROE.

Tianyu (2013) compared two markets in Germany and China, by sampling over 1,200 listed firms in Germany and another 1,000 listed firms in China from 2003-2012. The study investigated how CS influences firm profitability for both markets. The dependent variables used were Tobin's Q and ROE, while total debt was used as the CS measure. Findings show that there is a negatively significant effect of TDTA on FP (Tobin's Q and ROE) in China, while the association is found to be positively significant in the case of German firms.

Le et al. (2017) studied the non-financial listed firms in Vietnam. Using data for the period of 2007–2012, they investigated CS influence on FP. Findings show that total debt has a negatively significant relationship with ROA and Tobin's Q.

Ali et al. (2018) investigated the FP of Jordanian manufacturing firms listed on the ASE from 2005 to 2015. The dependent variable was the FP, measured by ROA and the independent variable was total debt. The findings show a positive association between total debt and ROA. Dada & Ghazali (2016) employed similar measures of

23

CS to investigate the performance of 100 non-financial firms on the Nigerian Stock Exchange (NSE), encompassing the period of 2010 to 2014. Using Tobin's Q and ROA as proxies for FP, wherein CS was measured by total debt divided by total assets, the study found TDTA has a negatively significant relationship with ROA and Tobin's Q.The Table below summarises the above review of related studies.

Table 2.2

The Relationship between Total Debt and Performance

NO	Author & year	Independent variable	Dependent variable	Major Findings
1	Abor (2005)	Total debt	ROE	The results show a significantly positive relationship between ROE and the ratio of TDTA.
2	Arbiyan and Safari (2009)	Total debt	ROE	The results show that total debts correlate positively with profitability measured by ROE.
3	Martis, et al., (2013)	Total debt	ROA and Tobin's Q	The results show a negative correlation between total debt and ROA, although. total debt tends to have a major negative effect on Tobin's Q.
4	Mohamad and Abdullah (2012)	Total debt	ROA and ROE	The study indicates that TDTA ratio has a statistically negative association with ROA
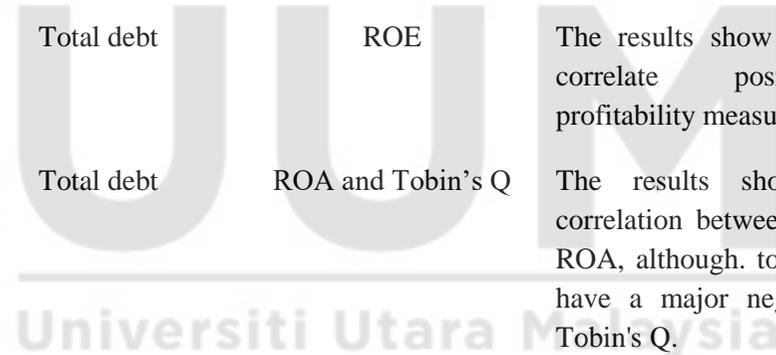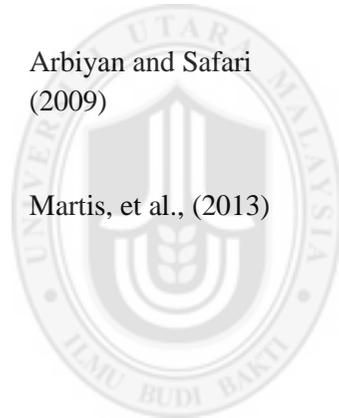
5	Nawaz, Ali, & Naseem (2011)	Total debt	ROA, ROE and Tobin's Q	Result shows a positive association between debt-to-assets ratio and FP (using Tobin's Q, ROE and ROA).
6	Rahaman and Hasan (2014)	Total debt	ROE, ROA and Tobin's Q	Result shows a positive association between total debt and FP (using Tobin's Q, ROE and ROA) and CS has no influence.
7	Tianyu (2013)	Total debt	Tobin's Q and ROE	Result shows a negative association between total debt and FP (using Tobin's Q, and ROA)
8	Le, et al., (2017)	Total debt	ROA and Tobin's Q.	Result shows a negative association between total debt and FP (using Tobin's Q, and ROA)
9	Ali , et al., (2018)	Total debt	ROA	Result shows a negative association between total debt and FP using ROA
10	Dada and Ghazali (2016)	Total debt	Tobin's Q and ROA	Result shows a negative association between TDTA and FP (using Tobin's Q and ROA)
				The study found TDTA has a negatively significant relationship with ROA and Tobin's Q.

2.4.3 Firm Size (Size) and Firm Performance (FP)

Existing literature has documented that firm size affects FP. Firms with greater capabilities may enjoy economies of scale, which may influence productivity and returns (Ebaid, 2009; Salim & Yadav, 2012). Hence, firm size plays an important role in CS, as supported by several studies. Mouna and Ali (2017) studied the influence of CS on 53 Moroccan firms over a period of two years (2014 -2016). This study incorporated size as a key determinant of CS and found a positive association with FP, using ROA and ROE. Dada & Ghazali (2016) employed similar measures of CS to investigate the performance of 100 non-financial firms on the NSE for the period of 2010 to 2014. Using Tobin's Q and ROA as proxies for FP, the study found FP has a negative and significant relationship with ROA and Tobin's Q. Additionally, the study by Ahmed and Afza (2019) employed the use of competitive intensity as a moderator in the relationship between CS and FP, measured by ROA, ROE and Tobin's Q of Pakistani non-financial firms. They found that size is positively associated with ROA, ROE and Tobin's Q.

Chi Nguyen et al. (2019) employed ROA and Tobin's Q to measure firm size and found firm size has a negative and significant relationship with ROA and Tobin's Q.Twairesh (2014) empirically investigated the influence of CS on the performance of non-financial firms operating in Saudi Arabia as one of the transition economies for eight years (2004 -2012). This empirical study made use of 74 companies as a source for sample data, and firm size was noticed to have an influence on FP, with a significantly positive influence on ROA and ROE.

Mohamed and Tailab (2014) carried out an in-depth assessment of financial performance of 100 top non-financial American firms listed on Fortune 500; the study analysed the effect of factors, such as firm size on FP. The measures of ROA and the ratio of earnings before depreciation, interest and tax (EBIT) to total assets were used to measure financial performance. As indicated by the findings, size has a positively significant effect on profitability of the American firms. A summary of the literature review is as in the Table below.

Table 2.3

The Relationship between Firm's Size and Performance

NO	Author & year	Independent variable	Dependent variable	Major Findings
1	Mouna and Ali (2017)	firm size	ROE and ROA	Result shows a positive association between firm size and FP (using ROE and ROA).
2	Dada & Ghazali (2016)	firm size	ROA and Tobin's Q.	Result shows a positive association between firm size and FP (using Tobin's Q and ROA).
3	Ahmed and Afza (2019)	firm size	ROA, ROE and Tobin's Q	Result shows a positive association between firm size and FP (using Tobin's Q, ROE and ROA).
4	Chi Nguyen et al., (2019)	firm size	ROA and Tobin's Q	Result shows a negative association between firm size and FP (using Tobin's Q and ROA).
5	Twairesh, (2014)	firm size	ROA and ROE.	Result shows a negative association between firm size and FP (using Tobin's Q and ROA).
6	Mohamed and Tailab (2014)	firm size	ROA	Result shows a positive association between firm size and FP using ROA.

2.4.4 Sales Growth and Firm Performance (FP)

Regarding the relationship with growth, previous studies have highlighted a positive association with FP. It has been argued that high growth rate to earn maximum profits is possible, which in turn, can increase firm value and investment opportunities. King and Santor (2008) explained that sales, represented by growth of the firm, has a positive influence on FP. Likewise, Jiraporn and Liu (2008) also explained the importance of growth in terms of FP, which brings extensive opportunities for future prosperity.

Dada & Ghazali (2016) employed similar measures of CS to investigate the performance of 100 non-financial firms on the NSE for the period of 2010 to 2014. Using Tobin's Q and ROA as proxies for FP, the study found that sales growth has a positively significant association with Tobin's Q and ROA. Ahmed and Afza (2019) employed competitive intensity as a moderator in the relationship between CS and FP, using ROA and Tobin's Q as measurements of performance and growth as the determinant of CS. The study found growth has a significantly positive influence on ROA and Tobin's Q.

Mohamed Tailab (2014) carried out an in-depth assessment of financial performance of 100 top non-financial American firms listed on Fortune 500; the study analysed the effect of factors, such as growth on financial performance. ROA and EBIT to total assets ratio were used to measure financial performance. The finding shows that growth has a negatively significant effect on ROA. For ease of reference, the review of studies is summarised in the Table below.

Table 2.4

The Relationship between Growth and Performance

NO	Author & year	Independent variable	Dependent variable	Major Findings
1	King and Santor (2008)	Growth	Tobin's Q	There is a positive association between growth rate and FP.
2	Jiraporn and Liu (2008)	Growth	ROA	There is a positive association between growth rate and FP.
3	Dada & Ghazali (2016)	Growth	Tobin's Q and ROA.	There isa positive association between growth rate and FP (Tobin's Q and ROA)
4	Mohamed Tailab (2014)	Growth	ROA and Tobin's Q	There is a positive association between growth rate and FP (Tobin's Q and ROA)
5	Ahmed and Afza (2019)	Growth	ROA and Tobin's Q	There is a positive association between growth rate and FP (Tobin's Q and ROA)

2.4.5 Tangibility and Firm Performance (FP)

Trade-off is possible when firms have a mix of fixed assets and bonds; fixed assets are considered as firm collateral against borrowing, which in turn, reduces risk for defaulting borrowers. Under the Pecking Order Theory, collateral value is positively associated with a firm's debt ratio. Chi Nguyen et al. (2019) and Hussainet al. (2019) empirically proved that tangibility and FP have a negative association, which is quite similar to ROA and Tobin's Q. Schonbrod (2011) found that ROA and firm tangibility have a positive association. In their study, the dependent variable was ROA, which was measured through profitability of the firm, whereas, tangibility was the independent variable. Ahmad et al. (2018) employed the use of competitive intensity as a moderator in the relationship between CS and FP, using ROA and Tobin's Q as measurements of performance and tangibility as a determinant of CS. They found that tangibility has a significantly negative influence on ROA and Tobin's Q .Zeitun and Tian (2007) studied the association between tangibility and performance of a set of Jordanian companies and found that tangibility is negatively related to both accounting and market measures of performance (ROA and Tobin's Q). A summary is provided in the Table below.

32

Table 2.5

The Relationship between Tangibility and Performance

NO	Author & year	Independent variable	Dependent variable	Major Findings
1	Chi Nguyen et al. (2019)	Tangibility	ROA and Tobin's Q	A negative association between tangibility and FP.
2	Hussainet al. (2019)	Tangibility	ROA and Tobin's Q	A negative association between tangibility and FP.
3	Schonbrod (2011)	Tangibility	ROA	A positive association between tangibility and ROA.
4	Ahmad, et al. (2018)	Tangibility	ROA and Tobin's Q	Tangibility has a negative relationship with ROA and Tobin's Q.
5	Zeitun and Tian (2007)	Tangibility	ROA and Tobin's Q	Tangibility is negatively related to performance (Tobin's Q).

2.4.6 Liquidity and Firm Performance (FP)

Liquidity is important for all organisations in all situations. Eljelly (2004) argued that liquidity plays an important role when organisations are in a good situation, but is most important during troubled periods (Gryglewicz, 2011). However, Liargovas & Skandalis (2008) addressed that firms utilise their liquidity to finance their investments when external funding is not available. Lamberg (2009) posited the adaptation of liquidity strategies has no significant effect on ROA. Saleem and Rehman (2011), however, found a significant influence of liquidity ratio on ROA. Almajali et al. (2012) showed that liquidity, as a financial factor, has a positively statistical effect on financial performance. This result is consistent with Ali et al. (2018), who found a positive influence of liquidity on ROA. Additionally, the study by Ahmed and Afza (2019) found liquidity is positively related to ROA.

Dada & Ghazali (2016) employed liquidity as a determinant of CS to investigate the performance of 100 non-financial firms listed on the NSE for the period of 2010 to 2014. Using Tobin's Q and ROA as proxies for FP, the study found liquidity has a negatively significant association with Tobin's Q and ROA. Likewise, Chi Nguyen et al. (2019) employed ROA and Tobin's Q for FP and TDTA for CS, with liquidity as a control variable. The findings indicate that there is a negatively significant influence of liquidity on financial performance measured by ROA, but no significant influence of liquidity on financial performance measured by Tobin's Q. All reviews are summarised in the Table below.

Table 2.6

The Relationship between Liquidity and Performance

NO	Author & year	Independent variable	Dependent variable	Major Findings
1	Lamberg (2009)	liquidity	ROA	Liquidity has no significant effect on ROA.
2	Saleem & Rehman (2011)	liquidity	ROA	Found a significant influence of liquidity ratio on ROA.
3	Almajali et al. (2012)	liquidity	Tobin's Q and ROE	Found a significant influence of liquidity on Tobin's Q and ROE
4	Ali et al. (2018)	liquidity	Tobin's Q and ROE	Found a significant influence of liquidity on Tobin's Q and ROE
5	Ahmed and Afza (2019)	liquidity	ROA and Tobin's Q	Findings show a negative influence of liquidity on financial performance, but no influence of liquidity.
6	Dada & Ghazali (2016)	liquidity	Tobin's Q and ROA	Liquidity has a negative association with Tobin's Q and ROA
7	Chi Nguyen et al., (2019)	liquidity	Tobin's Q and ROA	Findings show a negatively influence of liquidity on financial performance, but no influence of liquidity.

2.5 Summary of Chapter

This chapter discusses the definitions of CS and performance of the firm. Then, three main theories, i.e., the Modigliani and Miller theory, the trade-off theory and the agency cost theory are presented. Past studies on the association between CS and FP show inconclusive findings. In previous literature, results show a negative association, while some studies show a positive association. Thus, it is difficult to draw any conclusion because empirical findings are not only inconsistent but also vague. Thus, the failure of research to provide a consistent and systematic association between CS and FP is an important reason that has necessitated this empirical study. Consequent to the review of the previous studies, the inconsistencies in findings and the scarcity of studies, the researcher undertakes this study on the effect of CS on the performance of the Jordanian listed companies in the non-financial sector. This study uses ROA and Tobin's Q as the dependent variables, and LTDTA, TDTA, Size, Growth, Tangibility and Liquidity as the independent variables.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The research investigates the association between CS and performance of non-financial public listed firms on the ASE. This section presents the data source used for the study, the process of data gathering, data sampling, the variables, research framework as well as hypotheses. Additionally, this chapter discusses the methods employed in examining and analysing the association between CS and FP.

3.1 Data Source

The data for the study is taken from two sources. First, data for Jordanian firms was taken from Datastream and second, from the annual reports of Jordanian firms taken from the ASE.

3.2 The Sample Population

There are three sectors in the ASE: financial, industrial and service sectors. This study used only two, i.e., the industry and service sectors, which constituted a total of 118 non-financial listed firms or 80 % of the entire Jordanian listed companies as shown in Table 3.1 (ASE, 2016). However, the current study finally used only 95 firms out of the 118 firms due to missing data of some firms, and hence, these firms were dropped from the current study. This led to 475 firm-year observations for the entire final sample (95 firms multiplied by five years).

Table 3.1

Sector category and the sample of non-financial firms

Sector category	Total Firms
Commercial services	9
Educational services	4
Health Services	3
Tourism and hotels	6
Media	3
Communications and technology	3
Utility and energy	8
Chemical	6
Electrical	4
Engineering and construction	5
Food and beverage	8
Textiles and leather	7
Mining and extraction	6
Pharmaceutical	8
Transportation	7
Other industries	8
Total	95

3.3 Variables

There are two categories of variables used in this study, i.e., independent variables (IV) and dependent variables (DV), as explained in the next sub-sections.

3.3.1 Dependent Variables

In this study, performance was computed by ROA and Tobin's Q (Dada & Ghazali, 2016; Javed, Younas, and Imran, 2014; Ahmed & Afza, 2019; Chi Nguyen et al., 2019). In any case, if a firm is profitable, it may not mean that the flow of cash is readily available to this firm and it will be able to cater for all its liabilities so that creditors will be paid.

3.3.1.1. Return on Assets (ROA)

ROA is one of a firm's key performance measurements. In the preceding literature, Yazdanfar and Ohman (2016), Akeem et al. (2014) and Salawu (2009) said that the computation is net income divided by total assets. Thus, if a firm wants to improve its ROA, it will have to increase its net income without acquiring any new assets or improve the effectiveness of existing assets (Saeedi and Mahmoodi, 2011). ROA contains all the firm's assets, including transactions of accounts receivable, debts to lender and additional capital from investors.

$$\text{Return on Assets (ROA)} = \frac{Net\ Income}{Total\ Assets}$$

3.3.1.2 Tobin's Q

Tobin's Q is "the ratio of the market value of a physical asset and its replacement value, whereby Tobin's Q displays the current financial market estimation of the return value of each incremental investment dollar" (Tobin, Weston, and Copeland, 2004). The current study used Tobin's Q as a measure of the FP in Jordanian listed firms.

$$\text{Tobin's Q} = \frac{Total\ Market\ Value\ of\ Firm}{Total\ Asset\ Value\ of\ Firm}$$

3.3.2 Independent Variables

Variables are chosen based on their significant contribution in previous studies. This study employed six IV. These were all adopted from the review of previous literature (Afza & Ahmed, 2017; AbuTawahina & Helles, 2015; Rehan et al., 2019; Ramadan, 2015; Dada & Ghazali, 2016), thus, coming up with six variables, Total Debt to Total Assets (TDTA), Long-Term Debt to Total Assets (LTDTA), Firm Size, Sales Growth, Tangibility and Liquidity.

3.3.2.1 Long-Term Debt to Total Assets (LTDTA)

LTDTA is an indicator that has been commonly employed in extant research work. The computation of LTDTA is as in previous literature (Oguna, 2014; Al-Taani, 2013; Chowdhury & Chowdhury, 2010), where LTD is divided by total assets. In prior studies, a significantly negative association has been found between LTDTA and ROA (Khanam et al., 2014; Hasan et al., 2014; Akingunola, Olawale, and Olaniyan, 2018).

Following the trend of existing studies, LTDTA is utilised as one of the variables. Thus, it is argued that LTDTA influences FP in Jordanian non-financial firms.

$$\text{Long-Term Debt to Total Assets (LTDTA)} = \frac{\text{Long Term Debt}}{\text{Total Assets}}$$

3.3.2.2 Total Debt to Total Assets (TDTA)

The TDTA ratio considers the total debt of all maturities to all creditors. The easiest definition is total debt divided by total assets (Abor, 2005; Ebaid, 2009; Ross et al., 2010). TDTA reflects the firm's financial risk, which means the higher the TDTA ratio, the higher the financial risk. Ebimobowei et al. (2013) used Nigerian listed firms to analyse the association between CS and operating performance (measured by TDTA). Other researchers who have used TDTA include Salim and Yadav (2012), Nirajini and Priya (2013), Nago (2017) and Kajananthan and Nimalthasan (2013). Since a higher TDTA reflects higher risks, investors must be more cautious when they want to invest in such firms, especially in difficult economic periods. Investors should be careful to consider the possibility of future debt payments by the firm. Thus, TDTA is expected to affect the firm's performance for Jordanian non-financial firms.

$$\text{Total Debt to Total Assets (TDTA)} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

3.3.2.3 Firm Size

Existing literature suggests that the size of the firm may influence its performance. Firms with greater capabilities may enjoy economies of scale, which may influence productivity and returns (Ebaid, 2009; Salim & Yadav, 2012). Therefore, firm size is included as an IV in this study to regulate the differences in firms' operating environment (Al-Kayed, Syed, & Duasa, 2014). Salim & Yadav (2012) posited that the natural logarithm of the firms' total assets is a common way to measure firm size (SIZE). Firm size plays an important role in the CS choice making process. Several previous studies have pointed out that firm size plays a vital role in the determination of performance (Javed et al., 2014; Soumadi and Hayajneh, 2012).

$$Size = \ln(Total\ Assets)$$

3.3.2.4 Sales Growth

The average total sales of the firm is used to measure growth. For instance, Ahmad et al.(2012) and Dawar (2014) asserted that the growth factor no longer affects FP. However, some researchers have found that sales growth of firms shows a substantial association with performance of firms (Haque & Arun, 2016; Salim & Yadav, 2012). In the present work, firm growth is computed with the sales of the present year (Sales1) and subtracting sales of the last or previous year (Sales 0), divided by sales of last or previous year. With this, it is argued that sales growth influences FP.

$$Growth = \frac{Sales1 - Sales\ 0}{Sales\ 0}\ x100$$

42

3.3.2.5 Tangibility

For FP, tangibility is a key element that cannot be ignored (Chi Nguyen et al., 2019). For instance, firms with high collateral can be more successful in making decisions on CS. Due to low intensity of tangible assets, creditors' risk increases but if firms have a high proportion of collateral in the form of assets, it means lower creditor risk. This is why bankruptcy reduces and liquidation increases. With this, it is argued that a firm's higher tangible assets lead to the giving of loans to the firm, and thereby high profits for the firm in future (Al-Najjar, 2011). Below is the computation of tangibility.

$$\text{Tangibility} = \frac{Fixed\ Assets}{Total\ Assets}$$

3.3.2.6 Liquidity

Liquidity refers to the financial position of a firm. This enables the smooth running of firm operations without any funding constraints. It also leads to reduction of costs in terms of borrowing, and therefore, an improvement in the performance. However, there are conflicting perceptions associated with liquidity and performance. In the light of the trade-off theory, firms using higher external financing have higher liquidity but have better ability to repay debt with the additional benefit of tax shield, which in turn, indicates a significant association between liquidity and leverage. Further, the pecking order theory explains that when firms willingly choose internal funds in liev of external financing for their new investments, it will have a significantly negative association between liquidity and performance.

43

$$\text{Liquidity} = \frac{Current\ Assets}{Current\ Liabilities}$$

3.4 Expected Results

Table 3.4

List of variables, proxies and expected results:

Variables	Symbol	Proxy	Expected Result
Dependent	ROA	NI/TA	+/-
	Tobin's Q	TMV/TA	+/-
Independent	LTDTA	LTD/TA	+/-
	TDTA	TD/TA	+/-
	SIZE	Ln (TA)	+/-
	GROWTH	$(S_1 - S_0)/S_0$	+/-
	Tangibility	FA/TA	+/-
	Liquidity	CA/TA	+/-

3.4 Research Framework

The current study investigates the relationship between CS and performance of non-financial firms listed on the ASE for a period of five years (2013 to 2017). Six variables are selected as determinants of CS: long-term debt to total assets (LTDTA), total debt to total assets (TDTA), firm size (SIZE), sales growth (GROWTH), tangibility and liquidity. Two variables are also selected as proxies for FP (dependent variable), namely ROA and Tobin's Q.

44

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┌─────────────────────────────┐          ┌─────────────────────────────┐
│ ❖  Independent Variables    │          │ ❖  Dependent                │
│                             │          │                             │
│ ❖  Capital Structure        │          │    Variables                │
└─────────────────────────────┘          └─────────────────────────────┘
┌─────────────────────────────┐          ┌─────────────────────────────┐
│  ┌───────────────────────┐  │          │                             │
│  │ I.   Long Term debt   │  │          │   ┌──────────────────────┐  │
│  │      to Total Assets  │  │          │   │ I.    Return on      │  │
│  │      (LTDTA)          │  │          │   │                      │  │
│  ├───────────────────────┤  │          │   │       Assets         │  │
│  │ II.  Total Debt to    │  │          │   └──────────────────────┘  │
│  │      Total Assets     │  │          │                             │
│  │      (TDTA)           │  │          │                             │
│  ├───────────────────────┤  │          │   ┌──────────────────────┐  │
│  │ III.  Size            │  │          │   │ II.    Tobin's Q     │  │
│  │                       │  │          │   │                      │  │
│  └───────────────────────┘  │          │   └──────────────────────┘  │
│  ┌───────────────────────┐  │          │                             │
│  │ IV.   Growth          │  │          │                             │
│  │                       │  │          │                             │
│  └───────────────────────┘  │          │                             │
│  ┌───────────────────────┐  │          │                             │
│  │ V.    Tangibility     │  │          │                             │
│  │                       │  │          │                             │
│  └───────────────────────┘  │          │                             │
│  ┌───────────────────────┐  │          │                             │
│  │ VI.   Liquidity       │  │          │                             │
│  │                       │  │          │                             │
│  └───────────────────────┘  │          │                             │
└─────────────────────────────┘          └─────────────────────────────┘
```
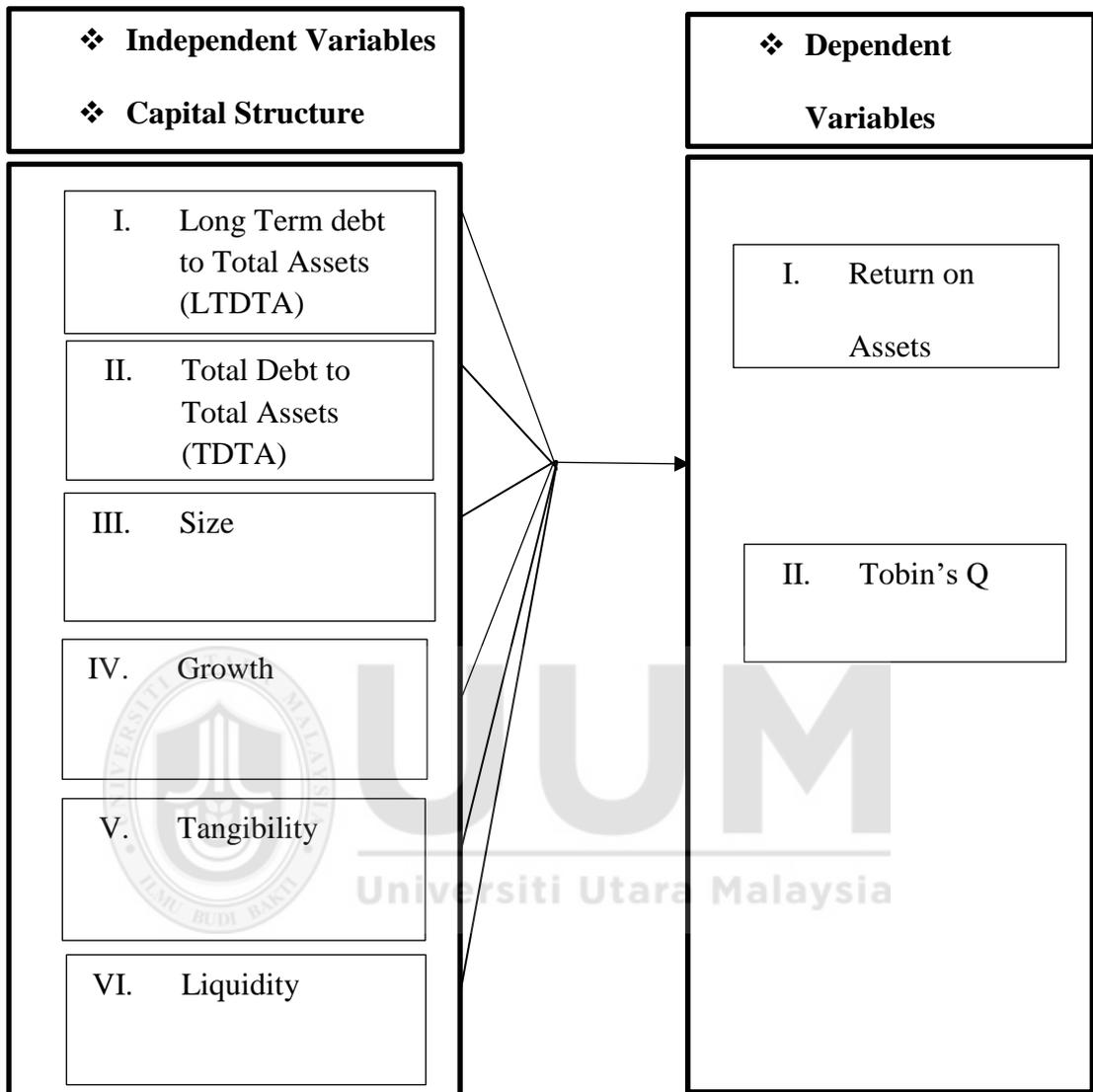
Figure 3.4

Research Framework

45

3.5 Development of Hypothesis

3.5.1 The association between Long-Term Debt to Total Assets and Firm Performance

Several studies have empirically investigated the link between LTDTA and FP, although the results have been mixed or contradictory. Also, with respect to emerging economies, limited research exists that has investigated this association. Besides, most studies that have used LTDTA in developed economies agree that there is a positive association between LTDTA and FP. However, few studies that have focused on emerging markets have indicated a negative association between LTDTA and FP, measured using ROA and Tobin's Q. This means an increase in LTDTA weakens FP.

In accordance with the explanation of the trade-off theory, FP tends to improve when financial distress of firms reduces which is also considered as expected bankruptcy costs. The pecking order theory argues that those firms having a profitable journey will want to circumvent the negative signal that comes from its association with equity, which helps to increase the better use of financial leverage for firms. In the previous literature, it is indicated that FP, measured by ROA and Tobin's Q, has a negative effected on LTDTA. Tian and Zeitun (2007), Joshua (2009) and Majumdar and Chhibber (1999) contended that undervaluing the cost of bankruptcy on liquidation can lead to a firm's increase in debt more than it should be; thus, higher LTDTA negatively affects performance measured by ROA and Tobin's Q.

Moreover, the monitory function of debt in FP improvement has not been measured much in emerging markets. Specifically, the study of Saedi and Mahmodi (2011) and Hassan et al. (2014) concerning the association of CS (LTDTA) with financial performance, measured by ROA and Tobin's Q, has found that it is significantly and

46

positively associated with performance. Higher performance level could be accounted for by the advantages garnered from tax shield along with the disciplinary function enforced through increase in LTDTA, which lessens agency cost. Therefore, based on the contradiction presented in the literature, the study formulates the following hypotheses:

H1: Long-term debt to total assets has a significant association with firm performance (ROA)

H2: Long-term debt to total assets has a significant association with firm performance (Tobin's Q)

3.5.2 The Association between Total Debt to Total Assets and Firm Performance

In the present study, TDTA is an IV. The agency cost theory's view is that TDTA is useful to lower agency cost, where a high amount of total debt will reduce inefficiency, thereby detrimental to FP. Afza1 et al. (2017) asserted that lower agency cost is due to a rise in TDTA. Gleason et al. (2000), Min-Tsung Chen (2009), Zeitun (2007) and Rahaman and Alam (2014) found a negative association between TDTA and ROA and Tobin's Q. Likewise, Onaolapo and Kajola (2010) used ROA and Tobin's Q measures to evaluate firm profitability which empirically evinced that there is a negatively significant association between TDTA and profitability.

In contrast to the studies, Pratheepkanth and Lanka (2011) demonstrated that TDTA has a positive association with ROA, while Joshua (2007) found similar results, where TDTA is positively related to FP measured by Tobin's Q. In the same vein, Arbiyan

47

and Safari (2009) and Ghanavati & Khosroshahi (2009) established that TDTA and firm profitability are positively related. Thus, two hypotheses are as below:

H3: *Total debt to total assets has a significant association with firm performance (ROA)*

H4: *Total debt to total assets has a significant association with firm performance (Tobin's Q)*

3.5.3 The Association between Firm Size and Firm Performance

Considering that large firms exhibit higher diversity compared to small ones, such firms are expected to sustain lesser bankruptcy costs which then enhances their ability to receive more loans due to easy market access (Gregory et al., 2005). Other studies have indicated that there is positive association between the size of firms and their performance. Gleason et al. (2000), Min-Tsung Chen (2009), Zeitun (2007), Rahaman & Alam (2014), Sadeghian et al. (2012) and Naveed & Ahmed (2019) described a positive association of firm size with ROA and Tobin's Q. However, Amato and Burson (2007) and Niresh and Thirunavukkarasu (2014) revealed a negative effect of firm size on performance (ROA and Tobin's Q). Thus, the following hypotheses are tested:

H5*: Firm size has a significant association with firm performance (ROA)*

H6 *Firm size has a significant association with firm performance (Tobin's Q)*

3.5.4 The Association between Growth and Firm Performance

Most previous studies have generally agreed that growth has a positive association with performance as a result of higher profit and investment opportunities accrued from the high rate of growth. King and Santor (2008) discovered a positive link between growth rate (or sales growth) and FP, measured by Tobin's Q. Afza1 and Ahmed (2017), Tian and Gleason et al. (2000), Jiraporn and Liu (2008) and Naveed and Ahmed (2019) found that growth opportunities of firms positively and significantly affect FP measures, like ROA and Tobin's Q. Margaritis and Psilaki (2010) found a positive association between sales growth and efficiency; while Nunes et al. (2009) and Lööf & Heshmati (2006) found sales growth is negatively related to FP, measured by ROA and Tobin's Q. So, the following hypotheses are tested:

H7: *Growth has a significant association with firm performance (ROA)*

H8*: Growth has a significant association with firm performance (Tobin's Q)*

3.5.5 The Association between Tangibility and Firm Performance

The tangibles of firms are considered easy to monitor. It also assists as collateral, and thus, it strongly alleviates agency conflicts. Dada et al. (2016) asserted that higher ratio of tangible assets in a firm is considered as best security for the firm to get a loan, whereby the high tangible assets a firm has results in reduction of creditor risk and chances of bankruptcy. Therefore, it is argued that firms with more tangible assets have the ability of getting secured debt and earn more profit in upcoming years (Al-Najjar, 2011).

With this, several studies (Zeitun and Tian, 2007; Talat and Hussain, 2011; Nunes et al., 2009) have documented a negative association between FP and CS. Based on available studies of Le and Phan (2017), Dada and Ghazali (2017) and Margaritis and Psillaki (2009), below are this study's hypotheses:

H9: Tangibility and firm performance (ROA) have a significant relationship.

H10: Tangibility and firm performance (Tobin's Q) have a significant relationship.

3.5.6 The Association between Liquidity and Firm Performance

Cho et al. (1998) posited that liquidity signals FP and its prospects, i.e., firms having higher liquidity are likely to exhibit good performances as well as more opportunities for investment. Additionally, having high cash level could help firms in supporting their new projects, along with paying of dividends or mitigating financial distress. Consequently, it is predicted that liquidity is associated positively with performance of firms. Naveed and Ahmed (2019), Afza and Ahmed (2017), Enilolobo et al. (2019), Le and Phan (2017) and Dieu et al. (2019) found a positive association between liquidity and ROA. On the other hand, Onaolapo and Kajola (2010) and Sadeghian et al. (2012) found a negative association between liquidity and FP, measured by Tobin's Q and ROA. So, the following hypotheses are tested:

H 11*: Liquidity has a significant association with firm performance (ROA)*

H 12*: Liquidity has a significant association with firm performance (Tobin's Q)*

3.6 Data Analysis

The analysis was conducted in three steps. Firstly, descriptive statistics was used to describe the data, using maximum, minimum and standard deviation. Secondly, the correlations analysis led to understanding the direction of correlation between CS as the IV and financial performance as the DV. Lastly, linear regression analysis was carried out to test the hypotheses.

3.6.1 Methods of Estimation

This section explains how to model error term in a specified regression model to the panel data which is depicted mathematically as below:
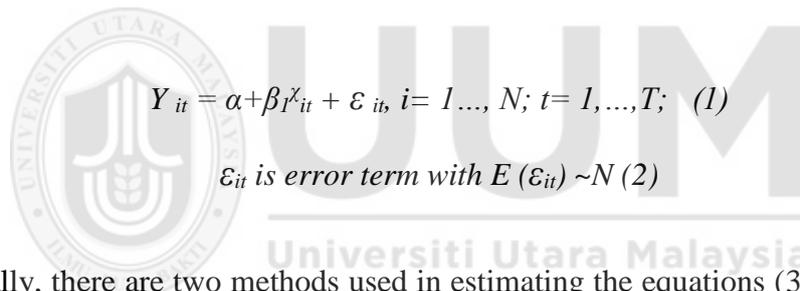
$$Y_{it} = \alpha + \beta_1 \chi_{it} + \varepsilon_{it}, \; i = 1..., N; \; t = 1,...,T; \quad (1)$$

$$\varepsilon_{it} \text{ is error term with } E(\varepsilon_{it}) \sim N \; (2)$$

Basically, there are two methods used in estimating the equations (3.1, and 3.2). The techniques are Pooled Ordinary Least Squares (Pooled OLS) and fixed-effects (FE) regression.

3.6.2 Econometric Model

All variables are hypothesised to have a significant association with FP. The model is developed based on the list of variables for this study. It is written as:

$$ROA_{it} = \alpha + \beta_1 LTDTA_{it} + \beta_2 TDTA_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 Tang_{it} + \beta_6 LiQ_{it} + u_{it}$$

(3.1)

51

$Tobin\ Q_{it} = \alpha + \beta_1 LTDTA_{it} + \beta_2 TDTA_{it} + \beta_3 SIZE_{it} + \beta_4\ GROWTH_{it} + \beta_5 Tang_{it} + \beta_6 LiQ_{it} + u\ it$

(3.2)

Where,

ROA: Return on Assets

LTDTA: Long-Term Debt to Total Assets

TDTA: Total Debt to Total Assets

Size: Firm Size

Growth: Sales Growth

Tang: Tangibility

LiQ: Liquidity

3.6.3 Descriptive Statistics

This is the first analysis used to describe the data. This analysis is usually used to understand the descriptive nature of the data that will assist to summarise and describe the data (Zikmund, 2003). So, minimum, maximum, mean, variance and standard deviation are calculated to interpret the variables used in this study.

3.6.4 Correlation Coefficient

The correlation coefficient formula is:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}}$$

Where:
r: correlation coefficient
n: number of samples.
x, y: variables

Correlation is a statistical measure of how two variables fluctuate in relation to each other. A range of correlations from negative one (perfect negative association) to positive one (perfect positive association) is used to show the association among the variables. However, perfect correlation is very rare, except in a case when a variable is correlated with itself. If a correlation equals zero, it means the two variables do not have a linear association (Jackson, 1995). The correlation matrix was used to test the association between CS and FP and the correlation range is described as follows.

Table 3.3

Correlation Coefficient

Value of Correlation Coefficients	Strength of correlation
(-1)	A perfect negative association
(-0.70) – (- 0.99)	A strong negative association
(- 0.40) – (-0.69)	A moderate negative association
(-0.10) – (-0.39)	A weak negative association
0	No linear association
(+0.10) – (+0.39)	A weak positive association
(+0.40) – (+0.69)	A moderate positive association
(+0.70) – (+0.99)	A strong positive association
(+1)	A perfect positive association

3.6.5 Multicollinearity

The linear regression model is considered good for the process of estimating the parameters if there is no multicollinearity among the explanatory variables. Multicollinearity can be controlled by using the Variance Inflation Factor (VIF). According to Gujarati (2003), multicollinearity exists among all IV if VIF value is higher than 10. Thus, the VIF test is employed to measure the amount of multicollinearity in a set of multiple regression variables.

3.6.6 Pooled Ordinary Least Squares (Pooled OLS) Regression

Basically, the model is estimated by employing general OLS regression. It is assumed that there is maximum of T time period and maximum of N cross-sectional entities. Since each cross-sectional unit has similar number of time-series observations, the model is termed as a balanced panel data. Equation (3.1 and 3.2) postulates that the intercept and the slope coefficient are the same across subject and time. The error term unit compresses differences over time an individual. After all, pooled OLS has a limitation; which it does not distinguish among various cross-sectional entities. Therefore, by combining and pooling the cross-sectional unit, it simply denies the heterogeneity or individuality that may exist among the entities. It is supposed that these entities are the same. The association between Y and X across the cross-sectional units (Gujarati & Porter, 2009) in this model was estimated using OLS, fixed or random-effects (RE) based on the Hausman Test and estimation techniques due to its simple nature.

$$ROA_{it} = \alpha + \beta_1 LTDTA_{it} + \beta_2 TDTA_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 Tang_{it} + \beta_6 LiQ_{it} + u_{it} \quad (3.1)$$

$$Tobin\ Q_{it} = \alpha + \beta_1 LTDTA_{it} + \beta_2 TDTA_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 Tang_{it} + \beta_6 LiQ_{it} + u_{it} \quad (3.2)$$

All cross-sectional entities have a similar number of time-series observation. Equations 3.1 and 3.2 presume that the output of the interception α and slope coefficients (β_1, β_2, β_3, β_4, β_5 and β_6) remains the same across space and time. Over entities and time, divergence is compressed by error terms unit compresses.

3.7 Hausman Test for Fixed or Random-Effects

In order to test the effect of CS on FP, panel regression analysis and Hausman Test were used in the present work. The tests are used to discover the best model that can explain the effect of the DV on the IV. FE regression is incorporated when the specific component is not an IV. In contrast, RE is incorporated when the specific component is a DV. When the Hausman test shows that p-value is <5%, it provides the justification to use FE regression. But when results are >5%, the RE regression is used.

$$ROA_{it} = \alpha + \beta_1 LTDTA_{it} + \beta_2 TDTA_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 Tang_{it} + \beta_6 LiQ_{it} + u_{it} \quad (3.1)$$

$$Tobin\ Q_{it} = \alpha + \beta_1 LTDTA_{it} + \beta_2 TDTA_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 Tang_{it} + \beta_6 LiQ_{it} + u_{it} \quad (3.2)$$

Where $u_{it} = \alpha_i + \varepsilon_{it}$ is often called the composite error.

3.8 Summary of Chapter

This chapter explains data extraction and measurement of variables. In addition, this chapter also develops 12 hypotheses to analyse the association between CS and FP as well as the methodology used in this study. The specific data, the analysis of variables and the results of the study are discussed in the next chapte.

CHAPTER FOUR

RESULT AND DISCUSSION

4.0 Introduction

This chapter outlines and discusses the main results relating to the association between CS and the performance of non-financial public listed firms on the ASE. In this chapter, the outcomes of the study based on the research objectives and the hypotheses are highlighted. The results comprise descriptive statistics, correlations and multiple regressions. The models were evaluated using OLS, FE or RE based on Hausman Test and estimation techniques to determine the association among the variables. The data elicited through the data stream and annual reports were analysed using STATA 14.0.

4.1 Descriptive Statistics of Data

Descriptive statistics outlines the essential characteristics of sampled data for the study. It offers a summary form of the entire data. Thus, the current sub-section describes the study's IV and DV for a total sample of 95 firms covering both the industrial and service sectors belonging to the non-financial sector of the ASE. The descriptive statistics used include the mean, standard deviation, percentages, minimum and maximum values.

Table 4.1

Descriptive Statistics

Variables	Mean	Std. Dev	Min.	Max.
ROA	.012	.086	-.614	.387
Tobin's Q	.041	.200	-.856	1.129
LTDTA	.181	.127	.023	.403
TDTA	.292	.229	.001	1.045
Size	10.022	1.351	6.588	13.878
Growth	-1.815	16.792	-27.7	22.883
TANG	.365	.292	0	.982
LIQ	1.615	.835	.694	2.938

Note: ROA=Return on Assets, Tobin's Q = Tobin's Q, TD=Total Debt to Total Assets, LTD=Long-Term Debt to Total Assets, Size=Size of the firms, GROWTH= Sales Growth, TANG=Tangibility, LIQ=Liquidity

Base on Table 4.1, the descriptive results show that the mean value of ROA is .012, with a maximum of .386 while the minimum is -.614. It implies 1.2 % is the rate at which firms generate income through the use of their assets. It shows efficiency is not high, and Jordanian firms need to improve ROA to attract investors. In the same manner, Table 4.1 shows that the mean for the DV (Tobin's Q) is .041, while the minimum is -.856 and the maximum is 1.129. So, the ROA of performance indicates that Jordanian firms have a low accounting performance. Similarly, for Tobin's Q, the most powerful proxy of performance in Jordanian firms, the high ratios of Tobin's Q could be as a result of the rise in equity and firms' share price without a corresponding rise in the actual performance of the firms.

The ratio of TDTA has a mean of .292. This indicates that .292 of the assets of the company is financed through debt. This ratio has a minimum value of .001and a maximum value of 1.045. Evidence in Table 4.1 shows that LTDTA value is in the range of .023 (minimum) to .403 (maximum). Moreover, in terms of long-term debt, the mean value of LTDTA is .181. So, regarding Jordanian firms, mean value of firm growth is -1.815, whereas minimum value is -27.7 and maximum value is 22.883. This implies that the level of growth among listed Jordanian firms is uneven. Firm size mean is 10.022 with a minimum value of 6.588 and maximum value of 13. 878. On the other hand, the mean of tangibility is 36.5 on average and the maximum is .982 and minimum is 0.0. Additionally, the mean value of LIQ is 1.615 with a maximum of 2.938 and minimum of 0.694. Hence, Jordanian firms maintain a good level of its liquidity (161%) to be safe and be able to meet their obligations.

4.2 Correlation Matrices

Besides the determination of the existence of a bivariate correlation among variables, the correlation matrices were also adopted to guarantee the correlation values among variables are not too high so as to limit the presence of multicollinearity problem (Sheikh & Wang, 2011; Akeem et al., 2014). Table 4.2 presents the coefficient correlation matrices of the association among the six IV of CS and two DV, representing FP from the years 2013 to 2017.

Table 4.2

Correlation Matrices

Variables	ROA	Tobin Q	TDTA	LTDAT	Size	Growth	TANG	LIQ
ROA	1							
Tobin Q		1						
TDTA	-0.151	-0.092	1					
LTDTA	-0.051	0.052	0.168	1				
Size	0.189	0.209	0.442	0.069	1			
Growth	0.170	0.168	0.045	-0.001	0.087	1		
TANG	-0.154	-0.104	0.079	0.099	0.067	-0.012	1	
LIQ	0.131	0.111	0.014	-0.077	-0.074	-0.011	0.005	1

Note: ROA=Return on Assets, Tobin Q = Tobin's Q, TDTA=Total Debt to Total Assets, LTDTA=Long-Term Debt to Total Assets, SIZE=Size of the firms, GROWTH= Sales Growth, TANG=Tangibility, LIQ=Liquidity.

Table 4.2 illustrates the Pearson correlations for this study. The value of Pearson correlation (r) is a measure of strength along with direction of the correlation between two variables. For the current study, Table 4.2 shows the correlation between CS and financial performance measures (ROA and Tobin's Q) of the six IV (TDTA, LTDTA, Size, Growth, TAN and LIQ).

The purpose of applying the correlation coefficient is to assess the degree of linear association that exists amongst two variables or more (Husain, Affandi, & Shukur, 2015). In Table 4.2, it can be viewed that there is a negatively significant correlation between TDTA and ROA and Tobin's Q. This means that a higher level of TDTA leads to lower performance (ROA, Tobin's Q). In addition, LTDTA is negatively related to ROA and positively related to Tobin's Q.

Additionally, firm size is positively and significantly related to ROA and Tobin's Q, suggesting that large Jordanian firms are highly diverse and have easy access to capital with favourable interest rates. Also, sales growth is positively associated with FP; while, TANG has a negative association with ROA and Tobin's Q. Lastly, LIQ is positively correlated to the performance through ROA and Tobin's Q.

4.3 Variance Inflation Factor (VIF)

Assessment of multicollinearity is necessary as it can identify the correlation among two or more IV in a study. The presence of multicollinearity among variables tends to reduce the reliability of the analysis (Stock and Watson, 2007). A common test to investigate multicollinearity is the VIF, which assesses the extent of correlation among variables (Obrien, 2007; Pallant, 2010). The VIF is employed to assess the collinearity among variables using regression analysis. The VIF is estimated as 1/Tolerance and the value is normally greater or equal to 1. There is no standard rule for determination of VIF value as a measure for the existence of multicollinearity. Generally, VIF values exceeding 10 are considered to signify multicollinearity (Wooldridge, 2012; Gujarati and Porter, 2009).

Table 4.3

VIF Test

Variable	VIF	1/VIF
TDTA	1.280	.781
LTDTA	1.044	.958
Size	1.262	.793
Growth	1.008	.992
TANG	1.016	.984
LIQ	1.015	.985
Mean VIF	1.104	

According to Table 4.3, the VIF results show that multicollinearity does not exist in this sample, since the largest VIF is 1.280 for TDTA and it is less than 10. The VIF ranges from 1.008 to 1.280, which is less than 10, indicating that there is no issue of multicollinearity in this study.

4.4 Result of Regression Analysis (OLS)

Table 4.4

Regression Result of Model 1 - ROA

ROA	Coef.	St. Err.	t-value	p-value	Sig.
TDTA	-.106	.018	-5.94	0.000	***
LTDTA	.00	.015	0.03	0.979	
Size	.02	.003	6.56	0.000	***
Growth	.001	.00	3.58	0.000	***
TANG	-.041	.012	-3.29	0.001	***
LIQ	.007	.002	3.81	0.000	***
Constant	-.151	.029	-5.25	0.000	***
R-squared	17.7			No of obs	475
Prob > F					0.000

Note: *** p<.01, ** p<.05, * p<.1. ROA=Return on Assets, TDTA=Total Debt to Total Assets, LTDTA=Long-Term Debt to Total Assets, SIZE=Size of the firms, GROWTH= Sales Growth, TANG=Tangibility, LIQ=Liquidity.

Table 4.4 presents the regression results of the model that used ROA as the DV. The regression analysis shows R-squared of 17.7 %. This indicates that about 17.7% variation observed in ROA is explained by the IV (total debt to total assets, long-term debt to total assets, sales growth rate, size of the firms, tangibility and liquidity). So, the findings are in line with Ramadan and Ramadan (2015) who investigated the CS of Jordanian firms and this study found that TDTA is significantly and negatively associated to ROA**.** Furthermore, LTDTA is positive but insignificantly related to ROA. This outcome is in line with Eibad (2009). Size is significantly and positively related to ROA, concurring with Min-Tsung Chen (2009). The result indicates also that growth has a significantly positive association with ROA, supporting Pallant

(2010) claim that high performance companies should issue debt, as debt is a financing instrument that is more convincing than equity. The result is in line with Naveed and Ahmed (2019) and Afza1 and Ahmed (2017). Likewise, ROA is negatively and significantly related to tangibility, in tandem with Nunes et al. (2009). According to Zeitun and Tian (2007), Jordanian firms invest more in fixed assets that does not improve its performance or firms do not use their fixed assets professionally. Thus, it has a negative influence on performance. Besides, liquidity has a positively significant association with ROA, consistent with the results of Dieu et al. (2019); therefore, firms having higher liquidity are more likely to exhibit better performance

4.4.1 Hausman Test Results

Table 4.5

Hausman Test Results Model 1- ROA

Chi 2 (6)	18.61
Prob>Chi 2	0.0048

The outcome of Hausman test supports the choice of the FE regression as indicated by p-value that is lesser than 0.05. The p-value is 0.0048 when ROA was investigated against the six IV. The test also shows that FE should be used to investigate the association between CS and ROA.

4.4.2 Fixed-Effects Regression Results - Model 1 ROA

Table 4.6

Fixed-Effects Regression Results - Model 1 ROA

ROA	Coef.	St. Err.	t-value	p-value	Sig.
TDTA	-.244	.039	-6.29	0.000	***
LTDTA	.006	.015	0.36	.715	
Size	.094	.014	6.49	0.000	***
Growth	.00	0.00	2.30	0.022	**
TANG	-.098	.034	-2.88	0.004	***
LIQ	-.003	.007	-0.37	0.71	
Constant	-.816	.141	-5.78	0.000	***
R-squared	16.9		No of obs		475
Prob > F					0.000

*Note: *** p<.01, ** p<.05, * p<.1. ROA=Return on Assets, TDTA= Total Debt to Total Assets, LTDTA=Long-Term Debt to Total Assets, SIZE=Size of the firms, GROWTH= Sales Growth, TANG=Tangibility, LIQ=Liquidity.*

Table 4.6 shows the FE regression results. The results show that R-squared is 16.9 %. This indicates that about 16.9% variation in ROA is explained by IV (total debt to total assets, long-term debt to total assets, sales growth rate, firm size, tangibility and liquidity). Rahaman, and Alam (2014) who also investigated the CS of Jordanian firms, showed that there is a significantly negative association between TDTA and ROA. A negative association shows that agency problems could lead companies to use debt in its CS more than is appropriate, which limits the managers' capacity to manage the operations efficiently, thus negatively affecting FP. Hence, this result supports **H3.** Furthermore, LTDTA has an insignificant but positive association with ROA. This might be due to the long-term debts to reduce the pressure for repayment and give

flexibility towards improvement profitability, thus, **H1** is not supported, in line with Ebaid (2009) and Aboor (2007). Firm's size has a positively significant association with ROA and consistent with the forecasts of the trade-off theory that larger firms tend to use debt to have tax savings on interest costs. This result supports **H5** and is consistent with Dada & Ghazali (2016). The outcome also illustrates that growth is positively and significantly related to ROA, which means increased growth is reflected by an increase in FP. So, **H7** is supported, in line with Naveed and Ahmed (2019) and Afza1 and Ahmed (2017). Likewise, tangibility is negatively but significantly related to ROA which does not support **H9.** This is in line with Nunes et al. (2009) and Zeitun and Tian (2007). Liquidity has a negative and insignificant association with ROA . Thus, **H11** is not supported, consistent with Ramarow (2017).

4.5 Result of Regression Analysis (OLS)

Table 4.7

Regression Result of Model 2 - Tobin's Q

Tobin's Q	Coef.	St.Err.	t-value	p-value	Sig
TDTA	-.144	.028	-5.15	0.000	***
LTD	.051	.024	2.16	0.031	**
Size	.031	.005	6.62	0.000	***
Growth	.001	0.00	3.54	0.000	***
TANG	-.052	.02	-2.65	0.008	***
LIQ	.023	.007	3.43	0.001	***
Constant	-.262	.047	-5.56	0.000	***
R-squared	14. 9		No of obs		475
Prob > F					0.000

Note: ***p<.01, **p<.05, *p<.1. Tobin's Q = Tobin's Q, TDTA= Total Debt to Total Assets, LTDTA= Long-Term Debt to Total Assets, SIZE=Size of the firms, GROWTH= Sales Growth, TANG=Tangibility, LIQ=Liquidity.

Table 4.7 shows the regression results for CS and FP. R-squared is 14.9 %, indicating that around 14.9% variation in Tobin's Q is explained by the IV (total debt to total assets, long-term debt to total assets, sales growth rate, firm size, tangibility and liquidity), consistent with Afza, et al. (2017). There is a significantly negative association between TDTA and Tobin's Q, meaning that high levels of debt in the company's CS is directly related to high performance (Saeedi et al., 2011; Martis et al., 2013). Besides, the results show that there is a significantly positive association between LTDTA and Tobin's Q, in line with Nawaz, Ali, & Naseem (2011). On the other hand, size is significantly and positively related to FP, measured by Tobin's Q. Moreover, firm's growth has a positively significant association with Tobin's Q, suggesting an increase in sales improves performance. Thus, the results are in line with Naveed and Ahmed (2019), Amato and Burson (2007) and Ahmed (2017). Zeitun and Tiann (2007) found a significant but negative association between TANG and Tobin's Q; thus, Jordanian firms invest more in fixed assets, a method that does not improve its performance. Additionally, LIQ shows a positively significant association with Tobin's Q, in line with Naveed and Ahmed (2019).

4.5.1 The Hausman Test results

Table 4.8

Model 2 Tobin's Q

Chi 2 (6)	33.52
Prob>Chi 2	0.0000

Table 4.8 indicates the result of the Hausman Test. The p-value is less than the confidence level of 0.05, signifying that the FE regression model is appropriate when the IV are investigated against the DV (ROA).

4.5.2 Fixed-Effects Regression Results of Model 2 - Tobin's Q

Table 4.9

Fixed-Effects Regression Results of Model 2 - Tobin's Q

Tobin's Q	Coef.	St. Err.	t-value	p-value	Sig.
TDTA	-.236	.059	-4.00	0.000	***
LTDTA	.002	.024	0.09	0.927	
Size	.109	.022	4.98	0.000	***
Growth	.001	0.00	2.43	0.016	**
TANG	-.133	.052	-2.57	0.011	**
LIQ	-.002	.011	-0.17	0.862	
Constant	-.939	.215	-4.37	0.000	***
R-Squared	11.7		No of obs		475
Prob > F					0.000

Note: *** p<.01, ** p<.05, * p<.1. Tobin's Q = Tobin's Q, TDTA= Total Debt to Total Assets, LTDTA= Long-Term Debt to Total Assets, SIZE=Size of the firms, GROWTH= Sales Growth, TANG=Tangibility, LIQ=Liquidity.

Table 4.9 presents the results of the FE model. Tobin's Q has a R-squared of 11.7%, consistent with Afza et al. (2017). TDTA has a significantly negative association with Tobin's Q. This finding is in line with Tristan and Huy-Cuong (2015) who claimed that TDTA influences firm's performance or is directly related to increased performance (Tobin's Q). Thus, this result supports **H4**. LTDTA has an insignificant association with Tobin's Q, in line with Bhagat et al. (2001), which does not support

H2. Dawar (2014) found that size has a significant influence on FP (Tobin's Q), supporting **H6.** Thus, large Jordanian firms are highly diverse and have easy access to capital with favourable interest rates and can benefit optimally from economies of scale. The result is in line with Rizky, Nur, and Siti (2017). In addition, firm's growth has a significantly positive association with Tobin's Q, implying that as sales growth increases, then performance improves, supporting **H8**. The results are in line with Naveed and Ahmed (2019), Amato and Burson (2007) and Ahmed (2017). Zeitun and Tiian (2007) also found a negative and significant association between TANG and Tobin's Q which support **H10**. Jordanian firms invest more in fixed assets in a method that does not improve their performance. Similarly, Tobin's Q shows an insignificant but negative association with liquidity. Therefore, LIQ is unable to describe the variability of FP in Jordan for the period of the current study. Hence, the result does not support **H12,** in line with Yakubu et al. (2017).

4.6 Summary of Hypotheses Testing Results

Table 4.10

The Table below presents the summary of the findings from hypotheses testing.

Number	Hypothesis	Result
H1	There is association between capital structure (long-term debt) and firm performance (ROA)	**Not Supported**
H2	There is significant association between capital structure (long-term debt) and firm performance (Tobin's Q)	**Not Supported**
H3	There is significant association between capital structure (Total Debt) and firm performance (ROA)	**Supported**

69

H4	There is significant association between capital structure (Total Debt) and firm performance (Tobin's Q)	**Supported**
H5	There is significant association between firm size and firm performance (ROA)	**Supported**
H6	There is significant association between firm size and firm performance (Tobin's Q)	**Supported**
H7	There is significant association between growth and firm performance (ROA)	**Supported**
H8	There is significant association between growth and firm performance (Tobin's Q)	**Supported**
H9	There is significant association between tangibility and firm performance (ROA)	**Supported**
H10	There is significant association between tangibility and firm performance (Tobin's Q)	**Supported**
H 11	There is significant association between liquidity and firm performance (ROA)	**Not Supported**
H 12	There is significant association between liquidity an firm performance (Tobin's Q)	**Not Supported**

4.6 Summary of Chapter

This chapter provides the summary statistics of data, the correlation matrices of the IV, VIF values that specify the level of multicollinearity of the variables, and the regression analyses of the data using pooled OLS, Hausman Test and FE model.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

The present chapter covers the summary of current findings of this research and highlights the research limitations for this study. Finally, this study provides key recommendations that will help to improve performance among the Jordanian firms as well as recommendations for future research.

5.1 Summary of Study

This study investigates the association between CS of firms listed on the ASE and their performance. Consequently, the study employs data from the annual reports from ASE and DataStream. The data comprises reports from 95 Jordanian firms listed on the ASE from both the industrial and service sectors. Also, the data covers the period of 2013-2017. The models applied for analysing the data are the panel data pooled OLS and FE models based on the Hausman Test. This method of regression analysis is considered as the best and the most simple among the other methods of regression.

Through determinants of CS, notably, LTDTA, TDTA, TANG, Size, Growth and LIQ, and applying ROA and Tobin's Q as proxies to measure performance, studies have generally found a positive and significant association between CS and FP. Furthermore, research outcomes indicate that TDTA and performance measures of Jordanian firms (ROA and Tobin's Q) show that TDTA and TANG have a significantly negative association with ROA and Tobin's Q. Meanwhile, LTDTA has a positively insignificant association with ROA and Tobin's Q. Size and growth have

a positively significant association with performance (ROA and Tobin's Q). LIQ has a negative and insignificant association with ROA and Tobin's Q. This further indicates the role of these factors in influencing the performance of Jordanian firms. Thus, the variables in the current study aid investors in the identification of risk factors in companies.

The trade-off theory offers explanation concerning debt size and tax shield, i.e., a firm with more debt enjoys extra tax shield, although this may only possibly be up to a certain level of debt. When firms over-leverage their capital, this will bring about hardship in trying to meet the obligation of interest payment. Consequently, it is possible to maintain a positive association between LTDTA and ROA and Tobin's Q. Also, the association between TDTA and ROA and Tobin's Q should be negative. The Pecking Order theory assumes a positive influence of firm size on leverage ratio. The lower level of information asymmetry grants large firms the privilege of borrowing at favourable terms. Generally, firms with potentially high profitability and more liquidity usually adopt a CS with less debt; whereas having high tangible assets along with large firm size and growth encourage firms to take the risk of longer-term debt. Contrary to perception, firms in Jordan are particularly characterised by low profitability and liquidity, which are inadequate to manage the restrictions and burdens of repayment that accompanies long-term debts. Nonetheless, they could overcome these weaknesses through the incorporation of other industry and country influences into the choices of CS. Finally, the outcome of this empirical study further suggests the emergence of the important role that CS plays in influencing FP.

5.2 Limitations

The study only focuses on two sectors in Jordan as an emerging market which does not reflect the overall markets of developing economies. In Jordan, there are other sectors like financial sector, and hence, the outcomes of the current research are only limited to the sampled sector since not all the sectors are covered. Secondly, the data for the current study only covers a period of five years. Employing data over a longer time can serve to provide better accuracy in results. Thirdly, it is possible to investigate the influence of CS on FP in the financial sector, followed by an assessment of the outcomes to identify the exact nature of their association.

5.3 Recommendation and Further Research

The findings of the current study indicate the need for the sampled firms, such as the industrial and services firms in Jordan, to investigate earnestly their CS. As earlier mentioned, firms in Jordan have the option of debt financing whereby a majority of firms prefer to resort to internal resources. In a way, instead of resorting to external resources, it is further suggested that relying too much on debt can decrease the firm's profitability and may into bankruptcy. Hence, another suggestion is that the financial managers of firms can device appropriate strategies and work on the best CS. Over-reliance on debt can lead to lower performance, consequent to high costs and bankruptcy. The study therefore, recommends cautiousness on the part of managers intending to use debt financing as the increase of debt above optimal debt level has an implication on an increase in the cost of capital which influences negatively on performance. Managers require support in identifying an optimum level of debt so as to ensure there is no excessive use of debt in forming the CS. This is necessary for

maximisation of performance along with the wealth of shareholders. Managers need to mobilise the firm's real CS towards an optimal level and further sustain the level as far as feasible. Additionally, future researchers need to investigate the association between CS and FP in Jordan, using macroeconomic variables, like inflation, growth in GDP and business risk, to determine CS. Finally, future researchers should employ the moderating role of competitive intensity measure using the Herfindahl-Hirschman Index with debt ratios. Likewise, they can also involve control variables, for instance, age of firm and asset turnover rate in the framework.

5.4 Conclusion

The current study explains the association between CS and FP of Jordanian firms listed on the ASE, whereby CS is measured by the ratio of LTDTA and TDTA with ROA and Tobin's Q as indicators of FP. In addition, due to the big difference in operations and the use of debt among non-financial firms, the current study splits the sample of the current study into two sectors, i.e., industrial and services sectors, and runs empirical regressions for non-financial firms by using pooled OLS and FE model based on the Hausman test as a method of regression analysis because this method is considered as the best and the most simple among the other methods of regression.

Generally, extra profitable and liquid companies would tend to use a lesser amount of debt in their CS, but larger size, growth and tangible assets, tend to create risks for debt with long-term maturities. Jordanian companies are generally not more liquid and profitable or able to manage the restrictions and burdens of repayment which accompany long-term debts. They can make up for such weaknesses by incorporating

other industry and country influences in their CS choices. Lastly. the current study recommends that CS is a vital factor affecting Jordan's FP.

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77

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