

UNIVERSITY OF GHANA

**FACTORS AFFECTING FINANCIAL LEVERAGE OF MANUFACTURING FIRMS
LISTED ON THE GHANA STOCK EXCHANGE**

BY

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**THIS LONG ESSAY IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON
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DECLARATION

I, **Jennifer Owusu**, do hereby declare that, this research project is done by me and the results are of my own work and has not been presented by anyone in part or whole for any academic award in this or any institution. All references used in this work have been acknowledged accordingly.

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University of Ghana.

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DATE

DEDICATION

I dedicate this work to the almighty God and my lovely family, especially my parents, Mr. John Kweku Owusu and Mrs. Felicia Owusu for their immerse contribution and support throughout my educational career.

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ABBREVIATIONS

GSE	-	Ghana Stock Exchange
DTA	-	Debt to Total Asset
DTE	-	Debt to Total Equity
ETA	-	Equity to Total Asset
LIQ	-	Liquidity
ROA	-	Return on Asset
ROE	-	Return on Equity
FINLEV	-	Financial Leverage
FIRM SZ	-	Firm Size
PROD COST	-	Production Cost
TANG	-	Tangibility
GMM	-	Generalized Method of Moments

ABSTRACT

In this study, I aimed at three objectives. First, to determine the financial leverage of manufacturing firms listed on the Ghana Stock Exchange. Second, to analyse the relationship between financial leverage and profitability. Third, to examine the factors affecting financial leverage of manufacturing firms that are listed on the Ghana Stock Exchange. Employing descriptive and trend analysis, my results showed that financial leverage of manufacturing firms listed on the Ghana Stock Exchange has been varying over time precisely, financial leverage increased from 2006 to 2007, declined thereafter until 2013 where a sharp increase was observed to 2015 and then decreased again from 2016 to 2018. This suggests that manufacturing firms rely more heavily on debt financing thus more exposed to the risk of financial leverage, bankruptcy, whiles financing their operations. In terms of my second objective, using the dynamic system Generalized Method of Moments (GMM) to analyze the relationship between financial leverage and manufacturing firms' profitability, I established that debt to total asset component of financial leverage is negatively linked to profitability whiles debt to equity and equity to total asset options of financial leverage were positively linked to profitability of manufacturing firms. Lastly, the study employed panel regression, to examine the key determinants of financial leverage. From this regression, I find that return on equity, production cost, inventory, firm size and tangibility are key determinants of financial leverage of the manufacturing firms in Ghana.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The motive behind the establishment of most firms is creation of shareholders wealth or increase in firm's value. However, maximization of shareholders wealth springs from optimal capital structure. For many years, the concept of capital structure has been an object of intense ideologically influenced debate. Consequently, capital structure has been defined from different scholarly perspectives. For instance, Hung (2012) referred to capital structure as a decision made by a firm to finance its operating activities using a specific proportions of debt and equity. Moreover, Marquis (2001) identified the main sources of financing available to business as debt and equity financing. Businesses are therefore required to maintain a right balance between debt and equity financing in order to attain optimum capital structure. Whereas capital structure reflects using specific mix of debt and equity to fund their assets or operations (Abor, 2005), financial leverage highlights usage of more of firm's debt to certain mix of its equity to fund the operation of that firm (Gill, 2008). Debt financing represents borrowings which establishes a debtor-creditor relationship between firms and the bond holders whereas equity financing results from stock issue and it is characterized by interest received by owners of the corporation. There is no hard and fast rule to be applied in determining proportions of debt to equity, thus, a dilemma in determining ideal financial leverage position of firms.

Modigliani & Miller (1958) pioneered capital structure irrelevancy theory, which reveals capital structure plays no significant role in estimating firm's worth. Regardless of a firm being highly leveraged or not has no bearing on firm's worth unlike operating profits. Firm's value hangs on profit margins and corresponding risk attached to an investment

(Horne, 2002). Durand (1952) introduced the net income approach of capital structure, and posited that more leverage would impact the cost of capital which results in increasing firm's value. He emphasized that firms manipulate their cost of capital by using debt capital. Modigliani & Miller (1958), was of the view that businesses retain proportions of debt in capital structure to lessen weighted average cost of capital, unfolding into maximizing firm's worth. An optimal capital structure is one with inclusion of some amount of debt, but not in full. A right blend of debt to equity reduces financing cost of firms which could develop into bankruptcy (Gill, 2011). Cuong and Cahn (2012) stated that a firm's total leverage should not go beyond 59.27% since an increasing debt ratio impacts firms negatively. This contradicts the earlier works by Gill et al (2011), who found a positive correlation between financial leverage and firms' value.

Whether a firm holds more equity or more debt, it is grounded in the choice of correct capital structure hence the importance of capital structure cannot be overlooked (Copeland & Weston, 1984). Although, the study on capital structure has gained much attention in recent times, this study aims at analysing the true effect of financial leverage on profitability of firms. It is however alien in many developing countries as till date many researchers focus their research lenses on factors affecting financial leverage in the developed countries. Ghanaian manufacturing industries have been plagued by setbacks from both the external and internal environment. Many hardly survive after five years of operations and those who find feet in their businesses remain adamant and unable to expand into other markets due to misuse of capital, particularly, financial leverage. This paper sheds light on factors affecting financial leverage of manufacturing firms in Ghana.

1.2 Problem Statement

The manufacturing industry plays a crucial role in our economy by contributing significantly to its average productivity. Survival of any firm depends on the optimal or prudent use of debt and equity in financing their operations (Gill et al., 2011; Abor, 2005). However, financial leverage is an important issue in corporate finance that helps firms to finance their operations with judicious use of debt and equity capital in order to maximize firms' profits. Many firms, according to Gill (2008), have failed because of their inability to use their capital efficiently and due to the cost associated with high borrowing. Although, financial leverage is keen to most organizations, the optimal use of financial leverage varies from one business to another, from one industry to another, and from one institution to another. These differences arising from use of financial leverage among firms result in an inconclusive relationship between firms' leverage and profitability. This study intends to investigate effect of financial leverage on profitability of manufacturing firms in Ghana.

Previous studies present that higher leverage lead to risk of firm going bankrupt, indicating low profits for firms. According to Gill et al (2009), most studies that determined the relationship between financial leverage and profitability are opened to doubt. Capital structure has gained recognition in academic research and studies have been done in the financial sector (Amidu, 2007). In Ghana, studies on capital structure and profitability were centred on listed financial firms (Abor, 2005). These studies established that profitability could either be influenced by the use of either debt, equity or both. Managers of firms find it difficult to choose the combination of debt and/or equity to minimize cost and improve profitability. This study finds out if the choice of financial leverage by manufacturing firms affect their profit.

Moreover, financial leverage is also influenced by factors within a firm. Previous studies analysed financial leverage of small business in India (Gill, Mand & Sharma, 2012); determinants of capital structure of manufacturing firms at Nairobi Exchange Security Market, (Muasa, 2014), and factors affecting leverage in micro and small enterprises at Iasi country level (Onofrei, Tudose, Durdureanu & Gabriel, 2013). However, little has been done on factors influencing financial leverage of manufacturing firms listed on the Ghana Stock Exchange (GSE). In addition to little studies conducted on the factors affecting financial leverage of manufacturing firms listed on the GSE, it is identified that financial managers do not have a clear cut intrinsic and extrinsic factors that affect financial leverage of listed manufacturing firms in Ghana. Therefore, this study seeks to examine the factors that affect the financial leverage and its impact on profitability on listed manufacturing firms in Ghana.

1.3 Research Objectives

The main objective of this study is to examine the factors affecting financial leverage of manufacturing firms listed on the Ghana Stock Exchange.

The specific objectives are:

1. To determine the financial leverage of manufacturing firms listed on the Ghana Stock Exchange from 2006 to 2018.
2. To analyze the relationship between financial leverage and profitability of listed manufacturing firms over the period of study.
3. To examine the determinants of financial leverage of the manufacturing firms listed on the Ghana Stock Exchange.

1.4 Research Question

Based on the research objectives, this study seeks to address the following questions:

1. What is the financial leverage of manufacturing firms listed on the Ghana Stock Exchange over the period of study?
2. What is the relationship between financial leverage and profitability of manufacturing firms listed on the Ghana Stock Exchange?
3. What are the factors that influence the financial leverage of manufacturing firms listed on the Ghana Stock Exchange?

1.5 Significance of the study

This study will empower managers of manufacturing firms and the higher dependable bodies to know the importance of leverage, analyse its effect on firms' profit levels and also determinants of leverage on manufacturing firms. This would help inform their choice of how to blend debt and equity to finance their operations. It will give extra information on the manufacturing firm's profitability which will fill the research gap. It additionally gives bit of knowledge into how manufacturing firms utilize debt and equity proficiently.

This study will provide empirical premise for the analysis and examination of leverage and how it impact on the listed manufacturing firms on GSE. It will convey to the fore factors affecting leverage and it impact on profit margins of these firms. Besides, this study will encourage and move researchers drive to take up further research into firms leverage and its impact on financial viability of other firms listed on the Ghana stock Exchange.

1.6 Organization of the study

The study comprises five chapters. Chapter one details introduction of the study which comprises background of study, statement of problem, research objectives, research questions and significance of the study. Chapter two entails literature review which reveals theories, concepts and empirical review underpinning this study. Chapter three presents methodology employed for the study. Chapter four looks at data analysis and chapter five presents the summary, conclusion and recommendation of this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses literature review on theoretical and empirical works in relation to financial leverage and performance of firms. It highlights the concepts and definitions in line with the research under study. It explains the factors affecting financial leverage among firms.

2.2 Theoretical framework

A number of theories have been developed with respect to firms' choice of capital structure mix. These theories acknowledge factors shaping the choice of capital structure of a firm. Discussions on these frameworks are spelt out below:

2.2.1 Perking order theory

This theory is premised on the fact that companies follow a hierarchical order when it comes to making financial decisions. They would rely on cheaper sources of finance, especially internal sources of funds within the company, before they reach out for external sources of funds, with equity financing being their last resort when debt financing has been fully exhausted (Myers, 1984). The preference of debt over equity financing happens because of the cost that comes as a result of information asymmetric which is associated with debt issue (Myers, 1984). Moreover, a firm would prefer debt to equity if investors discount the stock prices of the firm when firms issue equity as opposed to debt. However, firms tend to avoid this discount by going for the debt option (Myers & Majluf, 1984). G. Donaldson (1961) observed that external financing comes to play in instances where there is a one-time unavoidable bulge in the need for funds. Despite the benefits of this theory to

firms, it also presents some challenges. The pecking order theory encourages firms to build up cash and marketable securities without considering the effects on market discipline. It fails to take into account agency cost, financial distress and the effect of a tax. This study, therefore, seeks to explain the results on the bases of whether firms adhere to the principle of pecking order by ranking their sources of financing which is considered as the cheapest source (Seppa, 2008; Silva, Majluf, & Paredes, 2006; Stretcher & Johnson, 2011).

2.2.2 Static and Dynamic Tradeoff Theory

This theory states that ideal capital structure of a firm is determined by a trade-off between costs and benefits associated with usage of debt and equity. One of the costs associated with static theory is agency cost, which arises out of the conflicts of interest between stakeholders of a firm and financial distress which stems from taking in so much debt. Tax shield benefits is an advantage of taking in debt. According to Jensen and Meckling (1976), a firm determines its capital structure by trading off the tax shield benefits associated with debt against the cost of financial distress and the agency cost. Ayen and Oruas (2008) urge the need for a right balance between the tax benefits arising from debt as that helps minimise agency cost, bankruptcy threats and financial distress.

Dynamic trade-off theory considers the role time plays in evaluating the leverage decisions of a firm. According to Goldstein, Ju, and Leland (2001), this model considers choices between deferring financial leverage today for the future. Firms could opt to increase its leverage in the future when its leverage today is low. This model is said to be less responsive to short-run equity fluctuations than long-run value changes.

2.2.3 Signalling Effect

This theory views top officials and managers as having access to pertinent information with regards to the firm at all times, unlike investors who get to know such information after the

firm's financial statements have been published. Thus, the latter are likely to transfer knowledge to external investors to permit an increase in stock price (Ross, 1977). In order to avoid suspicions about the good prospect of firms, firms increase financial leverage by forecasting future cash flows in such a way that possible financial distress of the firm can be avoided (Veronesi, 2000). Ross (1977) predicted a positive reaction of stock prices to increasing debt.

2.2.4 Modigliani- Miller theorem

Modigliani and Miller (1958) stipulate that capital structure plays no significant role in estimating the firm's worth. They added that, firm's worth is dependent on value of real assets a firm has in stock rather than how these assets are financed. Hence a cautious effort made by a firm to maintain the right blend between debt and equity is irrelevant in assessing how much a firm is worth. They assumed a perfect marketplace devoid of tax and bankruptcy costs.

2.2.5 Shareholders Theory

This theory was pioneered by (Friedman, 1962), who believes that a firm's sole responsibility is to maximize shareholders wealth while minimizing the company's cost of capital. He adds that economic growth of the entire economy soars higher where there is wealth maximization of shareholders. This theory further posits that managers who act as agents of shareholders are required to act in the interest of shareholders, which can be achieved through monitoring of activities undertaken by managers and awarding incentives where appropriate in the form of higher salaries, job securities, bonuses and health care packages.

2.2.6 Stakeholders Theory

This theory was originated by Freeman and McVea (1984) and backed by an assumption that business value is a pillar of growth in every organisation. He urged that managers do not make decisions that would benefit shareholders only but also place relevance on stakeholders' interest, and stakeholders bargaining power, although both objectives seek value maximization and minimization of company's cost of capital. He argues that stakeholder theory considers a firm's value maximization in relation to corporate social responsibility of the firm towards the community since the society has the decisive power to either make or unmake the business.

2.2.6 Dual- investor Theory

This theory was introduced as an antidote to the controversies between shareholders theory and stakeholders' theory. Dual investor theory views every business as having two main investors, namely; the stock owners and society as a whole. The stock owners are deemed to provide the start-up capital whereas the society comes in with opportunity capital. The combined effort of these investors makes up the value of the business. Schlossberger (1994) cautioned that the external society is more valuable to the firm as every firm strives on society and without it, the business cannot operate or even raise capital to run the business.

2.2.7 Stewardship Theory

Stewardship theory, also known as the agency theory stipulates that management is motivated by the will power to achieve a given task and work towards maximizing shareholders' worth at the firm's level or market level (Potter, 1962). He added that the driving force of management is their will power and not the provision of incentives. L. Donaldson and Davis (1991) concluded that neither incentive nor the will power works

towards maximizing firm's value but rather shared responsibilities amongst the parties work towards achieving the firm's ultimate goal of the firm.

2.2.8 Cash flow and Free Cash Flow theory

Businesses usually have in its coffers cash flows used for daily running of their business. These free cash flows are viewed as an internally generated fund that is available to firms. There are however cost incurred by managers when dealing with these cash flows. Scott (1981) found that managers could rely on the records kept on these cash flows to predict the soundness and future performance of the firm. Despite the positive relationship found between the availability of cash flow and firm's performance, Jensen (1986) urges that a negative relationship would exist when managers channel the cash flow into investments that do not promise great yields. The debt was seen as a relief from the cost associated with free cash flows. Harris and Raviv (1991) argue the need to employ debt since such a decision would not only minimise cost but also enable managers to join hands towards the achievement of firm's needs and not their individual needs. Empirical studies observed that the cash flow and free cash flow theory could aid the choice of a mix of debt and equity when making relevant capital structure decisions (Hart & Moore, 1994).

2.3 Manufacturing firm's optimal use of capital structure

The Ghana Statistical Service (GSS) in its industry survey defined manufacturing firm as firms that undertake variety of activities pertaining to production of goods and services. Ghana Enterprise Development Commission (GEDC) also defines manufacturing firms in terms of plant and equipment. Capital structure stems from firms' decision to resort to debt or equity financing in specific proportions (Hoang, Biger, & Nguyen V, 2008). In the financial sector, financial intermediaries like banks are considered as levered firms that only

depend on the use of all debts (deposits and liabilities) to finance their operations, except in few cases where the firm has gone bankrupt. However, manufacturing firms are heterogeneous decision-making unit that depends both on debt (loans, bonds and debentures) and owners' equity in a certain proportion to finance their business (A. Gill, Biger, Pai, & Bhutani, 2009).

Ghanaian manufacturing firms have been plagued by a myriad of setbacks from both the external and internal environment. Many of the firms hardly survive after five years of operation and those who continue in business remains stagnant and are unable to expand into the market due to lack of access to capital, a high cost of borrowing and poor managerial skills amidst other factors. Many firms have failed due to its inability to make use of capital judiciously and strains associated with high borrowing costs (A. Gill et al., 2009). Due to the impact of high cost of borrowing on firm's value, Cuong and Canh (2012) cautioned firms not to exceed 59.27% threshold for total debt. The decision of whether to hold more debt to some proportions of equity is grounded on the right blend of capital structure. Thus, capital structure relevance to firms, more specifically manufacturing firms cannot be overlooked (Copeland, Weston, & Shastri, 1992).

2.4 Factors affecting Financial Leverage from the Global Perspective

Choosing specific proportions of debt to equity could be a daunting task as this decision impact on firm's financial performance (Myers, 1984). Despite the freewill of business to go in for either debt or equity, research shows that businesses are most likely to rely on borrowings from financial institutions. For instance, small firms who are faced with major constraint associated with high issuing cost of securities would find comfort with borrowings from banks in relation to financial leverage decision (Petersen & Rajan, 1994).

Unlike large firms, small firms, sometimes viewed as defaulters of loan due to their poor record keeping of account – face challenges in accessing borrowings from financial institutions. Moreover, due to bankruptcy charges associated with a high cost of borrowing, small firms would prefer minimal or no debt (Ang, 1992; Petersen & Rajan, 1994).

With financial leverage resounding and drifting into an object of intense debate, scholars sought the need to know what determines financial leverage and its possible impact on firm's profitability, value or shareholder's wealth (Ashraf & Rasool, 2013). Sánchez-Vidal (2014) observed that the differences in research findings were on grounds of the type of industry, the country analysed and more importantly the phase of the business cycle, as well as the ratios employed and the methodology used. Most studies are pegged at developed economies that have many institutional similarities (Bevan & Danbolt, 2002; Gonenec, 2003; Huang & Song, 2004; Wald, 1999). Earlier researchers studied optimum capital structure of firms in developed economies (Bevan & Danbolt, 2002; Gonenec, 2003; Huang & Song, 2004), with little work done on financial leverage within developing economies that have varying structures (Abor, 2007). According to (Harris & Raviv, 1991), works done in developed countries shows a positive relationship between financial leverage and tangibility, non-debt tax shields, growth and opportunity, firm's size and a negative relationship between profitability and probability of bankruptcy and volatility. Firms with large fixed assets cling onto debt financing as they have enough assets to turn into collateral. Tangibility is therefore seen as the main determinant of financial leverage among others (Rajan & Zingales, 1995).

Tax shield benefits associated with debt encourages larger firms to go in for debt as opposed to equity financing (Brealey, Myers, Allen, & Mohanty, 2012; Modigliani & Miller, 1958) found a contradiction with pecking order theory and argues that growing

firms acknowledge debt financing from the outside world other than sticking to the funds generated internally. Gill and Mathur (2011) conducted a research on Manufacturing firms in Canada as well as the service sector by employing least square regression method where they found a positive correlation with financial leverage and increasing firm size, but a negative correlation between tangibility, increasing growth opportunity and tax shield benefits. However, results differed in both the manufacturing and the service sector. Gill, Mand, Sharma, and Mathur (2012) focused their research on small business in India and found a positive significant relationship between financial leverage and firm's size, level of sales and family support. Ashraf and Rasool (2013) researched on the determinant of financial leverage in automobile industry in Pakistan, using multiple regression, they found that relationship between these variables (asset size, tangibility and growth) and financial leverage were statistically significant. However, financial leverage and non-debt tax shield, business risk, and profitability were observed to be statistically insignificant.

In developing countries, Abor and Biekpe (2009) observed that listed firms on the Ghana Stock Exchange have more than half of its capital being financed by debt. They found a positive relationship between short term debt to total debt and ROE and a negative relationship between long term debt to total asset and ROE; however, studies were narrowed on a listed financial firm. Amidu (2007) study on determinant of capital structure of banks in Ghana acknowledged that growth opportunities, size of the firm, ownership structure and age of the firm determine the financial leverage of a firm.

2.5 Financial leverage and profitability of firms

Rehman (2013) observed positive relationship between firm's leverage and profitability, using ROA as proxy for profitability of listed sugar firms in Pakistan. Oyesola (2007) and

(Graham, 2000) established that an inverse relationship exist between profitability and cost of capital which contradicts findings of Abor (2005) who established a significant but positive relationship exist between profitability (return on equity) and the financial leverage (the ratio of short term debt to total assets) as well as a negative relationship between long term debt and firm's ROE of listed firms in GSE during a five year period. Abor (2007) in research conducted on small and medium enterprises observed a negative correlation between long term debt and firm's performance. He employ regression analysis techniques on performance measures, using ROA, ROE and Profit margin against capital structure variables such as long term debt to total asset, short term debt to total asset and total debt to equity. Previous work by Myers (1984) found a negative relationship between debt and profitability as he believed firms with good standing do not employ debt financing.

Tuffour, Adjei, Agyei, and Barnor (2014), using the ex-post facto design and the cross-sectional regression to ascertain relationship between financial leverage and profit levels of manufacturing firms listed on the Ghana Stock Exchange for the period 2007-2012 identified a significant negative relationship between long term debt and total debt to profitability, likewise short term debt and total debt to profitability. Oyesola (2007) conducted a study on the relationship between financial leverage and profitability for sampled firms in Nigeria where he found a negative relationship. With new set of manufacturing firms spring up and new data coming on board amidst the inconclusive findings on factors affecting firm's leverage its impact on profitability, this study seek to evaluate the effect of financial leverage on profitability and the determinants of financial leverage of manufacturing firms listed on the Ghana Stock Exchange.

2.6 Empirical Review

Earlier studies identified variables that influence capital structure of businesses. Notable amongst these variables are growth opportunities, performance, tangibility of the asset, firm's size, age, uniqueness of product offered and the ownership structure. Proponents of these empirical results, Amidu(2007), Oppong-Boakye, Appiah, and Afolabi (2013), (Saeedi & Mahmoodi, 2011) and Titman and Wessels (1988) acknowledged these variables as a major determinant of financial leverage.

2.6.1 Growth Prospects

It is urged that firms resort to debt financing since it is cheaper as opposed to equity financing (Sinha, 1992). As earlier established by pecking order theory, it is prudent for firms to analyse the cost associated with a particular type of capital before going in for it. Titman and Wessels (1988), Huang and Song (2004) as well as Gharaibeh and Alnajjar (2007) established the need to get access to more funds in cases where the growth prospects of the firm are increasing; hence, a positive correlation between firm's financial leverage and growth prospect. Conversely, Auerbach (1985) found an inverse relationship between leverage and growth prospect of firms and added that growing firms usually have non-debt tax shields making their tax deductibility of interest payment not useful. Researchers (Oppong-Boakye et al., 2013) and (Bauer, 2004) found an inverse relationship between leverage and growth – upon conducting their studies.

2.6.2 Performance

The relationship between financial leverage and firm's performance has been an object of ideologically influenced debate over decades. Long and Malitz (1985) found a positive relationship between profitable firms and leverage and added that firms who earn much profits would be hard to default when they go in for debt. For this reason, these firms

outlay to debt financing. (Myers & Majluf, 1984) refuted the earlier findings and concluded that an inverse relationship exists between financial leverage and profitability as firms with excessive profit would not go in for debt in the first place than to think of how to defray its debt. Arguments stem up as research findings seem not to have equal stands and all portraying diverse views. Mwangi, Makau, and Kosimbei (2014) employed data from the Kenyan Stock Exchange from 2004 to 2014 and found a positive relationship between financial performance and firms who resort to long terms loans as opposed to short term loans. However, an inverse relationship was observed between financial leverage and ROE (a performance measure) in the studies conducted on the Pharmaceutical firms listed on the Nigerian Stock Exchange from 2001-2012 (Enekwe, Agu, & Eziedo, 2014). Results were however not different from Studies conducted in Asian continent using 150 manufacturing firms for the period 2004-2014 (Javed, Rao, Akram, & Nazir, 2015). Singh and Bansal (2016), studied on the effect of financial leverage on firm's performance, taking into account across yearly data from 2007 to 2016 of 60 industrial firms listed on the Bombay Stock exchange, stipulates an inverse relationship between ROA and financial leverage.

2.6.3 Firm's Size

According to Marsh (1982), firm's size plays an important role in its choice of financing. He argued that larger firms with more stable sources of finance are usually served with leverage option than that of smaller firms. Hence, the relationship between financial leverage and firm's size is dependent on how large or small the firm may be. Titman and Wessels (1988) observed a positive relationship between a firm's size and its debt ratios. He added that as larger firms face less bankruptcy charges, they are likely to go in for more debt, unlike small firms. Works of Bauer (2004), Huang and Song (2004) and (Saeedi & Mahmoodi, 2011) confirmed that a positive relationship exists between these two variables. In Ghana, Oppong-Boakye et al. (2013), who undertook studies on both listed and unlisted firms

found a positive relationship between financial leverage and firm's size which contradicts studies undertaken by Amidu (2007) in microfinance institutions but added that larger microfinance per his study absorbs more long term debt.

2.6.4 Credit Risk

Credit risk is a proxy for financial distress. Firms with high risk do not venture debt financing as it will unravel to financial distress. It is therefore expected that risk and financial leverage would be negatively related (Sufian & Chong, 2008). Analysis by Abor and Biekpe (2009) found a positive but not significant relationship between credit risk and gearing ratio. Since businesses with high credit risk appear to be unattractive to equity holders, which makes debt financing a better alternative than equity. Thus, the risk appetite of the firm would tell which alternative best suit the firm and confirm which relationship exists.

2.6.5 Tangibility

Tangibility is assessed using ratio of fixed assets to a total asset or total log of a fixed asset. Most theorist (Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Titman & Wessels, 1988) found a positive relationship between tangibility and financial leverage, and they consented that firms with a wide array of tangible assets are able to take up debt financing where appropriate as they could quickly raise funds through the sales of these assets to meet up debts obligations. Bas, Muradoglu, and Phylaktis (2009), refuted the proposed findings made by the earlier theorist and declared their findings holds when there is long term debt but with short term debt, there lies a negative relationship. Abor and Biekpe (2009) found a positively but not significant relationship between financial leverage and premised on the notion that firms could resort to debt financing in instances where they have tangible fixed assets. This was an affirmation of the previous study by Rajan and Zingales (1995). In line

with credit risk, it is observed that high-interest rates contribute to a high default rate. On the contrary, a higher interest rate in the market will force firms to increase interest on credits, and withdraw from investing in debts – resulting in a negative relationship between financial leverage and interest rate risk. However, Masnoon and Saeed (2014), Saeedi and Mahmoodi (2011) as well as (Titman & Wessels, 1988) found a positive relationship between financial leverage and interest rate.

2.6.6 Tax

As proposed by Modigliani and Miller (1958), debt is tax deductible and firms with taxable income are likely to cling onto debt financing. However, most researches refuted the underlying theory as their studies conducted revealed the preference of equity to a debt due to the benefit of tax rebates, hence a negative relationship between firm's leverage and tax (Oppong-Boakye et al., 2013). Amidu (2007) found a positive relationship between financial leverage and tax and acknowledged that this relationship was so due to the National Reconstruction Levy the Ghanaian banks are obliged to pay. Most studies conducted on the relationship between financial leverage and tax are still opened to doubt Saeedi and Mahmoodi (2011) and Bauer (2004).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology employed for the study. It highlights design of study, data sources, model estimation and method of data analysis used for the study.

3.1 Design of the Study

The study will use quantitative research design, whose findings are mainly products of statistical summary and analysis. This researcher relies mainly on secondary data. The research consist of panel data comprising of thirteen (13) manufacturing companies listed on the Ghana Stock Exchange (GSE) across yearly data from 2006 to 2016. The target sample size consists of manufacturing firms listed on GSE.

3.2 Population and Sampling Technique

From research point of view, Husamen (1994) defines population as collection of elements relied upon by researches to draw conclusions. This study will target all manufacturing firms listed on the GSE (2006-2018). There are thirteen (13) manufacturing companies listed on GSE (Facts Book, 2010). All the 13 manufacturing firms will be used in the study. The period 2006-2016 covers 12 years. Therefore, 156 data points (13x12) will be used. Therefore, the sampling technique in this study is the census approach.

3.3 Sources of Data

The primary source of information for this research is GSE Facts Book which will be retrieved from their website (2010). This study will relies on both published and unpublished data which includes annual reports, articles and journals which relates to the

topic. Various sources of secondary data will be duly acknowledged at the reference section of the research.

3.4 Analysis of Data

STATA software will be used to analyse the data. Secondary data collected from the annual report of these manufacturing firms will be analysed using descriptive statistics in the form of tabular representations, chart to analyse the patterns in both financial leverage and profitability among the manufacturing firms. Correlation and Regression analysis would be employed as well.

3.4.1 Model Estimation

The first objective will be measured using descriptive statistics and trend analysis. Non-linear graphs will be used for the trend analysis. The determinants or factors affecting financial leverage and relationship between financial leverage and profitability will be analysed using Pearson Correlation Coefficients and Regression analysis. Correlation coefficients of variables will enable us observe the variables that are highly correlated before proceeding to run the regression analysis. The OLS panel regression model will be used for the analysis. For the second objective, financial leverage variable and other explanatory variables will be regressed on profitability variable. The factors or variables affecting financial leverage will be regressed on the dependent variable (financial leverage). Robust standard errors will be used to correct for autocorrelation and heteroscedasticity. This will help improve the parameter efficiency of the model.

The relationship between financial leverage and profitability can be expressed as:

$$\text{PROF}_{i,t} = \beta_0 + \beta_1 \text{FinLEV}_{i,t} + \beta_2 \text{LIQ}_{i,t} + \beta_3 \text{INVENTORY}_{i,t} + \beta_4 \text{FIRMSZ}_{i,t} + \beta_5 \text{PC}_{i,t} + \beta_6 \text{TANG}_{i,t} + \varepsilon_{i,t} \dots\dots\dots(1)$$

The model for examining financial leverage determinants can be expressed as:

$$\text{FinLEV}_{i,t} = \beta_0 + \beta_1 \text{PROF}_{i,t} + \beta_2 \text{LIQ}_{i,t} + \beta_3 \text{PC}_{i,t} + \beta_4 \text{INVENTORY}_{i,t} + \beta_5 \text{FIRMSZ}_{i,t} + \beta_6 \text{TANG}_{i,t} + \varepsilon_{i,t} \dots\dots\dots(2)$$

Variable Description

- $\text{FinLEV}_{i,t}$: Financial Leverage, expressed as: $\frac{\text{Debt}_{i,t}}{\text{Total Asset}_{i,t}}$ and $\frac{\text{Debt}_{i,t}}{\text{Equity}_{i,t}}$
- $\text{PROF}_{i,t}$ was a proxy for performance variables (the dependent) i^{th} firm in time t .

$\text{PROF} = \text{ROA}$ and ROE ; expressed below;

- Return on Assets (ROA) = $\frac{\text{Net Profit}}{\text{Total Assets}}$
- Return of Equity before tax (ROE) = $\frac{\text{Net Profit}}{\text{Shareholder's Equity}}$

Explanatory Variables are;

- $\text{LIQ}_{i,t}$: Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$
- Production Cost of the i^{th} firm in time t . ($\text{PC}_{i,t}$) = $\frac{\text{Cost of Production}_{i,t}}{\text{Total Sales}_{i,t}}$
- INVENTORY of the i^{th} firm in time t . ($\text{PC}_{i,t}$) = $\frac{\text{Stocks in Inventory}_{i,t}}{\text{Total Sales}_{i,t}}$
- $\text{FIRMSZ}_{i,t}$: Firm size, expressed as log of total asset
- $\text{TANG}_{i,t}$: Tangibility, expressed as the ratio of fixed asset to total asset.

$\varepsilon_{i,t}$: Error term controls for unit-specific residual in the model for the i^{th} firm in period t

α_0, β_0 : Intercept of the regression line. $\alpha_{i,s}, \beta_{i,s}$ ($i=1-8$): coefficients to be estimated

The error term of the model will be tested for their assumptions of normality, no autocorrelation and homoscedasticity. The coefficient variables were tested to ensure multicollinearity is not present among the independent variables. Fixed effects model is a statistical model in which model parameters are constant. In panel data fixed effects

represents subject specific means. Random effect model are those in which the some model parameters are random.

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF RESULTS

4.0 Introduction

This chapter presents the analysis and discussion of results. It further interprets results obtained from the data analysis. This entails descriptive statistics, trend analysis, correlation matrix and regression analysis.

4.1 Descriptive statistics

The study shows the descriptive statistics of Firms' specific variables. This section (Table 1) presents summary statistics of financial leverage variables, profitability ratios and firm's specific variables. Given that DTA is debt to total asset; DTE is debt to total equity and ETA is equity to total asset are the financial leverage variables used in the study. Profitability variables are defined by ROE which is Return on Equity and ROA which is Return on Asset.

Table 1: Summary Statistics

Variable	Obs	Mean	Sd. Dev.	Min. Values	Max. Values
DTA	149	0.318	1.144	-0.762	13.172
DTE	149	1.582	7.770	-4.433	64.343
ETA	127	0.180	0.107	-6.016	0.709
ROA	161	-0.048	0.609	-5.649	0.601
ROE	161	-0.550	6.587	-80.692	3.713
LIQ	160	1.546	1.832	-3.580	9.806
PRODCOST	159	0.749	1.017	-1.152	12.009
FIRMSZ	161	14.412	2.745	9.746	20.912
INVENTORY	155	0.260	0.201	0.013	1.361
TANG	161	0.662	0.786	0.030	9.492

Source: Data Analysis (2019)

The study spells out the factors affecting financial leverage of a firm as well as the relationship between financial leverage and profitability. From Table 1, mean ROA is -0.048

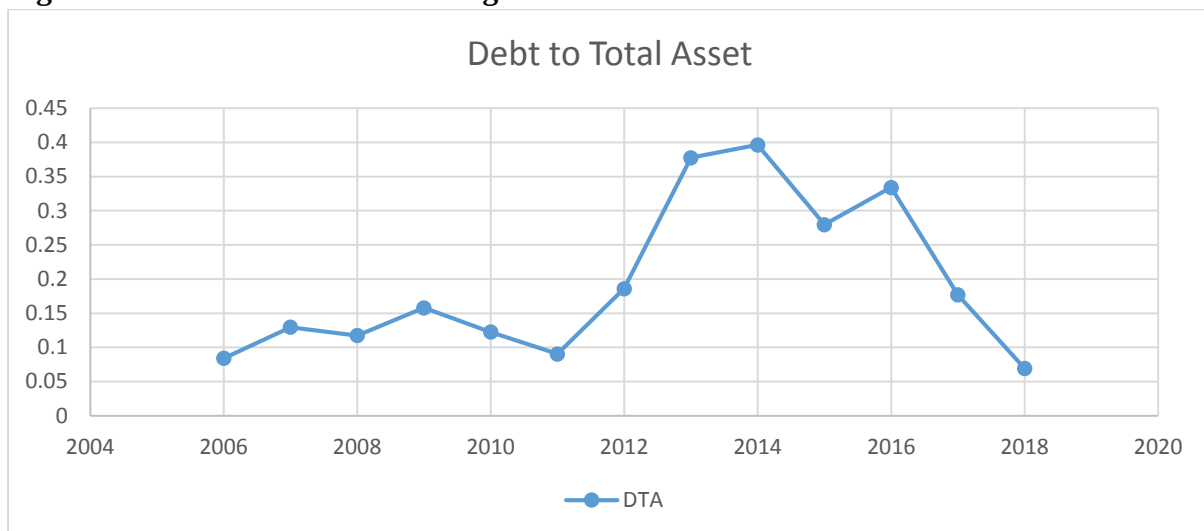
percent, 0.609 standard deviation and with maximum and minimum values of -5.649 and 0.601 respectively. Thus, on average profit margins of manufacturing firms listed in Ghana are low indicating that these firms are not profitable. Moreover, a wide range of values found between their respective minimum and maximum values explains a high variation of return on assets (ROA) across the firms sampled. ROE also accounts for a mean (standard deviation) of -0.550 (6.587) with maximum and minimum values of -80.693 and 3.713 respectively. On the average, Firms mostly fund their equity position with lower levels of profit as explained by a high variability with standard deviation of 6.590 around the mean which tends to be volatile. From Table I, mean and standard deviation for liquidity (LIQ) is 1.550 (1.832) with a minimum and maximum values of -3.580 and 9.806 respectively. This explains firms' ability to settle 1.550 percent of its current liability using current asset. This is an indication of a good financial health of sampled manufacturing firms in Ghana since they have enough current asset to cover their current liabilities and could further invest in securities. Firms in Ghana are more risky with higher variability, as indicated with wide standard deviation around the mean. From Table 1, production cost and inventory recorded mean and standard deviation of 0.750 (1.016) and 0.26 (0.201) respectively. Firm size (Firmsz) recorded an average (standard deviation) value of 14.416 (2.745). Tangibility, expressed as a ratio of fixed to total asset recorded mean (Standard deviation) of 0.662 (0.786).

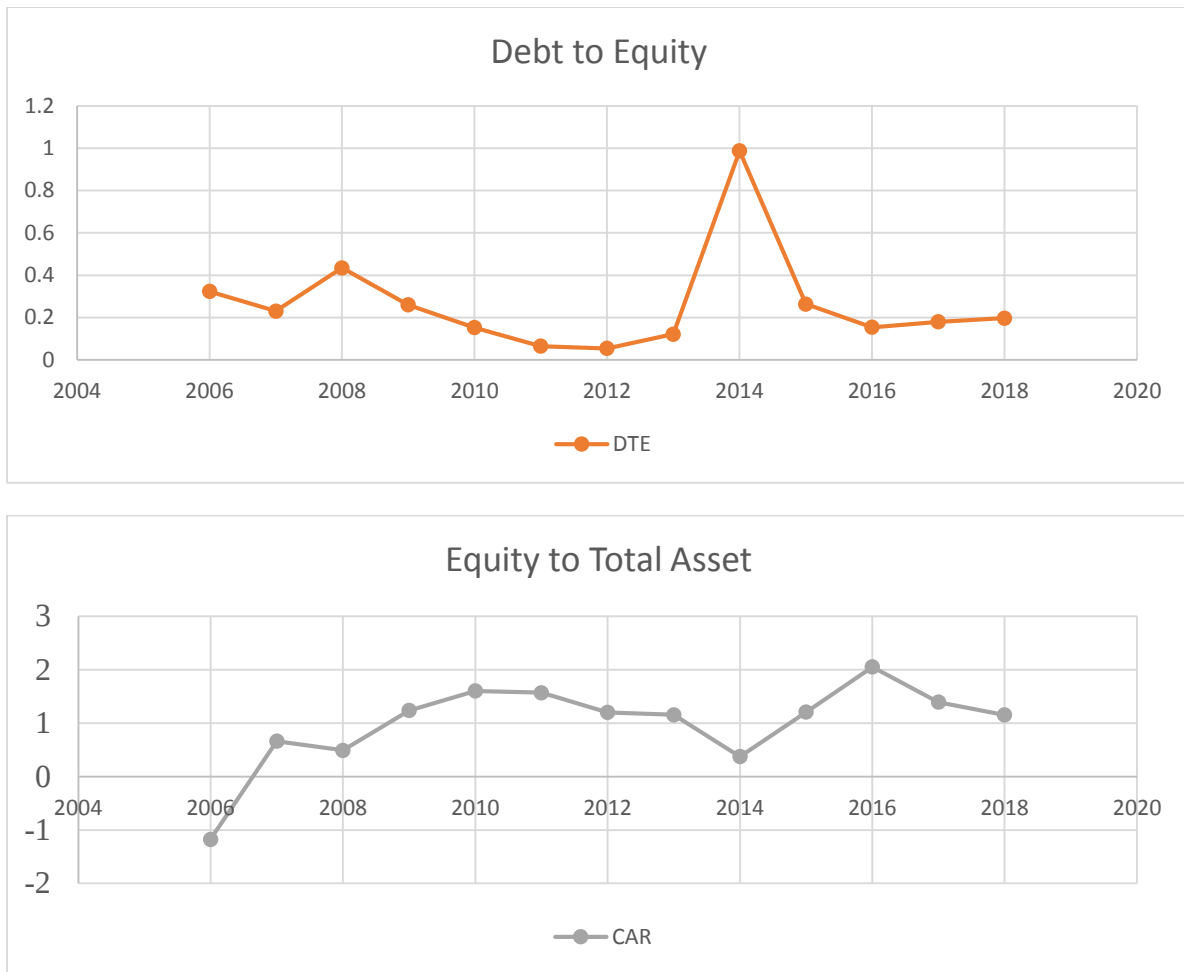
4.2 Trends and descriptive of Financial Leverage

This section below presents graphs of financial leverage variables and trends of the variables (financial leverage) over time (2006-2018). The study used the debt to total equity (DTE), debt to total asset (DTA) and equity to total asset ratio (ETA) as proxies for financial leverage of firms in Ghana. Higher values of DTE, DTA, and ETA indicate higher levels of

financial leverage. On the average, firms' leverage has relatively high variability as indicated by higher values of standard deviations around their respective means. This depicts that firms employ more of debt to fund its operations. From Table 1, the mean (standard deviation) of debt to total equity was 1.582 (7.770) with minimum and maximum values of -4.432 and 64.34 respectively, whereas the mean (standard deviation) of debt to total asset (DTA) was 0.318 (-0.762) with minimum and maximum values -0.762 and 13.170 respectively. This highlights the volatility of DTE and DTA of firms, given wide range of values of standard deviation. In terms of capital ratio, which recorded a mean (standard deviation) of 0.180 (0.107), with a minimum and maximum value of -6.016 and 0.709 respectively. This suggests that the sample firms in Ghana use an average of 18 percent of equity to finance their debts.

Figure 1: Trend in financial leverage indicators





Source: Data Analysis (2019)

From Figure 1, DTA of the firm increased sharply from 2006 to 2007, a slight decrease was observed from 2007 to 2008, it increased but at a decreasing rate from 2008 to 2009. It again decreased from 2009 to 2011 and begun to increase from 2012 to 2014 where it approached a sharp decrease at 2015 ; thereafter an increase at a decreasing rate from 2015 to 2016 and a decrease from 2016 to 2018. ETA of the firms on the other hand increased sharply from 2006 to 2007; decreased from 2007 to 2008, increased but at decreasing rate spanning from 2008 to 2011. It decreased to 2012 and remained constant at 2013. It again decreased in 2014 and begun to increase from 2014 to 2016 then decreased again from 2016 to 2018. This suggests that listed manufacturing firms have a higher variability in their

financial leverage and that they are more exposed to the risk of leverage while financing their asset or operations.

As shown in Figure 1, debt to equity ratio decreased from 2006 to 2007, increased in 2008, decreased gradually to 2011 and increased sharply in 2013. This shows an inconsistent changes in equity to debt ratio. It later increase sharply from 2013 to 2014 and then decreased sharply in 2016 and then begun to increase gradually to 2018. This indicates an inconsistent and higher variability in debt to equity position faced by the firms in Ghana, which demand attention by the managers of the firm. In general, the results on financial leverage variables were inconsistent over time. This trend analysis shows that firms in Ghana are not able to minimize financial leverage position over time. This result is in contradiction with the study by Musau (2014) who modeled debt to equity in Kenya and found that debt to equity (financial leverage variable) among firms decreased consistently with respect to time.

4.3 Factors affecting Financial Leverage

4.3.1 Correlation Results

Pearson's correlation coefficient was used to analyze the association among variables (independent variables). In analyzing factors affecting financial leverage, the explanatory variables used were ROA, ROE, Liquidity (LIQ), production cost, inventory, firm size (Firmsz) and tangibility. This is presented in Table 2 below.

Table 2: Correlation Matrix

	ROA	ROE	LIQ	PRODCOST	FIRMSZ	INVENTORY	TANG
ROA	1						
ROE	0.047	1					
LIQ	0.230	0.029	1				
PRODCOST	-0.162	-0.085	-0.023	1			
FIRMSZ	-0.166	-0.170	0.198	-0.054	1		
INVENTORY	-0.189	-0.093	0.148	0.213	0.508*	1	
TANG	-0.166	-0.005	-0.209	0.038	-0.133	0.098	1

Notes: ROA represent Return on Asset (profitability), ROE= Return on Equity, TANG = Assets structure also referred to as tangibility is measured as fixed assets divided by total assets, Firmsz = Firm size is measured as the natural log of total assets; LIQ= Liquidity (ratio of current asset to current liability), INVENTORY=Inventory;(* represent strong correlation).

Source: Data Analysis (2019)

Correlations among variables are quite low except that the correlation between the pair variables (Size and Inventory) are strongly and positively correlated. Correlation coefficient of more than 60% indicate multicollinearity between the variables and in order to proceed to analyze regression, the study check for the presence of multicollinearity. Thus, there exist no multicollinearity between variables, since the correlation coefficient between the variables are less than 60%.

4.3.2 Regression Results

This study used panel regression to examine the determinants of financial leverage. This results are discussed below. The financial leverage variables were used as dependent variables. The first model shows the relationship between firms' variables and debt to asset ratio; the second model shows the relationship between firm variables and debt to equity and the third model presents the relationship between firm variables and equity to asset ratio. The results are presented in table 3, table 4 and table 5 below, with the discussions below the tables.

Table 3: Regression results: Effect on debt to asset

	Coef.	Robust SE	T	P> t	95% Conf.	Interval]
ROA	-1.151	0.379	-3.030	0.003	-1.903	-0.399
ROE	0.004	0.001	3.200	0.002	0.001	0.006
PRODCOST	-0.301	0.137	-2.190	0.030	-0.572	-0.030
LIQ	-0.003	0.028	-0.110	0.912	-0.059	0.052
FIRMSZ	0.017	0.015	1.180	0.239	-0.012	0.047
INVENTORY	-0.080	0.048	-1.680	0.096	-0.174	0.014
TANG	0.084	0.035	2.390	0.018	0.014	0.154
_cons	-0.220	0.261	-0.840	0.400	-0.737	0.296
Observations	120					
R Square	0.5099					
F-stat	6.74***					

Source: Data Analysis (2019)

From Table 2, return on asset has a negative (-1.15) and significant (1%) relationship with financial leverage (debt to asset (DTA)). This indicates that increasing return to asset of firms leads to a decrease in financial leverage firms which suggests that firms use their profits to fund projects at the expense of their leverage position. Thus, reducing the use of debt to asset increases return on asset which eventually decrease financial leverage exposures. The implication is that firms should not only reduce financial leverage exposures by taking an optimal decision to invest their profits but must also find ways of recovering their debt positions with other source of funds. This is in line with Myers (1984) findings which consented that the financial leverage and profitability has a negative relationship. Fama and French (1999) consented to the previous finding as they found a negative relationship between profitability and financial leverage. They added that this finding is in line with the pecking order theory where companies follows a hierarchical order when it comes to sourcing funds for their operations, thus relying on internal source of funding until they are exhausted before reaching out for debt and equity being their last resort. Oyesola (2007) in the case of sampled firms in Nigeria also found a negative relationship between financial leverage and profitability.

Return on equity has a positive (0.004) and significant (1%) relationship with financial leverage (DTA) of firms, which suggests that an increase in financial leverage increases return on equity of firms. This means the use of debt attracts higher return to shareholders because firms raise their cost for investment using debt in order to generate more revenue where shareholders can benefit. Production cost decreases debt to asset ratio as indicated with negative (-0.301) and significant (1%) relationship between production cost and debt to asset ratio. This suggests that firms incur low production cost due to higher use of debt to asset ratio. This implies that firms channel their source of funds (debt to asset) into other expenses rather than production cost. Inventory decreases debt to asset ratio as indicated with negative (-0.080) and significant (10%) relationship between inventory and debt to asset ratio. This suggests firms channel their source of funds (debt to asset) into other expenses rather than inventory. Tangibility was positively and significantly associated with financial leverage. Thus, increasing fixed asset leads to higher debt to asset ratio financial leverage.

Table 4: Regression results: Effect on debt to equity

	Coef.	Robust SE	T	P> t	[95% Interval	Conf. Interval
ROA	1.552	0.475	3.270	0.001	0.612	2.492
ROE	0.004	0.010	0.410	0.685	-0.015	0.023
PRODCOST	0.430	0.433	0.990	0.323	-0.428	1.288
LIQ	0.005	0.100	0.050	0.960	-0.194	0.204
FIRMSZ	0.163	0.058	2.800	0.006	0.048	0.278
INVENTORY	-0.119	0.228	-0.520	0.601	-0.570	0.331
TANG	0.131	0.062	2.130	0.035	0.009	0.253
_cons	-1.976	1.150	-1.720	0.089	-4.254	0.303
F-stats	1.920*					
R-square	0.154					
Obs	120					

Source: Data Analysis (2019)

In Model 2, return on asset was positively (1.552) and significantly (1%) related to financial leverage (DTE) of firms – indicating that increasing profitability increases the use of financial leverage (DTE). This implies that firms invest their profits in areas that comes at a higher return, especially investing in debt securities thus, leading to higher financial

leverage. Firms' size and tangibility, on the other hand, were positively and statistically significant to financial leverage (DTE) – indicating that an increase in firm size and tangibility cause financial leverage of firms to increase. This implies that larger firms go for debt source of funds (high financial leverage). Rajan and Zingales (1995) found that firm's size and financial leverage have a positive relationship and attributed it to two main reasons – larger firms have the option to issue debt at a lower cost since investors have access to a wide array of information regarding the company, also, large firms are believed to be able to bear bankruptcy cost as opposed to smaller firms. Rajan and Zingales (1995) and Booth et al (2001) observed a positive relationship between financial leverage and tangibility.

Table 5: Effect on ETA

	Coef.	Robust SE	T	P> t	[95%	Conf. Interval
Lag1. ETA	-0.172	0.085	-2.010	0.048	-0.342	-0.002
ROA	4.133	1.004	4.120	0.000	2.137	6.130
ROE	0.013	0.004	3.640	0.000	0.006	0.020
PRODCOST	-0.293	0.543	-0.540	0.591	-1.373	0.787
LIQ	0.075	0.136	0.550	0.583	-0.195	0.345
FIRMSZ	0.027	0.090	0.300	0.762	-0.151	0.205
INVENTORY	-0.263	0.182	-1.450	0.152	-0.624	0.099
TANG	0.742	0.106	6.990	0.000	0.531	0.953
_cons	0.463	1.587	0.290	0.771	-2.692	3.618
F-stats	24.68***					
R-square	0.349					
Obs	94					

Source: Data Analysis (2019)

From Table 5 (model 3), profitability (both ROA and ROE) was positive and significantly (10%) associated with financial leverage (equity to total asset); past year's equity to asset ratio was positive and significantly (5%) linked to financial leverage; and tangibility was positively and statistically significant with financial leverage. The results indicate that profitability increased financial leverage (ETA), tangibility increased financial leverage and previous year's capital ratio increased financial leverage. This implies that higher profitable

firms are able to finance their equity position, which may lead to decrease in insolvency. Moreover, increasing tangibility will eventually increase financial leverage.

From the results, we observe an inconsistent relationship between profitability variables (ROA and ROE) and financial leverage. This as a result of the inconsistent use of the measure of financial leverage of firms. Thus, increasing the profit of firms will either increase or decrease financial leverage of firms. This contradicts findings of Renato & Terra (2002). Production cost and inventory statistically decreases debt to total asset ratio of the firms but not statistically related with debt to equity and equity to total asset ratio of firms. However, tangibility consistently influenced financial leverage positively indicating that increasing profitability and tangibility increases financial leverage. This is not expected and it contradicts the findings by Gharaibeh & Al-Najjar (2007). In general, return on asset, return on equity, production cost, inventory and tangibility significantly influence debt to total asset ratio; return on asset, return on equity, firm size and tangibility influence debt to equity ratio of firms; and return on asset, return on equity, and tangibility affect equity to total asset of the listed firms in Ghana. Thus, return on equity, production cost, inventory, firm size and tangibility are key determinant of financial leverage of manufacturing firms in Ghana. However, the relationship between these variables or determinants and financial leverage were inconsistent due to the different proxies of financial leverage of the firms.

4.5 Relationship between financial leverage and profitability

4.5.1 Correlation Results

Pearson's correlation coefficient was used to analyze the association among the variables (independent variables). In analyzing the relationship between profitability and financial

leverage, the explanatory variables used were DTA, DTE, ETA, Liquidity (LIQ), Production cost, firm size, Inventory and tangibility. This is presented in Table 6 below.

Table 6: Correlation Matrix

	<i>DTA</i>	<i>DTE</i>	<i>ETA</i>	<i>LIQ</i>	<i>PROD COST</i>	<i>FirmSz</i>	<i>INVENTORY</i>	<i>TANG</i>
DTA	1							
DTE	0.386	1						
ETA	0.209	-0.461	1					
LIQ	-0.254	-0.168	0.439	1				
PROD COST	0.170	0.442	-0.141	0.119	1			
FirmSz	0.374	-0.029	0.530	0.414	0.175	1		
INVENTORY	0.128	0.269	-0.459	-0.365	0.212	-0.634	1	
TANG	0.202	-0.100	0.131	-0.381	-0.276	0.026	0.227	1

Notes: ROA represent Return on Asset (profitability), ROE= Return on Equity, TANG = Assets structure also referred to as tangibility is measured as fixed assets divided by total assets, Firmsz = Firm size is measured as the natural log of total assets; LIQ= Liquidity (ratio of current asset to current liability), INVENTORY=Inventory; PROD COST= Production cost; ETA= capital ratio measured as the ratio of debt to total asset, (*represent strong correlation); LEV = debt to total asset

Source: Data Analysis (2019)

It can be seen that the correlations among all variables are quite low except that the correlation between the pair variables (Firm Size and ETA) are strongly and positively correlated. A high correlation coefficient of more than 60% indicate multicollinearity between the variables and in order to proceed to analyze a regression analysis, the correlation coefficient should be less than 60%. Thus, there exist no multicollinearity between the variables.

4.5.2 Results Discussion

The study suspects endogeneity between explanatory variables and the error term. In view of this the dynamic system two staged GMM estimation was used to estimate the relationship between financial leverage and profitability – capturing year specific effects whiles – taking into account some endogeneity problems. This technique was used to handle potential endogeneity problems between the unobserved heterogeneity and the observed regressors.

Table 7: Regression results of financial leverage and profitability

	Coef.	Corrected SE	Z	P> z	[95%	Conf.
lag ROA	0.212	0.140	1.510	0.132	-0.064	0.487
DTA	-0.315	0.107	-2.960	0.003	-0.524	-0.106
DTE	0.026	0.011	2.300	0.022	0.004	0.048
ETA	0.020	0.012	1.680	0.094	-0.003	0.044
PRODCOST	-0.178	0.030	-5.750	0.000	-0.239	-0.117
LIQ	0.022	0.009	2.490	0.013	0.008	0.040
FIRMSZ	-0.011	0.008	-1.310	0.191	-0.026	0.005
INVENTORY	-0.033	0.035	-0.950	0.341	-0.101	0.035
TANG	-0.014	0.031	-0.440	0.661	-0.074	0.047
_cons	0.085	0.184	0.460	0.644	-0.276	0.446
Observation	114					
Wald chi2	356.88					
AR(1) z =	-2.350**					
AR(2) z =	0.090					

Sargan test of overid. Restrictions: chi2 (65) = 85.00 Prob > chi2 = 0.049

Hansen test of overid. Restrictions: chi2 (65) = 2.51 Prob > chi2 = 1.000

Source: Data Analysis (2019)

From the result, the lag of the dependent variable was not significant, however, the financial leverage variables were significantly related to return on asset (profitability). Debt to total asset was negatively and significantly (1%) linked to return on asset whiles debt to equity ratio and equity to asset ratio were positively associated with return on asset. This suggests that an increase in DTA decreases ROA whereas DTE and ETA increases ROA of listed firms in Ghana.

The negative coefficient of DTA suggests firms with higher debt exposure tend to be less profitable and significant at 1% significant level. The findings by Kayode, Obamuyi, Ayodele, Owoputi and Adeyefa (2015) show financial is significant but negatively related to firm's return on assets (ROA). This suggests an increased exposure to DTA reduces firm profitability. Production cost is negatively linked to profitability (ROA). This shows that increasing expenditure on production decreases profitability of the firms in Ghana. Liquidity was positive and significantly linked to return on asset. Thus, profitability of

firms increases with efficient use of current asset to pay current liabilities. From the result, we find that financial leverage has a conflicting relationship with profitability of firms. The inconsistencies in the relationship is as a result of the different measures of financial leverage for firms.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings of the study. It concludes the study based on the findings and recommendation is drawn for policy implication.

5.2 Summary of the findings

The purpose of this study is to analyze the factors affecting financial leverage of manufacturing firms listed on the Ghana Stock Exchange market. It further examines the effect of financial leverage on profitability of listed manufacturing firms in Ghana. The study used the descriptive design and the source of data used for the analysis was audited financial statements of thirteen (13) licensed firms in Ghana from 2006-2018. The study used panel regression to estimate the determinants of financial leverage while the dynamic system GMM was used to analyze the relationship between financial leverage and manufacturing firms' performance. From the descriptive statistics, the study found that the average profitability of listed manufacturing firms in Ghana are low indicating that these firms are not profitable. Moreover, there is high variation of return on assets (ROA) across the firms in the sample. The study used the debt to total equity (DTE), debt to asset (DTA) and equity to total asset ratio (ETA) as proxies for financial leverage of firms in Ghana. On the average, leverage of firms has relatively high variability across the firms in the sample, as indicated by higher values of standard deviations around their respective means. This implies that firms are levered firms that use more debt or equity to finance their asset. The results on the trend of financial leverage variables were inconsistent across time. Hence this

trend analysis show that firms in Ghana are not able to minimize financial leverage position over time.

From the GMM model, debt to total asset component of financial leverage was negatively linked to profitability whiles debt to equity and equity to asset options of financial leverage were positively linked to profitability of manufacturing firms. This indicates that an increased exposure to debt to asset reduces firm profitability. It was found that financial leverage has a conflicting relationship with profitability of firms. The inconsistencies in the relationship is as a result of the different measures of financial leverage for firms.

In terms of the factors affecting financial leverage of manufacturing firms in Ghana, the study found that reducing the use of debt to asset increases return on asset which eventually decrease financial leverage exposures. Return on asset decreases debt to asset option of financial leverage, but increases both the debt to equity and equity to asset options of financial leverage. Return on equity positively influenced financial leverage options. Production cost was found to negatively affect debt to asset and equity to asset options of financial leverage, but positively influenced debt to equity option of financial leverage. Inventory was found to negatively affect debt to asset and equity to asset options of financial leverage. Tangibility was positively related to the financial leverage of manufacturing companies in Ghana. Thus, return on equity, production cost, inventory, firm size and tangibility are key determinant of financial leverage of the listed manufacturing firms in Ghana. However, the relationship between these variables or determinants and financial leverage were inconsistent due to the different proxies of financial leverage of the firms.

5.3 Conclusion and Recommendation

The importance of financial leverage as a component of capital structure cannot be overlooked as it is a major part of corporate financing decision of a firm. Businesses need to maintain a right balance of debt and equity financing since its combination would either propel success or derail the business' future prospect.

The study examined the factors affecting financial leverage among manufacturing firms listed on the Ghana Stock Exchange for the period 2006 – 2018 and further analyzed the relationship between financial leverage and profitability of these firms. This study employed panel regression to estimate the determinants of financial leverage while the dynamic system GMM was used to analyze the relationship between financial leverage and manufacturing firms' performance. Return on equity, production cost, inventory, firm size and tangibility are key determinant of financial leverage of the listed manufacturing firms in Ghana. Debt to total asset component of financial leverage was negatively linked to profitability while debt to equity and equity to asset options of financial leverage were positively linked to profitability of manufacturing firms.

This study provides the following policy recommendations. First, manufacturing firms must focus on employing minimal debt in financing their operations so as to minimize their financial leverage position over time and not be exposed to bankruptcy charges which is a risk associated with taking more of debt to finance a firm's operation. Second, managers of manufacturing firms should adopt a consistent and appropriate measure of financial leverage so as to drive an optimal decision in relation to their capital structure. More so, firms should not only reduce their financial leverage exposure but ensure an optimal decisions that would improve their performance as well as finding ways to recover debt

positions with other source of funds. Another policy could be for managers and researchers to explore other internal and external factors that are likely to influence financial leverage.

5.4 Limitations of the Study

This study focused on listed manufacturing firms in Ghana, findings therefore are limited to these publicly listed manufacturing firms and may not be applicable to private manufacturing firms whose financial report is not in the public domain. This study also used ratio analysis, whose calculations were based on audited financial statements. Ratio analyses are historical in nature and prepared based on specified accounting standards which could be subjected to manipulations by managers.

5.5 Suggestions for Further Research

This study recommends an additional study on the factors affecting financial leverage of non- financial firms listed on the Ghana Stock Exchange as this study focused on listed manufacturing firms. The study also recommends the use of different methodology to analyze existing relationship between profitability and financial leverage and examine other administrative role of firm that impact on firms' financial leverage.

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