Research Project
Dalarna University, Master’s in Business Studies
The Effects of International Financial Reporting Standards Adoption on Earnings Management: Evidence from Commercial Banks in Liberia

Authors: Abraham Monah and Osedebamen Okojie
Supervisor: Asif M Huq
Examiner: Klas Sundberg
Course Code: FÖ3043
Subject/main field of study: Business Studies with Accounting/Control
Credits: 15
Date of examination: 30th May 2018

At Dalarna University it is possible to publish the student thesis in full text in DiVA. The publishing is open access, which means the work will be freely accessible to read and download on the internet. This will significantly increase the dissemination and visibility of the student thesis.

Open access is becoming the standard route for spreading scientific and academic information on the internet. Dalarna University recommends that both researchers as well as students publish their work open access.

I give my/we give our consent for full text publishing (freely accessible on the internet, open access):

Yes ☒ 
No ☐
Abstract

**Purpose** - the purpose of this thesis is to investigate earnings management in an emerging economy without market force. We use discretionary loan loss provisions (DLLP) to proxy earnings management, which constitute a material portion of the total accruals in the banking industry. We examine this abnormal behavior in the financial statements prepared under US GAAP and IFRS. Specifically, we try to find the differences in managerial opportunistic behavior that might exist in the two accounting regimes. We also examine the micro economy and regulatory factors that might influence the earnings behavior in the banks.

**Design/method/approach** - This empirical investigation uses an unbalanced panel data of five commercial banks in Liberia for a period of six years, 2010 to 2012 before and 2013 to 2016 after IFRS adoption. The data generated from the audited financial statements of the commercial banks were analyzed with two sample t test and multiple linear regression. We also run robustness check with same statistical procedures to validate the results.

**Findings** - the empirical results show a statistically insignificant difference in earnings management after the adoption of IFRS, which means the introduction of IFRS did not have significant effect on earnings management practices in the banks. Additionally, we found no significant relationship between Liberia GDP growth and DLLP. Finally, we discovered a positive insignificant relationship between the capital adequacy ratio and DLLP as predicted.

**Originality/value** - the result of this thesis advances the understanding of earnings management under US GAAP and IFRS in an emerging economy. As most of the existing literature conducted on earnings management are mainly focused on developed economy with capital market and data from non-financial institutions. This thesis fills a gap in the existing literature by studying managerial discretion in an unusual environment. The results of our findings inform regulators, investors, auditors and standards setters considering IFRS adoption.

**Keywords** - IFRS, US GAAP, Earnings management, discretionary loan loss provisions, Liberia, commercial banks, accrual.

**Paper type** - Research paper
Acknowledgements

Firstly, we would like to thank God Almighty for giving us the strength, knowledge ability and opportunity to undertake this research study and to persevere and complete it satisfactorily. Without his blessing, this achievement would not have been possible.

Secondly, we would like to thank our supervisor Asif M Huq for his guidance and assistance, especially for the tremendous support he rendered to us for the statistical analysis software.

Thirdly, we thank those commercial banks that responded to our email promptly and providing us with the necessary data needed for this master’s thesis.

Additionally, we would like to thank our lecturers during the “Master of Business Studies with an International Focus” in Dalarna University for the tremendous knowledge they impacted on us. This knowledge gave us the foundation we need to embark on this research.

Lastly, we would like to express our gratitude and appreciations to our families, friends and most importantly our parents for the immeasurable support they rendered to us during the period of our study.
# Table of Contents

**INTRODUCTION** ................................................................................................................................. 1
  1.1 BACKGROUND ............................................................................................................................... 1
  1.2 GLOBAL IFRS CONVERGENCE AND LIBERIA ................................................................. 4

**2. THEORETICAL FRAMEWORK** ........................................................................................................... 6
  2.1 AGENT THEORY ........................................................................................................................... 6
  2.2 FAIR VALUE ACCOUNTING ......................................................................................................... 7
  2.3 EARNINGS MANAGEMENT ......................................................................................................... 8

**3. PRIOR STUDY ON EARNINGS MANAGEMENT & HYPOTHESIS DEVELOPMENT** ....................... 11

**4. RESEARCH DESIGN** .......................................................................................................................... 15
  4.1 METHOD OF EARNINGS MANAGEMENT ............................................................................. 18
  4.2 EARNINGS MANAGEMENT RESEARCH APPROACHES .................................................. 19
  4.3 ACCOUNTING FOR LOAN LOSS PROVISIONS ...................................................................... 20
  4.4 EMPIRICAL METHOD ............................................................................................................... 23

**5. RESULTS AND ANALYSIS** ............................................................................................................... 27
  5.1 DATA QUALITY AND ETHICAL CONSIDERATION ............................................................... 27
  5.2 DESCRIPTIVE STATISTICS ........................................................................................................ 27
  5.3 PEARSON CORRELATIONS ........................................................................................................ 29
  5.4 MEAN SAMPLE DIFFERENCES BETWEEN US GAAP AND IFRS .................................... 31
  5.5 EVIDENCE ON THE EFFECT OF IFRS ADOPTION ON EARNINGS MANAGEMENT ....... 32
  5.6 ROBUSTNESS CHECK .............................................................................................................. 34

**6. DISCUSSION** .................................................................................................................................... 37
  6.1 CONCLUSION ............................................................................................................................... 38

**REFERENCE** ......................................................................................................................................... 41

**APPENDIX 1** ....................................................................................................................................... 52

**APPENDIX 2** ......................................................................................................................................... 53
List of Tables

1. Table 1: List of banks operating in Liberia 17
2. Table 2: Loan and advances classification and loan loss provision rate 21
3. Table 3: Multiple regression analysis for model 2 using fixed effect and robust errors 24
4. Table 4: Descriptive statistics for all the variables included in the regression models. 28
5. Table 5: Pearson correlation table of panel data 29
6. Table 6: Two-sample t test equal variable 31
7. Table 7: Two-sample t test for unequal variables 36
8. Table 8: Multiple regression analysis for model 2 using fixed effect and robust errors 33
9. Table 9: Robust two sample t test for equal variables 35
10. Table 10: Robust two sample t test for unequal variables 36
11. Table 11: Multiple regression analysis for model 3 using random effect and robust errors 36
12. Table 12: Hausman test for Random effect and Fixed effect 51

List of Appendix

Appendix 1 50
Appendix 2 51

List of Abbreviations

1. A: Assets
2. CAR: Capital Adequacy Ratio
3. CBL: Central Bank of Liberia
4. DLLPs: Discretionary Loan Loss Provisions
5. EBTP: Earnings Before Taxes and Provision
6. EU: European Union
7. EVD: Ebola Virus Disease
8. FDI: Foreign Direct Investment
9. FVM: Fair Value Measurement

10. FIFO: First In First Out

11. FASB: Financial Accounting Standard Board FASB

12. GAAP: Generally Accepted Accounting Principle

13. GDP: Gross Domestic Product

14. GT: Guarantee Trust

15. HCM: Historical Cost Measurement

16. IPO: Initial Public Offers

17. IASC: International Accounting Standards Committee

18. IAS: International Accounting Standards

19. IFRS: International Financial Reporting Standards

20. IASB: International Accounting Standard Board

21. LICPA: Liberia Institute of Certified Public Accountant

22. LIFO: Last In First Out

23. LLPs: Loan Loss Provisions

24. LBDI: Liberia Bank for Development and Investment

25. PPE: Property Plant and Equipment

26. NBL: National Bank of Liberia

27. NDA: Non-Discretionary Accruals

28. n.d: No Date

29. OLEM: Other Loans Especially Mentioned

30. UK: United Kingdom

31. US: United States

32. US-GAAP: United States General Acceptable Accounting Principle
Introduction

This section discusses the background of the thesis, research gap and the aim of the research.

1.1 Background

In 1973, Accounting bodies of 10 countries including (Australia, Canada, France, Germany, Ireland, Japan, Mexico, Netherlands, United Kingdom and the United States) established the International Accounting Standards Committee (IASC) with the broad objective of formulating an international accounting standard (IAS). Before the replacement of IASC, the body has issued 26 generic international accounting standards. However, because of the absence of independence constituent and technical expertise, the body was replaced on the 1st of April 2001 with International Accounting Standards Board (IASB). The primary objective was to create international accounting standards, globally. Here, begins a new era of international financial reporting. The structure of the newly formed international accounting body was changed with the creation of a well-focused sub bodies with well-focused responsibilities and the objective was also changed from harmonization to convergence or global standard setting (Doupnik & Perera 2012).

Proponents of IFRS argue that there are several advantages of the convergence of international accounting standards. Firstly, they argue that convergence to IFRS enhances the comparability and quality of financial statements across difference nations, which makes it much easier for investors to evaluate potential foreign investments. Secondly, they assert that single accounting standard makes it much easier to make informed economic decision to invest in multinational companies (Doupnik & Perera 2012). Ramos and Castellon (2008) also found that IFRS convergence encourages Foreign Direct Investment (FDI). Thirdly, a global accounting standard reduces the cost of financial reporting for companies listed on foreign stock exchange. Fourthly, a global accounting standard will reduce the cost of preparing consolidated financial statement and simplify the auditing of financial statements (Doupnik & Perera 2012). Finally, with a universal accounting standards staff of multinational companies can be more easily transferred between different nations (Doupnik & Perera 2012).

One of the greatest arguments against the convergence from national standard to IFRS is the numerous economic and political costs of eliminating national standard (Doupnik & Perera 2012). Opponent of IFRS argued that national entitlement will be given away to international bodies with foreign economic influence. They assert that a well-developed capital market
already exists without a universal accounting standard. Convergence to an international standard is unnecessary to have all worldwide companies follow a global standard and adopting to these standards will also be standard overload for these companies (Doupnik & Perera, 2012).

Choi and Levich (1991) propagated that all countries are not on the same stage of economic development and as well have diverse sources of financing. As such, they should have different accounting standard. The cultural differences and diverse systems of government are other arguments against the convergence to a universal accounting standard (Doupnik & Perera 2012). Furthermore, Barth, Landsman and Lang (2008) assert that IFRS standards is not as developed compare to other local accounting standards, especially the US General Acceptable Accounting Principle (US GAAP). They argue further that adopting IFRS to prepare financial statement would avail managers more opportunities to engage in earnings management, given that the generic standard is principles based not rule based. Thus, countries need to consider both pros and cons before replacing local standards with IFRS. While, convergence to IFRS may likely improve the quality of financial statement, it is only a part of determinants of the overall quality of financial statement (Ebaid, 2016). It is possible that accounting quality would differ across nations that adopt the same IFRS standards. Previous literature shows that IFRS, which is principle based, avail managers with the opportunity of using considerable judgment and discretion when treating transactions. Using this discretion depends on reporting incentives, which are designed by institutional structure of a country and differences in enforcement, like economy growth, legal system, financial development, regulatory authority and various market forces (see for example, Collins, Shackelford & Wahlen 1995; Leuz, Nanda & Wysock 2003; Ball, Robin & Wu 2003; Gopalan & Jayaraman 2012; Lemma, Negash & Miilo 2013; Enomoto, Kimura & Yamaguchi 2017 and Elkalla, 2017). Even if IFRS standard as argued can improve accounting quality, there is no guarantee that firms who adopt it, can successfully implement and make the standard operational in their environment, considering the human resources and economic implications.

Most of the literature published on earnings management mainly focused on listed companies in a well-developed economy and the few published research papers always exclude financial institutions from their sample. Also, there are few researches that examine earnings behavior in unlisted companies in an emerging economy and banking industry specifically. Chen, Tang, Jiang and Lin (2010) analyses the effect of IFRS adoption on earnings management in 21,707
firms in EU countries. The findings suggest IFRS adoption reduces the level of earnings management. There are still a lot of research that need to be done in this specific sector. There exists a gap of research studies in emerging economy more especially an economy without a capital market like Liberia, given the fact that a lot of differences that exist between an economy with capital market and an economy without a capital market (Zeghal & Mhedhbi 2006). Therefore, this thesis aims at investigating the differences in earnings management before and after the adoption of IFRS by commercial banks in an emerging economy.

In this thesis we would try to answer the following research questions:

What is the effect of IFRS adoption on earnings management of commercial banks in the absence of market force?
How does micro economic environment, institutions impact on discretionary behavior of managers as expressed by earnings management?

The adoption of IFRS by the banking industry is one of the most significant changes in the financial reporting in Liberia and set the foundation for national adoption of IFRS. Therefore, it is essentials for managers, investors, regulators and other parties that are involved in the financial reporting process to know the impact the adoption would have on earnings management in the commercial banks financial statements. This research will contribute to existing knowledge in several ways. Firstly, this study will be the first to provide empirical evidence on the accounting quality implication of mandatory adoption in a developing economy without a capital market. Secondly, this research will add to existing earnings management research in the banking sector. Additionally, this study will extend on existing literature that has investigated on the impact of changes in accounting rules (Pérez, Salas-Fumas & Saurina 2008) and in internal control regulations (Altamuro & Beatty 2010) on the accounting behavior of banks.

This thesis is organized in seven sections: section 1.2 discusses the convergence of IFRS globally and Liberia specifically. In section 2, we discuss the theoretical framework, where we discuss in detail, the meaning of terminologies used in this thesis. In section 3, we discuss previous literature on earnings management and their findings, then we formulate hypothesis for the study. In section 4, we discuss how we would go about our research, which is the research design. Section 5 shows the empirical results and analysis of the findings and lastly,
in section 6, we discuss our findings, conclusion, limitation and recommendation for future studies.

1.2 Global IFRS convergence and Liberia

In past years, a lot of effort were made by the International Accounting Standard Board (IASB) to harmonize accounting standards globally (Bryce, Ali & Mather 2015). Ultimately, there was a breakthrough in 2005 when the European Union mandated all listed companies in its member’s countries to adopt IFRS (Dayanandan, Donker, Ivanof & Karahan 2016). Since then many countries have switched from local GAAP and embraced the IFRS standards in preparing financial statement.

In 2005, all the firms listed in major capital markets for example, the European countries, South Africa, Hong Kong and Philippine were mandated to adopt IFRS when preparing their consolidated financial statements (Horton, Serafeim & Serafeim, 2013). Presently, more than 140 countries have been said to adopt IFRS (Dayanandan et al., 2016). Prior to adoption, individual countries have invented a set of accounting principles that is unique to their environment to prepare their financial statements, and these set of accounting principles are known as the General Accepted Accounting Principles (Ebaid, 2016).

Like the developed capital markets that adopt IFRS at the early stage. In 2011, the Central Bank of Liberia as part of its mandate issued a prudential regulation, mandating commercial banks to adopt IFRS before December 31st, 2012. This mandate was later postponed to December 31st, 2013 to ensure full compliance by all banking institutions. Previously, commercial banks in Liberia reported their annual financial statement under US GAAP and other reporting guidelines issued by the CBL. The objective of the convergence to IFRS is to produce a high-quality and comparable financial statements, and a roadmap of national convergence to IFRS (Central Bank of Liberia, 2011).

There are three factors that influence developing nations who adopt IFRS according to Zeghal and Mhedhbi (2006), these factors are:

(1) Economic growth
(2) Education level and,
(3) The existence of a capital market and institutional regulation.
Economic conditions are considered a significant determinant of international accounting standards. Countries with high economic growth will require a change in the accounting system to respond to changes in the economic conditions of a more dynamic business environment. It has been established that high economic growth will lead to high-quality accounting standard (Zeghal & Mhedhbi 2006). Liberia has experienced a significant increase in economic growth since 2006. The sustained growth within the economy can be attributed to robust economic reform strategies instituted by the government that led to an increase in Foreign Direct Investment (FDI). The country recorded an economic growth rate of 8.3% in 2012, supported by a strong performance in the extractive industry. However, in 2014/2015 the economy was hit by a major outbreak of the Ebola Virus Disease (EVD) that led to some major investors closing projects and leaving the country. The economy was also affected by the decrease in the prices of primary commodities (iron ore and rubber) exported on the international market. In spite of that, analysts predict that the outlook of the economy still remains favorable (The World Bank, Liberia Overview, n.d.).

Secondly, the adoption of IFRS is a strategic and critical decision that requires a higher level of education and competence for professional accountants. The implementations of IFRS requires professional knowledge of the standards to be able to interpret and then make use of the standards. IFRS requires accountants to exercise professional judgment, as such accountant should be highly qualified and well trained to apply professional judgment and process complex accounting information (Zeghal & Mhedhbi 2006). In a bid to ensure accountants are competent enough to meet up with the challenges of implementing IFRS-based accounting standard the Liberia Institute of Certified Public Accountant (LICPA), the institution saddled with the responsibility of setting up accounting standards has incorporated IFRS into the syllabus of Liberia certified public accountant professional exams, and plans are on the way to be included into the curricula of tertiary institutions in Liberia (Liberia Institute of Certified Public Accountant, Action Plan, 2011).

Lastly, the existence of a capital market is considered as one of the crucial factors in a nation’s economic development because of its role in the allocation of resources across different sectors of the economic and among firms within each industry.

The quality of accounting information plays a key role in the development and efficient functioning of a capital market. The pressures exerted by investors require quality financial information to make the best choices when analyzing investment opportunities. The presence of capital market will require a nation adopting international accounting standards to meet the
demand of investors (Zeghal & Mhedhbi 2006). Liberia presently does not have a domestic capital market of any portfolio investment options, such as a stock exchange. However, the CBL has issued series of regulations for the protection of investors and public depositors in banks. The regulations issued by the CBL demand a high-quality financial statement. As stated by Ball, Kothari and Robin (2000) the quality of a firm financial reporting is determined by its financial reporting incentives resulting from market forces and institutional factors. Financial statements of commercial banks served as important tools used by regulators and supervisors to determine key regulations requirement. The CBL has issued series of regulations that required banks to satisfy specific requirements, many of these regulations are tied to banks accounting data. Regulations issued by the CBL that affects the financial reports of commercial banks are: capital adequacy requirement, required reserves for commercials banks, provision for Loan loss and suspension of interest on non-performing loans and advances, liquidity requirement for banks, and minimum capital requirement and among others (Central Bank of Liberia, Banking and Supervision section, n.d.).

2. Theoretical Framework

In this section we discuss the theoretical framework underpinning earnings management. The section begins by discussing agency theory, followed by fair value accounting and earnings management.

2.1 Agency theory

Predominantly in earnings management literature, agency theory is often used to explain the behavior of earnings in a firm. It is an abstract theory that is often applied in different situations, especially when one party has to checkmate another.

Agency theory can be defined as a “contract under which one or more person's the (principal) engage another person the (agent) to perform some service on their behalf which involves delegating decision making authority to the agent” (Jensen & Meckling, 1976, pg. 308).

The agent (manager) with delegated authority act on behalf of the principal (shareholders) with given incentive, but it often happened that the agent would act opportunistically which deviates from the interest of the principal, this result to agency problem (Jensen & Meckling, 1976). This agency problem occurs due to information symmetry between the agent and the principal, meaning the agent might have access to information that the principal does not have access to because the agent oversees the day to day running of the business. The agent (manager) can
take advantage of this information gap to act in way that is not in the best interest of the principal (shareholders).

One of the ways to curb this information symmetry is through the annual financial statement of the organization. The total level of earnings is a prominent section of the financial statement, in that, it is often used for compensation contracts and to enter debt agreement with potential creditors (Schipper & Vincent, 2003). Nevertheless, earnings should not be an absolute measure of net income because it involves judgment and evaluation of the manager (Scott, 2012). The manager who is the agent has the discretion to determine the level of earnings by using accounting standards, techniques and policies that affect income. For instance, making accounting choice, how to treat loan and advances, research and development, inventories. The manager, using their discretion to make accounting choice would invariably affect the true economy reality of the organization. Therefore, earnings management practice in organization may increase the information symmetry between the agent (manager) and the principal (shareholders) which decrease the quality of financial statement and bridge the contractual agreements between the two parties (Scott, 2012). Effective measures can be taken to reduce the gap, managers can from time to time in agreement with the principal report the activities of the business and involves an independent entity, like the external auditor to checkmate it activities. Additionally, the theory of agency is built on the premises that managers are optimistic. As such, accounting standards gives opportunity for them to overstate the value of an item, which is far from reality. Since they have dominant power to exercise judgment about company's income and expenditure. Fair value restrains manager’s influence and allow market force to determine the true value of an item (Barlev & Haddad 2003).

2.2 Fair Value Accounting

Since the 1980s, standards setters including IASB and FASB have substituted the Historical Cost Measurement (HCM) with the Fair Value Measurement (FVM), as the new basis of measuring assets and liabilities (Hitz, 2007). Entities applying the fair value measurement for the first time will have significant changes in its measurement of asset and liabilities (Chorafas, 2006). The IASB defines fair value measurement or the mark to market value "as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, and willing parties in an arm's-length transaction" (IAS 39, Paragraph 48). There are keys factors that should be taken into consideration when interpreting the fair value concept. The first assumption is that there is a specific hypothetical market price under ideal conditions. Secondly, the parties involved should be knowledgeable, independent and economically rational. The
estimate of fair value measurement follows a three-tier hierarchy. The market prices or market data are the primacy of fair value measurement. However, the item should be regularly trading on a sufficiently liquid market to estimate the market value of the item. If the item is not trading in an active market, the next hierarchy requires considering the market prices of similar items. When such price cannot be established the market value measurement fails, and the fair value can be estimated using internal estimates (Hitz, 2007, p. 326). According to Ball (2016) the fair value of accounting aims to provide high earning qualities that are more informative, more volatile, and more difficult to predict. He added that fair value rules aim to incorporate more timely information about economic gains and losses on securities, derivatives and other transactions in the financial statements and to incorporate more losses impairments on long-term tangible and intangible assets. There are several criticisms of the fair value accounting. Ball (2006) argues that the value relevance can’t be consider the sole criterion for financial reporting. As such fair value measurement includes irrelevant information that negatively affects the contractual outcomes of debt and compensation contracts. Ball (2016) mentioned that information concerning the market value of assets and liabilities could be incorporated in the footnotes to the financial statements without affecting earnings and the balance sheets. However, Laux and Leuz (2009) oppose his arguments that historical cost measurement does not show a true representation of an asset fair value either. They argue that the best measurement of an assets and liabilities should be the market value even if the market is illiquid, and supplementary information on the value of the assets or liabilities provided in the notes to the financial statements.

Laux and Leuz (2009) also added that FVM can stills provides additional disclosure that will include fundamental values of asset or liabilities and there is no empirical evidence that investors will overlook these fundamental values contained in the footnotes and overreact to the market values.

**2.3 Earnings Management**

We begin this section by discussing the importance of company’s earnings. The traditional value of accounting information are the informative values and to monitor management stewardship of a firm. As stated in the agency theory above; the stewardship derives from the contractual agreement between the manager (steward) and shareholders (owner). This contractual agreement requires management to give account to shareholders on the affair of the firm. Accounting information is used by shareholders to access managers’ actions when acting in the interest of shareholders. The traditional role of accounting provides a partial explanation
of the importance of earnings. Accounting information provides investors with information concerning their earnings on investment. Earnings is considered the performance measure by investors to monitors management. Earnings are essential in the decision making process of both internal and external stakeholders. Because of the value attached to earnings, it creates incentives for a manager to manage earnings to arrive at specific outcomes (Ron`en & Yaari, 2008).

There are many definitions by accounting researchers on earnings management. Ronen and Yaari (2008) defines earnings management into three categories. They are the white, gray and black. White earnings management is using flexibility in accounting standards to give management private information on future cash flows. Grey earnings management is a judgment in accounting treatment for either opportunistic or economically efficient reasons, and black earnings management is the use of tricks to misrepresent or reduce the transparency of accounting information. Scott (2003), also define earnings management as manager choices of accounting police to achieve a specific objective.

The following definition is the concluding definition by Healy and Wahlen (1999):

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy & Wahlen, 1999, p.26)

This research will consider the definition by Healy and Wahlen (1999) as the working definition of earnings management.

There are keys aspects of this definition that need additional discussion. Firstly, there are many ways management can exercise professional judgment in financial reporting. For example, a judgment in the estimate of future economic events such as the expected useful lives and salvage value of long-term assets, judgment in the estimation of employee post-employment benefit (pension), judgment in loan loss provisions, provision on bad debts and asset impairments. Management can also choose among acceptable accounting methods for reporting the same transactions, such as using the straight-line or accelerated depreciation methods, or the FIFO, LIFO, or weighted-average inventory valuation methods. In addition, management can exercise
judgment in working capital management (the timing of inventory purchase or shipments and receivable policies) which may affect inventory allocation cost and net revenues.

Secondly, earnings management is created with the objective to mislead stakeholders (or some class of stakeholders) about the firm economic performance. This arise when management believe that (at least some stakeholders) cannot make any changes to earnings. Earnings management also occur if management has access to information that outside stakeholders do not have, a situation like these place stakeholders in a disadvantaged position. In this case, earning management is unlikely to be transparent to outside stakeholders. Managers can also use accounting judgment to make financial reports more informative to users. In this case, managers used accounting choice or estimate to provide more credible and reliable information of the firm's performance. For example, a separation of persistent earnings from one-time shocks earnings to allow financial statements users to distinguish between the two components and enhance the informational values of financial reports (Healy & Wahlen 1999 and Ronen & Yaari 2008). The decision by management to provide more valuable information to financial reports users is not consider as earnings management. Finally, the cost and benefit of management judgment in financial reporting need to be emphasized. The cost includes potential misapplication of resources that give rise to earnings management. As such, earnings management is view as bad because it does not show a true representation of firm financial performance. The benefit of accounting judgment includes providing private and credible information to external stakeholders, to improve decision making in the allocation of resources (Healy & Wahlen, 1999).

Healy and Wahlen (1999) identify three incentives of earnings management, they include capital market expectations and valuation, contracts written concerning accounting numbers and antitrust or other governmental regulations. Earnings figures are important in the stock market valuation and for forecasting a firm's future performances because of the vital role earnings plays in stock market valuation and stock price. It provides incentive for managers to manipulate earnings to influence firm short-term stock prices. Studies conducted by (Burgstahler & Eames 1998 and Abarbanell & Lehavy 1998) found that managers manipulate earnings to meet financial analysts and investors expectations. Accounting information is used to affect contractual agreements between firm management and its stakeholders (investors, the board of directors, creditors, banks, customers, government and other stakeholders). The Financials report are the direct outcome of a firm's management performance and are used by those that have contracts with management to make economic decisions. For example, creditors
use earnings to determine a firm's ability to repay its debts, and earnings is also used to determine managers compensation (Healy & Wahlen, 1999). In most countries, all industries are regulated, but to a great extent the banking, and insurance industries are more faced with regulations that are tied to accounting data. It has been found that such regulations can create incentives to managers to manage financial variables of interest to regulators (Healy & Wahlen, 1999). Researchers (Moyer 1990; Scholes, Wilson & Wolfson 1990 and Collins et al. 1995) found that banks that are close to the minimum capital requirements overstate provision for loan loss, understate loan write-offs and recognized abnormal gains on securities portfolios.

3. Prior Study on Earnings Management & Hypothesis Development

In this section we explore the literature pertaining to earnings management in non-financial sector. Specifically, we discuss studies done within the banking sector. Finally, we formulate three hypotheses to capture the research questions.

The developed research questions in this thesis and the following hypothesis in this section originate from the agency theory discussed above. When researching earnings management in an organization, agency theory is often used to explain the existence of incentive for managers to engage in discretionary behavior. Which can arrive from conflict of interest with the principal (shareholder). This conflict of interest can be resolve to a large extent with the introduction of a uniform standard IFRS (Dayanandan et al. 2016). It is assumed that managers would make accurate accounting choice when implementing IFRS standards. However, we still do not fully understand the extent the generic standards can lead to the improvement of financial statement. A lot of studies has been done globally to ascertain the effectiveness of IFRS. Barth et al., (2008) conducted a research between 1994 to 2003 with a sample from range of industries in 21 countries that adopted IAS/IFRS, the study reviewed a significant improvement in the quality of financial statement after IFRS. Similarly, Chen et al. (2010) research earnings behavior with a sample of 21,707 firms between 2000 to 2007, the study was conducted in 15 EU member states. They discovered that the quality of financial statement has improved dramatically, with reduction in earnings management.
On the contrary, Aussenegg, Inwinkel, and Schneider (2008) examine the effect of IFRS on earnings management of 17 European countries between 1990 and 1994. They argued that earnings management has increased significantly for firms in the United Kingdom, Ireland and Scandinavians countries. However, there was a slight decrease in central European countries. Most recently, Ebaid. (2016) examine accounting quality in code law country Egypt after adopting IFRS. Using sample of listed companies between 2000 to 2006 and 2007 to 2009. The findings suggest a decrease in earnings management for the listed firms that uses IFRS to prepare financial statement. Liu, Yip, Yao and Chan (2014) examine whether US GAAP and IFRS had different effect on earnings management. Using consolidated financial statement of listed firms in Frankfurt stock exchange. The study reviewed earnings management through research and development investment is significantly higher in IFRS consolidated financial statement as against US-GAAP. This give credence to the argument that the US GAAP might be superior to the other local GAAP. In the same vein, Gordon Jorgensen and Linthicum (2008) research Form 20-F reconciliation of a sample of 156 firms from 23 countries around the globe that used IFRS and US GAAP to prepare account between 2004 to 2006. The study was done to examine the effect of IFRS in the file reconciliations. They discovered that US GAAP and IFRS shared similar accrual quality and there was no reflection of differences in earnings quality.

As reviewed above majority of the earnings management literature used sample from non-financial industries and include heterogeneous data, meaning a combination of data from different sectors. In the research design of their studies, banks and other financial institutions are often excluded from their sample. The reason is due to their sector specific accounting structure that differ from non-financial sector. Secondly, commercial banks have a totally different accrual that is difficult to capture with the popular models used in calculating total accrual (Peasnell, Pope & Young, 2000). This thesis contributes to previous literature by using homogeneous data from a specific financial sector, the commercial banks in Liberia. According to Greenawalt and Sinkey (1988) earnings management is more prevalent in the banking industry compare to other sectors. Predominantly in accounting literature, Discretionary Loan Loss Provisions (DLLP) are often used as proxy for earnings management in the banking sector. It is the primary tool for managing earnings in banks (Anandarajan, Hasan, & Lozano-Vivas 2003; Ahmed, Takeda & Thomas 1999 and Beatty, Chamberlain & Magliolo, 1995). Unlike other researchers that are concerns about the total accrual of a firm when investigating earnings management in commercial banks, loan loss provision is the most
important accrual that significantly affect earnings and regulations of banks, so this would be the focus of this thesis.

Previous research has tried to find the relationship between accounting standards and loan loss provisions. For instance, Armstrong, Barth, Jagolinzer and Riedl (2010) discovered a positive market reaction with a sample of EU firms, especially banks after adopting IFRS. Similarly, Pérez et al., (2008) posit in their study, when they examine the impact of earnings management in the Spanish banks, an environment that operates rules-based accounting standards for LLP. They conclude that IFRS accounting standard might be the only alternative to restrain managers from using Loan Loss Provisions (LLP) with their discretion. Ideally, No. 39 in the International Accounting Standard (IAS) recommend how loan loss provisions should be recognized by adopters, with the aim of reducing the discretionary ability of managers from chosen the provision (IASB 2003). Evidently, as highlighted above the various standards have relationship with distinct levels of earnings quality. We argue in this thesis that the introduction of IFRS in the banking sector in Liberia will reduce earnings management in their financial statements. The reason for this is due to the greater disclosure requirements and the serious emphasis on fair value accounting. Therefore, we formulate our first hypothesis:

**H1: DLLP reduce significantly in the financial statements of commercial banks in Liberia, after the adoption of IFRS.**

Accounting system of an organization is not only shaped by the accounting standards, the overall institutional system of a country’s plays a vital role (Ball, 2006). Previous studies have tried to examine earnings management from a country’s specific institutional level (see for example, Enomoto et al., 2017; Ozili 2017 and Elkalla, 2017). These literature's investigate how earnings management relates to economy development and regulatory incentive of a country.

The proportion of economic development of a country can also affect the magnitude of earnings behavior in a bank. The changing economic level of a country such as the Gross Domestic Product (GDP) growth, whether it increases, or decreases may tremendously impact earnings management (Chen, Lee, & Chou, 2015). During recession banks are expected to maintain higher loan loss provision and lower provision when the economy is doing well because commercial banks do not have many problems during the economic boom, this suggests that economic fluctuation place a significant role in determining loan loss provision (Ozili, 2017). Pain (2003) research the factors that are responsible for the increase in loan loss provision in
the United Kingdom banks and discovered that GDP growth, lagged aggregate lending growth affect the level of loan loss provision in the banks.

Filip and Raffournier (2014) posit that the likelihood that a firm would manipulate their earnings depend on how the economic environment of the firm fluctuate. To confirm this, Cohen, Dey and Lys (2008) examine US companies and discovered a negative association between their GDP growth and earnings behavior. Which suggest poor economic situation result to higher level of earnings management. Using same method, Gopalan and Jayaraman (2012) discovered a negative relationship between discretionary accrual and GDP growth when they study firms in 22 countries.

Furthermore, Cummings and Durrani (2016) argue in their study that banks in Australia use discretionary provisions to curb fluctuations in the credit market. Similarly, Ozili (2015) posit in his study that there is a negative association between banks provision and the degree of economic growth in Nigeria banks. For this we formulate another hypothesis:

**H2: There is a significant relationship between the extent of DLLP and the degree of economy growth in Liberia.**

Regulations are monitoring mechanism that provides disciplinary actions for banks management. The minimum capital adequacy ratio is a regulation put in place by the CBL mandating all banks to maintain adequate capital, against and to absorb losses by endangering customer deposits. The prudential regulation No. CBL/RSD/003/2013 requires banks tier 1 capital (permanent stock equity and disclosed reserve) must exceed 5 percent of risk-weighted assets and total capital adequacy ratio must exceed 8 percent of risk-weighted assets. The regulation also gives the CBL the authority to impose a specific capital charge and limits on material risk exposures, where necessary if in the judgment of the CBL such material risks have not been adequately transferred or mitigated through transactions (e.g., security transactions). Lastly, the CBL can also use leverage to assess a bank capital adequacy requirement; banks are required to maintain a minimum leverage ratio of not lower than 5%. Banks failing to meet the capital adequacy requirement may sometime lead to regulators intervening in the operations of banks, including dismissing management. Collins, Shackelford and Wahlen, (1995) found that banks that are close to minimum capital requirement engages in earning by understating loan loss provisions, understate loan write-offs and recognize abnormal gains on securities portfolios. Cheng, Warfield and Ye (2011) studied the relationship between manager’s equity incentives and earnings management in the banking industry in the US. The finding of the study
shows that managers with high equity incentives are more likely to engage in earnings management. This finding implies that, in the banking industry, potential regulations intervention provide inducement, rather than the mitigation of earnings management arising from equity incentives. Because of the regulations oversight in the banking industry and the benefits of earnings management, the impact of regulatory intervention on earnings management arising from equity incentives give raise to our last hypothesis:

**H3: DLLP is negatively associated with managers’ capital adequacy ratio incentive.**

4. Research Design

This section highlights the sample selection, the research methodology applied to address the research questions. Earnings management research approach, accounting for loan loss and empirical methods.

To statistically test the null hypothesis generated from the existing body of literature's and answer the research question, we used quantitative methodology. Just as asserted by Saunders, Lewis and Thornhill (2016) that quantitative research method deals with the collection and statistical analysis of numerical data. We chose this strategy because our research is deductive in nature, which means a coherent process to reject or retain the null hypothesis formulated from prior literature. Secondly, we are computing the needed variables from the banks audited financial statement prepared under US GAAP and IFRS, which is a secondary data. This is the same research strategy adopted by all the existing studies reviewed above. Furthermore, in conformity with studies on Loan Loss provisions (Ben Othman & Mersni 2014; Hillier, Hodgson & Ngole 2016), we used panel estimation techniques to test our model for the sample commercial banks in Liberia. Panel data analysis is a longitudinal or cross-sectional time series analyses that observe the behavior of data in an organization across time (Torres-Reyna 2007). It helps control for abstract variables that cannot be easily measured like organizational culture and discretionary behaviors. Panel data analyses allow to control for other variables that changed over time e.g, regulations, accounting standards and agreements (Torres-Reyna 2007). Typically, in panel data research, there are two techniques that are often used to explore, analyze data, these techniques are fixed effect and random effect.
Fixed effect model is used to explore the relationship between forecast and outcome variables within an organization, it is used to analyze the impact of variables that differ overtime. On the other hand, random effect model is used to explore differences in organizational factor that has impact on the dependent variable. Since our research questions is to know the effect of IFRS on earnings management; we chose fixed effect panel data estimation, consistent with (Ben Othman & Mersni, 2014) to analyze our data. However, the Hausman test conducted to check the significant difference between the two models favors random effect, see appendix 2 for the statistical output. Finally, we used Robustness Standard Errors to ensure reliability and accuracy of the models adopted in this thesis. Just as asserted by Cameron and Trivedi (2009) Robustness Standard Error controls for heteroscedasticity in the measurement models.

The banks specific variables consist of earnings management, while Liberia specific variables consist of economy growth and regulatory body. Data for the commercial banks are drawn from their annual financial statements. Some audited financial statements were not available in their respective websites, so we contacted individual banks in Liberia for the remaining audited financial statements. The dependent variable and the commercial banks independent variables are computed from the Income statement, statement of financial position, and note to financial statement of the sample banks. The audited financial statements covered a period of 2010 to 2016, choosing this period would allow us to observe the data behaviors across time when doing analysis. Also, the collected data span across different economic level, the period of economy boom and depression. This would help us access the reaction of earnings in the multiple economy circles. Data for the Liberia level specific variables were obtained from the Central Bank of Liberia website, the International Monetary Fund Database. Currently, there are nine commercials banks establish in Liberia. We initially considered including all nine banks established in Liberia. However, we were not able to obtain all the needed data from all commercials banks. We contacted all banks including the CBL to provide us with their audited financial statement from (2010 to 2016), we got response from five banks, which includes LBDI, Ecobank, GT Bank, International Bank, and Access Bank. Therefore, our research sample size includes the five (5) banks that we obtained the required data.
<table>
<thead>
<tr>
<th>Bank Name</th>
<th>Year Established</th>
<th>Ownership</th>
<th>Total assets as at December 31, 2016 LRD$</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberian Bank for Development &amp; Investment (LBDI)</td>
<td>1961</td>
<td>Liberian</td>
<td>17,648,436,429</td>
<td>Included in sample size</td>
</tr>
<tr>
<td>Ecobank Liberia (Limited) (EBLL)</td>
<td>1999</td>
<td>Foreign</td>
<td>20,833,253,000</td>
<td>Included in sample size</td>
</tr>
<tr>
<td>International Bank Liberia (Limited) (IBLL)</td>
<td>2000</td>
<td>Foreign</td>
<td>12,255,986,579</td>
<td>Included in sample size</td>
</tr>
<tr>
<td>Global Bank (Liberia) Limited (GBLL)</td>
<td>2005</td>
<td>Foreign</td>
<td>N/A</td>
<td>Not included in sample size</td>
</tr>
<tr>
<td>Groupe Nduom Bank Liberia Limited (GNBLL)</td>
<td>2016</td>
<td>Foreign</td>
<td>N/A</td>
<td>Not included in sample size</td>
</tr>
<tr>
<td>United Bank for Africa Liberia Limited (UBALL)</td>
<td>2008</td>
<td>Foreign</td>
<td>N/A</td>
<td>Not included in sample size</td>
</tr>
<tr>
<td>Access Bank Liberia The Microfinance Bank</td>
<td>2009</td>
<td>Foreign</td>
<td>N/A</td>
<td>Included in sample size</td>
</tr>
<tr>
<td>Guaranty Trust Bank Liberia (GTBL)</td>
<td>2009</td>
<td>Foreign</td>
<td>10,136,327,903</td>
<td>Included in sample size</td>
</tr>
<tr>
<td>Afriland First Bank LIBERIA Limited (AFBLL)</td>
<td>2011</td>
<td>Foreign</td>
<td>3,862,301,000</td>
<td>Included in sample size</td>
</tr>
</tbody>
</table>
4.1 Method of Earnings Management

There are two methods used by managers to manage earnings, they are real activities earning management and accruals-based earnings management Cohen and Zarowin (2010). Real activities earnings management occurs when managers use normal economic transactions to influence the financial reports of a firm. Roychowdhury (2006) define real activities earnings management as follow:

The manipulation of earnings derives from normal operational practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations (p.337).

Real activities earnings management has a direct effect on firm cash flow and changes in working capital is consider as a tool that is frequently used in the real activities earnings management method (Burgstahler & Dichev, 1997). The next method of managing earnings is the accrual earnings management. The accruals basis of accounting recognized the effect of transactions on an asset or a liability when they occurred and not necessary when cash is paid or received (Doupnik & Perera, 2012). According to Roychowdhury (2006) accruals arises when there is a difference between the timing of the accounting recognition of transactions and the cash flow. An example of an accrual is services that had been incurred, but payment not made, employee pension payment, bad debt provision and loan loss provisions (Ronen & Yaari, 2008). Accruals accounting allows manager to use discretion to recognize transactions which may result to management signaling their private information or to opportunistically manipulate earnings (Dechow, 1994). Ronen and Yaari (2008) separate accruals into three base components: discretionary accruals, non-discretionary accruals and reversals of past transactions. Discretionary accruals are accruals that arise from accounting treatment or judgment chosen by managers with the objective of managing earnings. Discretionary accruals are calculated as total accruals less expected normal accruals.

Ronen and Yaari (2008) define non-discretionary accruals as follow:

Non-discretionary accruals are accruals that arise from transactions made in the current period that are normal for the firm given its performance level and business strategy, industry conventions, macroeconomic events, and other economic factors (p. 372).
Non-discretionary accruals are assumed to be at the result of normal operational activities, non-discretionary accruals are considered to be difficult to manipulate. Therefore, it is difficult to manage earnings using non-discretionary accruals (Ronen & Yaari, 2008). In the next section we discuss various approaches used in capturing discretionary accrual in earnings management studies.

4.2 Earnings Management research approaches

There are several approaches use by researchers in measuring earnings management. The first approach is to identify discretionary accruals based on the relation between total accruals and hypothesized explanatory factors. The models using this approach is referred to as total accrual and aggregate accrual models. Some of the most widely used models are Healy model (1985), DeAngelo model (1986), Jones model (1991), and the modified Jones model developed by Dechow, Sloan & Sweeney (1995).

The second approaches in measuring earnings management is the specific accrual approach. The specific accruals approach is often used when testing for earnings management in a particular industry. This model is used when a specific accrual constitutes a significant portion of a firm’s total accruals, and management discretion is required in determining such accrual. Managers may use their discretion to manage their earnings to achieve a specific objective (see for example, McNichols & Wilson 1988; Petroni 1992 and Beaver & Engel 1996) uses specific accrual approach. McNichols (2000) identified some advantages and disadvantages of the specific accruals approach. Firstly, this approach allows researchers to use their knowledge of a firm GAAP to develop key factors that influence a particular accrual behavior. Secondly, specific accrual is used in industries where a single accrual is material, and a dependent of management discretion. Also, specific industry setting can aid in determining the discretionary component of an accrual by identifying the control variables that need to be consider. Thirdly, the relation between a single accrual and explanatory factors can be estimated directly, as compared to the aggregated or total accrual approach, where aggregation can lead to errors in the parameter in estimates.

In this research we will use the specific accruals approach to measure earnings management. The specific accruals approach is used because loan loss provision is a specific accrual account
in the banking industry that constitute a material portion of commercial banks total accruals and management discretion is often required in making such accrual, management could use their discretion to manage earnings to achieve some specific objective. However, there are also some shortcoming of the specific accrual approach, firstly, it is necessary that the specific accrual reliably reflects the use of management discretion. It has not been clear which accrual management will use to manage earnings, and one will require a model to test each specific accrual likely to be manipulated by management. The second disadvantage is that specific accrual approaches will require more institutional knowledge and data as compared to aggregate accruals approaches. Lastly, the number of firms with specific accruals may be relatively small as compared with firms with aggregated accruals. As such, it may have an adverse effect on the generalization of research findings (McNichols, 2000).

The last approach of measuring earnings management is to observe the behavior of accruals around a specific benchmark. This approach of detecting earning management examines statistical properties of earnings to identity behavior influencing earnings. The benchmark used in these studies can be based on management estimate and can be for example zero, or a prior period earnings. This approaches test for incidences of amounts above and below the benchmark are distributed smoothly or reflect discontinuities as a result of discretion by management. Example of some studies that use this approach is Burgstahler and Dichev (1997) and Degeorge, Patel and Zeckhauser (1999).

4.3 Accounting for Loan Loss Provisions

The primary objective of commercial banks is to borrow cash and received interest and principal in return. Loan and advances are the two major types of credit portfolio that commercial banks issue to customers. Advances are monies provided to customers to fulfill a short-term requirement and loans are debt provided by banks to clients, for a specific repayment period with a particular rate of interest (Davidson & Simpson 2016). The Financial Accounting Standard Board (FASB No, 2010-20) defined Loan as a “contractual right to receive money on demand or on fixed or determinable dates that are recognized as an asset in the creditor’s balance sheet” (Page 5).

The IAS 39 defines loan as:

Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market other than those that the entity intends to sell immediately or in the
near term, those that the entity upon initial recognition designates as available for sale, or those for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, which is classified as available for sale (Page 9).

The CBL regulations No. CBL/RSD/005/2014 classify loan and advances into five categories; the categories determine the allowance for loan loss against perceived or anticipated diminution in the loan quality. Table 2 below give a description of Loan and advances and loan loss provision rate that is required.

**Table 2: Loan and advance classification and loan loss provision.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Classification</th>
<th>Loan Loss Provision Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits portfolio with repayment up-to-date as per the terms and conditions specified in the loan agreement. All bank overdrafts are classified as current and performing credit.</td>
<td>Current or Performing</td>
<td>0%</td>
</tr>
<tr>
<td>Credit portfolio currently protected by adequate security but are potentially weak and vulnerable to credit risk.</td>
<td>Other Loans Especially Mentioned (OLEM or Cristable)</td>
<td>5%</td>
</tr>
<tr>
<td>Non-performing credits portfolio for which the customer has difficulties on the repayment of principal and interest for ninety (90) days but less than one hundred and eight (180) days.</td>
<td>Substandard</td>
<td>20%</td>
</tr>
<tr>
<td>Non-performing credit portfolio with principal, and interest remain outstanding for one hundred and eighty (180) days but less than three hundred and sixty (360) days.</td>
<td>Doubtful</td>
<td>50%</td>
</tr>
<tr>
<td>Non-performing credit portfolio with principal and interest outstanding for three hundred and sixty (360) days or more.</td>
<td>Loss</td>
<td>100%</td>
</tr>
</tbody>
</table>

After December 31st, 2012, banks measured loans and advances according to International Accounting Standard no. 39 (IAS 39), Financial Instruments: Recognition and
Measurement. IAS 39 prescribes the subsequent measurement of loan and advances. The standard required a periodic assessment of credits to assess for objective evidence that will lead to an impairment of a financial asset or group of financial assets. Impairment is considered as the loss in the value of an asset or a group of assets. IAS 39 required an entity to recognize an impairment loss on the financial asset if there are objective evidence of events (loss events) that has occurred after the initial recognition and such loss events had a negative measurement impact on the future cash flows of the financial asset (IAS 39.58-65). The objective evidence includes observable information about the following loss events:

- Significant difficulty of the client;
- A breach of the agreement on the repayment of the financial asset (such as a default or delinquency in interest or principal payments);
- Loan restructuring giving the borrower privileges because of financial difficulties;
- Probable bankruptcy or other financial reorganization of the borrower;
- Information suggests that there will be a decrease in the recoverable amount of future cash flow from a group of financial assets. A decline in the repayment and national or local economic condition will result in defaults on the asset or group of assets.

An entity should recognize an incurred impairment loss if the event or events have an adverse impact on future cash flows of a financial asset or group of assets and can be reliably estimated. The impairment loss for loan and advances is measured as the difference between the carrying amount of a financial asset and the present value of expected future cash flows discounted at the financial asset’s original effective interest rate. A financial asset can be tested for impairment by either individual significant financial asset or a group of financial assets. There carrying amount of loan and advance is reduced directly or through the use of a contra asset account called allowance for loan loss and impairment losses are to be recognized in the profit and loss (IAS 39.58-65).
4.4 Empirical Method

Prior studies in earnings management has used different measurement as proxy to capture the opportunistic behavior of managers in the organization, e.g., discretionary accrual, timeliness, smoothness, investor’s responsiveness and loss avoidance (Dechow, Ge & Schrand 2010). In the banking industry loan loss provisions (LLP) is the predominantly proxy often used to measure earnings management practice (Anandarajan, Hasan & Lozano-Vivas 2003 and El Sood, 2012). To investigate earnings management behavior in Liberia commercial banks, we adopt this proxy (LLP). This earnings management proxy is made up of two components. First, discretionary accrual, second is non-discretionary accrual. With the following fundamental model:

Model 1: \[ LLP = \text{Non-discretionary LLP} + \text{Discretionary LLP} \]

Like previous researchers (Kanagaretnam, Lobo & Mathieu 2004; Beaver & Engel, 1996; Zoubi & Al-Khazali 2007; Cheng, Warfield & Ye 2011 and Ben Othman and Mersni, 2014) we use discretionary loan loss provisions as proxy for earnings management. To measure discretionary LLP, the non-discretionary LLP need to be separated from the LLP component and measure with the following model:

Model 2: \[ LLP_{it} = \beta_0 + \beta_1 NPL_{it-1} + \beta_2 \Delta NPL_{it} + \beta_3 \Delta TL_{it} + \varepsilon_{it} \]

Where:

- \( LLP_{it} \) = total loan loss provisions for bank \( i \) at the year \( t \), deflated by beginning loans,
- \( NPL_{it} \) = the beginning balance of non-performing loan for bank \( i \) at the year \( t \) deflated beginning loan
- \( \Delta NPL_{it} \) = change in the value of non-performing loan for bank \( i \) at the year \( t \), deflated by beginning loans
- \( \Delta TL_{it} \) = change in the value of total loan, for bank \( i \) at the year \( t \), deflated by beginning loans.

The discretionary loan loss provision is made up of the LLP prediction error (\( \varepsilon_{it} \)), which is estimated from the residual value of model (2). Just as asserted by many researchers (see for example, Kanagaretnam et al. 2004; Ben Othman and Mersni, 2014) that there is a positive
relationship between loan loss provisions, non-performing loans, the beginning balance of non-performing loans and the total loans. The reason is, when banks give more loans to customers and there is a likelihood that the loan will not be recovered, this would result to banks increasing their loan loss provisions (Kanagaretnam et al. 2004). The dependent variable is the LLP, while the independent variables at time “t” will be used to explain the LLP. Also, in the model “t” represents time, while “i” represents the entity. “β” are the coefficients of the various independent variables.

We expect a positive correlation between LLP and the variables mentioned above. Furthermore, we predict as the value of the beginning of non-performing loan rises commercials banks will report a higher LLP.

Table 3 below show the regression of model (2) used to estimate the discretionary loan loss provisions. It is important to note that, this model is the non-discretionary component of the loan loss provision. The residuals of model (2) will be used as the dependent variable DLLP in model (3). As indicated in the table, the coefficient for non-performing loan is positive at (0.0581), and the p-value is (0.135). This implies that as non-performing loan increase by 1%, LLP will increase by approximately 0.058% on average, holding other variables constant. Also, there is a positive coefficient of (0.0023) and a p-value of (0.880) on changes in total loan. This denotes that bank managers are more likely to increase loan loss provision when there is an upward change in total loan. This result is consistent as predicted that an increase in non-performing loan and total loan will result to an increase in loan loss provision. However, the result is not statistically significant. This implies that, when banks give more loans to customers there are possibilities that some loans will not be recovered, which would result to banks increasing their loan loss provisions. Lastly, there is a negative coefficient for changes in non-performing loan. Which suggest for 1% increase in the changes in non-performing loan, the LLP will decrease by 0.077%, on average holding other variables constant. Based on the result of the regression none of the independent variable (NPL, Chan NPL and Chan TL) have a statistical significant effect on the dependent variable (DLLP).
Table 3: Multiple Regression Analysis for Model 2 using Fixed Effect and Robust Errors

<table>
<thead>
<tr>
<th>R-sq.:</th>
<th>Coefficients</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within = 0.0601</td>
<td>0.0581</td>
<td>0.135</td>
</tr>
<tr>
<td>Between = 0.0026</td>
<td>-0.7706</td>
<td>0.070</td>
</tr>
<tr>
<td>Overall = 0.0046</td>
<td>0.0022</td>
<td>0.880</td>
</tr>
</tbody>
</table>

At the second stage of our measurement, we used the residual value from equation (2) which is the discretionary loan loss provisions DLLP as dependent variable. Below in equation (3) are what we hypothesized that influence DLLP and the control variables consistent with (Ben Othman & Mersni 2014 and Van Oosterbosch 2010). The effect of IFRS on earnings management as proxy by DLLP.

Model 3:  

\[ DLLP_{it} = \beta_0 + \beta_1 EBTP_{it} + \beta_2 CAR_{it} + \beta_3 IFRS * EBTP_{it} + \beta_4 GDPG_{it} + \beta_5 TAX_{it} + \beta_6 SIZE_{it} + \varepsilon_{it} \]

Where:

- \( DLLP_{it} \) = discretionary loss provisions
- \( EBTP_{it} \) = earnings before tax and provision deflated by total assets for bank \( i \) at the year \( t \)
- \( CAR_{it} \) = capital adequacy ratio for bank \( i \) at the year \( t \), measured by average total equity over total assets.
- \( GDPG_{it} \) = rate of the gross domestic product growth in year \( t \) deflated by total assets
- \( IFRS * EBTP_{it} \) = Dummy variable which signify 1, for observation pre-IFRS and 0 for post-IFRS and the interaction of IFRS on EBTP
- \( SIZE_{it} \) = bank size for bank \( i \) at year \( t \), expressed at natural logarithm of asset.
- \( TAX_{it} \) = income tax expense deflated by net income before tax
We include control variables like income before tax and provisions (EBTP), bank size (Size) and tax in the equation above. Researchers like (Moyer 1990; Ahmed Takeda & Thomas 1999; Liu & Ryan 2006 and Cheng et al., 2011) posit that these variables are also used to control for discretionary behavior in LLP disclosure, which is to smooth earnings, meet capital requirement and reduce tax.

Like prior researchers (Leventis, Dimitropoulos & Anandarajan 2011 and Cheng et al., 2011) we used the level of capital adequacy ratio to capture the managers regulatory incentives in the banks, which we obtained from Liberia central bank capital regulatory framework. The bank of international settlement recommended a tougher capital requirement for banks globally in line with 2010 Basel 111. The purpose was to increases the minimum capital adequacy ratio for banks from 8% to 10.5% starting from 2013 to 2019 (Li, Chen, Chien, Lee & Hsu 2016). This is one of the ways to maintain financial health in the banking industry. Presently, all commercial banks in Liberia maintain 10% capital adequacy ratio.

Since our objective is to examine the effect of IFRS on earnings management via discretionary LLP, we introduce dummy variables that capture the effect of IFRS on different accounting regimes and the level of discretionary use of provisions. Like Anandarajan, Hasan and McCarthy (2007), we used EBTP, IFRS*EBTP to test the discretionary use of loan loss provision LLP before and after IFRS adoption. We expect managerial discretionary loan loss provision to reduce after adopting IFRS standards. Therefore, we forecast a positive coefficient for EBTP if the commercial banks managers’ decision on DLLP is because of earnings management. Furthermore, we expect a negative coefficient and statistical significant for interaction term IFRS*EBTP used for IFRS regime. On natural logarithm of asset as variable for banks size, we expect a negative sign for big banks with higher credit portfolio diversification.

GDP variable represent the micro economic environment of the commercial banks, we measure this with real GDP growth at constant price. Just as asserted by (Bouvatier & Lepetit 2008 and Packer & Zhu 2012) a good economic makes banks to expand their reserve buffer, while during economic decline banks are expected to create additional LLP. We expect a negative coefficient for GDPG, because in the period of economic decline banks tend to manipulate earnings.
5. Results and Analysis

Firstly, in this section we briefly discuss data quality and ethical consideration, before moving on to analyze the results from the panel data. Secondly, we analyze descriptive statistics, followed by Pearson Correlation, two sample t test, fixed effect model and random effect as robustness check.

5.1 Data quality and Ethical consideration

To ensure reliability and validity of this research, we obtain secondary data audited financial statement from the official website of the commercial banks. Just as asserted by (Saunders et al. 2016) that secondary data are raw numeric data used in a quantitative research. Financial statements that are not available on the website were obtained through email from individual banks. For validity purpose we intend to run a robustness check in line with previous studies to substantiate the result. Furthermore, we intend to be considerate on ethical issues during the analysis of data. We would try as much as possible to avoid plagiarism and all the literature, diagrams, images and tables that will be used are duly reference with APA style. Secondly, we would ensure that the results generated from the general purpose statistical software package (STATA) are going to be reported unbiased in compliance with Dalarna University code of Ethical Standards for Research.

5.2 Descriptive statistics

Table 4 below present descriptive statistics (means, standard deviations, maximum, minimum and the number of observations) for the most important variables included in our model, including control variables and variables that were used to get discretionary loan loss provisions from the estimated regression in equation (2). The total DLLP represent the predicted residual value estimated from the first regression result see Table 3. While the US GAAP represents the separated regress residual from the model calculated strictly with US GAAP prepared financial statements between 2010 to 2012. The IFRS proxy the predicted residual from post adoption of IFRS 2014 to 2016. While the second IFRS Robust is the estimated residual value regress specifically with 2013 to 2016 prepared audited financial statements. This was done to check the robustness of the results, see appendix 1 for the full list of measurements of all variables. As shown in this descriptive statistics table, the mean for NPL is 0.164 percent with standard
deviation of approximately 10 percent. The mean ratio for changes In NPL signify 0.31 percent with standard deviation of 64 ratio. This result is consistent with Quttainah, Song and Wu (2013) study who discovered similar values in the measures of central tendencies. The mean for changes in LLP for the sample commercial banks is 0.31 percentage with a standard deviation of 23 percent. Which suggest a fair dispersion in the level of total loans provided to customers in the various commercial banks. The mean percentage for EBTP and Tax, which is the natural logarithm of assets indicate 0.021, 0.113 respectively, with higher dispersion. The ratio for CAR is 0.20 ratio for the sample banks. The implication for this is that the commercial banks adhere to the regulatory capital adequacy ratio. The bank’s asset size has a mean of approximately 9.99 percent with a fair dispersion of 7.15 percent, indicating that the banks in our sample are fairly large. The mean for total DLLP, which is the estimated error from model (2) is 0.004 percent, with minimum of 0.013. The average of GDPG, minimum and standard deviations are 195.8, 198.3 and 37.6 percent respectively. The mean for the changes in total loan is 1.30 percent. While the average for US GAAP, which is the predicted residual for Pre-IFRS indicate a higher percentage of 0.048 in contrast to the predicted residual of IFRS which indicate 0.004 ratio. Finally, the predicted residual for the robustness check for IFRS financial statements from 2013 to 2016 indicate a 0.0037 ratio, suggesting there may be no significance difference in both standards.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>30</td>
<td>0.1642</td>
<td>0.0928</td>
<td>0.0435</td>
<td>0.4485</td>
</tr>
<tr>
<td>ChngNPL</td>
<td>30</td>
<td>0.0311</td>
<td>0.0615</td>
<td>-0.0967</td>
<td>0.2322</td>
</tr>
<tr>
<td>LLP</td>
<td>30</td>
<td>0.3235</td>
<td>0.0237</td>
<td>0</td>
<td>0.0895</td>
</tr>
<tr>
<td>ChngTL</td>
<td>30</td>
<td>1.3022</td>
<td>0.2404</td>
<td>0.9216</td>
<td>1.9040</td>
</tr>
<tr>
<td>DLLP</td>
<td>30</td>
<td>0.0040</td>
<td>0.0024</td>
<td>0.0013</td>
<td>0.0100</td>
</tr>
<tr>
<td>EBTP</td>
<td>30</td>
<td>0.0211</td>
<td>0.0238</td>
<td>-0.0315</td>
<td>0.0894</td>
</tr>
<tr>
<td>GDPG</td>
<td>30</td>
<td>195.8496</td>
<td>198.3689</td>
<td>37.6209</td>
<td>0.0894</td>
</tr>
<tr>
<td>IFRS*EBTP</td>
<td>30</td>
<td>0.0132</td>
<td>0.0227</td>
<td>-0.0315</td>
<td>0.0894</td>
</tr>
<tr>
<td>TAX</td>
<td>30</td>
<td>0.1133</td>
<td>0.3986</td>
<td>-1.8145</td>
<td>0.8848</td>
</tr>
<tr>
<td>CAR</td>
<td>30</td>
<td>0.2038</td>
<td>0.1654</td>
<td>0.0317</td>
<td>0.7418</td>
</tr>
<tr>
<td>SIZE</td>
<td>30</td>
<td>9.99e+09</td>
<td>7.15e+09</td>
<td>9.78e+08</td>
<td>2.38e+10</td>
</tr>
<tr>
<td>US GAAP</td>
<td>30</td>
<td>0.0048</td>
<td>0.0030</td>
<td>0.0013</td>
<td>0.0029</td>
</tr>
<tr>
<td>IFRS</td>
<td>30</td>
<td>0.0034</td>
<td>0.0017</td>
<td>0.0015</td>
<td>0.0076</td>
</tr>
<tr>
<td>IFRS ROBUST</td>
<td>30</td>
<td>0.0037</td>
<td>0.0020</td>
<td>0.0015</td>
<td>0.0076</td>
</tr>
</tbody>
</table>

**Table 4: Descriptive statistics**
5.3 Pearson Correlations

The Pearson Correlation for the panel data in Table 5 is used to check the correlations between all variables being used in the two models. The correlations can be used to assess the explanatory power of variable. Variables can have a positive, negative or no correlation. The correlation can range from positive 1 to negative -1. In the case the correlation is 0 no correlation is present. Correlation that are significant are in bold and italic. The most important correlations are discussed below.

As shown in the table below there is a positive correlation of (0.0790) between LLP and DLLP, the correlation is close to 0 and thus indicate that there is no relationship. The same applies for NPL. The relationship between NPL and DLLP is (0.1124), the relationship is not significantly strong. As such, changes in NPL may not significantly affect DLLP. The relationship between Chan NPL (-0.0803) and DLLP is not significantly far from 0 which indicate that there is a weak relationship between Chan NPL and DLLP. This implies that Chan NPL is a predictor of DLLP. However, it is not significantly strong. There is a positive and strong relationship between Chan TL (0.5254) and DLLP the correlation is closer to 1, which suggest that the correlation is significantly strong, the positive relationship is consistent with what we predicted and with prior researchers (Kanagaretnam et al. 2004; Ben Othman & Mersni, 2014). The relationship of IFRS*EBTP is negative and not statistically significant. Economic growth measure by GDP have a positive correlation of (0.0995) on DLLP. On the other hand, both Size measure by firm total asset have a positive, but weak relationship on DLLP. Lastly, CAR (0.1165) have a positive but weak relationship with DLLP. The findings of the correlation indicate that except for changes in total loan, none of the variables has a significant correlation.
Table 5: Pearson Correlation Table of Panel Data. Statistical significant results are in bold and italics

<table>
<thead>
<tr>
<th></th>
<th>DLLP</th>
<th>LLP</th>
<th>NPL</th>
<th>Chan NPL</th>
<th>Chan TL</th>
<th>EBTP</th>
<th>EBTP IFRS</th>
<th>Tax</th>
<th>CAR</th>
<th>Size</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLLP</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LLP</td>
<td>0.0790</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPL</td>
<td>0.1124</td>
<td>-0.1318</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chan NPL</td>
<td>-0.0803</td>
<td>-0.2296</td>
<td>0.3990</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chan TL</td>
<td>0.5254</td>
<td>-0.0248</td>
<td>-0.1053</td>
<td>0.2960</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBTP</td>
<td>0.0836</td>
<td>-0.1431</td>
<td>-0.1509</td>
<td>-0.0726</td>
<td>0.0800</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IFRS EBTP</td>
<td>-0.0516</td>
<td>-0.1013</td>
<td>-0.2377</td>
<td>-0.0267</td>
<td>-0.0318</td>
<td>0.7527</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax</td>
<td>0.0763</td>
<td>-0.0867</td>
<td>0.2023</td>
<td>0.1516</td>
<td>0.0403</td>
<td>0.0714</td>
<td>-0.0115</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>0.1165</td>
<td>0.3941</td>
<td>-0.5214</td>
<td>0.1268</td>
<td>0.4105</td>
<td>-0.1135</td>
<td>0.0260</td>
<td>-0.2878</td>
<td></td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>0.1245</td>
<td>-0.2829</td>
<td>0.5362</td>
<td>-0.1614</td>
<td>-0.4175</td>
<td>-0.1365</td>
<td>-0.1461</td>
<td>0.2705</td>
<td>-0.7136</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>GDPG</td>
<td>0.0995</td>
<td>0.4995</td>
<td>-0.5069</td>
<td>0.0882</td>
<td>0.3917</td>
<td>-0.1676</td>
<td>-0.0676</td>
<td>-0.2857</td>
<td>0.9742</td>
<td>-0.7605</td>
<td>1.0000</td>
</tr>
</tbody>
</table>
5.4 Mean sample differences between US GAAP and IFRS

Table 6 below shows a two-sample t test equal variable conducted for the estimated residual values from the financial statements prepared under US GAAP and IFRS, starting from 2010 to 2012 and 2014 to 2016 respectively. This was run to determine the differences between the two-accounting regimes that is, if the discretionary loan loss provisions DLLP was higher under US GAAP or IFRS. Theoretically, as we discussed before the predicted residual value from the regression is picked as the discretionary loan loss provisions because earnings management is an abstract term that cannot be optically observed. As show in the table, the variable column represents different accounting standards whose means are been compared. The output of the descriptive statistics provides a useful information for the variables that are been compared, including the means, standard deviations and the actual results for the two-sample t test. The result shows that IFRS has a mean of 0.34 percent, while the US GAAP variable indicate a mean that is slightly higher than the one of IFRS with 0.48 percent. There is a large dispersion among the variables under study, with US GAAP indicating 0.30 percentage and IFRS 0.17 ratio respectively. The t-statistic indicates 1.44 ratio, which is estimated from the differences in the two variables means divided by the standards error. The 95 percent confidence interval represent the upper and lower limit of the US GAAP and IFRS mean. As we can see in the results the two means of the variables are slightly different, meaning there is no statistically significant difference between the means of the variables as the \( p \) value in the \( \text{Pr}(t \geq 1.44) \) row is 0.16 percent, greater than 0.05 percent based on a 2 tailed significant difference. This result suggests a non-significant decline in earnings management with the introduction of IFRS in Liberia banks. This imply that the discretionary loan loss provision practice under the two accounting regimes does not differ significantly. However, the results contradict our expectation as hypothesized. This finding is consistent with Gordon Jorgensen and Linthicum (2008) result on earnings management when they sample 156 firms that used US GAAP and IFRS standards to prepare financial statement.

Furthermore, to validate this finding, we ran a two-sample t test for unequal variables for the predicted residuals, which is the discretionary loan loss provisions DLLP for the two-accounting regime. See Table 7 for the result. The mean value for the US GAAP indicates 0.48 percent, with a reduced mean for IFRS 0.34 percent. There is a large variance between the two variables, with a t statistic of 1.29 percent. The \( p \) value, which is the most important part of the statistical output reflect 0.21 percent. Again, this value is above 0.05 percent on a 2-tailed significant difference. Therefore, we conclude that IFRS did not have a significant effect on
earnings management practice in Liberia commercial banks. In order words, the discretionary loan loss provisions, which is made up of the material accruals in the banking industry did not reduce significantly with the introduction of the generic standard.

\[ P\text{-value} = 0.1613 \]

<table>
<thead>
<tr>
<th>Variables</th>
<th>observations</th>
<th>Mean</th>
<th>Std. Error.</th>
<th>Std. Dev.</th>
<th>(95% Conf. Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US GAAP</td>
<td>10</td>
<td>0.0048</td>
<td>0.0009</td>
<td>0.0030</td>
<td>0.0026</td>
</tr>
<tr>
<td>IFRS 2014-2016</td>
<td>15</td>
<td>0.0034</td>
<td>0.0004</td>
<td>0.0017</td>
<td>0.0024</td>
</tr>
<tr>
<td>Combined</td>
<td>25</td>
<td>0.0039</td>
<td>0.0004</td>
<td>0.0024</td>
<td>0.0029</td>
</tr>
<tr>
<td>Diff</td>
<td></td>
<td>0.0013</td>
<td>0.0009</td>
<td></td>
<td>-0.0006</td>
</tr>
</tbody>
</table>

Table 6: two-sample t test equal variable

\[ P\text{-value} = 0.2170 \]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Observation</th>
<th>Mean</th>
<th>Std. Error.</th>
<th>Std. Dev.</th>
<th>(95% Conf. Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USGAAP</td>
<td>10</td>
<td>0.0048</td>
<td>0.0009</td>
<td>0.0030</td>
<td>0.0026</td>
</tr>
<tr>
<td>IFRS 2014-2016</td>
<td>15</td>
<td>0.0034</td>
<td>0.0004</td>
<td>0.0017</td>
<td>0.0024</td>
</tr>
<tr>
<td>Combined</td>
<td>25</td>
<td>0.0039</td>
<td>0.0004</td>
<td>0.0024</td>
<td>0.0029</td>
</tr>
<tr>
<td>Diff</td>
<td></td>
<td>0.0013</td>
<td>0.0010</td>
<td></td>
<td>-0.0009</td>
</tr>
</tbody>
</table>

Table 7: two-sample t test for unequal variables

5.5 Evidence on the effect of IFRS adoption on earnings management

The model presented in Table 8 report the regression result of model (2). This is done to confirm the result from the two-sample t test. The model describes how independent variable, IFRS*EBTP, CAR, and GDPG are numerically related to the dependent variable DLLP. The regression model also shows the result and the effect of control variables (Size, EBTP and Tax) on the dependent variable DLLP.

The first hypothesis is to test for the level of reduction in earnings management as proxy by DLLP after the adoption of IFRS. We create a dummy variable with a value of 1 for post-IFRS
and 0 for pre-IFRS. The interaction term IFRS*EBTP is our main variable of interest. Our analysis for the effect of IFRS*EBTP on earning management (DLLP) is presented in the table below. The result shows a negative coefficient on DLLP with statistical insignificant. This result contradicts our expectations, we anticipated a significant reduction in earnings management after the adoption of IFRS as hypothesized. The coefficient is negative, which suggests that the adoption of IFRS-based accounting standards did not reduce discretionary behaviour of managers in commercial banks financial statements in Liberia. In other words, the generic standard did not have significant effect on earnings management. As previously mentioned our statistic of significant is 0.05, the p-value is not statistically significant in the fixed effect model using robust standard errors. Therefore, we reject the alternative hypothesis and retain the null hypothesis that there is no significant reduction in earnings management after the adoption of IFRS.

We hypothesized that there will be a significant reduction in DLLP during the period of economic growth and increase in DLLP during the period of economic decline. We measured economic growth by changes in GDPG. As predicted, the GDPG column on the regression table show a positive coefficient and a p-value of 0.613. The positive coefficient of the GDP growth variable indicates that banks engage more in discretionary loan loss provision during the period of high economic growth. However, the coefficient is insignificant which leads us to conclude that there is insufficient evidence to support that there is a relationship between GDP growth and DLLP. Furthermore, the last hypothesis state that bank managers use loan loss provision to increase earnings in order to meet the capital adequacy requirement. By further examining the model and analyzing the coefficients of the independent variable CAR, it is observed that the coefficient for CAR is not significantly different from zero the result shows a positive coefficient and a p-value of 0.747, which is above our statistic of significant of 0.05. Therefore, we cannot reject the null hypothesis. The result is consistent as we predicted, we predicted a negative and strong relationship between DLLP and CAR. According to the estimate of the fixed effect, a 1% change in CAR will result to an increase of 0.62346% in DLLP. This implies banks with good capital adequacy ratio has a tendency of managing earnings downward, which would result to increase in discretionary loan loss provisions and decrease earnings (Cheng Warfield & Ye 2011).

Lastly, we include three control variables (Size, Tax and EBTP) in the regression model. The first control variable banks size is measured by total asset (TA), which indicate a negative coefficient. The result is not statistically significant with p-value of 0.750. This suggests that
big banks are more likely to reduce DLLP, this result is consistent as predicted. Similarly, there is a negative coefficient for Tax. We also found a positive and insignificant association between EBTP and DLLP. The result of the regression shows that all control variables are not statistically significant. We suggest that size and tax are not crucial factors that impact the discretionary behavior practice in the commercial banks in Liberia. However, it is pertinent to note that this result is specifically for fixed effect regression output, the other measurement of panel data; random effect used for robustness check might differ.

Table: 8 Multiple Linear Regression for Model 2 Using Fixed Effect and Robust Error

<table>
<thead>
<tr>
<th>Dependent Variable DLLP</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBTP</td>
<td>0.0553</td>
<td>0.073</td>
</tr>
<tr>
<td>CAR</td>
<td>0.0062</td>
<td>0.747</td>
</tr>
<tr>
<td>SIZE</td>
<td>-7.15e-14</td>
<td>0.750</td>
</tr>
<tr>
<td>IFRS*EBTP</td>
<td>-0.0007</td>
<td>0.980</td>
</tr>
<tr>
<td>GDP</td>
<td>9.77e-06</td>
<td>0.613</td>
</tr>
<tr>
<td>Tax</td>
<td>-0.0006</td>
<td>0.915</td>
</tr>
</tbody>
</table>

5.6 Robustness check

In this section, we perform two additional tests to check the robustness of our results. Firstly, we conduct two sample t test for equal variables and two-sample t test for unequal variables. What differentiate the sample used for this t test robustness check from the previous t test statistical results is that, we specifically used the estimated residual value from 2013, IFRS prepared financial statement to 2016. Which differ from the previous sample, where we used financial statement from 2014 to 2016. The US GAAP remained constant, with sample financial statements of 2010 to 2012.
Consistent with the results above, there is no significant difference in the discretionary behaviors of managers in the two accounting standards. See Table 9 and 10 for the statistical output for equal and unequal variables.

Additionally, for robust check, we regress random effect to control for bank factors that might influence the discretionary loan loss provisions (DLLP) which is the dependent variable see table 11 below. The results are similar to the fixed effect model, under this model the control variable size variable is statistically significant. As indicated in the panel, the total R square of the model is 0.2068. This mean 20.68 percent of the total variation of the discretionary loan loss provisions DLLP can be explained by the variation of the independent variables. In a nutshell, it is good in explaining the dependent variable (DLLP).

Some of the results in the regression are consistent as predicted. The coefficient for EBTP is positive with a value of 0.0503, meaning if EBTP increase by 1%, the discretionary loan loss provision will increase by 0.05 percent, on average holding other variables constant. The implication for this is; EBTP is an important factor that can influence bank managers in using discretionary LLP to manage earnings. However, this result should be interpreted with caution because the p-value for EBTP is not statistically significant. For one of our hypothesized variables CAR, there is positive coefficient of 0.0020 and statistical insignificant, which suggest for 1% increase in CAR, DLLP will increase by 0.0020 in percentage, holding other variables constant. This result is consistent with the formulated hypothesis because there is non-enough statistical evidence to refute the hypothesis, as the p-value is 68.8%. This is however, inconsistent with Ben Othman and Mersni (2014) findings. The result can be interpreted to mean that commercial banks in Liberia with higher equity incentive do not engage in discretionary LLP to inflate earnings.

One of the control variable size indicate a positive coefficient with the DLLP and statistically significant at 1.9%. This suggests that banks with larger size are likely to indulge in discretionary LLP practice. This variable result is inconsistent with what we discovered in the fixed effect panel. The coefficient for the interaction between EBTP and IFRS indicate negative and statistically insignificant at 11.3%. This finding suggests a non-decrease in discretionary loan loss provision after adopting IFRS, which contradicts our first hypothesis. This statistical output is also inconsistent with previous findings (Leventis et al. 2011). The positive coefficient in GDPG indicate that, during the period of economy boom banks are likely to engage in loan loss provision. However, the p-value for the GDPG is not statistically significant, which means
there is non-enough evidence to prove that during economy growth banks engage in
discretionary loan loss provision as purport in the hypothesis. Therefore, we retain the null
hypothesis. Finally, the coefficient for tax indicate 0.03361%, but with no statistical
significance.

Table 9: Robust two sample t test for equal variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Error.</th>
<th>Std. Dev.</th>
<th>(95 % Conf. Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US GAAP</td>
<td>10</td>
<td>0.0048</td>
<td>0.0009</td>
<td>0.0030</td>
<td>0.0026</td>
</tr>
<tr>
<td>IFRS 2013-2016</td>
<td>20</td>
<td>0.0037</td>
<td>0.0004</td>
<td>0.0020</td>
<td>0.0027</td>
</tr>
<tr>
<td>Combined</td>
<td>30</td>
<td>0.0040</td>
<td>0.0004</td>
<td>0.0024</td>
<td>0.0031</td>
</tr>
<tr>
<td>Diff</td>
<td></td>
<td>0.0011</td>
<td>0.0009</td>
<td></td>
<td>-0.0008</td>
</tr>
</tbody>
</table>

P-value 0.2485

Table 10: Robust two sample t test for unequal variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Error.</th>
<th>Std. Dev.</th>
<th>(95 % Conf. Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US GAAP</td>
<td>10</td>
<td>0.0048</td>
<td>0.0009</td>
<td>0.0030</td>
<td>0.0026</td>
</tr>
<tr>
<td>IFRS 2013-2016</td>
<td>20</td>
<td>0.0037</td>
<td>0.0004</td>
<td>0.0020</td>
<td>0.0027</td>
</tr>
<tr>
<td>Combined</td>
<td>30</td>
<td>0.0040</td>
<td>0.0004</td>
<td>0.0024</td>
<td>0.0031</td>
</tr>
<tr>
<td>Diff</td>
<td></td>
<td>0.0011</td>
<td>0.0010</td>
<td></td>
<td>-0.0012</td>
</tr>
</tbody>
</table>

P-value 0.3237
### Table: 11 Random Effect GLS Regression for Robustness Check

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>within</td>
<td>0.1475</td>
<td></td>
</tr>
<tr>
<td>between</td>
<td>0.5207</td>
<td></td>
</tr>
<tr>
<td>overall</td>
<td>0.2068</td>
<td></td>
</tr>
</tbody>
</table>

**Dependent variable DLLP**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBTP</td>
<td>0.0503</td>
<td>0.081</td>
</tr>
<tr>
<td>CAR</td>
<td>0.0020</td>
<td>0.688</td>
</tr>
<tr>
<td>SIZE</td>
<td>2.13e-13</td>
<td>0.019</td>
</tr>
<tr>
<td>IFRS*EBTP</td>
<td>-0.0317</td>
<td>0.113</td>
</tr>
<tr>
<td>GDP</td>
<td>6.18e-06</td>
<td>0.185</td>
</tr>
<tr>
<td>Tax</td>
<td>0.0003</td>
<td>0.533</td>
</tr>
</tbody>
</table>

### 6. Discussion

The results of this earnings management study indicate a non-difference between US GAAP rules-based accounting standards and IFRS principles-based accounting standards. This denote that IFRS as introduced in Liberia commercial banks did not reduce managerial discretionary behavior. At first in table 6 and 7, we ran a two-sample t test for equal and unequal variables to compare the mean of US GAAP and IFRS. Although there was a slight difference between the means; the p-value indicate a non-statistical significant, which made us reject the alternative hypothesis and retain the null hypothesis. Additionally, in table 8 and 11 we used fixed effect, random effect panel model to regress our variable of interest IFRS, in order to confirm the result, we got from the two-sample t test. In table 9 and 10, we include 2013 data as robustness check in contrast to table 6 and 7 where we used 2014 to 2016 data. The result was still the same, IFRS did not have significant impact on DLLP. The interpretation of this does not mean that the commercial banks do not engage in aggressive earnings, as the coefficient for EBTP is positively related to DLLP. Which suggests that the banks engage in earnings management, which could be other means outside the loan loss provisions.
We found no support for hypothesis 2, that the GDP growth has significant impact on discretionary loan loss provisions in both fixed effect panel and random effect panel, which made us reject the alternative hypothesis. However, there is a positive coefficient with the discretionary loan loss provisions. The positive relationship between GDPG and DLLP could be because of individual’s performance of the banks, not actually the Liberia gross domestic product growth.

A possible explanation for our findings supporting the last hypothesis is that the individual banks in the sample experience economic growth within the period of investigation. Since they were fairly capitalized in the sample period, there was no need to increase loan loss provisions to meet Basel 111 capital requirements. Just as asserted by Hasan and Wall (2004) that a financial stable bank does not need to manipulate earnings to meet its capital requirements. Lastly, there was mixed evidence in both fixed effect and random effect model for SIZE, one of the control variables. The statistical significance in the random effect regress as robustness check denote that larger banks engaged more in discretionary loan loss provisions.

6.1 Conclusion

The convergence of accounting standards across borders drew overwhelming attention from the accounting research community to investigate the implications and consequences this bold step would have on various critical issues. In this thesis we examine the effect of IFRS on earnings management as proxy by discretionary loan loss provisions in the absence of market force. There are two opposing views, researchers like Barth et al., (2008) argue that implementation of IFRS can restrain managerial discretionary behavior, thereby limiting the ability to report accounting information that contradicts firm’s economy reality, which would enhance the quality of financial statement. Others asserts that the principle-based accounting standards give more discretion to management when exercising accounting judgment, this could reduce the quality of reporting earnings. The empirical results of whether IFRS reduce earnings management are mixed. We contribute to previous literature by investigating the effect of IFRS on earnings management behavior in Liberia commercial banks, using DLLP, which is the most important accruals in the banking sector. We used a sample of 5 banks, from 2010 to 2012, when the banks were reporting with US GAAP and 2013 to 2016 when they were reporting with IFRS. The results are robust, we discovered that banks manipulate earnings, but the introduction of IFRS into the banking industry in Liberia did not significantly reduce earnings
management behavior. We ran a two-sample t test to see differences in both accounting standards, the results are the same, we discovered no significance differences in earnings management between US GAAP financial statement and IFRS financial statement. This finding is consistent with (Navarro- García & Madrid- Guijarro 2014 and Gordon Jorgensen & Linthicum 2008) results.

As for institutional and country factors, we also examine whether the earnings management is negatively related with managers capital adequacy ratio. The result was as predicted, our data fail to prove that banks managers use discretion to underestimate LLP when CAR is low, to enhance earnings and meet up the banking requirement. The reason could be that the banks are fairly capitalized and does not need to manipulate earnings. Furthermore, we did not find a significant relationship between earnings management and the degree of economic growth in Liberia, even though there was positive coefficient with DLLP.

The findings of this thesis advance the understanding of earnings management under US GAAP, which is rules-based and IFRS, which is principles based for users of financial statement in the banking industry. While the result rejects earnings management hypothesis developed, it does provide important policy implications. Our findings suggest the need to encourage applying of IFRS-based accounting standard by banks to provide effective monitoring of earnings management of commercial banks in Liberia. Furthermore, this research paper reviewed that the introduction of accounting standards in the banks may not be the only remedy in curbing aggressive reporting. Just as asserted by Bratton (2003) that it is not only accounting standard that makes management to engage in manipulating earnings. It mostly has to do with strategic non-compliance actions, where the interpretation of laws conflicts with regulators interpretations. Also, this study reviewed the importance of considering LLP in the banking industry under local GAAP and IFRS studies, especially underdeveloped economy without market force. Finally, our results can be useful for potential investors, standards setters, auditors and regulators in the banking industries.

This thesis is not without limitations, firstly one should consider the disadvantages discussed in the research design section above. It is important to keep in mind that this research does not focus on earnings management in general, but rather focuses on earnings management in a specific accrual account LLP. It is possible that bank managers may use other accrual account or real activities to manage earnings. This implies that earnings management may not be detected, which makes this research findings less reliable. We drew our conclusion based on loan loss provisions as proxy for earnings management. Thus, further research can investigate
earnings management after the adoption of IFRS by using total accrual approach or real activities earnings management.

Another limitation of this research involves the sample size. Since we did not include all banks in our sample, it may not be representative of the entire population. As such, the findings of the research cannot be generalized. Also, the period used for the investigation is 2010 to 2016. Ideally, we would have chosen a longer period for both pre-IFRS and post-IFRS. This was not possible because we encounter challenges in getting data. Also, the adoption of IFRS is still new in Liberia banking sector and the available audited financial statements are quite limited. We recommend for future research to employ large sample size that will cover several years before and after IFRS. Additionally, control variables like return on assets (ROA) can be used to influence financial performance of banks. Finally, the introduction of accounting standards is not the only control mechanism used to restrain management from engaging in earnings management, further studies should examine how managerial incentives can be used to curb earnings management in the banking sector.
Reference


Cameron, A. C., & Trivedi, P. K. (2009). Microeconometrics with STATA. *College Station, TX: StataCorp LP*.


region (Doctoral dissertation, University of the West of England).


between financial development and earnings management. Journal of International Financial
Management & Accounting.

evidence. The International Journal of Accounting, 49(4), 455-478.


comparison of earnings attributes and informativeness in the US market. In Working paper.

301-318.

Country Comparisons. Financial review, 39(1), 129-152.

accounting and economics, 7(1-3), 85-107.


The World Bank (n.d). Liberia overview: Retrieved March 10, 2018, from


Torres-Reyna, O. (2007). Panel data analysis fixed and random effects using Stata (v. 4.2). *Data & Statistical Services, Princeton University*.


Appendix 1

Variables measurement

LLP_{it} = total loan loss provisions for bank \( i \) at the year \( t \), deflated by beginning loans

NPL_{it} = \text{the beginning balance of non-performing loan for bank } \( i \) at the year \( t \) deflated beginning loan

ChanNPL_{it} = \text{change in the value of non-performing loan for bank } \( i \) at the year \( t \), deflated by beginning loans

ChanTL_{it} = \text{change in the value of total loan, for bank } \( i \) at the year \( t \), deflated by beginning loans

DLLP_{it} = \text{discretionary loss provisions}

EBTP_{it} = \text{earnings before tax and provision deflated by total assets for bank } \( i \) at the year \( t \)

CAR_{it} = \text{capital adequacy ratio for bank } \( i \) at the year \( t \), measured by average total equity over total assets.

GDP_G = \text{the of the gross domestic product growth in year } t

SIZE_{it} = \text{bank size for bank } \( i \) at year \( t \), expressed at natural logarithm of asset.

Tax_{it} = \text{Income tax expense, divided by net income before tax}

IFRS \times EBTP_{it} = \text{Dummy variable which signify 1, for observation pre-IFRS and 0 for post-IFRS and the interaction of IFRS on EBTP}
## Appendix 2

### Coefficient

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fixed effect</th>
<th>Random effect</th>
<th>Differences</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBTP</td>
<td>0.0552871</td>
<td>.0503542</td>
<td>.0049328</td>
<td>.0182554</td>
</tr>
<tr>
<td>CAR</td>
<td>0.0062346</td>
<td>.0020016</td>
<td>.004233</td>
<td>.013404</td>
</tr>
<tr>
<td>SIZE</td>
<td>-7.15e-14</td>
<td>2.13e-13</td>
<td>-2.85e-13</td>
<td>2.66e-13</td>
</tr>
<tr>
<td>IFRS*EBTP</td>
<td>-.0007963</td>
<td>-.0317195</td>
<td>.0309232</td>
<td>.0243891</td>
</tr>
<tr>
<td>GDPG</td>
<td>9.77e-06</td>
<td>6.81e-06</td>
<td>2.96e-06</td>
<td>.0000117</td>
</tr>
<tr>
<td>TAX</td>
<td>-.000075</td>
<td>.0003361</td>
<td>-.0004111</td>
<td>.0007128</td>
</tr>
<tr>
<td>Prob&gt;chi2</td>
<td>0.2684</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hausman test for Random effect and Fixed effect