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Walden University

College of Management and Technology

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Steven R. Posey

has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

Examining Liquidity, Growth Strategy, Capital Structure, and Earnings Growth

by

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MBA, California State University, San Bernardino, 2000

BA, California State University, San Bernardino, 1998

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

June 2020

Abstract

Many businesses experience financial deterioration after a growth period. Business leaders of firms with market capitalization value between \$50 million and \$300 million, known as microcap companies, might have an incomplete understanding of growth drivers. Grounded in the firm growth theory, the purpose of this quantitative, correlational study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. The population consisted of the more than 1,400 constituent firms from the 2019 Russell Microcap Index. Archival data from the Securities and Exchange Commission EDGAR database were collected, organized, and analyzed for 119 randomly selected firms. Multiple regression was used to identify a predictive model. The results indicated no statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth; $F(3, 108) = 2.22, p = 0.90, R^2 = 0.058$. The current study's findings might encourage business leaders to alter their assumptions about liquidity, growth strategy, and capital structure as determinants of earnings growth. The implications for positive social change include the potential for increased donations to support social programs in the local community and local economic stability.

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Dedication

I dedicate this study to my wife, Elizabeth, and our sons, Kendall and Cameron, who provided love and support during this journey, and who hold a love of learning equal to my own. I also dedicate this work to my parents, Robert and Nancy, who, emphasized the value of education and knowledge throughout my childhood.

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Section 1: Foundation of the Study

Much of the research into firm growth has focused on high-growth businesses. The generally accepted definition of a high-growth business includes an average annual growth in employment or sales of more than 20% over 3 consecutive years (Satterthwaite & Hamilton, 2017). The definition of a high-growth business skews to smaller, less mature businesses because it is difficult for larger businesses to achieve and maintain growth rates of 20% per year for 3 consecutive years. Additionally, the intent of growth is to increase earnings and returns to owners and investors of the business. The purpose of this quantitative study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth.

Background of the Problem

Many owners of businesses use the business as a path to employment and financial security (Failla, Melillo, & Reichstein, 2017). Others may want to grow the business beyond an employment vehicle. Successfully growing a business requires capital to finance operations during the growth period (Yang, Guariglia, & Guo, 2017). Although some entrepreneurs have access to financing through relationships with banks or private investors, others may have exceeded available bank financing and move to capital markets to fund the operations of the firm (Allini, Rakha, McMillan, & Caldarelli, 2018; G. Li, 2016).

A business leader completing an initial public offering changes the dynamics of managing the firm. External investors may expect the entity to engage professional managers, with the expectation that doing so leads to increased earnings (Feng, Morgan,

& Rego, 2016; Lin & Hu, 2007). Investors also expect the entity to pursue growth, which requires acquiring enough resources and developing a growth strategy (Rupar, 2017). A business leader must balance those factors to pursue and achieve growth in earnings (Hossain, Ibrahim, & Uddin, 2016).

Problem Statement

Access to capital is vital to fund growth and sustain the enterprise following the growth period (Feng et al., 2016; J. Yang et al., 2017). Approximately 25% of firms who achieve growth experience deterioration of financial performance within 5 years of the growth period (Satterthwaite & Hamilton, 2017). The general business problem was that some business executives do not understand that liquidity, growth strategy, and capital structure may affect the company's ability to grow. The specific business problem was that some business executives of publicly traded microcap companies do not know the relationship between liquidity, growth strategy, capital structure, and earnings growth.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. The targeted population consisted of executives of U.S. constituent companies of the 2019 Russell Microcap Index. The Microcap Index consists of small, publicly traded companies who are pursuing growth either in earnings or market capitalization. The independent variables were liquidity, growth strategy, and capital structure. The dependent variable was earnings growth. Burrus, Graham, and Jones (2018) correlated improved firm performance with reinvestment and community growth. Simmie (2003)

noted that the impact of successful companies extends beyond the geographic region in which the business is located. The current study may contribute to positive social change by increasing firm performance and improving the economy of the region, which could translate into reinvestment and community growth.

Nature of the Study

In a quantitative study, a researcher classifies and counts features to develop statistical models and test a hypothesis (Frels & Onwuegbuzie, 2013; Tobi & Kampen, 2017). A researcher uses quantitative methodology to generate numerical data and subject them to formal analysis (Curtis, Comiskey, & Dempsey, 2016). Because I sought to understand the nature and strength of the relationship between the independent variables of liquidity, growth strategy, and capital structure and the dependent variable of earnings growth, quantitative methodology was appropriate.

There are various quantitative designs available. A researcher uses a correlational design to analyze data and determine how variables relate to one another (Curtis et al., 2016). A descriptive quantitative design provides researchers with the ability to count and categorize occurrences to create a profile of the phenomenon (Saunders, Lewis, & Thornhill, 2016). A descriptive approach was not appropriate for the current study because descriptive profiles of variables do not determine the nature and magnitude of relationships. Because the purpose of the current study was to examine the relationships between the independent variables and dependent variable, a correlational design was appropriate.

Researchers can also use qualitative or mixed methodologies to conduct research (Ramlo, 2016). Qualitative methodology is used to develop an understanding of meaning by exploring a phenomenon through words rather than numbers (Bennett & McWhorter, 2016). Power and Gendron (2015) noted qualitative methodology is not used to measure the level of the relationship and strength among variables. The mixed methodology combines quantitative and qualitative methodologies (Frels & Onwuegbuzie, 2013). Neither qualitative methodology nor mixed methodology was appropriate for my study. I examined independent variables as predictors of earnings growth using only deductive reasoning in my study.

Research Question

What is the relationship between liquidity, growth strategy, capital structure, and earnings growth?

Hypotheses

*H*₀: There is no statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth.

*H*₁: There is a statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth.

Theoretical Framework

The theoretical framework for the study was Penrose's (2013) firm growth (FG) theory. Penrose developed FG theory in 1959 to explain that firms use internal resources and capabilities to grow. Many researchers attribute the resource-based view theory to Penrose's FG theory. However, Penrose focused on firm growth rather than competitive

advantage, arguing a firm could grow based on its service outputs rather than its position relative to competitors. Penrose insisted that business leaders should reinvest profits into growth, providing investors with only enough return to produce needed investment. Blundel (2015) concluded that in FG theory the firm is a decision-making unit with leaders of the business developing strategy and deploying resources. I selected FG theory to serve as a foundation to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth in constituent companies of the Microcap Index. According to FG theory, the decisions of a business leader, including financing and strategy decisions, establish the framework for growth.

Operational Definitions

Capital structure: The mixture of debt and equity a firm uses to finance operations (Herciu & Ogrean, 2017).

Earnings: The net profit of the firm available for reinvestment into the firm as retained earnings or distribution to investors as dividends (Anagnostopoulou & Tsekrekos, 2015). For the current study, I examined increase in return on equity (ROE) as growth in earnings.

Inorganic growth: Growth through acquisition or merger activities (Hodgon & Hoque, 2017).

Liquidity: Cash holdings of the firm (J. Yang et al., 2017). For the current study, liquidity was examined as cash holdings as a percent of total assets.

Organic growth: Growth through market, product, or customer expansion (Achtenhagen, Brunninge, & Melin, 2017)

Return on equity: Net earnings divided by book value of equity (Easton, 2015).

Assumptions, Limitations, and Delimitations

As an independent researcher, I considered certain claims to be true without verification. Assumptions are claims assumed to be true that cannot be verified (Knight & Cross, 2012). Limitations are data validity risks that the researcher cannot control (Bryman & Bell, 2015). Delimitations define the scope of the study and derive from theories, practices, and the business problem (Simon, 2011).

Assumptions

The first assumption was that filings with the United States Securities and Exchange Commission (SEC) represented actual financial performance of the firms in the study. I used secondary data sets for the study. Business leaders may have incentives to present manipulated financial results for personal gain (Veronica, 2015). The second assumption was that FG theory would be relevant for a study of the relationship between liquidity, growth strategy, capital structure, and earnings growth.

Limitations

My study contained several potential limitations. The first potential limitation was the use of existing data sets not intended for use in the study. My secondary data may have included errors. Those errors may have influenced the findings of the study and impaired the application of the results to other companies. A financial audit provides assurance that the financial statements are free of material misstatement due to errors or irregularities and includes a review and concurring approval by a qualified person other

than the person in charge of the audit (Kinney & Martin, 1994). The audited financial statement information in the data set should have mitigated this limitation.

The second potential limitation was the focus of the study. I focused on internal processes of the business leaders of the constituent firms of the Microcap Index. Javed and Basheer (2017) observed that external factors, such as inflation, interest rates, and gross domestic product growth, may affect earnings growth. The results of the current study, while expected to be applicable to other companies, may have been affected by external factors.

Delimitations

My purpose was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. I concentrated on constituent firms of the Microcap Index and studied growth in earnings for the period 2014 to 2018. I included only microcap companies that were independent, publicly traded firms listed on the U.S. stock exchange as of the end of each firm's 2014 and 2018 fiscal years.

Significance of the Study

The significance of the study was the contribution to business practice and implications for positive social change. My research may provide insight into the factors associated with earnings growth, increasing the propensity for investors to commit capital. A business leader initiates an initial public offering to access capital markets to fund investment projects (Bernstein, 2015).

Contribution to Business Practice

A business leader takes a company public to access capital markets, frequently to fund growth. One measure of a company's ability to grow is market capitalization, which is price per share multiplied by outstanding shares. The SEC (2013) defined a microcap company as having market capitalization in the range of \$50 million to \$300 million. The Microcap Index may have contained companies with market capitalization outside of that range due to the proprietary algorithm used to create the Microcap Index. Business leaders of microcap companies seek to grow the business and attract investors. For investors to commit capital, the business must demonstrate the ability to generate a return (Danbolt, Hirst, & Jones, 2011; Feng et al., 2016). If a business is unable to generate internal capital or attract external capital, the future operations of the business may be at risk of failure.

Business leaders may not be aware of the relationship between liquidity, growth strategy, capital structure, and earnings growth. The current study may contribute to business practice by establishing a framework that increases business leaders' likelihood for success. Oler, Pitre, and Song (2018) noted that a business leader failing to improve financial fundamentals experiences negative market response to earnings announcements. Improving business fundamentals is a key component of economic development (Senderovitz, Klyver, & Steffens, 2016).

Implications for Social Change

The study's implications for positive social change include the potential for increasing earnings and enhancing the economic well-being of the community.

Frequently, businesses partner with social enterprises to collaborate on social change, utilizing the complementary resources of business and social enterprises (Sakarya, Bodur, Yildirim-Oktem, & Selekler-Goksen, 2012). Improved financial performance and earnings growth may enhance those partnerships and increase the potential for successful social change through increased donations to community projects.

A Review of the Professional and Academic Literature

The purpose of the study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth of microcap companies. A literature review consists of a synthesis of existing knowledge of the topic (Van Laar, Van Deursen, Van Dijk, & Jos de Haan, 2017), providing the researcher with a framework to position the study in the context of previous studies (Baker, 2016). My literature review is a synthesis of the research, both historical and contemporary, on the topic of earnings growth.

I used several search terms to conduct my literature review, including *firm growth theory*, *Edith T. Penrose*, *growth strategies (inorganic and organic)*, *liquidity*, *capital structure*, *earnings*, *pecking order theory*, *trade-off theory*, and *resource-based view*. I accessed several databases to conduct the literature review: Academic Search Complete, Business Source Complete, Google Scholar, EBSCOHost, and ProQuest. The source of business data for my study was the SEC EDGAR database. The current study included 256 sources; 72% were published during the 2016-2020 period, and 84% were from peer-reviewed journals (see Table 1). The review of the professional and academic literature

includes 137 sources; 80% were published during the 2016-2020 period, and 87% were from peer-reviewed journals (see Table 2).

Table 1

Frequency and Percentage of Sources Used in the Study

Resources	References		N	%
	≤ 5 years old	6+ years old		
Peer-reviewed articles	163	51	214	83.6%
Other journal articles	7	7	14	5.5%
Books	7	11	18	7.0%
Other	7	3	10	3.9%
Total	184	72	256	100.0%

Note. Articles from peer-reviewed journals published during the past 5 years constituted 64% of the total sources.

Table 2

Frequency and Percentage of Sources Used in the Review of the Professional and Academic Literature

Resources	References		N	%
	≤ 5 years old	6+ years old		
Peer-reviewed articles	99	20	119	86.9%
Other journal articles	5	2	7	5.1%
Books	2	6	8	5.8%
Other	3	—	3	2.2%
Total	109	28	137	100.0%

Note. Articles from peer-reviewed journals published during the past 5 years constituted 72% of the total sources.

My review of professional and academic literature consists of five main subject areas: theoretical framework, independent variables, dependent variable, significance of the relationship between the variables, and quantitative methodology. The theoretical framework area includes the evolution of FG theory, the relevance of FG theory to my study topic, and alternative theories. The section on independent variables includes discussion of liquidity, growth strategy, and capital structure and the relevance of each to firm growth. For the dependent variable section, I discuss the importance of earnings and earnings growth to firm sustainability and long-term success. Finally, I explain why quantitative methodology, including a correlational design, was appropriate for my study.

Importance of Firm Growth

Firm growth is important to several stakeholder groups. Growth is a measure of business sustainability and adaptability for managers (Eshima & Anderson, 2016). Investors expect growth to build value and earn a return on the investment (Murni, Sabijono, & Tulung, 2019). Finally, growing businesses contribute to job creation (Senderovitz, Klyver, & Steffens, 2016; Tajnikar, Ponidvar, & Bonca, 2016). The ability of a business leader to grow the business influences many components of the economy.

Managers and business leaders rely on firm growth to sustain the business. The firm's ability to invest in research and development activities is contingent upon growth in profits (Coad & Grassano, 2018). Growth is important to managers as an indicator of business performance (Feng et al., 2016; Gajdka & Pietraszewski, 2016). Managers use the results of financial growth to acquire resources, sustain the business, and pay a return to investors.

For investors, firm growth provides a return on the investment and the potential for increasing the value of the assets invested. Betermier, Calvet, and Sodini (2017) noted that investors seek stock returns and rely on corporate and macroeconomic data in investment decisions. Investors have long focused on business fundamentals, including business models, growth plans, and forecasted profitability, for investment decisions (Farboodi & Veldkamp, 2017). Investors look for firm growth potential in the investment decision process. However, investors may, in pursuit of growth, overpay for investments in growing companies leading to lower than expected investment returns (Gajdka & Pietraszewski, 2016). An investment return provides the investor with the means for additional investments and increases the investor's standard of living.

Firm growth is a contributor to economic growth. Brown and Mawson (2016) found that growth firms are significant contributors to new job creation. Senderovitz et al. (2016) noted that growing businesses create economic wealth by acting as an economic generator. The economic effect of firm growth extends beyond the direct stakeholders of the firm. Local, regional, and national economies experience benefits from growing firms resulting in positive economic trends. The economic importance of firm growth makes the subject worthy of study.

Firm Growth Theory

To recognize the contribution of FG theory to strategic planning, it is important to understand the economists' view of the firm. Prior to FG theory, economists applied biological analogies to the concept of the firm (Penrose, 1952). In 1899, Veblen (as cited in Song & Simpson, 2018) discussed the institution, or firm, as needing to change in

response to environment and stimuli. Grajzl and Murrell (2016) noted that economists associated with institutional economics thinking continued to apply Darwin's theory of evolution to the institution. Economists considered the firm to be an institution of predictable actions resulting from thoughts and behaviors of the individuals managing the firm (Almeida & Pessali, 2017). Economists thought the managers of a firm would demonstrate similar behaviors based on biological evolution (Menzel, Feldman, & Broekel, 2017). That is, managers would make similar decisions in similar circumstances because of evolutionary development (Almeida & Pessali, 2017). The use of biological analogies provided the foundation for the concept of the organization (Kennedy, Miller, & Niewiarowski, 2018). However, biological analogies are inadequate to describe an individual firm because each firm holds unique resources that, although similar, may be applied differently to the firm's business (Penrose, 2013).

Penrose (2013) considered the firm to be a collection of resources and capabilities. Hitt, Xu, and Carnes (2016) concluded that a firm's resources are unique and not easily replicated. A resource available to a firm is anything that facilitates operational and financial success (Penrose, 2013). Because resources are not easily reproduced, a firm takes on a heterogeneous concept rather than the homogeneous concept of early economists. To Penrose, the business leader, managers, and employees of the firm are a form of resource to the firm. During the formation of FG theory, the human capital of a firm was the primary differentiator because other forms of resources could be acquired in the market (Penrose, 2013).

During the early 1960s, FG theory did not gain significant traction among Penrose's peers. However, some researchers viewed FG theory as a new tool to study firm behavior. Baumol (1962) used FG theory to develop a model for firm expansion. Marris (1964) discussed the internal restraints on firm growth, building on the concept of the firm as an administrative unit. Williamson (1966) expanded on Baumol's work to further model firm growth based on internal resources. With FG theory, economists had an alternative view of the firm, shifting the focus from the concept of an evolution-based process for firm decisions to the concept of firm decisions based on the specific resources available to the individual firm (Penrose, 2013). Marris described a firm as operating within comparative dynamics, in which the conditions of each firm vary from other firms. Marris also concluded that the ability of a firm to grow is constrained by management. Williamson's modeling of firm growth established that a firm operates in unique circumstances including management's objectives, which are subject to change based on available resources.

Researchers continued developing models of FG theory. Rubin (1973), in a study based on FG theory, noted that a firm engages in activities with the intent to acquire resources to engage in additional activities. Rubin also addressed the possibility of a firm engaging in internal growth or merger growth. In work on a life cycle theory, Mueller (1972) referred to the concepts of FG theory in the development of life cycle theory and identified that factors other than firm size and firm age are responsible for growth. With FG theory, Penrose (2013) developed a framework for identifying the drivers and limitations of growth. As economists worked to understand growth, it became clear that

firms experience growth at different times and different rates (Mundt, Alfarano, & Milakovic, 2016). Those differences were indicators that other factors drive growth (T. Kang, Baek, & Lee, 2019). The early work of researchers following the introduction of FG theory addressed the internal resources of the firm in the economic models attempting to predict growth (Marris, 1964; Williamson, 1966).

One of the first efforts to study firm growth within the framework of FG theory was Shen's (1970) study of growth rates in 14 industries for the periods 1948-1953 and 1953-1958. Shen noted that a firm must prepare for growth by establishing production slack (surplus resources), planning by management, and risk acceptance. A firm has capacity to grow when a business leader has resources available to apply to the strategic plan (T. Kang et al., 2019). The ability of the firm to grow is not limitless.

Jovanovic (1982) expanded FG theory by testing growth relative to firm efficiencies. Jovanovic's model tested operational efficiency of firms and found that efficient firms had surplus resources that could be applied to growth. Evans (1987) studied firm growth of nearly 18,000 manufacturing firms to test Jovanovic's model, which correlated firm growth with younger firms. Evans found firm growth decreases as firm size increases, and firm age was not correlated with growth. Smaller firms may be able to achieve growth because it is easier to grow from smaller numbers (T. Kang et al., 2019). Improvements in operational efficiency may facilitate growth in smaller firms because each improvement has a larger effect on operations (Roespinoedji, Prawira, Solihin, Saudi, & Alaeddin, 2019).

Researchers have addressed the application of surplus resources to achieve growth. Aldrich and Ruef (2006) discussed internal selection as managers within an organization who alter routines and competencies to adapt to external opportunities. Internal selection occurs when the business has surplus resources that can be transitioned to alternative uses (Aldrich & Ruef, 2006; T. Kang et al., 2019). A firm can monetize surplus resources in pursuit of growth (Teece, 2019). Firm growth results from expansion of core resources that are not consumed in current processes (B. N. Kim, Lee, Wi, & Lee, 2017). The resources of the firm consist of the entrepreneur (business leader), managers, capital, land, and labor (Kor, Mahoney, Siemsen, & Tan, 2016). Because the resources of the firm are unique to the firm and not easily replicated, a business leader uses those resources to drive the firm toward an objective.

Carnes, Chirico, Hitt, Huh, and Pisano (2017) studied 189 firms in the United States and Italy to determine executive management's perceptions of firm resources and growth. Based on the hypothetical scenarios presented to the respondents, managers of growth-stage firms selected resource acquisition and accumulation as prerequisites for growing the firm (Carnes et al., 2017). In a study of 437 small business owners in the United States, Campbell and Park (2017) correlated social resources of a firm to financial performance. Burvill, Jones-Evans, and Rowlands (2018) used FG theory in a multiple case study to understand strategies used to facilitate firm growth. The managers of the two firms in the study identified the availability of resources, such as growth aspirations, financial assets, management expertise, and human capital, as a key requirement to

enable the firm to grow (Burvill et al., 2018). The business leader determines how management will apply resources to achieve growth (Penrose, 2013).

Pratono and Mahmood (2015) studied views of entrepreneurial orientation and financial performance of 390 business leaders in Indonesia; entrepreneurial orientation was defined as willingness to take risk, draw on resources, and pursue opportunity. Pratono and Mahmood concluded that entrepreneurial orientation has no direct impact on firm performance. Although Penrose (2013) identified the business leader and managers as resources, a desire to grow the firm is not enough to achieve growth, and additional resources are necessary. Additionally, not all growth leads to increased earnings. Yoo and Kim (2015) expanded on Jovanovic's work by studying 263 Korean construction companies within the framework of FG theory, examining growth in assets, growth in employment, growth in sales, and profitability. Yoo and Kim found that growth was negatively correlated with profitability.

Okello (2018) surveyed 373 owners and managers of furniture businesses in Kenya to correlate growth with strategy, using FG theory. Okello concluded that growth is negatively correlated with entrepreneurial strategy, noting that some preconditions exist for growth. Preconditions may be interpreted as resources available to the firm, including liquidity, technology, and human capital (Okello, 2018). Pigatto and Pigatto (2015) conducted a qualitative study of six Brazilian meat companies' strategies for internationalization. The companies with access to financing through the development bank achieved higher growth under the internationalization strategy during the period 2007 to 2013 than did companies without that financing option (Pigatto & Pigatto, 2015).

Beginning with a database of 865 domestic and foreign firms, Abubakar and Mitra (2017) used FG theory as the framework for a study of 323 high impact firms, defined as experiencing growth in sales and employment, to determine the level of access to knowledge spillover (knowledge transfer between firms). Regional, domestic, high-impact firms experienced greater access to knowledge spillover than did foreign firms operating in the region (Abubakar & Mitra, 2017). Huo, Han, and Prajogo (2016) surveyed managers of 197 Australian manufacturing companies and correlated supply chain data integration with improved firm performance. Knowledge spillover may result from management transition between firms in the region. Accepting Penrose's (2013) consideration that firm management is a resource means the movement of managers and employees between firms is a form of resource acquisition. A firm may recruit managers from competing firms to strengthen the pool of resources available to apply to the strategy (Abubakar & Mitra, 2017).

Odalo, Njuguna, and Achoki (2016) used FG theory as the framework for a study of seven agricultural firms listed on the Nairobi Securities Exchange for the period 2003 to 2013. Odalo et al. (2016) noted that financial leverage is linked to financial strength variables and, ultimately, financial performance. Achieng, Muturi, and Wanjare (2018) studied 40 nonfinancial firms listed on the Nairobi Securities Exchange to correlate capital structure with financial returns during the period 2009 to 2015, determining that common stock equity is negatively correlated with return on equity while retained earnings equity is slightly positively correlated with return on equity. Firms with high financial leverage experience decreased financial performance while firms with high cash

reserves and prior profitability experience increased financial performance (Hossain & Nguyen, 2016). Khodavandloo, Zakaria, and Nassir (2017) concluded financial leverage negatively affects financial performance. A business leader's decisions on financing sources can affect the ability of the firm to generate financial returns (W. C. Liu, 2017). In some instances, financial leverage leads to increased profits while in other instances equity financing, with the absence of periodic interest payments, results in earnings growth (Herciu & Ogrean, 2017).

Following Penrose's development of FG theory, other economists began addressing the concept of the firm as a collection of resources. Wernerfelt used the basis of FG theory to build on Porter's work on competitive advantage (Burvill et al., 2018). Porter's work on competitive advantage included the Five Forces Model and the environmental conditions that lead to increased firm performance (Wee, 2016). In the Five Forces Model, a firm's ability to achieve high financial performance is the result of the external opportunities based on the choice of industries (Porter, 1998). Wernerfelt incorporated FG theory into the concept of competitive advantage (Burvill et al., 2018). Wernerfelt's developed the resource-based view (RBV) to identify whether a firm's specific resources and superior capabilities as significant contributors to competitive advantage and, ultimately, financial performance (T. M. Jones, Harrison, & Felps, 2018). The concept of the firm as a collection of resources was also applied to entrepreneurial ecosystem theory (EE theory), in which firm resources are the drivers of entrepreneurial processes (Cao & Zhou, 2018). Schumpeter continued the firm-as-resource-collection movement with the theory of creative destruction (CD theory); a firm uses its technology

and innovation resources to gain advantage in the market (Bloch & Metcalfe, 2018).

Penrose (2013) established that a firm is a modular unit in which resources are applied to the projects most suitable, allowing a firm to continue to hold competitive advantage in a mature market while allowing the firm to pursue growth opportunities and increase profits.

Building on Penrose's concept of the firm as a bundle of resources (2013), Almeida and Pessali (2017) described the firm as an administrative unit, whose business leader manages the resources of the firm to achieve growth. The effective management of the firm's resources contributes to implementing the strategic plan and growing the firm (Douglas, 2016). Because the resources of the firm are not imitable, the business leader's strategy should leverage the firm's resources to achieve growth (Egger & Hristova, 2018). The business leader establishes the firm's strategic plan and allocates resources to move the firm toward the planned end state.

Alternative Theories

In developing RBV, Wernerfelt (1984) applied the concept of firm resources to competitive advantage. Jensen, Cobbs, and Turner (2016) commented that RBV is aligned with competitive advantage. A firm gains competitive advantage by applying strengths to opportunities (Cheraghalizadeh & Tumer, 2017). Barney (1991) noted that resources are heterogeneously distributed among firms and contribute to competitive advantage. Wernerfelt posited that a business leader may apply the firm's resources to gain competitive advantage in the market. Barney identified categories of resources available to pursue competitive advantage including assets, attributes, and capabilities.

RBV is not without critical assessments. Early efforts to model the RBV did not consider the effect of time on the conversion of resources into capabilities (Hitt et al., 2016). The lack of clear identification of firm resources may limit a business leader's ability to apply RBV to strategic planning (Bromiley & Rao, 2016). A firm that develops competitive advantage may achieve superior financial performance and economic sustainability (Wernerfelt, 1984).

Yu, Chavez, Jacobs, and Feng (2018) applied RBV to a study of 1,500 Chinese manufacturing firms using data within the supply chain function. Yu et al. concluded the principles of RBV are consistent with data-driven supply chain management and improve financial performance. In a study of 110 Canadian beef producers, Steiner, Lan, Unterschultz, and Boxall (2017) used RBV to correlate levels of firm resources with non-equity alliances. Steiner et al. concluded that higher levels of resource richness negatively correlated with willingness to enter non-equity alliances. Tate and Bals (2016) conducted a multiple case study of three firms in Haiti, using RBV as the foundation, to test the concept of a social resource-based view (SRBV) of the firm. Tate and Bals concluded that each of the firms had acquired resources classified as social resources and called for future research into SRBV and its influence on firm sustainability. The RBV is an established theory with broad application to academic and professional research.

Schumpeter (2016) developed CD theory in 1942 to explain large firms with market power as drivers of innovation. New technologies increase competition and place pressure on earnings as new, small firms enter the market (Nicholas, 2003). Under CD theory, an entrepreneur is an innovator who engages in market-building activities through

product development, process, and strategy development to gain a market advantage (Bloch & Metcalf, 2018). Critics of CD theory assert the theory supports accumulation and annihilation of wealth (Banks & Cunningham, 2016). CD may lead to decreased firm longevity (Anthony, Viguerie, Schwartz, & Van Landeghem, 2018). Komlos (2019) discussed that creative destruction may have social and economic costs that negate gains in innovation.

Feenstra (2018) worked to model competitive advantage gains in international markets through the application of CD theory, concluding that firms with higher productivity and lower price markups gain international market share. Igami (2017) studied 1,378 firm years of data in the hard disk drive industry to assess the effect of innovation (creative destruction) on incumbent firms. Igami concluded that incumbent firms hold higher innovation efficiencies, but fear of cannibalization of existing products cause incumbent firms to hesitate to implement new technology. Garcia-Macia, Hsieh, and Klenow (2019) used CD theory to study employment growth in more than 4,000 U.S. private firms between 1983 and 2013. Garcia-Macia et al. concluded that employment growth from incumbent firms exceeded growth from entry firms.

RBV and CD theory each have application to studies of firm growth. Competitive advantage may be a contributor to earnings growth and innovation can provide competitive advantage in a market, leading to increased financial performance. However, my interest is in firm resources that drive growth rather than advantage in the market. FG theory is a framework within which a researcher can understand how a firm grows.

Information Asymmetry and Financing Theory

Information asymmetry affects the ability of the firm to obtain financing. Kiraci and Aydin (2018) commented that managers have better information about the firm's value and investment opportunities than potential investors. Boateng, Asongu, Akamavi, and Tchamyou (2016) described the effects of information asymmetry as a form of power over a party to the transaction. Hirshleifer, Huang, and Teoh (2016) concluded that information asymmetry results in additional risk to the investor and payment of a risk premium but does not change expected returns. Investors work to mitigate information asymmetry (Hirshleifer et al., 2016). C. Liu, Luo, and Wang (2017) observed that standardized financial reporting reduces information asymmetry. In the United States, companies with publicly traded securities must comply with SEC Regulation S-K, including filing standardized financial statements and reporting (Loughran & McDonald, 2017).

Two seminal theories on firm financing are Myers' (1984) pecking order theory (PO theory) and trade-off theory (TO theory). Under PO theory, an entrepreneur chooses financing based on a specific sequence; internal financing, informal external financing, external debt financing, and external equity financing (Allini, Rakha, McMillan, & Caldarelli, 2018). That sequence moves from lowest cost financing to highest cost financing (DaCosta & Adusei, 2016). TO theory developed from the Modigliani and Miller Theorem (Kahtani & Eraij, 2018). TO theory is the theory that a firm's debt structure is a trade-off between costs and benefits of borrowing (W. C. Liu, 2017). A business leader works to balance tax advantages with the higher cost, including the costs

of financial distress (Herciu & Ogrea, 2017). Abeywardhana (2017) commented that an entrepreneur may use similar financing decisions when pursuing funding. When a business leader pursues external equity funding in capital markets, financing friction may increase due to transaction costs and timing (Begenau & Salomao, 2018).

Overview of Publicly Traded Companies

Reasons for an entrepreneur to take a company public include access to capital, prestige, and liquidating personal holdings (Mun & Jang, 2019). Taking a company public means the company has issued equity or debt securities to the investing public (Mun & Jang, 2019). An entrepreneur may undertake an initial public offering (IPO) to raise capital (Block, Fisch, & van Praag, 2016). When the objective is to raise capital for new investments, a company will have to disclose future strategic plans (Ozen, 2016). A public company has the requirement to file financial statements with the SEC (Commodities and Securities Exchanges, 2019). Following an IPO, a company gains access to global capital through organized markets but accepts increased oversight and responsibilities to do so.

Prior to the IPO, there is high information asymmetry as the business leader works to increase the value of the stock (B. Li & Liu, 2017). Investor protection is one of the primary objectives of the regulatory framework within which a company issues public equity (Hoque & Mu, 2019). X. Li, Wang, and Wang (2019) summarized that investors participate in a firm's IPO based on the risk assessment, return trade-off, and trust in the information provided to potential investors. In the United States, companies must comply with SEC regulations during an IPO and while the company's securities remain publicly

traded in the market, including filing financial statements in accordance with SEC Regulation S-K (Loughran & McDonald, 2017). Documents filed with the SEC, generally, are available to investors and the general public (Kambil & Ginsburg, 1998; Tashakkori & Teddlie, 2003).

By accepting financing from the capital markets, an entrepreneur may relinquish partial ownership and managerial control. Yalcin and Unlu (2017) noted the firm and external investors may have different expectations, although the objective for each should be maximizing shareholder value. Investors react favorably to the appointment of a professional chief executive officer (CEO), as evidenced by positive movement in the securities market (Rose, 2019). When a firm turns to a professional CEO, it is likely the business leader will exhibit different leadership behavior than the entrepreneur CEO (Lee, Hwang, & Chen, 2016). A business leader who relies on external funding sources increases the likelihood of outside influence on the decision-making process (Ramon-Llorens, Garcia-Meca, & Durendez, 2017). A founder CEO's investment decisions may emphasize technology or process development (Lin & Hu, 2007). Conversely, a professional CEO may be a better manager than a founder CEO (H. C. Kang & Kim, 2016).

Independent Variables

I used correlational design to describe the relationship between the independent variables of liquidity, growth strategy, and capital structure, and the dependent variable of earnings growth. The independent variables represent resources of the firm. Those resources are under the control of the firm's leader and the result of prior decisions

(Penrose, 2013). A business leader establishes the firm's strategic plan based, in part, on the availability of resources and the ability of the management team members to deploy those resources (Penrose, 2013).

Liquidity. Liquidity, or cash holdings, may provide the business leader with the necessary funding to conduct business operations (Martínez-Sola, García-Teruel, & Martínez-Solano, 2018). Nikolov, Schmid, and Steri (2018) found that cash-to-assets ratios of U.S. corporations have doubled since 1980. Manjula and Sivignanam (2018) summarized that current assets, including cash holdings, comprise more than 50% of total assets. A business leader may hold cash for several reasons, but one potential use of cash is investment in the firm's strategic plan (Martinez-Sola et al., 2018). Cash allows the firm's managers to pursue additional opportunities, internal and external, to build operations and sustain the firm (Martinez-Sola et al., 2018). The business leader's decision to build cash holdings also may be an indicator of future growth plans (Huang-Meier, Lambertides, & Steeley, 2015).

Firms tend to fund growth opportunities through internally generated funds, or retained earnings (G. Li, 2016). According to Martinez-Sola et al. (2018), a firm that lacks financial resources may have to forego investment opportunities. A business leader may establish large cash reserves in anticipation of needing investment funds to pursue external opportunities (Malamud & Zucchi, 2019). Cash holdings provide flexibility to pursue growth opportunities (Martinez-Sola et al., 2018), whether organic or inorganic. Liquidity facilitates decisions about the firm's strategic plan (Huang-Meier et al., 2015).

Liquidity reduces financial friction. Caggese (2019) described financial friction as the inherent difficulty in obtaining external financing and includes documentation, underwriting, and timing. Financial frictions negatively affect a firm's ability to invest in opportunities and projects (Michaels, Page, & Whited, 2018). A firm's plan to invest in innovation and growth may include risk, uncertainty of value, and information asymmetry, limiting the ability to secure financing (Cui & Yang, 2018). A firm with cash holdings can respond to opportunities and make investments timely, increasing the ability to grow (Huang-Meier et al., 2015). The firm's management team can allocate resources in support of the strategic plan (Martinez-Sola et al., 2018). McLean and Zhao (2018) noted that a firm generates cash holdings from prior profitability, debt borrowings, or issuing equity.

Capital structure. The capital structure of a firm reflects the prior financing decisions of management and is the mixture of debt and equity to fund operations (Herciu & Ogrea, 2017). A firm's managers determine the method and sources of funding for investments (DaCosta & Adusei, 2016). Kiraci and Aydin (2018) concluded companies with growth plans prefer to use debt for expansion and new projects. Prijadi and Desiana (2017) noted a firm with higher debt service has higher growth and profitability levels. However, the use of debt financing requires periodic payments and carries an interest component that may erode profitability (DaCosta & Adusei, 2016). Also, capital structure changes convey information to investors and may modify intended investment behavior based on the investor's interpretation of the financing decision (Kiraci & Aydin, 2018). The required periodic payments and interest charges associated with debt financing

reduces cash available for distribution to shareholders and net income (DaCosta & Adusei, 2016).

Growth strategy. Liquidity is an important factor in the business leader's ability to manage and operate the firm, as the availability of cash holdings supports the firm's growth strategy (Manjula & Sivignanam, 2018; Martinez-Sola et al., 2018). Growth is necessary for sustainability of the firm (Eshima & Anderson, 2016). Ngek Neneh and van Zyl (2017) identified that firms that experience slower growth are significantly less likely to sustain operations. Growth is important to the firm itself and to outside investors, who expect a reasonable return (Danbolt et al., 2011; Feng et al., 2016). The two primary growth strategies are organic and inorganic (Achtenhagen et al., 2017; Hodgson and Hoque, 2017).

Organic. Organic growth is an internal strategy. In an organic growth strategy, a business leader intends to grow the business through asset replication, technological innovation, and product development (Achtenhagen et al., 2017). Organic growth is essentially an internal process using internal resources (Achtenhagen et al., 2017). An organic growth strategy is a controlled process for growth, providing a path for earnings growth and sustainability, mitigating the potential for long-term deterioration (Sudharshan, 2019).

Inorganic. An alternative to organic growth is growth through merger or acquisition. Inorganic growth is a buy-and-build strategy for initiating growth (Hammer, Knauer, Pflucke, & Schwetzler, 2017). Hodgson and Hoque (2017) summarized that inorganic growth can be a much faster method of achieving growth. Growth through

merger or acquisition can provide a company with stronger management, improved supply chain, and enhanced culture (Asef, Perpina, Habte, & Babaeian, 2017). Inorganic growth presents a business leader with numerous challenges including integrating the operations of the merged or acquired entity (Frentzen & Lampadarios, 2016).

Dependent Variable

The dependent variable in my doctoral study was earnings growth, as measured by return on equity. Return on equity is the ratio of net income to book value of equity (Damodaran, 2006). Return on equity is a measure of financial performance as it is based on net income and external invested capital (Damodaran, 2006). Although net income is a common and accepted financial measure, it is susceptible to influence by the firm's management team (Veronica, 2015).

Many investor expectations rely on the firm earning profit (Feng et al., 2016). Stock returns are positively correlated with earnings growth (Gajdka & Pietraszewski, 2016). Akgun, Samiloglu, and Oztop (2018) noted that profitability is a component of market value. When a firm consistently earns a profit, investors perceive that future earnings are likely, and may be willing to commit investment into the firm (Feng et al., 2016). The investor can earn a return through receipt of dividends or increase in stock price, each of which is contingent upon profits (Aryannejad et al., 2018).

Earning a profit is beneficial to the firm as profitability provides cash to invest in projects (G. Li, 2016). Profit growth results from innovation, which is funded by prior profitability (Coad & Grassano, 2018). A firm generates earnings from investment in technology and tools of production (Huang & Hou, 2019). Profitability is a precondition

to innovation and firm sustainability (Margaretha & Supartika, 2016). Profitability allows the firm to acquire resources in pursuit of the strategic plan (Martinez-Sola et al., 2018).

For some business leaders and managers, achieving profitability may come from earnings manipulation. Prijadi and Desiana (2017) identified that some business leaders place a greater emphasis on earnings than firm growth. Earnings are an indicator of the potential of future profitability but can be managed by firm managers (Kapoor & Goel, 2016). Earnings management, the effect of managers' personal judgments to create changes in financial reporting, may lead investors to inaccurate estimates of economic performance (Aryannejad, Ghaemi, & Maham, 2018).

One of the factors for investors to invest in a firm is increased market value. Aryannejad et al. (2018) observed that investors use a firm's earnings as an input into estimating market value. Investors purchase stock with the expectation that market value will increase (Yemi & Seriki, 2018). Investors accept both dividends and stock price appreciation as a return on the investment (Akgun et al., 2018). Although changes in market value result from several factors, firm earnings are an indicator of estimated market value changes and are important to investors (Danbolt et al., 2011).

Gibrat's (1931) Law identified that firm growth is independent of firm size and age but cannot identify the growth dynamics of firms (Mundt et al., 2016). T. Kang et al. (2019) noted that Gibrat's Law has a threshold as smaller firms grow faster than larger firms. The expected profitability of a firm, and the related volatility of earnings, are independent of firm size or age (Mundt et al., 2016). As firm size and age are not

positively correlated with earnings growth, other variables would be determinants of earnings growth.

Relationship of Variables

I examined the independent variables of liquidity, growth strategy, and capital structure to determine if the variables are positively correlated with earnings growth. Under FG theory, liquidity represents both a firm resource and a tool for acquiring additional firm resources (Penrose, 2013). A business leader's growth strategy is a plan for allocating resources toward profitable projects (Penrose, 2013). A business leader's financing strategy, represented as the firm's capital structure, affects the reported earnings of the firm as debt financing requires periodic interest payments that reduce earnings (DaCosta & Adusei, 2016; Herciu & Ogrea, 2017). Each of the independent variables likely plays a role in earnings growth but the current study attempted to identify the strength of the relationship between the independent variables and the dependent variable.

Liquidity and earnings growth. Liquidity reduces financing friction, allowing the business to respond to business opportunities quickly (Huang-Meier et al., 2015). Firms have different access to capital markets and may have to rely on cash flow, or liquidity, to finance investment opportunities (Anton, 2016; Arnold, Hackbarth, & Puhan, 2018). However, Manjula and Sivignanam (2018) theorized that a business leader should reduce liquidity to increase profitability, as liquidity will lead a business leader to invest in projects that negatively affect profitability. In the current study, I correlated liquidity with growth in earnings over a 4-year period. Durrah, Rahman, Jamil, and Ghafeer

(2016) studied eight food companies listed on the Amman stock exchange in Jordan and positively correlated liquidity to earnings. Waemustafa and Sukri (2016) also positively correlated liquidity to earnings. Ahmad (2016) studied the relationship between liquidity and earnings of the standard charter bank of Pakistan, finding negative correlation between liquidity and earnings. Daryanto, Samidi, and Siregar (2018), using a multiple regression model, found negative correlation between liquidity and earnings. Such focused studies may lack generalization to businesses in other industries, limiting the applicability to business leaders.

Growth strategy and earnings growth. Growth strategy is important for a firm's earnings. Vinogradova (2017) noted that growth strategy affects a firm's expected returns. Entrepreneurs look to improve financial performance through growth strategy (Bulanova, Isaksen, & Kolvereid, 2016). Growth strategy for new products or new markets increases a firm's profitability (Dagnino, King, & Tienari, 2017). Olah, Karmazin, Mate, Grabara, and Popp (2017) found that both an organic growth strategy and inorganic growth strategy are positively correlated with profitability. Certainly, it is possible that inorganic growth will be negatively correlated with profitability as integrating an acquisition can be challenging and produce results below those forecasted (Frentzen & Lampadarios, 2016). A growth strategy, whether organic or inorganic, should contribute to increased earnings.

Capital structure and earnings growth. The relationship between capital structure and earnings growth is a function of financing theory. Herciu and Ogrea (2017) summarized that analyzing firm profitability requires consideration of the effect of

capital structure. Mustaruddin, Dinata, and Azazi (2017) noted that asymmetric information about the expected timing of earnings influences capital structure decisions. The business leader's capital structure decisions influence ROE because debt requires periodic interest payments and external equity carries up-front costs to complete the transaction (Begenau & Salomao, 2018; DaCosta & Adusei, 2016). Hussain, Shahid, and Akmal (2016) negatively correlated financial leverage in capital structure to profitability. Aziz and Rahman (2017) found negative correlation between long-term debt-to-equity and profitability. Vo (2017) found equity financing is positively correlated with profitability. The business leader's financing decision plays a role in earnings growth.

Transition

In Section 1, I established the foundation of my doctoral study. I described the problem, problem statement, purpose statement, nature of the study, and theoretical framework. I provided operational definitions; assumptions, limitations, and delimitations; and significance of the study. I also reviewed the professional and academic literature relevant to the study.

In Section 2, I describe the research process I undertook. I discuss the research methodology, participants, data collection and analysis, and the role of the researcher. I describe the population of the study and the specifics of my quantitative, correlational study of the relationship between liquidity, growth strategy, capital structure, and earnings growth. Determining the effect of the independent variables on earnings growth may provide business leaders with a basis for allocating resources in pursuit of increased ROE. In Section 3, I discuss the study's findings, the application to professional practice,

the implications for positive social change, recommendations for action and further research, and present my reflections and the conclusion.

Section 2: The Project

This section contains the comprehensive description of my multiple regression correlational study. The ability of the business leader to grow earnings will increase the likelihood of attracting investors to the firm (Betermier et al., 2017). In Section 2, I describe the purpose, role of the researcher, participants, research method and design, population and sampling, ethical research, data collection instruments and technique, data analysis, and study validity.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. The targeted population consisted of executives of U.S. constituent companies of the 2019 Russell Microcap Index. The Microcap Index consists of small, publicly traded companies who are pursuing growth either in earnings or market capitalization. The independent variables were liquidity, growth strategy, and capital structure. The dependent variable was earnings growth. Burrus et al. (2018) correlated improved firm performance with reinvestment and community growth. Simmie (2003) noted that the impact of successful companies extends beyond the geographic region in which the business is located. The current study may contribute to positive social change by increasing firm performance and improving the economy of the region, which could translate into reinvestment and community growth.

Role of the Researcher

An independent scholar assumes many functions to complete academic research in fulfillment of a doctoral degree. An independent scholar must develop research questions in support of the study's objectives, conduct data collection, prepare the study document, and ensure ethical compliance (Tobi & Kampen, 2017). I have worked in finance and accounting since 1991, holding successively more advanced leadership roles in private and public companies. Much of my career has involved improving processes in the areas of liquidity, corporate strategy, and capital structure, developing my understanding of earnings growth. I did not have personal or professional relationships with any of the participants. For the current study, I collected data from the SEC's EDGAR database, an archival source of publicly available data, of microcap companies as of December 31, 2014 and 2018. Microcap companies have completed an initial public offering and are filing quarterly and annual reports with the SEC. More than 1,400 companies are components of the Microcap Index.

I used secondary data to complete the data analysis. Salerno, Knoppers, Lee, Hlaing, and Goodman (2017) noted that the use of secondary data does not require informed consent if the human participants cannot be identified. Hughes-Cromwick and Coronado (2019) observed that a business or individual can use open government data for commercial gain or public good. The Belmont Report protocols around confidentiality and protecting participants do not apply when there are no human participants (Kowalski, Hutchinson, & Mrdjenovich, 2017; Miracle, 2016). I complied with the required rules and regulations around research.

As a quantitative researcher, I had a complex role in the data collection process. A quantitative researcher needs a clear idea of the data required to answer the research question (Tobi & Kampen, 2017). A quantitative researcher has the responsibility of designing the study, collecting and organization data, testing the hypothesis, and interpreting the study data (Leedy & Ormrod, 2016). The research question establishes the quantitative researcher's data requirements, instruments, and techniques (Tobi & Kampen, 2017). I used archival financial data of microcap companies and identified three independent variables that may be correlated with earnings growth. To answer the research question, I made decisions about which financial results are relevant to the purpose of the study, compiled and stored the data, and completed the data analysis.

Participants

To be considered for inclusion in the data set, a company had to be listed in the 2019 Russell Microcap Index and have filed SEC Forms 10-K for the years 2014 and 2018. Researchers have used the Russell Microcap Index to select research populations. Wilson (2019) used the Russell Microcap Index of companies to examine financial literacy of audit committee members. Frieder and Zittrain (2008) examined stock returns of touted stocks to returns of the Russell Microcap Index. Borkovec and Serbin (2013) used data from the Russell Microcap Index of companies to examine liquidity and transaction costs of exchange-traded funds. I obtained the full listing of constituent companies of the Microcap Index and cross-referenced the Microcap Index with the SEC database to identify Form 10-K filings for fiscal years ending in 2014 and 2018. The population for my study was constituent companies of the Microcap Index, excluding

companies in the financial and extraction sectors, based on Standard Industrial Classification code.

I used secondary data from the SEC EDGAR database for microcap companies. The financial information filed with the SEC is available to the public and is frequently used in research. Loughran and McDonald (2017) reviewed data logs of investors accessing the SEC's EDGAR database in a study of individual investor research on equity securities. Ashraf (2017) documented that the EDGAR database is widely used by researchers to extract financial information. Dong, Lee, Lin, and Ni (2016) used the SEC EDGAR database to study the eXtensible Business Reporting Language filings of 3,045 firms to identify timing of the adoption of eXtensible Business Reporting Language as a disclosure tool. Proux, Roux, Sandor, and Perez (2017) used the SEC's EDGAR database to perform content analysis on financial regulatory filings. Because I used secondary data from a publicly available database, I did not have a working relationship with the participants of my study.

Research Method and Design

I used the quantitative method and correlational design for my study. Tobi and Kampen (2017) noted that the research methodology should align with the research question. My method and design were chosen to answer the research question and fulfill the purpose of the study.

Research Method

I used the quantitative correlational design to test my hypotheses and answer the research question. Quantitative methodology allows the researcher to use numerical data

in a statistical model to test a hypothesis (Tobi & Kampen, 2017). A researcher uses qualitative methodology to find meaning for a phenomenon through words, actions, and behaviors (Bennett & McWhorter, 2016). In a mixed-methods study, a researcher uses quantitative and qualitative designs to answer the research question (McKim, 2016). Because I examined the relationship between the independent and dependent variables, the quantitative methodology was appropriate. Quantitative methodology requires several components such as knowing in advance what the researcher is looking for, designing the study before the data are collected, compiling data in the form of numbers and statistics, and remaining objectively distanced from the subject (Tobi & Kampen, 2017). By using quantitative correlational methodology, I applied deductive reasoning to answer the research question. A researcher uses deductive reasoning to examine specific information and apply the conclusions to the general population (Armat, Assarroudi, Rad, Sharifi, & Heydari, 2018). Quantitative methodology allowed me to examine the relationship between liquidity, growth strategy, and capital structure (independent variables) and earnings growth (dependent variable).

I identified ROE, a financial ratio, as the measurement of earnings for my study. Researchers have used financial ratios to answer research questions in corporate finance (Eldomiaty, Soliman, Fikri, & Anis, 2016; Zorn, Esteves, Baur, & Lips, 2018). The calculation of ROE is net income divided by book value of equity (Damodaran, 2006). My chosen measurement of earnings was a numerical datum derived from a formula: a financial ratio. The independent variables of my study were numeric and may have held a

statistical relationship to the dependent variable. Based on the research question, quantitative methodology was appropriate for my study.

Research Design

A correlational design is appropriate for examining relationships between variables (Sharma & Kumar, 2017). A review of the professional and academic literature showed that examining liquidity, growth strategy, and capital structure as determinants of earnings growth was a valid research endeavor and may contribute to the study of strategic planning. I used a correlational design to examine the relationship between the independent variables and the dependent variable, and either accept or reject the null hypothesis. Curtis et al. (2016) noted that a researcher using a correlational design analyzes data and develops objective assessments. A researcher uses a correlational design to identify relationships between variables (Sharma & Kumar, 2017; Sucuahi & Cambarian, 2016). A researcher uses the descriptive quantitative design to count and categorize occurrences in descriptive research, creating a profile of the phenomenon (Saunders et al., 2016). A component of my statistical analysis was Pearson product moment correlation (PPMC). A researcher uses PPMC to examine the strength of the relationship between variables (Mohamad Asri, Hashim, Mat Desa, & Ismail, 2016). Because I used one dependent variable with several independent variables, I used multiple linear regression for statistical analysis. Multiple linear regression analysis is appropriate for analyzing the relationship between multiple explanatory variables and a single constant term, or dependent variable (Khajevand & Tehrani, 2019). I conducted this research to understand the relationship between the variables and to identify the

strength and magnitude of the relationship. Because I was unable to control the independent variables, my study design was nonexperimental. When a researcher uses secondary data and is unable to control the independent variables, a correlational nonexperimental design is the appropriate choice for the study (Rockers, Rottingen, Shemilt, Tugwell, & Barnighausen, 2015).

Population and Sampling

More than 1,400 companies compose the Microcap Index. Achtenhagen et al. (2017) noted that large companies do not generate much organic growth while Zaremba (2015) commented that microcap equities demonstrate financial performance independent of size and momentum. Analysis of the financial performance of microcap companies through publicly available information subject to audit provided sufficient data to examine the relationship liquidity, growth strategy, capital structure, and earnings growth. Using Standard Industrial Classification codes, I eliminated companies in the financial services and extraction sectors. Because different accounting standards apply to companies in those industries, including them may have skewed the correlation results (see Achieng et al., 2018). After I eliminated financial services and extraction sector companies, there were 1,047 companies remaining in the general population. After I reviewed the SEC EDGAR database for filings in 2014 and 2018, 609 companies remained for sampling.

Selection of a sample is usually the first step in analyzing a data set. A researcher uses a small representative sample of data to explore a large data set (Rojas, Kery, Rosenthal, & Dey, 2017). When sampling a population, a researcher can use a statistical

approach or a nonstatistical approach. The statistical approach is based on probability when each item in the population is equally likely to be selected, and the nonstatistical approach includes professional reasoning as the basis for sample selection (Munteanu, Zamfir, & Floria, 2018). I used statistical random sampling to select the companies for analysis. By using statistical random sampling, I expected that my sample would be representative of the population and my results would be generalizable for the population.

I used probabilistic sampling through a random sampling method to choose the sample companies. A researcher uses simple random sampling to collect data and identify descriptive patterns (Rudestam & Newton, 2015). I used random sampling so that each company in the population would have an equal chance of selection. I used G*Power statistical software to compute an appropriate sample size to conduct multiple regression analysis. My calculation of the a priori power analysis using G*Power 3.1.9.2, assumed a medium effect ($f=0.15$), $\alpha=0.05$, power of 0.95, and three predictors, resulting in a sample size of 119 companies (see Appendix). Increasing the power to 0.99 would have required increasing the sample size to 161 companies. Figure 1 shows the minimum sample size breakdown based upon 0.95 and 0.99 power (see Faul, Erdfelder, Buchner, & Lang, 2009).

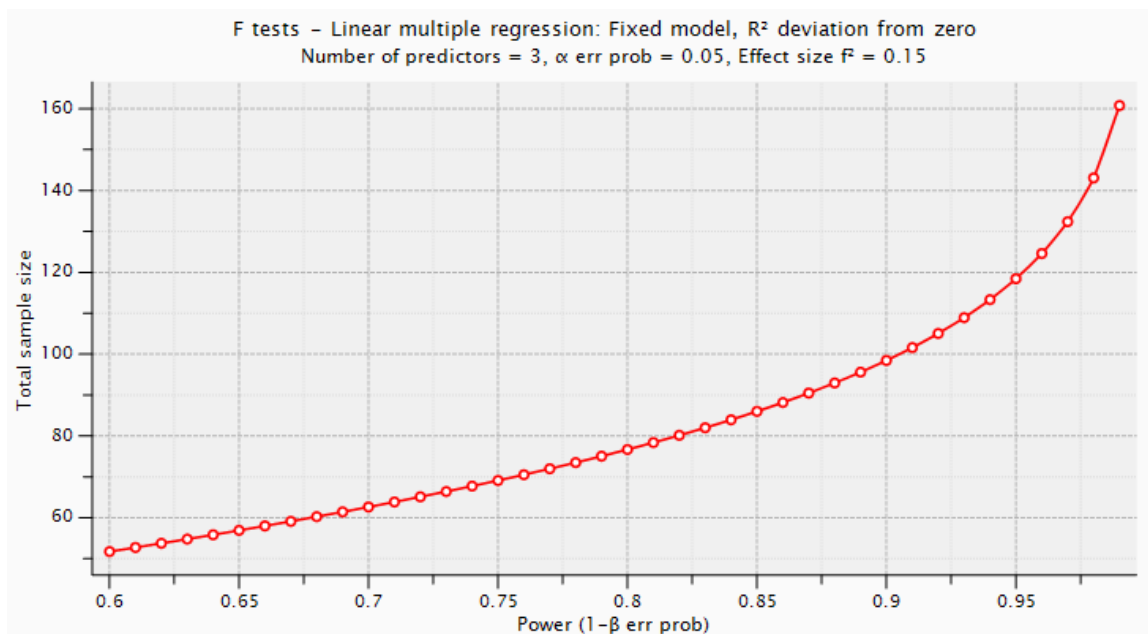


Figure 1. Power as a function of sample size.

Rudestam and Newton (2015) concluded that research based on probabilistic sampling has the benefits of (a) selecting a random, focused population; (b) using statistical theory relating to normal distribution; (c) eliminating researcher bias; and (d) working with large numbers. The population for my study consisted of 609 companies. Probabilistic sampling allowed me to select a representative sample based on statistical theory. Probabilistic sampling minimizes the risk of bias; however, sampling errors may occur from data overload (Nardi, 2018). A researcher has the responsibility of minimizing errors (Fain, 2017; Nardi, 2018). As the researcher, I was responsible for ensuring errors were minimized to the extent possible.

Ethical Research

As an independent scholar, I was responsible for conducting ethical research. Ethical research requires an assessment of potential for harm and benefit resulting from

the participation of the subjects in the research (Kennan & Dolan, 2017). A major component of ethical research for an independent scholar is the institutional review board. The institutional review board is an ethics committee, members of which review the proposed study through the lens of safeguarding participants (Balon et al., 2019). An independent scholar gains the confidence of having a workable project after receiving institutional review board approval for the research (Balon et al., 2019). I developed an ethical research project applicable to each component of the study (04-01-20-0743159).

My use of secondary data meant I did not have to obtain participation agreements. Also, a participant withdrawal process was not required because I used publicly available financial reports from the SEC EDGAR database. After selecting the sample and compiling the necessary financial information, I saved the information on a password-protected flash drive. I anonymized the company names using randomly assigned alphanumeric codes unrelated to the company name or Standard Industrial Classification code. Five years after completing the current study, I will delete the data files on the password-protected flash drive and destroy the flash drive.

Instrumentation

The source of the secondary data for my study was the SEC EDGAR database. The intent of the SEC EDGAR system is to provide the general public with access to corporate disclosure documents, which the managers of a company must file on behalf of the company (Kambil & Ginsburg, 1998; Tashakkori & Teddlie, 2003). In the case of companies with securities that trade on U.S. stock exchanges, such as microcap companies, managers must comply with Regulation S-K and file Forms 10-K with the

SEC, making those filings available to the public through the EDGAR database (Commodities and Securities Exchanges, 2019; Loughran & McDonald, 2017). Because the SEC EDGAR database contains the necessary information and is available to the public for use, no other databases were considered for the study. I collected the raw data and used Microsoft Excel to process the financial ratios.

Researchers can use several data collection instruments to collect data. Examples of those instruments include questionnaires, surveys, interviews, experiments, and secondary data (Hagan, 2014; Tashakkori & Teddlie, 2003). I used secondary data collected from an open, archival source. Ikeda (2016) noted that archival data sources are a valid collection technique. The SEC Office of Structured Disclosure establishes validation rules and data quality assessments for information filed with the SEC (Securities and Exchange Commission, 2017). Further, the financial statements filed under Regulation S-K must be audited by qualified independent persons (Ellram & Tate, 2016). Prior researchers have completed studies with stock index datasets (Borkovec & Serbin, 2013; Frieder & Zittrain, 2008; Wilson, 2019). For the current study, the data collection instruments I used were audited financial statements of microcap companies that contain the values for the independent variables.

I used Microsoft Excel version 2016 as the instrument for organizing and processing raw data. Because I used secondary, numerical data for the current study, using Microsoft Excel was appropriate. Lutey, Hassan, and Rayome (2018) used Microsoft Excel to study the performance of investing strategy against a market benchmark. Hang (2017) conducted a study of GDP growth in China using Microsoft

Excel. The data from the SEC EDGAR website was numerical and contained the financial statements of the microcap companies (Loughran & McDonald, 2017). The independent variables needed for the current study were included in the financial statements of microcap companies. Accordingly, I did not have to modify the settings of the instrument. As I purchased a multiyear subscription of Office 365, I had a license to use the instrument and did not have to obtain permission to use Microsoft Excel in the current study.

The raw data for the current study, and the calculated financial ratios, included several hundred data fields, precluding reproduction in an appendix. The data sources remain available in the SEC EDGAR database (Loughran & McDonald, 2017). Because the data originated from the audited Form 10-K filings of microcap companies in the SEC EDGAR database, changes to the source data are unlikely.

Collected data are measured on one of four scales, which are nominal, ordinal, interval, and ratio (Saunders et al., 2016). Nominal data are representative of categories with no numerical value while ordinal data also lacks numerical value but has order (Saunders et al., 2016). Interval data is represented by equal scale intervals and ratio data has equal scale intervals from a zero point (Saunders et al., 2016). Table 3 shows the independent and dependent variables of my study and the scales of each.

Table 3

Variables and their Scale of Measurement

Variable	Type	Nominal	Scale of measurement
Liquidity	Independent		Ratio
Growth strategy	Independent	0 = no or 1 = yes	Nominal
Capital structure	Independent		Ratio
Return on equity	Dependent		Ratio

Liquidity

Liquidity was a ratio predictor variable for the current study. Liquidity represents the cash holdings of the firm (J. Yang et al., 2017). I calculated liquidity as the ratio of cash and cash equivalents to total assets.

Growth Strategy

Growth strategy was a nominal predictor variable for the current study. Inorganic growth is growth through merger or acquisition activities (Hodgon & Hoque, 2017). Organic growth is growth through market, product, or customer expansion (Achtenhagen et al., 2017). I assigned a value of 1 to the growth strategy variable if a firm disclosed in its Form 10-K filing a merger, joint venture, or acquisition during the period of the study. I assigned a value of 0 to the growth strategy variable if a firm did not disclose a merger, joint venture, or acquisition during the period of the study.

Capital Structure

Capital structure was a ratio predictor variable for the current study. Capital structure is the mixture of debt and equity a firm uses to finance operations (Herciu & Ogrea, 2017). I calculated capital structure as the ratio of long-term debt to total equity.

Earnings Growth

Return on equity (ROE) was the dependent variable in the current study and is a ratio variable calculated from information available in the Form 10-K filings of microcap companies. Easton (2015) defined ROE as net income divided by book value of equity. Net income is the profit of the firm (Anagnostopoulou & Tsekrekos, 2015). Both net income and book value of equity are included in a company's Form 10-K filing with the SEC (Commodities and Securities Exchanges, 2019). I calculated the increase in return on equity (ROE) to examine growth in earnings.

A researcher, or investor, measures the economic sustainability of a firm through financial performance. ROE is an appropriate measure for economic analysis of microcap companies. Kijewska (2016) used ROE to study companies in Poland's mining sector. Rambe and Putre (2017) used ROE to study capital structure of Indonesian mining companies. The components of ROE are standardized the SEC (Commodities and Securities Exchanges, 2019). Christensen (2014) noted that uniformity in the calculation of the instrument strengthens construct validity. ROE is a measure of the ability of the business leader to manage the firm's assets.

Data Collection Technique

In the current study, I examined the relationship between liquidity, growth strategy, capital structure, and earnings growth. I used archival data from Forms 10-K filed with the SEC and annual reports available on the websites of microcap companies. Archival data increases external validity and reduces time and expense (Fanning, 2014; Ikeda, 2016). C. Jones (2010) noted that a researcher using archival data must assume the data are free of manipulation. The SEC requires business leaders of public companies to file company financial data on Form 10-K annually (Loughran & McDonald, 2017). Khaldun and Muda (2014) used secondary SEC data to study profitability and liquidity. Schendel, Patton, and Riggs (1976) studied profit declines using secondary SEC data. T. Kang, Park, and Han (2018) studied financial performance using the EDGAR database. I used financial statements filed with the SEC and annual reports available on the websites of microcap companies, both of which are public documents, to collect the independent variables and the financial information necessary to calculate earnings growth.

I selected my sample from the population of microcap companies, excluding financial and extraction sectors, that were publicly traded in both 2014 and 2018. The financial and extraction sectors use specialized accounting rules that may skew the correlation results (Achieng et al., 2018; Parra, Di Felice, Giampietro, & Ramos-Martin, 2018). I compiled data for independent variables from the financial statement filings of the microcap companies for the 2014 fiscal year and calculate *change in return on equity* as of the 2018 fiscal year; a 4-year period to measure growth in earnings. The SEC requires business leaders of public companies to report company financial data annually

(T. Kang et al., 2018). The annual financial reporting included on Form 10-K includes cash holdings, long-term debt, common stock equity, net income, and disclosures about mergers or acquisitions. I examined the relationship between liquidity, growth strategy, capital structure, and earnings growth from these data sources.

To select the sample for the current study, I listed the microcap companies alphabetically in a Microsoft Excel spreadsheet. I used the Excel formula “=rand()” to generate a random number for each company, converted the formula to a value, and sorted the list based on the random number. Working from the sorted list, I worked down until I had the required sample number of 119 companies. From the 2014 and 2018 Form 10-K filings of each of those companies, I collected the data necessary to calculate the independent and dependent variables. I entered the data into individual cells in Microsoft Excel; the columns were fields and the rows were a record. I entered amounts for cash holdings, total assets, long-term debt, common stock equity, and net income for each company in the sample. For growth strategy, I entered a 1 if the company engaged in a merger or acquisition during the study period and a 0 if the company did not engage in a merger or acquisition. If a company had missing or incomplete data, including negative stockholders’ equity, I excluded it from the sample and replaced it with the next company in the sample listing.

Data organization was important to be able to perform the analysis necessary to examine the relationship between the independent variables and the dependent variable. Because the microcap companies are of differing sizes, as measured by total assets, I standardized the data I collected. A researcher standardizes organized data to identify

their importance in answering the research question (Darweesh, 2015). At times, a researcher will have to perform data cleaning to facilitate data analysis (Krishnan, Wang, Wu, Franklin, & Goldberg, 2016). I created an Excel spreadsheet containing the required data points that allowed for review and calculation and ensured that the data were anonymous. After entering the data into Excel, I performed a manual review to ensure no data entry mistakes or duplications occurred. Using Excel allowed me to easily calculate liquidity (cash holdings as a percentage of total assets), capital structure, and return on equity. I formatted and structured the data in the Excel file to ensure compatibility for data entry into Statistical Package for the Social Sciences software (SPSS). The SPSS software program is an accepted tool for analyzing quantitative data (Masood & Lodhi, 2016). I loaded the Excel data into SPSS to calculate both descriptive statistics and inferential statistics. Descriptive statistics include mean and standard deviation while inferential statistics include ANOVA analysis and multiple regression analysis (Hinton, 2014).

The use of archived data increased the efficiency of completing the current study. A researcher using secondary data experiences economies of time and money (Ellram & Tate, 2016). A disadvantage of using secondary data is the potential for skewed results due to bias in the data or using the data for a purpose not intended by the original researcher (Ellram & Tate, 2016). However, the SEC EDGAR database includes mandatory disclosures for all publicly traded companies and the data must be audited by an independent audit firm (Ellram & Tate, 2016; Monterio, 2016).

Data Analysis

The purpose of this quantitative, correlational study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth.

The research question was as follows:

RQ1: What is the relationship between liquidity, growth strategy, capital structure, and earnings growth?

The null and alternative hypotheses are as follows:

H₀: There is no statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth.

H₁: There is a statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth.

My analysis of the data was to either accept or reject the null hypothesis that there is no statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth. A significant and positive correlation would support the relationship between the independent variables and the dependent variable. According to D'angelo, Luo, and Xiang (2012), it is standard practice in correlational methodology to analyze only data in which there are complete observations. Assessing data for completeness can include examining descriptive statistics to look for outliers or missing data (Tran, Havard, & Jorm, 2017). To increase validity of the current study, I should have no missing or non-interpreted data.

I used SPSS software version 24 to analyze the data generated for the current study. SPSS is a software program a researcher can use for data analysis and is widely

accepted for quantitative data analysis (Masood & Lodhi, 2016). The Excel spreadsheet discussed previously contained data from the Forms 10-K filed with the SEC by each Microcap Company in the sample, which are publicly available documents. I used multiple linear regression as the statistical technique to perform simultaneous exploration of the independent variables. As part of my data analysis, I examined the assumptions required to use multiple linear regression to ensure the assumptions were met.

Assumptions of multiple linear regression analysis are normality, linearity, homoscedasticity, and independence of residuals (Bakdash & Marusich, 2017).

Normality is the assumption that the data is normally distributed (Ghasemi & Zahediasl, 2012). Linearity is the assumption that the independent variables are linear functions of the dependent variable (Bakdash & Marusich). Homoscedasticity is the assumption that the variances of residuals are constant at each level of the independent variables (K. Yang, Tu, & Chen, 2019). A visual representation of the data, such as a scatter plot or histogram, is a method of checking for normality, linearity, or homoscedasticity (Bakdash & Marusich; Ghasemi & Zahediasl, 2012). Independence of residuals is the assumption that data observations are independent between the groups (Bakdash & Marusich). Multiple linear regression derives a linear relationship between the variables and allows a researcher to draw conclusive results (Anghelache, Manole, & Dumitrescu, 2015).

Data assumptions may threaten the validity of a study. The validity of the statistical analyses, and ultimately the statistical conclusion, may be threatened if data assumptions are violated (Solomon, Howard, & Stein, 2015). A researcher could use bootstrapping to resample the data if a data assumption is violated (Banjanovic &

Osborne, 2016). A researcher uses bootstrapping to correct invalid data or eliminate incomplete records, thereby minimizing assumption violations (Chang, Pal, & Lin, 2017; Sillabutra et al., 2016).

A researcher establishes the strength of a relationship between variables with Pearson product-moment correlation (PPMC) (Mohamad Asri et al., 2016). A correlation coefficient between 0.5 and 1 indicates a medium to strong positive correlation (Mohamad Asri et al.). I calculated a PPMC for ROE, the dependent variable.

Many researchers have used multiple regression analysis to examine earnings growth. Varaiya, Kerin, and Weeks (1987) studied growth, profitability, and firm value using multiple regression analysis. Abraham and Harrington (2016) used multiple regression analysis to study predictors of earnings growth. Adediran and Alade (2013) used multiple regression analysis to study factors of earnings growth. Cox and Willows (2017) studied investor return predictions of small capitalization companies using PPMC. Vermeulen (2017) used PPMC to study factors influencing returns on publicly traded companies in South Africa. The use of multiple regression analysis to correlate liquidity, growth strategy, capital structure, and earnings growth was appropriate for the current study.

I considered both stepwise regression analysis and Cox regression analysis for my study. Stepwise regression analysis requires explanatory variables and is not based on theory (Zhang, 2016). A researcher uses Cox regression analysis to compile time event data (Brembilla et al., 2018). Neither stepwise regression analysis nor Cox regression analysis was appropriate for answering the research question of the current study.

Study Validity

An independent scholar applies academic rigor to ensure validity of the research. A study has validity if it measures what was intended to be measured (Golafshani, 2003). A researcher uses statistical methods to establish validity in the study's conclusions (Noble & Smith, 2015). Because the current study was a nonexperimental quantitative correlational design, there were no threats to the internal validity of the study.

If the study's findings can be generalized to the population, the study has external validity (Avellar et al. 2017). Random sampling increases generalizability across measures, settings, and times (Calder, Phillips, & Tybout, 1982). The use of secondary data mitigates the potential threat to instrumentation validity (Reio, 2016). The secondary data contained in the EDGAR database has undergone validation of the instrument and measurement through the financial audit and SEC review of the data and should have acceptable data quality (Monterio, 2016; Proux et al., 2017). The application of standardized statistical methods to a validated, secondary data set enhanced the validity of the study.

I assumed the information contained in the EDGAR database was accurate and fairly represented the financial performance of the microcap companies included in the sample. Murayama, Pekrun, and Fiedler (2014) discussed that processing data in a manner that minimizes assumption validity threats will minimize the potential for Type I and Type II errors. A Type I error reports a false positive result, while a Type II error reports a false negative result (Bettany-Saltikov & Whittaker, 2014). The sample for the current study was a random sample of publicly traded companies listed in the Microcap

Index. A diverse number of industries contained in a sample mitigates threats to external validity (Luft & Shields, 2014). I calculated a sample size, using G*Power, of 119 companies. Bettany-Saltikov and Whittaker (2014) noted that a properly calculated sample size reduces the possibility of a Type II error. Reducing the possibility of a Type I error requires consistently applying data collection procedures and visually inspecting the data patterns to identify outliers (Bakdash & Marusich, 2017).

Transition and Summary

In Section 2, I reviewed the decision to use a quantitative correlational study and my decision to create a data set from the Russell Microcap Index. Included in Section 2 is a discussion of my role as the researcher and a description of data collection, instrumentation, and analysis. Section 2 also included a discussion of study validity and use of the SEC EDGAR database as an archival data source. Finally, Section 2 aligned with the research question and hypotheses of the study. Section 3 will consist of the study's findings and the implication of those findings for positive social change. Further, Section 3 will include recommendations for further research and action. I present my conclusion and a personal reflection statements at the end of Section 3.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlational study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. The independent variables were liquidity, growth strategy, and capital structure. The dependent variable was earnings growth. After analyzing the data, I failed to reject H_0 that there was not a statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth. I rejected the alternative hypothesis that there was a statistically significant relationship between liquidity, growth strategy, capital structure, and earnings growth. The result of the current study was based on a sample size with moderate generalizability to the population.

Presentation of the Findings

This section includes my discussion of the findings of the study, including the tests of assumptions, descriptive statistics, inferential results, analysis summary, and a theoretical discussion of the findings of the study. I examined the relationship between liquidity, growth strategy, capital structure, and earnings growth. The sample size for the current study was 119 firms in the 2019 Russell Microcap Index. During the data gathering portion of the study, I identified 29 firms with missing or incomplete data and replaced those firms in the sample with the next 29 firms in the population listing. I removed seven firms with outliers, and the final sample was 112 firms (a 94% usability rate). I used a confidence interval of 95% and a significance level of 5%.

Initial Data Assessment

According to Corrales, Corrales, and Ledezma (2018), a researcher works to compile high-quality data. A researcher is responsible for data preparation and data cleaning to ensure quality in the study (Corrales et al., 2018). In performing the test of assumptions, I completed a preliminary analysis of the sample.

Outliers. In assessing the data, I first conducted descriptive statistics for the independent and dependent variables (see Table 4). I then examined the data for univariate and multivariate outliers. An outlier is a data point that is extremely distant from the other data points in the sample or population (Leys, Klein, Dominicy, & Ley, 2018).

Table 4

Descriptive Statistics of Sample

Variable	Mean	Standard deviation
Liquidity	21.1%	19.1%
Growth strategy	0.504	0.502
Capital structure	29.1%	59.1%
Return on equity	-2.7%	71.3%

Note. $N = 119$.

I assessed for univariate outliers by using SPSS to calculate z-scores for liquidity, capital structure, and earnings growth for each of the firms in the sample. Using the z-scores, I identified one outlier for liquidity, three outliers for capital structure, and two outliers for earnings growth. None of the identified univariate outlier firms appeared as

an outlier for more than one variable. I also assessed the data for multivariate outliers by calculating Mahalanobis (1936/2018) distances and Cook's (1977) distances for each of the firms in the sample. Mahalanobis distance is a tool for detecting outliers and calibrating a sample set (De Maesschalck, Jouan-Rimbaud, & Massart, 2000). Altman and Krzywinski (2016) described Cook's distance as a measure of the influence of a data point on the fit of the regression. Both the Mahalanobis and Cook's distances indicated three outlier firms. One of the Cook's distance outlier firms was also an outlier firm based on the Mahalanobis distance. Additionally, each of the Mahalanobis distance outlier firms were also a univariate outlier firm, and two of Cook's distance outlier firms were also a univariate outlier firm.

I concluded that those seven firms, consisting of two based on z-scores greater than 3.0, three based on Mahalanobis distances greater than 13.82, and two based on Cook's distances greater than 0.034, would lead to a structural break in the data. Greenwood-Nimmo and Shields (2017) described a structural break as a change in the mean or trend of the data due to the existence of outliers. Outliers can inflate Type I errors by distorting the estimation of the population, altering the results of the analysis (Leys et al., 2018). I eliminated the seven firms from the sample based on the z-scores, Mahalanobis distances (see Figure 2), and Cook's distances (see Figure 3).

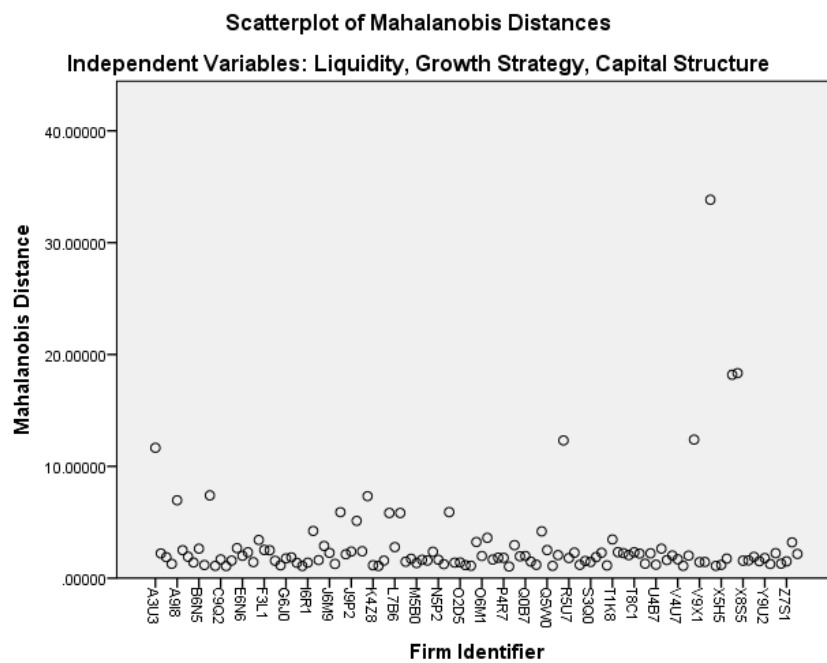


Figure 2. Scatterplot displaying outliers for Mahalanobis distances of independent variables.

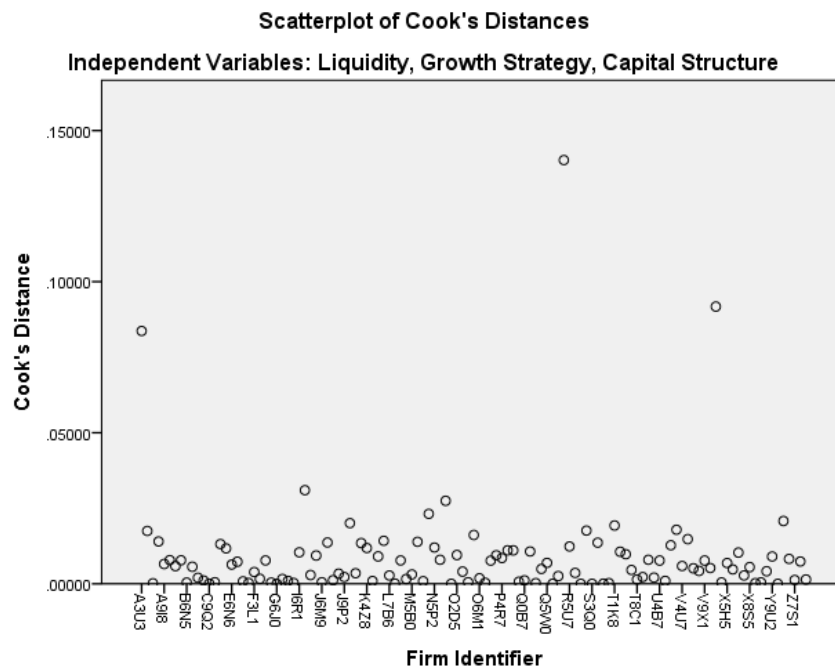


Figure 3. Scatterplot displaying outliers for Cook's distances of independent variables.

Multicollinearity. The existence of two independent variables that are highly or autocorrelated is called multicollinearity (Winship & Western, 2016). Highly correlated independent variables in a regression model may result in large errors that affect the power of the test (Winship & Western, 2016). J. H. Kim (2019) noted that a Pearson correlation between the independent variables equal to or greater than 0.7 is an indicator of multicollinearity. I reviewed the bivariate correlations of the independent variables to assess the risk of multicollinearity (see Table 5). The highest correlation among the independent variables was 0.208; therefore, multicollinearity was not present.

Table 5

Correlation Coefficients Among Study Independent Variables

Variable	Liquidity	Growth strategy	Capital structure
Liquidity	1.000	-0.117	-0.353
Growth strategy	-0.117	1.000	0.208
Capital structure	-0.353	0.208	1.000

Note. $N = 119$.

Tests of Assumptions

Having identified and eliminated data outliers, I analyzed the remaining 112 firms in the sample to test the assumptions of multiple linear regression. The assumptions of multiple linear regression include normality, linearity, homoscedasticity, and independence of residuals (Bakdash & Marusich, 2017). The violation of data assumptions may threaten the validity of the statistical conclusion (Solomon et al., 2015).

Normality and linearity. My regression analysis included a normal probability plot (P-P) of the regression standardized residuals of the dependent variable earnings

growth and a histogram of the dependent variable earnings growth. A visual examination of the histogram and the P-P plot did not indicate major violations of normality or linearity. The histogram (see Figure 4) indicated the sample was normally distributed with outliers to the right and left of the mean. Assessing the skewness of the data is a method for testing the normality assumption (Psaradakis & Vavra, 2018). I tested for skewness when preparing the descriptive statistics. H. Y. Kim (2013) noted that for a sample size between 50 and 300, an absolute z-value less than 3.29, calculated by dividing the skewness value by the standard error for skewness, indicates normal distribution. I divided the skewness value of -0.236 by the standard error of skewness of 0.228, which resulted in an absolute z-value of 1.04; consequently, the skewness was not significant, and the data were normally distributed. The P-P plot resulted in a diagonal line from lower left to upper right (see Figure 5).

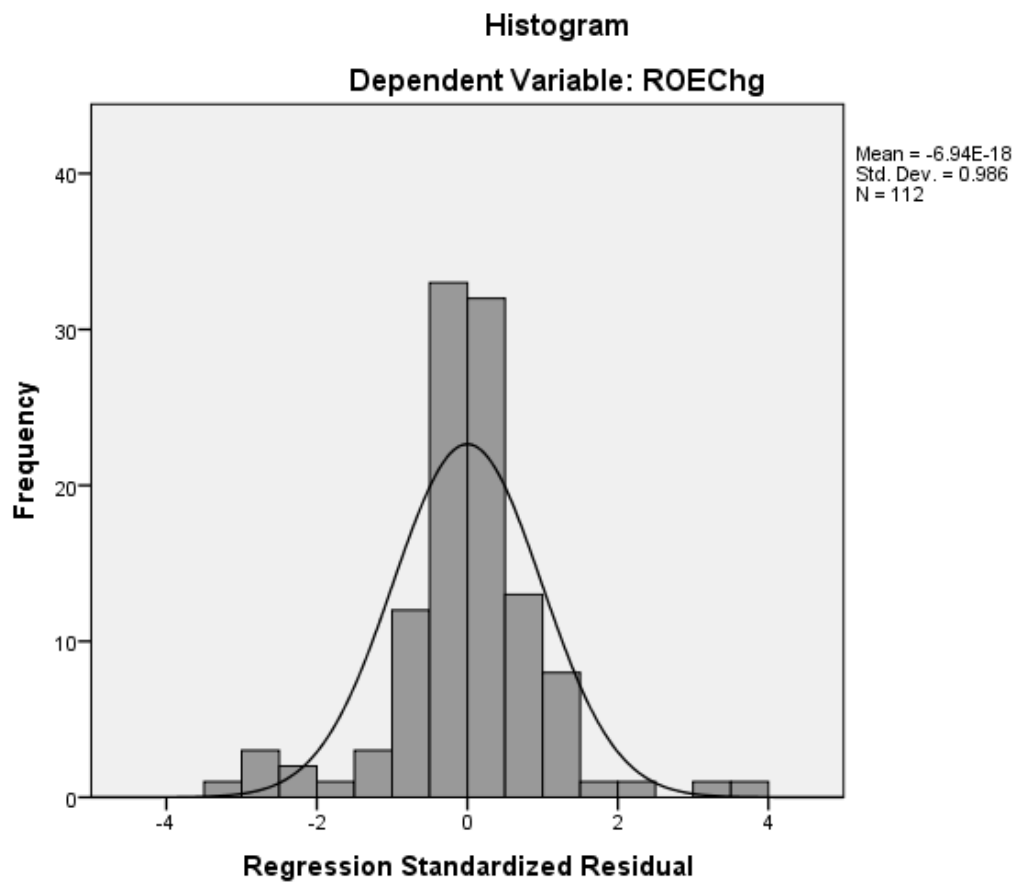


Figure 4. Histogram of the dependent variable earnings growth.

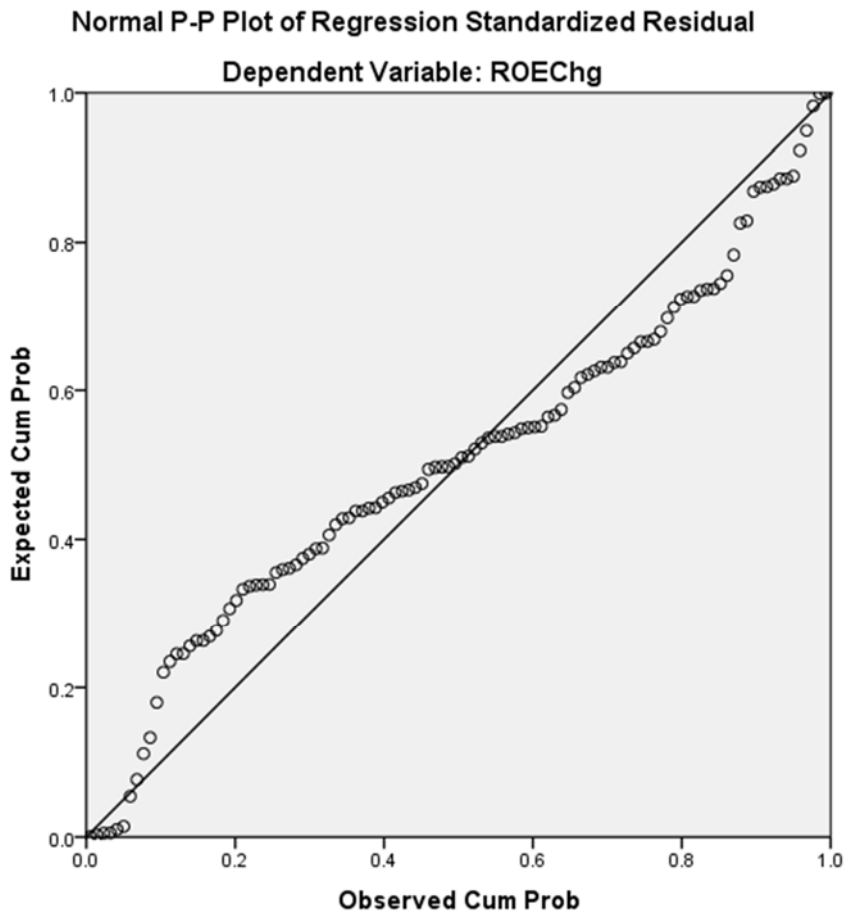


Figure 5. Normal (P-P) plot of the regression standardized residuals.

Homoscedasticity. The assumption that the variances of the residuals are constant at each level of the independent variables is called homoscedasticity (K. Yang et al., 2019). I created a scatterplot to visually test for homoscedasticity (see Figure 6). Chang et al. (2017) noted that a violation of the homoscedasticity assumption increases the potential for Type I errors. The scatterplot of standardized residuals did not indicate any systematic patterns, meaning the homoscedasticity assumption was not violated.

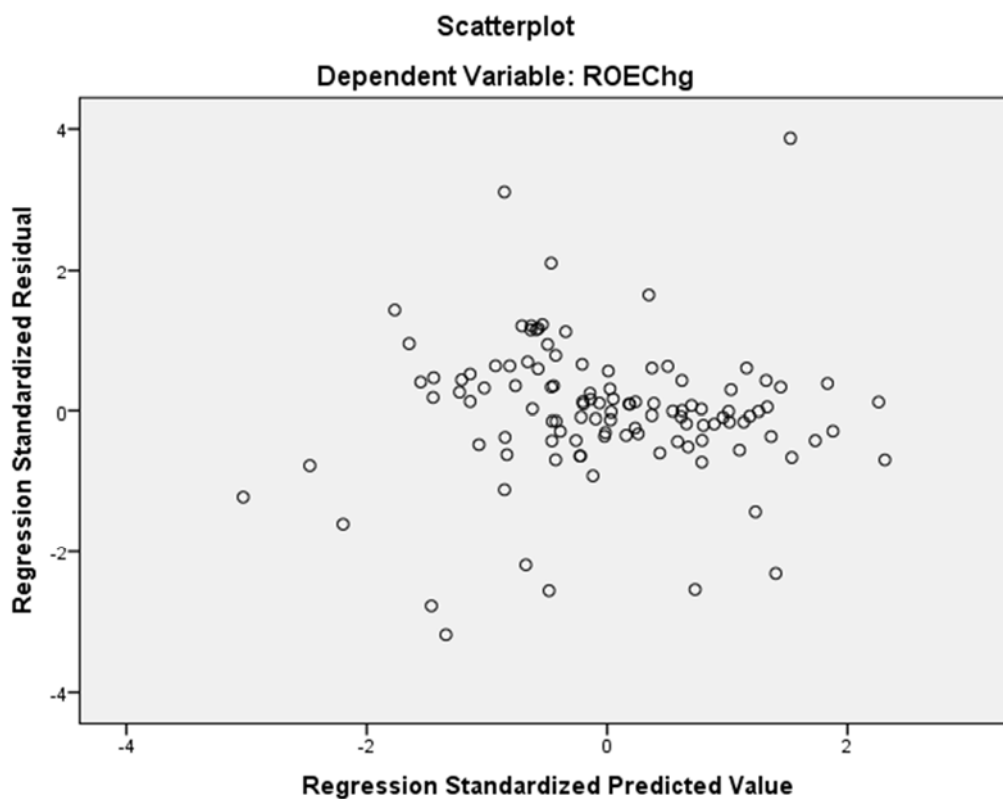


Figure 6. Scatterplot of dependent variable earnings growth.

Descriptive Statistics

After removing outliers from the sample and completing the tests of assumptions, I prepared descriptive statistics of the remaining 112 firms in the sample. According to Hinton (2014), descriptive statistics include the arithmetic means and standard deviations of the variables. The descriptive statistics for the final sample appear in Table 6. The distribution of the firms in the sample, by sector, appears in Table 7.

Table 6

Descriptive Statistics of Sample (Excluding Outliers)

Variable	Mean	Standard deviation
Liquidity	20.3%	17.5%
Growth strategy	0.509	0.502
Capital structure	21.3%	38.0%
Return on equity	-4.2%	50.2%

Note. $N = 112$.

Table 7

Sector Classification of Firms

Sector	Frequency	%
Manufacturing	67	60%
Services	23	21%
Retail	10	9%
Wholesale	5	4%
Construction	3	3%
Transportation	2	2%
Utility	2	2%

Note. $N = 112$.

Inferential Results

I conducted a multiple linear regression to examine liquidity, growth strategy, capital structure, and earnings growth. The independent variables were liquidity, growth strategy, and capital structure. The dependent variable was earnings growth. The model did not predict earnings growth; $F(3, 108) = 2.22$, $p = 0.90$, $R^2 = 0.058$ (see Table 8 and Table 9), which would result in a prediction of 5.8% of the variance due to liquidity, growth strategy, and capital structure. However, because $p > 0.05$, the relationship is not statistically significant. Based on these findings, I failed to reject the null hypothesis. Liquidity, growth strategy, and capital structure do not significantly predict earnings growth (see Table 10) and a linear relationship does not exist between variables. Additionally, the high standard error of the estimate indicates the linear regression is not a highly accurate predictor as the points fall further from the regression line than a more accurate regression.

Table 8

Model Summary

Model	R	R ²	Adjusted R ²	Standard error of the estimate
1	0.241	0.058	0.032	49.39%

Note. N = 112.

Table 9

Analysis of Variance

Model		df	F	η^2	p
1	Regression	3	2.22	0.06	0.90
	Residual	108			
	Total	111			

Note. N = 112.

Table 10

Coefficients of Sample (Excluding Outliers)

	Unstandardized coefficients		Standardized coefficients	T	p
	B	SE B	β		
(Constant)	-3.174	9.973		-0.318	0.751
Liquidity	-0.453	0.299	-0.158	-1.516	0.132
Growth strategy	12.614	9.500	0.126	1.328	0.187
Capital structure	0.081	0.140	0.061	0.579	0.564

Note. N = 112.

The coefficient calculations from the multiple regression model resulted in a negative coefficient for liquidity and positive coefficients for both growth strategy and capital structure (see Table 10). The standardized β for liquidity was -0.158, meaning that for every 10% increase in liquidity, there is a 1.6% decrease in earnings growth; the Pearson correlation for liquidity and earnings growth is -0.191. The standardized β for capital structure was 0.061, meaning that for every 10% increase in capital structure, there is a 0.6% increase in earnings growth; the Pearson correlation for capital structure and earnings growth is 0.155. The correlation between growth strategy and earnings growth is .145. Table 11 presents the Pearson correlations between the variables. Again, the regression is not statistically significant based on $p > 0.05$.

Table 11

Correlations

		Earnings growth	Liquidity	Growth strategy	Capital structure
Earnings growth	Pearson correlation	1	-0.191	0.145	0.155
	Sig. (2-tailed)		0.043	0.128	0.103
	<i>N</i>	112	112	112	112
Liquidity	Pearson correlation	-0.191	1	-0.047	-0.445
	Sig. (2-tailed)	0.043		0.624	0.000
	<i>N</i>	112	112	112	112
Growth strategy	Pearson correlation	0.145	-0.047	1	0.182
	Sig. (2-tailed)	0.128	0.624		0.055
	<i>N</i>	112	112	112	112
Capital structure	Pearson correlation	0.155	-0.445	0.182	1
	Sig. (2-tailed)	0.103	0.000	0.055	
	<i>N</i>	112	112	112	112

Note. Correlation is significant for capital structure and liquidity at the 0.01 level (2-tailed) and for liquidity and earnings growth at the 0.05 level (2-tailed).

I conducted single regression analyses for each of the independent variables to determine the p value for each individual variable. The result of the single regression model for liquidity supported rejection of the null hypothesis; $F(1, 110) = 4.19$, $p = 0.04$, $R^2 = 0.037$ (see Table 12). The results of the single regression models for growth strategy and capital structure failed to support rejection of the null hypothesis; growth strategy: $F(1, 110) = 2.35$, $p = 0.13$, $R^2 = 0.021$ (see Table 13), capital structure: $F(1, 110) = 2.70$, $p = 0.10$, $R^2 = 0.024$ (see Table 14).

Table 12

Model Summary - Liquidity

Model	R	R ²	Adjusted R ²	Standard error of the estimate	F	Significance
1	0.191	0.037	0.028	49.49%	4.19	0.04

Note: Independent variable is liquidity and dependent variable is earnings growth.

Table 13

Model Summary – Growth Strategy

Model	R	R ²	Adjusted R ²	Standard error of the estimate	F	Significance
1	0.145	0.021	0.012	49.89%	2.35	0.12

Note: Independent variable is growth strategy and dependent variable is earnings growth.

Table 14

Model Summary – Capital Structure

Model	R	R ²	Adjusted R ²	Standard error of the estimate	F	Significance
1	0.155	0.024	0.015	49.81%	2.70	0.10

Note: Independent variable is capital structure and dependent variable is earnings growth.

Analysis Summary

The purpose of the current study was to examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. I used multiple linear regression to test the independent variables of liquidity, growth strategy, and capital structures as predictors of earnings growth. I assessed the sample data set for outliers and removed seven outlier firms, consisting of two univariate outlier firms and five multivariate outlier firms, from the data. After removing the outlier firms, I tested the assumptions of multiple regression and found no violations of the assumptions. Based on the results of the multiple regression model, I failed to reject the null hypothesis; $p > 0.05$ means the results are not statistically significant.

Liquidity. Liquidity has a negative relationship with earnings growth based on the standardized coefficient β of -0.191 (see Table 15). The negative coefficient of liquidity means earning growth will decrease by 1.9% for every 10% increase in liquidity. This relationship is statistically significant, as $p < 0.05$. The findings of the current study are consistent with the findings of Waemustafa and Sukri (2016), Ahmad (2016), and Daryanto, Samidi, and Siregar (2018), but were inconsistent with the findings

of Durrah, Rahman, Jamil, and Ghafeer (2016). As Manjula and Sivignanam (2018) posited, reducing liquidity may increase profitability.

Table 15

Coefficients - Liquidity

	Unstandardized coefficients		Standardized coefficients	<i>T</i>	<i>p</i>
	<i>B</i>	<i>SE B</i>	β		
(Constant)	6.903	7.171		-0.963	0.338
Liquidity	-0.548	0.268	-0.191	-2.046	0.043

Note: Dependent variable: Earnings growth.

Growth strategy. Growth strategy has a positive relationship with earnings growth based on the standardized coefficient β of 0.145 (see Table 16). The positive coefficient of growth strategy means earnings growth will increase by approximately 15% for a firm implementing an inorganic growth strategy. This relationship is not statistically significant, as $p > 0.05$. Due to the limitation of the 4-year study period, it is not unreasonable to expect firms using an inorganic growth strategy to realize earnings growth more quickly than firms using an organic growth strategy. As Hodgon and Hoque (2017) summarized, an inorganic growth strategy can realize growth much faster than an organic growth strategy.

Table 16

Coefficients – Growth Strategy

	Unstandardized coefficients		Standardized coefficients	<i>T</i>	<i>p</i>
	<i>B</i>	<i>SE B</i>	β		
(Constant)	-11.581	6.728		-1.721	0.088
Growth strategy	14.468	9.430	0.145	1.534	0.128

Note: Dependent variable: Earnings growth.

Capital structure. Capital structure has a positive relationship with earnings growth based on the standardized coefficient β of 0.155 (see Table 17). The positive coefficient of capital structure means earning growth will increase by approximately 1.6% for every 10% increase in the debt component of capital structure. This relationship is not statistically significant, as $p > 0.05$. The findings of the current study were inconsistent with the findings of Hussain et al. (2016), Aziz and Rahman (2017), and Vo (2017).

Table 17

Coefficients – Capital Structure

	Unstandardized coefficients		Standardized coefficients	<i>T</i>	<i>p</i>
	<i>B</i>	<i>SE B</i>	β		
(Constant)	-8.573	5.402		-1.587	0.115
Capital structure	0.204	0.124	0.155	1.642	0.103

Note: Dependent variable: Earnings growth.

Applications to Professional Practice

The results of the current study may provide business leaders with an understanding of the relationship between liquidity, growth strategy, capital structure, and earnings growth. The regression model does not support a significant predictive relationship between liquidity, growth strategy, capital structure, and earnings growth. Although correlations exist between the individual independent variables and earnings growth, each is a low degree of correlation.

Business leaders of microcap companies may adjust financial forecasts and financial models related to earnings growth based on the finding of the current study. The negative correlation between liquidity and earnings growth may allow a business leader to initiate growth strategies with lower levels of liquidity or while the business carries higher levels of debt financing. A business leader may transition into an inorganic growth strategy, financed by debt, to improve financial results more quickly than an organic growth strategy. Business leaders of middle-market firms may use the study's findings to better position the firm for a financial or strategic acquisition. The leaders of private equity investment companies may improve the returns of their portfolio companies by planning for lower investment levels. The current study's findings contribute to knowledge base of financial strategy.

Implications for Social Change

The current study's findings have the potential to improve local and regional economies, increasing community reinvestment and contributing to increased standards of living. Sakarya et al. (2012) noted that businesses may partner with social enterprises

to initiate social change. A business leader may shift resources to social change initiatives if earnings growth is achieved with a lower investment. Improved financial performance may lead to enhanced social benefits. State and local agencies may receive increased funding as the result of increased taxes resulting from corporate earnings. Earnings growth may lead to job creation and wage growth, improving the lives of the company's employees (Lyon, 2016). Finally, sustainable businesses may improve the economic stability of the community which may translate into business organizations making donations to support social programs in the local community

Recommendations for Action

The findings of the current study are applicable to business leaders of growing, publicly traded companies, particularly companies with market capitalization less than \$300 million. These findings are also applicable to business leaders of private equity investment companies with several portfolio companies to manage. For smaller publicly traded companies, the findings provide guidance on the effect of liquidity, growth strategy, and capital structure on earnings growth. Business leaders of those companies may choose to allocate resources to strategic plans differently than originally anticipated based on the lack of statistical significance. For business leaders of PE companies, the decision to commit additional capital to fund growth may change based on the lack of a significant statistical relationship between the independent variables and the dependent variable. A business leader can develop differing models of the allocation of resources in pursuit of a strategic plan. The findings of the current study may alter strategic planning for smaller growth companies. After completing my doctoral degree, the current study

will be published in the ProQuest dissertation database. Additionally, I plan to submit the current study for publication to scholarly journals, such as *Strategic Planning* and *Journal of Business Research*. I also plan to prepare and distribute an executive summary of the current study to the Association for Corporate Growth, which is a community of executives, investors, and advisers for middle-market growth companies.

Recommendations for Further Research

I completed the current study using archival financial data of microcap companies, excluding firms in the financial and extraction sectors, for the years 2014 and 2018. I recommend further research using both quantitative and qualitative methodologies to further examine the relationship between liquidity, growth strategy, capital structure, and earnings growth. Further research using quantitative methodology may use data from a more extended period, limiting the study to a specific industry, including external factors, or controlling for specific variables. Future quantitative studies could include examining the independent variables' relationship to differing dependent variables, such as cash from operations, profit margin, or operating income. The effect of changes in capital structure during a given period, due to stock repurchase programs or equity offerings, may be of interest for future research. Further research using qualitative methodology may include studying strategies of executives of microcap companies related to growth strategy, capital structure decisions, or other determinants of earnings growth.

Reflections

I experienced some challenges during my doctoral process, but I know that my journey was rewarding. My initial doctoral study topic, valuation of retail marijuana businesses, proved to be ill-advised based on both the lack of a mature industry and published research. I benefitted from attending Residency 1 early in the doctoral process and discussing the topic with several faculty members, receiving guidance to finish my degree and then seek topics that particularly interest me. I found the proposal stage the most challenging, as I built the basis for my study through a review of the literature. I recognize that a foundation based on professional and academic sources in support of my study was important for my progress as well as those who might read my study. The data collection process progressed easily, as I used archival data available to the public. However, I did not expect approximately 25% of my initial sample to have invalid or incomplete data necessary to calculate the ratios of the variables. I expected that the study results would support my initial thought that liquidity, growth strategy, and capital structure would result in earnings growth. The study results did not support that expectation.

I entered the doctoral program with a plan to complete a quantitative correlational study. However, a qualitative study may have enhanced my education by exposing me to the decisions that led to earnings growth. I do not think my personal bias towards a quantitative methodology study hindered my learning experience. My experience in the doctoral program has improved my skill set and will benefit me as a business consultant and scholar. My time management and organizational skills have significantly improved,

as I worked to manage my personal, professional, and academic lives toward successful completion of the program. I have improved my research and writing skills. For me, this process was about more than completing the doctoral study; I have improved as a person.

Conclusion

Business leaders of microcap companies should be aware that their ideas regarding allocation of resources in pursuit of earnings growth may not be supported by quantitative analysis. Liquidity, in the form of cash holdings, may entice a business leader to invest in projects that have a negative return on investment, while a capital structure that includes increased debt levels may improve returns to investors. I used multiple linear regression analysis to answer the research question of the current study. The current study's results show there is no significant relationship between liquidity, growth strategy, capital structure, and earnings growth. The regression model of the current study was unable to significantly predict earnings growth; $F(3, 108) = 2.22, p = 0.90, R^2 = 0.058$. Because the p value is greater than .05, I failed to reject the null hypothesis and had to reject the alternative hypothesis. The correlations of the individual independent variables to the dependent variable support prior research that the independent variables lack significant correlation to earnings growth. microcap companies are important contributors to economic growth as innovators and employers. Attention to the current study's results by executives of microcap companies could lead to improved earnings, enhanced sustainability, and growth in other indicators of operating and financial performance, leading to economic growth.

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Appendix: G*Power for a Priori Analysis for a Linear Multiple Regression Model

