EFFECT OF CASH HOLDING ON FINANCIAL PERFORMANCE: A CASE OF LISTED NON-FINANCIAL FIRMS IN TANZANIA
EFFECT OF CASH HOLDING ON FINANCIAL PERFORMANCE: A CASE OF LISTED NON-FINANCIAL FIRMS IN TANZANIA

By

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A Research Paper Submitted In Partial Fulfillment of the Requirement for the Award of Master of Science in Accounting and Finance of Mzumbe University

July 2019
CERTIFICATION

We, the undersigned certify that we have read and hereby recommend for acceptance for defending a dissertation entitled Effect of Cash Holding on Financial Performance: A Case of Listed Non-Financial Firms in Tanzania, in fulfillment of the requirements of the Degree of Master of Science in Accounting and Finance submitted to Mzumbe University, Dar Es Salaam Campus College.

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Major Supervisor

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Internal Examiner

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External Examiner

Accepted for Mzumbe University, Dar es Salaam Campus College

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I, Emilius Simon Tatala, hereby declare that this dissertation is my original work and that it has not been presented and will not be presented to any other University in a similar or any other degree award.

Signature____________________________________

Date________________________________________

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ACKNOWLEDGEMENT

I thank the almighty God for bringing me this far in life.

I am very grateful to my supervisor who provided me with guidance which enabled me to complete this study. In a special way, I thank my parents who tirelessly worked hard to provide me with all the financial support without which this study would not have been possible. I also extend thanks to my relatives especially Mr. Gwamaka Christopher and Emmanuel Kachali including all those that I have not mentioned in this acknowledgement that in any way provided me with support that enable me to complete this study. I will remember you for all that you have done for me.

Thank you very much.
DEDICATION

I dedicate this work to my loving parents Dr. Simon Rupia Tatala and Mrs Jane Mapunda Tatala who worked tirelessly to see my education through.

Likewise, I dedicate this work to my entire family especially my loving sisters; Cynthia Simon Tatala, Neema Simon Tatala, Kiwomba Mapunda and my young brothers Benson Simon Tatala and Raymond Joel Masaruje for their prayers, encouragement and support during my course of education may God bless you.
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>BOT</td>
<td>Bank of Tanzania</td>
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<tr>
<td>BRELA</td>
<td>Business Registration and Licensing Authority</td>
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<tr>
<td>CAG</td>
<td>Controller and Auditor General</td>
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<tr>
<td>CMSA</td>
<td>Capital Markets and Securities Authority</td>
</tr>
<tr>
<td>DNFBP</td>
<td>Designated Non-Financial Businesses and Professions</td>
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<tr>
<td>DSE</td>
<td>Dar Es salaam Stock Exchange</td>
</tr>
<tr>
<td>EPS</td>
<td>Earnings per Share</td>
</tr>
<tr>
<td>NSE</td>
<td>Nairobi Stock Exchange</td>
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<tr>
<td>OLS</td>
<td>Ordinary Least Square</td>
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<tr>
<td>PLS- R</td>
<td>Partial Least Square Regression</td>
</tr>
<tr>
<td>RI</td>
<td>Residual Income</td>
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<tr>
<td>ROA</td>
<td>Return on Asset</td>
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<td>ROE</td>
<td>Return on equity</td>
</tr>
<tr>
<td>ROI</td>
<td>Return on Investment</td>
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<tr>
<td>SPSS</td>
<td>Statistical Packages for Social Science</td>
</tr>
<tr>
<td>VIP</td>
<td>Variance Importance in the Projection</td>
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ABSTRACT

Cash is the most fundamental resource to every organization for a smooth running of its business operations. However, controversy still prevails between schools of thoughts on how cash holding affects the financial performance of firms. Some school of thoughts stresses on the positive effect inflicted by optimal cash holding on the financial performance of firms; whereas, the others stresses on inexistence to optimal level of cash to be retained for future running of business operation. Thus, this study aimed to examine the effect of cash holdings on the financial performance of non-financial firms listed in DSE, Tanzania. Specifically, it examined the effect of cash flows and liquid asset substitutes on firm’s financial performance in the presence of control variable—leverage, firm size, and investment opportunities. To achieve the intended objectives, the current study employed a quantitative research design, specifically a non-experimental design through a descriptive approach to study 9 purposively selected listed non-financial firms for 13 years marking 117 observations. The study employed a quantitative method of analysis to analyze the secondary data collected through document review of respective firms’ financial statements. The results of PLS-regression reveals that cash flows, liquid asset substitutes and firm size affect positively the financial performance of non-listed financial firm when measured by both ROA and ROE. Also, leverage exhibited to affect negatively the financial performance of listed non-financial firms as measured by ROE except in the first model where the effect of cash flow is examined against ROA; yet, investment opportunities portrays to have a positive effect when measured against ROE, and negative against ROA. As a policy implication, small sized firms should consider reserving an optimal cash level as a shield during financial difficulties and bankruptcy; unlike large sized firms that can generate enough cash to internally finance their projects, service debts, declare dividend and yet accumulate cash to cover for any unforeseen financial difficulties when come due.
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CHAPTER ONE
BACKGROUND OF THE STUDY, OBJECTIVES AND PROBLEM
DEFINITION

1.1 Introduction

Cash being the most significant resource to start and keeping a business running, every organization has to make sure that it holds a sufficient level of cash for running their operations smoothly. Insufficient cash availability can disrupt organization operations leading to insolvency. Cash holding is characterized as the set of promptly accessible cash and assets easily convertible into cash with maturity less than three months. Therefore, the choice of a firm to hold cash has to be sound, exhaustive and intelligent with a specific end goal to maintain a strategic tradeoff between sufficient and insufficient cash holding (Muddessar, 2017). However, the decision to hold cash can be of merits or demerits to the performance of the firm, for the same reason this study intend to examine the effect of cash holding on financial performance of 15 non-financial firms listed with Dar Es Salaam Stock Exchange (DSE) in Tanzania. Hitherto, this chapter presents the background to the study, define the problem at hand, while rest of the sections cover the objective of the study, research questions, significant of the study, and lastly the scope of the study.

1.2 Background of the Study

Cash being the business life blood and most paramount liquid asset for running day to day operations of a firm, globally, its management cannot be separated from business operations (Randall & Farris, 2009). The role of cash management is to guarantee the firm with positive flow of cash for smooth business operations and for handling corporate cash transactions (Adetifa, 2005). However, the centre of concern is regarding the level of cash management which is crucial in guaranteeing positive, effective, and reliable flow of cash into business operations to realize firm financial performance.

The financial performance of firms to a great extent relies upon various variables including rational cash management decision (Attom, 2014). Thus, the decision to
manage cash plays a major role in guaranteeing a positive flow of cash into business operations (Abioro, 2013; Muthama, 2016). Barrett (1999) postulates that the fundamental target of cash holding is to have available enough cash when it is required to run day to day operations. Moyer, et al. (2001) present that sound cash management is especially significant for number of reasons such as, it aids the preparation of fiscal reports which are crucial for securing bank loan; also, it reduces risks associated with cash shortage; yet, it allow firms to monitor its most liquid assets; and finally, it empowers a firm to maintain minimum cash resources to support its operations following mind-boggling cost of, and restricted access to capital.

Despite the crucial role played by cash management in enhancing firm performance, challenges still prevail among finance managers. Among others includes, the determination of suitable fund sources that can be utilized by the firm as initial or working capital; also, identification of appropriate potential investment opportunities to utilize the available fund; and the determination of firm’s cash holding optimal level that influence performance in a positive manner. According to Kesseven (2006) finance managers also encounter a challenge of determining a desired trade-off between profitability and liquidity that boost-up the performance of the firm financially, arguing that any extreme concentration on profitability may trigger mismatch between assets and liability, which consequently increases short run profitability at the expense of insolvency.

Notwithstanding, studies regarding the connection of cash holdings and firm's financial performance dominate a focal spot in corporate finance discipline (Abushammala & Sulaiman, 2014). The expanding series of studies on the subject matter are detached with clashing proof on the connection between the two variables. One way of thinking contends that excessive cash holdings help firms to increase their piece of the pie in the market at the detriment of industrial competition to finance their financial responsibilities at the time of financial difficulties which ultimately improve their financial performance. The other way of thinking contends that cash holdings include a load of costs which could antagonistically influence the performance of the firms. These costs incorporate lower rate of return on assets, probable high tax expenses and possible emerging of agency problem as firm’s management may hold
cash to seek after its very own objectives at owners’ expense. Being the case, the genuine effect of holding cash on firm’s performance remains an open debate.

Therefore, this study intends to accommodate the prevailing literature gap by studying the subject matter and providing further empirical justification regarding the effect of cash holdings on the financial performance of non-financial firms listed in DSE, Tanzania.

1.3 Problem Definition

Cash management is crucial in operating all activities of firms; making the decision to manage cash and cash equivalent to be paramount for managers in order to enhance the financial performance of their firms (Megginson, et al., 2014). However, recently the decision regarding the appropriate source of fund and the trade-off between insufficient and sufficient cash to be retained during operations has become a major problem experienced by many firms with regards to their financial performance. This problem can also be traced back from school of thoughts in which trade-off theory (Modigliani & Miller, 1963) postulates that cash holdings has negative effect on firm financial performance while the pecking order theory (Myers & Majluf, 1984) predicts otherwise.

Nevertheless, the conflict extends among previous studies as to whether cash holdings improves (Debadatta, 2017; Nwarogu & Iormbagah, 2017) or worsens (Disraeli, et al., 2018; Shinada, 2012) firm’s financial performance. Henceforth, such a controversy paves a way for future researches, for the same reason it is being considered in this study. Yet, following contextual variability it is not clear if the effect of cash holdings on financial performance of firm in developed countries is similar to those in developing countries (Chen, 2012). Additionally, to the best of researcher’s knowledge no attention has been vested in the relationship between cash holding and firm financial performance in Tanzania, especially among listed non-financial firm’s despite of vast studies on cash management.

Being the case, this study is set to enrich relevant cash management literature base of developing countries; and yet, explore the relationship among variables to test
objective theories. Ultimately, this study aims at examining the effect of cash holdings on firm financial performance using duo proxy of Return on Assets (ROA) and Return on Equity (ROE).

1.4 **Objective of Study**

Cash is the most important element to start and keep a business going, therefore a company need to maintain a sufficient level of cash to run a business efficiently to realize sound performance financially. Hitherto, Cash holdings is likely to disrupts the firm’s financial performance by tying down unnecessarily long-term capital which will ultimately lower income associated with capital employed (Akinyomi, 2014). Being the case, this study has a general objective of investigating the effect of cash holdings on financial performance of non-financial firms listed in DSE, Tanzania; and it is accompanied by the following specific objectives:

- i. To assess the effect of cash flows on financial performance of listed non-financial firms in Tanzania
- ii. To examine the effect of liquid asset substitutes on financial performance of listed non-financial firms in Tanzania

1.5 **Research Questions**

The research questions of the current study are as follow:

- i. What are the effects of cash flows on financial performance of listed non-financial firms in Tanzania?
- ii. What are the effects of liquid asset substitutes on financial performance of listed non-financial firms in Tanzania?

1.6 **Scope of the Study**

The current study focuses on the effects of cash holding on the financial performance of listed non-financial firms in Tanzania. The study will only cover non-financial firms listed in the DSE. This study will cover a period of 17 years being from 2002 to 2018 for provision of updated information.
1.7 **Significance of the Study**

This study is beneficial to non-financial firms, managers and the entire public on the impact of cash holding on financial performance despite their differences in business and environments. Also, helpful to decision makers to review policies, guidelines, laws and regulations on cash holding, improve performance, confirm validity issues of similar research done by others, reduce operational risks, compliance with laws and maximize shareholders' wealth.
CHAPTER TWO
LITERATURE REVIEW ON CASH HOLDING AND FINANCIAL PERFORMANCE

2.1 Introduction

Cash is a crucial component for the day to day operation of every company and it provides the firm with liquidity and facilitates the payments of various types of obligations. According to the literature review, cash holding is commonly defined as cash and marketable securities or cash equivalents (Opler et al., 1999). Cash equivalents are current assets, which can be converted into cash in a very short term and are thus characterized by a high degree of liquidity.

2.2 Conceptual Definitions

This section takes into account of the key concepts involve in the study; it further assign meaning (definition) to operational concepts to avoid misguided judgement to interested parties. The definition of each operational concept is provided in the subsequent explanation.

2.2.1 Financial Performance

The product or outcome of the firm`s business operation is what can be referred to as performance. Firms explore various possible proxies to measure their performance; and the convenient one lies in its goal. Apart from using achievement of firm’s goals as its performance proxy, profit generated can also be taken into account. According to Barbosa and Louri (2005) the firm can employ financial proxies to evaluate its performance, such proxies include dividend yield, Return on Investment (ROI), price earnings ratio, Residual Income (RI), growth in sales, earnings per share (EPS), market capitalization, and financial ratios such as profit to sell (P/S), both Return on Assets and Equity (ROA and ROE).

i. Return on Assets (ROA)

ROA is a profitability ratio that presents the contribution of firm`s assets to generate its income/profit. It is the ratio that measure firm’s effectiveness in utilizing its assets.
to generate profit; implying that the higher the ratio, the effective the firm’s management in using its assets to generate profits (Mahdi & Kumars, 2009). ROA can be expressed as net profit to total assets.

\[ ROA = \frac{\text{Net Income}}{\text{Total Asset}} \]

ii. **Return on Equity (ROE)**

ROE measure the income generated as a result of shareholders’ investment in the firm; being the case, increase in ROE will imply the growth of firm’s profit (Ang, 2001; Sawir, 2005). According to Suwarno (2004), the higher the value of ROE, the higher the firm’s profit resulting from extra working capital, which can be exhausted in financing firm’s operations to further generate more income. ROE is further expressed as net income to average equity of the shareholders.

\[ ROE = \frac{\text{Net Income}}{\text{Average Equity}} \]

### 2.2.2 Cash Flows

Cash flow represents a ready source of liquidity and hence it acts as a substitute for cash holding (Ferreira & Vilela, 2004). Cash flows can be used during the time of cash shortage and thus, negating the need to hold cash. A firm will be in difficulty environment if it fails to have an effective cash flow to aid its business operations and will lead to bankruptcy. Therefore, firms with persistently high cash flow will have significant cash holding and this will help a firm to finance their projects and pay off debts (Chireka & Fakoya, 2017).

### 2.2.3 Liquid Asset Substitutes

Liquid assets can be turned into cash more cheaply than other assets and can help to avoid expensive capital market financing (Ozkan & Ozkan, 2004). All liquid assets other than cash can be regarded as substitutes (Selcuk & Yilmaz, 2016). Liquid assets other than cash are networking capital, inventory and marketable securities.
2.2.4 Leverage

Leverage of the firms is proportion between total debt to the total assets and it shows the degree to which company total assets are financed by total debts. Agency costs are the costs which happen consequently to clashes of interest between shareholder and manager of firm. According to shareholders point of view, debt financing is considered as vital tool to develop and monitor management and reduce unrelated expenditures. Higher leverage is the main reason of creating agency problem between debtor and creditor that reveals a strong association amongst leverage and firm performance (Iftikhar, 2017).

2.3 Theoretical Literature Review

There are basically three motives for companies to hold cash; transactions motives, precaution motives and speculative motives. Transaction motives refer to the need to hold cash to satisfy normal disbursement collection activities associated with a firm’s day to requirement. Precaution motives refer to the need to hold cash as safety margin to act as financial reserves which may be required for payments of unpredictable or unanticipated events in the future and speculative motives refer to the need to hold cash in order to able to take advantage of additional investment opportunities. Hence, the firms with higher business prospects or expect to make capital investments hold cash based on the speculative motive (Keynes, 1936).

2.3.1 Trade-Off Theory

According to Borges (2016), firms tend to establish an optimal cash level in order to maximize shareholders wealth by weighing the marginal benefit and marginal cost of holding cash. Firms cut down transaction cost of accessing funds from capital markets by holding cash and safeguarding itself during difficulty times of accessing funds from external sources. Insufficient amount of cash forces firms to forgo profitable investment projects or seek for other high cost of financing. Cost that are associated with cash holding depends on managers decisions, if managers decisions are in line with shareholders interest, the only cost of cash holding is its lower return relative to other investment of the same risk. If managers do not maximize shareholders wealth, they increase cash holdings to increase assets under their control. Hence, agency cost
will arise. Therefore, trade off theory can be applied to balance the optimal cash a firm can hold so that to increase shareholders wealthy and improve performance.

2.3.2 The Pecking Order Theory

Unlike trade-off theory which stress on the availability of ideal level of cash holding by the firm, the pecking order theory by Myers and Majluf (1984) postulates that to escape borrowing costs, firms will opt for internal resources utilization to accommodate their investment needs before seeking external funds such as risky or safe debts, and equity if needed (Ferreira & Vilela, 2004). This is necessarily the case since, in comparison to internally generated funds; external assistances are highly expensive due to presence of information asymmetric between capital markets and firms. Therefore, this theory stresses on the inexistence of optimal cash holding, such that any increasing operational cash flows will be used to finance new projects that are profitable to the firm, also to service debts, to declare dividends, and eventually to accumulate cash. However, firms will utilize their cash holdings to finance potential investments, and thereafter issue new debt when retained earnings are not sufficient enough to do so.

2.4 Empirical Literature Review

Managers run their organization by holding different level of cash to meet their operational needs. However, the important question is that whether or not the level of cash that firm’s management decided to maintain to finance their business operations improves firm performance? Therefore, subsequent discussion covers the prior empirical studies observation on the subject matter.

Abioro, (2013) examined the impact of cash management on the performance of manufacturing firm. The study employed a descriptive research design to collect both primary and secondary data from 100 personnel who were judgementally sampled prior to quantitative analysis. Using a correlation coefficient technique, the results revealed that there is a significant relationship between cash management and performance of manufacturing firms; while liquidity (cash) have no significant effect on the performance of such firms. The study concluded that mere cash holding with
improper management is less likely to improve the performance calling for effective management of cash for sound performance.

Aiyegbusi and Akinlo (2016) examined the effects of cash holdings on the performance of Nigerian firms for a period of 12 years. Through a descriptive research design, the study collected secondary data from purposively selected 60 non-financial firms listed in Nigerian Stock Exchange, to allow the adoption of generalized method of moments for analysis. The results however, reveals that cash holding and debt repayment were the only variables that have a significant impact on the firm performance; while growth opportunities, net working capital, firm size, and cash flows exerted a negative impact. The study recommended that cash holdings is crucial for the firm performance, and firms are more likely to suffer at times of financial difficulties in case of any ineffective management of such liquid assets.

Debadatta (2017) used secondary data collected from public listed companies over a period of 10 years to examine the effects cash holdings on performance, just after analysing the determinants of cash holdings. The results of the quantitative analysis reveals that firms opt to hold cash to boost up their return and anticipate financial uncertainties. Furthermore, results indicated a presence of positive effects of cash holdings on performance and value when investment opportunities are large enough to realize better ROA.

Cheryta, et al. (2017) analysed numerous determinants of cash holdings and later examined their effects on the value of manufacturing firm listed in Indonesian Stock Exchange for a period of 3 years ending 2015. Being the case, a path analysis was employed to analyse data collected 56 firms, and the results indicates that unlike leverage, profitability has a positive influence on cash holdings, while cash holdings, firm size, and information asymmetry exhibit a negative relationship on the firm values.

Amahulu and Ezechukwu (2017) employed an ex-post facto research design on time series data to assess the effect that cash holdings has on the financial performance of 22 quoted insurance firms in Nigeria from 2010 to 2015. the collected secondary data were quantitatively analysed, and the results of the adopted pearson correlation
coefficient and multiple regression analysis indicate that cash holdings has a statistically significant effect on performance (ROA and ROE) in a positive manner. The study finally recommended that, to ensure performance and anticipate mismanagement of their cash resources, firms should well-manage their re-investment decisions.

Nwarogu and Iormbagah (2017) examined the effect of cash management on the performance of listed firms in Nigeria by employing an Ex-post factor research design. A variable cash management was further disintegrated into cash holding, cash flows, cash conversion cycle, and firm growth and size, and then pool OLS regression, descriptive statistics, and correlation matrix was employed to determine their relationship with performance. The analytical results reveal that cash holding and cash conversion cycle has a positive and significant effect on performance measured as ROA while firm size and cash flows exerted otherwise. Regarding ROE, only cash flows, firm growth, and size revealed a negative and significant relationship to performance, unlike other variables in the study. The study eventually recommended that for an effective performance of service sector firms, their management should play a major and effective role in turning their most liquid assets quickly and economically into cash.

Abushammala and Sulaiman (2014) used panel data from 65 non-financial firms listed in Amman Stock Exchange from 2000 to 2011 to examine the effect that cash holdings have on their level of profitability. However, three model were developed prior to analysis, and the results of a quantitative simple regression model indicated that cash holding has a positive significant relationship to profitability, implying that an effective financial performance of a firm is a result of sound cash holdings. The study eventually recommended the need for future researches to examine the suitable strategies associated with cash holdings.

Muddessar (2017) and Naoki (2012) also used panel data from 2010 to 2014 to examine the impact of cash holding on the performance of non-financial firms listed in Kenya Stock Exchange. The study begin with the analysis of the determinants of cash holdings, followed with the examination of cash holdings effects on firm
performance. The results of panel regression model indicates that firms decission to increases their level of cash holdings depends on expected trend of increasing cash flow uncertainty. Being the case, cash holdings and firm’s ROA has a positive connection especially for the firms with larger investment opportunities. The study concluded that under sudden economic difficulties, firms will improve their performance through conservative cash holdings in the short run; but any excessive cash holding in the long run will worsen firm’s ROA.

2.5 Research Gap

All reviewed empirical literature were done in other developed and developing countries but not in Tanzania with mixed results on the effect of cash flow on financial performance, then the researcher want to explore the real effect of cash flow with firms in Tanzania, focus being to non- financial firms listed in DSE.
CHAPTER THREE

THE ANALYTICAL FRAMEWORK ON THE EFFECTS OF CASH HOLDING ON FINANCIAL PERFORMANCE

3.1 Introduction

This chapter presents narrative outline of the variables to be studied and the hypothetical relationship between and among the variables.

3.2 Developing the Framework: Variables

A framework narrating the operationalization of the variables of this study is deduced from both empirical reviewed literatures and theoretical review. Miles and Huberman (1994) viewed such a conceptual framework as a blueprint that describes either geographically or narratively the key study factors, variables, or concepts, and their expected relationship. Therefore, a framework exhibited in Figure 3.1 has been constructed to assist the study in examining the effect of cash holdings on the financial performance of listed non-financial firms. The variables exhibited in the schematic diagram of the conceptual framework includes, financial performance—ROA and ROE which represents the dependent variable; while other variables such as cash flows, liquid assets substitute, leverage, firm size, and investment opportunities are the determinants of cash holdings which is considered as the explanatory variable in this study (Chireka & Fakoya, 2017). However, each of the explanatory variables and their respective operationalization in the research model are explained in the subsequent sections.
### Figure 3.1: Schematic diagram of Conceptual framework

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent variable</th>
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<tr>
<td><strong>Cash Holding</strong></td>
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<tr>
<td>• Cash Flows</td>
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<tr>
<td>• Liquid Asset</td>
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<td>Substitutes</td>
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<td><strong>Control Variables</strong></td>
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<td>• Leverage</td>
<td></td>
</tr>
<tr>
<td>• Firm Size</td>
<td></td>
</tr>
<tr>
<td>• Investment</td>
<td></td>
</tr>
<tr>
<td>Opportunities</td>
<td></td>
</tr>
<tr>
<td>**Financial</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td></td>
</tr>
<tr>
<td>• ROA</td>
<td></td>
</tr>
<tr>
<td>• ROE</td>
<td></td>
</tr>
</tbody>
</table>

Source: Researcher Own Construct, 2019

### 3.3 Hypotheses Development

The subsequent explanation gives the argument underlying the association of each variable to cash holding, then to financial performance, and finally developing the hypothesis for individually variable.

#### 3.3.1 Cash Flows

Trade-Off Theory consider cash flow as among source of liquidity freeing managers from financial difficulties that can alternatively be inverted by capital markets (Hardin et al., 2009). Cash flows play a major role at times of cash difficulties discarding the need for a particular firm to hold more cash (Kim, et al., 2011). On the other hand, the pecking order theory postulates that increase in cash flow will ultimately increase the firm’s motive to hold cash. This is necessarily the case as firm with sound and significant flows of cash can conveniently accommodate its projects’ expenses, finance their debts, yet remaining with significant amount of cash accumulation. Notwithstanding, a sound flow of cash is crucial for the performance of a particular firm as it enable the firm to conveniently accommodate its expenses and finance its projects which significantly affect their performance positively. Therefore, in line
with pecking order theory, this study expects cash flows to have a positive effect on financial performance.

Ho1: Cash flow has negative effect on the financial performance of listed non-financial firms in Tanzania.

### 3.3.2 Liquid Asset Substitutes

Liquid assets substitutes are assets that can easily and cheaply be converted into cash compared to other assets, and allow the firm to escape capital market financing expenses (Ozkan & Ozkan, 2004). Liquid assets are very crucial for firms as they provide a loophole for firms to convert such assets into cash at times of cash difficulties (Al-Najjar & Belghitar, 2011). According to Trade-Off Theory there is a negative relationship between liquid asset substitutes and cash holdings, such that, firms with more liquid assets tend to hold less of its cash reserves. Therefore, the relationship between liquid asset substitutes and financial performance is expected to be negative as well. This is necessarily the case as firms with more liquid assets diminish the amount of cash available to finance their investment needs which have significant effect on their performance (Selcuk & Yilmaz, 2016).

Ho2: Liquid asset substitute has a positive effect on the financial performance of listed non-financial firms in Tanzania

### 3.3.3 Leverage

According to Trade-Off Theory, firms with high leverage are more likely to experience financial difficulties leading to bankruptcy. Thus, such firms which are highly levered are expected to retain more of its cash as a precautionary motive against bankruptcy (Kim, et al., 2011). However, highly levered firm may not necessarily hold more cash if they have substantial ability to secure additional debt, as the high leverage increases firm’s ability to access the capital markets (D’Mello, et al., 2008). Therefore, a negative relationship is expected between leverage and cash holdings, as highly levered firms will retain less cash when their ability to generate cash is outweighed by their investment needs. Being the case, this study expects a negative relationship between
leverage and firm performance as in line with the Trade-Off Theory and Chireka and Fakoya (2017).

Ho3: Leverage has a positive effect on financial performance of listed non-financial firms in Tanzania.

3.3.4 Firm Size

The relationship between firm’s cash holdings and firm size remained a discussion among many studies. According to the Trade-Off Theory, there exist a negative relationship between cash holdings of a firm and its size. Unlike small sized firms, larger ones are more likely to take advantage of the economies of scale which ultimately allow them to quickly and cheaply obtain external finance and lower their transactions costs (Bigelli & Sanchez- Vidal, 2012). Therefore, the size of a firm is expected to have a negative relationship with cash holdings, as the transaction costs of the larger firms are lower compared to small firms. On the other hand, the firm size has a positive relationship with cash holdings as per pecking order theory, as profitability allows larger firms to grow and to possibly hold more cash as they control their investment needs. Similarly, firm size is expected to have positive effect on financial performance of listed non-financial firms. This is necessarily the case as firms of large size has the capacity to diversify compared to smaller sized firms; having relatively less possibility of bankruptcy (Jiang et al., 2011). Being the case, this study expects a positive relationship between firm size and financial performance.

Ho4: Firm size has a negative effect on financial performance of listed non-financial firms in Tanzania.

3.3.5 Investment Opportunities

According to pecking order theory firm having more investment opportunities tends to retain more of its cash to anticipate the financing cost of such investments, as funds generated internally are less expensive compared to capital market financing (Bigelli & Sanchez- Vidal, 2012; Kim, et al., 2011). Hitherto, Trade-Off Theory postulates that firms with growing investment opportunities is more likely to be influenced by precautionary motive to retain more cash following increase in financial difficulties,
and market constraints (Kim, et al., 2011). Therefore, in line with the pecking order theory and trade-off theory, firms with more investment opportunities are more likely to increase their profitability leading to increase in its performance. Being the case, this study expects a positive relationship between investment opportunities and financial performance of listed non-financial firms.

Ho5: Investment opportunities has a negative effect on the financial performance of listed non-financial firms in Tanzania

3.4 Measurement of Variables

This study takes into account of both explanatory and dependent variables as summarized in Table 3.1 which also indicates how such variables are operationalized for quantitative analysis. Being the case, each expected sign attached to respective explanatory variable reflects its effect on dependent variables. Thus, a positive sign implies that the variable set moves in the same direction, or have a positive relationship, while a negative sign exhibit that a respective variable set moves in opposite direction.

Dependent variable for this study is the financial performance of listed non-financial firms which uses both ROA and ROE as proxy. ROA measure how efficient the firm utilize its assets to generate income; such that the higher the value of ROA the higher the profit of the firm, and it measured as the ratio of net income to total assets. On the other hand, ROE reflects the level of income generated in comparison to shareholders’ equity; and it can be measured as the ratio of net income to average shareholders’ equity.

Cash holdings on the other hand represents the explanatory variable of this study, which is determined by cash flows, liquid assets substitute, leverage, firm size, and investment opportunities. The variable cash flow is measured as the ratio of earnings after taxes plus depreciation to total assets. Earning after tax is the profit obtained by the firm after less statutory government taxes; whereas, total assets is the sum of fixed asset and current asset of the firm. The variable liquid asset is measured as the ratio of net working capital to total assets; as net working capital is calculated as current assets
less current liabilities and total cash and cash equivalents (Ozkan & Ozkan, 2004). Also, in line with Chireka and Fakoya (2017) leverage in this study is measured as the ratio of total debt to total assets; while natural logarithm of total assets is used as a proxy for firm size; and finally, investment opportunities is as the ratio of book value of total assets less the book value of equity plus the market value of assets. Regarding the expected signs, only liquid assets substitute and leverage are expected to bear a negative sign, indicating that they have negative effects on the performance of listed non-financial firms in Tanzania. Whereas, cash flow, firm size, and investment opportunities are expected to bear a positive sign implying that they have positive effects on the financial performance of listed non-financial firms in Tanzania.

However, using ROA and ROE as the financial performance proxy, the variable operations to examine the effect of explanatory variable on dependent variables was disintegrated into two pairs of models. Thus, the first pair involves the effect of cash flows on ROA and ROE, while the other pair involve the effect of liquid asset substitutes on ROA and ROE. Altogether, the pairs of models considered leverage, firm size, and investment opportunities as the control variables towards determining the effect of cash holdings on the financial performance of listed non-financial firms in Tanzania.
## Table: 3.1: Descriptions of Study Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Abbreviations</th>
<th>Measurement</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on Asset</td>
<td>ROA (Y_{1,3})</td>
<td>(Net Income or Earning After Tax) / Total Assets</td>
<td></td>
</tr>
<tr>
<td>Return on Equity</td>
<td>ROE (Y_{2,4})</td>
<td>Net Income/ Average Equity</td>
<td></td>
</tr>
<tr>
<td><strong>Independent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash Flow</td>
<td>CFL (X_1)</td>
<td>(Earning After Tax + Depreciations) / Total Assets</td>
<td>+</td>
</tr>
<tr>
<td>Liquid Assets Substitute</td>
<td>LAS (X_2)</td>
<td>(Current Assets – Current Liabilities – Cash &amp; Cash Equivalent) / Total Assets</td>
<td>-</td>
</tr>
<tr>
<td>Leverage</td>
<td>LEV (X_3)</td>
<td>Total Debt / Total Assets</td>
<td>-</td>
</tr>
<tr>
<td>Firm size</td>
<td>FRS (X_4)</td>
<td>Natural logarithm of Total assets</td>
<td>+</td>
</tr>
<tr>
<td>Investment opportunities</td>
<td>INV (X_5)</td>
<td>The ratio of book value of total assets minus the book value of equity plus the market value of assets</td>
<td>+</td>
</tr>
</tbody>
</table>
CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter presents the research design, data type and method of data collection, data analysis method, and sampling procedures.

4.2 Name of Research Design

A research design is a blueprint or general plan or strategy for carrying out a research study; it gives essential information for data collection to address research problem, and yet communicate the study goals (Gay, Mills, & Airasian, 2012). There are distinguishing research design but factors such as main research question, environmental constraints, and nature of the involved variables, are what determine the choice of a particular design to be employed (Khan, 2014). As per Creswell (2014) research design is mainly categorized into qualitative; quantitative; and mixed method research design.

4.2.1 Qualitative Research Design

A qualitative research design as an interpretive view originated from education and social science discipline stresses on collecting data from a smaller sample size to understand and explore the meaning respondents assign to a social problem. It is advantageous in gathering more detailed information about the phenomena using open-ended questions (Leavy, 2017), and the frequently used approaches includes phenomenological, grounded theory, narrative, case study, and ethnography design (Creswell, 2014). On the other hand, quantitative research design stresses more on positivist view allowing reality to be free of researcher’s perception as well as gathering of data from large sample (Khan, 2014).

4.2.2 Quantitative Research Design

Unlike the qualitative research design, quantitative design is more flexible in dealing with collected data yet allowing the examination of the existing relationship among variables so as to test objective theories. It is further disintegrated into experimental
and non-experimental design which includes descriptive design then extended to survey design—cross-sectional, and longitudinal designs (Edmonds & Kennedy, 2017).

4.2.3 **Mixed Research Design**

Ultimately, a mixed research design is a hybrid adopted to integrate both qualitative and quantitative design to explore the strength of context and strength of testability respectively in a single study (Classen, et al., 2007). However, the option for mixed design requires the researcher to decide on the major design to dominate the study; and it can be further categorized into convergent parallel, explanatory, and exploratory sequential mixed research design.

4.2.4 **Research Design for this Study**

Basing on the preceding explanation that exhibit the choosy-reasons, merits and demerits of each research design type, this study employed a quantitative, non-experimental research design, dominated by descriptive research design. However, the approach was preferred as it gives an intense description of the existing relationship among variables so as to test objective theories.

4.3 **Data Collection Strategy**

The strategy for data collection process gives a systematic techniques and approaches for gathering information from the unit of analysis in order to address the key research questions. Data can be referred to as a set of phenomena values in form of raw information which are recorded and used analysis purpose (Dawson, 2002).

4.3.1 **Data Type**

There are commonly two types of data for research studies, being primary and secondary data. Primary data are firsthand data gathered directly from the field and requires the researcher’s presence in the field. Unlike secondary data, primary data guarantee accuracy and avoidance of fabrication, despite that they are costly in terms of time and resources. On the other hand, Secondary data can alternatively refer to as second-hand data, are not collected directly from the field rather from different readymade sources. Its collecting involves the review of relevant documents in line
with the study at hand. As merits, secondary data are costless in term of time and resources, conveniently accessible, and crucial for the study that quantitatively explore the relationship among variables which is the case for this study. Therefore, secondary data was collected to aid the analysis, and presentation of results.

### 4.3.2 Data Collection Techniques and Data Sources

There are different techniques for data collection, and they all depend on the type of the data itself. Being the case, document review technique of data collection was used in this study to collect secondary data from secondary sources. This study reviewed the financial statements of listed non-financial firms published in Dar Es Salaam Stock Exchange (DSE) and in the firms’ respective official website. Nevertheless, information regarding financial performance such as net income, and equity, and cash holding information covering cash flows, liquidity Asset Substitutes, total assets, total sells, total debts and the likes were gathered from such firms’ financial statements to accommodate analysis.

### 4.4 Target Population and Sample Procedures

Prior to sample size determination, the next details narrate the targeted population and sample procedures employed to obtain a sample size to be studied.

#### 4.4.1 Target Population and Sample Frame

A group of individuals bearing the same characteristics is referred to as population; while target population stands as the individual group bearing common defining feature that the researcher is ought to study (Creswell, 2014). The target population considered in a particular study involves the like of person, institution or organizational part, housing, households and so forth (Ishak & Abu-Bakar, 2014). Similarly, sample frame is the roster of all units from which at any sampling stage, a sample is to be drawn (Digaetano, 2013). Therefore, all 28 listed firms in DSE represent the study population, while 15 out of them which are non-financial represent the target population and the sample frame.
4.4.2 Sample Size

Sample size is the number of units drawn from the sample frame to be studied. According to Malhotra (2005) sample size determination depends on both qualitative factors such as type of data analysis, sample size in similar studies, nature of the study, number of variables included in the model, time and resource constraints. But quantitative factors for the determination of sample size rely on level of precision, confidence interval, standard deviation, and techniques of data analysis. Therefore, 9 listed non-financial firms from the sample frame (15) as in Appendix I represented a sample size studied for the period of 13 years totaling 117 observations.

4.4.3 Sampling Techniques

Sampling techniques are subsequent action taken by the researcher following the establishment of sampling frame from which the sample size is ought to be drawn. The decision taken by the researcher can be of either traditional (non-probability) or probability sampling technique. According to Rahi (2017) Traditional or alternatively non-probability sampling is the sampling procedure that involve not the estimation of the probability of every single population item probability to generate a sample. Traditional sampling extended further to purposive sampling, judgmental sampling, and quota sampling. Probability sampling on the other hand involves the estimation the probability of each population item to generate a sample to be studied. It can alternatively refer to as random sampling and it further disintegrated into systematic sampling, cluster sampling, stratified sampling, area sampling, and multi-stage sampling (Dawson, 2002). Therefore, to conveniently understand the research problem, and allow the gathering of relevant data for analysis, this study purposively drawn 9 firms from the sample frame to be studied.

4.5 Data Analysis Strategy

Data analysis is categorized into qualitative and quantitative method. Qualitative method of data analysis is further disintegrated into content analysis and extracting themes; while the quantitative method can be in terms of descriptive or inferential statistics. Therefore, this study used quantitative method of analysis prior to results interpretation.
4.5.1 Descriptive Data Analysis

This study employed descriptive statistics in analyzing the data collected. A descriptive analysis involved the establishment of measure of central tendency, related to the variables under study. It further involved the use of tabulation techniques and graphical representation through Statistical Packages for Social Sciences (SPSS) version 25.0 and excels spreadsheet programs.

4.5.2 Inferential Data Analysis (Partial Least Square Model)

At first the study opted for multiple regression analysis but considering the nature of data collected for the variables, thus, having high degree of multicollinearity, Partial Least Square (PLS) regression was adopted instead. PLS regression is often used when explanatory variables are highly collinear or in the existence of more explanatory variables compared to number of observations. In such a case, employing Ordinary Least Square (OLS) regression produce coefficients associated with extreme standard errors or fails to produce completely. Being the case, PLS regression reduces the explanatory variables to a smaller set of less correlated components, as a replacement of original data; thus, explanatory variables are assumed to be fixed and can be measured with errors allowing PLS to be more robust in measuring uncertainty. Therefore, Statistical Packages for Social Science (SPSS) version 25.0 was used to determine the effect of cash holding on the performance of listed non- financial firms in Tanzania, through a models expressed in subsequent equations.

Model 1: Firm performance measured by ROA versus cash flows

\[ Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \] (3.1)

Model 2: Firm performance measured by ROE versus cash flows

\[ Y_2 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \] (3.2)

Model 3: Firm performance measured by ROA versus liquid asset substitutes

\[ Y_3 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \] (3.3)

Model 4: Firm performance measured by ROE versus liquid asset substitutes
\[ Y_4 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon \]  

(3.4)

Where:

\( \beta_1, \beta_2, \beta_3, \beta_4, \) and \( \beta_5 \) are the slope coefficient of the explanatory variables \( X_1, X_2, X_3, X_4 \) and \( X_5 \), while \( \varepsilon \) is the error term. Other variables descriptions are exhibited in Table 3.1.
5.1 Introduction

This chapter exhibits the analysis as well as the findings of the data collected through methodologies narrated in the preceding chapter. The quantitative data obtained by secondary data resulting from the review of the firm’s financial statements have been used to test the postulated hypotheses. Initially, the study used Minitab version 18.1 to establish number of graphical plots justifying the satisfaction of underlying assumption when using Partial Least Square Regression. The graphical plots produced cover Residual versus Fit, Residual versus Leverage; and Response Plot. Nevertheless, PLS regression aided by SPSS version 25.0 produced results regarding the effect of cash holdings on the performance of listed non-financial firms, covering cash flows, liquid asset substitutes as explanatory variables; and leverage, firm size, and investment opportunities as control variables. The output of PLS regression analysis to be interpreted next includes Promotion of Variance Explained, Variable Importance in the Projection, Parameters, and Weights.

5.2 Interpretation of Findings

This section presents the interpretation of the findings obtained following the analysis of the data collected through document review from secondary sources. The findings cover the effects of cash flows, liquid asset substitutes, leverage, firm size, and investment opportunities on financial performance.

5.2.1 The Effect of Cash Flows on Financial Performance

The findings in this section consider the effect of cash flows on the financial performance of firms disintegrated into ROA and ROE; yet, taking into account of leverage, firm size, and investment opportunities as control variables.

5.2.1.1 The effect of cash flows on ROA

Prior to the presentation of the results regarding the effects of cash flows on ROA, various assumptions were diagnosed using graphical plots. Figure 5.1 exhibits the
residuals versus fits graph plots, having fitted values on the horizontal line—x-axis, and standardized residuals on the vertical—y-axis. This graph plots in PLS regression is commonly used to justify the assumption that there is a random distribution of residuals, and constant variance. Therefore, this assumption was satisfied as ideally the points on the graphs fall randomly with unrecognizable points’ patterns on both sides of 0.

**Figure 5.1: Residual versus Fit plot (Cash flow and ROA)**

![Residual versus Fit plot](image)

Also, Figure 5.2 exhibits the response plot, being a scattered plot of fitted scores against actual responses and examines how well the model understudy fits and predicts each score. The graph plot shows inexistence of non-linear pattern in the points implying that the model adequately fits and predicts the data. The observations in the graph plot are viewed to bottom left corner of the graph towards the top right corner in a linear pattern.

Finally, the scattered plot of standardized residuals against the leverage of each score is exhibited in Figure 5.3 to narrate the outliers and leverage points. Thus, at most two observations lying outside the reference x-axis, the graph plot implies no impacts of
outliers in the prediction process; and with at most two observations outside reference y-axis imply inadequate impact of leverage scores.

Figure 5.2: Response Plot (Cash flow and ROA)
Henceforth, the results of PLS regression regarding the effects of cash flows on the financial performance in terms of ROA is exhibited in the subsequent explanation. However, it should be noted that PLS regression initially extract a group of latent factors explaining as much covariance as possible between explanatory variables and dependent variables. Thereafter, a regression step determines values of dependent variables through decomposition of the explanatory variables.

Table 5.1 exhibits, the proportion of variance explained, revealing the contribution of individual latent factor to the model. The first latent factor reveals 42.4% of the variance in the explanatory variables, and 88.3% of the variance in the dependent variable. Also, the second factor describes 7.7% of the variance in the dependent variable, and 9.5% in the explanatory variables. The third factor explains 0.1% of variance in dependent variable, and 47.9% in predictors. Collectively, the initial three latent factors describe 99.9% of the variance in the explanatory variables and 96% of the variance in the dependent variable. However, the last latent factor inflicts very little to the variance explained in dependent variable and in the predictors.
Table 5.1: Proportion of Variance Explained (Cash flow and ROA)

<table>
<thead>
<tr>
<th>Latent Factors</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X Variance</td>
</tr>
<tr>
<td>1</td>
<td>0.424</td>
</tr>
<tr>
<td>2</td>
<td>0.095</td>
</tr>
<tr>
<td>3</td>
<td>0.479</td>
</tr>
<tr>
<td>4</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table 5.2 presents the Variable Importance in the Projection (VIP)-cum-parameters. The parameters column exhibits the estimated regression coefficients for individual explanatory variables for predicting dependent variable. In replacement of typical testing of model effects, VIP will be taken into consideration. The VIP postulates the contribution of individual explanatory variable to the model by the number of factors collectively in the model. In Table 5.2 cash flows and leverage have the highest importance in predicting financial performance—ROA in all factors-model compared to firm size and investment opportunities. The cash flow has the highest importance (VIP= 1.605) followed by leverage (VIP= 1.150) in one-factor model compared to other predictors, bearing highest coefficients of 0.929 and 0.139 respectively. However, the cumulative VIP of predictors cash flow decreases when more factors are added, while that of leverage increases.

Table 5.2: VIP-cum-Parameters (Cash flows and ROA)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Latent Factors</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash Flows</td>
<td>1.605</td>
<td>1.590</td>
</tr>
<tr>
<td>Leverage</td>
<td>1.150</td>
<td>1.173</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.274</td>
<td>0.267</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.169</td>
<td>0.174</td>
</tr>
</tbody>
</table>

Therefore, Table 5.3 presents the weights of each predictor at each factor extracted. The weight of each explanatory variable presents the relationship between the
respective predictor and dependent variable by latent factor. Consistently with VIP results, Cash flows as exhibited in Table 5.3 have a highest association with ROA in first latent factor (0.802), went on decreasing in the rest of the factors. Nevertheless, cash flow is having a positive relationship with ROA in all latent factors except in the fourth factor. Leverage has the largest association with ROA in the second factor (0.708); yet having a positive relationship with ROA in the second to fourth latent factors, exception made in the first factor. Firm size also, shows a highest association in the third factor (0.798); having a negative association with ROA in the second factor, and positive in the rest of the factors. Eventually, investment opportunities reveal a highest association with ROA in the third factor (0.6) bearing a positive relationship with ROA in the second and third factor, and negative in the rest.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Latent Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Cash Flows</td>
<td>0.802</td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.575</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.137</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>-0.084</td>
</tr>
<tr>
<td>ROA</td>
<td><strong>0.728</strong></td>
</tr>
</tbody>
</table>

5.2.1.2 The Effect of Cash Flows on ROE

In determining the effects of cash flows on financial performance—ROE, as a new model it was verified against the underlying assumptions of the PLS regression. Regarding the assumption of random distribution of residuals, and constant variance, Figure 5.4 exhibits the residuals versus fit graph plot. Ideally, for satisfaction of this assumption in the prediction process, the points on the graph are expected to be randomly distributed on both sides of the x-axis, without recognizable pattern of points in the graph plot. Thus, the residual versus fit graph plot is consistent with the narrated rule of thumb, such that the residuals are randomly distributed with constant variance.
Figure 5.4 Residual versus Fit plot (Cash flows and ROE)

Notwithstanding, the model was tested on how well it fits and predicts each score using a scatter plot of fitted scores against actual responses. As a rule of thumb, the model to adequately fits and predicts the data well, non-linear pattern is not expected in the points on the graph plot. Being the case, Figure 5.5 justify that the model considered in this study fitted and predicted the data well, as linear pattern is observed in the points, moving from bottom left hand towards upper right hand.
On the other hand, Figure 5.6 exhibits that outliers and leverages observation are not a serious concern to jeopardize the process of determining the effect of cash flows on the firms’ ROE. This is necessarily the case as at most two of observations with standardized residuals (outliers) are outside the x-axis reference line; and less than three leverage values lying outside the y-axis reference line.
Figure 5.6: Residuals versus Leverage (Cash flow and ROE)

Regarding the PLS regression results on the effect of cash flows on non-listed financial firms’ ROE, Proportion of variance explained, VIP, parameters, and association tables are were developed. Table 5.4 reveals that in the first latent factor, explains 43.3% of the variance in the explanatory variables, and 0.6% in the dependent variable; the second factor explains 17.4% of variance in explanatory variables, and 1.4% in the dependent variable; whereas, the third factor explains 0.2% in the dependent variable, and 39.1% in predictors. In total, the first three factors explain 99.9% of variance in predictors, and 7.6% in dependent variable. However, in the fourth factor model very little of the variance is explained in predictors and dependent variables.
Table 5.4: Proportion of Variance Explained (Cash flows and ROE)

<table>
<thead>
<tr>
<th>Latent Factors</th>
<th>Statistics</th>
<th></th>
<th></th>
<th>Cumulative Y Variance (R-square)</th>
<th>Adjusted R-square</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X Variance</td>
<td>Cumulative X Variance</td>
<td>Y Variance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.434</td>
<td>0.434</td>
<td>0.060</td>
<td>0.060</td>
<td>0.051</td>
</tr>
<tr>
<td>2</td>
<td>0.174</td>
<td>0.608</td>
<td>0.014</td>
<td>0.074</td>
<td>0.057</td>
</tr>
<tr>
<td>3</td>
<td>0.391</td>
<td>0.999</td>
<td>0.002</td>
<td>0.076</td>
<td>0.051</td>
</tr>
<tr>
<td>4</td>
<td>0.001</td>
<td>1.000</td>
<td>5.819E-5</td>
<td>0.076</td>
<td>0.043</td>
</tr>
</tbody>
</table>

Regarding the importance of variables in all four factors model, Table 5.5 exhibits that cash flows is the highest important variables in its effects on the financial performance—ROE of non-financial firms listed in DSE. Cash flows turn out to be the highest predictor in first two factors (1.559) followed by a slightly decrease in the next two factors (1.540); yet bearing the highest coefficient (3.934) compared to other predictors. Next follows leverage in the manner of importance, being the highest in last latent factors (0.961) then in the second factor (0.923) and 0.815 in the first, yet leverage is the second variable with large estimated coefficient (0.315). Firm size is the next highest in the manner of its importance in predicting ROE (0.8 in the first factor), 0.746 in the second, and 0.744 in the last two latent factors. Investment opportunities is the variable with the lowest importance in predicting ROE of non-financial firms listed in DSE, despite being the third predictor with large coefficient (0.242).

Table 5.5: VIP-cum-Parameters (Cash flows and ROE)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Latent Factors</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>-4.129</td>
</tr>
<tr>
<td>Cash Flows</td>
<td>1.559</td>
<td>3.934</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.815</td>
<td>0.315</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.800</td>
<td>-0.040</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.514</td>
<td>0.242</td>
</tr>
</tbody>
</table>

Eventually, Table 5.6 reveals that there is a positive relationship between the dependent variable—ROE and all predictors in the first latent factor except leverage.
However, cash flow is having more association with ROE (0.780) followed by firm size (0.400) and then investment opportunities (0.257), while leverage is a very less relationship with ROE. In the second latent factor, all predictors have a positive association with ROE except for firm size; in which cash flows is having the strongest association with ROE (0.778) followed by Leverage (0.641) then investment opportunities (0.012). Hitherto, a very less relationship exists between firm size and ROE compared to other explanatory variables. In the third factor, there is a positive association between ROE and all other predictors, leverage having the more relationship (0.919) followed by investment opportunities (0.702), firm size (0.338), and cash flows (0.313). Finally, investment opportunities are having a positive and more association with ROE (0.677), whereas, the rest of the predictors have less association with ROE, all being negative excepts for cash flows.

Table 5.6: Weights (Cash flows and ROE)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Latent Factors 1</th>
<th>Latent Factors 2</th>
<th>Latent Factors 3</th>
<th>Latent Factors 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Flows</td>
<td>0.780</td>
<td>0.778</td>
<td>0.313</td>
<td>0.004</td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.407</td>
<td>0.641</td>
<td>0.919</td>
<td>-0.249</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.400</td>
<td>-0.224</td>
<td>0.338</td>
<td>-0.692</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.257</td>
<td>0.012</td>
<td>0.702</td>
<td>0.677</td>
</tr>
<tr>
<td>ROE</td>
<td>0.191</td>
<td>0.176</td>
<td>0.037</td>
<td>0.109</td>
</tr>
</tbody>
</table>

5.2.2 The Effect of Liquid Asset Substitutes on Financial Performance

Similar to the determination of the effect of cash flows on the financial performance of non-financial firms listed in DSE, examination of liquid asset substitutes’ effect on financial performance will disintegrated into ROA and ROE.

5.2.2.1 The Effect of Liquid Asset Substitutes on ROA

As another separate model, assumptions associated with PLS-regression was tested prior to results presentation. The assumption covers for random distribution of residuals and constant variance, model goodness-of-fit, and presence of outliers and leverage points. Figure 5.7 is the residual versus Fit graph plot narrating whether the residuals are randomly distributed with fixed variance. Therefore, the distribution of
points in the graph plot implies that there is a random distribution of residuals, yet constant variance, as the points are distributed randomly on both side of 0 in unrecognized pattern of points.

**Figure 5.7: Residuals versus Fits Plot (Liquid Asset Substitutes and ROA)**

Regarding the goodness-of-fit of the model, points in the graph plot exhibited in Figure 5.8 are observed to move in the linear patterns from bottom left corner towards top right corner implying that the model fits well, and adequately fit the data. On the other hand, the model was tested for the presence of outliers and leverage points. Figure 5.9 depicts only two points in the graph plot to be outside vertical reference line (as leverage points); while at most two points outside the horizontal reference line (as outliers). The graph plot of residuals against leverage implies that the adverse impact of outliers and leverage points in the prediction process is not a serious concern.
Figure 5.8: Response plot (Liquid Asset Substitutes and ROA)

Figure 5.9: Residual versus leverage plot (Liquid Asset Substitutes and ROA)
Table 5.7 on the other hand, presents the proportion of variance in both explanatory variables and dependent variables at four different latent factors. The findings reveal that, 34.3% and 51.5% of variance is explained in the predictors and dependent variable in the first latent factor respectively. Also 49.3% of variance is explained in the predictors in the second factor, while 3.3% in dependent variables. In the third factor 16.2% of the variance is explained in the explanatory variables, and none in the dependent variable; yet very minimal amount of variance is explained in both variables in the fourth latent factors. Together, 99.8% and 54.8% of the variance in the first three latent factors is explained in the predictors and dependent variable respectively.

Table 5.7: Explained Variance Proportion (Liquid Asset Substitutes and ROA)

<table>
<thead>
<tr>
<th>Latent Factors</th>
<th>Statistics</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X Variance</td>
<td>Cumulative X Variance</td>
<td>Y Variance</td>
<td>Cumulative Y Variance (R-square)</td>
</tr>
<tr>
<td>1</td>
<td>0.343</td>
<td>0.343</td>
<td>0.515</td>
<td>0.515</td>
</tr>
<tr>
<td>2</td>
<td>0.493</td>
<td>0.836</td>
<td>0.033</td>
<td>0.548</td>
</tr>
<tr>
<td>3</td>
<td>0.162</td>
<td>0.998</td>
<td>0.000</td>
<td>0.548</td>
</tr>
<tr>
<td>4</td>
<td>0.002</td>
<td>1.000</td>
<td>0.009</td>
<td>0.557</td>
</tr>
</tbody>
</table>

Concerning the importance of each explanatory variable in predicting the dependent variables, and parameters, Table 5.8 shows that, leverage has the importance in predicting ROA in all of the latent factors, yet large number of coefficients of estimation (0.156) compared to the rest of the factors. Liquid asset substitute is the next importance predictors in estimating ROA in the first factor (0.862), followed by the third factor (0.839), then second factor (0.838) and the fourth factor (0.832). Firm size is the next important variable in predicting ROA in the fourth latent factor (0.520), decreasing as the factors draws back to the first factor. Lastly, investment opportunities decrease in term of importance from the fourth to the first factor, marking a coefficient of 0.139.
Table 5.8: VIP-cum-Parameters (Liquid Asset Substitutes and ROA)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Latent Factors</th>
<th>Parameters</th>
<th>ROA as DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td>0.430</td>
</tr>
<tr>
<td>Liquid Asset Substitutes</td>
<td>0.862 0.838 0.839 0.832</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>Leverage</td>
<td>1.738 1.700 1.699 1.687</td>
<td>-0.156</td>
<td></td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.414 0.481 0.481 0.520</td>
<td>0.123</td>
<td></td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.255 0.449 0.449 0.488</td>
<td>-0.139</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.9 exhibits the association between predictors and the dependent variable. In the first latent factor liquid asset substitutes and firm size have a positive relationship with ROA, while exist a negative relationship between leverage and investment opportunities, and ROA. Except for investment opportunities, all other predictors have a positive relationship with ROA in the third factor; while exist a negative association between all predictors and ROA in the second latent factor. Finally, only leverage and firm size have a positive relationship with ROA while the rest of the predictors relate otherwise.

Table 5.9: Weights (Liquid Asset Substitutes and ROA)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Latent Factors</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Asset Substitutes</td>
<td>0.431 -0.133 0.730 -0.016</td>
<td></td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.869 -0.447 0.440 0.288</td>
<td></td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.207 -0.544 0.086 0.808</td>
<td></td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>-0.127 -0.766 -0.518 -0.782</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.642 0.129 0.027 1.177</td>
<td></td>
</tr>
</tbody>
</table>

5.2.2.2 The Effect of Liquid Asset substitutes on ROE

Initially, the assumptions underlying PLS regression in determining the effect of liquid asset substitute on financial performance ROE is verified through graph plots. Figure 5.10 presents a residual versus fit graph plot narrating that the residuals are randomly distributed with a constant variance. This is necessarily the case when the
points in the graph plots are randomly scattered on both side of 0 (x-axis) in unrecognizable patterns.

**Figure 5.10: Residual versus Fit (Liquid Asset Substitutes and ROE)**

Despite the points dominating below 0.5, Figure 5.11 literally exhibits a linear pattern among the points in the graph plot; the points tend to move from the bottom left corner towards top right corner implying that the model adequately fits and predicts well the data.
Figure 5.11: Response Plot (Liquid Asset Substitutes and ROE)

Also, Figure 5.12 exhibits the presence of outliers and leverage points through residual versus leverage graph plot. In the graph plot, at most one point is identified as a leverage point as it lies outside the vertical reference line, and none of the points outside the horizontal reference line. The pattern of the points in the graph plot indicates the absence of adverse impact of outliers and leverage points in determining the effects of liquid asset substitutes on ROE.
The subsequent explanation presents the results of each predictor and its effect on ROE by reviewing the variance proportion explained; variable importance, coefficient of estimation, and association of each explanatory variable in predicting ROE. Table 5.10 exhibits that; the first three latent factors collectively explain 99.9% of variance in predictors, and only 2.8% in the dependent variable. Separately, the one factor model explains 52.4% of the variance in the predictors, and 2.6% in the dependent variable; in the second 0.3% of the variance is explained in the dependent variable, and 31.2% in the explanatory variables. Also, the third factor explains 16.2% of the variance in the explanatory variables, and very little in the dependent variable. Hitherto, very little of the variance is explained in both variables through the fourth latent factor.
Table 5.10: Variance Proportion Explained (Liquid Asset Substitute and ROE)

<table>
<thead>
<tr>
<th>Latent Factors</th>
<th>X Variance</th>
<th>Cumulative X Variance</th>
<th>Y Variance</th>
<th>Cumulative Y Variance (R-square)</th>
<th>Adjusted R-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.524</td>
<td>0.524</td>
<td>0.026</td>
<td>0.026</td>
<td>0.017</td>
</tr>
<tr>
<td>2</td>
<td>0.312</td>
<td>0.837</td>
<td>0.003</td>
<td>0.028</td>
<td>0.011</td>
</tr>
<tr>
<td>3</td>
<td>0.162</td>
<td>0.999</td>
<td>2.707E-6</td>
<td>0.028</td>
<td>0.002</td>
</tr>
<tr>
<td>4</td>
<td>0.001</td>
<td>1.000</td>
<td>1.152E-5</td>
<td>0.028</td>
<td>-0.007</td>
</tr>
</tbody>
</table>

On the other hand, the findings reveal the importance of each predictor in predicting ROE. Table 5.11 narrates that; leverage and firm size are the predictors with the highest importance in predicting ROE compared to other predictors. Thus, in the first latent factor, leverage is highly important (1.130) followed by firm size (1.111) bearing coefficient values of 0.883 and 0.083 respectively. Also, leverage is highly important from the second to fourth factors with a constant value of 1.201; likewise, for firm size at a fixed value of 1.065. The next in term of importance is liquid asset substitutes (0.990) in the first factor, and constantly at 0.945 in the rest of the factor having a coefficient of 0.008; whereas, investment opportunities comes last being highly important in the second to fourth latent factors at 0.745 constantly, and 0.713 in the first factor, having a coefficient of 1.381.

Table 5.11: VIP-cum-Parameters (Liquid Asset Substitutes and ROE)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Latent Factors</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td>-1.381</td>
</tr>
<tr>
<td>Liquid Asset Substitutes</td>
<td>0.990</td>
<td>0.945</td>
</tr>
<tr>
<td>Leverage</td>
<td>1.130</td>
<td>1.201</td>
</tr>
<tr>
<td>Firm Size</td>
<td>1.111</td>
<td>1.065</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.713</td>
<td>0.745</td>
</tr>
</tbody>
</table>

Eventually, Table 5.12 presents the association between predictors and ROE in four different latent factors. The findings in the first latent factor exhibit the presence of positive relationship between all predictors and ROE, except for leverage. Oppositely in the second factor, all the explanatory variables have a negative association with
ROE except for liquid asset substitutes. Nevertheless, in the third factor, firm size and investment opportunities have a positive association with ROE, while liquid asset substitutes and leverage have negative. Yet, in the last factor, exist a negative relationship between leverage and firm size, and ROE while have both liquid asset substitutes and investment opportunities are bearing a positive association with ROE.

**Table 5.12: Weights (Liquid Asset Substitutes and ROE)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Asset Substitutes</td>
<td>0.495</td>
<td>0.068</td>
<td>-0.849</td>
<td>0.011</td>
</tr>
<tr>
<td>Leverage</td>
<td>-0.565</td>
<td>-0.879</td>
<td>-0.338</td>
<td>-0.253</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.555</td>
<td>-0.179</td>
<td>0.193</td>
<td>-0.707</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.357</td>
<td>-0.504</td>
<td>0.358</td>
<td>0.686</td>
</tr>
<tr>
<td>ROE</td>
<td>0.114</td>
<td>0.045</td>
<td>0.002</td>
<td>0.048</td>
</tr>
</tbody>
</table>

5.2.3 Regression Analysis Results

This section is ought to provide the results of the regression analysis and its implication on the study objectives.

**Table 5.13: Regression Analysis Results (Cash Flows vs ROA & ROE)**

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>DV</th>
<th>Coefficient</th>
<th>Sign (ROA)</th>
<th>Coefficient</th>
<th>Sing (ROE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Flows</td>
<td></td>
<td>0.929</td>
<td>+</td>
<td>3.934</td>
<td>+</td>
</tr>
<tr>
<td>Leverage</td>
<td></td>
<td>0.139</td>
<td>+</td>
<td>0.315</td>
<td>-</td>
</tr>
<tr>
<td>Firm Size</td>
<td></td>
<td>0.119</td>
<td>+</td>
<td>0.040</td>
<td>+</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td></td>
<td>0.111</td>
<td>-</td>
<td>0.242</td>
<td>+</td>
</tr>
</tbody>
</table>
Regression Analysis Results (Liquid Asset Substitutes vs ROA & ROE)

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>DV Coefficient</th>
<th>Sign (ROA)</th>
<th>DV Coefficient</th>
<th>Sign (ROE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Assets Substitutes</td>
<td>0.003</td>
<td>+</td>
<td>0.008</td>
<td>+</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.156</td>
<td>-</td>
<td>0.883</td>
<td>-</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.123</td>
<td>+</td>
<td>0.083</td>
<td>+</td>
</tr>
<tr>
<td>Investment Opportunities</td>
<td>0.139</td>
<td>-</td>
<td>1.381</td>
<td>+</td>
</tr>
</tbody>
</table>

From the table 5.13 both cash flows, firm size and liquid asset substitutes have positive signs, meaning that; have positive effects on the financial performance when measured against ROA and ROE. While Leverage has a negative sign when measured by ROE and positive sign when measured by ROA in the first modal (cash flows against ROA). Meaning that have negative effect on the financial performance when measured by ROE and positive when measured by ROA. Investment opportunities have positive sign when measured by ROE and negative when measured by ROA, implying that have positive effect on financial performance when measured against ROE and negative effect when measured against ROA.

In a nutshell, the preceding explanation represents the presentation of the findings obtaining following a PLS regression analysis carried on the quantitative data collected from secondary source. However, the meaning, and implications behind the findings, and the discussion in general is presented in the subsequent section.

5.3 Discussion of the Findings

This section is ought to provide the meaning, and implications of the results in the same manner they were presented in the preceding sections. Yet, arguments in comparison to prior studies will be taken into account as well.

5.3.1 The Effect of Cash Flows on Financial Performance

The discussion regarding the effect of cash flows on the financial performance of non-financial firms listed in DSE is disintegrated into two parts, being cash flows against ROA, and against ROE.
5.3.1.1 The Effect of Cash Flows on ROA

The discussion regarding the effect of cash flows and control variables on financial performance measured as ROA is presented individually in the subsequent explanations with reference Table 5.2 and Table 5.3.

Cash Flows and ROA

Cash flows is the highest important predictors of ROA compared to other control variables. Bearing a coefficient of 0.929 and positive association with ROA it implies that, cash flows and ROA are moving in the same direction at a magnitude of 0.929. The findings further imply that, a unit increase in the flow of cash will increase the performance of firms—ROA by 0.929, and vice versa, other things being equal. Nevertheless, cash flows exhibited a positive sign as expected, implying a positive effect on ROA, allowing the acceptance of alternative hypothesis and rejection of null hypothesis such that cash flows have a negative effect on the financial performance-ROA of non-financial firms listed in DSE. These findings supports the argument made by Trade-off theory, and are consistent with the findings of prior studies (See, Abioro, 2013; Debadatta, 2017; Muddessar, 2017; Naoki, 2012), yet inconsistent with other studies of Aiyegbusi and Akilo (2016) and Sharifi et al (2013) which are in line with The Pecking order theory.

Leverage and ROA

Unexpectedly, leverage exhibited a positive sign with a coefficient of 0.139; implying that leverage has a positive effect on ROA. The findings further imply that increase in the ratio of total debt to total assets will increase the return on assets of the non-financial firm at the magnitude of 0.139, and vice versa, other things being constant. The findings allow the rejection of alternative hypothesis and acceptance of null hypothesis such that leverage has a positive effect on financial performance--ROA of non-financial firms listed in DSE. Hitherto, the results concerning leverage are in line with previous studies by Nhan and Ha (2016) yet criticizing the findings of Cheryta et al (2017).
Firm Size and ROA

Firm size on the other hand, has a positive effect on the financial performance—ROA as expected, and by bearing a coefficient of 0.119 it implies that a unit increase in firm size (measured as natural logarithm of total assets) will increase the return on asset of non-financial firms listed in DSE at a magnitude of 0.119, holding all other factor fixed. These findings support the findings of other previous studies by Nhan and Ha (2016) and disagree with those Aiyegbusi and Akilo (2016) and Cheryta et al (2017). Therefore, the study accepts the alternative hypothesis and rejects the null hypothesis such that firm size has a negative effect on financial performance (measured as ROA) of non-financial firms listed in DSE, Tanzania.

Investment Opportunities and ROA

Unexpectedly, investment has a negative effect on financial performance—ROA at a magnitude of 0.111, implying that, under ceteris paribus, a unit increase in the amount of investment made by firm will decrease the return on asset of a particular firm by 0.111, and vice versa. These findings are consistent with prior studies by Aiyegbusi and Akilo (2016); yet, implies the rejection of alternative hypothesis, and acceptance of null hypothesis that investment opportunities has a negative effect on financial performance—ROA of listed non-financial firms.

5.3.1.2 The Effect of Cash Flows on ROE

The discussion regarding the effect of cash flows and control variables on financial performance measured as ROE is presented individually in the subsequent explanations with reference Table 5.5 and Table 5.6.

Cash Flows and ROE

Cash flows has a positive effect on the financial performance measured in terms of ROE as expected, implying that holding other factors fixed, a unit increase in cash flows will increase the return on equity of the listed non-financial firm at the magnitude of 3.934 and vice-versa. Furthermore, the findings require the acceptance of alternative hypothesis, and rejection of null hypothesis that cash flows has a negative effect on financial performance—ROE. The findings of the current study
regarding cash flows effect on ROE is similar to various previous studies (See, Abushammala & Sulaiman, 2014; Afrifa & Tingbani, 2017, Amahulu & Ezechukwu, 2017) yet inconsistent with the conclusion made by Nhan and Ha (2016) and Nwarogu and Iormbagah (2017) such that cash flows affects firm performance negatively.

**Leverage and ROE**

As expected, leverage exhibit to have a negative effect on financial performance measured in terms of ROE, implying that, with other factors fixed, unit increase in the debt to assets ratio will result to a decrease in the return on equity by 0.315 and vice versa. Alternatively, the results show that leverage and ROE moves in opposite direction, allowing the rejection of null hypothesis that leverage has a positive effect on financial performance of listed non-financial firms. The findings are consistent with the argument by Debadatta (2017) and Cheryta et al (2017) while disagreeing with previous studies that leverage has a positive effect on ROE (Nhan & Ha, 201).

**Firm size and ROE**

Firm size and ROE also exhibited a positive relationship as expected implying that, under ceteris paribus, a unit increase in firm size measured as a natural logarithm of total assets, will ultimately increase firm’s return on equity at a magnitude of 0.040, and vice versa. These results are similar to other previous studies by Muddessar (2017) and Nhan and Ha (2016); yet inconsistent with other previous studies by Nwarogu and Iormbagah (2017) and Aiyegbusi and Akilo (2016). There findings further reflect the rejection of null hypothesis that firm size has a negative effect on the financial performance of listed non-financial firms.

**Investment Opportunities and ROE**

Investment opportunities also revealed a positive effect on the financial performance of firms measured as ROE with an estimated coefficient of 0.242. Such findings allow the rejection of null hypothesis that investment opportunities have a negative effect on the financial performance of listed non-financial firms in Tanzania. Being consistent with the findings by Abushammala & Sulaiman (2014) and Amahulu and Ezechukwu (2017) the finding oof the current study implies that a unit increase in
investment opportunities by the firm, will ultimately increase it return on equity by 0.242 and likewise; holding other factors equal. However, the findings oppose the conclusion made by Aiyegbusi and Akilo (2016) that investment opportunities affects return on assets in a negative manner.

5.3.2 The Effect of Liquid Asset Substitutes on Financial Performance

The discussion regarding the effect of liquid asset substitutes on the financial performance of non-financial firms listed in DSE is disintegrated into two parts, being liquid asset substitutes against ROA, and against ROE; taking into account of control variables.

5.3.2.1 The Effect of Liquid Asset Substitutes on ROA

The discussion regarding the effect of liquid asset substitutes and control variables on financial performance measured as ROA is presented individually in the subsequent explanations with reference Table 5.8 and Table 5.9.

Liquid Asset Substitutes and ROA

Liquid asset substitutes have a highest importance in predicting ROA, with an estimated coefficient of 0.003. Liquid asset substitutes have a positive effect on return on asset of listed non-financial firms as expected, allowing the rejection of null hypothesis that it has a negative effect on financial performance. The findings further imply that, with other variables fixed, a unit increase in liquid asset substitutes will in return increase the return on assets of firms by 0.003 and likewise. These findings support the conclusion made by prior studies (See, Abioro, 20013; Abushammala & Sulaiman, 2014; Debadatta, 2017) that liquid asset substitutes positive affect return on assets of firms. However, these findings are inconsistent with the conclusion made by Zhang and Ling (2015) and Nwarogu and Iormbagah (2017).

Leverage and ROA
Leverage has a negative effect on return on asset as expected bearing a coefficient of 0.156, allowing the rejection of null hypothesis that it has a positive effect on financial performance of listed non-financial firms. The results further imply that, other factors being equal, a unit increase in debt to total assets ratio by the firm will lead to an increase in return on asset of that particular firm by 0.156, and vice versa. This finding is consistent with prior study by Cheryta et al (2017) yet does not support the argument by Nhan and Ha (2016) that firms are likely to boost up their return on assets by increasing their leverage level.

**Firm size and ROA**

Also, firm size and return on asset have a positive relationship as expected bearing an estimated coefficient of 0.123; implying the rejection of null hypothesis that stress on the negative association between the two variables. The results alternatively imply that, firm size has a positive effect on return on asset, such that a unit increase in firm size will boost up firms’ return on asset at a magnitude of 0.123 and vice versa, keeping all other factor fixed. As a matter of fact, the conclusion of previous study by Nhaan and Ha (2016) is consistent with the findings of the current study, however, criticized by previous studies (See, Aiyegbusi & Akilo, 2016; Nwarogu & Ioembagah, 2017) claiming that firm size affect negatively the financial performance of firms.

**Investment Opportunities and ROA**

Unlikely, investment opportunities and return on asset were found to have a negative association with an estimated coefficient of 0.139 exerting the acceptance of null hypothesis that investment opportunities have a negative effect on the financial performance of listed non-financial firms in Tanzania. The results further imply that return on assets of a particular listed non-financial firm will decrease by 0.139 following a unit increase in the amount of investment opportunities, under ceteris paribus. The findings are in line with the argument by Aiyegbusi and Akilo (2016) and Cheryta et al (2017); however, criticizing the findings of Afrifa and Tingbbani (2017) such that increase in investment opportunities will accelerate the financial performance of a firm in positive manner.
5.3.2.2 The Effect of Liquid Asset Substitutes on ROE

The discussion regarding the effect of liquid asset substitutes and control variables on financial performance measured as ROE is presented individually in the subsequent explanations with reference Table 5.11 and Table 5.12.

Liquid Asset Substitutes and ROE

Referring to Table 5.11 and Table 5.12, liquid asset substitutes is highly important in predict ROE in the one-factor model compared to other variables, and despite of bearing a least coefficient of 0.008. Thus, unexpectedly, liquid asset substitutes and ROE are positively associated, implying that return on equity is affected positively by liquid asset substitutes. It further implies that, a firm will increase it return on equity by 0.008 following a unit increase in liquid asset substitutes and vice versa, other things remain fixed. Alternatively, these findings allow the acceptance of null hypothesis and rejection of alternative hypothesis such that liquid asset substitute has a negative effect on the financial performance of listed non-financial firms in Tanzania. These results are in line with Amahulu and Ezechukwu (2017), Abushammala and Sulaiman (2014), and Zhang and Ling (2015) while inconsistent with the findings of Sharifi et al (2013).

Leverage and ROE

Expectedly, leverage exhibit to have a negative effect on financial performance using ROE as a proxy, implying that, with other factors held constant, unit increase in the debt to assets ratio will result to a decrease in the return on equity by 0.883 and vice versa. Alternatively, the results shows that leverage and ROE moves in opposite direction, implying the rejection of null hypothesis that leverage has a positive effect on financial performance of listed non-financial firms. The findings are consistent with the argument by Debadatta (2017) and Cheryta et al (2017) while disagreeing with previous studies that leverage affect return on equity in the positive manner (Nhan & Ha, 201).
Firm size and ROE

On the other hand, Firm size and return on equity also exhibited a positive association as expected implying that, holding other factor the same, a unit increase in firm size proxied as a natural logarithm of total assets, will result to an increase in firm’s return on equity by 0.083, and vice versa. These findings support the argument made by previous studies [See, Muddessar, 2017; Nhan & Ha, 2016]; yet, inconsistent with other prior studies by Aiyegbusi and Akilo (2016) and Nwarogu and Iormbagah (2017). The findings further reflects the acceptance of alternative hypothesis, and rejection of null hypothesis stressing that the size of the firm has a negative effect on the financial performance of listed non-financial firms.

Investment Opportunities and ROE

Lastly, Investment opportunities also has a positive effect on the financial performance of firms proxied as ROE, bearing an estimated coefficient of 1.381. These findings reflects the rejection of null hypothesis that investment opportunities have a negative effect on the financial performance of listed non-financial firms in Tanzania. Being consistent with the findings by Abushammala & Sulaiman (2014) and Amahulu and Ezechukwu (2017) the finding of the current study implies that a unit increase in investment opportunities by the firm, will ultimately increase it return on equity at a magnitude of 1.381 under ceteris paribus and vice versa. Hitherto, the findings criticize the conclusion made by Aiyegbusi and Akilo (2016) that investment opportunities affects return on assets in a negative manner.

In the presence of control variables, both cash flows and liquid asset substitutes affect positively the financial performance of listed non-financial firms in DSE in terms of both ROA and ROE. Being the case, it can be generalized that cash holding affects the financial performance of non-financial firms listed in DSE in a positive manner. This argument favors the thoughts of trade-off theory, such that firms needs to hold cash to safeguard itself during financial difficulties yet allow them to invest the retained optimal level of cash to finance it profitable projects that will ultimately boost their financial performance. Hitherto, it is inconsistence with thoughts stressed by the pecking order theory, such that to accelerate performance firms should not entertain
cash holding, rather cash generated from operations should be used in order to escape the expenses and risky associated with external financing.
CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter gives the summary of the current study and conclusion on the findings narrated in the preceding chapters. It further narrates the policy implication associated with the findings; limitation of the study, and suggested area for further studies.

6.2 Summary

Cash is the most fundamental item to every organization for a smooth running of its business operations. However, controversy still prevails between schools of thoughts on how cash holding is likely to affect the financial performance of firms. On one side of the coin, some school of thoughts—Trade-off theory stresses on the positive effect inflicted by cash holding on the financial performance of firms; whereas, on the other side The pecking order theory—school of thoughts stresses on inexistence to optimal level of cash to be retained for future running of business operation. Being the case, this study aimed to examine the effect of cash holdings on the financial performance of non-financial firms listed in DSE, Tanzania. Specifically, it stressed on the effect of cash flows and liquid asset substitutes on firm’s financial performance in the presence of control variable—leverage, firm size, and investment opportunities.

To achieve the intended objectives, the current study employed a quantitative research design, specifically a non-experimental design through a descriptive approach to study 9 purposively selected listed non-financial firms for 13 years marking 117 observations. The study employed a quantitative method of analysis aided by PLS-Regression to analyze the secondary data collected through document review of respective firms’ financial statements.

The results generated by PLS-regression reveals that both cash flows, and liquid asset substitutes affect positively the financial performance of non-listed financial firm when measured by both ROA and ROE. Regarding the control variables, leverage exhibited to affect negatively the financial performance of listed non-financial firms, except in the first model where the effect of cash flow is examined against ROA. Firms
size on the other hand, affects the financial performance positively regardless of the proxy employed on performance; yet, investment opportunities portrays to have a positive effect when measured against ROE, and negative against ROA.

6.3 Conclusion

Conclusively, cash holding affects the financial performance of non-financial firms listed in DSE in a positive manner. This is considered to be the case as both cash flows and liquid asset substitutes which are the indicator of cash holding, affect positively the financial performance of listed non-financial firms in DSE in terms of both ROA and ROE in the presence of control variables. The findings of the current study supports trade-off theory- School of thoughts which stresses especially during financial difficulties, firms needs to hold cash to safeguard itself and by doing so, they used optimal level of cash held to service their profitable projects that will ultimately increases their financial performance. On the other hand, the findings are against the pecking order theory- School of thoughts that stresses that optimal cash level invites expenses and risks associated with external finance, thus, prior to seeking external fund, firms should use the amount of cash generated from operations to avoid the named expenses and risks, and earn return out of its internal financing.

6.4 Recommendations/Practical Implications

Generally, the findings of the current study are essential to both firms with the decision to hold their cash, as well as to those entertaining cash holding. The findings imply that practically firm should reserve cash they generate from their operations to anticipate unforeseen financial difficulties. The study stresses out that it is economical to use external fund to finance their profitable projects and generate desirable returns from such projects. Thus, the projects will service their own obligations, and generate returns which significantly enhance firms’ performance. Notwithstanding, the findings are crucial to firms opting for reinvesting their cash instead of holding; as the findings practically alerting these firms on the importance of reserving an optimal cash level, as the business future is usually uncertain. That being conveyed, the current study has the following recommendations.
i. Firms should reserve an optimal cash level; however, it should be maintained not to be in excess to trigger agency problem. Firms has to anticipate the agency problem by motivate their management through bonus and other incentives prior to cash management decision; ultimately, the management will focus on increasing shareholders’ wealth instead of their own interest.

ii. Ideally, unlike large sized firms that can generate enough cash to internally finance their projects, service debts, declare dividend and yet accumulate cash to anticipate any unforeseen financial difficulties as the come due, small sized one should consider the decision to reserve an optimal cash level as a safe guard during financial difficulties and bankruptcy.

iii. Also, firms handle well their leverage level as the findings portray it to have a negative effect on financial performance of listed non-financial firms. Therefore, any practice to exercise debt to asset ratio beyond its optimal level is more likely to decrease firm’s return in term of both ROA and ROE.

iv. Lastly, firms should consider investing in profitable opportunities that allows them to reserve their optimal cash level, at the same time access and use external finance from capital market, and yet be able to service all obligations that comes with it.

6.5 Limitations of the Study

The narrated valuable outcomes and implications are not free of limitation despite of being valuable. The methodological approach employed constrained the end product of the current study. Initially the study opted for a multiple regression before shifting to PLS-Regression due to high level of multicollinearity among explanatory variables. However, PLS-Regression model gives the relationship among variables in latent factors but fails to reveal the distributional properties of estimates, and yet lacking ability for test statistics. Also, the findings suffer from small sample size; as most of the non-financial are recently listed limiting the number of observations considered in the study. Also, the results and implication of the current study are limited to only two
variables as indicator (cash flows and liquid asset substitutes) for cash holding in relation to financial performance of listed non-financial firms in Tanzania.

6.6 **Recommendation for Further Research**

Reference made to the limitation of the current study; Future study should replicate the current study into other sectors to allow a significant number of observations to be studied. While doing so, they should consider adopting a model that allow test statistics and that provides distributional properties of estimates.
REFERENCES


## APPENDICES

**Dar es Salaam Stock Exchange**

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### Selected Quoted non-financial firms  Dar es Salaam Stock Exchange

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