

A Comparative Study Examining Firm Sizes and their Financial Health in Response to
Macroeconomic Shocks

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by

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Macroeconomic Shocks

By

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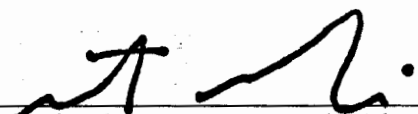
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Abstract

Corporate capital structures (CS) adjust in response to financial and economic conditions, but vary among firm size and their financial health. The problem is that although numerous studies have examined CS adjustments, there lacks comparative analyses between firm sizes based on market capitalization and their financial health in response to macroeconomic shocks. The purpose of this quantitative comparative study is to investigate and compare firm sizes given their financial health in response to macroeconomic shocks. This study addresses questions regarding differences, if any between the CS adjustments of financially unhealthy medium and large firms in response to periods of positive and negative macroeconomic shocks and any differences between the CS adjustments of financially healthy medium and large firms during periods of positive and negative macroeconomic shocks. In addition to firm responses to periods of macroeconomic shocks, this study presents findings regarding how quickly medium and large firms will adjust their CS in response to periods of macroeconomic shocks given their financial health. The data analysis strategy included 356 firms determined by the Altman Z-score to be either financially constrained or financially unconstrained. Firm size was determined by their market capitalization. Firms with market capitalizations of \$2 billion to \$10 billion were considered medium-size firms and firms with capitalizations over \$10 billion were considered large-size firms. CS was compared using the debt-to-equity ratio and their components of short-term debt (STD), long-term debt (LTD), and equity. The correlation of gross domestic product (GDP) and the U.S. Treasury bill was used to determine periods of positive and negative macroeconomic shocks. Variances between firms CS adjustments were analyzed using the MANOVA

method while the speed of CS adjustments determined using a subset of the econometric tool general method of moments (GMM), the maximum likelihood method estimator (MLME). As a consequence of this study, firm shaping decisions and future projections can be relevantly determined.

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Table of Contents

List of Tables	vi
List of Figures	vii
Chapter 1: Introduction	1
Background	2
Statement of the Problem	3
Purpose of the Study	4
Research Questions	5
Hypotheses	6
Nature of the Study	7
Significance of the Study	8
Definition of Key Terms	9
Summary	13
Chapter 2: Literature Review	14
Documentation	15
Corporate Capital Structure Behavior	16
Corporate Capital Structure	19
Capital Structure Theories	20
Capital Structure Determinants	24
Determinants of CS Components	36
Capital Structure Speed of Adjustments	44
Firm Financial Health	45
Effects of Asymmetric and Symmetric Information Costs	48
Influence of Country Characteristics	50
Developed Versus Developing Countries	53
Gap in the Literature	56
Summary	57
Chapter 3: Research Method	59
Research Methods and Design	62
Population	63
Sample	64
Materials/Instruments	64
Operational Definition of Variables	65
Data Collection, Processing, and Analysis	69
Assumptions	73
Limitations	74
Delimitations	74
Ethical Assurances	74
Summary	75
Chapter 4: Findings	76
Results	77

Evaluation of Findings	90
Summary	92
Chapter 5: Implications, Recommendations, and Conclusions	94
Implications.....	95
Recommendations.....	100
Conclusions.....	103
References.....	106
Appendixes	115
Appendix A: Collaborative Institutional Training Initiative Completion Certificate....	115

List of Tables

Table 1. <i>Firm Groups included in the Macroeconomic Positive Period of Q4-2002 - Q1-2004</i>	78
Table 2. <i>Firms Means for the Macroeconomic Shock Period Q4-2002 - Q1-2004</i>	79
Table 3. <i>Firm Groups included in the Macroeconomic Negative Shock Period of Q2-2008 - Q3-2009</i>	81
Table 4. <i>Firms Means included in the Macroeconomic Negative Shock Period of Q2-2008 - Q3-2009</i>	82
Table 5. <i>Pearson Correlations Between Variables for each Macroeconomic Shock</i>	86
Table 6. <i>R Square for each Macroeconomic Shock</i>	86
Table 7. <i>List of SOA by Shock Period and Firm</i>	90

List of Figures

<i>Figure 1.</i> Line chart comparing total average mean scores for financially unhealthy firms during the positive macroeconomic shock.....	80
<i>Figure 2.</i> Line chart compares the total average mean scores for financially healthy firms during the positive macroeconomic shock.....	80
<i>Figure 3.</i> Line chart compares total average mean scores for financially unhealthy firms during the negative macroeconomic shock.....	83
<i>Figure 4.</i> Line chart compares the total average mean scores for financially healthy firms during the negative macroeconomic shock.....	83
<i>Figure 5.</i> Line Chart Comparing GDP % Change and the U.S. Treasury Bill Rate.....	84
<i>Figure 6.</i> Bar chart presents Macroeconomic Positive Shock Period for the percentage change in GDP.....	85
<i>Figure 7.</i> Bar chart presents Macroeconomic Negative Shock Period for the percentage change in GDP.....	85

Chapter 1: Introduction

Capital structures (CS) contain sources of firm financing and firms will adjust their CS as financial positions and macroeconomic conditions change. A significant amount of research has been conducted to understand corporate financial behavior and the decisions firms make regarding CS adjustments (Ariff & Hassan, 2008; Byoun, 2008; Chen, 2000; Drobetz & Wanzenried, 2006; Drobetz, Pensa, & Wanzenried, 2007; Eldomiaty, 2007; Frank & Goyal, 2003). Byoun (2008) noted that macroeconomic conditions and financial positions motivate firms to adjust their CS. Combinations of macroeconomic and financial conditions produce an environment that influences the firm's decision-making for CS adjustments. Therefore, researchers continue to analyze the relationship between financial and macroeconomic variables to formulate their perspectives.

Researchers have presented studies regarding CS adjustments and demonstrated there are mixtures of variables that influence CS decision-making. Previous studies have been varied in their construction and presentation to investigate the impact macroeconomic conditions have on CS. Studies were differentiated by using a combination of selective variables such as tax consequences (Chen, 2000; Nejadmalayeri, 2001), firm-specific leverage variables (Korajczk & Levy, 2003), firm characteristics (Joeveer, 2013), and macroeconomic variables (Drobet et al., 2007; Hackbarth, Hennessy, & Leland, 2007). Using selective variables, researchers were able to conclude that macroeconomic conditions will influence firm CS decisions. Although results of CS adjustments reflect relationships between financial data and macroeconomic data there

lacks comparative research between firm sizes and their financial health in response to macroeconomic shocks.

While previous research on corporate CS includes macroeconomic and financial indicators in determining CS adjustments, there have been limited studies of different size firms with different financial conditions that have their CS examined based on their responses to macroeconomic shocks. Studies have not specifically addressed different size firms and their financial conditions. Studies by Ariff and Hassan (2008), Korajczyk and Levy (2003), and Byoun (2008) have addressed financially constrained and financially unconstrained firms. However, only Byoun (2008) divides sample data into small and large firms; he does then however not provide analysis of their CS adjustment results. Firms of different sizes respond differently to macroeconomic shocks due to their level of financial health. Therefore, it is essential to understand firm's CS adjustments during periods of macroeconomic shocks. This study is designed to report on firm's CS adjustments for specific macroeconomic shocks from their beginning, during the shock period, and through the end of the macroeconomic shock.

Background

The background of CS research begins by noting the early founders. The founders of CS research were Franco Modigliani and Merton H. Miller (1958). Modigliani and Miller (1958) discussed CS and the value of the firm in a perfect environment. Their work was relevant, simplistic, and they hoped for further research. Even as their own research continued on the subject, Modigliani and Miller (1963) determined that their previous study required correcting for corporate tax considerations. The work by Modigliani and Miller (1958, 1963) is profound and the basis for all other

studies in the field that followed. Research since Modigliani and Miller (1958, 1963) has revealed complexities that are inherent within corporate CS adjustments. Studies have determined that there are combinations of factors that influence firm decision-making that result in the adjustments of CS. Factors included but not limited to, are tax shields, asset tangibility, profitability, growth opportunities, market conditions, financial flexibility, industry, economic environment, and firm size. Influencing factors among the many types of firms allow for the interpretation of CS adjustments which studies have indicated (Aybar-Arias, Casino-Martinez & Lopez-Gracia, 2012; Chen, 2000; Drobetz & Wanzenried, 2006; Huang & Ritter, 2009; Joeveer, 2013; Mukherjee, 2013; Qiu & La, 2010). Although studies have shown relationships between the influencing factors, they lack the comparative analysis between certain factors. What we understand is that firms are unique in size with differing financial flexibility which influences CS decisions during specific macroeconomic conditions (Aybar-Arias et al., 2012; Folkinshteyn & Meric, 2014). Researchers should extend the body of knowledge regarding firm size and their financial health to better understand firm CS movements. This study intends to contribute to the current body of knowledge of CS movements by providing a comparative analysis of firm size and their financial health.

Statement of the Problem

Research of CS adjustments in response to macroeconomic conditions has been addressed using different variables by different researchers. It has been determined that CS are influenced by macroeconomic conditions and their adjustments differ among firms depending on firm characteristics such as firm size, financial health, and institutional setting (Ariff & Hassan, 2008; Bokpin, 2010; Byoun, 2008; Drobetz et al.,

2007; Hackbarth et al., 2006). Previous studies have demonstrated that it is essential to understand the relationships between macroeconomic indicators and CS components (Ariff & Hassan, 2008; Byoun, 2008; Chen, 2000; Drobetz & Wanzenried, 2006; Drobetz et al., 2007; Eldomiaty, 2007; Frank & Goyal, 2009). However, the patterns of firm decision-making regarding CS adjustments in response to macroeconomic shocks by firm size and financial health have not received extensive research.

The problem is that, although numerous studies have examined CS adjustments, there lacks comparative analyses between firm sizes based on market capitalization and their financial health in response to macroeconomic shocks. Firms of differing sizes and financial health exhibit dissimilar patterns of financial behavior in response to macroeconomic conditions. Frank and Goyal (2009) note that financial constraints impact CS choice and their examination indicates that only by analyzing firm size as well as other relative factors can one understand how each group responds to macroeconomic conditions. However, previous research is limited insofar as it either disregards firm size or takes a broad view of firm sizes and does not consider firm financial health comparisons when analyzing CS adjustments in response to macroeconomic conditions (Bokpin, 2010; Cook & Tang, 2010; Huang & Ritter, 2009). Therefore, a comparative study needs to be conducted to validate that firm size and financial health have differing responses to macroeconomic shocks.

Purpose of the Study

The purpose of this quantitative study is to investigate and compare firm sizes and their financial health in response to macroeconomic shocks. The intent is to contribute to other streams of financial behavior research by selecting firms based on their market

capitalization using the business databases of Mergent Online and Hoover's and quantifying movements of their CS components of debt and equity. A further breakdown of specific firm sizes and their financial constraints is necessary to evaluate their leaders' approach and development through positive and negative macroeconomic shocks. Variables used included independent financial variables and independent macroeconomic variables. The independent financial variables were firm's short-term debt (STD), long-term debt (LTD), common stock, and the debt-to-equity leverage ratio. The independent macroeconomic variables used were the gross domestic product (GDP) percentage and the U.S. Treasury bill rate of interest. After making all selections, the researcher evaluated and analyzed CS adjustments in response to macroeconomic shocks using a subset of the econometric tool general method of moments (GMM). The model used was the generalized linear model (GLM) using the maximum likelihood method estimator (MLME).

Based on the G*Power software by Faul, Buchner, Erdfelder, and Lang (2013), a total sample size of 323 firms is necessary to achieve a power analysis of 95%, as determined using a priori power analysis with an effect size of 0.25, and alpha of 0.05, for two groups. The total number of firms available was 356 therefore the researcher selected all available firms for this study. Firms selected were processed and determined by the Altman Z-score to be either financially constrained or not financially constrained.

Research Questions

The focus of this research is corporate CS and the variations between firm size and financial health as they respond to macroeconomic changes. Macroeconomic changes influence corporate behavior. In response to those changes, leaders of

corporations will reorganize the CS. However, what the CS position might be for firms of different sizes remains unknown. Different size firms are expected to respond differently and at different speeds to the macroeconomic environment. The research questions for this study are as follows:

Q1. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during positive macroeconomic shocks?

Q2. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during negative macroeconomic shocks?

Q3. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during positive macroeconomic shocks?

Q4. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during negative macroeconomic shocks?

Q5. How quickly will healthy versus unhealthy medium and large size firms adjust their CS in response to periods before, during, and after macroeconomic shocks?

Hypotheses

H1₀. There is not a difference between the CS adjustments for financially unhealthy medium and large size firms during positive macroeconomic shocks.

H1_a. There is a difference between the CS adjustments for financially unhealthy medium and large size firms during positive macroeconomic shocks.

H2₀. There is not a difference between the CS adjustments for financially unhealthy medium and large size firms during negative macroeconomic shocks.

H2_a. There is a difference between the CS adjustments for financially unhealthy medium and large size firms during negative macroeconomic shocks.

H3₀. There is not a difference between the CS adjustments for financially healthy medium and large size firms during positive macroeconomic shocks.

H3_a. There is a difference between the CS adjustments for financially healthy medium and large size firms during positive macroeconomic shocks.

H4₀. There is not a difference between the CS adjustments for financially healthy medium and large size firms during negative macroeconomic shocks.

H4_a. There is a difference between the CS adjustments for financially healthy medium and large size firms during negative macroeconomic shocks.

H5₀. There are no quick CS adjustments for healthy versus unhealthy medium and large size firms in response to periods before, during, and after macroeconomic shocks.

H5_a. There are quick CS adjustments for healthy versus unhealthy medium and large size firms in response to periods before, during, and after macroeconomic shocks.

Nature of the Study

In this quantitative study, the researcher selected a comparative research design to examine corporate financial structure behavior by firm size and financial constraint in response to macroeconomic shocks as determined by specific macroeconomic indicators. The research design of this study was a quantitative approach to analyzing CS changes and the speed at which they occur as a result of macroeconomic indicators for medium

and large firms given their financial health. The research objective was to understand the variations between the corporate CS components of debt and equity and macroeconomic shocks for medium and large size firms.

Firms were selected based on their market capitalization. Their financial health was calculated using the Altman *Z*-score method. The Altman *Z*-score is a proven indicator that serves the purpose of identifying firm financial health (Uebergang, 2006). In determining the macroeconomic shock periods, a correlation analysis of the two independent macroeconomic indicators of gross domestic product (GDP) and the U.S. Treasury bill was calculated. Data analysis was performed using the multivariate analysis of variance (MANOVA) method to analyze the variations between the independent variables of the short-term debt, the long-term debt, and the debt-to-equity leverage ratios before, during, and after a macroeconomic shock. In understanding the CS speed of adjustments, an estimator was determined using a subset of the econometric method generalized method of moments GMM (Hall, 2005). The model was the generalized linear model (GLM) using the maximum likelihood method estimator (MLME). The GMM using the subset MLME is a prominent analytical econometric tool that will significantly contribute to the sensitivity analysis of CS speed of adjustments.

Significance of the Study

The objective of the study was to contribute to the field of corporate financial behavior by presenting comparative analysis results between firms of different sizes and financial health. There have been few comparative CS studies relating to differing firm sizes. It is acknowledged that firms have differing constructs and only by analyzing their financial behavior applying differing methodologies that results come closer to revealing

how and why CS adjust, to what level they adjust, and how quickly they adjust given influencing and constraining factors.

This study was important by broadening the understanding of firm corporate capital structure for multiple audiences. Firm leaders, researchers, investors, and economists may all benefit from the responses and movement trends discovered in the study as a result of the comparative analysis between financially constrained and financially unconstrained medium and large size firms in response to periods of macroeconomic shocks. As a consequence of the research, firm shaping decisions and future projections can be relevantly determined.

Definition of Key Terms

Capital structure (CS). CS is the mix of a firm's short-term debt, long-term debt, and common equity that provides for the financing of the firm and is represented on the balance sheet (Nolop, 2012).

Corporate financial behavior. Corporate financial behaviors are reactions and responses by corporations in efforts to control business and financial risks while driven by theories of pecking order and trade-off in connection to their CS (Baker & Martin, 2011).

Debt-to-equity ratio. The debt-to-equity ratio represents numerically the comparison between a firm's debt and their equity (Hitchner, 2010).

Economic shock. Economic shocks are unpredictable positive or negative events that affect the economic environment (Baker & Martin, 2011).

Financial leverage. Financial leverage is the use of a fixed financial value in a financial ratio to determine the level of financial risk within the CS (Baker & Martin, 2011).

Financial ratio. A financial ratio is a calculation used in determining financial position (Baker & Martin, 2011).

Financial risk. Financial risk is a result of a fixed financial position that places additional risk on common stockholders (Baker & Martin, 2011).

Firm financial health. Firm financial health represents the financial condition of firm and is measured using the Altman's Z-score. The Altman's Z-score measures a firm's level of solvency and is an indicator of firm financial health. A high score represents a healthy firm and a low score represents an unhealthy firm (Uebergang, 2006).

Firm size. Firm size represents groups of medium and large firms measured in terms of market capitalization (Hsieh, Hodnett, & Rensburg, 2012).

Gross domestic product (GDP). GDP is the market value of all goods and services produced within a nation's borders. It is a standard measurement to determine the economic output of a nation (Frank & Bernanke, 2009).

Leverage ratio (LR). The LR numerically represents a comparison between one financial value and another financial value often referred to as financial leverage (Baker & Martin, 2011).

Rate of interest. The rate of interest is the percentage determined as a measure of risk an investor is willing to accept. The rate of interest is also referred to as risk premium (Baker & Martin, 2011).

Speed of adjustment (SOA). Speed of adjustment is an estimator indicating the rate of firm CS adjustments (Elsas & Florysiak, 2011; Iliev & Welch, 2010).

Altman Z-score. The Altman Z-score is a measurement used for the prediction of firm bankruptcy and financial distress (Zack, 2012). This ordinal measurement had dependent values calculated for three categories, distress, intermediate, and safe, to determine which firms are financially healthy and unhealthy.

Common stock. Common stock is a financing source used by a firm and represents the amount of stock the firm has outstanding on the balance sheet (Rajendra, 2013). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and the value converted to a percentage calculated as the percentage of long-term debt within the CS. The data was used in the study for comparing firm size given their financial health in response to macroeconomic shocks.

Gross domestic product (GDP). GDP is a macroeconomic indicator representing the percentage growth of the economy (Frank & Bernanke, 2009). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and used in the comparative analysis.

Interest rate (IR). An IR is the cost of borrowing for firms (Rajendra, 2013) and a macroeconomic indicator (Cook & Tang, 2010). In this study, the interest rate it was determined using the rate as indicated by the U.S. Treasury bill. The independent variable of the interest rate percentage was on an interval scale ranging from .01% to 100%. Data collected was from the FRED and used in the comparative analysis.

Leverage ratio (LR). The LR represents the percentage of debt outstanding as compared to common stock outstanding (Baker & Martin, 2011). The dependent variable was on an interval scale ranging from .01% to over 100% and indicated the percentage change of a firm's CS. Data collected was from the Mergent Online database and used in the conversion of the short-term debt, long-term debt, and common stock to percentages.

Long-term debt (LTD). Long-term debt is a financing source used by a firm, and the value represents the amount of debt the firm has outstanding over 1 year (Fosberg, 2012). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and the value converted to a percentage calculated as the percentage of long-term debt within the CS. The data was used in the study for comparing firm size given their financial health in response to macroeconomic shocks.

Macroeconomic environment (ME). Macroeconomic environment represents the economy in its entirety. It consists of components such as GDP, interest rates, inflation, unemployment, fiscal balance, infrastructure, debt position, and trade activities (Dozie, 2012). The two components of GDP and interest rates are independent variables representing ME. They were collected from FRED and their correlation used to identify macroeconomic shock periods. Periods of macroeconomic shocks were on an interval scale ranging from .01% to 10%.

Short-term debt (STD). Short-term debt is a financing source used within firms, and the value represents the amount of debt a firm has outstanding within a 1-year period (Fosberg, 2012). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and the value converted to

a percentage calculated as the percentage of short-term debt within the CS. The data was used in the study for comparing firm size given their financial health in response to macroeconomic shocks.

Speed of adjustment (SOA). Speed of adjustment is an estimator indicating the rate of firm CS adjustments (Elsas & Florysiak, 2011; Iliev & Welch, 2010). The dependent variable was on an interval scale ranging from .01% to 100%. Data was analyzed using MLME, a subset of the econometric method GMM, to determine SOA estimates.

Summary

This quantitative comparative research was used to examine the variances of financially constrained and financially unconstrained medium and large size firms in response to macroeconomic shocks. The research provides firm leaders, researchers, investors, and economists fundamental information as to the results of CS adjustments in response to positive and negative macroeconomic conditions for differing size firms and their financial health. The corporate financial behavior comparative results contribute to the understanding of CS adjustments, their trending during sharp macroeconomic increases and decreases, and whether there are theoretical behavior patterns followed.

Evidence from this study indicated that the size of a firm based on their value of market capitalization exhibited varying degrees of CS adjustment behavior given their financial capacity before, during, and after positive and negative macroeconomic shocks. This research demonstrated that market capitalization as a basis for firm size is instrumental and relevant. As the research model changes, researchers can expect greater understanding as to how and why CS adjust in response to macroeconomic conditions.

Chapter 2: Literature Review

The purpose of this quantitative, comparative study was to research corporate CS adjustments in response to macroeconomic shocks of medium and large firms with financially constrained and unconstrained positions. The primary focus of this proposed study was to analyze the dynamics of CS adjustments in relation to macroeconomic shocks and the speed at which those adjustments are made. Previous works by Ariff and Hassan (2008); Cook and Tang (2010); Drobetz, Pensa, and Wanzenried (2007); Elsas and Florysiak (2011); Frank and Goyal (2009); Hackbarth, Miao, and Morellec (2006); Huang and Ritter (2009); Iliev and Welch (2010); and Korajczyk and Levy (2002) presented results of firms' CSs and their adjustments towards target leverage ratios. While adjustments towards target levels offer insights into firm characteristics, firm credit positions, growth opportunities, economic conditions, and other determinants of CS adjustments are not an objective of this proposed research.

Firms will find it necessary to make STD, LTD, and equity adjustments in response to economic conditions and, although they may encounter constraints, they will adjust accordingly to achieve the optimal solution given the circumstances (Fosberg, 2012). Macroeconomic shocks create circumstances that require CS adjustments. Therefore, this study followed the stream of research by examining variations between firm size and CS in response to macroeconomic shocks given a firm's financial health. In addition to determining variations, the research indicates that although firm leaders adjust CS, as theories have suggested, the frequency of those changes as they approach and pass through the points of macroeconomic shocks is an important characteristic of corporate financial behavioral. The literature review encompasses the framework for

understanding corporate CS behavior by presenting prevailing CS theories, CS determinants, and CS components. This chapter includes a synthesis of research to support that firm leaders are influenced by several internal and external CS determinants which dictate their direction of CS decision-making. Finally, the comprehensive review of literature is presented to support that firms of different sizes and financial health respond to macroeconomic shocks differently.

Documentation

The literature review resulted from an extensive search using online databases from Northcentral University and Kaplan University. The databases used to research for scholarly peer reviewed journals, articles, and books included Ebrary, EBSCOhost, ProQuest, and Sage Journals Online. The researcher conducted the search based on variations of the following keywords: *corporate capital structure; capital structure behavior; capital structure theory; determinants; asymmetric costs; speed of adjustments; pecking order; trade-off; market timing; agency; developing country; developed; legal environment; financial constraints; financial health; and financial leverage*. The review of literature sections are organized logically into eleven sections to provide an understanding of corporate CS behavior and of the prevailing CS determinants influencing firm leader decision-making when considering debt and equity choices. The first section includes a fundamental understanding of the purpose of CS adjustments discussing firm leader influence and their legal environment. The second section complements the first section by presenting the background of CS research. The third section includes the prominent theories explaining the intuitive underlying premise for movements in CS. The fourth, fifth, and sixth sections are arranged to provide an

understanding of the various internal and external determinants influencing firm CS decision-making, CS components, and CS speed of adjustments, respectively. The seventh section presents firm financial health noting its influence on CS. Section eight covers the asymmetric and symmetric costs firms of differing sizes are subject to. Section nine includes the external determinants of country characteristics followed by section ten covering the influence of the level of country development on CS adjustments. The eleventh section covers the gap in the literature. The final section is the summary of the literature review.

Corporate Capital Structure Behavior

To manage business and financial risks, firm leaders make corporate financing decisions that influence their CS. Corporate financial behaviors are reactions and responses by corporations in efforts to control business and financial risks (Baker & Martin, 2011). Those corporate financing decisions include but are not limited by investment policies, financing policies, and dividend policies (Cohen & Yagil, 2010). Cohen and Yagil (2010) conducted a multinational survey of chief financial officers (CFOs) from 300 of the largest companies in their respective stock indexes in five countries and nine business sectors—banking and finance; communication; construction; energy; manufacturing; retail and wholesale; services; technology; and transportation for the United States, the United Kingdom, Germany, Canada, and Japan. Cohen and Yagil (2010) study revealed sectors were significantly different for financing policy and that investment policy was the overwhelming predominant policy, except in the communication sector, where financing policy was considered the most important. Cohen and Yagil (2010) noted that based on the order of policies—investment, financing,

and dividend—a literature imbalance exists. According to Modigliani and Miller (1958, 1963), dividend policy decisions are considered to impact CSs. Cohen and Yagil (2010) found that differences exist between firms and countries that will influence CSs. However, only results from CFO questionnaires were included in Cohen and Yagil (2010) study, allowing for future quantification of the policy claims. While the survey results from the CFOs provide evidence of policy decision-making regarding corporate behavior, there is a lack of quantifiable evidence suggesting those policies are either optimal or beneficial.

Chief executive officers (CEOs) are firm leaders with financial decision-making authority similar to CFOs. Their decisions will also impact the firm's CS framework. However, their financial decision-making tends to follow their personal leverage preference (Cronqvist, Makhija, & Yonker, 2012). The study by Cronqvist et al. (2012) compiled quantitative information connecting the personal financial behavior of the CEO and corporate financial behavior. Cronqvist et al. (2012) addressed two hypotheses: one was referred to as behavioral consistency and the other as hedging. Behavioral consistency suggested that firms would behave consistently with the personal leverage preferences of the CEO while the hedging hypothesis suggested an inverse relationship between CEO personal leverage and corporate leverage decisions (Cronqvist et al., 2012). These authors revealed that personal preferences and characteristics of CEOs might impact corporate financial behavior, causing CSs to adjust accordingly. CEOs' behaviors also elevate the understanding that internal firm influences determine the movements of CSs.

Firms function in a system of laws and regulations. This system of laws and regulations is referred to as the legal environment and influences their firm CS decisions (Smith, 2010). The legal environment is an external environment that places boundaries on the firm and effects their performance and financial behavior (Jorgensen, Konchitchki, BugraOzel, & Sadka, 2012). The legal environment places pressure on a firm's financial behavior in terms of the CS. However, a legal environment has been determined to contribute to the development of capital markets through the improvement of accounting standards, creditor rights, and shareholder rights (Alves & Ferreira, 2011). Although it is understood that the legal environment applies pressure to firm leader decision-making of CS adjustments, it is unknown as to the extent of its influence on medium and large size firms and its direct impact on CS adjustments.

Firm leaders must consider the ramifications of the legal environment when deciding to adjust their firm's CS. Legal systems lacking creditor and investor protection worsen information and contracting costs (Psillaki & Daskalakis, 2009). The legal environment influences creditor and shareholder rights and this differs between countries (Alves & Ferreira, 2011). Depending on the firm's country of registration, the degree of the pressures and influences of the legal environment on the firm may differ. Countries' legal systems are structured differently, which may affect the ability to obtain external financing (Psillaki & Daskalakis, 2009). Jorgensen, et al. (2012) noted that public and private firms are affected differently due to the quality of the legal system and that their performance is a direct result of the legal environment. Publicly traded firms tend to perform better than private firms in legal environments that are weak with a measurable level of corruption (Jorgensen et al., 2012). Legal systems also provide greater financial

constraints due to higher external financing costs for small and medium-sized firms (Kasseeah, 2012). If, as a result of the legal system, banks and financial institutions operate inefficiently and lack integrity, firms will not find external financing timely and/or beneficial, which may impact the development of the financial sector. Prior research indicates that a well-developed legal system contributes to a well-developed capital market (Jorgensen, et al., 2012; Jong, Kabir, & Nguyen, 2008). Therefore, the logic for conducting an analysis of variations on listed United State firms' CS adjustments is to eliminate potential inconsistencies and negative variables inherent in the lesser legal systems of other countries.

Corporate Capital Structure

The understanding of CS research begins by presenting the founders of CS research. Modigliani and Miller (1958) founded research on CS. Modigliani and Miller (1958) discussed CS and the value of the firm in a perfect environment. They noted that although their work was relevant, it was simplistic. Even as their own research continued, Modigliani and Miller (1963) determined that their previous study required correcting for corporate tax considerations. The work by Modigliani and Miller (1958, 1963) is profound and the basis for all other studies in the field that followed. Corporate CS is a sophisticated component of a firm and its analysis requires further research.

There are complexities inherent within corporate CS decision-making that firm leaders must consider. Many of those complexities were revealed in the research conducted by Modigliani and Miller (1958, 1963). Authors have determined that combinations of factors influence firm decision-making that result in adjustments of CS. Chen (2000) examined CS decisions premised on tax consequences and the associated

cost determinants. Ariff and Hassan (2008) evaluated CS dynamics and the frequency of their adjustments. Denis and McKeon (2011) noted that leaders of firms with flexible CS who make financing decisions do not follow traditional CS theories, but rather adjust their flexible CS when the need arises for operations. Denis and McKeon (2011) concluded that firm leaders maintained CS based on a level of unused debt capacity. Firms are unique in size with diverse business operations and dissimilar CS. Therefore, this proposed research will investigate two firm sizes and assess their debt and equity positions during periods of macroeconomic shocks.

CSs are dynamic, and many variations in the formation of the firm's CS generate particular leverage ratios. Analyzing previous works to understand the movements and adjustments to corporate CSs is a meaningful topic of research (Cook & Tang, 2010; Huang & Ritter, 2009). The researcher analyzed the primary components of the CS for medium and large firms—debt and equity—and documented their movements in response to macroeconomic shocks given their financial health.

Capital Structure Theories

The pecking order theory, trade-off theory, and market timing theory are the prevailing theories in the analysis of corporate CS and help to explain debt and equity proportions. However, agency theory has gained importance in CS behavior research (Iqbal, Muneer, Jahanzeb, & Saif-ur-Rehman, 2012). Firms adjust CS in relation to variables associated with firm characteristics, market conditions, and the economic environment (Huang & Ritter, 2009), but these theories are the underlying foundation for CS adjustments. The theories provide a generalization of a firm's CS adjustments.

However, no single theory can account for all the various patterns of financial behavior. Therefore, researchers continue to evaluate the four theories.

Pecking order theory. The pecking order theory suggests that firm leaders will adjust a firm's CS based on hierarchal order. Firms will select internal debt before external debt and external debt before equity (Wellalage & Locke, 2013). The pecking order theory results in a higher debt leverage especially when investments exceed the internal funding source of retained earnings (Gonzalez & Gonzalez, 2012). As noted by Frank and Goyal (2003), this theory is the most influential theory of firm leverage, and firms with high-growth potential will have high debt ratios as the firm leaders will be reluctant to issue equity. Although a prevailing theory, firm characteristics and macroeconomic indicators tend to disrupt the pecking order theory (Korajczyk & Levy, 2003). Psillaki and Daskalakis (2009) noted that for small and medium size firms (SMEs), the pecking order theory is particularly important since they are more likely to follow a hierarchy process in determining their CS choices due to a lack of a target debt level. Although the pecking order provides an instinctive approach to CS choice, there appear to be inconsistencies on its application for different firm sizes with different financial positions. This indicates that given the broad spectrum of variables from internal and external sources, analyzing CS adjustments requires extensive research considering different firm characteristics.

Trade-off theory. The trade-off theory is well-known CS theory that suggests firms will adjust CSs considering the cost and benefits of their debt and equity movements. Debt and equity have associated costs and benefits and firms will weight those costs and benefits before making CS adjustments based on them (Baltaci, &

Ayaydin, 2014; Chen & Strange 2005; Frank & Goyal, 2009). The theory was derived from the Modigliani–Miller theorem since tax considerations were relevant in the determining of whether to issue debt or equity (Luigi & Sorin, 2009). Tax considerations provided another influencing factor in deciding to choice debt or equity as a financial source. Hackbarth, Hennessy, and Leland (2007) focused on debt structure and used the trade-off theory to explain the types and levels of debt a firm will carry. Hackbarth et al. (2007) noted that different size firms will carry different debt structures and that small firms typically have bank debt, whereas larger firms will maintain an optimal mix of debt and equity. Although there is a basic underlying premise of the trade-off theory, it does not necessary apply to all firms given their particular characteristics. This theory leaves itself open to examination and although this study did not test the theory it offered an understanding that firm size and financial health ultimately influences CS decision-making.

Market timing theory. The market timing theory is another contributing theory to the field of financial behavior that assists in explaining CS adjustments. The theory suggests that when equity costs are low, equity is preferable to debt (Huang & Ritter, 2009; Russel & Hung, 2013). Firms will time equity issues when the market is considered high, as identified by lower past leverage ratios (Gombola & Marciukaityte, 2013; Russel & Hung, 2013). Huang and Ritter (2009) tested the theories of trade-off, pecking order, and market timing and noted that the market timing theory challenges both the trade-off and pecking order theories for their ability to determine CS relating to the equity risk premium (ERP) of external equity financing. Huang and Ritter’s (2009) research connected the timing of financing decisions to the timing of ERPs on the effect

of CS adjustments. The market timing theory is similar to the pecking order theory in regards to external financing decisions, but dissimilar to the trade-off theory. Frank and Goyal (2009) suggested that the market timing theory needed more development due to the lack of predictability of the data patterns. Varying scenarios shape the understanding of CS adjustments. Therefore, continued research is necessary to recognize conditions that lead to CS adjustments while giving credence to theories.

Agency theory. Agency theory explains the connection between the firm and the investor concerning CS adjustments. The agency theory was developed in 1932 by Berle and Means and since has gained importance in the discussion of CS behavior (Bassey, Arene, & Okpukpara, 2014; Iqbal, Muneer, Jahanzeb, & Saif-ur-Rehman, 2012; Viorel-Dorin, Viorela-Ligia, & Ionut-Constantin, 2013). The theory is an intuitive approach to understanding the conflicting relationship between the firm and the investor in the management of debt and equity (Bassey et al. 2014, Brendea, 2011). Through the issuance of debt, firm leaders create tension between the bondholder and the shareholder (Andani, & Al-hassan, 2012; Bassey et al. 2014). The theory suggests firm leaders behave in a self-opportunistic manner at the expense of shareholders by increasing leverage (Kayo & Kimura, 2011). By borrowing more to invest in risky business opportunities, managers create agency conflict between shareholders and creditors (Gill & Mathur, 2011). However, if management lowers their debt level to reduce agency costs, this may improve firm value but may not optimize the firm's CS position (Andani & Al-hassan, 2012). Firms can employ strategies to mitigate agency costs and reduce the conflicts between the firm, their creditors, and their shareholders.

Firm leaders can mitigate shareholder risk by employing particular debt strategies. Debt maturity structure, issuing debt with call provisions, and/or issuing short-term debt that offers flexibility with frequent term restructuring are methods by which firms can reduce agency costs (Andani & Al-hassan, 2012; Bassey et al., 2014). Collateralization is another method of reducing or controlling agency costs. Firms with a high ratio of fixed assets to total assets will have the ability to reduce agency costs through collateralization by enabling them to influence debt terms (Andani & Al-hassan, (2012). Since leverage is assumed to be the reflection of management and if management has the tendency to increase leverage, firms will find diminishing growth opportunities (Kayo & Kimura, 2011). Firm leaders are to be creative in managing their CS to reduce agency conflicts by selecting debt issued, such as short-term debt or unsecured debt (Bassey et al., 2014). Managing agency costs is another factor that firm leaders consider when adjusting their CSs. Given the size of a firm driven by their market capitalization volume, firm leaders may have differing degrees of mitigation pressures that influence their CS adjustments.

Capital Structure Determinants

CS determinants form the foundation for the causal movement of corporate CSs. Research regarding CSs has been extensive, but complete understanding of their movements still eludes researchers today. Qiu and La (2010) noted that previous studies indentify numerous firm characteristics associated with CSs adjustments. Continued research on CSs revealed determinants can offer explanations for CS movements.

CS determinants can be classified as either being internal and external. The most prevalent internal CS determinants are firm growth opportunities, firm profitability, firm

size, and asset tangibility. The most prevalent external CS determinants are industry sector, taxation, and macroeconomic conditions. Based on the approach by previous researchers in the evaluating the effect of determinants on CS, they mix CS determinants dissimilarly. This research has considered CS determinants when evaluating variance results between medium and large firms and their financial health.

Growth Opportunities

The CS determinant of growth opportunities indicates a firm's potential for successful investment opportunities. Firms with growth opportunities tend to have lower leverage ratios, but higher risk potential (Psillaki & Daskalakis, 2009). The relationship between growth opportunities and leverage has inverse predictions between the agency theory and the pecking order theory (Kayo & Kimura, 2011). The growth opportunity determinant is represented by a variety of indicators that serve as proxies for suggesting a firm's level of growth opportunity; however, they vary among researchers.

The market-to-book ratio is a predominant ratio and considered the most reliable. It signifies an inverse relationship with a firm's leverage, as a high market-to-book ratio encourages equity issues versus debt issues (Frank & Goyal, 2009). Frank and Goyal (2009) also stated that economic performance, as indicated by the term 'spread', implied growth opportunities. The work by Korajczyk and Levy (2003) on CS choice noted that in addition to the market-to-book ratio and term spread, proxies for growth opportunities may be firm specific variables, such as the mean of capital expenditures over four quarters; the mean of selling expenses as a fraction of sales over four quarters; research and development expenditures to sales; mean operating income; and the macroeconomic condition of equity market run-up. Margaritis and Psillaki (2010) suggested the indicator

of intangible assets to firm equity and intangible assets to total assets might both serve as proxies for growth opportunities. Kayo and Kimura (2011) used the proxy firm total market value of debt and equity to total assets. Prior CS research regarding growth opportunities as a factor for determining CS behavior reveals inconsistencies in determining a proxy. Growth opportunities are identified from a variety of firm financial sources. Those sources only signal potential firm growth and assist the prediction of the firms CS direction. A signal similar to growth opportunities is the profitability determinant.

Profitability. Profitability is a CS determinant that will influence CS adjustment decision-making by firm leaders. It is a measure of the firm's performance for a given financial period and represents an amount it will retain (Kayo & Kimura, 2011). Po-Yen, Meng-Ling, & Ju-Feng(2013) stated that profitability implies sufficient cash that reduces the need to increase leverage. Profitability levels differ by firm and are measurements firm leaders consider when making decisions given their profit level.

The profitability determinant value varies by researcher. Kayo and Kimura (2011) and Chang, Lee, and Lee (2009) defined profitability as operating income to total assets, while Chen and Strange (2005) defined profitability as return on equity. Drobetz et al. (2007) used the ratio return-on-assets to determine profitability for their study. Chong and Law (2012) used earnings before interest and taxes and scaled it by total assets to yield return-on-assets. In theory, the profitability determinant is related negatively to leverage for the pecking order theory, but related positively according to the trade-off theory (Kayo & Kimura, 2011). The theoretical relationships explain the profitability determinant in regards to the general order of adjustments of CS

components, but tend to be ambiguous (Frank & Goyal, 2003). The influence on the CS is dependent on other conditions driven by either external factors or internal factors (Kayo & Kimura, 2011). Firms are driven by the prospect of profitability and adjust CS in a direction corresponding to their level of profits. Large profits tend to persuade firm leaders into using internal financial sources rather than issue debt or equity and vice versa for lower profits. Chen, Chen, Chen, & Huang (2013) gave credence by noting that profitability is a major determinant. It is evident that profitability will influence CS, but other determinants, such as firm size will also influence CS decision-making.

Firm size. Firm size influences firm CS adjustment behavior. Although a firm may have growth opportunities and profitable financial results, the size of the firm has been noted to impact CS adjustments and is considered a key factor in determining corporate financing (Chia-Chung & Yung-Ho, 2008). While profits indicate opportunities for firms, their importance has declined and the effect of firm size has increased as a reliable factor in regards to its economic importance in explaining leverage (Frank & Goyal, 2009). In Frank and Goyal's (2009) study, the size of a firm was relevant to explaining leverage for low market-to-book firms than for high market-to-book firms. Frank and Goyal (2009) stated that although the pecking order theory may offer an intuitive explanation of firm CS behavior, the logic is not followed easily. They also noted that given the firm circumstances, different theories would apply.

The viewpoint from both the pecking order theory and the trade-off theory notes differing relationships of firm size and leverage. The pecking order theory suggests that there is an inverse relationship between firm size and leverage; however, studies by Alzomaia (2014), Charalambakis and Psychoyios (2012), Noulas and Genimakis (2011),

and Qui (2010) suggested a positive relationship between firm size and leverage that are indicative of the trade-off theory. However, much of the research lacks a differentiation of firm size. Results are considered broad and lack specificity. Various methods of determining firm size may explain differing responses by researchers.

Firms of larger size are examined given their higher level of capacity and flexibility. They are the basis for much of the past research (Baltaci, & Ayaydin, 2014; Bassey et al., 2014; Chen & Chen, 2011; Chen, Chen, Chen, & Huang, 2013; Cohen & Yagil 2010; Drobotz et al. 2007; Frank & Goyal, 2009; Joeveer, 2013a; Wellalage & Locke, 2013; Yoo & Rhee, 2013). The bias placed on large firm size does not offer clear distinctions between medium and small firms. Large firms are known to have a lower default risk, which is attributed to their maturity; greater reputation achievement; collateral; diversification; lower borrowing costs; and greater access to financial market sources (Aybar, 2012; Chong & Law, 2012; Frank & Goyal, 2009). These characteristics allow large firms greater flexibility when acquiring financial resources. Medium and small firms also have their distinct characteristics, but unlike large firms, have limitations that effect CS: immaturity; likelihood of financial distress; difficult access to financial markets; asymmetric information issues; and higher costs of issuing debt or equity (Byoun, 2008; Charalambakis, & Psychoyios, 2012; Chia-Chung & Yung-Ho, 2008). The distinctions between medium and large firms filter through the firm and contribute to their CS adjustments.

Examination of CS adjustments by firm size varies between studies. Research tends to examine firm size either collectively or within the extreme parameters of only large and small firms (Byoun, 2008; Folkinshteyn & Meric, 2014). Medium size firms

are grouped with the whole or combined with small firms, as in Noulas and Genimakis (2011), or represent an insignificant proportion of the sample size (Aybar, 2014).

Generally, samples are selected first and then a correlation analysis is conducted on the entire sample group. From their sample size, researchers conclude the effects of firm size on CS. Without first identifying firm size groups, there are assumptions that the firm size categories of small, medium, and large are represented in the sample. To understand the impact of the CS determinant of firm size fully, it is necessary to categorize each firm specifically. Abdulsaleh and Worthington (2013) noted that the financial behavior of large firms is significantly different from SMEs. Market capitalization is known to be the standard for determining firm size (Hsieh, Hodnett, & Rensburg, 2012). However, many researchers tend to analyze firm size based on tangible assets (Baltaci, & Ayaydin, 2014; Bassey et al., 2014; Chang et al., 2009; Cook & Tang, 2010; Forte, Barros, & Nakamura, 2013; Frank & Goyal, 2009). Selecting samples from each firm size classification will assist in the understanding of a firm's level of tangible assets.

Tangible assets. Tangible assets are another internal CS determinant that provides a signal to firm leaders for decision-making CS adjustments. Firms with large amounts of assets signal their ability to collateralize debt, which lowers the risk of the lender(s) (Charalambakis & Psychoyios, (2012). Two scenarios exist for tangible assets and firm leverage. The first is that if asymmetric information is low, firms will be able to issue equity at lower costs, lowering the leverage ratio. The second scenario suggests a higher leverage ratio for tangible assets as a result of an adverse selection (Frank & Goyal, 2009). The two scenarios indicate that there are relationships exist between assets and firm financial leverage. The study by Drobetz et al. (2007) indicated a positive

correlation between tangible assets and leverage. The higher the tangible asset balance, the greater availability of debt financing (Chia-Chung & Yung-Ho, 2008). The ability by the firm to offer collateral for debt backing reduces the risk by the lender and makes them more willing to lend and affords the firm financial flexibility for CS adjustments.

Larger firms by their nature of size tend to have greater amounts of tangible assets. Those tangible assets can be of significant value and used for investment purposes since they can be held as collateral (Bassey et al., 2014; Palliam, Wafaa, & Ghosh, 2013). Understanding their value offers a signal that influences firm leaders to make financial decisions regarding their CS (Forte et al., 2013). Firm leaders will need to consider whether financing needs to be acquired from either accessing debt and/or equity opportunities. Tangible asset values may be significant enough to consider; however, firm CS decision-making also considers other reliable CS determinants to signal their CS adjustments. Firm leaders also place relevance on the external CS determinant of industry sector.

Industry sectors. Industry sectors are operationally and financially diverse, differentiating their CS requirements. Firm leaders respond to financing requirements according to their industry sector. Industry sectors have specific characteristics of size, maturity, ownership structure, and market share (Abaidoo & Kwenin, 2013). Debt financing requirements are impacted across industry sectors (Abdulsaleh & Worthington, 2013). Studies have considered the impact of industry sectors and found that firms within the same sector reveal similar CSs and adjust towards their sector mean leverage or benchmark firm leverage (Noulas & Genimakis, 2011). For example, Po-Yen et al. (2013) conducted a study on Taiwanese firms in the technology sector and concluded that

due to innovative developments requiring technology investments and high expenditures that exhaust internal funds, firms tend to issue new debt, providing a much needed tax shield. Unlike Po-Yen et al. (2013), the study by Qiu and La (2010) did not analyze any one particular industry sector, but rather combined all the industry sectors with the exception of banking, finance, real estate, and insurance into one study to form a conclusion that Australian firms, in general, do not use debt as a financial resource but rather equity. Noulas and Genimakis (2011) Greek study samples companies listed on the Athens Stock Exchange from all industry sectors except banking, finance, real estate, and insurance. The research categorized companies into five sectors of industry, trade, services, tourism, and other and into their respective economic activity categories. Research statistics of the mean leverage and p -values based on the Kruskal–Wallis test indicated that firms within their economic activity classification have similar leverage ratios, but have leverage ratios that vary between the economic activity classifications (Noulas & Genimakis, 2011). In addition to similar industry sector leverage ratios indicated by Noulas and Genimakis (2011) and mac an Bhaird and Lucey (2010) noted that there are information asymmetries in similar sectors as a result of age, size, ownership structure, and provision of collateral. However, studies are mixed as to the similarities of sectoral effects on CS within an industry since firm characteristics weigh heavily in determining the CS of a firm (mac an Bhaird & Lucey, 2010). The effect of CS adjustments on firms within a particular industry sector was also viewed from the research of Chen, Chen, Chen, and Huang (2013). Chen, et al. (2013) studied Taiwanese firms listed on the Taiwan Stock Exchange from 1990 to 2005 with the purpose of testing the pecking order theory and market timing theory; he provided support to industry

sectoral differences. Chen et al. (2013) performed OLS regression analysis on firms by year and by industry sector. They revealed that calculated pecking order coefficients were, in fact, significantly different between industries. Based on the pecking order test coefficients, the Paper & Pulp, Cement, and Rubber industry sectors were determined to have followed the pecking order theory while the sectors of Electronics and Glass Ceramics showed evidence of following the market timing theory Chen et al. (2013). Evidence reflecting differences between sectors indicated that industry sectors are influential on CS and that firm leaders will adjust CS based on the influences inherent in their respective industry sector. Therefore, evaluating CS involves the consideration of several factors, including the industry sector.

Taxation. Firm leaders will consider governing tax policies when adjusting their CS. Modigliani and Miller (1958) postulated that CS decisions were without a tax effect. However, Modigliani and Miller (1963) recanted their position regarding a tax effect and concluded that a tax advantages can produce a quantitative difference to leverage for debt financing. Therefore, it can be stated that taxation could be a persuasive factor in the decision-making process, specifically in regards to debt issuance.

Debt has a tax-shielding component that firm leaders consider for CS adjustments. Depending on the firm and the tax environment, the tax-shielding component of debt may be beneficial given firm circumstances (Baltaci, & Ayaydin, 2014; Forte et al., 2013). Two primary theories of CS offer financial instinctive approaches for firms concerning taxation. The trade-off theory suggests that profitable firms issue debt to take advantage of tax-shielding opportunities, reflecting a positive relationship between debt leverage and taxation (Bassegy et al., 2014; Strebulaev, 2007). The pecking order theory, on the

other hand, suggests firms will likely prioritize their funding sources and use internal financing sources before seeking external financing sources regardless of taxation. Therefore, profitable firms will have an inverse relationship with leverage (Bassey et al., 2014). Given a firm's leverage structure, firm leaders may adjust when effective tax rates are high or disregard taxation opportunities, as the benefits may be considered insignificant or limiting due to potential financial distress (Bassey et al., 2014; Hackbarth et al., 2006). However, firm characteristics and tax policy tend to override standing CS theories, and taxation, although persuasive for CS adjustments, depends on multiple factors as this study presents.

Taxation policies established by country influence CS adjustments by firm leaders. Oztekin and Flannery (2012) evaluated firms from 37 countries to understand determinants that affect the speed of adjustment towards an optimal CS. Part of the study was to determine the role of debt tax shields on CS adjustment decisions. Using the country's respective tax rate to quantify a relationship between firm leverage adjustments for tax shielding debt, Oztekin and Flannery (2012) confirmed the hypothesis that higher tax rates effect leverage decisions, especially for underleveraged firms. The study indicates that taxation policy is influential and firms will respond to their effects.

Taxation is integral to an economy's performance and it relies on the tax revenues, however firms are adverse to tax and will attempt to lower their tax liabilities through the contribution of CS adjustments. Studies indicated that the respective country's tax policy is a consideration for firm leaders when making decisions to adjust or restructure CS in regards to debt issuance (Bassey et al., 2014; Wu & Yue, 2009). Decisions to issue debt versus equity rely on a country's effective tax policy. Firms

located in countries that have no taxation or located in countries with an underdeveloped tax system and/or lacks tax shielding benefits will issue less debt and have inversely related leverage ratios compared with their profitability, liquidity, and tangibility (Palliam et al., 2013). Studies revealed the significant influence tax policy has on CS. Firm leaders will consider the tax-shielding component of debt before deciding to adjust their CS with debt issues.

Macroeconomic conditions. In addition to taxation, macroeconomic conditions can have a significant impact on CS decision-making. Macroeconomic conditions are also important factors in the evaluation of firm financial choices (Baltaci, & Ayaydin, 2014; Cook & Tang, 2010; Korajczyk & Levy, 2003; Viorel-Dorin et al., 2013).

Primarily indicators of the macroeconomic environment are gross domestic product (GDP), interest rates, and inflation rates. Macroeconomic conditions are important, especially when studying financially distressed firms, as they are considered more sensitive to their variations (Ariff & Hassan, 2008; Drobetz & Wanzenried, 2006). Firm leaders of financially distressed firms tend to consider the macroeconomic conditions when adjusting for debt and equity more than financially stable firms (Joeveer, 2013b).

Frank and Goyal (2009) noted that firms would respond to periods of economic expansions, with larger firms borrowing more while smaller firms tended to remain stable. However, according to the pecking order theory, corporate financial behavior suggests that leverage should decline during periods of expansion as firms finance from internal funds (Frank & Goyal, 2009). Drobetz et al. (2007) stated that macroeconomic conditions determined the pace and size of CS changes. Macroeconomic conditions impact firm credit, ultimately influencing firm leader decision-making for debt and equity

choice. Hackbarth et al. (2006) noted that cost benefits of debt should depend on macroeconomic conditions since firms will attempt to balance tax-shielding debt benefits and bankruptcy costs. This research study intends to present results that indicate financially distressed firms will adjust their CS in response to macroeconomic shocks which will reflect their sensitivity to macroeconomic conditions.

While other studies noted importance of macroeconomic conditions and their impact on leverage, there are studies that present contradictory results albeit considered insignificant. Abaidoo and Kwenin (2013) stated that in the short term, macroeconomic conditions have no significant effect on corporate profit growth, but in the long term, macroeconomic conditions have a significant effect that constrains corporate profit growth. Abaidoo and Kwenin's (2013) research of American corporations investigated macroeconomic conditions and their impact on corporate behavior focusing specifically on American corporate profit growth. Abaidoo and Kwenin (2013) further stated and posited that macroeconomic conditions are systemic and out of a firm's control. Corporate profit growth is a proxy for measuring and evaluating firm CS adjustments and therefore consistent as a determinant of CS adjustments. Macroeconomic conditions are viable to understanding CS adjustments by firm leaders and should be considered when evaluating corporate CS. Indications of an expanding or contracting macroeconomic environment affects corporate leverage and shows a propensity by firms to borrow, contributing towards firm growth and profitability, thus correlating to CS adjustments.

In quantifying macroeconomic conditions, researchers use primary economic indicators, such as inflation, gross domestic profit, and interest rates, but will also develop other indicators as proxies for macroeconomic conditions. Joeveer (2013b) used

the primary macroeconomic factors of inflation, GDP, and saving ratio, but also developed the capital market size (market capitalization to GDP) ratio. Macroeconomic factors formulated by Drobetz et al. (2007) were an aggregate of after-tax corporate profits for nonfinancial firms. Economies are measured by their rate of GDP growth, interest rates, and their rate of inflation which makes these indicators viable in understanding firm financial behavior regarding the capacity of firm size and their CS adjustments.

Determinants of CS Components

Firm leaders adjust the components of debt and equity based on internal and external determinants when deciding on an appropriate CS mix. A combination of debt and equity define corporate CSs (Alkhatib, 2012). However, decision-making regarding whether to issue short-term debt, long-term debt, or equity requires determinant considerations and their effect on the CS. Factors affecting firms vary between firms. Firms have internal constraints on size, profit, growth opportunities, asset tangibility, credit worthiness, and risk, with concerns of the external environment of taxation and economic conditions.

Short-term debt. Short-term debt is issued or acquired based on the firm's need and level of CS. Firms will utilize short-term debt to manage their leverage and CS position (Mac an Bhaird & Lucey, 2010; Bassey et al. 2014; Chang et al., 2009). To understand a firm's requirement for short-term debt, Fosberg (2012) tested two short-term debt determinant theories. The first was the matching principle of financing and the second was the theory that factors affecting long-term debt financing will alter the use of short-term debt financing. The matching principle of finance states that short-term assets

should be financed with short-term debt and long-term assets with long-term debt (Andani & Al-hassan, 2012; Fosberg, 2012; Foster, & Young, 2013). Therefore, as a firm's short-term assets change, their short-term debt should mirror the change, but not necessarily by the same short-term debt source, referred to as the substitution effect. The second theory by Fosberg (2012) studied such factors of firm size, profitability, and the market-to-book ratio for their effect on short-term debt financing. Empirical analysis revealed a correct matching principle for current assets and a confirmation that the factors affecting long-term debt financing will affect short-term debt financing, except for tangible assets, which indicated an inverse relationship between long-term and short-term financing. An overall result of the Fosberg (2012) study provided a sense of the determinants for short-term debt financing. It revealed that depending on the yield curve, interest rates are influential in the decision to use either short-term or long-term debt. Each debt type has differing interest rates; therefore, tax-shielding considerations are made.

Profitable firms reflect signs of growth opportunities and employ more long-term debt than short-term debt. Firm size and profits are significant factors (Alzomaia, 2014). Larger firms are considered to have credit access and will utilize it to their advantage to finance more short-term debt than smaller firms (Basse et al., 2014; Brendea, 2011; Prime & Qi, 2013). Firms with greater investment opportunities, as revealed from their market-to-book ratio, have an inverse relationship with long-term debt. Short-term debt financing serves a purpose for firms, but certain firm factors indicated that long-term debt financing could affect short-term financing uses. Short-term debt is sensitive to firm size and asset tangibility (Charalambakis & Psychoyios, 2012). Charalambakis and

Psychoyios (2012) noted that small American firms have limited access to long-term debt and therefore restricted to short-term issuance. Although firms adjust STD for the composition of their CSs, other internal and external factors are considered as presented in this literature review.

Long-term debt. Long-term debt is another source of financing a firm will adjust in response to internal and external conditions. Long-term debt is a financing source for firms and a component of CS that adjusts when determining factors from internal and external conditions influence firm leader decision-making (Bassey et al., 2014; Cohen & Yagil, 2010). As noted in the short-term debt section, firms will also find that such internal determinants of profitability, growth, and financial ratios apply to long-term debt issues, as well as the tax shielding benefits of debt. However, since long-term debt spans over one year, there are other considerations such as risk levels, credit levels, debt market conditions, interest rates, taxation, and target debt levels.

Determinants of long-term debt are similar to short-term debt, but impact CS differently. The determinants of profitability, growth, tangible assets, and firm size play significant roles in the adjustment of both short-term and long-term debt ratios (Charalambakis & Psychoyios, 2012). The future of a firm can be revealed through excess leverage Caskey, Hughes, & Liu, 2012). Zhu's (2012) study on long-term debt determinants in the United States debt market over the period 1996–2006 confirmed that leverage increases for profitable firms and large firms tend to issue more debt. Charalambakis and Psychoyios (2012) noted that while size and asset tangibility are sensitive for short-term debt, along with profitability and growth, those determinants affect long-term similarly. Different periods of economic activity have revealed that

some determinants are more prevalent than others. The empirical study by Charalambakis and Psychoyios (2012) discovered that for the period of 1980–1991, tangibility and growth opportunities were weak for United Kingdom firms, with size weak for United States firms. The period of 1992–2002 reflected expected long-term leverage results for size, tangibility, profitability, and growth. It becomes apparent from the research by Charalambakis and Psychoyios (2012) that different periods of economic activity will affect firm CS. What was not revealed was whether selected time periods contained any unusual or inconsistent economic data perceived as a macroeconomic shock that could have altered the study's results.

As with short-term debt, a matching principle exists for long-term debt and firm's assets. Badoer and James (2012) noted that the firm's long-term debt maturity choice levels should coincide with their long-term asset values. However, there are instances where firms issue much longer-term debt than that of their tangible assets. Badoer and James (2012) hypothesized that gap filling is an important determinant of long-term debt consisting of 20 year maturity levels than that of shorter periods of long-term debt. This follows the belief that firms with high credit ratings may benefit from the cost advantages and are better able to manage the risk associated with the longer-term debt levels within the CS. Badoer and James (2012) selected public American firms between the years of 1987 and 2009 to examine their debt maturity choice based on credit market conditions, elasticity of borrowers, and maturity composition. The purpose of selecting United States firms was due to the uniform tax laws and the expectation that firms are more likely to respond to United States government debt maturity changes than foreign issuers. The United States Treasury security issues provide an important determinant to firm long-

term debt choice, especially for firms with high credit ratings (Badoer & James, 2012). As expected, firms with high credit ratings provided themselves with better debt choices.

An important point uncovered was that for highly rated firms, interest rate structures and maturity choice were not major concerns, which gave credence to the hypothesis of gap filling for high-grade debt issuers. Although the study by Badoer and James (2012) made relevant discoveries regarding determinants of long-term debt, its focus was on firms with high-credit rates, which offers the understanding that better credit rates provide for better credit access with financial flexibility. In addition to the outcomes of the study, two important points of the study were exposed. The first was that the United States provided a good foundation and benchmark in terms of the country's tax laws. The second point was that United States firms were considered to place reliance on United States Treasury securities. Both points provided the study of corporate financial behavior relating to long-term debt a foundation that reduced or eliminated complexities that can be found in lesser economies.

Firms with debt target levels will adjust according to the deviations from the target. Target deviations exist as market conditions fluctuate, contributed to the country level of debt market maturity (Chong & Law, 2012). Chong and Law (2012) examined the CS of firms from five Asian economies: Hong Kong, Japan, Singapore, Taiwan, and Thailand. Chong and Law (2012) noted that Asian firms will adjust gradually to their target debt levels, and he contributed this slow movement to a lesser mature debt market in comparison to that of the United States. However, Chong and Law (2012) study failed to differentiate the effect of target deviations by short-term and long-term debt. It was

noteworthy in regards to the understanding of differing economies and that debt market maturity does impact firm leader decision-making.

Equity. Equity is a different financing source than debt that offers no tax-shielding benefits, however there are still determinants that influence firm leaders to issue equity rather than debt. When firm leaders decide to issue equity, they consider their dividend policy (Denis, 2011). Dividend policies allow firms to remain financially flexible. Denis (2011) noted that financial flexibility is considered the most important determinant of corporate CS. However, firms need to balance associated costs with their investment opportunities. Denis (2011) noted that high costs of external financing and high volatility of investment opportunities will have low payout policies, while poor investment opportunities will incur high agency costs. Value-maximizing payout policy equated to higher payouts, however, for a firm to remain financial flexible, it needed to control the form of their equity payouts and therefore their equity issues.

Industry sectors influence a firm's decision-making to issue equity. Cohen and Yagil (2010) noted that equity issues are dependent on a firm's level of risk associated with their industry sector. Industry sectors with high risk, such as the technological sector or pharmaceutical sector, will likely issue more equity than debt to share the risk. As a result, those industry sectors tend to have low tangible assets and high intangible assets (Cohen & Yagil, 2010). In addition, industry sectors tend to imitate financial behavior (Cohen & Yagil, 2010). Therefore, CS behavior will differ between sectors, but within each sector, there tend to be similar patterns of equity issue decision-making. Analyzing firms in the aggregate may obscure and/or skew results when samples contain an uneven number of firms by industry sector.

Agency costs influence firm decision-making for equity issues. The more equity a firm issues, the greater agency cost the firm is exposed to (Bassey et al., 2014). Therefore, firm leaders will elect to avoid issuing equity to reduce their agency costs. Firm leaders that issue debt as a personal preference also will potentially reduce their agency costs (Cronqvist et al., 2012). Agency costs are a consideration for firm leaders, and therefore they will rely on their firm financing policies to mitigate the potential agency costs. However, not issuing equity creates conflicts between firm leaders, bondholders, and shareholders (Baltac & Ayaydin, 2014; Bassey et al., 2014; Frank & Goyal, 2009). Therefore, firm leaders need to be cognizant of the impact generated from issuing equity.

Firms encounter conflicts with agency costs when adjusting equity issues within their CSs. Firms faced with growth opportunities and pressured to finance may force firm leaders to consider the influence that agency cost places on the financing decisions (Bassey et al., 2014). Mac an Bhaird and Lucey (2010) noted that firms in their infancy incur the greatest experience of agency cost. Until it becomes established, a firm does not have the capacity to issue debt to mitigate agency costs. However, equity issuing is dependent of firm capacity and access to equity markets, and this proposed study is intended to analyze equity variances between firm size and firm financial condition.

Firms manage equity issues by controlling the associated equity costs by timing equity issues in the market. Market timing is considered an important determinant for a firm when choosing between equity and debt issues (Kaya, 2012). Firms practice market timing choice of equity financing in an attempt to lower equity costs (Sinha & Ghosh, 2009). Huang and Ritter (2009) noted that historically, firm leaders have been persuaded

to issue equity when their costs are lower. Firms will time equity issues when the market overvalues the equity in comparison to book value (Chong & Law, 2012). The study by Elliot, Koeter-Kant, and Warr (2008) evaluated 9,172 equity issues using a residual income model to compare intrinsic value and market value. Their study revealed that firms with overvalued equity tend to issue equity. As a result of having overvalued equity, firms will typically experience lower costs compared with undervalued equity.

Market timing of equity issues will contribute to the pressures of firm leader CS decision-making. The effects of market timing are considered significant in the short-run (Sinha & Ghosh, 2009). The study of market timing has been prevalent for developed countries and it was determined that firms in developed countries restructure their CS after they have equity issuances (Sinha & Ghosh, 2009). Cost of equity decreases in developed markets (Kayo & Kimura, 2011). Kayo and Kimura (2011) examined stock market development on firm leverage and determined a correlation between the two. A well-developed stock market contributes to a low firm leverage since the market is considered to have an open supply of funds, which ultimately lowers firm cost of equity (Kayo & Kimura, 2011). Managing the timing of equity issuances is beneficial for firms, as it potentially reduces equity costs and allows for a preferred CS balance. However, firms of different sizes with various financial conditions require different CS balances. Decisions regarding whether to issue equity or debt have associated costs that firm leaders will consider when leading CS to an ultimate position. As of the result of previous studies, market timing choice of equity is insightful for the understanding of CS adjustments.

Capital Structure Speed of Adjustments

This proposed research will attempt to understand the speed at which leaders of financially healthy and financially unhealthy corporations adjust their CS in response to macroeconomic shocks. Elsas and Florysiak (2011) noted that previous speed-of-adjustment research has not addressed cross-sectional differences between firms' SOA. There is a time interval between CS adjustments. Drobetz and Wanzenried (2006), Drobetz et al. (2007), and Huang and Ritter (2009) presented significant information relating to CS and the speed at which firm leaders adjust them. The question is not why leaders of corporations adjust their CS, but when they adjust them and how quickly they do so.

Firm leaders make decisions regarding CS adjustments. An insight into CS adjustment response times in response to macroeconomic conditions are of significant interest and little research has been conducted regarding the impact macroeconomic conditions have on CS SOA (Cook & Tang, 2010). Iliev and Welch (2010) noted that CS SOA is an important component for understanding CS adjustments that are in response to macroeconomic shocks, and calculating an accurate measurement estimate remains a goal. Byoun (2008) presented information that clarifies “[h]ow and when ... firms adjust their CS towards targets” (p. 3093). Byoun (2008) addressed adjustment speeds by analyzing a firm's financial deficits and surpluses, finding that firm leaders will adjust the estimated target CS based on their deficit-surplus position. Analyzing the speed at which CS components are adjusted allows for an understanding of their movements during macroeconomic conditions. Knowledge about the CS adjustments offers an insight into a firm's decision-making given their financial position and debt and equity capacity.

Firm Financial Health

Financially constrained and unconstrained firms respond differently to macroeconomic variables and make dissimilar CS adjustments. Korajczyk and Levy (2003) analyzed CS choice using macroeconomic variables for constrained firms (firms that have financial resource pressures) and unconstrained firms (firms with greater financial resource flexibility). Both Korajczyk and Levy (2003) and Drobetz and Wanzenried (2006) noted that during periods of macroeconomic conditions, leaders of unconstrained firms were better able than those of constrained firms to time issue choices. Ang and Smedema (2011) concluded with a general statement that constrained firms are unable to prepare for macroeconomic conditions while unconstrained firms are able. However, firms can be constrained and unconstrained in different categories, such as the ability to issue debt. Byoun (2008) noted that constrained and unconstrained firms follow similar CS patterns when adjusting debt levels and maintaining similar financial surpluses. Patterns of CS choice rely on the financial capacities of firms during periods of macroeconomic changes. This means that a firm may have less debt choices than equity choice. These choice differences impact CS movements and subsequent leverage ratios.

The financial health of a firm dictates their financial choices. A financially healthy firm maintaining a position of financial flexibility improves opportunities (Almeida, Campello, & Weisbach, 2010; Ang & Smedema, 2011; Drobetz et al., 2007). Financial flexibility is a major influence of CS choices and an important factor that connects CS theory and corporate financial behavior (Denis & McKeon, 2011). Responding to abrupt changes in cash flows and/or unplanned investment opportunities

with value-maximizing potential defines a financially flexible firm (Denis, 2011). In determining a firm's target CS, financial flexibility is a highly rated factor (Cohen & Yagil, 2010; Denis, 2011). Financial flexibility is an attribute that offers firms the ability to adjustment CSs to changing financial and economic conditions.

Financial flexibility and capacity provide firms with advantages for growth and opportunities. Aybar (2014) evaluated SMEs and their capacity to adjust their respective CS to target levels. Aybar's (2014) study indicated that financially flexible SMEs have greater opportunities to adjust their CS. This is not necessarily because they have high short-term debt to long-term ratios, but rather a level of financial health measured using the values of short-term debt to long-term debt and operating cash flow (Aybar, 2014). Palliam et al., (2013) noted that the status of financial flexibility allows a firm to manage their debt and equity in accordance with the pecking order theory, which affords the firm to utilize internal or external financial sources as necessary and within their financing policy. Denis and McKeon (2011) centered their study on the financial flexibility of firms' debt and determined that unused debt capacity is a major factor causing CS changes. Firm leaders will use debt capacity for investment and operating cash needs rather than for the exchange equity for debt or for making large cash payouts. Financial flexible firms maintain lower leverage ratios, which affords the firm the ability to conserve debt for advantageous funding sources (Almeida et al., 2010). Firms exhibiting greater financial flexibility are large in size with greater growth opportunities (Drobtz et al., 2007). Drobtz et al. (2007) also noted that larger firms and faster growing firms are in better positions to respond to market conditions given their financial flexibility and/or cost advantages. Evidence from previous studies revealed that healthy firms are

financially flexible and have the capacity to respond to financial conditions (Almeida et al., 2010; Ang & Smedema, 2011; Drobetz et al., 2007). They are able to attain and maintain a financial flexible position by managing their liquidity through CS policies and dividend payout policies (Denis, 2011). Firm size has its advantages, but research should be extended to understand the financial flexibility of medium size firms and of how they might respond to financial and economic conditions. The financial and economic environment is not without financial frictions. Firms of medium and large sizes evaluate their financial positions and respond when the environment shifts. However, the financial capacities of a medium or large size firm may or may not allow them to take advantage of opportunities. The financial health of a firm is an important factor in examining their responses to macroeconomic conditions. Analyzing firm debt and equity during periods of economic shocks will refine the understanding of their CS movements given their financial conditions.

Financially unhealthy firms are constrained and lack the capacities that larger firms have been described to exhibit. Financially constrained firms are considered to be in distress and therefore have financial limitations that prevent them from obtaining external financing resources (Kayo & Kimura, 2011). Such constraints consist of limited or no credit access, cash flow sensitivity, and/or existing in poorly developed financial markets (Almeida et al., 2010). Korajczyk and Levy (2003) defined financially constrained firms as those firms without sufficient cash flows to take advantage of investment opportunities and who incur significant agency costs when accessing financial markets. Ariff and Hassan (2008) noted that a financially distressed firm is known to be highly leveraged, which indicates leaders of financially distressed firms will pay more

attention to their CS than leaders of nonfinancially distressed firms. Highly leveraged firms are also more prone to bankruptcy, incur higher adjustment costs than those firms that are considered financially healthy and have low dividend payouts (Byoun, 2008). Financially constrained firms appear to be less responsive to macroeconomic conditions and smaller firms are more likely to experience unrelated firm-type issues in making CS choices (Joeveer, 2013b). Firms with constraints will respond to financial and economic conditions according to their financial structure and financing policies. Focusing on firm size, their financial condition, and periods of economic shocks will provide an extended contribution to the existing body of knowledge for CS behavior.

Effects of Asymmetric and Symmetric Information Costs

The effects of asymmetric and symmetric information costs are CS determinant considerations for firm leaders. They are the result of imbalanced financial market information (Ibrahim & Barros, 2009). This imbalance has differing debt and equity choices effects on different firm sizes. Both large and small firms are impacted by information costs; however, larger firms are likely to experience lower asymmetric information costs than smaller firms (Baltaci & Ayaydin (2014). The result of lower asymmetric information costs for larger firms influences firm leaders to choose equity as a financing source over debt, thereby generating a lower leverage ratio, which presents a negative relationship between firm size and leverage (Baltaci & Ayaydin, 2014). Smaller firms have less access to credit or subject to higher costs of credit, making it difficult for them to lower their information asymmetric costs (Bassey et al., 2014; Wellalage & Locke, 2013).

The theoretical views of the pecking order theory, the trade-off theory, and the agency theory have addressed asymmetric and symmetric costs. According to the pecking order theory, firms will adjust CS based on the extent of their asymmetric information costs (Baltaci & Ayaydin, 2014). In addition, pecking order theory suggests that low asymmetric costs may be determined by higher asset tangibility, taxation, agency costs, or behavioral considerations, all of which tend to favor larger firms (Frank & Goyal, 2009). Wellalage and Locke (2013) noted that asset intangibility contributes toward lower equity costs, increasing their issuance. However, if an association between higher asset tangibility and adverse selection exists then a potential ambiguity situation also exists for the pecking order theory, resulting in a higher leverage (Frank & Goyal, 2009). Frank and Goyal (2009) further noted that the ambiguity is a result of the asset tangibility being used as a proxy for other economic studies. From the viewpoint of the trade-off theory, larger financially healthy firms with lower agency costs will tend to choose debt over equity, therefore reflecting a positive relationship to their leverage (Baltaci & Ayaydin, 2014). For the agency theory, debt issuance lowers information asymmetric costs (Wellalage & Locke, 2013). As a result of financial information disclosure from long periods of being listed on stock exchanges, firms experience lower information asymmetric costs, allowing easier access to debt (Chen & Chen, 2011; Chen et al., 2013). Although CS theories suggest particular responses to CS by firms, a combination of firm characteristics and their financial position influences a firm's information asymmetric costs (Mac an Bhaird & Lucey, 2010). It becomes apparent that larger firms have the ability to control their CS positions. Larger firms are more likely to benefit from lower information asymmetric costs and have the ability to control their

costs, unlike smaller firms. This disparity of information asymmetric costs between firm sizes is another influential CS determinant that persuades CS decision-making by firm leaders.

Influence of Country Characteristics

Firms develop unique characteristics influenced by their country of existence that distinguishes their CS. Economic environment, tax regulations, legal system, capital market development, and the quality of firms define countries (Baltic, 2014; Jong et al., 2008). These characteristics will define a country's level of development and are considered important in CS behavior research (Alves & Ferreira, 2011; Baltic, 2014; Joeveer, 2013a; Jong et al., 2008; Psillaki & Daskalakis, 2009). Firm leaders will adjust CS as a result of the influence of country characteristics on firm specific determinants (Jong et al., 2008). Jong et al. (2008) hypothesized two methods of impact to firm leverage by country specific factors. The first is the direct method that suggests that country-specific factors impact firm leverage, and the second suggests that those factors impact firm leverage indirectly by the influence they have on firm-specific factors. It further emphasizes that firms are impacted by a variety of factors that influence their CS behavior.

Country specific factors are gaining prominence in the study of CS behavior. Baltic (2014) noted that firms are subject to costs and benefits influenced by their country characteristics and that the study of financial leverage is increasingly including those characteristics as part of CS research. CS research includes many factors and while there are identifiable determinants as previously noted, country characteristics are viable to understanding CS adjustments.

A number of researchers have examined country characteristics and the results primarily conclude that there are influences that firm leaders must consider for CS adjustments. Joeveer (2013b) conducted a study using the Eastern European countries of Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia to examine the impact of firm-specific, institutional, and macroeconomic factors on small, medium, and large companies, including unlisted and listed firms. Results revealed that country characteristics influenced high variation leverages for unlisted firms compared with listed firms. Country characteristics impacted smaller unlisted firms the greatest, while larger listed firms were impacted less primarily due to their size (Joeveer, 2013a). Listed firms exhibited the greatest of leverage variations due to industry related factors, with smaller unlisted firms impacted more from country characteristics. Joeveer (2013a) and Joeveer (2013b) concluded that country characteristics are important and play a significant part in the determinant of CS behavior. However, country characteristics are more influential for smaller firms than larger firms, as larger firms have greater access to financial markets, which encompasses domestic and international markets (Joeveer, 2013a; Joeveer, 2013b). This adds credence that firms of differing sizes respond according to their financial capacity and flexibility given their financial and economic environment influenced by their respective country.

Although country characteristics influence firm behavior there can be similarities between countries of similar financial and economic environments. Psillaki and Daskalakis (2009) examined the CS of SMEs from Greece, France, Italy, and Portugal to compare their differences between country characteristics, as well as the determinants of asset structure, size, profitability, risk, and growth. The study results presented similar

CS adjustment coefficients, which revealed similar leverage movements across determinants. Psillaki and Daskalakis (2009) noted a contradiction of country characteristics to Joeveer (2013a) and Jong et al. (2008) by stating that country characteristics are less influential on CS behavior. Joeveer (2013a) and Psillaki and Daskalakis (2009) both examined different countries, but from the same continent. Their research contribution supports an understanding that country characteristics may be an underlying determinant to CS behavior, and consideration needs given when investigating firms across differing countries. While Psillaki and Daskalakis (2009) noted only slight differences between the legal systems of the countries under examination, they were not deemed factors influencing CS behavior. Besides the similar legal systems, the financial systems of the four countries were also similar and consisted primarily of a banking system rather than a capital market. These two systems were common denominators for the four countries examined by Psillaki and Daskalakis (2009) and essentially provided little support to the influence by country characteristics. However, it is important to note that while there may not have been significant differences between the countries examined there are other evidence supporting country characteristics as having influence over firm leader decision-making.

Developed financial markets impact firm financial behavior and will influence firm leader decision-making for CS adjustments. Empirical studies by Jong et al. (2008) and Kayo and Kimura (2011) revealed that country-specific characteristics, such as GDP, bond and stock market development, financial system, and creditor protection are influential on firm leverage. Capital markets will have similar effects as more developed markets allow for the ease of trading (Kayo & Kimura, 2011). Researchers have

emphasized the impact of country specific factors and the importance of their influence on CS behavior. Country specific characteristics defined by efficient legal systems and developed capital markets provide persuasive information regarding the adjustments of a firm's CS (Bokpin, 2010). Developed markets, such as in the United States and Europe, improve the understanding of firm CS (Jong et al., 2008; Kayo & Kimura, 2011). As studies have indicated, country-specific characteristics suggest another level of consideration by firm leaders. The evaluation of CS behavior by firm sizes and their financial constraints will inherently include those characteristics. Therefore, evaluations of firms from particular countries not only will consist of previously noted CS determinants that factor in firm leader decision-making, but also of country-specific characteristics. Although in this proposed comparative study, specific CS determinants will not be evaluated for their impact on CS decision-making, they are documented to exist and influence CS choice that leads to CS adjustments.

Developed Versus Developing Countries

Developed or developing countries have financial and economic environments that restrict firms. Their environments influence firm leaders to make CS choices (Almeida et al., 2010; Bassey et al., 2014; Bokpin, 2010; Chen & Strange, 2005; Gill & Mathur, 2011; Jong et al., 2008; Kasseeah, 2012; Palliam et al., 2013; Prime & Qi, 2013; Vatatu, 2010; Yoo & Rhee, 2013). Country development impacts firms differently by way of their legal system, tax system, economic system, and socio-cultural issues (Bassey et al., 2014). A developing country finds economic growth difficult without a sophisticated capital market (Andani & Al-hassan, 2012). Banking systems are significantly different between developed and developing countries in relation to the

structure and development of legal and institutional environments (Kasseeah, 2012). Without an avenue for firms to acquire sufficient financial sources, firms lack the financial ability to adjust CSs. It becomes apparent that developing and developed countries place financial and economic constraints on firm opportunities.

Developing countries cause firms to structure themselves according to their environment since financial institutions, financial markets, economic development, and social issues affect their behavior. Bassey et al. (2014) made the point that few studies have made developing countries a focus of their study and that those researchers who have examined CS for developed countries presented differing results to those researchers that have examined the CS of developing countries. Bassey et al. (2014) stated further that those differences indicate the importance of studying CS behavior for developing countries. In developing countries, firm size and tangible assets are important determinants to obtaining debt, and that equity markets are need of development to improve borrowing choices and responses to economic conditions (Bassey et al., 2014). Firms in developing countries were noted as having higher fixed asset ratios and use less intangible assets than firms in developed countries (Almeida et al., 2010). Prime and Qi (2013) noted that while numerous empirical studies used data from developed countries, such as the United States, studies supported that determinants affecting CS choices of developing countries were similar for developed countries (Palliam et al., 2013; Prime & Qi, 2013). Both Palliam et al., (2013) and Alves and Ferreira (2011) agreed that firms in developing countries do not have different CS determinants influencing their CS positions. Although studies indicate similarities in CS choices for firms in developed and developing countries, firms in developing countries lack the sophisticated systems of a

developed country (Almeida et al., 2010). Therefore, financial sources tend to be difficult to obtain or there are limits to choice, leaving the firm vulnerable to higher costs of financing (Foster, & Young, 2013; Vatatu, 2010). SMEs are more prone to higher costs of borrowing in developing countries (Kasseeah, 2012). While developing or developed countries may encounter similar CS determinants influencing firm CS adjustments, the impact given the financial and economic development of the country should not be an overlooked consideration when adjusting CSs.

Firms positioned in developed countries encounter greater financial leverage flexibility. Firm leverage is considered to be influenced the most by well developed countries in regards to their legal system and economic development (Jong et al., 2008). Firm leverage is also found to be positively related to profitability for firms in developed countries, but vice versa for firms in developing countries (Alzomaia, 2014; Gill & Mathur, 2011). Information asymmetry and agency costs tend to contribute toward the negative relationship between leverage and profitability for firms in developing countries (Palliam et al., 2013). This is prevalent with small firms in developing countries since they lack access to a sophisticated financial market (Almeida et al., 2010). Leverage for firms in developed countries tends to include less long-term debt (Alzomaia, 2014). Although studies reflect similarities between developed and developing countries for CS variables, there are significant deviations between the CS of firms in developed and developing countries (Bokpin, 2010). The United States is considered to have a well-developed financial, legal, and economic structure, providing a solid basis and consistent platform for analyzing firm CS behavior. For this reason, this study considers only

American firms for CS comparison that are of different sizes with different financial constraints as they experience macroeconomic shocks.

Gap in the Literature

Although researchers have conducted research on corporate capital CSs and the speed at which they are adjusted, a gap remains in the literature regarding the comparative analyses of firm size and their financial constraints for macroeconomic shocks. Research on the topic of corporate CS is extensive, as researchers examine the correlations of firm internal and external variables that influence CS continuously (Abaidoo & Kwenin, 2013; Cook & Tang, 2010; Drobetz et al., 2007; Forte et al., 2013; Frank & Goyal, 2009; Gonzalez & Gonzalez, 2012; Frank & Goyal, 2009; Hackbarth et al., 2006). However, there is limited research regarding comparative variance analysis of CS adjustments between medium and large firms given their financial condition and the speed of CS adjustments.

The importance of this proposed study is to reveal the gap that exists for examining CS variances for firm size given their financial constraints. This is to understand that firms will respond to macroeconomic conditions but that there are differences and factors present that influence a firm leader's decisions. Although it is known that firms adjust their CS when influenced by internal and external factors, this proposed study will show that when comparing unhealthy and healthy firms of medium and large sizes, there are variances between their choices of debt and equity for macroeconomic shocks. In addition, an understanding of CS variance exists for future research that suggests firms may or may not follow CS theories or previous studies that were structured as correlational.

CS research has been dominated by empirical correlational studies. Empirical correlational studies have compared their results against CS theories (Chen & Strange, 2005; Frank & Goyal, 2009; Viorel-Dorin et al., 2013; Wellalage & Locke, 2013). However, those correlational studies of selected CS determinants lacked the variance analysis to determine the gap, if any, that exists between selected groups of firms that are either financially constrained or unconstrained. As the literature review has presented, researchers have confirmed that many CS determinants exist for firms of differing sizes and financial conditions that influence their CS adjustments. However, previous studies only selected certain CS determinants to evaluate whether CS movements followed CS theories (Chen & Strange, 2005; Frank & Goyal, 2009; Viorel-Dorin et al., 2013; Wellalage & Locke, 2013). Correlational studies are important as they expose corporate CS behavior. However, the next step in evaluating corporate CS behavior is to examine firm CS adjustment variances in response to macroeconomic conditions.

Summary

The literature review attempts to present the primary internal and external CS determinants that are the major influences of CS behavior thoroughly. Firm leaders have various internal and external determinants to consider when making debt and equity choice for the CS. The literature reviews makes a distinction of those CS determinants to reveal the connection and understanding that affect CS adjustments ultimately.

The adjustments of CS as they relate to macroeconomic conditions are instrumental to the understanding of corporate financial behavior. Cook and Tang (2010); Drobetz and Wanzenried (2006); Drobetz et al. (2007); Hackbarth et al. (2006); Huang and Ritter (2009); Joeveer (2013a); and Korajczyk and Levy (2003) all indicated a

level of significance in the examination of CS to macroeconomic conditions. Their research allows for the understanding of firm decision-making regarding financial resource choices and the timing of those choices.

Firm leaders make debt and equity choices based on their financial position and their level of influence by CS determinants. The literature review exposed two primary categories of CS determinants: internal CS determinants affect the firm from within and under the firm's control, and external CS determinants from outside forces beyond the control of the firm. Both apply pressure for firms to respond with CS adjustment decisions. The internal determinants offer a level of persuasive CS adjustment decision-making for firm leaders while considering their financial health. External determinants consist of external economic, regulatory, and country characteristics that apply constraints and boundaries for firm leaders to consider. Collectively, both determinant categories affect firm leader decision-making.

CS theories attempt intuitively to explain the decisions made by firm leaders for CS adjustments. However, CS theories are still considered to be under scrutiny to explain CS adjustments and leverage positions (Frank & Goyal, 2009). Previous CS research has been correlational based and attempted to explain CS movements, which then compared those movements to CS theories. The purpose of this proposed study is to compare the particular firm sizes of medium and large firms that are either financially constrained or financially unconstrained for macroeconomic shocks. Chapter 3 contains the research methodology description for the proposed quantitative study to analyze CS variances for firm size and their financial condition in response to macroeconomic shocks with a CS sensitivity analysis.

Chapter 3: Research Method

The problem addressed in this study is that, although numerous studies have examined CS adjustments, there lacked comparative analyses between firm sizes based on market capitalization and their financial health in response to macroeconomic shocks. Firms of differing sizes and financial health exhibit dissimilar patterns of financial behavior in response to macroeconomic conditions. Frank and Goyal (2009) note that financial constraints impact CS choice and their examination indicates that only by analyzing firm size as well as other relative factors can one understand how each group responds to macroeconomic conditions. Previous studies have demonstrated that it is essential to understand the relationships between macroeconomic indicators and CS components (Ariff & Hassan, 2008; Byoun, 2008; Chen, 2000; Drobetz & Wanzenried, 2006; Drobetz et al., 2007; Eldomiaty, 2007; Frank & Goyal, 2009). It has been determined that CS are influenced by macroeconomic conditions and their adjustments differ among firms depending on firm characteristics such as firm size, financial health, and institutional setting (Ariff & Hassan, 2008; Bokpin, 2010; Byoun, 2008; Drobetz et al., 2007; Hackbarth et al., 2006). However, previous research is limited insofar as it either disregards firm size or takes a broad view of firm sizes and does not consider firm financial health comparisons when analyzing CS adjustments in response to macroeconomic conditions (Bokpin, 2010; Cook & Tang, 2010; Huang & Ritter, 2009). In addition, the patterns of firm decision-making regarding CS adjustments in response to macroeconomic shocks by firm size and financial health have not received extensive research. Therefore, a comparative study was conducted to validate that firm size and financial health have differing responses to macroeconomic shocks.

The purpose of this quantitative study was to investigate and compare firm sizes and their financial health in response to macroeconomic shocks. The intent was to contribute to other streams of financial behavior research by selecting firms based on their market capitalization using the business databases of Mergent Online quantifying movements of their CS components of debt and equity. A further breakdown of specific firm sizes and their financial constraints is necessary to evaluate their leaders' approach and development through points of positive and negative macroeconomic shocks. Variables used included independent financial variables and independent macroeconomic variables. The independent financial variables were firm's short-term debt (STD), long-term debt (LTD), common stock, and the debt-to-equity leverage ratio. The independent macroeconomic variables were the gross domestic product (GDP) percentage and the U.S. Treasury bill rate of interest. After making all selections, the researcher evaluated and analyzed CS adjustments in response to macroeconomic shocks using the MLME statistical method.

To evaluate comparisons between firm sizes given their financial health in response to macroeconomic shocks, the following research questions and hypotheses was answered:

Q1. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during positive macroeconomic shocks?

Q2. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during negative macroeconomic shocks?

Q3. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during positive macroeconomic shocks?

Q4. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during negative macroeconomic shocks?

Q5. How quickly will healthy versus unhealthy medium and large size firms adjust their CS in response to periods before, during, and after macroeconomic shocks?

H1₀. There is not a difference between the CS adjustments for financially unhealthy medium and large size firms during positive macroeconomic shocks.

H1_a. There is a difference between the CS adjustments for financially unhealthy medium and large size firms during positive macroeconomic shocks.

H2₀. There is not a difference between the CS adjustments for financially unhealthy medium and large size firms during negative macroeconomic shocks.

H2_a. There is a difference between the CS adjustments for financially unhealthy medium and large size firms during negative macroeconomic shocks.

H3₀. There is not a difference between the CS adjustments for financially healthy medium and large size firms during positive macroeconomic shocks.

H3_a. There is a difference between the CS adjustments for financially healthy medium and large size firms during positive macroeconomic shocks.

H4₀. There is not a difference between the CS adjustments for financially healthy medium and large size firms during negative macroeconomic shocks.

H4_a. There is a difference between the CS adjustments for financially healthy medium and large size firms during negative macroeconomic shocks.

H5₀. There are no quick CS adjustments for healthy versus unhealthy medium and large size firms in response to periods before, during, and after macroeconomic shocks.

H5_a. There are quick CS adjustments for healthy versus unhealthy medium and large size firms in response to periods before, during, and after macroeconomic shocks.

Chapter 3 includes a comprehensive discussion of the research methodology which aligns the problem and purpose to the research questions. The first section provides a discussion of the research methods and design necessary for a valid and reliable study. The following sections of population, sample, materials/instruments, defined variables, and data collection, processing, and analysis include discussions on the research components and procedures in order to achieve the proposed study. In addition, the chapter includes sections presenting research assumptions, limitations, and delimitations. The chapter concludes with a brief discussion of ethical assurances and ends with a chapter summary.

Research Methods and Design

The quantitative research method was considered the most appropriate method for this research study. Quantitative research methods are useful in describing phenomenon and processing data for statistical estimations (Trochim & Donnelly, 2008). Qualitative research methods are non-numerical with characteristics not conducive for a study with numerical variables (Trochim & Donnelly, 2008). Given the nature of this study, qualitative research methods were not considered.

There are various quantitative research designs, but the most appropriate for this research was the comparative research design. A comparative research is designed to examine variances between two or more data groups to conclude whether similarities or dissimilarities exist. Its application is most notably in qualitative research, but it has been adopted rigorously in quantitative studies (Sasaki, 2004). This proposed study was designed to analyze CS adjustment variances and their SOAs in response to macroeconomic shocks and using a comparative research design was the best approach for this study. Using other research designs such as experimental, correlational, and descriptive were considered inappropriate since those research designs respectively, use random assignment to groups, determine whether relationships exist between sets of variables, and translate quantitative conclusions into text form (Trochim & Donnelly, 2008). Since this research was designed to compare and analyze variances between the independent variables of firm CS adjustments relating to STD, LTD, and equity, the quantitative comparative design was considered to be most effect for this research.

Population

The population size of interest for this study consisted of a selection of 356 publicly traded United States nonfinancial firms identified with the NAICS codes 31, 32, 33, 44, and 45. The 356 nonfinancial firms was categorized as medium-sized healthy firms, medium-sized unhealthy firms, large-sized healthy firms, and large-sized unhealthy firms. Nonfinancial firms were selected since they were likely to have greater debt and equity activity.

Sample

To ensure the study has a sufficient sample size the sample selection size with the necessary confidence level for the outcomes was based on the G*Power software by Faul, Buchner, Erdfelder, and Lang (2013). Beginning with a sample pool of 500 firms the selected sample size was to be a total of 323 firms which would be necessary to achieve a power analysis of 95%, as determined using a priori power analysis with an effect size of 0.25 and an alpha of 0.05, for two groups. However, only 356 firms were able to evaluate, there all firms selected were used in this study. The 356 firms were then determined by the Altman Z-score to be either financially constrained or not financially constrained.

Materials/Instruments

In this study, the researcher used secondary data collected from Mergent Online and the Federal Reserve Economic Data (FRED). The data from Mergent Online is a reliable source of financial data and was accessed through the Northcentral University library database. Economic data from FRED was accessed through The Federal Reserve Bank of Saint Louis. The economic data was retrieved from a United States government agency website and is considered a reliable source.

Variables used in this study included four independent financial variables, two independent macroeconomic variables, and one dependent variable. The independent financial variables are a firm's STD, LTD, common stock, and the total debt-to-equity leverage ratio. The independent macroeconomic variables were the gross domestic product (GDP) percentage and the U.S. Treasury bill rate of interest. The dependent variable was the MLME estimator determined from the CS speed of adjustments.

Operational Definition of Variables

This section provides readers with the familiarization of the variables used in the study. Various studies on the topic of corporate CS have analyzed data based on macroeconomic variables and firm specifics. Research has shown that given firm sizes and financial health they will respond differently to macroeconomic conditions. In this research, the researcher followed a similar process that will consist of two primary macroeconomic indicators identified as macroeconomic independent variables. The first independent variable is GDP percentage and the second is the Treasury bill interest rate. The two independent variables represent the macroeconomic environment. GDP represents the national product of a particular country and in this study represented the United States. GDP will consist of quarterly data selected from the FRED. Quarterly data will span 15 years, which should result in sufficient corporate and governmental data. The interest rate selected was also from the FRED. Interest rate data consisted of the 3-month Treasury bill and the rate used in the analysis was the quarter-end rate.

The financial independent variables were the financial leverage ratios of STD debt-to-equity, LTD debt-to-equity, and total debt-to-equity. These ratios represent corporate results based on the economic environment and they were selected from the financial database of Mergent Online. The variables were derived from medium and large firms characterized as being financially healthy and financially unhealthy. Firms with these characterizations were active in their CS decisions and respond more attentively to macroeconomic changes (Joeveer, 2005). Market capitalization was the basis for selecting the medium and large firms. Medium-size firms had market

capitalizations of \$2 billion to \$10 billion and large firms had market capitalizations over \$10 billion.

After the corporate selection process and data analysis, macroeconomic shocks underwent analysis. Analyzing corporate CS and firms' movements in response to macroeconomic shocks was the primary focus of the research. To understand CS adjustments, the researcher included a times-series and trend analysis on the financial components of debt and equity in response to macroeconomic movements. These methods provided useful data to determine the speed at which firm leaders make debt and equity adjustments. A higher percentage change between quarter-end periods will indicate quicker adjustments, and a lower percentage change between quarter-end periods will indicate slower adjustments. The comparison of debt and equity data to macroeconomic changes provides an understanding of the corporate financing decisions that relate to macroeconomic conditions and the following operational variables was used to conduct this comparative study.

Altman Z-score. The Altman Z-score was used in the firm selection process to identify firms that are either financially healthy or financially unhealthy. The Altman Z-score is a measurement used for the prediction of firm bankruptcy and financial distress (Zack, 2012). This ordinal measurement had dependent values calculated for three categories, distress, intermediate, and safe, to determine which firms are financially healthy and unhealthy.

Common stock. Common stock was an independent variable included as part of a firm's CS. Common stock is a financing source used by a firm and represents the amount of stock the firm has outstanding on the balance sheet (Rajendra, 2013). The

independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and the value converted to a percentage calculated as the percentage of long-term debt within the CS. The data was used in the study for comparing firm size given their financial health in response to macroeconomic shocks.

Gross domestic product (GDP). In this study, GDP was used as an independent variable to identify macroeconomic shock periods. GDP is a macroeconomic indicator representing the percentage growth of the economy (Frank & Bernanke, 2009). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and used in the comparative analysis.

Interest rate (IR). The IR was used in this study as a second indicator used in correlation with GDP to determine macroeconomic shock periods. An IR is the cost of borrowing for firms (Rajendra, 2013) and a macroeconomic indicator (c & Tang, 2008). In this study, the interest rate it was determined using the rate as indicated by the U.S. Treasury bill. The independent variable of the interest rate percentage was on an interval scale ranging from .01% to 100%. Data collected was from the FRED and used in the comparative analysis.

Leverage ratio (LR). The LR is a ratio that was used as a dependent variable in this study to measure and analyze the leverage of debt and equity for a firm. As defined, the LR represents the percentage of debt outstanding as compared to common stock outstanding (Baker & Martin, 2011). The dependent variable was on an interval scale ranging from .01% to over 100% and indicated the percentage of a firm's total debt-to-equity. Data collected was from the Mergent Online database.

Long-term debt (LTD). LTD is a component of a firm's LR and CS which was used as an independent variable for this comparative study. Long-term debt is a financing source used by a firm, and the value represents the amount of debt the firm has outstanding over 1 year (Fosberg, 2012). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and the value converted to a percentage calculated as the percentage of long-term debt within the CS. The data was used in the study for comparing firm size given their financial health in response to macroeconomic shocks.

Macroeconomic environment (ME). Macroeconomic environment represents the economy in its entirety. It consists of components such as GDP, interest rates, inflation, unemployment, fiscal balance, infrastructure, debt position, and trade activities (Dozie, 2012). The two components of GDP and interest rates are independent variables representing ME. They were collected from FRED and their correlation used to identify macroeconomic shock periods. Periods of macroeconomic shocks were on an interval scale ranging from .01% to 10%.

Short-term debt (STD). STD is a component of a firm's LR and CS which was used as an independent variable for the comparative analysis of firm size and financial health. STD is a financing source used within firms, and the value represents the amount of debt a firm has outstanding within a 1-year period (Fosberg, 2012). The independent variable was on an interval scale ranging from .01% to 100%. Data collected was from the Mergent Online database and the value converted to a percentage calculated as the percentage of short-term debt within the CS. The data was used in the study for comparing firm size given their financial health in response to macroeconomic shocks.

Speed of adjustment (SOA). In order to measure the speed of firm CS adjustments in response to macroeconomic shocks a sensitivity or speed indicator was calculated. The SOA is an estimator indicating the rate of firm CS adjustments (Elsas & Florysiak, 2011; Iliev & Welch, 2010). The dependent variable was on an interval scale ranging from .01% to 100%. Data was analyzed using the MLME subset of the econometric method GMM to determine SOA estimates.

Data Collection, Processing, and Analysis

The proposed quantitative research was to understand the differentiations between corporate CS adjustments for firm sizes and financial health in response to macroeconomic shocks. These macroeconomic shocks are economic environment adjustments indicated by GDP and interest rates. An increased understanding of corporate financial behavior in response to macroeconomic shocks will provide insightful management information for firm decisions and will contribute to the overall understanding of how particular firms respond to the shocks (Elsas & Florysiak, 2011). For example, Hackbarth et al. (2006) determined that certain macroeconomic conditions warrant different debt choice policies. The understanding of macroeconomic conditions offers insight to credit spreads. In addition, research has indicated that firms can significantly improve debt capacity during boom economic periods versus recessionary periods. The type of information accumulated from corporate CS analysis is practical and presents tremendous insight into corporate financial behavior. This study involved the analyzing reactions of corporate CS and examining adjustments to corporate CS to understand those movements given macroeconomic shocks. The process of data

collection began with the use of secondary databases for firm selection and macroeconomic data.

Data collection began by selecting the firms to be used in this comparative study. Data on selected firms was collected from the secondary data source of Mergent Online accessed through Northcentral University's library databases. Firms selected were based on two main criteria. The first criterion was to download into a Microsoft Excel file selected firms based on their North American Industry Classification System (NAICS) code of 31, 32, 33, 44, and 45. The second criterion was market capitalization to select firm size and this data also resided in the Excel spreadsheet. The selection of 356 firms was determined by the Altman Z-score to be either financially constrained or not financially constrained. Research sample sizes based on the G*Power software developed by Faul et al. (2013) recommended a sample size of 323 firms to be necessary to achieve a power analysis of 95%, as determined using a priori power analysis with an effect size of 0.25, and alpha of 0.05, for two groups, however, the study used the complete list of 356 firms. The next phase in this study was to begin the data process.

The selected data was processed using various statistical processes. The most basic of calculations was descriptive statistics consisting of the mean, median, minimum, maximum, and the standard deviation. This summary information provides important data in the analysis process. Drobetz et al. (2007), Drobetz and Wanzenried (2006), and Huang and Ritter (2009) noted descriptive statistics are necessary components as they provide summary results of firms' financial data. These summarized values are integral in the comparative analysis of the processed data. The basis of the research is to understand the distinctive behavior of a particular group of firms in response to positive

and negative macroeconomic shocks, and the descriptive statistics are the starting point of the research.

Once data was collected, the research involved examining the samples of the corporate CS responses for positive and negative macroeconomic shocks and measuring their SOA. Selected firms had profitable and sustainable characteristics of a financially healthy or unhealthy firm. Identifying the financial health of firms involved using the Altman's Z-score, which has been a reliable predictive model in determining the health of a firm (Uebergang, 2006). An important component to the study is the corporation's leverage ratio. The leverage ratio of debt-to-equity was compiled for the corporations. In this study, the researcher analyzed selected CS data in multiple steps. The first step was processing selected independent data using descriptive statistics, time series, and trend analysis. The next step involved processing the data to determine the quarterly periods of macroeconomic shocks. This was conducted by determining the macroeconomic using regression analysis and correlation analysis using the SPSS 22.0 software. The independent macroeconomic variables for the regression analysis consisted of the percentage change of GDP calculated quarterly covering a span of at least 15 years and the rate of interest, as determined by the U.S. Treasury bill. Because the U.S. Treasury bill interest rate is a basis for market interest rates, it maintains a direct relationship to financial instruments and economic activity (Korajczyk & Levy, 2003). Once the macroeconomic shock periods were established, the calculated mean scores were calculated for each firm size to be used to answer research questions Q1, Q2, Q3, and Q4. The calculated mean scores were then analyzed using multivariate analysis of variance (MANOVA) using the software SPSS 22.0.

The final phase of this study was to determine the SOA for each firm type and financial healthy and evaluate their results using the subset MLME from the econometric method of GMM developed in 1982 by Lars Peter Hansen. GMM has been a predominant analytical econometric tool in the estimation and hypothesis testing of large samples (Hall, 2005). The secondary data source of FRED was suitable for selecting the macroeconomic indicators of GDP and interest rates represented by the U.S. Treasury bill.

The compiled independent variables of a firm's CS mentioned above followed an interval scale and their calculated leverage ratio values were on a one-dimensional scale indicating a firm's level of debt and equity. The percentage change in the level of CS components will have interval-scaled values ranging from .01% to over 100%. These interval percentages indicated the fluctuations or adjustments to CS and the analysis was in conjunction with the macroeconomic indicators GDP and interest rate. The interval scaling also exists for the percentage values as part of the SOA analysis, and on its analysis the results was also on a one-dimensional scale identifying movements of a slow or fast CS adjustment.

In previous studies, researchers identify variations between several sets of data. The regression and linear models mentioned above are common models among researchers. This quantitative research is similar in many respects to studies by Drobetz et al. (2007), Drobetz and Wanzenried (2006), Huang and Ritter (2009), and Korajczyk and Levy (2003). However, this study involved a comparative analysis of firms' financial and macroeconomic data, as well as the SOA for macroeconomic shocks.

The GMM econometric model is a chosen method for the analysis of the SOA because it is a proven method of analyzing economic data. The subset model of GMM used was the generalized linear model (GLM) using the maximum likelihood method estimator (MLME). The GMM is a generalized model similar to the ordinary least squares regression method, and its primary use is within the fields of finance and economics. The model is an estimator that provides inference on all coefficients (Drobtz & Wanzenried, 2006). Drobtz and Wanzenried (2006) further noted that researchers can use the GMM in a two-step process. The first step can estimate a target debt ratio, and the second step, using the values from the first step, can estimate the SOA. This study did not include an estimated target debt ratio, but rather included the debt and equity figures in the analysis process of a macroeconomic shock and the SOA.

Assumptions

The research study includes six assumptions. The first assumption was that firm leaders are active in their pursuit of an ultimate CS position and cognizant of their macroeconomic environment. A second assumption was that the financial data provided was collected and disseminated accurately by Mergent Online and FRED databases. Thirdly, parameters for selecting medium-sized and large-sized firms were representative of their size. The fourth assumption was the determination of firm financial health using the Altman Z-score methodology. The fifth assumption was that firms identified as medium-size, large-size, financially healthy, and financially unhealthy remain in their respective category during the research analysis process. Lastly, it was assumed that the comparative, quantitative study design will provide a valid and reliable statistical analysis of firm groups during macroeconomic shocks.

Limitations

The research study is subject to inherent limitations. Limitations compromise the research internal validity (Trochim & Donnelly, 2008). The first limitation of the study was the number of macroeconomic shock events. The research may only be able to analyze and measure firm CS adjustments for one or two significant macroeconomic shock events. The second limitation was the method of measuring the sensitivity of firm CS adjustments to macroeconomic shocks. The GMM and its subset MLME is a valid econometric statistical measurement tool (Hall, 2005). However, only quarterly periods of financial data were available to evaluate the speed of CS adjustments.

Delimitations

The study was delimited in scope to address the most recent macroeconomic shocks covering a span of the most recent 15 years. This scope was driven by the number of years financial information was available through the Mergent Online database. In addition to the time span, the study was delimited by firm industry type. Only firms within the NAICS codes of 31, 32, 33, 44, and 45 were selected for the study. These particular NAICS codes were considered to meet requirements for firm sample selection.

Ethical Assurances

The research study adheres to the Northcentral University's (2013) ethical categories of protection from harm, informed consent, right to privacy, and honesty with professional colleagues. The researcher completed an ethics course titled: Collaborative Institutional Training Initiative (see Appendix A). The study used public available secondary data for research analysis which made the first three categories non-issues.

The Northcentral University Institutional Review Board (IRB) approved the data collection prior to the research study.

Summary

The quantitative comparative study was to investigate corporate CS adjustments in response to positive and negative macroeconomic shocks for different firm sizes and different financial health statuses. In addition to quantitatively determining CS adjustments, the researcher also presented the speed at which those adjustments were made, irrespective of an optimal target. Research of the adjustments consisted of selected secondary corporate financial data by firm NAICS code and by firm size based on their market capitalization. Financial data of debt and equity for CS adjustments were analyzed using descriptive statistics, regression analysis, MANOVA, and the MLME. Data related to the macroeconomic indicators of GDP and interest rate was secondary data extracted from the U.S. Government website database of FRED. The complete sample size comprising of 356 firms was used in the study.

Chapter 3 also described the materials and instruments of Mergent Online and FRED for secondary data selection of firms and determination of macroeconomic shocks. Variables used in this study were also described along with the process of data collection, processing, and analysis methods. In addition, the chapter included assumptions, limitations, delimitations, and ethical assurances concerning the study. The results of this study were presented in the following chapter 4.

Chapter 4: Findings

The purpose of this quantitative study is to investigate and compare firm sizes and their financial health in response to macroeconomic shocks. The problem being addressed is that although numerous studies have examined CS adjustments, there is a dearth of comparative analyses between firm sizes based on market capitalization and their financial health in response to macroeconomic shocks. Firms of differing sizes and financial health exhibit dissimilar patterns of financial behavior in response to macroeconomic conditions. Frank and Goyal (2009) note that financial constraints affect CS choice and their examination indicates that only by analyzing firm size as well as other relative factors can one understand how each group responds to macroeconomic conditions. However, previous research is limited insofar as it either disregards firm size or takes a broad view of firm sizes and does not consider firm financial health comparisons when analyzing CS adjustments in response to macroeconomic conditions (Bokpin, 2010; Cook & Tang, 2010; Huang & Ritter, 2009). The objective of the study is to contribute to the field of corporate financial behavior by presenting comparative analysis results between firms of different sizes and financial health. Few comparative CS studies have focused on differing firm sizes. Firms have differing constructs and only by analyzing their financial behavior applying differing methodologies can results reveal how and why CS adjust, to what level they adjust, and how quickly they adjust given influencing and constraining factors.

This chapter includes the findings of the comparative study and is divided into three sections. The first section presents study results and statistical analyses. The second section is devoted to the evaluation of the findings within the framework of the

research questions and hypothesis. The final section summarizes the key results for Chapter 4.

Results

Descriptive statistic results. The sample size for two groups totaled 356 firms: 142 firms for the positive macroeconomic shock and 214 firms for the negative macroeconomic shock, which exceeds the sample size of 323 firms based on the statistical power analysis results presented in Chapter 3. Table 1 presents firms by size, financial health, firm sample size, and percentage of total firms in the sample which were included in the macroeconomic positive shock period. Medium sized unhealthy firms was slightly greater at 7% compared to large size unhealthy firms at 4.2%, whereas large size healthy firms were 50% of the total sample size compared to the medium size healthy firms consisting of only 38.7%. Table 2 presents the mean scores for firm financial ratios by quarterly period, firm size, and firm health for the macroeconomic positive shock period. Figure 1 shows a comparison of the average mean scores between financially unhealthy medium and large size firms during the macroeconomic positive shock while Figure 2 shows a comparison of the average mean scores between financially healthy medium and large size firms during the macroeconomic positive shock.

Table 1.

Firm Groups included in the Macroeconomic Positive Period of Q4-2002 - Q1-2004

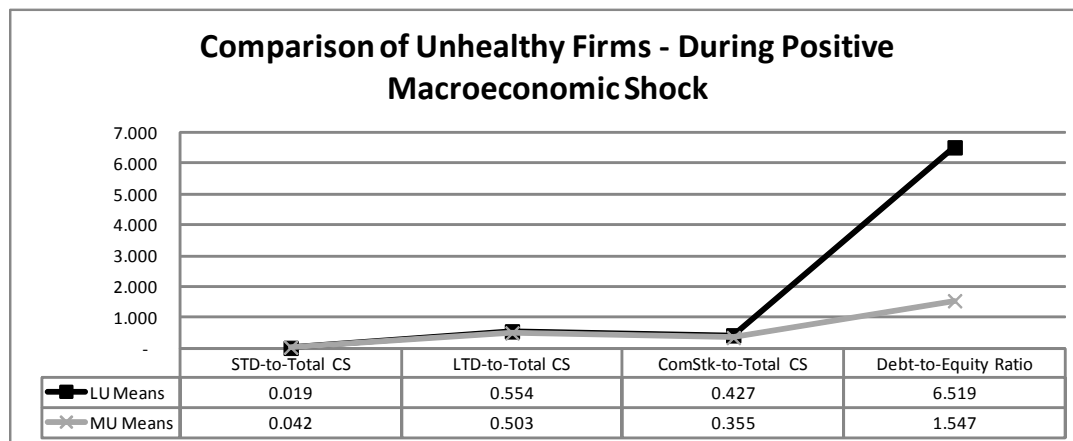
Firm Size	Firm Financial Condition	Number of Firms	Percentage
Medium	Healthy	55	38.7%
Medium	Unhealthy	10	7.0%
Large	Healthy	71	50.0%
Large	Unhealthy	6	4.2%
		142	100.0%

Table 2.

Firms Means for the Macroeconomic Shock Period Q4-2002 - Q1-2004

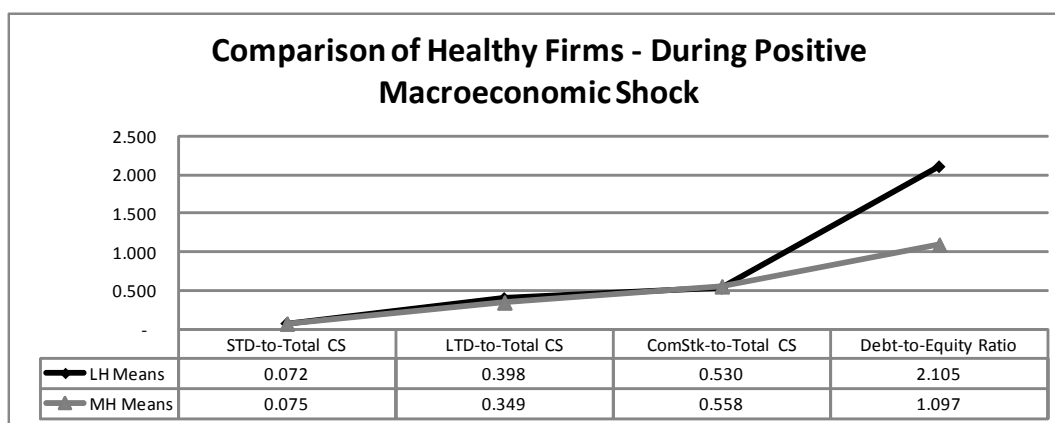
Period	Firms	STD-to-Total CS	LTD-to-Total CS	ComStk-to-Total CS	Debt-to-Equity Ratio
Q4-2002	LH Means	0.083	0.391	0.526	5.822
Q1-2003	LH Means	0.086	0.384	0.530	2.217
Q2-2003	LH Means	0.073	0.405	0.522	2.196
Q3-2003	LH Means	0.071	0.391	0.537	2.013
Q4-2003	LH Means	0.052	0.365	0.583	5.040
Q1-2004	LH Means	0.060	0.385	0.555	1.812
Q4-2002	LU Means	0.061	0.539	0.400	6.198
Q1-2003	LU Means	0.014	0.569	0.417	6.027
Q2-2003	LU Means	0.020	0.552	0.428	6.347
Q3-2003	LU Means	0.018	0.555	0.427	6.691
Q4-2003	LU Means	0.112	0.460	0.428	6.848
Q1-2004	LU Means	0.031	0.535	0.434	6.457
Q4-2002	MH Means	0.056	0.347	0.597	1.276
Q1-2003	MH Means	0.069	0.355	0.557	1.241
Q2-2003	MH Means	0.075	0.347	0.560	1.127
Q3-2003	MH Means	0.075	0.351	0.556	1.066
Q4-2003	MH Means	0.056	0.329	0.615	1.061
Q1-2004	MH Means	0.067	0.329	0.585	0.962
Q4-2002	MU Means	0.043	0.527	0.430	1.640
Q1-2003	MU Means	0.048	0.522	0.330	1.633
Q2-2003	MU Means	0.039	0.535	0.327	1.646
Q3-2003	MU Means	0.045	0.472	0.383	1.447
Q4-2003	MU Means	0.026	0.517	0.457	1.187
Q1-2004	MU Means	0.035	0.495	0.370	1.130

Note: LH = Large Healthy, LU = Large Unhealthy, MH = Medium Healthy, MU = Medium Unhealthy



Note: LU = Large Unhealthy, MU = Medium Unhealthy

Figure 1. Line chart comparing total average mean scores for financially unhealthy firms during the positive macroeconomic shock.



Note: LH = Large Healthy, MH = Medium Healthy

Figure 2. Line chart compares the total average mean scores for financially healthy firms during the positive macroeconomic shock.

Table 3 presents firms by size, financial health, firm sample size, and percentage of total firms in sample, which were included in the macroeconomic negative shock period. Medium size unhealthy firms were slightly greater at 6.5% compared to the large size unhealthy firms at 1.9%, whereas medium size healthy firms were 54.7% of the total sample size compared to the large size healthy firms consisting of only 36.9%. Table 4 presents the mean scores for firm financial ratios by quarterly period, firm size, and firm health for the macroeconomic negative shock period. Figure 3 shows a comparison of the average mean scores between financially unhealthy medium and large size firms during the macroeconomic negative shock while Figure 4 shows a comparison of the average mean scores between financially healthy medium and large size firms during the macroeconomic negative shock.

Table 3.

Firm Groups included in the Macroeconomic Negative Shock Period of Q2-2008 - Q3-2009

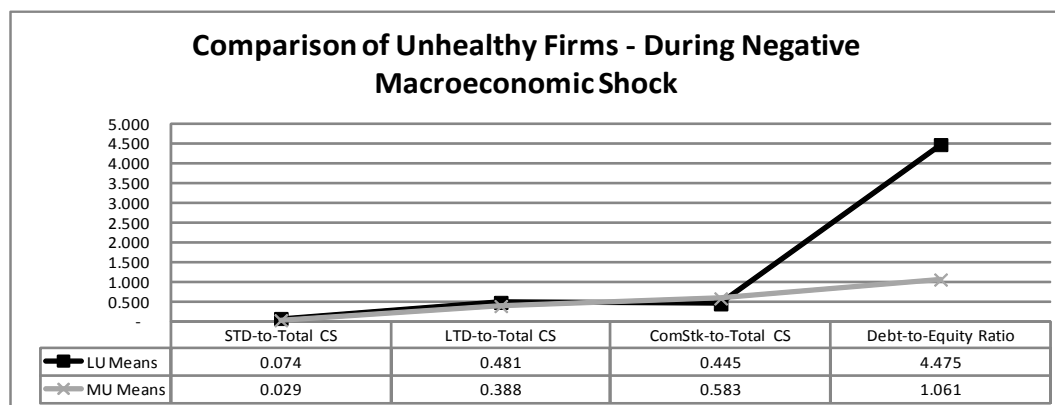
Firm Size	Firm Financial Condition	Number of Firms	Percentage
Medium	Healthy	117	54.7%
Medium	Unhealthy	14	6.5%
Large	Healthy	79	36.9%
Large	Unhealthy	4	1.9%
		214	100.0%

Table 4.

Firms Means included in the Macroeconomic Negative Shock Period of Q2-2008 - Q3-2009

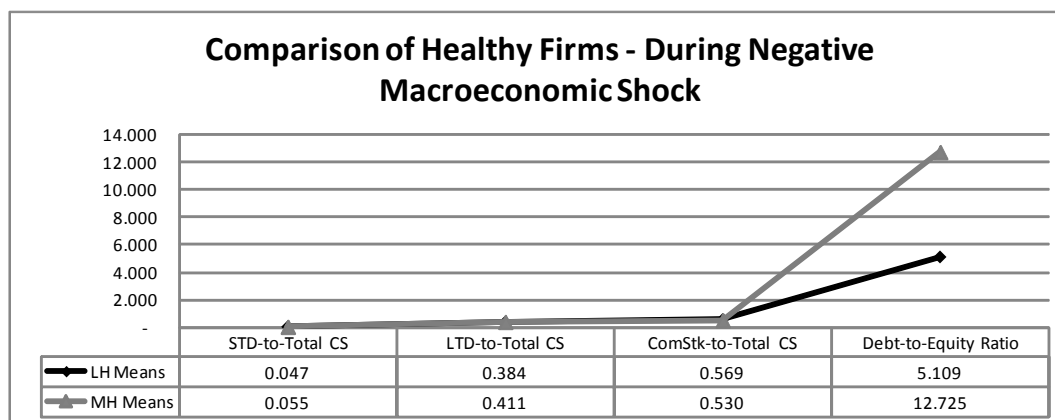
Period	Firms	STD-to-Total CS	LTD-to-Total CS	ComStk-to-Total CS	Debt-to-Equity Ratio
Q2-2008	LH Means	0.089	0.337	0.562	2.019
Q3-2008	LH Means	0.075	0.352	0.560	3.261
Q4-2008	LH Means	0.043	0.376	0.581	7.061
Q1-2009	LH Means	0.051	0.391	0.558	3.156
Q2-2009	LH Means	0.047	0.404	0.550	2.774
Q3-2009	LH Means	0.047	0.405	0.549	2.761
Q2-2008	LU Means	0.017	0.530	0.453	5.521
Q3-2008	LU Means	0.014	0.541	0.445	5.046
Q4-2008	LU Means	0.111	0.451	0.438	4.956
Q1-2009	LU Means	0.037	0.511	0.452	3.994
Q2-2009	LU Means	0.099	0.440	0.462	3.043
Q3-2009	LU Means	0.095	0.431	0.474	2.841
Q2-2008	MH Means	0.077	0.399	0.524	4.858
Q3-2008	MH Means	0.077	0.405	0.518	6.009
Q4-2008	MH Means	0.049	0.411	0.540	13.137
Q1-2009	MH Means	0.061	0.411	0.520	12.314
Q2-2009	MH Means	0.061	0.409	0.522	4.985
Q3-2009	MH Means	0.058	0.412	0.530	3.561
Q2-2008	MU Means	0.031	0.321	0.649	0.542
Q3-2008	MU Means	0.028	0.325	0.647	0.499
Q4-2008	MU Means	0.031	0.415	0.554	1.000
Q1-2009	MU Means	0.027	0.361	0.612	1.121
Q2-2009	MU Means	0.030	0.360	0.610	1.107
Q3-2009	MU Means	0.044	0.340	0.616	1.058

Note: LH = Large Healthy, LU = Large Unhealthy, MH = Medium Healthy, MU = Medium Unhealthy



Note: LU = Large Unhealthy, MU = Medium Unhealthy

Figure 3. Line chart compares total average mean scores for financially unhealthy firms during the negative macroeconomic shock.



Note: LH = Large Healthy, MH = Medium Healthy

Figure 4. Line chart compares the total average mean scores for financially healthy firms during the negative macroeconomic shock.

Macroeconomic shock periods, both positive and negative, were used in the comparative analysis of firm financial conditions and their CS components. Figure 5 presents the comparison between the percentage change in GDP and the U.S. Treasury Bill and the two macroeconomic shock periods analyzed are visually depicted and identified. The two macroeconomic shock periods were selected based on the correlation and their strong relationship as indicated by the regression analysis. The positive macroeconomic shock peaks at the GDP percentage change of 2.24% as indicated in

Figure 6 whereas the negative macroeconomic shock has a GDP percentage change of -1.97% as indicated in Figure 7. Each GDP percentage change identifying a macroeconomic shock represented a maximum GDP percentage change preceded with two quarters of progressive changes toward the peak, followed by two quarters increasing or decreasing changes, depending on the shock.

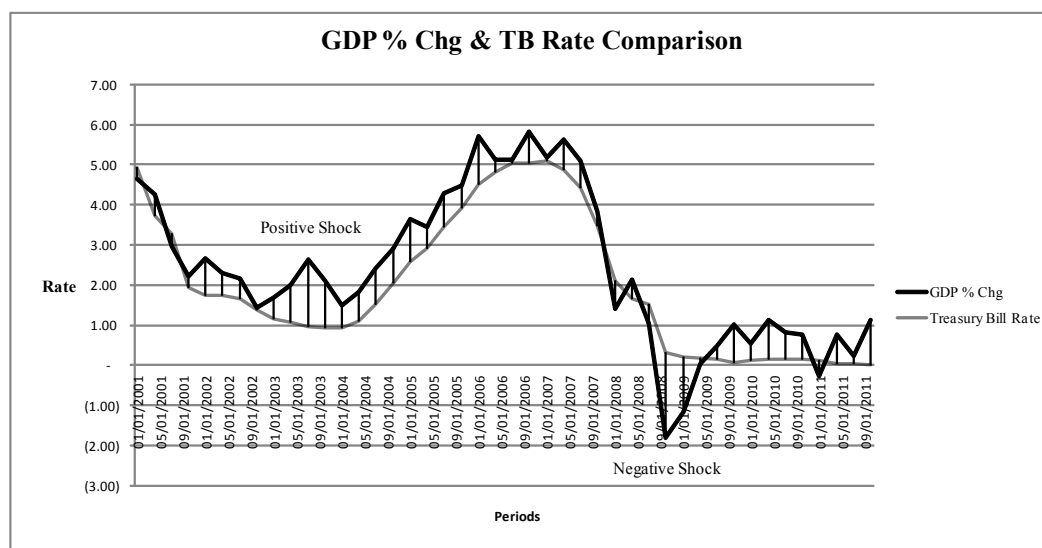


Figure 5. Line Chart Comparing GDP % Change and the U.S. Treasury Bill Rate.

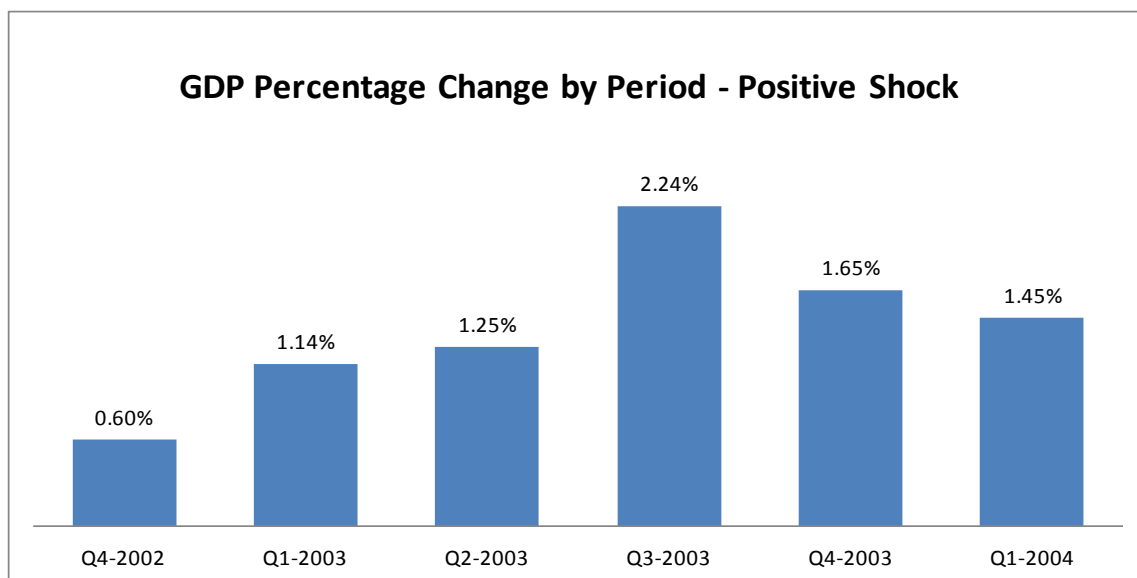


Figure 6. Bar chart presents Macroeconomic Positive Shock Period for the percentage change in GDP.

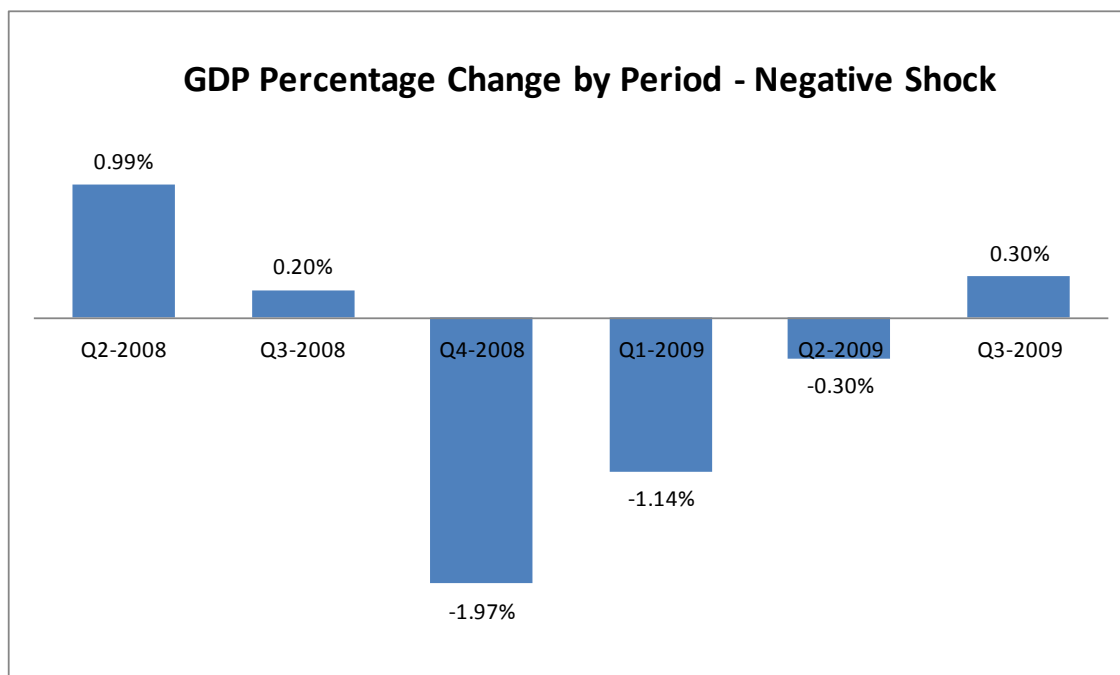


Figure 7. Bar chart presents Macroeconomic Negative Shock Period for the percentage change in GDP.

A correlation and regression analysis was used to determine the positive and negative macroeconomic shock periods. Using IBM SPSS 22.0 statistical software, the correlational analysis revealed a positive moderate relationship between the U.S. Treasury Bill rate and the GDP percentage change for the negative macroeconomic shock period as indicated by the Pearson correlation $r = .380$ presented in Table 5. The regression analysis $R^2 = .927$ revealed for the negative macroeconomic shock period indicated a strong fit, as noted in Table 6. As for the positive macroeconomic shock period the Pearson correlation of $r = .760$ in Table 5 and the regression analysis of $R^2 = .948$ in Table 6, indicate a strong relationship between the U.S. Treasury Bill rate and the GDP percentage change.

Table 5.

Pearson Correlations Between Variables for each Macroeconomic Shock

		GDP % Change	GDP % Change
Negative	U.S. Treasury Bill	0.380	
Positive	U.S. Treasury Bill		0.760

Note. $N = 6$.

Table 6.

R Square for each Macroeconomic Shock

		GDP % Change	GDP % Change
Negative	U.S. Treasury Bill	0.927	
Positive	U.S. Treasury Bill		0.948

Note. $N = 6$.

Research Question 1. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially

unhealthy medium and large size firms during positive macroeconomic shocks? The hypothesis to test this research question was as follows:

H1₀. There is no difference between the CS adjustments for financially unhealthy medium and large size firms during positive macroeconomic shocks.

H1_a. There is a difference between the CS adjustments for financially unhealthy medium and large size firms during positive macroeconomic shocks.

A MANOVA test was conducted to test the null hypothesis to determine if differences existed between the sizes of medium firms and large firms considered financially unhealthy. As indicated by $p > .05$, the results did not reflect a significant difference between the CS adjustments for financially unhealthy medium firms and financially unhealthy large firms during a positive macroeconomic shock for the second and third quarters of 2003. Based on the comparative analysis, the null hypothesis was not rejected.

Research Question 2. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during negative macroeconomic shocks?

H2₀. There is no difference between the CS adjustments for financially unhealthy medium and large size firms during negative macroeconomic shocks.

H2_a. There is a difference between the CS adjustments for financially unhealthy medium and large size firms during negative macroeconomic shocks.

A MANOVA test was conducted to test the null hypothesis to determine if differences existed between the sizes of medium firms and large firms considered financially unhealthy. As indicated by $p > .05$, the study results did not reflect a

significant difference between the CS adjustments for financially unhealthy medium firms and financially unhealthy large firms during a negative macroeconomic shock covering the fourth quarter of 2008 and first quarter of 2009. Based on the comparative analysis, the null hypothesis was not rejected.

Research Question 3. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during positive macroeconomic shocks?

H3₀. There is no difference between the CS adjustments for financially healthy medium and large size firms during positive macroeconomic shocks.

H3_a. There is a difference between the CS adjustments for financially healthy medium and large size firms during positive macroeconomic shocks.

A MANOVA test was conducted to test the null hypothesis to determine if differences existed between the sizes of medium firms and large firms considered financially healthy. As indicated by $p < .05$, the study results reflected a significant difference between the CS adjustments for financially healthy medium firms and financially healthy large firms during a positive macroeconomic shock for the second and third quarters of 2003. Based on the comparative analysis, the null hypothesis was rejected.

Research Question 4. What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during negative macroeconomic shocks?

H4₀. There is no difference between the CS adjustments for financially healthy medium and large size firms during negative macroeconomic shocks.

H4_a. There is a difference between the CS adjustments for financially healthy medium and large size firms during negative macroeconomic shocks.

A MANOVA test was conducted to test the null hypothesis to determine if differences existed between the sizes of medium firms and large firms considered financially healthy. As indicated by $p > .05$, the study results did not reflect a significant difference between the CS adjustments for financially healthy medium firms and financially healthy large firms during a negative macroeconomic shock covering the fourth quarter of 2008 and first quarter of 2009. Based on the comparative analysis, the null hypothesis was not rejected.

Research Question 5. How quickly will healthy versus unhealthy medium and large size firms adjust their CS in response to periods before, during, and after macroeconomic shocks?

H5₀. There are no quick CS adjustments for healthy versus unhealthy medium and large size firms in response to periods before, during, and after macroeconomic shocks.

H5_a. There are quick CS adjustments for healthy versus unhealthy medium and large size firms in response to periods before, during, and after macroeconomic shocks.

The SOA for firms as they pass through a positive or negative macroeconomic shock was evaluated using a subset of GMM. The model was the generalized linear model (GLM) using the maximum likelihood method estimator (MLME). Based on the SOA estimator results and their respective p -values, there were significant CS adjustments during each macroeconomic shock period. Therefore, because there were significant CS adjustments, the null hypothesis is rejected.

Table 7.

List of SOA by Shock Period and Firm

ME Shock	Firms	SOA Estimator	<i>p</i>
Positive	MU SOA	-30.744	0.000
Positive	MH SOA	-59.418	0.000
Positive	LU SOA	17.572	0.012
Positive	LH SOA	-1.510	0.351
Negative	MU SOA	21.896	0.000
Negative	MH SOA	-.243	0.740
Negative	LU SOA	-.193	0.000
Negative	LH SOA	-6.515	0.909

*Note: LH = Large Healthy, LU = Large Unhealthy, MH = Medium Healthy, MU = Medium Unhealthy
SOA = Speed of Adjustment*

Evaluation of Findings

This section presents a brief analysis of the study findings. A MANOVA statistical hypothesis test was conducted to analyze the first four research questions of this study. The four research questions addressed the comparison of medium firms and large firms given their healthy or unhealthy financial condition to determine whether any significant differences exist between the firm groups during positive and negative macroeconomic shocks. The fifth research question involved the use of the MLME to test whether there were any quick CS adjustments for healthy versus unhealthy medium firms and healthy versus unhealthy large firms as they pass through macroeconomic shock periods.

Regarding the first four research questions, and for this discussion, it was assumed that there would be CS differences between the firm groups. However, as the MANOVA test indicated there were no significant differences between the CS for research questions one, two, and four. Although firms vary in size and financial condition, they responded similarly to macroeconomic shocks. However, the third

research question addressed CS differences for healthy medium firms and healthy large firms during a positive macroeconomic shock and indicated that there were significant CS differences between the groups. This result offers some confidence that during favorable macroeconomic periods, firms with financial capacities take advantage of opportunities. Kayo and Kimura (2011) noted that financially constrained firms have financial limitations. Therefore, it is expected that healthy firms would have exhibited differences during a positive macroeconomic shock period. In addition, healthy firms during a positive macroeconomic shock period also tend to use more STD compared to healthy firms during a negative macroeconomic shock period, which coincides with Frosberg (2012) regarding firm size and profitability influencing STD financing.

Overall, a lack of CS differences or acknowledgement of CS differences can be explained by corporate financing decisions (Cohen & Yagil, 2010). Firms whether medium or large responding similarly to macroeconomic conditions indicates a parallel comparison driven by such factors as profitability, industry sector, taxation, and CS preservation. Firms that maintain a level of financial flexibility control their financial choices and improve their opportunities (Almeida, Campello, & Weisbach, 2010; Ang & Smedema, 2011; Drobetz et al., 2007).

Theories contribute to CS behavior by helping to explain the pattern of behavior associated with CS adjustments. Theoretical frameworks relating to this study are comprehensive and offer a level of understanding of CS behavior among firms of different sizes and financial conditions. Connections between theories and study results would suggest that theories of pecking order, trade-off, market timing, and agency are relevant. Firms adjusted CS in relation to their financial condition and economic

environment. Average ratios among firms during macroeconomic shocks reflect CS adjustments; however, they do not present which theory was more prevalent.

Another finding from the research is that medium and large firms will adjust their CS quickly as they pass through macroeconomic shocks. The MLME indicated that medium size firms adjusted CS more rapidly during either negative or positive macroeconomic shock than larger firms. CS adjustments by medium size firms appeared to be Medium size firms tend to have greater financial limitations than larger firms

Summary

Included in Chapter 4 was a comprehensive account of the findings from the analyses conducted in this study. Five primary conclusions were revealed from this study and they are:

1. Medium firms and large firms with unhealthy financial positions did not have significant CS adjustments during a positive macroeconomic shock.
2. Medium firms and large firms with unhealthy financial positions did not have significant CS adjustments during a negative macroeconomic shock.
3. Medium firms and large firms with healthy financial positions did have significant CS adjustments during a positive macroeconomic shock.
4. Medium firms and large firms with healthy financial positions did not have significant CS adjustments during a negative macroeconomic shock.
5. There were quick CS adjustments through positive and negative macroeconomic shocks by medium firms and large firms categorized as financially unhealthy or healthy.

Statistical analyses were conducted to compare healthy and unhealthy medium firms and healthy and unhealthy large firms to determine if there were significant CS adjustments between firms of different sizes and different financial health. In addition, the speed of CS adjustments of firms as they pass through macroeconomic positive and negative shocks was estimated. Comparisons of CS adjustments and speed estimation were analyzed in the evaluation of findings section, where they were also investigated to determine possible reasons for similarities or dissimilarities between firms and to identify inconsistencies with prior studies. The implications of this study's results and recommendations for future studies are covered in Chapter 5, followed by general conclusions.

Chapter 5: Implications, Recommendations, and Conclusions

The problem addressed in this research is that although numerous studies have examined CS adjustments, comparative analyses between firm sizes and their financial health in response to macroeconomic shocks were lacking. A gap in research exists because previous studies were limited in regards to firm sizes and firm financial health comparisons. Firms of differing sizes and financial health exhibit dissimilar patterns of financial behavior in response to macroeconomic conditions. Frank and Goyal (2009) note that financial constraints affect CS choice, and their examination indicates that only by analyzing firm size and other relative factors can one understand how each group responds to macroeconomic conditions. In order to validate that firm size and financial health have differing responses to macroeconomic shocks, it is necessary to investigate their CS adjustments. The purpose of this quantitative comparative study is to investigate and compare firm sizes given their financial health in response to positive and negative macroeconomic shocks.

A quantitative comparative research method was determined the most appropriate to address the selected research questions here. Given the nature of this study, the qualitative research method was rejected. Researchers use a qualitative research method when there are no known variables to consider, which does not apply in this study. This study examines financial variables to compare their firm CS adjustments.

Limitations in this study involved firm size selection and the self-determining of firm size. Identifying firm size based on market capitalization at the period before a macroeconomic shock was not available using the Mergent online database. Market capitalizations were calculated by Mergent online the using latest financial data reported.

A second study limitation was that firm size was self-determined. Medium size firms were determined to range from \$2 billion to \$10 billion in market capitalization and market capitalizations for larger firms were over \$10 billion.

The ethical dimensions of the proposed study were in accordance with Northcentral University's Institutional Review Board. The researcher completed an ethics course titled: Collaborative Institutional Training Initiative (see Appendix A). No data was collected before the Institutional Review Board granted approval.

This chapter includes interpretation and explanation of the research results. It will address the research questions and hypotheses of the study. The potential limitations are identified by investigating each research question in terms of the research findings as they relate to the study's purpose and significance. Following this section are recommendations for practical applications and future research that extend beyond this study, which might contribute to the existing body of literature. This chapter closes with a summation of the key points in the conclusion.

Implications

The implications of the study results are included in this section. Research questions and hypothesis are reexamined and study results are discussed. Potential effects of the study limitations on the study are addressed.

Research question results. The first research question addressed in this study was: What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during positive macroeconomic shocks? Based on the comparative analysis the null hypothesis was not rejected. Given the p -value of .054, which indicates $p > .05$,

it was concluded that medium and large size firms with unhealthy financial positions were not significantly different from each other during a positive macroeconomic shock. The study results indicated that financially unhealthy medium firms and financially unhealthy large firms adjusted CS with similar responses during periods of positive macroeconomic shocks.

The second research question addressed in this study was: What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially unhealthy medium and large size firms during negative macroeconomic shocks? Based on the comparative analysis the null hypothesis was not rejected. Given the p -value of .290, which indicates $p > .05$, it was concluded that medium and large size firms with unhealthy financial positions were not significantly different from each other during a negative macroeconomic shock. The study results indicated that financially unhealthy medium firms and financially unhealthy large firms would have similar CS adjustments in response to negative macroeconomic shocks.

The third research question addressed in this study was: What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during positive macroeconomic shocks? Based on the comparative analysis, the null hypothesis was rejected. Given the p -value of .037 which indicates $p < .05$, the study results concluded a significant difference between the CS adjustments for financially healthy medium firms and financially healthy large firms during a positive macroeconomic shock. The study results indicate that during periods of positive macroeconomic shocks financially healthy

medium firms and financially healthy large firms will respond with dissimilar CS adjustments.

The fourth research question addressed in this study was: What is the difference between the CS (short-term debt, long-term debt, common stock, and debt-to-equity ratio) adjustments of financially healthy medium and large size firms during negative macroeconomic shocks? Based on the comparative analysis the null hypothesis was not rejected. Given the p -value of .346, which indicates $p > .05$, it was concluded that financially healthy medium firms and financially healthy large size firms were not significantly different from each other during a negative macroeconomic shock. The study results indicated that financially healthy medium firms and financially healthy large firms would have similar CS adjustments in response to negative macroeconomic shocks.

The fifth research question addressed in this study was: How quickly will healthy versus unhealthy medium and large size firms adjust their CS in response to periods before, during, and after macroeconomic shocks? Based on the SOA estimator results and an evaluation of their respective p -values, significant CS adjustments were identified during each macroeconomic shock period. Therefore, because there were significant CS adjustments, the null hypothesis was rejected. The results indicate that both medium firms and large firms made quick CS adjustments when passing through positive and negative macroeconomic shocks.

Effects of the study limitations. The first study limitation was the selection of medium and large size firms based on market capitalization. Medium size firms were those ranging from \$2 billion to \$10 billion in market capitalization, and larger firms were those with market capitalization over \$10 billion. Identifying firm size based on

market capitalization at the period before a macroeconomic shock was not available using the Mergent online database. Because of not selecting firms based on size before the determined macroeconomic shock, some firms may have been included in the sample erroneously. If firms were not classified correctly, mean scores of the key variables could have slightly skewed the data results.

The second study limitation was the self-determination of firm size. The researcher determined the market capitalization range for medium size firms at \$2 billion to \$10 billion. However, based on the market capitalization data retrieved, the range could have been expanded. Expanding the range would have included more medium size firms in the sample and, therefore, could have generated different results.

Results in context. Several studies have been conducted presenting results of CS adjustments and their SOA. Previous researchers have found that firms of different sizes have different financial capacities and financial flexibilities (Baltaci, & Ayaydin, 2014; Bassey et al., 2014; Chen & Chen, 2011; Chen, Chen, Chen, & Huang, 2013; Cohen & Yagil 2010; Drobetz et al. 2007; Frank & Goyal, 2009; Joeveer, 2013a; Wellalage & Locke, 2013; Yoo & Rhee, 2013). Previous studies have also noted distinct characteristics between medium firms and large firms. However, results of this study contradicted previous studies and revealed insignificant differences between medium firms and large firms for three of the four research questions in regards to CS adjustments during macroeconomic shocks.

Research questions one, two, and four concluded with the null hypothesis not being rejected due to *p*-values indicating no significant differences between the medium firms and large firms given their respective financial health positions. Statistical results

from comparing CS adjustments of different size firms during macroeconomic shocks were expected to indicate significant differences between the two groups. Firms of different sizes are considered to have dissimilar levels of financial capacity. However, the results from this comparative study revealed no significant differences for RQ1, RQ2, and RQ4, which contradicts previous studies. Chia-Chung and Yung-Ho (2008) noted that firm size affects CS adjustments and is instrumental to corporate financing. Firm size has increased as a reliability factor in regards to economic relevance in explaining leverage (Frank & Goyal, 2009). Although a firm's size has been a reliability factor, this study found contradictory results when applied to RQ1, RQ2, and RQ4.

RQ3 results indicated significant differences between healthy medium firms and healthy large firms during a positive macroeconomic shock. This result aligns with the researcher's assumption that differences would exist in the CS of medium firms and large firms. Large firms, unlike medium size firms are not expected to have limitations that affect their ability to respond to financial conditions. Financial flexibility by larger firms was presented in the study results and is considered a major influence on CS choices (Denis & McKeon, 2011). This becomes apparent when comparing the means of STD for medium firms and large firms. Large size firms were able to reduce STD by 38% through a positive macroeconomic shock while medium size firms increased their STD by 17%. STD is an important finance source for firms and is used to manage their leverage and CS position (Mac an Bhaird & Lucey, 2010; Bassey et al. 2014; Chang et al., 2009). Financial flexibility is also presented by lower leverage ratios. In this study, in response to a positive macroeconomic shock, larger firms appeared to be more

financially flexible, as indicated by a 221% decrease in their leverage ratio compared to only a 33% decrease for medium size firms.

In addition to comparing responses to positive and negative macroeconomic shocks, the SOA for CS adjustments was estimated to understand whether medium firms and large firms adjusted their CS quickly in response to the shocks. Iliev and Welch (2010) noted that CS SOA is an important component in understanding CS adjustments in response to macroeconomic shocks and calculating an accurate SOA estimator remains a goal. This study determined an SOA estimator that revealed quick adjustments by both medium firms and large firms. The quickest SOA for CS adjustments were by medium size firms as indicated in Table 7. These results show that during macroeconomic shocks medium size firms will adjust their CS more quickly than larger firms will. Quicker responses may indicate that medium size firms have less financial flexibility and financial capacities to withstand the impact of a macroeconomic shock.

The results revealed in this study contained contradictions. Those contradictions might be due to investigating only U.S. firms, the NAICS codes 31, 32, 33, 44, and 45, the method of selecting firm size, and the determination of firm financial health. Continued research is suggested to determine whether the study results were representative of the variables employed.

Recommendations

Recommendations derived from the study results are offered in this section. Practical recommendations are presented first. Presented secondly are specific recommendations regarding opportunities for future studies to extend the results of this particular study.

Recommendations for practice. The primary recommendation surfaced from the analysis of research questions one through five, which investigated the comparison between CS adjustments for medium firms and large firms considered financially healthy or financially unhealthy during macroeconomic shocks. The results of this study provide evidence of CS adjustments and SOA during macroeconomic shocks, which offers behavioral patterns for publicly traded U.S. firms. Investors, financial advisors, firm leaders, researchers, and economists may benefit from this research to shape and enhance their financial decision-making and forecast future financial outcomes. The ability to make sound financial decisions and forecast future financial positions is an aptitude that can be encouraged and cultivated. Investors may find practical use from this study to better understand corporate financial behavior to augment their prediction of the financial market transaction timing. Because of the study, financial advisors may benefit in a manner that allows them to have a more proactive consultation regarding the potential impact to an investor's portfolio. Firm leaders may find benefit from the study results in improving their financial decision-making to mitigate or take advantage of impacts from potential macroeconomic shocks. Academia may process the study results for consideration of future research and to expand their current understanding of CS adjustments and CS SOA. Greater understanding and awareness of the impact of macroeconomic shocks on firms of different sizes and financial health might also benefit economists who study corporate financial responses to macroeconomic shocks to build forecast models.

Overall, the field of corporate financial behavior will benefit from the comparative analysis study because it will allow researchers, investors, and firms to

develop and process additional awareness regarding CS movements of different firm sizes given their financial health in response to macroeconomic conditions. The pursuit to understand corporate financial behavior benefits academia and financial investors and advisors. Practical applications stemming from the study results are for continued development and construct of research to further understand CS adjustments by firms of different sizes and financial health. Analyzing previous works to understand the movements and adjustments to corporate CSs is a meaningful topic of research (Cook & Tang, 2010; Huang & Ritter, 2009).

Recommendations for future research. Recommendations for future research were developed based on the methods, limitations, and results of this study. This study was a quantitative comparative research method, which was suited for the selected research variables. Nonetheless, many options are available for the comparative research of firm size and their financial health.

One recommendation for future research would be to conduct a study using a mixed methodology. Although this study was quantitative, it could be expanded using a mixed methods approach. Using a mixed methods approach, combining quantitative and qualitative methods, would further develop the understanding of CS adjustments. A qualitative method will assist in optimizing the development process of understanding corporate financial behavior as it relates to CS adjustments. Surveying participants, such as firm leaders, as part of the research process will contribute to the study. Firm leaders can incorporate their personal leverage preferences into the decision-making process to shape their firms' CS (Cronqvist, Makhija, & Yonker, 2012). Therefore, integrating their

insights from the decision-making process in response to macroeconomic shocks will add an element of support to the quantitative portion.

This study combined the NAICS codes 31, 32, 33, 44, and 45. A second recommendation for future research is that studies should analyze and compare CS adjustments by a major industry sector. Abaidoo and Kwenin (2013) noted that industry sectors have specific size characteristics, maturity, ownership structure, and market share. A study benefiting the topic of corporate financial behavior should consist of comparing firms of the same industry sector as well as a study comparing different industry sectors. Detail studies within industry sectors will provide for a more granular perception into firm CS adjustments that will develop greater understanding of their movements. Studies have considered the impact of industry sectors and found that firms within the same sector reveal similar CSs and adjust toward their sector mean leverage or benchmark firm leverage (Noulas & Genimakis, 2011). These studies would offer additional insight as to CS adjustments by different industry sectors in response to macroeconomic shocks.

Conclusions

The following primary conclusions were revealed from this study:

1. Medium and large size firms with unhealthy financial positions will adjust their CS similarly during negative and positive macroeconomic shocks.
2. Medium and large size firms with healthy financial positions will adjust their CS similarly during negative macroeconomic shocks.
3. Medium and large size firms with healthy financial positions will adjust their CS significantly differently during position macroeconomic Shocks.

4. There were quick SOA for CS by both medium and large size firms through macroeconomic shocks.

The primary conclusions generated two main recommendations for practice:

1. Financial advisors, investors, firm leaders, academia, and economists should integrate the understanding of CS adjustments by firm size during macroeconomic shocks into their advising, financial activities, and research.

2. CS adjustments consist of necessary financial resource components. Therefore, practical applications should continue to be developed and improved for their use in understanding corporate financial behavior as it relates to CS adjustments during macroeconomic shocks.

In addition, two recommendations for future research were provided:

1. Researchers should incorporate the use of qualitative methods or a combination of quantitative and qualitative methods, to further the understanding CS adjustments.

2. Researchers should investigate CS adjustments by industry sectors to better understand their movements within and between industry sectors.

Chapter 5 included implications of the research findings to the NAICS codes 31, 32, 33, 44, and 45, which consisted of manufacturing and retail firms for substantial contributions to the existing body of literature within the study of corporate financial behavior to better understand CS adjustments as they related to macroeconomic shocks. The study implications included the research question results, effects of study limitations, and results in context. The recommendations were identified for practice and for future research that is beyond the capacity of this study, but further application and research

could add a significant contribution to the body of knowledge in the field of corporate financial behavior.

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Appendixes

Appendix A: Collaborative Institutional Training Initiative Completion Certificate

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)

HUMAN RESEARCH CURRICULUM COMPLETION REPORT

Printed on 08/04/2014

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INSTITUTION Northcentral University

EXPIRATION DATE 08/03/2018

BUSINESS

COURSE/STAGE: Basic Course/1

PASSED ON: 08/04/2014

REFERENCE ID: 13697543

REQUIRED MODULES	DATE COMPLETED
Belmont Report and CITI Course Introduction	07/28/14
History and Ethical Principles - SBE	07/29/14
Defining Research with Human Subjects - SBE	07/29/14
The Regulations - SBE	07/30/14
Assessing Risk - SBE	07/30/14
Informed Consent - SBE	08/01/14
Privacy and Confidentiality - SBE	08/03/14
International Research - SBE	08/03/14
International Studies	08/03/14
Internet Research - SBE	08/04/14
Vulnerable Subjects - Research Involving Workers/Employees	08/04/14
Conflicts of Interest in Research Involving Human Subjects	08/04/14
Northcentral University	08/04/14

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Program Course Coordinator