

DOES IFRS IMPROVE THE USEFULNESS OF ACCOUNTING
INFORMATION IN AFRICAN CAPITAL MARKETS?

by

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ABSTRACT

This thesis examines whether IFRS adoption improves the usefulness of accounting information in African capital markets. Consistent with the IASB (2010) conceptual framework which focuses on shareholders, I define usefulness as the increase in value relevance of earnings and book value of equity, asymmetric earnings timeliness and conditional conservatism and the predictive ability of earnings and cash flow. I use a relatively large sample of 347 firms listed in five African capital markets namely; Johannesburg, Nairobi, Cairo and Alexandria, Botswana and Casablanca Stock Exchanges.

The thesis derives its motivation from the contemporary debate on fair value versus historical cost accounting, illiquidity of African markets and the adoption of IFRS in Africa. Although IFRS is widely adopted in Africa there are relatively few studies examining its usefulness. In Africa, capital markets are relatively small and illiquid (Smith *et al.*, 2002 and Kenny and Moss, 1998), there are no sound IFRS enforcement mechanisms (Daske *et al.*, 2011, Anandarajan and Hasan, 2010, World Bank, 2010a, and Prather-Kinsey, 2006), culture is secretive and conservative (Dahawy *et al.*, 2002 and Gray, 1988) and many accounting systems are based on government or bank capital models of corporate governance (Chamisa, 2000). Since, IFRS characterized by fair value accounting principles requires liquid and active markets for its appropriate use (Ball, 2008) and focuses on market led principles of measurement and disclosures (Walker, 2010) it is unclear how useful it is to market participants in illiquid markets particularly African capital markets.

The research objectives are fourfold; to examine whether IFRS increases (i) the information content of earnings and book value of equity as measured through the earnings response coefficient (ERC), the book value response coefficient (BRC) and adjusted R^2 (ii) the asymmetric earnings timeliness and conditional conservatism as a measure of stewardship

role of management to capital providers, (iii) the predictive ability of earnings and cash flow and (iv) to examine the conditioning roles of culture and legal origin on the above research sub-themes.

The results are summarized as follows; (i) IFRS increases the valuation role of book value of equity and overall value relevance but not earnings. These findings are consistent with the IASB (2010) conceptual framework' focus on the statement of financial position rather than the statement of financial performance in financial reporting. The results are also consistent with prior studies such as Hung and Subramanyam (2007) and Francis and Schipper (1999) which document the declining (increasing) value relevance of earnings (book value of equity), (ii) IFRS is incrementally more value relevant in code law than common law countries and (iii) the secretive culture prevalent in African countries is associated with greater BRC (lower ERC) after IFRS

Moreover, consistent with prediction, the results indicate that IFRS leads to reduced gains, loss, incremental loss and overall earnings timeliness. Also, common law earnings are timelier (untimely) in recognizing bad news (good news) than code law earnings. However, this asymmetric earnings timeliness decreases after IFRS adoption. Furthermore, the results indicate that a conservative culture is associated with greater (lower) gains (loss and incremental loss) recognition timeliness. In terms of earnings and cash flow predictability, IFRS results in reduced predictive ability of cash flow and earnings. Also, cash flow dominates earnings in predicting future cash flow. Conservative culture is associated with lower (greater) predictive ability of cash flow (earnings). Moreover, results do not support the contention that IFRS increases the predictive ability of earnings and cash flow more in common than code law countries. This is the first comprehensive study examining the decision usefulness (as defined by the IASB conceptual framework, 2010) of IFRS in Africa. The conclusion is that IFRS has not improved financial reporting in Africa.

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LIST OF ABBREVIATIONS

ASB Accounting Standards Board

ASEA African Securities Exchanges Association

BAO Botswana Accountancy Oversight Authority

BI Botswana Institute of Accountants

BICA Botswana Institute of Chartered Accountants

BMV Bolsa Mexicana de Valores Stock Exchange

BRC Book Value Response Coefficient

BRVM Bourse Régionale des Valeurs Mobilières

BSA British Society of Accountants and Auditors

BVMAC Bourse Régionale des Valeurs Mobilières de Afrique Centrale

CAPM Capital Asset Pricing Model

ERC Earnings Response Coefficient

ESAACEgyptian Society of Accountants and Auditors Standards Committee

FASB Financial Accounting Standards Board

FVA Fair Value Accounting

GAAP Generally Accepted Accounting Principles

GDP Gross Domestic Product

GLS Generalized Least Squares

GMM Generalized Methods of Moments

GNI Gross National Income

HCA Historical Cost Accounting

IAS International Accounting Standards

IASC International Accounting Standards Committee

IASB International Accounting Standards Board

ICAEW Institute of Chartered Accountants in England and Wales

ICPAK Institute of Certified Public Accountants of Kenya

IFRS International Financial Reporting Standards

IOSCO International Organization of Securities Commission

ISA International Standards of Auditing

JSE Johannesburg Stock Exchange

KASNEB Kenya Accountants and Secretaries National Examinations Board

NOA Non-Operating Accruals

OLS Ordinary Least Squares

PLR Provision to Total Liability Ratio

RAB Registration of Accountants Board

ROSC Reports on the Observance of Standards and Codes

SAICA South African Institute of Chartered Accountants

SFAC Statement of Financial Accounting Concepts

SFAS Statement of Financial Accounting Standards

U.K. United Kingdom

U.S. United States

U.S.GAAP United States Generally Accepted Accounting Principles

USD United States Dollar

WACC Weighted Average Cost of Capital

WLS Weighted Least Squares

CHAPTER ONE

INTRODUCTION

1.1 Motivation and Overview

This thesis is motivated by the contemporary debate on fair value accounting (FVA) versus historical cost accounting (HCA), illiquidity of African markets and the widespread adoption of International Financial Reporting Standards (IFRS) in Africa. The debate hinges on whether FVA through IFRS should replace HCA and whether it should do so in the underdeveloped markets of Africa.

Paragraph 5 of the Statement of Financial Accounting Standards (SFAS) No.157 and IFRS 13 define fair value as *‘the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date’*. Moreover, paragraph 22 of SFAS 157 provides a three-tier fair value hierarchy which describes how to value assets and liabilities. Tier 1 requires the use of observable market prices to value assets and liabilities. Tier 2 derives market prices from substitutes or similar assets and liabilities. Tier 3 uses models (e.g. option pricing, discounted future cash flows and expectation models) to value assets and liabilities. Thus, unlike HCA which is transactions-based, FVA uses current market prices and exit price accounting (Pozen, 2009). In short, FVA consists of two important components namely; ‘mark to market’ or pure FVA and ‘mark to model’ accounting.¹

¹ Pozen (2009, p.1) defines mark to market accounting as *‘the practice of revaluing an asset quarterly according to the price it would fetch if sold on the open market regardless of what was actually paid for it’*. However, mark to model means using discounted cash flow or option pricing valuation techniques to measure assets and liabilities. Tiers 1 and 2 of the fair value hierarchy are examples of mark to market accounting while Tier 3 is an example of mark to model accounting.

FVA is a measurement basis preferred by the International Accounting Standards Board (IASB) and the U.S. based Financial Accounting Standards Board (FASB) as their working principle. Examples of accounting standards issued by IASB which utilize the fair value concept include; IFRS 2: Share Based Payments; IFRS 3: Business Combinations; IAS 16: Property, Plant and Equipment, IAS 36: Impairment of Assets, and the new IFRS 9: Financial Instruments (formerly IAS 39).

The application of FVA is facilitated by SFAS 157 and IFRS 13. Both SFAS 157 and IFRS 13 are fair value measurement standards which provide guidelines on how to measure assets and liabilities in the presence or absence of active markets in order to promote consistency and comparability (Song *et al.*, 2010). SFAS 157 was issued in September 2006 by FASB whilst IFRS 13 was issued in 12th May 2011 by IASB with its effective date being 1st Jan 2013 although early adoption is permitted. Proper application of fair value accounting requires active markets (Ball, 2008) for valuing assets and liabilities but in Africa, capital markets are illiquid (Smith *et al.*, 2002 and Kenny and Moss, 1998).²

One critique of FVA is that it is not suitable for relatively inactive markets because in such markets, assets and liability measures are more likely to be based on “marked to model” (Tier 3) and will therefore rely more on management discretion, subjective judgement and so measurement may be effected by private incentives and may therefore not faithfully represent the underlying economics or performance of the firm. Thus, the adoption of IFRS in Africa offers a useful environment for examining the applicability of IFRS in illiquid capital markets.

The use of FVA in financial reporting has also attracted a very strong debate on its appropriateness in providing useful accounting information to users relative to HCA. Fair

² Paragraph 24 of SFAS 157 states that, “an active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis”.

value proponents argue that it reflects a 'truer' economic picture of the value of the firm, income and market conditions (Pozen, 2009 and Laux and Leuz, 2010). FVA is based on the Hicksian theory of income that defines income as; the change in the value of the firm from one period to another, and according to Laux and Leuz (2009, 2010), it provides timely, relevant, reliable, comparable and decision useful information to users particularly market investors. They further argue that it reduces income smoothing and earnings management due to increased disclosure requirements. Moreover, fair value advocates argue that HCA creates hidden reserves during the boom period by restricting assets write-ups and encourages gains trading by selectively selling financial instruments with unrealized gains (Laux and Leuz, 2009).

Critics of FVA (for example; American Bankers Association, Mortgage Bankers Association, U.S. Bancorp and many European Banks) argue that it exacerbated the financial crisis by creating a downward spiral as a result of marking to market. That is; prices were substantially below their intrinsic value. The principal argument is that during boom periods FVA causes excessive leverage and during financial crises or busts it leads to excessive write-downs (Laux and Leuz, 2010). As a result, mark to market accounting is an undesirable measurement basis, although both IFRS and U.S. GAAP allow deviations from market prices when there are few liquid asset and disorderly markets. However, during the financial crisis banks used mark to model accounting for toxic loans through inter-bank market selling but the fair values were unrealistic (Laux and Leuz, 2010). This implies that all levels (1, 2 and 3) of the fair value hierarchy do not necessarily provide realistic measures.

Nevertheless, fair value supporters including JP Morgan, Credit Suisse, Goldman Sachs, investor interest groups and accountants argue that FVA was not the culprit of the 2008 financial fiasco thus it should not be a scapegoat [Laux and Leuz (2009, 2010), SEC (2009), Pozen (2009), Ryan (2008), Barth (2008), Ball (2008), Turner (2008), and Veron

(2008)] but rather opacity, high leverage, bad decisions in granting subprime loans and writing credit default swaps. For instance, Ball (2008) contends that during the financial crisis, FVA only communicated the managers poor decisions to market participants thus should receive no blame after all. Moreover, the report by the Securities and Exchange Commission (SEC) to the congress on the impact of FVA to financial crisis revealed that only 45% of the sampled issuers' assets were recorded at fair value at the end of the first quarter of 2008. Also, out of the 45% of assets recorded at fair value only less than 25% affected the income statement (SEC, 2009, p.49). Similarly, only 15% of total liabilities were reported at fair value either by requirement or election.

Fair value opponents argue that FVA is based on management discretion and assumptions, and subjective judgments especially in estimating level 3 fair values leading to unreliable estimates(see for instance; Song *et al.*, 2010, Milburn, 2008, Ryan 2008, Benston, 2008 and Penman, 2007). Moreover, it causes procyclicality in the financial system through contagion effects and assets write-ups (Laux and Leuz, 2009). Level 3 fair value is mark to model accounting, in which fair values are estimated by an ex-ante valuation model determined by the management, and it may apply unobservable inputs and subjective assumptions. Milburn (2008) insists thatmark to model fair value estimates from level 3 fair value hierarchy do not represent real world economic values and hence are not reliable. Moreover, Benston (2006) and Haldeman Jr. (2006) argue that FVA principles were a cause for Enrons failure as the company usedFVA excessively even for non financial assets such as fixed assets and capitalized software. They suggest that FVA should only be limited to supplementary schedules in financial statements.

Since markets in Africa are illiquid, the use of levels 1 and 2 is also likely to be problematic, and thus level 3 fair value is in effect the default mechanism in valuing assets and liabilities. Also, the inclusion of fair value changes in the income statementis more likely

to increase earnings volatility (Pozen, 2009 and Ryan 2008). But since, markets in Africa are not active; security prices tend to remain unaltered for a long time, and so there may be no or relatively low price fluctuations. In short, in Africa FVA may not result from real business transactions but rather wishful thinking and is therefore not a suitable valuation method (Sunder, 2008, Whittington and Page, 2007, Godfrey *et al.*, 2006 and Mautz, 1973). Moreover, components of FVA such as exit prices focus on financial liquidity and short term decisions rather than long term firm performance thus potentially reducing the predictive ability and power of earnings and cash flow.

1.2 Complexity of Accounting Valuation Models

The main research question then is whether full fair value (IFRS) should be used in financial instruments and extended to non-financial assets and liabilities in Africa. Currently, even in financial instruments it is the mixed attribute model which is being used (Laux and Leuz, 2009, p.827). According to Laux and Leuz (2010, p.97) the mixed attribute model is “*the accounting treatment that differs depending on the type of asset and its intended use*”. Different classifications (e.g. AFS, HTM and trading securities) of financial instruments use different accounting rules (see for example; IFRS 9 or IAS 39 and SFAS 115). For instance; held to maturity (HTM) securities are measured through HCA while trading and available for sale (AFS) debt securities are measured using FVA.

There are also disagreements amongst accounting theorists. For example, using a theoretically constructed model, Plantin *et al.*, (2008) find that while FVA poses greatest damage when the claims are long-lived, illiquid and senior, HCA creates largest damage when the claims are short-lived, liquid and junior. This implies that neither FVA nor HCA provides full relevant accounting information all the time. Similarly, Laux and Leuz (2009) contend that in some cases (many cases) FVA (HCA) does not provide relevant accounting

information. Whittington (2008) argues that neither FVA nor HCA offers an appropriate measurement basis but rather it is the *deprival value* accounting approach to financial reporting which is superior. According to Whittington (2008) deprival value represents the value to the business of any asset. Deprival value is defined as; *the lower of replacement cost and recoverable amount where recoverable amount is the higher of the value in exchange (VIE) and the value in use (VIU)*. This is precisely mentioned in IAS 16: Property, Plant and Equipment Standard and is another reason why we have a “mixed” accounting system that is complex. Although deprival value is not explicitly mentioned by the IASB in the measurement basis list, it can be derived from the list.³

1.3 The IFRS Focus Group

Walker (2010) argues that IFRS is prepared to satisfy only one selected user; the stock market. In reality, there are different users including participants in coordinated market economies and other users of financial statements. According to Walker (2010) coordinated market economies embrace the stakeholders’ theory of corporate governance prevalent in many continental European countries. Furthermore, Walker (2010) argues that it is inappropriate to emphasize one set of accounting standards in a world where there are different business settings. As a result, Walker (2010) suggests that there should be a separate set of accounting standards for stock and coordinated market economies in addition to IFRS. This is meant to meet the demands of accounting information to a wider range of needs such as for stock market capital providers, creditors, banks and the stewardship role of management. The main argument here is that IFRS may not be suitable for forms of capitalism such as coordinated market economies which are widespread in the majority of African countries.

³The nine potential measurement basis candidates in milestone 1 include; past entry price, past exit price, modified past amount, current entry price, current exit price, current equilibrium price, value in use, future entry price and future exit price (Whittington, 2008).

African stock markets are relatively new (see Table 3 and Appendix 1), small, illiquid, inefficient and have low market integrity and price-earnings ratios (Prather-Kinsey, 2006, Smith *et al.*, 2002 and Kenny and Moss, 1988).⁴ Prather-Kinsey (2006, p.144) define market integrity as “*the country-specific legal rules related to shareholders rights and insider trading.*” As a result, they may not provide pricing information on ongoing basis thus affecting the valuation of assets and liabilities, the manner in which information is processed (Prather-Kinsey, 2006) and the timeliness of earnings recognition.

In summary, in a global context, the use of fair value (IFRS) may not offer similar usefulness due to different economic, institutional and business settings (Walker, 2010) and that the fair value debate is far from resolved (Laux and Leux, 2009, p.833). In Africa, the illiquidity of markets is the main concern of fair value (IFRS) as Ball (2008) argues; it is the depth and efficiency of financial markets which legitimizes the use of FVA, not the underlying legal systems. Also, in Africa, there are different expectations regarding the usefulness of IFRS due to different models of corporate governance and colonial or historical influences. Countries such as South Africa, Kenya, Zimbabwe, Zambia, and Botswana may find IFRS relatively more useful because they have followed the shareholder model adapted from their former ruler, the United Kingdom. Thus, countries such as Mozambique, Cameroon, Burkina Faso, Egypt, and Morocco might not find IFRS as useful because their accounting systems follow a banks or creditor model. Whether IFRS is useful in African capital markets, and whether it is incrementally more useful in stock than coordinated market economies remains an empirical issue.

⁴Liquid markets are characterized by small transaction costs, easy trading, timely settlement, and large trades but with limited impact on market prices (Kenny and Moss, 1998).

1.4 The IASB Objective and Adoption of IFRS

A major objective of the International Accounting Standards Board (IASB) is to promulgate a single set of high quality accounting standards to be used worldwide in order to promote consistency and comparability of financial accounting information (IASB, 2010). To ensure that this objective is met, the use of fair value accounting as decision metrics for investors is emphasized by both the IASB and FASB. This approach is strongly supported by the European Union (EU), the International Monetary Fund (IMF), the World Bank, the International Federation of Accountants (IFAC), the Organization for Economic Cooperation and Development Working Group on Accounting Standards (OECD), the United Nations Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR), the International Organization of Securities Commission (IOSCO) and G20 leaders [Yalkin *et al.*, (2008), Shima, (2007) and Choi and Meek (2005)]. For example, at their meetings in Pittsburgh (September, 2009), Toronto (June, 2010) and Seoul (November, 2010), G20 leaders consistently maintained their call that the IASB and FASB should redouble their efforts towards achieving a single set of high quality accounting standards. Moreover, the current ongoing IASB and FASB convergence project (Norwalk Agreement) focuses on eliminating the present differences between the IFRS and U.S. GAAP so as to have one single global standard.

Prior to 2001, International Accounting Standards (IAS) were issued by International Accounting Standards Committee (IASC) which was established in 1973 by the founding members from Australia, Canada, U.K., Ireland, U.S., France, Germany, Japan, Mexico and the Netherlands. However after 2001, the board was renamed the IASB and the standards deliberated thereafter were known as International Financial Reporting Standards (IFRS). For the purpose of consistency both standards issued by IASB and its predecessor (IASC) will be referred to as IFRS throughout this thesis although the references remain in their original

annotations. On the 19th July 2002, the European Union issued an accounting regulation number 1606/2002/EC which required all public companies listed on stock markets to consolidate their financial accounts using IFRS with effect from January 2005. Nevertheless, the regulation did not require but permitted all non-public companies and publicly traded companies which do not consolidate financial statements to use either IFRS or local GAAP (that is, country specific accounting standards) although this type of adoption was exercised to a lesser degree across Europe (Schipper, 2005).

Hence, the objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to present and potential equity investors, lenders, and other creditors in making decisions in their capacity as capital providers (IASB Conceptual Framework, 2010). The IASB conceptual framework (2010, BC 1.24-1.28) defines usefulness as; *“the accounting information which assists market participants to make economic decisions, evaluate the stewardship role of the management and predict future performance as measured through the ability to predict future cash flow and earnings”*.

EU's adoption of IFRS in 2005 served as a catalyst for other countries to adopt IFRS (Tweedie, 2007).⁵ Many countries other than EU also complied with the regulation on voluntary basis. By the end of May 2011, more than 123 countries around the world had adopted IFRS including Africa (Deloitte, 2011). In Africa, 20 countries have adopted IFRS on voluntary basis (see appendix 1) and many others are underway to either permit or require the use of IFRS (Deloitte, 2011). Some countries such as Lesotho, Gambia, Madagascar and Sierra Leone have adopted IFRS even though they do not have capital markets which are a key source of information on the valuation of assets and liabilities under IFRS (see for instance; Ball 2008, SFAS 157 and IFRS 13).

⁵ In Europe, IFRS has been in use since the late 1990s on voluntary basis. The examples of countries which adopted IFRS voluntarily include Germany, Austria, Cyprus and Malta (EU, 2007).

The application of IFRS is varied. For example, Lesotho permits only listed firms, Gambia permits only unlisted firms, Madagascar requires some unlisted firms and Sierra Leone requires both listed and some unlisted firms to apply IFRS (see Appendix 1 for further detail on how IFRS is adopted and applied in Africa). Moreover, IFRS is required for all domestic listed companies in South Africa, Tanzania, Botswana, Kenya, Ghana, Egypt, Malawi, Mauritius, Sierra Leone and Namibia. In Morocco and Mozambique, IFRS is permitted for all firms except unlisted banks. Countries which either require or permit IFRS for both listed and unlisted companies include; Botswana, Ghana, Kenya, Mauritius, Mozambique, Sierra Leone, South Africa and Tanzania. Many voluntary IFRS adopting countries do not change their institutional settings (Dahawy *et al.*, 2002) thus are not likely to be associated with lower cost of capital and higher market liquidity (Daske *et al.*, 2011). This means that the information risks to market participants remain high despite the adoption of accounting standards which have more disclosure requirements. Moreover, Cairns (2001) argues that voluntary adoption is associated with high incidences of non or incomplete compliance thus it is likely to yield less decision useful accounting information.

1.5 Reasons for, Advantages and Disadvantages of IFRS

The reasons for the adoption of IFRS include; accessing external financing, pressure exerted by the UN, the IMF and the World Bank which require developing countries to use IFRS or improve their financial reporting disclosure requirements (Dahawy *et al.*, 2002). Others are; lack of expertise and experience required to compose local accounting standards, perceptions that IFRS is of higher quality and costless (Ball, 2006), closeness or ties with U.K. or U.S. accounting systems and colonial history (Shima, 2007) to mention a few.⁶

⁶U.K. and U.S. accounting systems are based on Anglo-Saxon principles which focus on private sector or shareholders.

Chamisa (2000) argues that developing countries in which private sector economy dominates are likely to find IFRS more applicable. He further argues that some countries (for example, Botswana, Malawi and Zimbabwe) adopt IFRS as national GAAP while others (for instance, South Africa, Egypt and Kenya) only use IFRS as a basis for developing their national accounting standards. Further, Chamisa (2000) asserts that the suitability of the IFRS to developing countries depends upon a wide range of nation-specific environmental factors, including, economic, political, socio-cultural, legal, education and religious factors.

Adoption of IFRS in Africa is specifically argued to benefit investors and other users of accounting information in many ways including; providing comparable accounting information across different markets, increasing investors confidence in capital markets, thus reducing the cost of capital, and reducing managers opportunities to manipulate earnings as a results of increased disclosure requirements (Warsame, 2006). Others are; attracting foreign capital investment through increased foreign investors confidence and cost-efficiencies to business and reduced information asymmetries (Wong, 2004). From an investors perspective, if IFRS reduces the cost of capital (Daske *et al.*, 2011), the general research question then, is whether IFRS adoption leads to greater earnings response coefficients and value relevance of earnings and book value of equity.

However, IFRS adoption in Africa is not immune from criticisms. Warsame (2006) argues that since the majority of firms in Africa are relatively small, the costs of IFRS adoption are likely to be greater than the benefits that accrue.⁷ Other costs include; translation of IFRS from English to a particular country's language for example from English to Arabic for Egypt and Morocco where the official languages are Arabic (Anandarajan and Hasan, 2010). Another major concern of IFRS is implementation (Ball, 2006 and Schipper, 2005).

⁷This argument seems plausible before the promulgation of IFRS for Small and Medium-Sized Entities (SMEs). The IFRS for SMEs was issued by the IASB on 9th July 2009.

Ball (2006) argues that implementation is the Achilles heel of IFRS, and that the notion that IFRS alone will produce uniform financial reporting seems naive. He further comments that what is needed is the *actual* financial reporting (*de facto* convergence) and not merely having uniform accounting standards (*de jure* convergence). He also argues that institutional settings differ from one country to another and could potentially cause uneven implementation of accounting standards and hence different financial reporting practices.

Ball *et al.*, (2003) show that Hong Kong, Malaysia, Singapore and Thailand have low earnings response coefficients (ERC) despite the fact that their accounting standards were initially based on British Standards or U.S. GAAP and later on IFRS. These findings are attributed to dominance of firms reporting incentives over financial reporting standards (Ball *et al.*, 2003 and Holthausen, 2003). The financial reporting incentives include; financial market development, capital structure, tax systems, firm size, leverage, firm growth, disclosure, profitability and audit quality. Schipper (2005) argues that even in Europe, since IFRS is applied by firms which differ in terms of firm characteristics, institutional settings and the degree of accounting sophistication, precise and detailed guidance is important to ensure even implementation and hence comparability.

Moreover, extant literature suggests that IFRS adoption is likely to be affected by cross-country differences and environmental factors [Barth (2008), Barth and Schipper (2008), Bradshaw *et al.*, (2008), Soderstrom and Sun (2007), Zeff (2007), Ball (2006), Sellhorn and Gornik-Tomaszewski (2006), Burgstahler *et al.*, (2006), Schipper (2005), Ball *et al.*, (2003), Hope (2003), Leuz *et al.*, (2003), Ali and Hwang (2000) and Perera (1989b)]. Factors include; enforcement or regulatory issues, outside shareholders' protections, legal origins, political pressures, economic factors, accounting systems, tax systems, corporate governance structures, culture, firms' reporting incentives, and the nature of accounting standards (whether they are 'principles' or 'rules' based). IFRS is argued to be 'principles'

based whilst U.S. GAAP and many other non-U.S. GAAP are 'rules' based accounting standards. This implies that the usefulness of IFRS is dependent upon these factors and therefore it is likely to vary from one country to another.

For example, Ball (2006), Ball *et al.*, (2003) and La Porta *et al.*, (1998) argue that a high quality reporting regime is associated with common law countries (liberal stock market economies) whilst a low quality regime is associated with code law countries (coordinated market economies). Moreover, they contend that in code law countries, firms use an '*Insider access*' model and hence demand less financial reporting and disclosure (Lantto, 2007). Also, code law countries have low sensitivity of reported earnings to economic gains and losses, less timely loss recognition and individual shareholders are less important contributors to capital.

In addition, Daske *et al.*, (2011) assert that there are serious and label adopters of IFRS. The two categories are measured by the aggregate figure on four dimensions, namely; the number of pages of the financial statements, the IFRS compliance level, amount of accounting accruals relative to cash flow and reporting incentives. They find that unlike label adoption, serious adoption of IFRS is associated with lower cost of capital and higher market liquidity. The presence of IFRS adopter categories implies not only that the IASB and FASB convergence project is hardly achievable but also adoption of IFRS may lead to different usefulness in various capital markets. In Africa for example, IFRS adopters are likely to fall under the second categorization, that is, label adoption group since many countries adopt IFRS in full (Chamisa, 2000) without changing or instituting enforcement mechanisms (World Bank, 2010a and Dahawy *et al.*, 2002).

The extant empirical research on the usefulness of IFRS epitomized by fair value accounting is also mixed [see for instance; Barth *et al.*, 2008, Prather-Kinsey (2006), Barth *et al.*, (1996) and Nelson (1996)]. Moreover, the majority of studies have focused on the

banking industry, particularly on financial instruments and revaluations of assets and liabilities (Schipper, 2009). Further, many of the studies carried out to date have concentrated on developed economies such as U.S., U.K., Germany, France, Australia, Japan, Hong Kong and Singapore. In short, little attention has been paid to developing economies of Africa, and hence this severely limits the generalizability of the results to developing countries.

In summary, the adoption of IFRS in Africa offers a rich and unique research setting for examining the usefulness of IFRS in undeveloped/developing capital markets with different cultural and legal origin backgrounds. The major criticism facing IFRS is that fair value accounting as the cornerstone valuation concept, lacks reliability in illiquid markets as it leads to intrinsic measurement error and management induced error (Song *et al.*, 2010). This is more so the case in illiquid markets the fair value measures are more likely based on management discretion and subjectivity because by default mark to model (level 3) and not mark to market accounting (levels 1 and 2) is used in estimating asset and liability values. To sum up, although IFRS is widely adopted in Africa, there are relatively few studies on the usefulness of IFRS. Thus, the study in Africa provides additional and practical feedback and evidence to standard setting boards (IASB and FASB), regulators and academics on whether or not fair value accounting is a fully appropriate measurement working principle in a global context.

1.6 Research Questions and Objectives

The research objectives are fourfold: whether IFRS increases; (i) the information content of earnings and book value of equity as measured through earnings response coefficient (ERC), book value response coefficient (BRC) and the adjusted R^2 , (ii) asymmetric earnings timeliness and conditional conservatism (iii) the predictive ability of earnings and cash flow and (iv) to examine the impact of legal origin and culture on the value relevance of earnings

and book value of equity, asymmetric earnings timeliness and the predictive ability of earnings and cash flow. Equally, the thesis attempts to answer the following research questions; (i) Does IFRS increase the information content of earnings and book value of equity as measured through ERC, BRC and adjusted R^2 in African countries? (ii) Does IFRS adoption increase asymmetric earnings timeliness and conditional conservatism as a measure of stewardship in African countries? (iii) Does IFRS increase the predictive ability of future cash flow and earnings in African countries? (iv) Does legal origin and culture impact on information content of earnings and book value of equity, asymmetric earnings timeliness and the predictive ability of earnings and future cash flow?

The results indicate that IFRS leads to an increase in the BRC and overall value relevance but not ERC. Moreover, the BRC and adjusted R^2 increase more in code law than common law countries. This implies that IFRS is incrementally more value relevant in code law than common law countries. With respect to culture, the findings indicate that the secretive culture widespread in African countries is associated with a greater ERC before IFRS and a greater BRC after IFRS. The higher ERC before IFRS may be explained by the supposition that; managers in culturally embedded countries tend to report higher earnings (Risberg, 2005) and by low levels of disclosure of local GAAP. On the other hand, the increase in BRC after IFRS may be explained by the increased reporting flexibility under IFRS that allows greater subjective decisions to managers especially on assumptions, methods and inputs to the measurement of assets and liabilities.

The results also show that earnings recognize bad news more rapidly than good news. Furthermore, I find the evidence that IFRS results in a decrease in gains, loss, incremental loss and overall earnings recognition timeliness. Moreover, common law earnings recognize bad news (good news) more timely (less timely) than code law earnings and the earnings

timeliness decreases after IFRS. Additionally, the results indicate that cultural conservatism is associated with a higher (less) gains (loss and incremental loss) recognition timeliness.

Furthermore, the findings suggest that IFRS does not lead to improved predictive ability of contemporaneous cash flow and earnings. Also, contemporaneous cash flow dominates earnings and accounting accruals in predicting future operating cash flow for both one-year and two-year predictions. Pertaining to legal origin, results do not support the assertion that IFRS leads to incrementally more predictive ability of earnings and cash flow more in common than in code law firms. Also, conservative culture is associated with greater (lower) predictive ability of earnings (cash flow). Moreover, conservative culture is associated with a reduction in the overall predictive ability of earnings and cash flow.

1.7 Contributions

This thesis extends Prather-Kinsey's (2006) study to a set of African countries. Prather-Kinsey (2006) examines the value relevance and timeliness of earnings announcements when the local GAAP in South Africa and Mexico converges with the developed GAAP (IFRS or U.S. GAAP) for the period from 1998 to 2000. This study differs from Prather-Kinsey's study in several ways; (i) unlike Prather-Kinsey (2006) who define usefulness as "*having value relevance and timeliness of earnings announcements*", it takes a broader approach of usefulness of accounting information and defines it as per IASB (2010) conceptual framework, (ii) while Prather-Kinsey (2006) examines value relevance and timeliness in only two emerging capital markets; Johannesburg Stock Exchange (JSE) and Bolsa Mexicana de Valores Stock Exchange (BMV) for a short period of three years, I use a relatively large sample of listed companies from five African stock markets namely; South Africa, Morocco, Egypt, Kenya and Botswana and a larger sample period of eight years from 2002 to 2009, (iii) Also unlike prior research, I examine how culture and legal origin impact on value

relevance, conditional conservatism and earnings and cash flow predictability. That is, unlike prior studies, I control for differences in shareholders rights; enforcement quality and patterns of ownership concentration (legal origins) and societal values (culture) and (iv) I contribute to the ongoing fair value versus historical cost debate by providing evidence that fair value is value relevant, but less timely and less predictive in frontier markets of Africa.

Unlike prior studies, this thesis uses a sample from low and middle income countries characterized by illiquid capital markets and cultural diversity (see Section 3.6 for further detail). Generally, the policy implication is that the findings from this thesis should be of interest to the IASB as it provides feedback on the applicability and usefulness of IFRS and implementation challenges, that is, culture and legal origins. Also, the findings are of interest to stock market regulators in understanding whether IFRS improves the accounting information usefulness in African markets.

1.8 An Overview of Thesis Chapters

The rest of this thesis proceeds as follows. Chapter two contains the literature review which underpins the above research questions. In particular, the literature review covers the following sub-themes; value relevance, asymmetric earnings timeliness and conditional conservatism and earnings and cash flow predictability. Chapter three explains the institutional and accounting regulatory frameworks of South Africa, Egypt, Botswana, Kenya and Morocco. Chapter four discusses data and the descriptive statistics. It describes how data are collected, the countries involved, the data collection criteria, the measures of central tendencies and dispersions of variables and the correlations among variables. Chapter five examines the value relevance of IFRS. In particular, it examines whether IFRS increases the information content of earnings and book value of equity to investors. Also, it examines how culture and legal origin affect the value relevance impact of IFRS.

Chapter six examines the impact of IFRS on asymmetric earnings timeliness and conditional conservatism. In particular, it examines whether IFRS increases gains recognition timeliness, loss and incremental loss recognition timeliness and overall earnings timeliness. Also, it examines the impact of culture and legal origin on asymmetric earnings timeliness and conditional conservatism during the change of accounting measurement rule from local GAAP to IFRS. Chapter seven examines the impact of IFRS adoption on the predictive ability of contemporaneous earnings and operating cash flow. Specifically, it examines whether IFRS increases the ability of the contemporaneous earnings (or accruals) and operating cash flow to predict future operating cash flow. Also, it examines the relative roles of culture and legal origin on earnings (accruals) and cash flow predictability impact of IFRS. Chapter eight summarizes the background and findings of the research, discusses the policy implications, limitations, and offers the directions for future research.

CHAPTER TWO

RESEARCH BACKGROUND

2.0 Introduction

This chapter provides the literature review on the themes underpinning the main research questions and objectives. In particular, it reviews the literature on value relevance of IFRS, asymmetric earnings timeliness, and earnings and cash flow predictability. Also, it provides the literature on the relationship between legal origins, culture and accounting information.

2.1 The Value Relevance of IFRS

One of the ongoing debates in financial accounting is whether fair value accounting information is incrementally price or value relevant over historical cost accounting. This question is important particularly at this moment when the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) are working hard to ensure convergence of accounting standards and the worldwide adoption of IFRS which uses fair value as the working principle, is emphasized. Despite the fact that the IASB conceptual framework mentions many purposes of accounting information, the objective of financial reporting is to provide relevant information on economic performance primarily for current and prospective shareholders (Barth *et al.*, 2001, 2008 and Prather-Kinsey, 2006).⁸ The primary vehicle to operationalize economic performance has been through value relevance research.

Value relevance studies measure the contemporaneous relationship between financial statement variables especially earnings and stock returns (Ball *et al.*, 2008). An accounting

⁸ While the old conceptual framework issued in 1989 embraced a stakeholder theory and highlighted seven users of financial accounting information with investors as a primary focus, the new one (issued on September 2010) focuses only on existing and potential investors, lenders and other creditors.

variable is said to be value relevant if it predicts a relationship with equity market values (Barth *et al.*, 2001). More specifically, the tests of value relevance are meant to operationalize the accounting qualitative characteristics of relevance and faithful representation stated in the IASB (2010) conceptual framework.⁹ The common metric used to assess the value relevance of accounting information is an R^2 (Barth *et al.*, 2008). Other measures include; increases in earnings response coefficient (ERC) and book value response coefficient (BRC).

The early notable work on earnings response coefficients is that of Kormendi and Lipe (1987). Using time series models, they find that investors place more value on persistent rather than transitory earnings leading to higher ERC and explanatory power of model (R^2) for the former than the latter. Studies on earnings response coefficients are developments from Ball and Brown (1968) and Beaver's (1968) seminal papers on the empirical evaluation of accounting income numbers, and the information content of annual earnings announcements, respectively. Information content is defined as the change in expectations about the outcome of an event and the change must be sufficient to induce economic decision making behaviour (Beaver, 1968). These papers changed the accounting perspective from normative to positive accounting theory. This implies that ERC and BRC research derive from valuation theory (Godfrey *et al.*, 2006, Ohlson, 1995, Brown, 1994, Beaver, 1968, Graham *et al.*, 1962 and Miller and Modigliani, 1961) and are premised on positive accounting theory and efficient market hypothesis assumptions (Ball and Brown, 1968).

The role of accounting information, particularly earnings and earnings changes, in setting prices has been extensively researched in the financial accounting literature [see for

⁹The IASB 1989 conceptual framework mentions four qualitative characteristics of accounting information namely; relevance, reliability, comparability and understandability. However, the IASB (2010) conceptual framework outlines *two* fundamental qualitative characteristics i.e. relevance and faithful representation and *four* enhancing qualitative characteristics namely; comparability, verifiability, timeliness and understandability.

instance; Prather-Kinsey (2006), Kothari (2001), Easton and Harris (1991) and Lev (1989)] and weak explanatory and predictive power between the variables is the common phenomenon. This is argued to be a result of low quality of earnings prepared under conservative principles of historical cost accounting (Kothari, 2001 and Lev, 1989).¹⁰ In order to develop these studies, Lev (1989) suggests that the focus should be on policy-related themes that examine the impact of accounting measurement and principles on market valuation; for example the impact of IFRS adoption on the value of the firm. Also, as a way of increasing the explanatory power of income on value relevance research, the net book value of equity should be added as an independent variable (Francis and Schipper, 1999, Ohlson, 1995 and Lev, 1989). Directly related to this research, Prather-Kinsey (2006) calls for more studies on the value relevance of IFRS in emerging African capital markets in order to provide evidence to standard setting bodies (IASB and FASB) on the suitability of IFRS to shareholders and other capital providers in illiquid markets.

In summary, value relevance studies have largely been explored in the financial accounting literature to examine economic impact for investors (Barth *et al.*, 2008, Holthausen and Watts, 2001 and Barth *et al.*, 2001). For the purpose of exposition, studies on the value relevance of fair values are now reviewed and categorised into financial assets and liabilities, net income and comprehensive income, and revaluations and general studies.

2.1.1 Financial Assets and Liabilities Studies

Archival research relating to fair values tends to focus on a few areas and is mixed (Schipper, 2009). It has mainly concentrated on the banking industry, particularly financial instruments and asset revaluations, because the core operating assets and liabilities are financial, and banks are expected to manage most or all the assets and liabilities in business on a fair value

¹⁰ Other competing arguments are; methodological issues particularly misspecification of models, investors' irrationality, presence of low profitability firms and transitory earnings components.

basis. Research in this area has been carried out extensively in developed (westernised) capital markets such as U.S., U.K., Australia, Canada, Germany, France, Japan and Hong Kong. Therefore there is a limit to which the results of this research can be generalized to other countries, especially undeveloped or developing ones. Studies related to fair values of financial assets and liabilities in banking industry include; Plantin *et al.*, (2008), Landsman (2007), Deans (2007), Barth (2004), Wong (2000), Barth *et al.*, (1996), Venkatachalam (1996), Nelson (1996), Eccher *et al.*, (1996), Cornett *et al.*, (1996), Barth (1994), Barth *et al.*, (1995) and Bernard *et al.*, (1995). In general, these studies provide mixed results on the value relevance of fair value accounting information. For example, Wong (2000) finds that SFAS 119 fair value disclosures for derivatives do not provide incremental information about foreign currency risk for large manufacturing firms.

Using a similar research design (the book value-earnings valuation model), data (200 largest U.S. banks), standard 107 and period (1992 and 1993), Nelson (1996) and Barth *et al.*, (1996) arrive at different conclusions. On the one hand, Nelson (1996) finds that fair value measures for investment securities, loans, deposits, long term debt and off balance sheet financial instruments are not incrementally value relevant to book value and financial statement proxies of future profitability. On the other hand, Barth *et al.*, (1996) find that fair value estimates disclosed under SFAS 107 provide significant explanatory power for bank share prices beyond that provided by book values for three of the five major asset and liability categories disclosed. They also consistently find incremental explanatory power for the fair value of loans. Moreover, using similar approaches to Barth *et al.*, (1996) and Nelson (1996), Eccher *et al.*, (1996) find that investment securities fair values are incrementally informative relative to their book values in explaining bank share prices.

Venkatachalam (1996) examines the value relevance of banks' derivatives disclosures provided under SFAS No. 119 for a sample of banks between 1993 and 1994. The findings

suggest that fair value estimates explain cross-sectional variation in bank share prices incremental to fair value of the primary on-balance accounts (that is; cash, investments, loans, deposits and debt). Similarly, Barth (1994) finds that investment securities' fair values are incrementally associated with bank share prices after controlling for investment book values. Moreover, Barth *et al.*, (1995) confirm the Barths (1994) findings and indicate that fair value-based measures of net income are more volatile than historical cost based measures but the incremental volatility is not reflected in bank prices. Also, they find that banks violate regulatory capital requirements more frequently under fair value than historical cost accounting. Barth (2004) argues that to some extent earnings volatility is caused by measurement errors.

Furthermore, Landsman (2007) asserts that disclosed and recognised fair value estimates are more informative to investors although the degree of informativeness is limited to the amount of measurement error and the source of estimates (whether the estimates are internally generated by management or externally generated by independent appraisers). Hence measurement errors may cause the reliability of accounting information to be impaired. However, Bernard *et al.*, (1995) find that although there is evidence of earnings management, there is no reliable evidence that mark to market numbers are managed to avoid regulatory capital constraints. His study investigated the impact of fair value accounting on Danish bank regulatory capital. In information content studies, Cornett *et al.*, (1996) reveal that the market perceives the pronouncement of measurement and disclosure requirements is detrimental to the value of commercial banks. Their study finds a negative association between the standards' pronouncements and value.

2.1.2 Studies on Net Income and Comprehensive Income

Studies on net and comprehensive income include;Goncharov and Hodgson (2011), Van Cauwenberge and De Beelde (2007) and Hodder *et al.*, (2006).¹¹ Using U.S. sample for a period of 9 years from 1996 to 2004, Hodder *et al.*, (2006) find that comprehensive income (CI) has more volatility than net income (NI) but less than full fair value income (FFV). However, over the 9-year sample period the average volatility levels of NI, CI and FFV income are about the same. Moreover, income volatility is correlated with some but not all risk measures considered. Based on prior literature,Van Cauwenberge and De Beelde (2007) argue that comprehensive income enables investorsto ascertain variouscomponents of income including unrealized gains and losses. However, they argue that there is concern about the recycling of gains or losses due to re-measurements of assets or liabilities at each reporting date. Also, consistent with Ohlson (1999), they argue that net income is a better predictor of future income than comprehensive income which comprises many subjective components including transitory gains and losses.

Goncharov and Hodgson (2011) examine the value and price revision relevance of various income components in 16 European countries. In general, they find that net income (transaction) is a superior measure of firms' performance from a valuation perspective than comprehensive income. However, comprehensive income explains the variation in price revisions better than net income and this implies that analysts use comprehensive income in equity valuation and can even benefit from accounting on clean surplus basis.¹²

¹¹ Net income is basically realised income from business transaction operations only while comprehensive income includes unrealised operation sources such revaluations, exchange changes or losses and so on.

¹²Clean surplus accounting requires that all changes in book value of net assets ($b_t - b_{t-1}$) unrelated to dividends pass through income, implying that $b_t - b_{t-1} = E_t - d_t$.

2.1.3 Revaluation and General Studies

Value Relevance of Fair Value Accounting Information

Using Australian data from 1991-1995, Barth and Clinch (1998) find that revalued investments are incrementally priced. For mining firms, they find no significant positive relation between share prices and property, plant and equipment revaluation. Aboody *et al.*, (1999) find that upward revaluations are significantly positively related to changes in future performance measured by operating income and cash flows from operations. With regard to pricing, the findings are similar to Barth and Clinch (1998) in that, re-valued investments are incrementally priced.

Studies of accounting for stock-based compensation (SFAS, 123) for example; Landsman *et al.*, (2006), Aboody *et al.*, (2004) and Bell *et al.*, (2002) show that employee option expense is value relevant to investors. Subramanyam *et al.*, (2007) document that fair value pension accounting does not improve the value relevance of the balance sheet although it improves its credit relevance. However, it can impair both the value and credit relevance of income. When the balance sheet and income statements are aggregated, fair value pension accounting improves neither the value relevance nor the credit relevance. This implies that there is a loss of information content during aggregation.

Studies on the comparison of value relevance of accounting information under IFRS and other GAAP (for example, U.S. GAAP or local GAAP) have been extensively examined in large economies and the results are mixed. Examples of studies which support the value relevance of earnings and book value of equity include, Türel (2009, Turkey), Barth *et al.*, (2008, International study: 21 countries including South Africa), Jermakowicz *et al.*, (2007, Germany), Beckman *et al.*, (2007, Germany), Liu and Liu (2007, China), Prather-Kinsey (2006, South Africa and Mexico), Bartov *et al.*, (2005, Germany) and Sami and Zhou (2004, China).

However, other studies do not find IFRS as incrementally more value relevant in terms of ERC and BRC than local GAAP. These include; Tsalavoutas *et al.*, (2010, Greece), Lantto (2007, Finland), Hung and Subramanyam (2007, Germany), Schiebel (2007, Germany), Lin and Chen (2005, China) and Eccher and Healy (2003, China). In general, these do not support the assertion that IFRS increases the information content of earnings and book value of equity. The two contradictory results in Germany and China are attributed to the manner of IFRS adoption (mandatory or voluntary) whereby the increase in value relevance of IFRS is linked to mandatory adoption.¹³ Also, the difference in infrastructures and enforcement mechanisms and controls is put forward as another reason. In summary, these results imply that the historical cost versus fair value debate is an open issue.

In a study involving 21 countries including South Africa between 1994 and 2003, Barth *et al.*, (2008) find *inter alia* that firms applying IFRS have greater ERC, BRC and explanatory and predictive power than those applying non-US domestic standards. In a comparative study, Bartov *et al.*, (2005) find that earnings response coefficients are highest for firms applying U.S. GAAP followed by those applying IFRS and then followed by firms applying German accounting standards. This observation supports the notion that U.S. GAAP provides greater value relevance for investors.

Prather-Kinsey (2006) examines the value relevance of earnings and book value of equity and information content of Johannesburg Stock Exchange (JSE) and Bolsa Mexicana de Valores Stock Exchange (BMV) listed companies for the period 1998-2000.¹⁴ She finds

¹³ Although IFRS is not permitted in China (Deloitte, 2011), companies are required to report to foreign and local investors using IFRS and local Chinese accounting standards respectively (Tsalavoutas *et al.*, 2010).

¹⁴ This study used a measurement approach by regressing market value on earnings and book values of equity i.e. $MV_{i,t} = \alpha_{0,t} + \alpha_{1,t}BV_{i,t} + \alpha_{2,t}NI_{i,t} + \varepsilon_{i,t}$. The equation is scaled throughout by the

that JSE's and BMV's reported earnings and book value of equity are value relevant, although the explanatory power due to convergence with either IFRS or U.S. GAAP increases only in Mexico. She attributes this finding to the fact that South Africa started adopting IFRS with a lag in 1993. Also, Prather-Kinsey (2006) finds that there is information content of earnings announcements in South Africa but not in Mexico. Again, this finding seems to be caused by the structure of family ownership prevalent in Mexico where information is more so channelled through an insider access model rather than through financial reporting.

Similarly, Warsame (2006) predicts and finds that there is value relevance of IFRS for African countries adopting and those harmonizing their local GAAP with IFRS for a period prior to 2006. Negash (2008) examines the impact of accounting information liberalization (IFRS) on the value relevance of earnings, book value of equity and dividends using an Ohlson (1995) model for 118 companies listed in JSE from 1988 to 2004. The sample was divided into two periods namely; pre-liberalization period (1989-1993) and post-liberalization period (1998-2004). The period from 1994 to 1997 was considered as a liberalization window. The author concludes that IFRS does not improve the value relevance of accounting information.

As an overview, we can observe that the value relevance of IFRS through ERC and BRC is mixed. This is the case even in liquid capital markets which are a necessary condition for the fair value accounting paradigm to work well (Ball, 2008). As a result, the generalizability of the findings is limited. Moreover, prior studies assume that the perception of investors (as reflected in share prices) is a surrogate for the relevance and reliability of fair value accounting information. For instance, Dechow (1994) and Barth *et al.*, (2001) draw

beginning of the period book value of equity. MV is market capitalization calculated as the prices times the number of shares outstanding; $BV_{i,t}$ is book values of equities at time t , $NI_{i,t}$ is the reported income in the income statement and $\varepsilon_{i,t}$ is the random variable error.

inferences from value relevance studies as capturing the combined relevance and reliability of the earnings information or other financial accounting information. Deans (2007), however argues more widely that the usefulness of fair value information depends on; sectors of the economy, the types of assets and liabilities, disclosed and recognized information, and the cultural and geographic situation.

Culture Theory

The concept that culture is a determinant of institutions is a developing phenomenon in accounting, finance and economics literatures. For instance, Greif (1994), Landes (2000), Stulz and Williamson (2003) and Ding *et al.*, (2005) empirically indicate that culture dominates institutions. As long as accounting is a social system like other systems (such as economic, legal, political, and financial systems), and part of the institutional setting, it is more likely to be affected by culture as well (Gray, 1988; Bloom and Naciri, 1989; Perera, 1989a; Chow *et al.*, 1995; Verma and Gray, 1998).

The theory of national culture was pioneered by Hofstede (1980) and Hofstede's (1980, 1991, and 2001) seminal works remain pivotal in terms of culture related research. Hofstede analyzed and summarized the attitude survey research work done on single multinational company (IBM) employees from 1967 to 1973 in 66 countries worldwide. The survey was conducted in two different periods. The study aimed at identifying cultural dimensions in work places and attributing them to the national level.

Hofstede (1980, p.25) defines culture as 'the collective programming of the mind which distinguishes the members of one human group from another'. He further explains that culture manifests itself not only in values but also in more superficial ways such as symbols, heroes, and rituals. He argues that '*culture*' is reserved for societies as a whole, or nations, while '*subculture*' is used to denote the level of an organization, profession, or family.

Hofstede (1980) used more than 116000 questionnaires and he matched the respondents by occupation, age and sex and identified four dimensions of culture. They include; uncertainty avoidance (UA), power distance (PD), individualism (IND) versus collectivism (COL) and masculinity (MASC) versus femininity (FEM) and they are defined further in Section 3.6.

The countries' scores of the cultural dimensions are presented in Hofstede (1980, Table 7.1, p.315). In addition to above dimensions, Hofstede and Bond (1988) identified another dimension of culture namely; long term orientation versus short term orientation or Confucian dynamism.¹⁵ Informed by Hofstede (1980), this study applies three dimensions including power distance, masculinity versus femininity and individualism versus collectivism. Confucian dynamism refers to the time orientation of cultures and is based on the work of the great Chinese philosopher Confucius.¹⁶ It also refers to the acceptance of the legitimacy of hierarchy and valuing of perseverance and thrift, without undue emphasis on tradition and social obligations that could impede business initiative. A high score along this dimension reflects a culture's tendency toward a future-minded mentality.

Hofstede and Bond (1988) contend that people in societies that have high Confucian dynamism scores tend to associate more with the values of persistence, respect for status, thrift, and having a sense of shame. Their study indicates that people from Hong Kong, Taiwan, Japan, South Korea, Brazil, India and Thailand are highly ranked in Confucian Dynamism values. However, Pakistan, West Africa, Philippines, Canada, East Africa and

¹⁵This study was based on the cultural values prepared by Chinese social scientists and translated into English and administered in 22 selected countries. Hofstede and Bond (1988) argue that because Hofstede (1980) questionnaires were prepared from western countries perspective, there was a probability of excluding some relevant items and including irrelevant ones in the perspective of non-western countries.

¹⁶ This was a highly respected civil servant, Kong Fu Ze who lived in China between 551BC-479BC and was known for his wisdom. He was very similar to Greek Philosopher Socrates and was renamed Confucius by the Jesuit missionaries.

Great Britain are lowly ranked. The scores for this new variable are available for thirty eight (38) countries excluding South Africa and Arab countries which contribute large proportion of my sample.

Hofstede's (1980) study is widely criticized on its reliance on results based on a single company worldwide and that it is out dated. Other concerns include the identified dimensions themselves. Consequently, other studies in this line of research emerged including, Schwartz (1994) and Schwartz and Bardi (1997). These studies partitioned nations into seven cultural dimensions basing on data gathered during 1988-1992 period from 86 samples drawn from 41 cultural groups in 38 countries as follows; conservatism, autonomy, intellectual autonomy, affective autonomy, hierarchy, masterly, egalitarian commitment, and harmony.

Schwartz (1994) and Schwartz and Bardi (1997) define these dimensions as follows; conservatism: emphasis on the status quo, property, and restraint of actions or inclinations that might disrupt the solidary group or the traditional order. Autonomy: emphasis on the person viewed as an autonomous entity entitled to pursue his or her individual interests and desires. It can be split into two sub-dimensions: Intellectual autonomy which is an emphasis on self-direction and flexibility of thoughts and affective autonomy which puts emphasis on stimulation and hedonism. Hierarchy is an emphasis on the legitimacy of the hierarchical role and resource allocation.

Masterly: emphasis on active masterly of the social environment through self-assertion, promotion of active efforts to modify one's surroundings and get ahead of other people. Egalitarian Commitment: Emphasis on transcendence of selfish interests, voluntary commitment promoting the welfare of other people. Harmony: Emphasis on fitting harmoniously into the environment – promoting the environment, unity with nature, world of beauty. The seven cultural values were reduced into two main dimensions namely; first, autonomous versus conservatism and secondly, egalitarian commitment and harmony versus

hierarchy and masterly. Hope (2003) argues that Schwartz (1994) cultural values are used in international accounting and finance as useful complements of Hofstede's study. Nevertheless, no African country was included in Schwartz study thus its scores are irrelevant to the current research.

Building on Hofstede (1980) and Hofstede and Bond (1988), House *et al.*, (2004) links culture, leadership and organizations. Unlike Hofstede's (1980) study which used a single multinational corporation and Hofstede and Bond (1988) which used students as respondents to study the cultural dimensions, this study involved three industries namely; financial services, food processing and telecommunications thus introducing more diversity than previous studies. Also, House *et al.*, (2004) measured culture at different levels with both practices and values and then related it with societal, organizational, and leadership effectiveness. The data was collected from 17300 managers in 951 organizations from 62 societies or countries including seven African countries.¹⁷ This study identified nine cultural dimensions as follows; uncertainty avoidance, power distance, future orientation, institutional collectivism (collectivism I), In-group collectivism (collectivism II), gender egalitarianism, assertiveness, performance orientation and humane orientation.

House *et al.*, (2004) define uncertainty avoidance and power distance similar to Hofstede (1980). *Future orientation* is similar to Confucian dynamism in Hofstede and Bond (1988) and is defined by House *et al.*, (2004, p.30) as “the extent to which individuals engage in future oriented behaviors such as delaying gratification, planning, and investing in the future”. *Institutional Collectivism (Collectivism I)* is the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and

¹⁷ They include South Africa (Black and white sample), Egypt, Morocco, Namibia, Nigeria, Zambia and Zimbabwe. Moreover, South Africa consists of 79.5% blacks, 9% whites, 9% coloureds and 2.5% Asians.

collective action. *In-Group Collectivism (Collectivism II)* is the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families.

Gender Egalitarianism is defined as the degree to which a collective minimizes gender inequality. *Assertiveness* is the degree to which individuals are assertive, confrontational, and aggressive in their relationships with others. *Performance orientation* is the degree to which a collective encourages and rewards group members for performance improvement and excellence. Moreover, *humane orientation* is defined as the degree to which a collective encourages and rewards individuals for being fair altruistic, generous, caring, and kind to others. In summary, collectivism I and II and humane orientation are mere categorizations of Individualism versus collectivism of Hofstede (1980). Also, gender egalitarianism and assertiveness are mere classifications of masculinity versus femininity. The dimension which is new in this study is performance orientation.

Despite its importance and acceptance in cross cultural research, Hofstede (1980) has received strong criticisms (see for instance, Gernon and Wallace, 1995; McSweeney, 2002; and Baskerville, 2003). Foremost being that (i) culture dimensions do not empirically exist. In responding to this critique, Hofstede (2002) argues that the dimensions exist and are still valid and they were validated against external measurements. He further adds that the dimensions were assumed to have centuries-old roots and that only data which remained stable across two subsequent surveys were maintained, (ii) McSweeney (2002) argues that surveys are not a suitable way of measuring cultural differences. In responding, Hofstede (2002, p.2) argues that alternative ways are welcome, (iii) it is criticized that nations are not the best units for studying cultures. Hofstede agrees but argues that nations are usually the only kind of units available for comparison, (iv) another critique is that; a one company study cannot provide information about whole national cultures. Hofstede (2002) responds that his study only intended to measure the differences between national cultures, (v) the dimensions

established are not sufficient. Hofstede responds that additional dimensions should be conceptually and statistically independent from the five dimensions already defined.

Hofstede (1980) remains useful in research relating culture to other disciplines for reasons explained above. Moreover, Hofstede participated in the field and generated robust results (Ding *et al.*, 2005). Sondergaard (1994) and Dahl (2004) argue that Hofstede national culture dimensions have been widely accepted and used in business related research including accounting and psychological research. Furthermore, Sudarwan and Fogarty (1996) note that Hofstede study has received significant attention by different fields of study and that it has been cited in nearly 600 studies between 1981 and 1992. It is obvious that from 1980 when Hofstede work was published for the first time until now, its study might have been cited more than three times that of 1981-1992. This justifies its acceptability and importance. After all culture is sticky and exists for a long time before it can be modified.¹⁸ Papadaki (2005) contends that although there exist many critiques of Hofstede's work in the literature but they have not diminished the attractiveness of his model to researchers of cross- cultural research. To appreciate the shortcomings of Hofstede cultural dimensions, Ding *et al.*, (2005) complement their study with Schwartz (1994) cultural value measures.

Other Factors

Papadaki (2005, p.356) posits that 'local accounting standards are the result of a complex interaction of cultural, historical, economic, and institutional factors.' Apart from culture, Saudagaran and Meek (1990, 1997) specify other factors which influence accounting development as follows; inflation levels, political and economic ties, the level of economic

¹⁸ Specific nations have specific cultural traits that are rather sticky and difficult to change in any basic fashion although they can often be modified (Herman Kahn, cited in Hofstede and Bond, 1988).

development, education levels, the nature of the relationship between business and enterprises and providers of capital and the legal system.

Gambling and Abdel Karim (1986) study the influence of Islamic beliefs on accounting in Islamic societies and conclude that accounting theory is part of the personality and hence culture. They further claim that in these societies, individuals are Muslims, their personalities are Islamic and their culture is Islamic and hence accounting theory is also Islamic. Moreover, religion is considered to be a significant cultural factor that impacts all social institutions including accounting (Askary and Jackling, 2004). Lee (1997) argues that Gray (1988) considers only culture to be the most significant factor in shaping accounting systems and ignores other factors such as political, legal and colonial or historical influences.

Culture and Accounting Information

Prior empirical research on culture and accounting focuses mainly on testing the relationship between the disclosure of accounting information and secretive culture. The first paper to link culture and the development of accounting systems internationally is Gray (1988). Gray (1988) develops a framework that links Hofstede (1980) cultural dimensions (society values) to accounting values and accounting practices. Both societal and cultural dimensions are defined further in Section 3.6. The four hypotheses developed are; the secrecy, conservatism, uniformity and professionalism hypothesis.

Secrecy hypothesis states that countries which are highly ranked in terms of uncertainty avoidance and power distance and lower in individualism and masculinity are more likely to rank highly in terms of secrecy. *Professionalism hypothesis* states that countries which rank highly in individualism but lower in uncertainty avoidance and power distances are more likely to rank highly in terms of professionalism. *Conservatism hypothesis* states that countries which are highly ranked in uncertainty avoidance but lower in

individualism and masculinity are more likely to rank highly in terms of conservatism and lastly *Uniformity hypothesis* states that uniformity is directly related to uncertainty avoidance and power distance but inversely related to individualism. Unlike Hofstede (1980), Gray (1988) defines culture as the value system shared by major groups of populations.

Chow *et al.*, (1995) examine the impact of culture on Chinese accounting reforms; when China changed its economic systems from centrally ownership economy to a market oriented one.¹⁹ The accounting reforms underwent four phases starting from 1985 and there has been little progress towards the adoption of IFRS.²⁰ Chow *et al.*, (1995) attribute this slow pace of accounting reforms to Chinese culture. In Hofstede's (1980) terms, China is a society with a large power distance, a high degree of collectivism, strong uncertainty avoidance, less masculinity and long term orientation culture. This is totally opposite to the Anglo-American culture from which IFRS originates. Under Gray's (1988) model, Chinese accounting systems are statutory, conservative, uniform and secretive. The accounting systems and practices in China are centrally controlled and governed by the government through its ministry of finance. Moreover, the accounting systems are underpinned by or premised on historical cost principles. Consistent with Violet (1983) the implication of Chow *et al.*, (1995) is that the success of internationalization and homogenization of accounting standards and IFRS in particular is limited to the countries' cultural differences. Along similar lines of reasoning, Perera (1989b) documents that there is a strong relationship between accounting and culture.

¹⁹Centrally owned economy is sometimes referred to as; socialist and state owned or fund oriented economy while market oriented economy is the private and foreign investment.

²⁰ Phase 1(1985-1992): Accounting for foreign invested enterprises and phase 2(1992): Accounting for share enterprises. Moreover, phase 3(1993): Accounting standards and new industry-based accounting regulations and phase 4(1994 onwards): A full set of accounting standards.

Perera and Matthews (1990) extend the Hofstede Gray framework. They argue that in addition to the relation between societal and accounting values established by Gray (1988), accounting is also affected by global organizations such as the United Nations and the European Economic Union, among others. Frechner and Kilgore (1994) argue that the extant research does not explain the differences in accounting practices within and across cluster groupings identified by Hofstede and Gray. Therefore, they develop a framework which involves economic and cultural factors and link them directly with accounting practices.

In a further study involving 29 countries, Salter and Niswander (1995) test Gray's hypotheses using regression analysis. Their findings are summarized as follows; (i) professionalism is strongly positively correlated with uncertainty avoidance, (ii) uniformity is strongly positively related to uncertainty avoidance and significantly inversely related to masculinity, (iii) conservatism is strongly positively related to uncertainty avoidance but significantly negatively related to masculinity and (iv) secrecy is significantly directly related to uncertainty avoidance and strongly negatively related to individualism. The implication is that Gray's framework is not fully confirmed and that power distance dimension is insignificant in explaining accounting values and practices.

Unlike Salter and Niswander (1995), Gray and Vint (1995) test only the secrecy dimension of Gray's hypotheses. In particular, they examine the relationship between secrecy and disclosure practices covering 27 countries by using survey method and regression analysis. They find that secrecy is indirectly related to disclosure practices thus confirming the secrecy hypothesis. Sudarwan and Forgarty (1996) examine the Gray's framework in Indonesia using independently self-constructed cultural values (different from those of Hofstede (1980)) and structural equation modelling (SEM). Their findings are as follows; (i) power distance is positively related to conservatism and uniformity, (ii) uncertainty avoidance is positively related to uniformity and conservatism, (iii) individualism is

positively related to professionalism and conservatism, and (iv) uncertainty avoidance and individualism are negatively related to secrecy. The results are mixed as far as Gray's (1988) framework is concerned.

In another international study, Zarzeski (1996) finds that there is a relationship between secretive culture and the level of accounting disclosure practices. Also, information disclosure is directly related to individualism and masculinity and inversely related to uncertainty avoidance. Thus, this study supports the secrecy hypothesis. Moreover, the study reveals that the level of firm's disclosure of accounting information is dependent upon the internationalism of the firm, whereby foreign firms disclose more information than local firms.

Another study which examines the influence of culture on the level of disclosure is Wingate (1997). This study covers 39 countries and relates independent data on financial disclosure to Hofstede's (1980) index scores. The results indicate that power distance is insignificant to disclosure practices contrary to Gray's (1988) prediction. Jaggi and Low (2000) replicate Wingate's (1997) study and add legal system as an additional explanatory variable to Hofstede cultural variables. Their study involves six countries, divided into equal numbers of common and code law countries. Their findings indicate that the cultural variables are only significant to code law countries. In interpreting Jaggi and Low (2000) results, Douppnik and Tsakumis (2004) conclude that in the presence of legal origin culture does not matter to disclosure levels. However, using Hofstede (1980) and Schwartz (1994) data, Ding *et al.*, (2005) conclude that culture dominates legal origins in explaining the divergence of local accounting standards from international accounting standards.

Moreover, Hope (2003) repeats the Jaggi and Lows (2000) study for all 39 countries studied by Wingate (1997) for a period of 3 years from 1993 to 1995. The author finds mixed

results but he emphasizes that culture is still an explanatory variable for annual report disclosure levels. However, the study finds little evidence that masculinity relates to disclosure practices.

In a study involving 16,334 firms from 37 countries during the period 1992-2004, Hope *et al.*, (2008) predict and find that there is a negative relationship between secretive culture and the choice of a big four audit firm. Here, the logic is that big four audit firms are of high quality and only accept the audit engagements in secretive societies when there is high reward. Also, Hope *et al.*, (2008) find that the negative relation between secrecy and the choice of big four audit firm is mitigated by the extent to which firms are exposed to foreign markets.

In a study involving Australia, Germany, France, Netherlands, U.K., and Italy, Akman (2011) finds that culture still prevails on the disclosure level of accounting information even after the adoption of IFRS. Similarly, in Egypt, using a sample of three companies, Dahawy *et al.*, (2002) show that the secretive culture embedded in Egypt adversely affects the disclosure level of companies before and after adopting IFRS. This implies that the secretive and conservative culture prevalent in African countries is likely to obscure the benefits offered by IFRS especially the informativeness of earnings and book value of equity, asymmetric earnings timeliness and earnings and cash flows predictability.

Legal Origin and Accounting Quality

Another strand of literature examines the impact of legal origin on accounting quality particularly earnings quality. The widely accepted proxy for the legal origin is common versus code law dichotomization. The view that common (code) law countries are associated with high (low) quality accounting regime has been expressed frequently (see for instance; Barth *et al.*, 2008, Lantto, 2007, Ball *et al.*, 2003, Ball *et al.*, 2000, Chamisa, 2000 and La

Porta *et al.*, 1998). Contradictory arguments exist on the usefulness of IFRS to countries with different legal origins. For example, Chamisa (2000) argues that since IFRS is based on Anglo-Saxon accounting systems (common law) may not be useful to developing countries with different accounting orientations especially code law countries. On the other hand, it is expected that IFRS will provide decision useful accounting information to code law countries (Lantto, 2007) due to an introduction of a market-led accounting system, IFRS. In this case, ERC, BRC and an adjusted R^2 are likely to increase significantly more in code law countries. However, whether IFRS adoption is favourably or adversely affected to a larger extent by common or code law African countries remains an open issue subject to empirical inquiry.

In summary, prior studies on the information content of earnings and book value of equity focus on well developed capital markets or western countries (Dimitropoulos and Asteriou, 2009). Also, they examine the relationship between earnings/book value of equity or both and market value under similar accounting measurement concepts; that is, U.S. GAAP, IFRS or local GAAP or comparison of different firms using different GAAP. For instance, Barth *et al.*, (2008) compare the value relevance of U.S. GAAP firms with non-U.S. GAAP firms applying IFRS. Bartov *et al.*, (2005) compare the earnings response coefficients (ERC) among firms applying U.S. GAAP, IFRS and German accounting standards. To date, there are relatively few studies in Africa examining the impact of IFRS adoption on the value relevance of earnings and book value of equity.

Furthermore, with regard to culture and accounting, prior studies focus on examining the relationship between the secretiveness of culture and the disclosure levels of accounting practices. Theoretical studies assert that culture is one of the main impediments to the usefulness of IFRS and the convergence of accounting standards (see for instance; Ball, 2006, Schipper, 2005 and Chamisa, 2000). However, so far, there is no empirical study examining

the impact of secretive culture and legal origin on the informativeness of earnings and book value of equity especially in Africa.

2.2 Asymmetric Earnings Timeliness and Conditional Conservatism

The IASB (2010) conceptual framework lists 'timeliness' as one of the enhancing qualitative characteristics of accounting information, others being verifiability, understandability and comparability. The usefulness of accounting information *inter alia* empirically depends on how timely it incorporates the economic gains or losses (Basu, 1997). Earnings asymmetrically recognizes economic losses (bad news) and gains (good news) and the incremental loss recognition (the relative recognition of bad news over good news) is what is referred to as conditional conservatism (Basu, 1997).

The theoretical argument is that conditional conservatism increases contracting efficiencies through several agency relationships such as between shareholders and management, debt holders and shareholders and other firms' contracting parties. This is done by providing more timely information on bad news than good news (Ball *et al.*, 2000, and Basu, 1997). The contract and compensation theory asserts that untimely loss recognition reduces the effectiveness of contractual restrictions on the loss-making activities of managers that are based on financial statement numbers (Ball *et al.*, 2008). They further argue that timeliness affects debt contracting because reported financial statement variables affect various covenanted financial ratios such as leverage, liquidity, and interest coverage ratios.

The concept of recognition timeliness and conditional conservatism is thoroughly examined empirically in the Basu (1997) seminal paper. Using a U.S. sample for the period from 1963 to 1990 and a reverse ERC model, Basu (1997) predicts and confirms that earnings respond more rapidly to negative returns than positive returns and refers this phenomenon to as asymmetric timeliness of earnings. He argues that this finding is

attributable to the differential accounting treatment on economic gains and losses whereby losses are recognised immediately as they occur while gains are deferred to future periods.²¹

In short, Basu (1997) intends to measure how timely earnings are in recognizing information in stock prices (good and bad news) which are based on investors past trading decisions. He assumes a semi-strong efficient market and the idea that accounting data lags stock prices (stock returns) hence accounting information confirms and verifies stock market information (Risberg, 2005).

Using the Basu (1997) reverse ERC model, Pope and Walker (1999) compare the timeliness and conservatism of reported earnings before and after extraordinary items between the U.S. and U.K. for the period spanning from 1976 to 1996. Their findings are summarized as follows; (i) U.S. GAAP earnings both before and after extraordinary items indicate similar earnings timeliness patterns, (ii) the responsiveness of U.K. GAAP earnings before extraordinary items to bad news is significantly less than that of after extraordinary items earnings, (iii) the sensitivity of earnings before extraordinary items to bad news is more timely under U.S. GAAP than U.K. GAAP, (iv) the responsiveness of after extraordinary items earnings to bad news is significantly more timely under U.K. GAAP than U.S. GAAP and (v) the sensitivity of earnings to good news is significantly higher under U.K. GAAP than U.S. GAAP. Pope and Walker (1999, p.54) argue that U.K. firms recognize good news more rapidly than U.S. firms but they classify the bad news differently due to the greater latitude offered by the accounting for extraordinary items under U.K. GAAP.

In a comparative study covering the period from 1985 to 1995 on the effect of international institutional factors on properties of accounting earnings between common and

²¹Basu (1997) argues that accountants require a higher degree level of verification for recognizing good news in earnings than bad news.

code law countries, Ball *et al.*, (2000) find that common law countries earnings are significantly timelier in recognizing bad news than earnings in code-law countries.²² This means that earnings in common law countries are conditionally conservative than those in code law countries. This is attributable to quicker incorporation of economic losses in common versus code law countries. Ball *et al.*, (2000) argue that the demand for accounting income is higher in common than code law countries because the latter takes a stakeholders approach of corporate governance thus solve the effects of asymmetry of information through the insider channels and family networks.

Ball *et al.*, (2003) compare the timeliness recognition of economic gains and losses of the four East Asian countries of Hong Kong, Thailand, Singapore and Malaysia with the matched sample of common and code law countries for the period from 1984 to 1996.²³ Using the Basu (1997) model, they find that the East Asian countries have similar overall earnings timeliness (measured through the adjusted R^2) to code law countries but it is much lower than those of common law countries. The incremental loss recognition coefficient (which is also a measure of conditional conservatism) shows that both Asian countries and code law countries have little evidence of conditional conservatism although code law countries are somewhat better than Asian group. However, the results indicate that common law countries are more conditionally conservative. Ball *et al.*, (2003) attribute these findings to dominance of financial reporting incentives over accounting standards because all four East Asian countries accounting standards are common law in nature.

²²Common law countries include; Australia, Canada, U.K. and U.S. while the code law countries are France, Germany and Japan for the primary sample (Firm year observations exceeding 1000). The secondary sample (with firm year observations between 100 and 1000) consists of eight common law countries including South Africa and ten code law countries (for further detail see Ball *et al.*, 2000, p.20).

²³The common law sample comprises of Australia, Canada, U.K. and U.S. while the code law sample consists of Germany, France and Japan.

Ball and Shivakumar (2005) document that timely loss recognition is substantially less prevalent in private companies than in public companies for a U.K. sample. This is despite the fact that both private and public firms face similar regulatory rules. Moreover, Risberg (2005) examines the contractual effectiveness embedded in public financial reporting between the firm and the outside investor in nine different countries consisting of eight European code law countries and one Anglo-Saxon country, the U.K. Consistent with Ball *et al.*, (2000), she finds that independent firms' earnings incorporate economic losses more timely than firms in pyramid groups.²⁴ However, firms in pyramid groups are more aggressive reporters of economic income than independent firms.

Using a sample of 29,489 firm-year observations from sixteen European countries during the period 1991-2005, Goncharov and Hodgson (2011) examine the ability of income components namely; net income (NI), other comprehensive income (OCI) and comprehensive income (CI) in recognising bad news relative to good news.²⁵ They find that OCI is a more timely vehicle to incorporate economic gains (good news) but less timely in incorporating economic losses (bad news), hence reducing the efficiency of debt contracting. Also, they find that NI incorporates bad news in a timely fashion thus from debt holders' perspective; NI should be preferred over OCI as an efficient contracting measurement vehicle.

In a study involving 78,949 firm-year observations from 22 countries during the period 1992-2003, Ball *et al.*, (2008) hypothesize and confirm that debt markets and not

²⁴ Risberg (2005) defines independent firms as firms not owned by another firms or with less ownership concentration most found in Anglo-Saxon countries. Pyramid firms are the ones which are owned by other firms, with higher level of ownership concentration and are prevalent in corporate Europe.

²⁵ Net income is defined as income available to common shareholders, other comprehensive income (OCI) = $\Delta BV - NI + DIV + NETCAP$, where ΔBV is the change in book value of equity, NI = net income, DIV = dividend and NETCAP is the net capital contributions by owners. Moreover, CI = NI + OCI.

equity markets are associated with the level of timely loss recognition.²⁶ They argue that the demand for financial reporting is primarily triggered by debt markets contrary to the widespread belief that equity markets and not debt markets should shape corporate financial reporting. Moreover, they find that timely gain recognition is independent of equity markets and that legal origin is positively and significantly associated with timely loss recognition. Thus, the incremental loss recognition coefficient measuring the existence of conditional conservatism confirms the importance of debt markets not equity markets.

Employing Basu's (1997) model, Hung and Subramanyam (2007) compare the recognition timeliness of earnings between IFRS and Germany GAAP for the period from 1998 to 2002. Their findings indicate that overall timeliness measured through the explanatory power of the model is higher for IFRS firms than for Germany GAAP firms. The incremental loss recognition timeliness coefficient shows that both IFRS earnings and Germany GAAP earnings are conditionally conservative. However, the coefficient is larger for IFRS earnings than Germany GAAP earnings but their difference is not statistically significant. This means that there is no strong evidence that IFRS earnings are timelier in recognizing bad news than Germany GAAP earnings.

Barth *et al.*, (2008) examine whether the application of International Financial Reporting Standards (IFRS) is associated with higher loss recognition timeliness than non-U.S. domestic standards. They compare the loss recognition timeliness of IFRS firms and non-IFRS firms before and after adoption periods on a large sample of 1896 firm-year

²⁶The sample included eight common law countries i.e. Australia, Canada, U.K., U.S., South Africa, Malaysia, Singapore and Thailand and fourteen code law countries including; Brazil, Chile, France, Indonesia, Italy, Netherlands, Spain, Germany, Japan, South Korea, Denmark, Finland, Norway, and Sweden.

observations (327 firms) for the period spanning from 1994 to 2003 involving 21 countries.²⁷ They find that IFRS firms recognize large losses more frequently than non-IFRS firms in both periods before and after IFRS adoption.

Recent literature focuses on examining the impact of societal values on accounting conservatism particularly unconditional accounting conservatism (see for example, Dragomir *et al.*, 2010 and Kang *et al.*, 2004). Using a sample of 800 firm year observations from 21 countries during the period 1993-2001, Kang *et al.*, (2004) examine the relationship between cultural conservatism and accounting conservatism. They use Schwartz (1994) culture conservatism index score. Their findings indicate that cultural conservatism is negatively related to non-operating accruals (a proxy for accounting conservatism). This implies that the higher the cultural conservatism the higher the accounting conservatism. Also, they find that culture and legal origin are independent in explaining conditional conservatism.

Dragomir *et al.*, (2010) examine the relationship between accounting conservatism (using a ratio of provisions to total liability, *PLR* as a proxy) and national accounting culture (countries classified into IFRS complaint, conservative and liberal). The sample comprises of 388 firms (IFRS compliant-147, Conservative-179 and Liberal-62) from 17 European countries during the period between 31st December 2007 and 30th September 2008.²⁸ The results (Table 2, p.10) indicate that firms from conservative culture recognize significantly greater amounts of provisions than firms from IFRS-compliant and Liberal accounting culture. This implies that conservative culture directly relates to unconditional accounting

²⁷The countries include; Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Greece, Hong Kong, Hungary, Poland, Portugal, Russian Federation, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, and United Kingdom.

²⁸ IFRS compliant countries include; United Kingdom, Ireland, Norway and Sweden. Conservative countries include; Germany, France, Switzerland, Finland, Netherlands, Belgium, and Austria. Liberal countries include; Spain, Italy, Denmark, Portugal, Greece and Luxembourg. The measurement and recognition of provisions in all firms is done under IFRS regulations.

conservatism. To this end, there is no study examining the relationship between conservative culture and conditional accounting conservatism. As Risberg (2005) argues that managers in conservative culture tend to report more gains than losses, one would expect cultural conservatism to adversely affect asymmetric earnings timeliness and conditional conservatism. This implies that although IFRS is conditionally conservative than local GAAP (Barth *et al.*, 2008), the conservative culture widespread in African countries is more likely to reduce its usefulness in terms of asymmetric earnings timeliness.

In summary, prior studies have concentrated in developed economies (for example, U.S., U.K., Germany, Australia, Canada, and France among others). These economies have developed stock markets which are a prerequisite condition for timely incorporation of bad and good news into earnings. Unlike developed countries, African markets are unsophisticated and information inefficient (Smith *et al.*, 2002 and Kenny and Moss, 1998), thus earnings may not capture market news in a timely fashion. Also, the extant research either examines the asymmetric timeliness of earnings and conditional conservatism under a single accounting GAAP (for instance, Basu, 1997) or compares firms which adopt IFRS in the U.S., Europe or Asia with those which do not (see for instance, Barth *et al.*, 2008, Hung and Subramanyam, 2007 and Ball *et al.*, 2003). No study examines Africa and there is a gap in the literature on studies examining asymmetric earnings timeliness and conditional conservatism in emerging African capital markets. Also, there are relatively no studies examining the impact of IFRS adoption on asymmetric earnings timeliness and conditional conservatism in Africa.

Furthermore, there is a gap in the literature on studies examining the impact of culture and legal origin on asymmetric earnings timeliness and conditional conservatism during the accounting regime change from the local GAAP to IFRS.

2.3 Earnings and Cash Flow Predictability

The FASB and IASB joint conceptual framework issued on 30th September 2010 emphasizes that accounting information, among other things, should assist market participants to predict future net cash inflow from operations. FASB's Concepts Statement No.8 states that “information has a predictive value if it can be used in making predictions about the eventual outcomes of past or current events” Giner and Reverte (2003) argue that prediction of future cash flow and earnings is the main objective of annual accounts for listed companies. Earnings prediction is rooted in time series properties of earnings that are argued to be stochastic in nature or follow a random walk and that current earnings better predict future earnings (Giner and Reverte, 2003, Dechow *et al.*, 1998 and Ball and Watts, 1972). In effect earnings contain accrual elements of forecasted cash flow not present in current cash flow e.g. sales on credit.

Giner and Reverte (2003) examine the persistence and predictive ability of earnings under four accounting regimes namely; U.K., Spain, France and Germany by regressing the future earnings on the contemporaneous earnings, book value of equity and share price. Their sample comprises of 12497 firm-year observations covering the period 1988-1997. They find that earnings volatility, persistence and predictive ability are systematically higher for U.K. followed by Spain, France and Germany. They attribute these findings to the accounting systems whereby U.K. is a common law while Spain, France and Germany are code law countries.

Similar to Giner and Reverte (2003), Atwood *et al.*, (2011) examine and compare earnings persistence and the association between the contemporaneous earnings and future cash flow under IFRS, U.S. GAAP and non-U.S. domestic accounting standards. They use a sample of 58,832 firm-year observations from 33 countries during the period 2002-2008. The

findings are summarized as follows; (i) IFRS positive earnings are no more or less persistent than U.S. GAAP positive earnings, (ii) IFRS losses are less persistent than U.S. GAAP losses, (iii) earnings reported under U.S. GAAP are more strongly associated with future cash flow than that reported under IFRS and (iv) the IFRS and non-U.S. domestic accounting system earnings show no systematic differences and in terms of earnings persistence and predictability.

Using European firms for the period 1991-2005, Goncharov and Hodgson (2011) address two research questions; (i) whether net income dominates the aggregated or comprehensive income (net income plus other comprehensive income) in terms of predicting future cash flows and (ii) whether disaggregating the other comprehensive income into revaluation reserve changes (*REVAL*), changes in foreign currency adjustments (*FOREX*) and unrealized gains and losses (*UNREAL*) provides incremental predictive ability over aggregated income and net income. They find that net income is a better predictor of future cash flow than comprehensive income. However, the results show that disaggregated income components better predict future cash flow than the aggregated income although their predictive abilities do not exceed that of net income. From an accounting measurement perspective, one can argue that IFRS income is not a suitable predictor of future cash flow and firm performance because it contains subjective changes in the value of assets and liabilities.

Van der Meulen *et al.*, (2007) among other issues, compare the predictive ability of earnings under IFRS and U.S. GAAP for the German New Market firms during the period 2000-2002. Their findings indicate that U.S. GAAP earnings better predict firm's future performances than IFRS earnings. However, in other measures of accounting quality, value relevance, timeliness and accrual quality there are no systematic differences in results under

the two accounting regimes. This means that except for earnings predictability U.S. GAAP and IFRS earnings are similar in terms of value relevance, timeliness and accrual quality.

Finger (1994) examines the ability of current earnings and cash flow to predict future earnings and cash flow using a long ex ante horizon of eight years for a U.S. sample of 50 firms during the period 1935-1987 using time series models. The findings indicate that; (i) earnings are a better predictor of future earnings, (ii) cash flow is a better predictor of themselves for a short term period, and (iii) when used in addition to current cash flow earnings rarely improves the prediction of future cash flow especially for out-of-sample forecasts. However, in-sample results show that earnings are a better predictor of future cash flow both when used alone and together with current cash flow. Finger concludes that earnings do not dominate cash flow in predicting future cash flow as claimed by FASB (1978).

Using a U.S. sample of 100,266 firm-year observations during the period 1973-2000, Kim and Kross (2005) examine the ability of the contemporaneous earnings and cash flow to predict future cash flow. They find that both earnings and cash flow are significant predictors of future cash flow but over time the incremental explanatory power is higher for earnings than cash flow. These findings in part refute those of Finger (1994) and support the IASB assertion that earnings better predict future cash flow than current cash flow. Moreover, Kim and Kross (2005) find that the relationship between the contemporaneous earnings and share prices is decreasing over time while that of book values of equity and share prices is increasing.

The predictive ability of earnings and cash flow is somewhat affected by earnings management (Atwood *et al.*, 2011) and earnings management is facilitated by culture surrounding firms' managers (Callen *et al.*, 2011; Han *et al.*, 2010). For instance, Callen *et*

al., (2011) find that earnings management is negatively related to individualism and positively related to uncertainty avoidance. In Gray's (1988) terms, this means that earnings management is higher in secretive and conservative societies. The implication is that there is a direct or indirect relationship between earnings and cash flow predictability and cultural or societal values.

The extant research does not directly examine the relationship between the predictive ability of earnings and cash flow and culture but rather it only examines the link between earnings management and cultural values. For example; using a sample of 30 countries, Nabar and Boonlert-U-Thai (2007) examine the relation between earnings discretion and culture. They find positive relationship between earnings discretion and all Hofstede cultural variables. Braun and Rodriguez, Jr (2008) examine the relationship between Gray (1988) framework and earnings management practices for a sample of 31 countries. Their results indicate that higher levels of earnings managements are recorded for firms from countries characterized by higher levels of statutory control, conservatism, uniformity and secrecy. In other words, there is a positive relation between earnings management levels and statutory control, conservatism, uniformity, and secrecy.

Also, consistent with Nabar and Boonlert-U-Thai (2007) the study reveals that earnings discretion rather than earnings smoothing is highly associated with earnings management. While managers of firms residing in higher cultural values of statutory control, conservatism, uniformity, and secrecy manage earnings through the inherent ambiguities, managers of firms in countries characterized by high professionalism, optimism, flexibility and disclosure manage earnings through the flexibility in accounting rules, latitude in financial reporting rules and the extent to which accountants are able to exercise their professional judgment. The impact of culture on earnings management provides an insight that the usefulness of IFRS in terms of the predictive ability of earnings and cash flow is

limited. Since, IFRS is widely adopted in Africa, the policy-related question is: Does IFRS increase the predictive ability of earnings and cash flow regardless of cultural and legal origin differences?

In summary, the research on earnings predictability is focused in western and developed economies particularly the United States. Unlike developing economies, particularly Africa, these countries have higher levels of accounting enforcement measures, litigation and disclosures (La Porta *et al.*, 1998). Also, extant research examines the predictive ability of earnings and cash flow under the same accounting regime (e.g. U.S. GAAP, IFRS or Non-U.S. Domestic Accounting Standards) or compares different firms in different accounting regimes. The adoption of IFRS in Africa and the assertion by IASB that IFRS improves the predictive ability of earnings provide an ample opportunity for examining the earnings and cash flow predictability impact of IFRS. Also, they provide a fruitful avenue for filling the gap in the literature of scarce empirical studies on earnings and cash flow predictability in emerging economies particularly African capital markets.

Moreover, there is a gap in the literature on studies examining the relationship between the predictive ability of earnings and cash flow and culture and whether legal origin impacts on the earnings and cash flows predictability during the accounting rule change from local African GAAP to IFRS.

2.4. Chapter Summary

The research on value relevance of earnings and book value of equity, asymmetric earnings timeliness and conditional conservatism and earnings and cash flow predictability is mixed, concentrated in developed economies, carried out under single GAAP and ignores the impact of culture and legal origin. To fill the gap in the literature, I examine the impact of switching from local GAAP to IFRS on value relevance, asymmetric earnings timeliness and

conditional conservatism and earnings and cash flow predictability and the conditioning roles of culture and legal origin.

I use the *secrecy hypothesis* to link culture with the value relevance of IFRS. Moreover, I use the *conservatism hypothesis* to link culture with asymmetric earnings timeliness and conditional conservatism and the predictive ability of earnings and cash flow. Both hypotheses are developed by Gray (1988). Furthermore, I compute secrecy and conservatism values by using Hofstede (1980) and House *et al.*, (2004) cultural dimension scores (see chapters 5, 6 and 7 for further details). Huff and Smith (2008) recommend that current research should use other culture data bases in addition to Hofstede (1980).

With respect to legal origin, consistent with prior studies (e.g. Ball *et al.*, 2000, 2003 and Jaggi and Low, 2000), I classify countries into two major groups namely; common and code law countries (see chapter three for further details) and examine its impact on value relevance, asymmetric earnings timeliness and conditional conservatism and earnings and cash flow predictability. The next chapter explains the institutional and regulatory accounting frameworks of countries used in this thesis.

CHAPTER THREE

INSTITUTIONAL AND ACCOUNTING REGULATORY FRAMEWORKS

3.0 Introduction

This chapter presents the institutional, market and culture characteristics and accounting standards setting process of countries used in this research. Many legal systems in Africa originate from European countries and, therefore, their accounting systems are reflective of those countries (La Porta *et al.*, 1998, 1999). Before adoption of IFRS in Africa, there was a large number of accounting systems in terms of conservatism, guidelines on measurement and disclosure requirements, completeness and the number of accounting standards issued (Warsame, 2006). Like many countries in the world, African countries can be classified into common and code law countries (Ball *et al.*, 2000 and La Porta *et al.*, 1998, 1999). La Porta *et al.*, (1998, 1999) classify South Africa, Kenya and Botswana as common law while Egypt and Morocco are code law countries. For the purpose of discussion and clarity, countries are grouped into Sub-Saharan and Northern Africa categorization. Each country is discussed in further detail below;

3.1 Sub-Saharan Africa

3.1.1 South Africa

South Africa was first settled by the Dutch in 1652 and later on was colonized by the British (Prather-Kinsey, 2006). Thus, the primary source of South African law is Roman Dutch law, but due to long associations with the United Kingdom, its laws and accounting systems reflect that of British common law. In South Africa, the accounting standards are promulgated by the Accounting Standards Board (ASB) in consultation with the Council of South African Institute of Chartered Accountants (SAICA). SAICA (formerly the Institute of

Accountants and Auditors in the South African Republic) was established in 1894 in Johannesburg by the British Society of Accountants and Auditors (BSAA) and the Institute of Chartered Accountants in England and Wales (ICAEW). SAICA has been harmonizing its GAAP with IFRS since 1993 (eStandards Forum, 2010) and in January 2005 it adopted the wholesome version of IFRS and International Standards of Auditing (ISA).

3.1.2 Kenya

Kenya is a former British colony and its legal and accounting systems reflect that of the United Kingdom. The Accountants Act, chapter 531 of 1977 governs the accounting and auditing profession in Kenya (World Bank, 2010a). This act establishes three independent but related accounting bodies, namely; the Institute of Certified Public Accountants of Kenya (ICPAK); the Registration of Accountants Board (RAB); and the Kenya Accountants and Secretaries National Examinations Board (KASNEB). The council of ICPAK is responsible for setting and issuing accounting standards and it started harmonizing Kenyan accounting standards with IFRS and International Standards on Auditing (ISA) from 1998 (World Bank, 2001). Despite the early adoption of IFRS, there is no law that enforces its application embodied in company law, the Accountants act or the capital market act. Moreover, Bova (2009) argues that the accounting regulatory framework in Kenya is weak.

3.1.3 Botswana

Botswana is also influenced by British common law (La Porta *et al.*, 1999). The accounting profession is a mixture of various professionals across the world but mainly dominated by members of the Association of Chartered Certified Accountants from the United Kingdom (World Bank, 2006). The accounting and auditing activities are governed by the Botswana Institute of Accountants (BIA) established in 1990 by the Accountants Act of 1988. The parliament of Botswana later on amended the Accountants Act in order to improve and

broaden BIA activities.²⁹ Following the law amendment, the regulatory body responsible for coordinating all accounting activities including promulgating accounting standards is the Botswana Accountancy Oversight Authority (BIA, 2011).

3.2 Northern Africa

3.2.1 Egypt

Egypt was under French and British rule during the periods 1789-1801 and 1882-1922 respectively and its legal framework and accounting systems reflect those of French civil law (World Bank, 2010a and La Porta *et al*, 1998). In the 1950s, Egypt had an active stock market exchange, but later on the economy was nationalized and the stock exchange eventually became inactive (Chamisa, 2000). However, in the 1990s, Egypt subsequently moved to a market led economy which involved instituting economic liberalization policies; structural adjustment programmes and re-activating the stock market (Samaha and Stapleton, 2008).

Accounting standards in Egypt are established by the Egyptian Society of Accountants and Auditors Standards Committee (ESAAC) led by the minister of investments. In order to provide quality accounting information, improve decision making and attract investors, ESAAC started issuing accounting standards comparable to IFRS in 1997 (Samaha and Stapleton, 2008). This means they used IFRS as basis for preparing their accounting standards. However, Egypt can be considered as a label adopter of IFRS (Daske *et al.*, 2011) because even after adopting IFRS companies are still applying Egyptian accounting standards in most cases and IFRS in some cases (Anandarajan and Hasan, 2010).

²⁹ The amendments aimed at changing the institute' name to become Botswana Institute of Chartered Accountants (BICA). Also, the Financial Reporting Act was enforced to establish the Botswana Accountancy Oversight Authority (BAOA).

3.2.2 Morocco

Morocco is a French based code law country that attained its political independence from France and Spain on 2nd March 1956 and 7th April 1956 respectively. Before IFRS adoption, the accounting standards in Morocco were conceptually different from IFRS due to their tax, banks and government orientations (Word Bank, 2010a). The legal accounting standards setting body is the National Accounting Council established in 1989. The Central Bank of Morocco required all banks and similar institutions to consolidate their annual accounts using IFRS from 1st January 2008. The Casablanca Stock Exchange, the only capital market in the country, allows listed companies to use either IFRS or Moroccan GAAP. However, IFRS guidelines are not complied with fully by firms and this dual application reduces transparency in financial reports (Anandarajan and Hasan, 2010). Like in Egypt, the official language in Morocco is Arabic thus IFRS which is usually written in English needs to be translated to Arabic.

3.3 The Markets and Institutional Characteristics

African capital markets are relatively small compared to developed markets (Smith *et al.*, 2002 and Kenny and Moss, 1998). To date, there are more than 25 capital markets in Africa and most of them are relatively immature (ASEA, 2011). Out of that, there are two regional capital markets namely; Bourse Régionale des Valeurs Mobilières (BRVM) established in 1998 and situated in Abidjan, Ivory Coast and the Bourse Régionale des Valeurs Mobilières de Afrique Centrale (BVMAC) started in 2008 and situated in Libreville, Gabon.³⁰ With exception of South Africa (1887), Egypt (1883), Zimbabwe (1896), Morocco (1929), Kenya (1954) and Nigeria (1960), the majority of capital markets in Africa were developed in the

³⁰The member countries comprising BRMV include; Benin, Burkina Faso, Mali, Niger, Senegal, Togo, Guinea-Bissau and Ivory Coast. BVMAC is comprised of Central African Republic, Gabon, Republic of Chad, Congo and Equatorial Guinea.

1990s (see Smith *et al.*, 2002, Table 2, p.477; Kenny and Moss, 1998, Table 1, p. 830 and Appendix 1 in this thesis). Twenty two markets are members of the African Securities Exchanges Association (ASEA, 2011) and fourteen markets are members of the International Organization of Securities Commission (IOSCO, 2011). The market integrity of emerging capital markets is low (Prather-Kinsey, 2006). Table 3 provides a comparative summary of the market, institutional and culture characteristics of the five countries included in the sample. The following paragraphs make some observations from Table 3.

South Africa has a highest (lowest) score in individualism (power distance and uncertainty avoidance) in Africa which implies that it is more professional, and has a less conservative, uniform, and secretive culture. Egypt and Morocco have the largest scores in uncertainty avoidance and power distance implying higher conservatism and secretive culture. Kenya has a highest score in power distance and lowest in individualism index suggesting that it has less professionalism, high secrecy, uniformity and conservatism. Botswana is not covered neither in Hofstede (1980, 2001) nor in House *et al.*, (2004) but since its legal origin is English it is more likely to resemble to either South African or Kenyan culture or a hybrid of the two.

Also, during the period 2002-2009, South Africa has the largest average market capitalization, followed by Egypt, Morocco, Kenya and Botswana. Also, during the research period, the South African capital market contributes the largest amount to the domestic economy followed by Egypt, Morocco, Kenya, and Botswana. This is reflected by the ratio of the average market capitalization of listed companies to GDP whereby South Africa has 219%, Egypt 62%, Morocco 57%, Kenya 34% and Botswana 31%. The statistics also reflect the age and stage of development of these markets. For instance, while Egypt is the oldest capital market in Africa, South Africa is the largest one. Egypt has a greatest number of listed companies while Botswana has the lowest one. However, many companies in Egypt are

inactive with only about 40 companies actively trading on the Cairo and Alexandria Stock Exchange.

As far as economy is concerned and using gross national income per capita (GNI) as its proxy, Botswana and South Africa have upper middle income economies with an average GNI per capita of \$5121 and \$4603 respectively during the sample period (World Bank, 2010b). Egypt and Morocco are lower middle income countries with an average GNI per capita of \$1454 and \$2013 respectively, and Kenya is a low income country having an average GNI per capita of \$563.

In terms of legal enforcement of IFRS, only South Africa enacted a law in July 2010 to mandate the application of IFRS to all listed and unlisted firms. Other countries only require listed companies to use IFRS but they have so far no legal enforcement in place. This may lead to a partial or selective adoption of IFRS (Daske *et al.*, 2011; Anandarajan and Hasan, 2010). Also, South Africa has the highest score of shareholders' rights indices while Egypt and Kenya have highest scores in creditors' rights indices. These statistics reflect the presence of strong shareholders protection rules and the stock market dependent economy in South Africa. On the other hand, they reflect the dependence of bank debt capital in Egypt and Kenya.

Table 3 further shows that South Africa, Botswana and Kenya are common law countries while Egypt and Morocco are code law countries. Moreover, the figures indicate that South Africa, Morocco and Botswana comply with international financial standards and codes better than Egypt and Kenya. The compliance scores show how a country comply with key financial standards including transparency of monetary and financial policies, data dissemination, accounting and auditing, banking supervision, insurance regulation, securities market regulation, bankruptcy laws and corporate governance.

Gray (1988) argues that the accounting systems in Africa (except South Africa) are uniform, conservative and secretive in culture. Gray (1988) defines Professionalism versus Statutory Control as '*a preference for the exercise of individual professional judgment and the maintenance of professional self-regulation as opposed to compliance with prescriptive legal requirements and statutory control*'. Uniformity versus Flexibility is '*a preference for the enforcement of uniform accounting practices between companies and for the consistent use of such practices over time as opposed to flexibility in accordance with the perceived circumstances of individual companies*'. Conservatism versus Optimism is '*a preference for a cautious approach to measurement so as to cope with the uncertainty of future events as opposed to a more optimistic, risk taking approach*'. Secrecy versus Transparency is '*a preference for confidentiality and the restriction of disclosure of information as opposed to a more transparent, open and publicly accountable approach*'.

In Hofstede's (1980) terms, African countries are characterized by collectivism, high uncertainty avoidance and power distance and less masculinity.³¹ However, in Islamic societies from which Egypt and Morocco are part of, it is argued that the cultural values support weak uncertainty avoidance, collectivism, small power distance and femininity (Askary and Jackling, 2004). For instance, *uncertainty* is said to be a normal feature of life and future is argued to be certain as everything is under the control of Allah. As a result, the accounting measurement in Islamic countries insists measuring financial statement elements particularly assets and profits in real values consistent with exit price accounting.

³¹ Hofstede (1980) defines uncertainty avoidance (UA) as '*the extent to which the members of a society feel uncomfortable with uncertainty and ambiguity*'. Individualism versus Collectivism is '*the extent to which individuals are integrated into groups*'. Masculinity refers to '*a country's preference for achievement, heroism, and assertiveness and material success*'. Power Distance (PD) is '*the extent to which people accept an unequal distribution of power in institutions or society*'.

Table 3 Market and Institutional Characteristics

Characteristics	South Africa	Egypt	Botswana	Morocco	Kenya
Average Market Capitalization of Listed Companies from 2002 to 2009 (Current US \$ 000)	527,248,500	72,494,843	3,277,447	40,942,453	7,789,177
Average Market Capitalization of Listed Companies to GDP from 2002 to 2009 (%)	219%	62%	31%	57%	34%
Average GNI per Capita (Current US\$) from 2002 to 2009	4603	1454	5121	2013	563
Income or Economy Group	Upper-Middle	Lower-Middle	Upper-Middle	Lower-Middle	Low Income
Average Number of Domestic Listed Companies from 2002 to 2009	410	671	19	64	52
Year of Capital Market Establishment	1887	1883	1989	1929	1954
Legal Origin	English	French	English	French	British
Compliance with International Financial Standards and Codes Index (%).	Medium (55.8%)	Low (34.2%)	na	Medium (46%)	Low (24.2%)
Legal Enforcement of IFRS	2010	No	No	No	No
Shareholders' rights index	5/6	2/6	na	na	3/6
Creditors' rights index	3/4	4/4	na	na	4/4
Individualism Index Score	65	38	na	46	27
Power Distance Index Score	49	80	na	70	64
Uncertainty Avoidance Index Score	49	68	na	68	52
Masculinity Index Score	63	53	na	53	41

Notes: Listed companies are as defined by the World Bank (2010b). *GNI per capita* (formerly GNP per capita) is as defined and calculated by the World Bank (2010b). *Income group* is determined by GNI per Capita and is as defined by the World Bank (2010b). *Legal origin* identifies the legal origin of the company law or commercial code of the country (La Porta *et al.*, 1998, 1999). *Compliance* is how a country complies with the key financial standards including the compliance on IFRS (EStandards Forum, 2010). *Legal Enforcement of IFRS* shows whether or not IFRS are mandated (EStandards Forum, 2010). *Shareholders and Creditors index scores* indicate the extent to which shareholders and creditors rights are protected (La Porta *et al.*, 1998, 1999). The cultural dimensions normally range from 1 to 120, and are standardized by a 0-100 scale. On such scale, higher scores, imply higher uncertainty avoidance, power distance, individualism and masculinity. Similarly, higher values of uncertainty avoidance and power distance constitute higher secretive and conservative culture. The culture dimensions scores are obtained from Hofstede (1980, 2001).

3.4 African versus Western Culture

Hofstede (1983) asserts that there are identifiable differences between industrialised and developing countries in terms of their cultural orientation. Industrialised countries are argued to be highly individualistic whilst developing countries, particularly African countries, are highly collectivist (Triandis, 1989). In a culture area classification, Gray (1988) indicates that African countries fall under statutory control and uniformity in terms of authority and enforcement accounting systems respectively. However, in terms of measurement and disclosure accounting systems, they fall under conservatism and secrecy. In other words, unlike in western countries, African accounting systems are uniform, conservative and secretive.

Gray (1988) predicts that professionalism is positively related to individualism but inversely related to uncertainty avoidance and power distance. Uniformity is positively related to uncertainty avoidance and power distance but negatively related to individualism. However, conservatism is hypothesized to be positively related to uncertainty avoidance and inversely related to individualism and masculinity. Lastly, secrecy is predicted to be directly related to uncertainty avoidance and power distance and inversely related to individualism and masculinity.

However, Perera (1989a) argues that western oriented accounting information is irrelevant to the decision models of less developed countries. In a similar line of reasoning, Briston (1984) posits that investor oriented financial statements may be inappropriate for economies in which there are very few private investors, no stock exchanges and very strong government involvement in the economy. Many African countries possess these characteristics. For example, Briston and Wallace (1990, p.293) argue that the accounting in Tanzania was not definitive in terms of its intended objectives. The Tanzania Statements of

Standard Accounting Practices did not explicitly explain what group of accounting information users deserved the rights to claim a company's information.³²

Also, like Egypt, Indonesia and Sri Lanka, Tanzania transformed its economy from capitalist to socialist economy through the nationalization of all foreign owned companies immediately after attaining political independence from the United Kingdom (Chamisa, 2000). It is further argued that after establishing socialist economies, the governments of these countries reviewed and redefined the role of accounting. However, many laws remained unchanged despite the fact that these countries instituted socialism and self-reliance policies. In Hofstede terms, the country shifted from an individualist to a collectivist culture though the institutional settings were unaltered. It is unclear under this situation to determine exactly the purpose which accounting serves.

Whilst other African countries like Zimbabwe continued with the systems they adapted from their colonial masters, countries which shifted to socialist economies such as Tanzania and Egypt have now moved back to capitalist economies. Chamisa (2000) concludes that IFRS is relevant to capitalist developing countries where the economy is privately owned and a market-focused one but not to developing countries where economies are centrally controlled and state owned. Also, many regimes including African countries are label adopters of IFRS because they do not fully comply with all provisions of IFRS (Daske *et al.*, 2011, Anandarajan and Hasan, 2010 and Dahawy *et al.*, 2002).

³² The accounting standards mentioned the following as legitimate users of accounting output; the present and potential equity owners, providers of financial accommodation, members of the public (customers and potential investors) and organizations established to protect their interests in Tanzania. Others are the Tanzania government, its ministries, agencies, and regulatory authorities and employees of the reporting enterprises. Currently, Tanzania uses IFRS as issued by the IASB since 2005 for all domestic listed and foreign firms.

3.5 Chapter Summary

African countries vary in terms of their cultures, legal origins, accounting standards orientation, stock markets' sophistication and the levels of economic development. In terms of culture and referring to Gray's (1988) framework, cultural dimensions scores suggest that South Africa is less conservative and secretive than other countries. In other words, its culture is more optimistic and transparent. Further, Egypt is more secretive and conservative when compared to Morocco and Kenya.

The legal environment also differs from one to another. For example, South Africa, Botswana and Kenya derive their laws from the United Kingdom while Egypt and Morocco derive from France. Moreover, in terms of economic developments, South Africa and Botswana are upper middle economies while Egypt and Morocco are lower middle economies and Kenya is a low income country.

The level of capital market sophistication measured by the market capitalization also varies from country to country. For example, South Africa has the largest market capitalization during the sample period followed by Egypt, Morocco, Kenya and Botswana. Also, shareholders rights are highly ranked in South Africa and Kenya while creditors' rights are highly ranked in Egypt and Kenya.

Moreover, in Africa, the majority of accounting standards setting institutions are government established and owned. This implies that governments have a large influence in accounting standards promulgation process. Also, there are relatively no IFRS enforcement mechanisms. The implication is that as a result of these institutional and cultural differences IFRS may not offer similar usefulness between African countries themselves and between African countries and developed ones. The following chapter describes the data and presents descriptive statistics of the various variables used in the empirical tests.

CHAPTER FOUR

DATA AND DESCRIPTIVE STATISTICS

4.0 Introduction

This chapter presents the data and descriptive statistics. It gives a detailed description on how data were collected, the sources of data, the number of countries and firms involved, and the data selection criteria. Moreover, it describes the measures of central tendencies (i.e. means and medians) and dispersions of variables and the correlations among variables, in order to determine their distributional characteristics.

4.1 Data and Sample Selection

Data consist of 347 listed companies in five African stock exchanges namely; the Johannesburg (242), Casablanca (24), Nairobi (24), Botswana (17) and Cairo and Alexandria (40). South Africa comprises 70% of the entire sample in terms of the number of firms whilst the other four countries share the remaining 30%. The 30% consists of 38% Egypt, 23% Morocco, 23% Kenya and 16% Botswana. The firm-year observations range from 136 for Botswana to 1936 for South Africa. The financial data for South Africa, Morocco and Egypt, are obtained from Thomson one banker (World scope) while share prices are obtained from DataStream. The financial data for Botswana and Kenya are hand-collected from www.Africanfinancials.com and respective companies' websites. The share prices for Kenya are available on DataStream while those for Botswana are obtained directly from the Botswana stock exchange.³³ Culture data are obtained from the Hofstede (1980, 2001) and House *et al.*, (2004) culture survey studies.

³³Thanks to Thapelo Tsheole, the product development manager of Botswana Stock Exchange who provided me with the market data.

The sample period is eight years spanning from 2002 to 2009. During this period, twenty African countries adopted IFRS voluntarily as a response to the European Union regulation which required all European public companies to consolidate their final accounts using IFRS in 2005. For instance, South Africa, Egypt and Kenya adopted IFRS in 2005 while Botswana and Morocco adopted IFRS in 2006 and 2008 respectively. It is worth noting that the years of IFRS adoption are obtained from the reports on the observance of standards and codes (ROSC) issued jointly by the World Bank and International Monetary Fund, eStandards Forum, specific country information on accounting (e.g. professional accounting boards) and prior studies [e.g. Samaha and Stapleton (2008), Shima (2007, p.47) and Prather-Kinsey (2006)]

The country sample selection criteria are as follows; (i) a country must have required all domestic listed firms to use IFRS, (ii) it should have a functioning capital market and (iii) it should have adopted IFRS within the period 2002-2009.³⁴ During this period, out of twenty countries which adopted IFRS in Africa, only eleven countries required all domestic listed companies to use IFRS (see Appendix 1). Out of that, Sierra Leone is excluded because it does not have stock market. Also, Mauritius, Tanzania, Malawi and Namibia are excluded due to insufficient number of listed companies.³⁵ This is because their inclusion makes the country by country comparative analysis difficult. Furthermore, Ghana is excluded due to data availability especially market data. Consequently, after excluding these countries the final sample comprises of five countries namely; South Africa, Egypt, Morocco, Kenya and Botswana.

³⁴ Lesotho, Reunion and Sierra Leone adopted IFRS even though they do not have capital markets.

³⁵ They have less than 10 listed companies which meet the research period criterion (2002-2009). For instance, while Tanzania has only six listed companies, Mauritius has seven.

A firm is selected and included in the sample if it has both financial accounting and market data within the specified sample period, 2002-2009 inclusively. Moreover, to avoid bias towards large firms (Smith and Pourciau, 1988), both December and non-December fiscal year-end firms are used.³⁶ Thus, the final sample consists of 347 firms from different industries as shown in Table 4-1. The sample comprises of 67 financial firms (19%) and 280 non-financial firms (81%). Out of 67 financial firms, 33 are banks (49%) and 34 are non-banks (51%). Non-financial firms are to a large extent composed by manufacturing and distribution (39%), others (24%), mining (10%), communication and logistics (6%), hotels and tourism (5%) and construction (5%).³⁷ Due to the different nature of financial accounts for financial from non-financial firms, I further conduct empirical tests for banks, financial and non-financial firms as part of robustness check. Deans (2007) argues that fair value measures are not only important to the banking industry but also to other sectors of the economy.

In order to test the various hypotheses, an IFRS dummy, *D* is introduced to capture the effect of IFRS on estimated coefficients. Moreover, as part of analysis, the pooled sample (a U.S. dollar-denominated aggregate sample of all countries) and that of each country is divided into pre and post IFRS adoption periods in order to enable separate sample regressions to be run. The exchange rates (local currency unit per U.S. dollar, period average) were obtained from the World Bank (2010c). All countries in the sample represent emerging capital markets as they reside in the low or middle income economies (see Table 3 for definitions of low and middle income economies).

³⁶ Smith and Pourciau (1988) reveal that December year-end firms are larger, concentrated with many industries and have smaller betas compared to non-December year-end firms.

³⁷ Others comprises IT and telecommunications, fishing, printing services, data companies and real estate.

Table 4-1 Industry Classifications and Firm Distribution

No	Industry	Number of firms					
		Kenya	SA	Morocco	Egypt	Botswana	Total
1	Mining	1	24	2	0	0	27
2	Oil and Gas	0	3	2	1	1	7
3	Constructions	1	5	4	5	0	15
4	Banking	6	9	5	9	4	33
5	Insurance	2	3	1	0	1	7
6	Investments and financial services	2	15	3	3	4	27
7	Beverages	1	2	1	0	1	5
8	Transportation	1	1	0	0	0	2
9	Utility	1	1	0	0	0	2
10	Agriculture	3	6	0	2	0	11
11	Communications and Logistics	2	12	0	3	0	17
12	Health care	0	3	0	1	1	5
13	Hotels and Tourism	1	8	1	3	1	14
14	Motorcar and Tyres	2	1	0	0	0	3
15	Manufacturing and Distribution	1	88	5	13	1	108
16	Others	0	61	0		3	64
	Total	24	242	24	40	17	347

A common practice to control for outliers in a sample is trimming or excluding the extreme values by certain percentages (see for instance, Kothari and Zimmerman, 1995 and Easton and Harris, 1991). While Kothari and Zimmerman (1995) exclude the largest and smallest 1% of observations, Easton and Harris (1991) limit the earnings variables within the range of -1.5 and +1.5 using a truncation rule. That is, the current and lagged earnings and change in earnings all deflated by the beginning of the period stock price should lie within this limit in order to minimize the effects of outliers on results.

In this thesis I adopt the winsorization method in order to mitigate the effects of outliers on results. This is a statistical method which transforms extreme values to a specified percentile of data and winsorized estimators are normally more robust to outliers than standard estimators (Barth *et al.*, 2008 and Hope *et al.*, 2008). Moreover, winsorization not

only distributes the data normally (i.e. mean = median) but also generates the missing variables in a sample. Thus, consistent with Barth *et al.*, (2008) I winsorize all variables at 5%, which implies that for a whole sample of 2776 observations 278 are winsorized.

4.2 Data Limitations

One issue that has to be discussed is the dominance of South Africa in the sample. For instance, Table 4-1 indicates that South Africa comprises of 70% of the sample. This may cause results to be biased as well as culture and legal origin to be dominated by South Africa. For instance, Table 4-2 shows that the minimum value of secretive culture is 33 (Mean value for South Africa) while the maximum value is 110 (Mean value for Egypt). The mean value for the whole sample is 50.7; and the mean values for all other countries are above this aggregate value. Hope *et al.*, (2008, Table 1, p.365) report an average value of secrecy of 61.81 from 37 countries including Australia (-3), Denmark (-33), Ireland (-7), New Zealand (-8), Sweden (-11), U.K. (-19) and U.S. (-5). The negative values imply that these countries are transparent.

Similarly, conservatism ranges from -16 for South Africa to 30 for Egypt. This implies that South Africa is the least conservative (most optimistic) country while Egypt is the most conservative country. The aggregate average value for conservatism is -4.68 while the average values for Egypt, Morocco and Kenya are clearly above this aggregate value. This suggests the dominance of South Africa in terms of culture in the sample. In terms of legal origin, South Africa, Kenya and Botswana are common law countries while Egypt and Morocco are code law countries. To address the problem of South Africa's dominance, I use two techniques. First, I exclude South Africa and run the regressions for the rest of the countries and second, I use the weighted least squares regressions, see for example, Sections 5.5.2.8, 6.4.8.5 and 7.4.8.3. However, future research should increase the sample size.

Table 4.2 Summary and Construction of Culture Variables (*Secrecy* and *Conservatism*) and Legal origin

	<i>Secrecy</i>						<i>Conservatism</i>						<i>Legal origin</i>
	N	μ	ρ_{50}	δ	Min	Max	N	μ	ρ_{50}	δ	Min	Max	
SA	1936	33	33	0	33	33	1936	-16	-16	0	-16	-16	1
Egy	320	110	110	0	110	110	320	30	30	0	30	30	0
Mor	192	92	92	0	92	92	192	22	22	0	22	22	0
Ken	192	89	89	0	89	89	192	25	25	0	25	25	1
Bot	136	na	na	na	na	na	na	na	na	na	na	na	1
Pooled	2640	50.7	33	29.8	33	110	2640	-4.68	-16	18.86	-16	30	na

Notes: *Secrecy* is defined as the summation of uncertainty avoidance and power distance minus individualism (Hope *et al.*, 2008 and Gray 1988). Uncertainty avoidance (UA), power distance (PD) and individualism (IND) scores are obtained from Hofstede (1980) and House *et al.*, (2004). For House *et al.*, (2004) individualism is calculated as the average value of the institutional collectivism (I), in group collectivism (II) and human orientation index scores. *Conservatism* is defined as uncertainty avoidance minus individualism. Consistent with prior studies e.g. Hope *et al.*, (2008), I exclude masculinity in computing secrecy and conservatism values because it has relatively little relationship with these culture variables. Secrecy and Conservatism are linked with test variables in value relevance, conditional conservatism and prediction models through *SEC* and *CON* respectively. *SEC* is a dummy variable equals 1 if the secrecy value is greater than its median value and 0 otherwise. For example, in order to capture the impact of culture on ERC, *SEC* is interacted with $E_{i,t}$ to get the variable $SEC * E_{i,t}$. Similarly, *CON* is a dummy variable equals 1 if the conservatism value is greater than its median value and 0 otherwise. For example, in order to capture the impact of conservative culture on the ability of earnings to recognize bad news, *CON* is interacted with $NEG * RET_{i,t}$ to get $CON * NEG * RET_{i,t}$ in the Basu (1997) model. *Legal origin* is determined by common versus code law dichotomization (La porta *et al.*, 1997, 1998). Thus, South Africa, Kenya and Botswana are common law while Egypt and Morocco are code law countries. To capture the impact of legal origin on the test variables, a dummy variable, *C* is introduced which takes the value of 1 if the firm observation is from a common law country and 0 otherwise.

4.3 Descriptive Statistics

4.3.1 Value Relevance

4.3.1.1 Mean, Median and Standard deviation

Tables 4-3 and 4-4 below present descriptive statistics for the pooled and individual country samples respectively. The whole sample Section of Table 4-3 shows that arithmetic means are greater than medians for all variables, this implies that the data are right-skewed, thus do not follow normal distribution. The share price has the largest volatility (\$62.63) during the period 2002-2009, and the volatility is greater before (\$69.4) than after (\$61.3) IFRS.

The mean stock returns per number of observations decrease by about 8.8% from 0.57 before IFRS to 0.52 after IFRS in the sampled African countries. However, the decrease is not statistically significant at conventional level. The mean earnings per share, book value of equity per share, share price and firm size increase statistically significantly after IFRS suggesting increasing firm and market performance. On the other hand, the mean values of leverage and secrecy decrease statistically significantly after IFRS.

Moreover, the earnings, returns and book value per share are skewed to the right before and after IFRS. This observation is similar to four East Asian countries reported in Ball *et al.*, (2003, Table 1(a), p.248).³⁸ The return volatilities increase by 136% from 1.29 to 3.05 suggesting that they are riskier after IFRS than before. On the other hand, book values of equity and earnings volatilities decrease by 76% and 14.5% respectively. This may be

³⁸ Ball *et al.*, (2003) find that stock returns are right-skewed in all four Asian, common and code law countries while earnings are right-skewed in Asian and code law countries and left-skewed in common law countries.

evidence of earnings smoothing practices after IFRS and supportive of fair value theorists who argue that fair value accounting does not increase income volatility.³⁹

Turning to the individual countries, Table 4-4 shows that return, earnings, and book value per share are right-skewed in South Africa before and after IFRS. However, in the rest of the countries, they are either right or left-skewed in one of the periods or both before and after IFRS. Moreover, in South Africa, earnings per share, price per share and firm size increase statistically significantly while returns decrease. In Egypt, returns, earnings, book value of equity, share price and firm size increase statistically significantly after IFRS while the leverage decreases. In Morocco, only share price and firm size increase statistically significantly. Further, only share price and firm size increase statistically significantly after IFRS in Kenya and Botswana respectively.

Moreover, Table 4-4 indicates that price volatility increases in all countries. However, returns volatility increases in South Africa, Morocco and Kenya and decreases in Egypt and Botswana. Also, earnings volatility increases in all countries except Kenya. On average, earnings volatility increases by 64.2% for each country.⁴⁰

³⁹ibid find that common law countries do not smooth income compared to code law countries.

⁴⁰ Unlike for the pooled sample which uses a U.S. dollar-denominated currency and show a decrease in earnings volatility, this sample uses individual countries presentation currencies.

Table 4-3 Descriptive Statistics for the Pooled Data (USD-non presentation currency)-Value Relevance

Whole Sample					Pre IFRS				Post IFRS				Paired t test (pre and post IFRS)		
Variable	N	μ	$\rho 50$	δ	N	μ	$\rho 50$	δ	N	μ	$\rho 50$	δ	Mean diff.	t-statistic, μ (diff=0)	p > t
RET _{i,t}	2747	0.5	0.3	2.3	1102	0.57	0.3	1.29	1322	0.52	0.2	3.31	0.1	0.48	0.6298
EPS _{i,t}	2673	1.4	0.1	5	1080	1.58	0.1	5.56	1271	6.55	0.1	23.2	-5.0	-6.91	0.000
Δ EPS _{i,t}	2314	0.2	0	2.9	731	0.20	0	4.02	1263	0.65	0	13.7	-0.4	-0.87	0.3826
BVPS _{i,t}	2664	8	0.6	55	1056	10.47	0.6	70.54	1289	27.49	0.8	114.2	-17.0	-6.32	0.000
P _{i,t}	2760	17.9	1.2	62.6	1116	21.71	0.8	69.40	1321	72.98	1.7	249.2	-51.3	-7.05	0.000
SIZE	2498	4.9	5.2	2.6	1009	4.43	4.7	2.71	1194	5.25	5.6	2.5	-0.8	-11.23	0.000
LEV	2667	244.7	1.1	1963	1075	284.3	1.1	2837.3	1271	2.27	1.1	4.14	282.0	3.21	0.0013
GROWTH	2288	-0.1	0.1	6.1	723	-0.30	0	10.19	1250	0.12	0.1	0.50	-0.4	-1.07	0.2842
SECRECY	2640	50.7	33	29.8	1062	53.5	33.0	30.6	1272	39.8	33.0	21.9	13.7	14.70	0.000

Notes: $RET_{i,t}$ is the returns calculated by using the equation; $RET_{i,t} = (P_{i,t} - P_{i,t-1}) / P_{i,t-1}$ over 12 months extending from 9 months prior to the fiscal year-end to 3 months after the fiscal year-end. $E_{i,t}$ and $\Delta E_{i,t}$ are the current earnings per share and change in earnings per share respectively. $BV_{i,t}$ is the year end net book value of equity per share. $P_{i,t}$ is the closing price per share. $SIZE$ is the firm size proxied by the natural logarithm of the end of the year market value of equity, LEV is the leverage measuring the level of firm risk and is defined as the ratio of total liability to net book value of equity and $GROWTH$ is the firm growth defined as the change in revenue or sales divided by total assets. $SECRECY$ is defined as the summation of uncertainty avoidance (UA) and power distance (PD) minus individualism (IND) and masculinity (MASC) (Hope *et al.*, 2008 and Gray, 1988). Consistent with prior studies, I exclude masculinity in computing secrecy, thus $SECRECY$ is calculated as UA + PD - IND using Hofstede (1980) cultural dimension values. However, I use House *et al.*, (2004) cultural dimension scores for robustness check in all empirical tests. N is the number of observations, μ = mean, $\rho 50$ = median and δ = standard deviation.

Table 4-4 Descriptive Statistics for Individual Countries (Local currency presentation)

Panel A. South Africa (Rand)

Pre IFRS					Post IFRS				Paired t test (pre and post IFRS)		
<i>Variables</i>	N	μ	ρ_{50}	δ	N	μ	ρ_{50}	δ	Mean diff	t-statistic, μ (diff=0)	p > t
<i>RET_{i,t}</i>	721	0.73	0.32	1.51	968	0.49	0.21	1.66	0.239	3.07	0.0022
<i>E_{i,t}</i>	718	1.10	0.36	3.79	949	3.12	0.77	8.08	-2.0	-6.96	0.000
$\Delta E_{i,t}$	474	0.01	0.06	3.67	943	0.28	0.04	6.64	-0.3	-0.79	0.4278
<i>BV_{i,t}</i>	717	38.01	2.63	782.24	952	17.26	4.69	110.94	20.7	0.82	0.413
<i>P_{i,t}</i>	721	13.33	3.13	33.08	968	31.69	8.07	79.69	-18.4	-8.37	0.000
<i>SIZE</i>	713	2.51	3.86	1.14	945	7.05	5.12	2.44	-4.5	-78.87	0.000
<i>LEV</i>	718	3.82	1.00	24.78	947	2.19	0.95	4.26	1.6	1.75	0.0804
<i>GROWTH</i>	468	-0.47	0.06	12.41	928	0.13	0.09	0.57	-0.6	-1.04	0.299

Panel B. Egypt (Egyptian £)

Pre IFRS					Pre IFRS				Paired t test (pre and post IFRS)		
<i>Variables</i>	N	μ	ρ_{50}	δ	N	μ	ρ_{50}	δ	Mean diff	t-statistic, μ (diff=0)	p > t
<i>RET_{i,t}</i>	118	0.21	0.16	0.53	160	0.40	0.14	0.52	-0.193	-2.69	0.0083
<i>E_{i,t}</i>	106	3.84	1.45	10.26	151	9.88	3.22	29.43	-6.0	-2.83	0.006
$\Delta E_{i,t}$	66	1.91	0.17	8.58	151	1.72	0.16	7.73	0.2	0.36	0.7168
<i>BV_{i,t}</i>	107	14.14	7.85	28.69	157	24.76	12.77	51.73	-10.6	-2.85	0.005
<i>P_{i,t}</i>	118	15.22	8.41	19.87	160	82.76	31.77	209.43	-67.5	-3.76	0.000
<i>SIZE</i>	98	6.45	4.6	1.58	153	7.79	5.99	1.53	-1.3	-9.96	0.000
<i>LEV</i>	107	3.49	1.46	4.84	151	2.83	1.26	3.60	0.7	2.95	0.004
<i>GROWTH</i>	64	0.14	0.09	0.27	151	0.09	0.03	0.13	0.1	1.65	0.104

Panel C. Morocco (Moroccan Dirham)

Pre IFRS					Post IFRS				Paired t test (pre and post IFRS)		
<i>Variables</i>	N	μ	ρ_{50}	δ	N	μ	ρ_{50}	δ	Mean diff	t-statistic, μ (diff=0)	p > t
<i>RET_{i,t}</i>	141	-0.10	0.16	0.22	48	-0.07	-0.03	0.34	-0.04	-0.62	0.5372
<i>E_{i,t}</i>	136	54.67	52.03	78.74	37	96.31	66	147.26	-41.65	-2.69	0.011
$\Delta E_{i,t}$	112	8.45	4.85	17.19	37	44.50	4.38	73.65	-36.04	-2.06	0.0584
<i>BV_{i,t}</i>	139	284.39	328.9	742.93	43	459.92	421.45	321.33	-175.52	-1.73	0.092
<i>P_{i,t}</i>	141	557.21	660	548.87	48	1560.10	1239.5	1543.92	-1002.89	-5.93	0.000
<i>SIZE</i>	134	8.12	6.21	1.43	46	8.91	6.78	1.05	-0.79	-3.37	0.002
<i>LEV</i>	136	4.02	0.76	5.38	36	4.37	1.74	4.93	-0.35	-0.60	0.5498
<i>GROWTH</i>	112	-0.05	0.04	0.18	35	-0.05	0.03	0.20	0.00	0.05	0.957

Panel D. Kenya (Kshs.)

Pre IFRS					Post IFRS				Paired t test (pre and post IFRS)		
<i>Variables</i>	N	μ	ρ_{50}	δ	N	μ	ρ_{50}	δ	Mean diff	t-statistic, μ (diff=0)	p > t
<i>RET_{i,t}</i>	72	0.52	0.52	0.74	96	0.49	0.13	1.38	0.03	0.14	0.8881
<i>E_{i,t}</i>	56	1.88	1.93	8.14	95	5.57	3.49	6.11	-3.69	-2.45	0.017
$\Delta E_{i,t}$	34	2.06	0.46	9.71	95	-0.51	0.37	2.75	2.57	1.49	0.1466
<i>BV_{i,t}</i>	53	31.08	17.1	34.08	95	42.19	23	63.12	-11.11	-1.46	0.149
<i>P_{i,t}</i>	72	18.54	9.4	27.43	96	64.67	4.25	50.18	-46.13	-8.51	0.000
<i>SIZE</i>	na	na	na	na	na	na	na	na	na	na	na
<i>LEV</i>	53	5.57	2.48	11.48	95	3.05	1.94	2.81	2.52	1.59	0.117
<i>GROWTH</i>	33	-0.05	0.04	0.64	95	0.07	0.02	0.11	-0.12	-1.11	0.277

Panel E. Botswana (Pula)

Pre IFRS					Post IFRS				Paired t test (pre and post IFRS)		
<i>Variables</i>	N	μ	p50	δ	N	μ	p50	δ	Mean diff.	t-statistic, μ (diff=0)	p > t
$RET_{i,t}$	50	0.07	0.1	0.37	50	-0.10	0.07	0.28	0.17	2.08	0.0456
$E_{i,t}$	64	54.04	35.49	57.63	42	75.84	62.25	68.09	-21.80	-1.78	0.083
$\Delta E_{i,t}$	46	-6.08	2.08	51.94	41	12.92	10	42.79	-19.00	-1.35	0.1916
$BV_{i,t}$	61	266.73	161.68	287.18	42	272.60	141.86	221.67	-5.86	-0.12	0.909
$P_{i,t}$	64	661.91	450	583.01	50	822.96	522.5	686.32	-161.04	-1.30	0.199
<i>SIZE</i>	64	5.38	8	1.59	50	6.45	9.10	1.78	-1.08	-7.77	0.000
<i>LEV</i>	61	3.68	0.93	4.67	42	5.15	1.43	7.08	-1.47	-2.53	0.0157
<i>GROWTH</i>	46	0.07	0.02	0.23	41	0.21	0.18	0.30	-0.14	-1.68	0.108

Notes: $RET_{i,t}$ is the returns calculated by using the equation; $RET_{i,t} = (P_{i,t} - P_{i,t-1}) / P_{i,t-1}$ over 12 months extending from 9 months prior to the fiscal year-end to 3 months after the fiscal year-end. $E_{i,t}$ and $\Delta E_{i,t}$ are the current earnings per share and change in earnings per share respectively. $BV_{i,t}$ is the year end net book value of equity per share. $P_{i,t}$ is the closing price per share. *SIZE* is the firm size proxied by the natural logarithm of the end of the year market value of equity, *LEV* is the leverage measuring the level of firm risk and is defined as the ratio of total liability to net book value of equity and *GROWTH* is the firm growth defined as the change in revenue or sales divided by total assets. N is the number of observations, μ = mean, p50 = median and δ = standard deviation. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Morocco, Egypt, Kenya and Botswana.

4.3.1.2 Pairwise Correlations

Table 4-5 reports the pairwise correlation coefficients for value relevance variables. It indicates that there is strong positive relation between earnings, book value per share and stock price in African markets. For instance, the correlation between price levels and earnings per share is 0.793 and is statistically significant at $p < 0.05$. Similarly, the correlation between earnings per share and book value per share is 0.287 at $p < 0.05$ while that of book value per share and share price is 0.252 and statistically significant at 5%. Firm size is positively correlated with the market measures of returns and share price. On the other hand, as expected, the leverage is negatively correlated with stock market measures. The firm growth variable is positively correlated with all other measures except the returns.

The culture variable is statistically significantly positively correlated with all variables except the returns. This is consistent with expectations that, in secretive societies, investors are likely to demand higher rates of return due to increased information risks leading to lower discounted value of future cash flow and share price returns.

4.3.2 Asymmetric Earnings Timeliness and Conditional Conservatism

4.3.2.1 Mean, Median and Standard deviation

Table 4-6 reports the measures of central tendency of the variables on asymmetric earnings timeliness. During the sample period, the earnings are right skewed. However, when the sample is divided into pre and post-IFRS periods, earnings are left skewed before IFRS and right skewed after IFRS. This indicates that earnings are conditionally conservative before than after IFRS. The returns and positive returns are right skewed both before and after IFRS. However, the negative returns are left skewed before and after IFRS. The returns are also more risky after than before IFRS. The negative sign in the mean value of the culture variable (i.e. -4.68) implies that, in aggregate, culture is less conservative, though the individual countries are more conservative except South Africa (see Table 4-2 for further

detail). The score is similar to many developed countries, for instance, using Hofstede-Gray model, and Hope *et al.*'s (2008) definition of conservatism, the following are the conservatism mean scores for various countries: U.K (-54), U.S. (-45), Australia (-39), Ireland (-35), Canada (-32), Denmark (-51), Finland (-5), Italy (-1), Netherlands (-27), Singapore(-12), Switzerland (-10) and New Zealand (-30). This implies that their cultures are less conservative, or in other words, more optimistic.

On the other hand, other countries are more conservative. For example, countries with high degrees of conservatism include; Guatemala (95), Greece (77), Panama (75), Costa Rica (71), South Korea (67), Colombia (67), Portugal (77), Peru (71) Uruguay (64), Venezuela (64) and Chile (63).

Table 4-5 Pairwise Correlations for Value Relevance Variables

	$RET_{i,t}$	$E_{i,t}$	$\Delta E_{i,t}$	$BV_{i,t}$	$P_{i,t}$	$\Delta P_{i,t}$	$SIZE$	LEV	$GROWTH$	$SECR.$
$RET_{i,t}$	1									
$E_{i,t}$	0.032	1								
$\Delta E_{i,t}$	-0.003	0.329**	1							
$BV_{i,t}$	0.023	0.287**	0.059**	1						
$P_{i,t}$	-0.036	0.793**	0.103**	0.252**	1					
$\Delta P_{i,t}$	0.034	0.226**	0.007	0.083**	0.337**	1				
$SIZE$	0.203**	0.229**	0.067**	0.053**	0.309**	0.047**	1			
LEV	-0.004	-0.036	-0.015	-0.020	-0.033	-0.009	-0.046**	1		
$GROWTH$	-0.026	0.011	0.002	0.006	0.0106	0.004	0.066**	0.003	1	
$SECRECY$	-0.065**	0.233**	0.064**	0.061**	0.252**	0.065**	0.222**	0.169**	0.016	1

Notes: $RET_{i,t}$ is the returns calculated by using the equation; $RET_{i,t} = (P_{i,t} - P_{i,t-1}) / P_{i,t-1}$ over 12 months extending from 9 months prior to the fiscal year-end to 3 months after the fiscal year-end. $E_{i,t}$ and $\Delta E_{i,t}$ are the earnings per share and change in earnings per share respectively. $BV_{i,t}$ is the year end net book value of equity per share. $P_{i,t}$ is the closing price per share 3 months after the fiscal year end. ΔP is the change in price per share. $SIZE$ is the firm size proxied by the natural logarithm of the end of the year market of equity, LEV is the leverage measuring the level of firm risk and defined as the ratio of total liability to net book value of equity and $GROWTH$ is the firm growth defined as the change in revenue or sales divided by total assets. $SECRECY$ is defined as the summation of uncertainty avoidance (UA) and power distance (PD) minus individualism (IND) and masculinity (MASC) (Hope *et al.*, 2008 and Gray, 1988). Consistent with prior studies, I exclude masculinity in computing secrecy, thus secrecy is calculated as $UA + PD - IND$ using Hofstede (1980) cultural dimension values. However, I use House *et al.*, (2004) cultural dimension scores for robustness check in all empirical tests. ** denotes statistical significance at 5% level.

Table 4-6 Descriptive Statistics for Asymmetric Earnings Timeliness Variables

Variables	N	Statistics (USD dollar)				
		μ	ρ_{50}	δ	Min	Max
$E_{i,t}$	2663	0.121	0.107	0.774	-13.57	10.115
$RET_{i,t}$	1127	0.555	0.26	1.274	-1.91	11.68
$D*RET_{i,t}$	1805	0.324	0	2.618	-1.6	98.84
$NEG*RET_{i,t}$	264	-0.26	-0.186	0.264	-1.91	-0.006
$D*NEG*RET_{i,t}$	422	-0.342	-0.258	0.298	-1.6	-0.007
$POS*RET_{i,t}$	816	0.851	0.45	1.378	0.005	11.68
$D*POS*RET_{i,t}$	874	0.834	0.36	3.686	0.001	98.84
<i>CONSERVATISM</i>	2640	-4.679	-16	18.861	-16	30
$ACC/CFO_{i,t}$	2570	4.455	0.593	72.807	0.0003	3539

Notes: Conservatism (CON) is defined as the uncertainty avoidance (UA) minus individualism (IND) (Hope *et al.*, 2008 and Gray, 1988) computed using Hofstede (1980) cultural dimensions. Consistent with prior studies, masculinity is excluded in computing conservatism because it has relatively little relationship with the variable. All other variables definitions are included in Appendix 6-1.

The comparative country descriptive statistics for asymmetric earnings timeliness (Table 4-7) show that the mean value of earnings increases after IFRS in South Africa and Morocco. However, it decreases in Egypt, Kenya and Botswana. The mean returns increase slightly in Egypt and Botswana and decrease in South Africa, Morocco and Kenya. The mean return after IFRS for Morocco is negative (-0.06). Morocco required all domestic listed banks to use IFRS and this could be a reflective of the financial fiasco (2007-2009). The decrease in earnings suggests the declining firms' performance while the decrease in returns reflects the decline in market performance probably caused by the financial crisis occurred at the end of 2007.

While firm size increases in all countries after IFRS, leverage decreases in South Africa, Egypt and Kenya. Moreover, the accruals ratio that measures the extent to which managers exhibit earnings discretion increases only in South Africa.

Table 4-7 Comparative Country Statistics (Mean values): Asymmetric Earnings Timeliness

$E_{i,t}$			$Ret_{i,t}$		Neg*Ret		SIZE		LEV		Accruals Ratio	
Country	B	A	B	A	B	A	B	A	B	A	B	A
South Africa	0.04	0.11	0.73	0.54	-0.25	-0.33	3.66	4.96	3.79	2.14	0.30	0.56
Egypt	0.44	0.16	0.21	0.23	-0.29	-0.45	4.67	6.10	3.41	2.77	1.13	0.06
Kenya	0.49	0.13	0.52	0.28	-0.32	-0.33	na	na	5.57	2.92	0.05	0.05
Morocco	0.01	0.05	0.22	-0.06	-0.22	-0.28	6.28	6.81	3.23	4.26	0.07	0.08
Botswana	0.12	0.10	0.08	0.07	-0.25	-0.26	8.34	9.11	3.66	4.97	3.38	0.11

Notes: A and B stand for post and pre adoption of IFRS respectively. $RET_{i,t}$ is the returns calculated by using the equation; $RET_{i,t} = (P_{i,t} - P_{i,t-1}) / P_{i,t-1}$ over 12 months extending from 9 months prior to the fiscal year-end to 3 months after the fiscal year-end. $E_{i,t}$ is the earnings per share scaled by the beginning period stock price. $NEG*RET_{i,t}$ is an interaction variable measuring the extent to which earnings recognize economic losses or bad news. $SIZE$ is the firm size proxied by the natural logarithm of the end of the year market of equity, LEV is the leverage measuring the level of firm risk and defined as the ratio of total liability to net book value of equity and $ACCRUALS\ RATIO$ is the absolute value of the ratio of accounting accruals to cash flows from operations. This ratio measures the extent to which managers exhibit discretion in reported earnings. The higher the ratio, the larger is the earnings discretion.

4.3.2.2 Pairwise Correlations

Table 4-8 reports the pairwise correlations among earnings, returns, negative returns and conservatism. There is strong and significant correlation between negative returns and returns ($r = 0.9995$, $p < 0.05$), conservatism and earnings ($r = 0.0746$, $p < 0.05$) and conservatism and returns ($r = -0.0651$, $p < 0.05$). This implies that cultural conservatism facilitates managers to report higher earnings (Risberg, 2005) and investors perceive it negatively. Returns are negatively related to earnings while negative returns are positively related to earnings but both relations are statistically insignificant.

Table 4-8 Pairwise Correlations for Asymmetric Earnings Timeliness Variables

Variable	$E_{i,t}$	$RET_{i,t}$	$Neg * RET_{i,t}$	Conservatism
$E_{i,t}$	1.0000			
$RET_{i,t}$	-0.0368	1.0000		
$NEG * RE_{i,t}$	0.0748	0.9995**	1.0000	
Conservatism	0.0746**	-0.0651**	-0.0324	1.0000

Notes: This table reports the pairwise correlations between the earnings timeliness and conditional conservatism variables. $NEG * RET_{i,t}$ is an interaction variable proxying for bad news, in other words it implies negative returns i.e. $RET_{i,t} < 0$. ** denotes statistical significance at 5% level. The definitions of other variables are as provided previously and are also included in Appendix 6-1 at the end of chapter six.

4.3.3 Earnings and Cash Flow Predictability

4.3.3.1 Mean, Median and Standard deviation

Table 4-9 reports the means, medians, standard deviations and the minimum and maximum values of the variables. During the sample period (2002-2009), before and after IFRS the operating cash flow is right skewed. However, while earnings are left skewed, accounting accruals are right skewed before and after IFRS. Consistent with prior studies such as Kim and Kross (2005) the mean cash flow exceeds the mean net income because of non cash costs such as depreciation.

While the cash flow and accounting accruals volatilities increase, the net income volatility decreases slightly after IFRS. All variables are highly dispersed for example cash flow ranges from \$-25.94 to \$281.24. The mean value of conservatism is -4.679 indicating that, in aggregate, culture is less conservative and it is influenced by South Africa.

Table 4-9 Descriptive Statistics for Earnings and Cash Flow Predictability Variables

Variables	N	Statistics (USD dollar)				
		μ	ρ_{50}	δ	Min	Max
$CFO_{i,t}$ (full sample)	2572	0.356	0.074	7.793	-25.938	281.236
$NI_{i,t}$	1077	0.028	0.058	1.251	-29.412	17.207
$D*NI_{i,t}$	1269	0.045	0.07	1.05	-27.438	19.793
$CFO_{i,t}$	992	0.412	0.076	7.523	-6.167	206.629
$D*CFO_{i,t}$	1261	0.371	0.071	8.905	-25.938	281.236
$ACC_{i,t}$	1078	-0.351	-0.02	7.404	-206.372	19.034
$D*ACC_{i,t}$	1273	-0.322	-0.01	8.598	-280.956	10.952
<i>CONSERVATISM</i>	2640	-4.679	-16	18.861	-16	30
$ACC/CFO_{i,t}$	2570	4.455	0.593	72.81	0.00033	3539

Notes: This table reports the descriptive statistics for earnings and cash flow predictability variables. $CFO_{i,t}$ stands for operating cash flow for the full and subsample. It is defined as the income before depreciation minus interest expense plus interest revenue less tax expense and the changes in working capital. $NI_{i,t}$ is the income after depreciation minus interest expense plus interest revenue minus tax expense before IFRS. $ACC_{i,t}$ is the difference between $NI_{i,t}$ and $CFO_{i,t}$. $D*ACC_{i,t}$ is an interaction variable capturing the incremental effect of IFRS on accounting accruals. $D*NI_{i,t}$ is an interaction variable capturing the incremental effect of IFRS on net income. $D*CFO_{i,t}$ is an interaction variable capturing the incremental effect of IFRS on operating future cash flow. $ACC/CFO_{i,t}$ is an absolute ratio of accounting accruals to cash flow from operations proxying for the extent to which reporting discretion is exhibited on reported earnings. The mean value of 4.455 in accruals ratio implies that there is greater reporting discretion in reported earnings.

Table 4-10 reports comparative country mean values for earnings and cash flow predictability variables. The mean value for one year-ahead operating cash flow increases after IFRS in South Africa and Morocco and remains unaltered in Kenya. However, it decreases in Egypt and Botswana. Likewise, the accruals ratio behaves in a similar fashion. This may imply that accounting accruals increase (or decrease) to a greater extent than operating cash flows after IFRS. The mean value for one year-ahead earnings increases in all countries except Morocco. Moreover, the mean values for current and one year-ahead operating cash flow for Kenya are equal and remain unchanged after IFRS.

Table 4-10 Comparative Country Statistics(Mean values): Earnings and Cash Flow Predictability

CFO _{i,t+1}			NI _{i,t+1}		NI _{i,t}		CFO _{i,t}		SIZE		LEV		Accruals Ratio	
Country	B	A	B	A	B	A	B	A	B	A	B	A	B	A
South Africa	0.09	0.46	0.01	0.03	0.03	0.03	0.07	0.60	3.66	4.96	3.79	2.14	0.30	0.56
Egypt	1.21	0.10	0.06	0.08	0.05	0.09	1.89	0.11	4.67	6.10	3.41	2.77	1.13	0.06
Kenya	0.07	0.07	0.04	0.06	0.02	0.06	0.07	0.07	na	na	5.57	2.92	0.05	0.05
Morocco	0.08	0.12	0.07	0.06	0.07	0.06	0.08	0.12	6.28	6.81	3.23	4.26	0.07	0.08
Botswana	3.72	0.07	0.11	0.12	0.11	0.13	0.09	0.09	8.34	9.11	3.66	4.97	3.38	0.11

Notes: A and B stand for post and pre adoption of IFRS respectively. $CFO_{i,t+1}$ is one-year-ahead operating cash flow defined as the summation of income before depreciation and interest income less interest expense, tax expense and changes in working capital scaled by total assets. $NI_{i,t+1}$ is one-year-ahead net income defined as income after depreciation minus interest expense plus interest revenue minus tax expense scaled by total assets. $NI_{i,t}$ is income after depreciation minus interest expense plus interest revenue minus tax expense scaled by total assets. $CFO_{i,t}$ is the contemporaneous operating cash flow scaled by total assets. $SIZE$ is the firm size proxied by the natural logarithm of the end of the year market of equity, LEV is the leverage measuring the level of firm risk and defined as the ratio of total liability to net book value of equity and $ACCRUALS\ RATIO$ is the absolute value of the ratio of accounting accruals to cash flows from operations. This ratio measures the extent to which managers exhibit discretion in reported earnings. The higher the ratio, the larger is the earnings discretion.

4.3.3.2 Pairwise Correlations

Table 4-11 reports the pairwise correlations between earnings and cash flow predictability variables. There is strong positive correlation between current net income and cash flow ($r = 0.137$, $p < 0.05$). While there is a positive relationship between contemporaneous and future cash flow, there is a negative correlation between future operating cash flow and current net income and accruals. However, the relationships are not statistically significant at conventional levels.

However, there is a negative and significant relationship between the contemporaneous cash flow and accounting accruals ($r = -0.990$, $p < 0.05$). This implies that as operating cash flow increase the accounting accruals decrease. This relationship is also consistent with prior studies. For example, Kim and Kross (2005, Table 3, p.758) report the correlation coefficient of -0.49 between contemporaneous cash flow and accruals.

Table 4-11 Pairwise Correlations for Earnings and Cash Flow Predictability Variables

Variable	$CFO_{i,t+1}$	$CFO_{i,t}$	$NI_{i,t}$	$ACC_{i,t}$	Conservatism
$CFO_{i,t+1}$	1				
$CFO_{i,t}$	0.0001	1			
$NI_{i,t}$	-0.0047	0.1374**	1		
$ACC_{i,t}$	-0.0008	-0.9900**	0.0035	1	
Conservatism	0.0021	0.0017	0.0165	0.0027	1

Notes: This table reports the pairwise correlations for the earnings and cash flow predictability variables. ** implies statistical significance at the 5% level. $CFO_{i,t+1}$ is one-year-ahead operating cash flow defined as the summation of income before depreciation and interest income less interest expense, tax expense and changes in working capital scaled by total assets. $NI_{i,t}$ is income after depreciation minus interest expense plus interest revenue minus tax expense scaled by total assets. $CFO_{i,t}$ is the contemporaneous operating cash flow scaled by total assets. $ACC_{i,t}$ is the difference between net income (NI) and operating cash flow (CFO) or simply ΔWC -Depreciation. *Conservatism* is defined as the difference between uncertainty avoidance (UA) and individualism (IND).

4.4 Chapter Summary

This chapter explains about the sources, characteristics and transformation of data. Also, it describes how data were collected and why the five African countries were selected and used in this thesis. South Africa forms a large composition of data and in order to ensure that it does not unduly affect the tests' results, weighted least squares (WLS) regressions are used as part of additional analysis and robustness check. The majority of sample firms are non-financial or industrial; this implies that many banks and other financial institutions in Africa do not list their shares to capital markets. For instance, in South Africa out of 242 companies listed in Johannesburg stock exchange during the period 2002-2009, banks were only 8 (see Table 4-1).

The measures of central tendencies and dispersion show that data are not normally distributed and are dispersed suggesting the presence of outliers. As discussed earlier on in this chapter, I use winsorization statistical method to reduce the effects of outliers on results. In particular, consistent with Barth *et al.*, (2008) I employ a 5% winsorization method in all empirical tests. The following chapters examine whether IFRS increases the usefulness of accounting information in terms of value relevance, asymmetric earnings timeliness and conditional conservatism and the predictive ability of earnings and cash flow. Thus, chapter five examines the information content of IFRS. In particular, it examines whether IFRS increases ERC, BRC and explanatory and predictive power while taking into account the impact of culture and legal origin.

CHAPTER FIVE

THE VALUE RELEVANCE OF IFRS

5.0 Chapter Abstract

In this chapter I examine whether IFRS adoption increases the value relevance of earnings and book value of equity in African capital markets. Lev (1989) suggests that one way of extending value relevance research is by examining the impact of accounting measurement and principles on the change in market valuation. I extend prior research by also examining the relative roles of legal origin and culture on value relevance of IFRS. I estimate value relevance by examining earnings response coefficients (ERC), book value response coefficients (BRC) and the explanatory and predictive power of the model (Adj. R^2).

In brief, the results provide support for the contention that IFRS increases the valuation role of the book value of equity and overall relative value relevance (adjusted R^2), but not earnings. These findings are consistent with Hung and Subramanyam (2007) who find that book values of equity and not earnings are important in valuing stocks during the switch from local GAAP to IFRS in Germany. The results are also consistent with the IASB (2010) conceptual framework focus on the statement of financial position rather than the statement of financial performance approach to external financial reporting. With respect to legal origin, the BRC and adjusted R^2 increase more significantly in code law than common law countries. This suggests that IFRS is incrementally more value relevant in code law than common law countries. Also, the results provide empirical support that the secretive culture embedded in African countries is associated with a greater ERC before IFRS and a greater BRC after IFRS. This implies that legal origin and culture matter in equity investment in African capital markets hence they are important control variables for value relevance research.

5.1 Introduction

This chapter examines the value relevance of earnings and book values of equity before and after IFRS adoption. Brown Jr *et al.*, (2006, p.607) define value relevance as '*the degree to which accounting information summarizes information reflected in market prices*'. Since, the primary focus of IASB is equity investments (Prather-Kinsey, 2006 and Barth *et al.*, 2001); this chapter examines whether or not IFRS increases the informativeness of earnings and book value of equity to market participants in African capital markets. It is motivated by the historical cost versus fair value debate, the widespread adoption of IFRS, Lev's (1989) suggestion, and the call by Prather-Kinsey (2006) that, more value relevance studies are needed in African countries. Although IFRS is widely adopted in Africa, there are relatively few studies examining the impact of IFRS on the value relevance of earnings and book value of equity (e.g. Negash, 2008, Prather-Kinsey, 2006 and Warsame, 2006).

This chapter also extends Prather-Kinsey's (2006) study by examining whether IFRS adoption improves the information content of earnings and book value of equity as measured through the earnings response coefficient (ERC), book value response coefficient (BRC) and the explanatory and predictive power of the model. In particular, the research objectives are fourfold; to examine whether IFRS adoption increases; (i) ERC, (ii) BRC, (iii) both earnings and book value of equity response coefficients measured jointly by the explanatory power of the model, and (iv) whether legal origin and culture impact on ERC, BRC and adjusted R^2 .

Prather-Kinsey (2006) only considers value relevance from a measurement perspective and uses relatively small sample (South Africa and Mexico) and short research period from 1998 to 2000. This thesis rather takes a broader approach and uses both measurement (price models) and information (return models) perspectives to examine the ERC and BRC before and after IFRS adoption over a relatively long sample period of eight

years from 2002 to 2009. This approach is justified by Lev and Ohlson (1982) who argue that an accounting variable has information content if it is reflected in both valuation level and value change perspectives. Moreover, the use of both empirical specifications controls for individual problems posed by the models (Kothari and Zimmerman, 1995). While price level models examine the impact of accounting on firm value, price change models study the information contained in price changes such as the timeliness of accounting information (Barth *et al.*, 2001).⁴¹In summary, in this thesis value relevance is assessed by ERC, BRC and the explanatory and predictive power of the model before and after IFRS adoption.

The results provide support to the hypotheses that IFRS increases the BRC and overall relative value relevance as measured through the adjusted R^2 . However, the hypothesis that IFRS increases the ERC is not supported. These findings are similar to Francis and Schipper (1999) who report an increasing relevance on the balance sheet over time and a reduction of the explanatory power for earnings and Hung and Subramanyam (2007) who find that IFRS increases the BRC but not ERC in Germany. Moreover, consistent with Easton and Harris (1991) and Ragab and Omran (2006) investors in African markets place more importance on ‘earnings levels’ but not ‘earnings changes’ in equity valuation. This may be due to the preference of investors to hold stocks for short term horizons (Ragab and Omran, 2006).

With respect to legal origin, the BRC and adjusted R^2 increase more statistically significantly in code law than common law firms. This implies that IFRS is incrementally more value relevant in code law than common law firms. These findings are consistent with the argument by Lantto (2007) who asserts that IFRS leads to more decision-useful

⁴¹Both models suffer from econometric problems for instance; while price models are less biased but suffer from heteroskedasticity, return models are less heteroskedastic but have more bias (Kothari and Zimmerman, 1995).

information in code law than common law countries. Furthermore, the results provide evidence that secretive culture is associated with a higher ERC before IFRS and a higher BRC after IFRS. The higher ERC before IFRS may be attributed to the tendency of managers in culturally embedded societies facilitated by the relative low disclosure requirements of local GAAP to report higher earnings. The higher BRC after IFRS is likely to be caused by the financial reporting discretion available in IFRS. For instance, the discretion to determine inputs, methods and assumptions when measuring assets and liabilities under the fair value hierarchy.

5.2 Research Design

The main objective of this chapter is to examine whether the change in accounting measurement from historical cost accounting (HCA) to fair value accounting (FVA) through the application of IFRS increases the association between accounting quantities and market values. Consistent with Prather-Kinsey (2006), I adopt the measurement approach and use a variant of the Ohlson (1995) model in examining whether IFRS adoption results in an increase in ERC, BRC and the explanatory and predictive power of the model (adjusted R^2).⁴² From another perspective, this model is an extension of the Easton and Harris (1991) model

⁴²The model is primarily grounded in earnings capitalization framework (ECF) and the Residual Income Valuation Model (RIV) of Ohlson (1995). ECF states that the capitalized tax-adjusted value of the firm is equal to the present value of after tax earnings plus the growth opportunities value i.e.

$$V - tD = \frac{E(1-t)}{r} + g \text{ and RIV is given by } P_0 = b_0 + \sum_{t=1}^{\infty} [x_t - rb_{t-1}]R^{-t} \text{ where } V \text{ is the capitalized}$$

value of the firm, t is the tax bracket and time in ECF and RIV model respectively. E is the earnings before interest and tax, r is the cost of capital, g is the value of the growth opportunities, D is the debt, P_0 is the price of equity at date 0, b_0 is the book value of equity at date 0, x_t is current accounting earnings, rb_{t-1} is the imputed charge on investment and $R = 1+r$, the discounting factor.

which does not include the book value of equity per share.⁴³ While Prather-Kinsey (2006) regresses market value on book value of common equity and earnings and deflates all variables by the lagged book value of common equity, I include the change in earnings per share and deflate all variables by the beginning period stock price. Thus, the primary research design is the dummy variable model presented in equation 1 below;

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where, $P_{i,t}$ is the share price of the firm 3 months after the balance sheet date to match with the release of accounting information to investors and the general public, $BV_{i,t}$ is the current net book value per share, $E_{i,t}$ and $\Delta E_{i,t}$ are the earnings per share and change in earnings per share respectively. D is an IFRS dummy equal to 1 if a firm observation is from years following the adoption year and 0 otherwise. $D * BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on net book value of equity. $D * E_{i,t}$ and $D * \Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively and $\varepsilon_{i,t}$ is the random variable or an error term of the firm i at the end of the period t .

Equation (1) is built on the earnings capitalization framework and the residual income valuation model and is a combination of the traditional earnings change, earnings level and Ohlson models. The ERC is measured by $\alpha_3 + \alpha_5$ and $\alpha_4 + \alpha_6$ before and after IFRS respectively. The BRC is measured by α_1 before IFRS and α_2 after IFRS. The overall relative joint value relevance is measured through the *adjusted-R*². The above model is also similar to that of Francis and Schipper (1999, Equation 2, p.331) and Hung and Subramanyam (2007, Equation 2, p.642). Finally, to mitigate the effects of heteroskedasticity, the BV , E and ΔE are

⁴³Easton and Harris (1991) assume book value per share as a noisy proxy for explaining the market values of equity but Ohlson (2005) argues that the explanatory and predictive power of Easton and Harris (1991) model increases when the book value to price ratio is added.

all deflated by the beginning period share price (Basu, 1997; Kothari and Zimmerman, 1995; Kothari, 1992; Kothari and Sloan, 1992 and Christie, 1987), on the grounds that deflated price models yield less biased earnings and book value response coefficients and provide higher explanatory power. Also, similar to all models in this thesis, I include the country and time dummies to control for effects of macroeconomic differences on the behaviour of companies.

5.2.1 Control Variables

Prior studies reveal the following factors to have an impact on value relevance particularly earnings response coefficient; risk (-), uncertainty (-), audit quality (+), firm size (+), interest rates (+/-), financial leverage (-), and firm growth (+) impact on earnings response coefficient.⁴⁴ However, due to data limitations, and consistent with prior studies such as Barth *et al.*, (2008), as part of a robustness check, only firm size, financial leverage and growth are used as control variables.

5.2.1.1 Firm Size

Firm size does not directly relate to earnings response coefficients except through correlations with other factors determining market responsiveness to profits such as, ownership patterns, risk and uncertainty (Godfrey *et al.*, 2006). Large firms attract the attention of institutional investors, financial press and securities analysts who in turn are capable of monitoring the firm and ensuring high quality earnings and hence, ERC. Thus, it is expected that, firm size is positively related to ERC. Firm size (*SIZE*) is proxied by the natural logarithm of market capitalization calculated as closing share price times number of shares outstanding (Barth *et al.*, 2008).

⁴⁴ The positive and negative symbols in brackets show the manner in which the variables relate to ERC. Interested readers are referred to Godfrey *et al.*, (2006, p.273) for more explanations on how those factors impact earnings response coefficients.

5.2.1.2 Leverage

The optimal leverage theory of capital structure asserts that debt reduces the weighted average cost of capital (WACC) only when the debt-equity mix is optimal. This implies that during this period the level of debt is small, the required rate of return is small and hence the ERC is higher. When the leverage is beyond the optimal level, the bankruptcy and liquidation risks increase prompting higher compensation rates which in turn leads to lower ERC. These theoretical arguments lead to the assertion that ERC is inversely related to financial leverage. Leverage (*LEV*) is defined as the ratio of total liability to net book value of equity and proxies for firm risk (Barth *et al.*, 2008 and Hung and Subramanyam, 2007).

5.2.1.3 Growth

The expected rates of return from profitable investment opportunities or projects exceed the risk-adjusted rate of return making ERC larger. In other words, the present value of the expected future cash flows investment opportunities is large and hence leads to higher ERC. *GROWTH* is the firm growth defined as the change in revenue or sales divided by total assets.

Therefore, equation 2 includes the pre-determined firm characteristics of size, risk and growth.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t} \quad (2)$$

CV stands for the control variables which include the firm size, leverage and growth. Other variables are as defined in equation 1.

5.2.2 Legal origin

In order to examine the impact of legal origin on value relevance of earnings and book value of equity before and after adoption of IFRS, I first divide the sample into common and code

law countries and run separate regressions. Second, I introduce the legal origin dummy, C , into the test variables in equation 1 to form the following dummy variable model;

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 C * BV_{i,t} + \alpha_3 D * BV_{i,t} + \alpha_4 C * D * BV_{i,t} + \alpha_5 E_{i,t} + \alpha_6 C * E_{i,t} + \alpha_7 D * E_{i,t} + \alpha_8 C * D * E_{i,t} + \alpha_9 \Delta E_{i,t} + \alpha_{10} C * \Delta E_{i,t} + \alpha_{11} D * \Delta E_{i,t} + \alpha_{12} C * D * \Delta E_{i,t} + \varepsilon_{i,t} \quad (3)$$

Where C is a legal origin dummy equal to 1 if a firm observation is from common law countries and 0 otherwise. $C * BV_{i,t}$ and $C * D * BV_{i,t}$ are interaction variables measuring the incremental impact of common law legal origin on book value of equity before and after IFRS respectively. $C * E_{i,t}$ and $C * D * E_{i,t}$ are interaction variables capturing the effect of common law legal origin on earnings before and after IFRS respectively. $C * \Delta E_{i,t}$ and $C * D * \Delta E_{i,t}$ are interaction variables measuring the incremental effect of common law legal origin on change in earnings before and after IFRS respectively.

5.2.3 Culture

In a secretive culture environment, investors are likely to demand higher rates of return due to increased asymmetric information risks between management and investors (Hope *et al.*, 2008). Since African countries (especially Morocco, Egypt and Kenya) are characterized by secretive culture (Gray, 1988 and Hofstede 1980), the present value of future cash flows is likely to be lower due to the increased discount rates demanded by investors. Culture is an important control variable in Africa because unlike western countries from which IFRS originates, African culture is secretive and hence the disclosure level of accounting information is expected to be relatively low.

To assess the impact of culture on value relevance of IFRS, I use the secrecy hypothesis pioneered by Gray (1988). Basing on earnings capitalization framework and the dividend valuation model, the higher rates of return will eventually lead to reduced share

prices and earnings response coefficient. Also, in a secretive environment, managers are likely to manipulate earnings and net assets to avoid accountability to external investors (Risberg, 2005). Ultimately, this may increase or decrease the association between market values and accounting data depending on whether the manipulation is downward or upward. As a result, I introduce the secrecy variable (*SEC*) on the test variables in equation 1 to form the following equation.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 SEC * BV_{i,t} + \alpha_3 D * BV_{i,t} + \alpha_4 SEC * D * BV_{i,t} + \alpha_5 E_{i,t} + \alpha_6 SEC * E_{i,t} + \alpha_7 D * E_{i,t} + \alpha_8 SEC * D * E_{i,t} + \alpha_9 \Delta E_{i,t} + \alpha_{10} SEC * \Delta E_{i,t} + \alpha_{11} D * \Delta E_{i,t} + \alpha_{12} SEC * D * \Delta E_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where *SEC* stands for secretive culture, and it is a dummy variable equal to 1 if the secrecy value is greater than its median value and 0 otherwise. This is consistent with prior studies which use a median as a cutoff point of magnitude or size (Hodgson and Stevenson-Clarke, 2000). Hence, *SEC* is defined as the sum of uncertainty avoidance and power distance minus individualism (Hope *et al.*, 2008 and Gray 1988) and it is calculated using Hofstede (1980) and House *et al.*, (2004) cultural dimensions.⁴⁵ *SEC*BV_{i,t}*, *SEC*E_{i,t}* and *SEC*ΔE_{i,t}* are interaction variables capturing the impact of secretive culture on book value of equity, earnings and change in earnings before IFRS respectively. *SEC*D* BV_{i,t}*, *SEC*D* E_{i,t}* and *SEC*D* ΔE_{i,t}* are interaction variables capturing the impact of secretive culture on book value of equity, earnings and change in earnings per share after IFRS respectively. All other variables are as defined previously.

5.2.4 Returns-Based Model

Lev and Ohlson (1982) argue that accounting variables have information content only when they can produce qualitatively similar results in both price level and change models. Kothari

⁴⁵ Consistent with prior studies such as Hope *et al.*, (2008), I exclude masculinity in computing the amount of secretiveness of culture because it has relatively little relation with accounting values.

and Zimmerman (1995) suggest the use of both price and returns models (whenever possible) due to their individual econometrics problems. Accordingly, as a robustness check and a test of information impact, I use a returns-based model represented in equation 5.

$$RET_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \varepsilon_{i,t} \quad (5)$$

Where $R_{i,t}$ is the return calculated as $RET_{i,t} = (P_{i,t} - P_{i,t-1})/P_{i,t-1}$ over a 12 month period extending from 9 months prior to the fiscal year-end to 3 months after the fiscal year-end. This practice is intended to match the release of accounting information with market data and ensure that the market response to the previous year's earnings is excluded (Hodgson and Stevenson-Clarke, 2000; Francis and Schipper, 1999; Basu, 1997; Easton and Harris, 1991; and Givoly and Palmon, 1982).

5.3 Models' Applicability and Limitations

The valuation models (e.g. Residual Income Valuation, Abnormal Earnings Growth, and Earnings Capitalization Framework) were originally designed for developed markets and assume Efficient Markets (Ohlson, 1995). There are three forms of market efficiency, namely; weak, semi-strong and strong form efficiency. In weak form efficiency, current share price is said to reflect all past information relating to share price patterns. In a semi-strong market share price reflect all publicly available information including financial statement information. While in strong form efficiency, share prices reflect all publicly available and private information.

The Ohlson (1995) model assumes that investors are rational and make their investment decisions based on financial evaluations, accounting is unbiased, and that markets are in a semi-strong form of efficiency. This means that the model is designed and suitable

for developed capital markets which are reasonably assumed to be semi-strong form efficient. However, African capital markets are weak form efficient and illiquid (Smith *et al.*, 2002 and Kenny and Moss, 1998). This may lead to the applicability of the valuation models in African capital markets being limited.

In order to match with accounting information, value relevance studies in developed countries (see for instance, Hodgson and Stevenson-Clarke, 2000, Francis and Schipper, 1999, Easton and Harris, 1991 and Givoly and Palmon, 1982) usually use share prices three months after the balance sheet date. One way of modifying the valuation models to an African context is to extend the matching period between accounting information and share prices. Therefore instead of using a three month period after the balance sheet date, I suggest that value relevance and efficient market studies in Africa use four month prices. Results based on this approach are reported in Tables 5-8 and 6-8 in Sections 5.5.2.1 and 6.4.8.1 respectively. These results are qualitatively similar with those of the 3 month period.

5.4 Hypotheses Development

5.4.1 Earnings Response Coefficient

The widely accepted wisdom that, “unexpected earnings explain unexpected returns” is frequently criticized on the basis that earnings are measured through historical accounting systems which have limited ability to explain stock returns (Ohlson, 2005); and by the IASB conceptual framework that emphasizes the statement of financial position as the primary information statement (the asset-liability approach). Phrased differently, historical cost earnings which are transactions-based and backward looking are restrictive in that, they are imperfect explanators of stock prices (and stock returns) which are based on forward looking

information.⁴⁶ Kothari (1992), Kothari and Sloan (1992) and Kothari and Zimmerman (1995) argue that such limited information ability is attributable to the conventions that underlie Generally Accepted Accounting Principles (GAAP) for instance; conservatism, objectivity, biased and lagged revenue-recognition and verifiability. This view is further reinforced by Lev (1989) who argues that the low correlation (below 10%) between returns and earnings is largely caused by the deficiencies in the measurement system of accounting.

Since the fair value accounting measurement system has a greater market and future oriented focus, is less conservative and based on Hicksian theory of income, I argue that the resulting accounting numbers after IFRS adoption are more likely to associate strongly with the firm's market value or return. Thus, the ERC and the explanatory power of the model are also likely to increase. Barth *et al.*, (2008) argue that IFRS is of higher quality than local GAAP and leads to higher value relevance since IFRS is characterized by a more faithful representation of the firms underlying economics, less opportunistic discretion and less non-opportunistic error in estimating accruals.

With an exception of South Africa, many African countries' GAAP are more conservative in nature, and have tax and bank driven accounting systems. Hence, the application of IFRS in African capital markets may lead to incrementally more realistic accounting values, improved associations with market values or returns and higher ERC. Theoretically, ERC measures the sensitivity of change in the present value of expected future dividends to units of unexpected earnings (Freeman and Tse, 1992). These theoretical arguments form a basis of the following hypothesis:

⁴⁶ Prices contain information about future earnings changes i.e. prices lead earnings (Kothari, 1992, Kothari, and Sloan, 1992, Collins, *et al.*, 1994, Easton and Harris, 1991, Ohlson, 1991, and Brown, *et al.*, 1985).

H1: The earnings response coefficient increases significantly after IFRS adoption in African markets.

5.4.2 Book Value of Equity Response Coefficient

Under fair value accounting, the balance sheet is the prime statement while the income statement is a by-product and all assets and liabilities are valued at market prices (see for instance SFAS 157 and IFRS 13). Easton and Harris (1991) argue that the difference between the book and market values of equity in the book value valuation model can partly be explained by the choice of conservative accounting practices. Since fair value accounting is less conservative than historical cost accounting, the relationship between book and market values of equity is likely to increase when IFRS is adopted in African capital markets whose GAAPs are more conservative. Also, consistent with Ohlson (2005), I argue that the book value per share or net book value explains the firm's market values better after than before IFRS adoption because IFRS is based on Anglo-Saxon principles and shareholders theory which are future and market-oriented. This theoretical discussion leads to the following hypothesis:

H2: The book value of equity response coefficient increases significantly after IFRS adoption in African markets.

5.4.3 The Explanatory Power of the Model

Because assets and liabilities are marked to market or model, for each measurement period, with the fair value changes taken into the income statement, both ERC and BRC are more likely to increase after IFRS adoption and thus improve the explanatory power of the model (Adjusted R^2). Lev (1989) argues that an R^2 is a measure of the information contribution (usefulness) of earnings and book value of equity to investors. Therefore, the shift from more conservative African accounting standards to a market based set of accounting standards,

IFRS is expected to increase the explanatory power of the model. This leads to the following hypothesis:

H3: Both ERC and BRC, measured through an adjusted R^2 in a combined equation, increase significantly after IFRS in African capital markets.

5.4.4 Legal origin

Legal origin, categorized by common and code law, is one of the influential variables affecting financial and accounting systems (Ball *et al.*, 2000 and La Porta *et al.*, 1998). It is commonly used in international accounting and finance literature to proxy for the extent of shareholders' and creditors' protection, depth of capital markets, and accounting and financial systems.

Common law countries are characterized by high levels of investors' and creditors' protection, great depth of capital markets and market led accounting systems (Ball *et al.*, 2000 and La Porta *et al.*, 1997, 1998, 1999). In contrast code law countries are tax, bank and stakeholders' oriented (Hung and Subramanyam, 2007). Thus, legal origin triggers the demand for financial accounting information between common and code law countries. In code law countries information is channelled through an insider access model and family networks, but external financial reporting is the main source of information in common law countries (Tsalavoutas *et al.*, 2010 and Hope, 2003). Accordingly, financial reporting information is more likely to be useful in terms of the valuation role of earnings and book value of equity in common rather than code law countries.

Furthermore, International Financial Reporting Standards (IFRS) are embedded in Anglo-Saxon accounting systems (e.g. U.S., U.K., Ireland, Australia and South Africa) and embrace a shareholder theory of corporate governance. On the other hand, many other accounting regimes (e.g. Germany, France, Spain and continental European countries) are based on code and tax laws and embrace a stakeholders' theory of corporate governance.

Since IFRS is conceptually different in terms of its orientation from African local GAAP (World Bank, 2010a, Anandarajan and Hasan, 2010, Walker, 2010 and Chamisa, 2000), the shift from African local accounting systems to IFRS is likely to incrementally produce more decision-useful and value relevant information in code law than in common law countries (Tsalavoutas *et al.*, 2010). Grounded by these theoretical arguments, I predict and test the following hypothesis:

H4: *IFRS adoption increases the ERC, BRC and adjusted R^2 more in African code law countries than African common law countries.*

5.4.5 Culture

Gray (1988) develops four hypotheses by linking accounting values and societal values pioneered by Hofstede (1980). The hypotheses include; secrecy, professionalism, uniformity and conservatism. A large number of studies test the secrecy hypothesis by linking culture with disclosure levels of accounting information (Hope *et al.*, 2008, Dahawy *et al.*, 2002 and Jaggi and Low, 2000). The secrecy hypothesis asserts that countries with high levels of uncertainty avoidance and power distance in combination with lower individualism and masculinity, leads to a secretive culture.

Hope *et al.*, (2008) hypothesize and find an inverse relationship between secrecy and the choice of a big 4 audit firm. They argue that big 4 audit firms perceive secretive societies to be risky and thus demand appropriate compensation before accepting audit engagements. From an investors' perspective, one can argue that a secretive culture imposes opacity on investors in obtaining relevant accounting information for their investment decisions. Also, a secretive culture induces greater risk to investors who in turn demand higher rates of return. Subsequently, this decreases the present value of future cash flows leading to reduced earnings response coefficients (Godfrey *et al.*, 2006). This argument is also underpinned by

finance theory that assumes a positive relationship between risk and return. Along similar lines of reasoning, Kang *et al.*, (2004) argue that culture influences managers' and investors' behaviour on matters relating to firms' operations and investments. Thus, investors may demand higher rates of return for undertaking investments to firms that operate in secretive or riskier societies and this is likely to translate into lower response coefficients of earnings, book value of equity and overall relative value relevance.

Risberg (2005) argues that in order to avoid responsibility to external investors, managers in secretive cultures prefer to manipulate earnings and net assets. On the one hand, this may be the case even after the adoption of IFRS due to the flexibility and discretion it provides to managers especially on the methods, inputs and assumptions when determining assets and liabilities under the fair value hierarchy. This implies that even if IFRS is widely regarded as high quality accounting standard, the secretive culture in Africa is likely to reduce its value relevance. On the other hand, the high level disclosure requirements of IFRS when compared to local GAAP (Barth *et al.*, 2008) may mitigate the influence of secretive culture on the ERC, BRC and overall value relevance.

Even though, Barth *et al.*, (2008) argue that IFRS improves the value relevance of accounting information, it may not be the case in secretive African countries. For example, Dahawy *et al.*, (2002) document that the secretive culture prevalent in Egypt adversely affects the disclosure of accounting information even after the adoption of IFRS. In light of these arguments, since many African cultures are secretive (Gray, 1988; Hofstede, 1980), this is likely to reduce the ERC, BRC and adjusted R^2 . Based on these assertions, I predict and test the following hypothesis:

H5: The secretive culture in African capital markets constrains the hypothesized positive increases in ERC, BRC and overall value relevance.

5.5 Results

This Section reports the results from the basic regression model. For each regression, I check for potential heteroskedasticity and multi-collinearity among the independent variables. Accordingly, I use Breusch Pagan or Cook Weisberg test of heteroskedasticity and variance inflation factors (VIF) to test for potential multi-collinearity. When using the Breusch Pagan or Cook Weisberg test, the null hypothesis (H_0) of homoskedasticity is usually rejected at p-value less than or equal to 5% i.e. χ^2 beyond 3.84. Untabulated statistics show that unscaled price level regressions have relatively higher levels of heteroskedasticities than scaled price level regressions. Also, the VIF figures are far less than 10, which is a proposed cutoff point (Gujarat, 2003) indicating relatively no evidence of potential multi-collinearity. To mitigate the heteroskedasticity, I deflate all variables by the beginning period stock price and use robust standard errors. Also, to mitigate the influence of extreme variables on estimates, consistent with Barth *et al.*, (2008), I use a 5% winsorization method in all regressions.

5.5.1 Pooled Results

5.5.1.1 Earnings Response Coefficient

Table 5-1 reports the main results from a modified variant of the Ohlson (1995) model. The earnings response coefficient (ERC) is measured as the summation of the coefficient on $E_{i,t}$ and $\Delta E_{i,t}$. The results show that ERC decreases significantly after IFRS. For instance, only models 1 and 2 show a marginal increase of ERC from 0.702 to 0.703. However, M3 and M4 indicate that the ERC decreases from 0.768 to 0.646. Similarly, the coefficient on the incremental effect of IFRS in ERC (M5 and M6) is negative implying that IFRS decreases the sensitivity of price to earnings. As predicted by prior studies, although not tabulated, firm size and growth are positively related to ERC while leverage is negatively associated with ERC.

These results do not support hypothesis 1 that IFRS leads to a significant increase in ERC. The results also show that “earnings levels” and not “earnings changes” matter in forming prices in African capital markets. This may be explained by the manner in which investors hold stocks. They might prefer short to long hold horizons thus finding earnings changes insignificant. The possible conjectures for the decrease in value relevance of earnings after IFRS could be as follows; (i) IFRS induces measurement errors due to illiquidity of African capital markets, (ii) earnings volatility and noise which are a result of including non-performing items such as unrealized gains and losses in the statement of financial performance. For example, Table 4-4 in chapter four shows that earnings volatility increases in all countries except Kenya (iii) investors might have lost confidence in IFRS earnings as a performance measure due to the notion that they are based on unrealistic and unreliable accounting measurement systems and that due to lack of enforcement and secretive culture, managers adopt IFRS selectively (Daske *et al.*, 2011, Anandarajan and Hasan, 2010 and Dahawy *et al.*, 2002) and (iv) low market integrities especially insider trading prevalent in African capital markets (Prather-Kinsey, 2006) may also explain the low informativeness of earnings.

The findings are somewhat consistent with prior research such as Kim and Kross (2005), Collins *et al.*, (1997) and Francis and Schipper (1999) who conclude that value relevance of earnings declines over time. In a similar study, Prather-Kinsey (2006, Table 7 p.156) reports an ERC of 10.85 and 6.033 for South Africa and Mexico respectively. She further shows that it decreases (increases) by 76.6% (77.2%) in South Africa (Mexico) after the convergence of the local accounting standards with that of developed accounting standards (IFRS and U.S. GAAP respectively). The differences in coefficients may be attributed to scaling effects. Prather-Kinsey uses the book value of common equity as a

deflator while I use per share data and deflate the variables using the beginning period stock price.

Using an earnings valuation model and U.S. data, Kothari and Zimmerman (1995, Table 2, p.167) report an ERC of 0.45 while Easton and Harris (1991, Table 3, p.30) report an ERC of 0.87. Consistent with this thesis, both studies apply the beginning period stock price as a deflator. In summary, the results provide little support to hypothesis 1 that IFRS significantly increases the ERC.

5. 5.1.2 Book Value of Equity Response Coefficient

The BRC increases statistically significantly from 0.022 (t-stat = 1.418) to 0.124 (t-stat = 4.141, $p < 0.01$) for models M1 and M2. Also, the results are qualitatively the same when the control variables are included (M3 and M4). Moreover, the IFRS incremental coefficients (M5 and M6) are positive and statistically significant at 1% level of significance. This implies that IFRS significantly increases the valuation role of the book value of equity.

In summary, the results provide support to hypothesis 2 that IFRS significantly increases the BRC. This means that the application of IFRS aligns the book value of equity closer to market value due to fair valuation accounting principles. The findings are consistent with the IASB and FASB focus on the statement of financial position rather than the statement of financial performance approach to external financial reporting. These findings are also consistent with prior studies, for example; Prather-Kinsey (2006, Table 7, p.156) reports a book value response coefficient of 0.539 and 0.654 for South Africa and Mexico respectively. The coefficient increases by 158.1% in South Africa and decreases by 43.5% in Mexico after they converge their local accounting standards with IFRS or U.S. GAAP. South Africa is a common law country and it started to converge its local GAAP with IFRS since 1993 while Mexico is a code law country. Using a book valuation model, Francis and

Schipper (1999, Table 3 p.339) report an average BRC of 0.25 ranging from -0.13 to 0.97 in their study which uses U.S. data from 1952 to 1994.

5. 5.1.3 Adjusted R^2

The overall relative value relevance is measured by the explanatory power of the model (adj. R^2). Both the separate sample and dummy variable regressions show the increase in the explanatory power of the model. For instance, the adjusted R^2 increases from 17.9% to 30.6% in models M1 and M2 and from 18.6% to 32.8% in models M3 and M4. Also, when compared to M1 and M3, the explanatory power increases in models; M5, and M6. In summary, the results provide empirical support to hypothesis 3 that IFRS adoption increases the overall joint value relevance of earnings and book value of equity.

These findings suggest that although earnings and book values of equity can jointly be considered as value relevant, it is the book value of equity which has incremental value relevant information over earnings after IFRS. For instance, Table 5-2 shows that the incremental explanatory power of earnings over book values of equity decreases after IFRS by 57.1% from 0.07 to 0.03 while that of book value of equity over earnings increases by 20% from 0 to 0.02. These findings are consistent with Hung and Subramanyam (2007, Table 5, p.644) and Bellas *et al.*, (2008) who report that the book value of equity (net income) is more (less) important in valuation under IFRS than local GAAP in the context of Germany and Greece respectively. Similarly, Kim and Kross (2005) and Collins *et al.*, (1997) find that value relevance of book value of equity (earnings) increases (decreases) over time.

Table 5-1 The Impact of IFRS Adoption on ERC, BRC and the Adjusted R^2

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	0.978*** (14.676)	1.205*** (34.039)	0.935*** (11.911)	1.045*** (17.812)	0.823*** (10.991)	0.626*** (7.219)
$BV_{i,t}$	0.022 (1.418)	0.124*** (4.141)	0.033** (1.973)	0.185*** (5.744)	0.021 (1.184)	0.044** (2.381)
$D * BV_{i,t}$					0.110*** (3.12)	0.122*** (3.481)
$E_{i,t}$	0.606*** (7.099)	0.795*** (5.15)	0.617*** (6.916)	0.768*** (4.916)	0.746*** (8.548)	0.756*** (8.514)
$D * E_{i,t}$					-0.147 (-0.816)	-0.134 (-0.766)
$\Delta E_{i,t}$	0.096 (1.132)	-0.092 (-0.605)	0.063 (-0.705)	-0.122 (-0.778)	-0.028 (-0.339)	-0.059 (-0.700)
$D * \Delta E_{i,t}$					0.194 (1.293)	0.272* (1.835)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1130	1323	2776	2776
Adj. R ² (%)	17.9	30.6	18.6	32.8	24.4	26.2

Notes: These results are estimated by annual OLS regressions. The robust t-statistics are in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10% according to the two tailed t-tests. The data sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Botswana, Egypt and Morocco. $P_{i,t}$ is the closing price per share three months after the balance sheet date scaled by the beginning period share price. $BV_{i,t}$, $E_{i,t}$ and $\Delta E_{i,t}$ are the net book value per share, earnings per share and change in earnings per share respectively all scaled by the beginning period share price. $D * BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on the book value of equity. $D * E_{i,t}$ and $D * \Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively. CV stands for control variables and they include *FIRM SIZE*, *LEV* and *GROWTH* and are as defined previously and also their definitions are included in Appendix 5-1 at the end of this chapter and N is the number of observations.

Table 5-2 The Relative Incremental Explanatory Power of Equity over Earnings

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 E_{i,t} + \alpha_3 \Delta E_{i,t} + \varepsilon_{i,t} \text{ Model 1}$$

$$P_{i,t} = \lambda_0 + \lambda_1 BV_{i,t} + \varepsilon_{i,t} \text{ Model 2}$$

$$P_{i,t} = \beta_0 + \beta_1 E_{i,t} + \beta_2 \Delta E_{i,t} + \varepsilon_{i,t} \text{ Model 3}$$

	Model 1		Model 2		Model 3	
Coeff.	Before	After	Before	After	Before	After
BV _{i,t}	0.022 (1.418)	0.124*** (4.141)	0.056*** (3.537)	0.202*** (7.343)		
E _{i,t}	0.606*** (7.099)	0.795*** (5.15)			0.632*** (7.546)	0.990*** (6.718)
ΔE _{i,t}	0.096 (1.132)	-0.092 (-0.605)			0.105 (1.225)	-0.095 (-0.603)
ERC	0.702	0.703			0.737	0.895
Adj.R ² (%)	18.0	31.0	11.0	28.0	18.0	29.0
(1)-(2)			0.07	0.03		
(1)-(3)					0	0.02
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1130	1323	1130	1323

Notes: The intercepts are not reported for brevity but are all statistically significantly positive. Thus, only coefficients of interest are reported. These results are estimated by annual OLS regressions using the book value and earnings valuation model- 1, book valuation model -2, and the earnings valuation model-3. Similar to Kim and Kross (2005), the book value and earnings valuation model is decomposed in order to measure the incremental explanatory power of earnings (book values of equity) over book values of equity (earnings) in explaining stock prices. The incremental explanatory power of earnings over book value of equity (R_E^2) = $R_1^2 - R_2^2$ while the incremental explanatory power of book value of equity over earnings is given by (R_{BV}^2) = $R_1^2 - R_3^2$. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at 1%, 5% and 10% respectively according to the two tailed t-tests. N is the number of observations. Variables are as defined previously and are also included in Appendix 5-1.

5.5.2 The Year by Year Results

To understand the trends of the ERC, BRC and the explanatory power of the model, I run the regressions on a yearly basis. This approach provides a more accurate picture of the coefficients movements given that countries in the sample adopted IFRS differently. For instance, South Africa, Egypt and Kenya adopted IFRS in 2005 while Botswana and Morocco adopted IFRS in May 2006 and January 2008 respectively. Table 5-3 reports the results on a yearly basis for the entire sample period from 2002 to 2009.

5.5.2.1 Earnings Response Coefficient

Table 5-3 and Figure 5-1 depicts the earnings response coefficient (ERC) over time from 2002 to 2009. During the strict pre-adoption period (i.e. 2002-2004), the ERC is well below the average value of 0.838 and increases to 1.213 in 2005 the year when South Africa, Egypt and Kenya adopted IFRS. During the mixed pre-post period (2005-2007) and strict post-adoption period (2008-2009), the ERC is above the average value although in aggregate the ERC diminishes slightly after IFRS adoption.

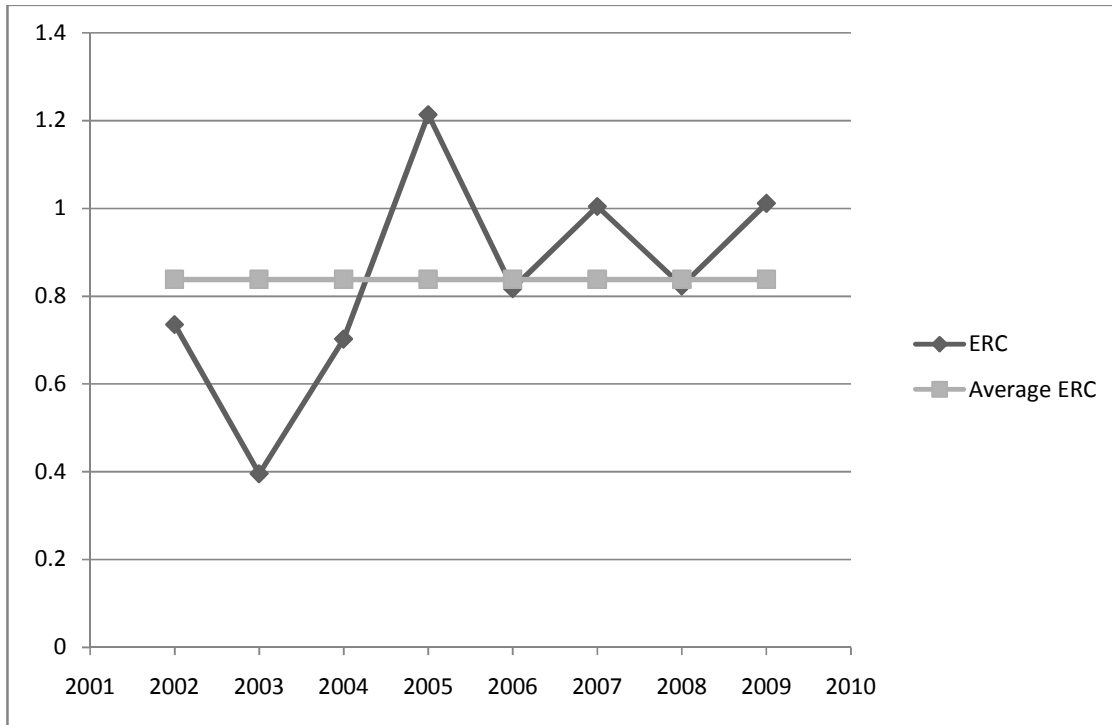
Table 5-3 The ERC, BRC and Adjusted R² on Yearly Basis over the Sample Period

$$\text{Model} = P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 E_{i,t} + \alpha_3 \Delta E_{i,t} + \varepsilon_{i,t}$$

Variable	YEARS								Avg
	2002	2003	2004	2005	2006	2007	2008	2009	
α_0	1.072*** (25.659)	1.032*** (26.98)	1.339*** (26.27)	1.355*** (21.55)	1.199*** (20.495)	1.220*** (20.608)	0.665*** (18.707)	0.815*** (21.942)	
$BV_{i,t}$	0.039* (1.765)	0.059** (2.298)	0.04 (1.233)	-0.018 (-0.405)	0.169** (2.546)	0.103 (1.381)	0.170*** (3.265)	0.027 (0.735)	0.074
$E_{i,t}$	0.735*** (5.086)	0.479*** (4.497)	0.480*** (2.863)	0.991*** (3.29)	0.518 (1.513)	1.377*** (3.356)	0.710*** (3.092)	1.003*** (4.999)	
$\Delta E_{i,t}$		-0.084 (-0.916)	0.222* (1.655)	0.222 (0.664)	0.299 (0.946)	-0.373 (-0.814)	0.113 (0.545)	0.008 (0.044)	
ERC	0.735	0.395	0.702	1.213	0.817	1.004	0.823	1.011	0.838
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Adj.R ² (%)	24.5	20.1	14.5	18.2	13.9	10.7	28.2	18.3	18.6
N	347	347	347	347	347	347	347	347	347

Notes: The robust t-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. Where $P_{i,t}$ is the closing price per share of the firm 3 months after the fiscal year end. $E_{i,t}$ and $\Delta E_{i,t}$ are the earnings per share and change in earnings per share respectively. $BV_{i,t}$ is the year end net book value of equity per share. All variables are deflated by the beginning period stock price ($P_{i,t-1}$) and N represents the number of observations. The data sample period spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. The definitions of the variables are as provided previously and are also included in Appendix 5-1 at the end of this chapter.

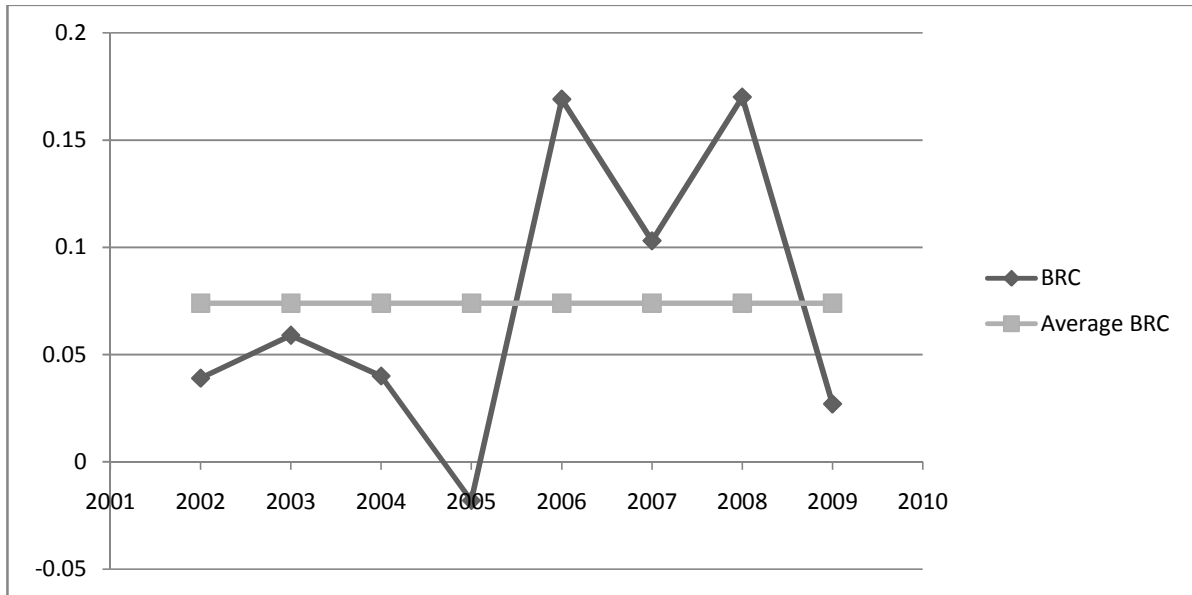
Figure 5-1 The Earnings Response Coefficient over the Sample Period



5.5.2.2 Book Value of Equity Response Coefficient

Figure 5-2 displays the chronological book value response coefficient (BRC) for the entire sample period. BRC is well below the average value of 0.074 during the strict pre-adoption period and falls to -0.018 in 2005. However, it increases substantially above the mean value during the mixed pre-post adoption period. During the strict post adoption period, BRC decreases from 0.17 in 2008 to 0.027 in 2009. BRC records its highest value in 2006 (0.169) and 2008(0.17), when Botswana and Morocco adopted IFRS respectively. The lowest value of BRC is recorded in 2005 when South Africa, Egypt and Kenya adopted IFRS. In aggregate, the BRC increases after IFRS adoption.

Figure 5-2 The Book Value of Equity Response Coefficient over the Sample Period



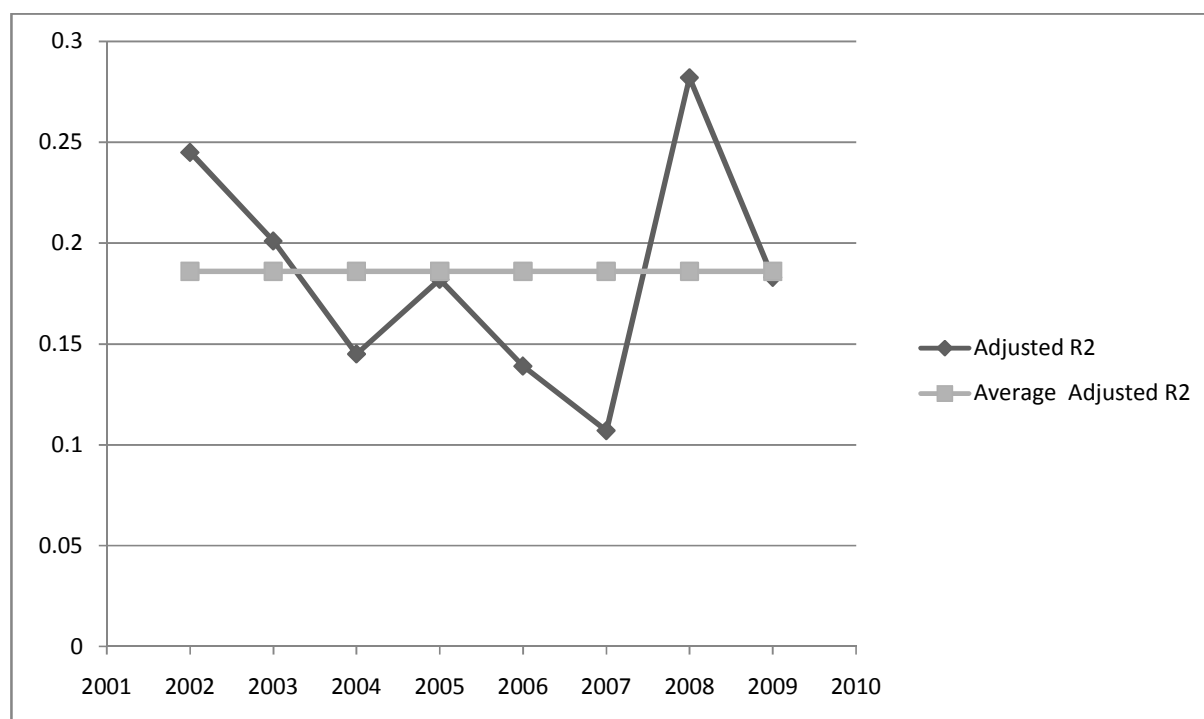
5. 5.2.3 Adjusted R^2

Figure 5-3 displays the trend of the explanatory and predictive power during the sample period. The explanatory power decreases from 0.245 to 0.145 during the strict pre-adoption period. It then increases to 0.182 in 2005 before dropping to 0.107 in 2007 during the mixed pre-post adoption period. Thereafter, the adjusted R^2 increases massively to 0.282 in 2008 before falling again to 0.183 in 2009. In aggregate, the explanatory power increases after IFRS adoption.

Alternatively the coefficient trend can be measured by regressing the particular coefficient (e.g. ERC, BRC or adjusted R^2) on years. I use the model developed by Kim and Kross (2005, Table 4, Model 4) to measure the trend in ERC, BRC and an adjusted R^2 over the sample period. The model is; $R_{vt}^2 = \gamma_0 + \gamma_1 YEAR_t + \varepsilon_{i,t}$. Where, R_{vt}^2 is an R^2 from the regression models and it can be any variable (i.e. ERC or BRC). The coefficient of interest is γ_1 and the interpretation is that if this coefficient is positive then the measured variable (R_{vt}^2 ,

ERC or BRC) is increasing over time and if it is negative, it means the variable is decreasing. Moreover, if the coefficient is zero, implies that the measured variable is constant. The results indicate that γ_1 is positive for ERC ($\gamma_1 = 0.055^*$) and BRC ($\gamma_1 = 0.01$). Moreover, it is negative for adjusted R^2 ($\gamma_1 = -0.002$). However, these coefficients are not statistically significant.

Figure 5-3 The Adjusted R^2 of Earnings and Book Value of Equity over the Sample Period



5. 5.3 The Impact of Legal origin on Value Relevance of Earnings and Equity

Table 5-4 reports results on the impact of legal origin on ERC, BRC and adjusted R^2 . Panel A presents results from dummy variable regressions while panel B presents results from separate sample regressions. In panel A, the results indicate that IFRS leads to a significant increase in BRC in code law but not in common law firms (see for instance M2 and M4). This significant increase in BRC in code law countries may be explained by the assertion that accounting standards in code law countries were conceptually different from

IFRS in terms of their orientations (World Bank 2010a, Anandarajan and Hasan, 2010 and Lantto, 2007) before the adoption of IFRS.

Similarly, M6 and M7 show that the common law legal origin incremental effect on BRC is positive before IFRS and negative after IFRS but both coefficients are not statistically significant at conventional levels. Moreover, IFRS leads to a decreased ERC in common law firms and an increased ERC in code law firms. For instance, ERC decreases to -0.111 after IFRS in common law firms and increases to 0.224 in code law firms (refer M2 and M4). However, both changes are not statistically significant. Equally, the common law legal origin incremental effect coefficient on ERC decreases from 0.201 (statistically significant at $p < 0.1$) before IFRS to 0.170 after IFRS.

The explanatory and predictive power reflects the results discussed above. For instance, the adjusted R^2 remains the same at 24.8% before and after IFRS for common law firms (see for instance M1 and M2) while it increases from 30.9% to 34% for code law firms (M3 and M4). Similarly, the explanatory and predictive power increases slightly from 24.1% in M5 to 24.7% in M6 and M7 when the common law legal origin incremental effects are included.

Moreover, separate sample regression results in panel B show that BRC increases more in code law than common law firms. For example, BRC increases from 0.015 (t-stat = 0.336) before IFRS to 0.517 (t-stat = 3.775, $p < 0.01$) after IFRS in code law firms while it increases from 0.030 (t-stat = 1.756, at $p < 0.1$) before IFRS to 0.097 (t-stat = 3.126, $p < 0.01$) after IFRS in common law firms. Also, the results show that ERC increases to a larger extent in code law than common law firms. For instance, the ERC increases from 0.624 to 1.543 in code law countries while it increases from 0.625 to 0.733 in common law countries. Some countries (e.g. South Africa and Kenya) in common law group started aligning their

local GAAP with IFRS before 2005. This might have led investors and other market participants to become indifferent in terms of their perceptions of the information content of IFRS earnings.

The explanatory and predictive power of the model is greater for code law firms than common law firms. This may imply that financial statements are the only sources of information to market participants in code law countries something which may not be the case in common law countries. Other sources of financial and accounting information including financial analysts, financial press, earnings forecasts and management conference calls may be available in common law countries. Although separate sample regressions indicate that the explanatory and predictive power increases by a larger amount in common law than code law countries, the changes in BRC and ERC are not statistically significant (see dummy variable regressions in panel A).

In summary, the findings suggest that IFRS leads to the increased valuation role of the book value of equity and overall value relevance in code law but not common law firms. However, IFRS does not lead to significant changes in the ERC for both code and common law firms. These findings are consistent with Lantto (2007) and Prather-Kinsey (2006) who find that IFRS or U.S. GAAP is incrementally more value relevant to code law than common law countries.

Table 5-4 The Impact of Legal Origin on the Value Relevance of IFRS

Panel A Dummy Variable Regressions

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 C * BV_{i,t} + \alpha_3 D * BV_{i,t} + \alpha_4 C * D * BV_{i,t} + \alpha_5 E_{i,t} + \alpha_6 C * E_{i,t} + \alpha_7 D * E_{i,t} + \alpha_8 C * D * E_{i,t} + \alpha_9 \Delta E_{i,t} + \alpha_{10} C * \Delta E_{i,t} + \alpha_{11} D * \Delta E_{i,t} + \alpha_{12} C * D * \Delta E_{i,t} + \varepsilon_{i,t}$$

Variable	Common Law		Code Law		Whole Sample		
	Before	After	Before	After			
	M1	M2	M3	M4	M5	M6	M7
BV _{i,t}	0.043*** (2.868)	0.032* (1.731)	0.118** (2.544)	0.030 (0.542)	0.048*** (3.203)	0.026 (1.111)	-0.005 (-0.114)
C*B _V _{i,t}						0.056* (1.909)	0.030 (0.654)
D*B _V _{i,t}		0.050 (1.325)		0.496*** (3.404)			0.145* (1.800)
C*D*B _V _{i,t}							-0.045 (-0.561)
E _{i,t}	0.720*** (9.058)	0.748*** (8.004)	0.529*** (3.289)	0.558*** (3.029)	0.720*** (9.659)	0.629*** (4.712)	0.873*** (4.854)
C*E _{i,t}						0.138 (0.816)	-0.126 (-0.659)
D*E _{i,t}		-0.143 (-0.742)		0.481 (0.734)			-0.238 (-0.629)
C*D*E _{i,t}							0.121 (0.307)
ΔE _{i,t}	0.037 (0.466)	0.032 (0.365)	0.065 (0.302)	-0.019 (-0.082)	0.012 (0.162)	-0.115 (-0.941)	0.353*** (-3.186)
C*ΔE _{i,t}						0.307* (1.678)	0.327*** (3.107)
D*ΔE _{i,t}		0.039 (0.252)		-0.257 (-0.206)			0.177 (0.916)
C*D*ΔE _{i,t}							0.049 (0.723)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2264	2264	512	512	2776	2776	2776
Adj. R ² (%)	24.8	24.8	30.9	34	24.1	24.7	24.7

Notes: The robust t-statistics are shown in parentheses. ***, ** and * denote significance at 1%, 5% and 10%.

Panel B Separate Sample Regressions

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 E_{i,t} + \alpha_3 \Delta E_{i,t} + \varepsilon_{i,t}$$

Variable	Common Law Sample		Code Law Sample	
	Before	After	Before	After
Variable	M1	M2	M3	M4
α_0	1.017*** (11.335)	1.219*** (34.094)	0.736*** (7.109)	1.003*** (6.482)
$BV_{i,t}$	0.032* (1.833)	0.097*** (3.126)	0.015 (0.336)	0.517*** (3.775)
$E_{i,t}$	0.538*** (5.741)	0.763*** (4.829)	0.569*** (3.072)	2.103*** (3.053)
$\Delta E_{i,t}$	0.077 (0.910)	-0.030 (-0.218)	0.055 (0.309)	-0.560 (-0.607)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	849	1115	264	208
Adj. R ² (%)	12.8	33.6	35.5	36.4

Notes: This panel reports results about the impact of legal origin on the value relevance from separate sample regressions. The robust t-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. Variables definitions are as provided previously and are also included in Appendix 5-1 at the end of this chapter.

5.5.4 Secretive Culture and the Value Relevance of IFRS

The tests of the impact of culture on the value relevance of earnings and book value of equity involve four countries; South Africa, Egypt, Morocco and Kenya. Botswana is dropped out due to the lack of culture data as it is not included in both Hofstede (1980) and House *et al.*, (2004) culture survey studies. For Hofstede (1980) regressions, the data sample period spans from 2002 to 2009 involving 330 firms from four countries namely; South Africa, Kenya, Egypt and Morocco.

However, for House *et al.*, (2004) regressions, the data sample period spans from 2002 to 2009 and involves 306 firms from three countries namely; South Africa, Egypt and Morocco. Botswana and Kenya are dropped out because they are not included in House *et al.*,

(2004) culture survey data. Also, in House *et al.*, (2004) individualism is calculated as the average value of the institutional collectivism (I), in group collectivism (II) and human orientation index scores. Secretive culture (SEC) is defined as the sum of uncertainty avoidance and power distance minus individualism (Hope *et al.*, 2008 and Gray 1988) and it is calculated using the Hofstede (1980) and House *et al.*, (2004) cultural dimensions.⁴⁷ Accordingly, SEC is introduced in order to capture the impact of culture on the ERC, BRC and adjusted R². It is a dummy variable equals to 1 if the secrecy value is greater than its median value and 0 otherwise.

Table 5-5 reports results about the impact of culture on value relevance of IFRS. While M1 is a base model, M2 and M3 are dummy regressions which use the Hofstede (1980) culture values while M4 and M5 use the House *et al.*, (2004) cultural dimension scores. Moreover, M1, M3 and M5 include the firm effects of size, risk and growth and all models i.e. M1-M5 include year and country effects. In terms of the BRC, the results indicate that the secretive culture embedded in African countries positively impacts the book value of equity before and after IFRS. However, the secretive culture incremental effect is only statistically significant at 10% level of significance after IFRS. This can partly be explained by the financial reporting flexibility under the principles ‘based’ IFRS for which managers have discretion on inputs, methods and assumptions in determining the assets and liabilities values. It is quite opposite to the rules ‘based’ local GAAP for which the values of assets and liabilities are derived from historical cost transactions hence there is relatively little secretive culture influence.

The results further show that, the secretive culture significantly increases the ERC before but not after IFRS. These findings may be attributed to (i) the contention that

⁴⁷ Consistent with prior studies such as Hope *et al.*, (2008), I exclude masculinity in computing the amount of secretiveness of culture because it has relatively little relation with accounting values.

managers from culturally embedded countries tend to report higher earnings by altering accounting accruals to avoid responsibility to capital providers (Risberg, 2005 and Leuz *et al.*, 2003); (ii) the low levels of accounting disclosures associated with the local GAAP and (iii) the interaction of secretive culture and low disclosure of local GAAP. However, the increased disclosure of IFRS is likely to hinder culturally influenced managers from managing earnings upward. This can further be explained by Barth *et al.*, (2008) who argue that IFRS limits opportunistic behaviour and reporting discretion by managers. Moreover, the explanatory power increases slightly from 25.8% in M1 to 25.9%, 27.1% and 26.5% in M2, M3 and M5 respectively. This implies that secretive culture is an important control variable for international accounting value relevance research. Untabulated results indicate that reported results are qualitatively similar when masculinity indices are included in computing secrecy values.

Table 5-5 The Impact of Culture on the Value Relevance of IFRS

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 SEC * BV_{i,t} + \alpha_3 D * BV_{i,t} + \alpha_4 SEC * D * BV_{i,t} + \alpha_5 E_{i,t} + \alpha_6 SEC * E_{i,t} + \alpha_7 D * E_{i,t} + \alpha_8 SEC * D * E_{i,t} + \alpha_9 \Delta E_{i,t} + \alpha_{10} SEC * \Delta E_{i,t} + \alpha_{11} D * \Delta E_{i,t} + \alpha_{12} SEC * D * \Delta E_{i,t} + \varepsilon_{i,t}$$

	Hofstede (1980) Scores			House <i>et al.</i> , (2004) Scores	
Variable	M1	M2	M3	M4	M5
BV _{i,t}	0.076*** (4.446)	0.061*** (3.369)	0.077*** (4.097)	0.050*** (2.736)	0.066*** (3.478)
SEC*BV _{i,t}		0.094 (1.013)	0.045 (0.470)	0.115 (1.164)	0.059 (0.590)
D*BV _{i,t}		0.056 (1.178)	0.075 (1.563)	0.059 (1.276)	0.065 (1.389)
SEC*D*BV _{i,t}		0.516* (1.955)	0.467* (1.770)	0.436 (1.133)	0.544 (1.423)
E _{i,t}	0.698*** (8.872)	0.587*** (6.904)	0.598*** (6.565)	0.631*** (7.543)	0.640*** (7.153)
SEC*E _{i,t}		1.361*** (3.564)	1.109*** (2.855)	1.306*** (2.715)	0.960** (1.966)
D*E _{i,t}		0.201 (0.696)	0.034 (0.117)	0.297 (1.063)	0.188 (0.675)
SEC*D*E _{i,t}		1.146 (1.131)	1.564 (1.541)	1.017 (0.564)	0.405 (0.224)
ΔE _{i,t}	-0.003 (-0.034)	0.011 (0.134)	-0.012 (-0.145)	0.015 (0.185)	-0.008 (-0.090)
SEC*ΔE _{i,t}		1.704 (1.393)	2.196* (1.789)	3.798* (1.901)	4.089** (2.054)
D*ΔE _{i,t}		0.211 (0.665)	0.083 (0.263)	0.133 (0.430)	0.013 (0.044)
SEC*D*ΔE _{i,t}		-7.572 (-0.828)	-8.805 (-0.960)	0.000 0.000	0.000 0.000
N	2640	2640	2640	2640	2640
Adj. R ² (%)	25.8	25.9	27.1	25.5	26.5

Notes: The intercepts are not reported for brevity but are all statistically significantly positive. The robust t-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. Variables are as defined previously and are also included in Appendix 5-1.

5.5.5 Country Comparison of ERC, BRC and Adjusted R²

Table 5-6 reports the country by country results. It reports the ERC, BRC and the explanatory and predictive power for South Africa, Egypt, Morocco, Kenya and Botswana. For South Africa, the IFRS incremental effect for both BRC and ERC is positive but not statistically significant. This finding is also reflected in the explanatory and predictive power of the model which shows no change after IFRS. In short, it implies that IFRS has no incremental impact on the value relevance of earnings and book value of equity in South Africa. These findings can be explained by; the fact that South Africa started aligning IFRS with lags since 1993 and the lack of IFRS enforcement (Prather-Kinsey, 2006). These results are consistent with Prather-Kinsey (2006) who finds the declining value relevance of earnings and book value of equity in South Africa after converging its GAAP with IFRS.

For Egypt, both the BRC and ERC increase after IFRS but the increase is only statistically significant for the BRC. This implies that IFRS increases the information content of the book value of equity but not earnings. Moreover, the explanatory and predictive power increases from 0.315 to 0.350 after IFRS. Egypt is a code law country and it started aligning or using IFRS as basis for its GAAP since 1997 (Ragab and Omran, 2006; Dahawy *et al.*, 2002).

For Morocco, the IFRS incremental effect coefficient for BRC is positive while that of ERC is negative. However, they are both statistically insignificant implying that IFRS does not increase the informativeness of earnings and book value of equity. The ERC is statistically significantly positive before IFRS. The explanatory power of the model reflects these findings as it decreases slightly from 0.516 to 0.512. These findings can be attributed to argument that due to lack of enforcement firms' managers in Morocco selectively adopt IFRS (World Bank, 2010a and Anandarajan and Hasan 2010).

For Kenya, the IFRS incremental effect coefficient is positive for both earnings and book value of equity but it is only statistically significant for earnings. This implies that IFRS earnings are informative to market participants but not the book value of equity. The explanatory and predictive power increases marginally from 0.420 to 0.438. Kenya is a common law country and like South Africa and Egypt, it started aligning its GAAP with IFRS since 1998 but Kenyan Accounting Standards were still in application. Moreover, it has a relatively weak regulatory framework (Bova, 2009). According to Bova (2009) IFRS benefits only accrue to countries with strong regulatory frameworks.

For Botswana, there is a negative (positive) impact of IFRS on the book value of equity (earnings). However, both coefficients are statistically insignificant. This means that IFRS has relatively no impact on BRC and ERC in Botswana Stock Exchange. Likewise, the explanatory and predictive power shows no change after IFRS. Botswana is a common law country and its accounting standards are heavily dependent on British Accounting systems and lack effective IFRS enforcement mechanisms (World Bank, 2006). In summary, these findings imply that IFRS offers different information content of earnings and book value of equity to market participants in different countries.

Table 5-6 The Country by Country Comparison on the Value Relevance of IFRS

$$\text{Model} = P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

	SA		Egypt		Morocco		Kenya		Botswana	
Variable	Before	After	Before	After	Before	After	Before	After	Before	After
α_0	0.928*** (12.69)	0.940*** (11.46)	0.111 (0.581)	0.224 (1.106)	0.791*** (4.269)	0.809*** (4.107)	0.802*** (3.822)	0.879*** (3.884)	0.204 (0.936)	0.236 (0.967)
$BV_{i,t}$	0.092*** (4.806)	0.086*** (3.894)	0.208*** (3.094)	0.126* (1.665)	0.055 (0.758)	0.027 (0.322)	-0.169 (-0.590)	0.027 (0.061)	0.04 (1.361)	0.037 (1.257)
$D * BV_{i,t}$		0.033 (0.634)		0.656*** (2.686)		0.356 (1.325)		0.269 (0.104)		-0.073 (-0.240)
$E_{i,t}$	0.619*** (7.059)	0.603*** (5.963)	0.202 (1.269)	0.134 (0.782)	1.293*** (4.224)	1.344*** (3.936)	0.099 (0.940)	0.051 (0.458)	1.523*** (3.365)	1.279*** (2.700)
$D * E_{i,t}$		0.075 (0.271)		2.118 (1.621)		1.051 (0.601)		2.448*** (2.746)		2.738 (1.346)
$\Delta E_{i,t}$	-0.031 (-0.386)	-0.037 (-0.379)	0.247 (0.880)	0.203 (0.724)	-1.094** (-2.014)	-1.107* (-1.777)	-0.093 (-0.364)	-0.162 (-0.564)	0.595 (1.094)	0.653 (1.068)
$D * \Delta E_{i,t}$		0.018 (0.061)		0.285 (0.149)		-2.693 (-0.707)		-0.737 (-0.784)		-1.235 (-0.551)
N	1936	1936	320	320	192	192	192	192	136	136
Adj. R ² (%)	27	27	31.5	35	51.6	51.2	42	43.8	38	38

Notes: The robust t-statistics are shown in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. Variables are as defined previously and are also included in Appendix 5-1. The results are also controlled for firm and year effects.

5.5.6 Industry Classification

The major reason for the concentration of value relevance studies on the banking industry is that its assets and liabilities are primarily financial. However, Deans (2007) argues that fair values are not only important in the banking industry but also other financial institutions which often use price-to-book measures for valuation purposes. She further argues that the relevance of fair value accounting information is likely to vary depending on the sectors of the economy and the types of assets and liabilities. In order to test this argument, I divide the sample into banks, financial and non-financial or industrial. A bank is any commercial, investment or credit bank listed in the stock exchange within the specified period. Financial institutions refer to banks, insurance companies, pension funds, unit trusts, mortgage loans, credit unions, building societies and investment funds. Non-financial firms are all firms except financial firms listed in the stock exchanges within the research period. The results based on industry classification are reported in Table 5-7.

5.5.6.1 Earnings Response Coefficient

The ERC decreases in all industries with large decreases recorded in banks followed by financial and non-financial firms. Majority of assets and liabilities of banks and other financial institutions are financial; thus the shift of accounting standards to IFRS is likely to have induced fair value measurement problems due to illiquidity of African markets. Also, the financial crisis happened during the post IFRS adoption period, that is, 2007-2009. This might have affected the measurement of assets and liabilities due to the fair value principles of marking to market or model accounting thus making earnings noisy.

5.5.6.2 Book Value of Equity Response Coefficient

The book value response coefficient is statistically significant before and after IFRS adoption only in non-financial firms. Also, although the BRC increases to a greater extent in banks and financial firms when compared to non-financial firms, it is the non-financial firms whose increase is statistically significant. For instance, the BRC in non-financial firms increases from 0.059 (t-stat = 2.934, $p < 0.01$) to 0.088 (t-stat = 1.769, $p < 0.1$). Again, the measurement of financial assets and liabilities both under local GAAP and IFRS in illiquid markets and the financial crisis may be attributable to these results.

5.5.6.3 Adjusted R^2

The explanatory and predictive power of the model indicates that the overall relative value relevance increases in all industries. Moreover, the largest percentage increase in the explanatory power is registered in banks (4.27%) followed by non-financial (2.7%) and financial firms (1.9%). Consistent with Deans (2007) these results imply that fair value accounting is also value relevant to other sectors of economy other than the banking sector.

Table 5-7 The Value Relevance Impact of IFRS Based on Industry Classification

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variables	Banks		Financial		Non-Financial	
	Before	After	Before	After	Before	After
α_0	0.745*** (3.304)	0.691*** (2.992)	0.860*** (5.724)	0.809*** (5.396)	0.822*** (12.709)	0.858*** (12.25)
$BV_{i,t}$	0.011 (0.283)	-0.007 (-0.160)	0.03 (1.039)	0.012 (0.353)	0.076*** (4.39)	0.059*** (2.934)
$D^* BV_{i,t}$		0.208 (1.275)		0.16 (1.396)		0.088* (1.769)
$E_{i,t}$	0.285** (2.292)	0.290* (1.831)	0.554*** (3.628)	0.618*** (3.371)	0.767*** (8.688)	0.694*** (7.051)
$D^* E_{i,t}$		-0.056 (-0.084)		-0.563 (-1.044)		0.507* (1.682)
$\Delta E_{i,t}$	-0.085 (-0.358)	0.097 (0.352)	-0.005 (-0.027)	0.112 (0.548)	0.019 (0.222)	0.01 (0.106)
$D^* \Delta E_{i,t}$		-2.200** (-2.053)		-0.658 (-1.147)		-0.021 (-0.062)
SIZE	-0.002 (-0.110)	-0.003 (-0.155)	-0.009 (-0.718)	-0.011 (-0.827)	0.007 (1.323)	0.008 (1.49)
LEV	-0.000 (-1.402)	-0.000 (-1.094)	-0.000 (-1.026)	-0.000 (-0.938)	-0.009*** (-5.276)	-0.009*** (-5.278)
GROWTH	1.402 (1.022)	1.316 (0.921)	0.236 (0.634)	0.275 (0.742)	0.232*** (4.25)	0.236*** (4.297)
Firm Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	264	264	536	536	2240	2240
Adj. R ² (%)	28.1	29.3	26.0	26.5	26.3	27.0

Notes: The robust t-statistics are in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. Banks refer to any commercial, investment, or credit bank listed in the particular stock exchange for the specified period of time. Financial institutions refer to banks, insurance companies, pension funds, unit trusts, mortgage loans, credit unions, building societies and investment funds. Non-financial firms are all firms except financial firms and simply are industrial firms. Variables are as defined previously and are also included in Appendix 5-1 at the end of this chapter.

5.5.2 Robustness Tests and Additional Analyses

5.5.2.1 A Modified Valuation Model for the Context of Africa

Following the discussion in Section 5-3 that valuation models may not be suitable in African capital markets, I use a four month period share prices. The results based on this approach are reported in Table 5-8. Separate sample regressions indicate that ERC increases slightly from 0.6506 to 0.686 when firm characteristics are not controlled. However, when firm effects are controlled, ERC decrease from slightly from 0.6406 to 0.626. Similarly, the ERC in dummy variable regressions are negative (see M5 and M6) although not statistically significant at conventional level.

The BRC increases from 0.0131 (t-stat = 0.830) to 0.077 (t-stat = 2.850, $p < 0.05$) when firm effects are not included in separate sample regressions. Moreover, the results qualitatively the same when the firm effects are controlled (see M3 and M4). Also, the dummy regressions indicate that BRC increases statistically significantly after IFRS (M5 and M6).

The predictive and explanatory power of the model (adjusted R^2) increases from 16.9% to 29.4% (M1 and M2), 22.1% to 31.7% (M3 and M4) and from 23.7% to 25.4% (M5 and M6). In general, the findings are qualitatively the same with the main results reported in Table 5-1. These findings suggest that valuation models are applicable to frontier markets of Africa and raise concern over the Efficient Market Hypothesis. However, one may attribute these findings to the dominance of South Africa in the sample. When compared to other African markets, South Africa is developed and sophisticated.

Table 5-8 The Impact of IFRS on ERC, BRC and Adjusted R² When a Four Month Period

Share Prices are Used

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	1.0469*** (15.03)	1.231*** (34.850)	0.937*** (10.710)	1.066*** (18.480)	0.891*** (11.760)	0.702*** (7.970)
$BV_{i,t}$	0.0131 (0.830)	0.077** (2.850)	0.0547** (2.720)	0.135*** (4.480)	-0.0001 (-0.010)	0.020 (1.090)
$D * BV_{i,t}$					0.1029** (2.980)	0.115** (3.350)
$E_{i,t}$	0.6169*** (7.040)	0.877*** (5.860)	0.6358*** (6.300)	0.847*** (5.510)	0.763*** (8.760)	0.769*** (8.660)
$D * E_{i,t}$					-0.0864 (-0.500)	-0.079 (-0.460)
$\Delta E_{i,t}$	0.0337 (0.380)	-0.191 (-1.280)	0.0046 (0.040)	-0.221 (-1.440)	-0.093 (-1.130)	-0.133 (-1.570)
$D * \Delta E_{i,t}$					0.1614 (1.080)	0.230 (1.550)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1009	1323	2776	2776
Adj. R ² (%)	16.9	29.4	22.1	31.7	23.7	25.4

Notes: These results are estimated by annual OLS regressions. The robust t-statistics are in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10% according to the two tailed t-tests. The data sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Botswana, Egypt and Morocco. $P_{i,t}$ is the closing price per share four months after the balance sheet date scaled by the beginning period share price. $BV_{i,t}$, $E_{i,t}$ and $\Delta E_{i,t}$ are the net book value per share, earnings per share and change in earnings per share respectively all scaled by the beginning period share price. $D * BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on the book value of equity. $D * E_{i,t}$ and $D * \Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively. CV stands for control variables and they include *FIRM SIZE*, *LEV* and *GROWTH* and are as defined previously and also their definitions are included in Appendix 5-1 at the end of this chapter and N is the number of observations.

5.5.2.2 Robust Regressions

Robust regression is a powerful method for dealing with the impact of outliers on estimated results to produce more stable results (Zaman *et al.*, 2001). Similar to winsorization, robust regression is primarily meant to mitigate the effects of outliers on estimated results.

Table 5-9 reports results from the robust regressions. Models M1-M4 represents separate sample regressions while M5 and M6 are dummy variable regressions. In separate sample regressions, the ERC increases from 0.242 (0.261+ -0.019) to 0.370 (0.467 + -0.097) for the first two models (M1 and M2). However, when the firm effects of size, risk and growth are included (M3 and M4), the ERC decreases from 0.302 to 0.260. Furthermore, the IFRS incremental effect coefficient of earnings is negative in both M5 and M6. However, the IFRS incremental effect coefficient on earnings changes is positive in both models (M5 and M6) but only statistically significant in M6. In aggregate, the ERC decreases after IFRS. On the other hand, the BRC increases significantly in both separate sample and dummy variable regressions.

The explanatory and predictive power of the model increases from 0.274 to 0.375 when firm effects of size, risk and growth are not controlled. However, it decreases from 0.441 to 0.337 when the firm effects are controlled. The dummy variable regressions show that the explanatory power increases marginally. Generally, these findings support the main results reported in Table 5-1 and specifically the second and third hypotheses.

Table 5-9 The ERC, BRC and an Adjusted R^2 from the Robust OLS Regressions

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	1.067*** (38.684)	1.246*** (50.662)	1.056*** (25.722)	1.082*** (29.937)	0.774*** (13.341)	0.443*** (7.024)
$BV_{i,t}$	-0.006** (-2.484)	0.016*** -8.012	0.008*** (-3.438)	0.024*** -4.619	-0.013 (-1.030)	0.025* (1.934)
$D^* BV_{i,t}$					0.131*** (4.627)	0.135*** (4.954)
$E_{i,t}$	0.261*** (9.892)	0.467*** (14.748)	0.263*** (8.536)	0.299*** (9.236)	0.922*** (15.79)	0.914*** (15.839)
$D^* E_{i,t}$					-0.153 (-1.152)	-0.033 (-0.260)
$\Delta E_{i,t}$	-0.019 (-1.390)	-0.097*** (-3.325)	0.039*** -6.552	-0.039 (-1.312)	-0.128** (-2.160)	-0.148** (-2.524)
$D^* \Delta E_{i,t}$					0.13 (1.028)	0.252** (2.067)
SIZE			0.005 (0.685)	0.025*** (4.811)		0.018*** (4.313)
LEV			-0.001 (-0.971)	-0.004 (-1.337)		-0.001*** (-12.017)
GROWTH			0.126*** (17.931)	0.165*** (5.799)		0.296*** (6.988)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	723	1256	678	1126	2776	2776
Adj. R^2 (%)	27.4	37.5	44.1	33.7	27.8	32.6

Notes: The t-statistics are in parentheses. *** ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. Variables are as defined previously and are also included in Appendix 5-1 at the end of this chapter.

5.5.2.3 Returns-Based Model

The use of both price and return models reduce the individual model problems (Kothari and Zimmerman, 1995) and validate the information content of accounting information (Lev and Ohlson, 1982). Motivated by these arguments, I use a returns-model as part of the robustness check and report results in Table 5-10.

The results indicate that earnings changes explain the cross sectional variations in returns better than earnings levels. The ERC increases when the firm effects are not controlled in separate sample regressions. However, when the firm effects are included, the ERC decreases after IFRS. Furthermore, the IFRS incremental effect coefficients on ERC decrease implying declining value relevance of earnings. When compared to price models, the earnings response coefficients are relatively small in returns models but they behave in a similar manner.

The BRC increases in separate sample regressions. For instance, when the firm effects are not controlled, the BRC increases from 0.124 (t-stat = 5.198, $p < 0.01$) to 0.217 (t-stat = 5.905, $p < 0.01$). The results are qualitatively the same when the firm characteristics of size, risk and growth are controlled. However, the IFRS incremental effect on the book value of equity is positive but not statistically significant. The explanatory and predictive power of the model increases to a large extent in both separate and dummy variable regressions implying the increasing overall joint relative value relevance. In general, hypotheses 2 and 3 are largely supported by these findings while hypothesis 1 is weakly supported similar to the main results reported in Table 5-1.

Table 5-10 The ERC, BRC and Adjusted R² from the Returns-Based Regressions

$$RET_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	0.362*** (4.217)	0.366*** (9.061)	0.803*** (7.401)	0.572*** (7.957)	0.121 (1.233)	0.492*** (4.479)
$BV_{i,t}$	0.124*** (5.198)	0.217*** (5.905)	0.086*** (3.296)	0.190*** (4.895)	0.125*** (5.175)	0.092*** (3.717)
$D * BV_{i,t}$					0.064 (1.379)	0.036 (0.791)
$E_{i,t}$	0.044 (0.329)	-0.186 (-0.956)	0.270** (2.162)	0.081 (0.433)	0.006 (0.051)	0.255** (2.266)
$D * E_{i,t}$					-0.303 (-1.275)	-0.23 (-1.028)
$\Delta E_{i,t}$	0.04 (0.383)	0.411** (2.143)	0.055 (0.526)	0.26 (1.373)	0.367*** (3.222)	0.288*** (2.612)
$D * \Delta E_{i,t}$					0.163 (0.853)	0.099 (0.543)
SIZE			-0.099*** (-7.206)	-0.051*** (-6.349)		-0.079*** (-10.964)
LEV			0.003 (1.29)	-0.000** (-2.523)		-0.000 (-0.687)
GROWTH			-0.165 (-1.179)	0.313*** (3.536)		0.044 (0.619)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1130	1323	2776	2776
Adj. R ² (%)	8.6	20.9	15.4	25.9	14.0	19.9

The robust t-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. $RET_{i,t}$ is returns calculated on firms' share prices over 12 months extending from 9 months prior to the fiscal year-end to 3 months after the fiscal year-end. The data sample spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. All other variables are as defined previously and are also included in Appendix 5-1.

5.5.2.4 The Linear Fixed and Random Effects Models

OLS regressions assume that error terms are uncorrelated to each other and have constant variance but in reality they may have varying variances (Bond, 2002). Under this scenario, linear fixed and random effects models better approximate the results. The main advantage of these methods is that they control for an unobserved individual specific time-invariant heterogeneity or individual effects that cannot be observed by the researcher (Hillier *et al.*, 2011 and Bond, 2002).

In this research setting, the unobservable heterogeneity may be the propensity of managers to comply with the provisions and disclosure requirements of IFRS. Linear fixed effects models assume that the unobservable heterogeneity (η_{it}) is correlated with the explanatory variables. However, linear random effects models assume that unobservable heterogeneity is uncorrelated with the regressors. To decide which model to use, the Hausman test (1978) is employed. This test compares two estimators under the null hypothesis that the difference in coefficients is not systematic. The null hypothesis is rejected when, the $\text{prob} > \chi^2$ is less than 0.05 and the fixed effects model is used. However, if the $\text{prob} > \chi^2$ is greater than 0.05, the null hypothesis is not rejected, and a random effects model is applied.

The fixed and random effects model results are reported in Table 5-11. Except for M1 and M3, all models represent fixed effects model results. The separate sample regression results show that the ERC decreases from 0.628 to 0.470 when the firm effects are not controlled. However, when they are controlled the ERC increases from 0.607 to 0.621. The dummy variable regression results indicate that the ERC decreases in all models. On the other hand, the BRC and the explanatory power increase significantly in all models. Similarly, the explanatory and predictive power increases greatly after IFRS. In summary, these findings are qualitatively similar to the main results reported in Table 5-1.

Table 5-11 The ERC, BRC and Adjusted R² from the Fixed and Random Effects Models

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D * BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D * E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D * \Delta E_{i,t} + \sum CV + \eta_i + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	1.043*** (18.782)	1.023*** (23.344)	0.986*** (14.621)	0.896*** (9.062)	0.623*** (7.288)	0.491*** (4.901)
$BV_{i,t}$	0.023 (1.37)	0.421*** (7.247)	0.033* (1.756)	0.472*** (8.078)	0.077*** (2.924)	0.108*** (4.027)
$D * BV_{i,t}$					0.198*** (5.478)	0.201*** (5.666)
$E_{i,t}$	0.635*** (7.189)	0.846*** (3.587)	0.650*** (7.244)	1.028*** (3.969)	0.767*** (7.497)	0.877*** (8.334)
$D * E_{i,t}$					-0.197 (-1.056)	-0.156 (-0.833)
$\Delta E_{i,t}$	-0.007 (-0.110)	-0.376** (-2.077)	-0.043 (-0.622)	-0.407** (-2.217)	-0.087 (-0.942)	-0.13 (-1.354)
$D * \Delta E_{i,t}$					0.22 (1.465)	0.347** (2.305)
SIZE			-0.001 (-0.070)	0.016 (0.951)		0.015 (1.236)
LEV			-0.004** (-2.476)	-0.001*** (-3.964)		-0.001*** (-5.590)
GROWTH			0.177* (1.867)	0.221* (1.926)		0.116* (1.809)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1130	1323	2776	2776
Adj. R ² (%)	18.6	39.7	19.7	41.7	27.5	29.5

These results are estimated by fixed and random effects models which include the unobservable heterogeneity (η_i). The robust z-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed z-tests. The data sample spans from 2002 to 2009 involving 347 from South Africa, Egypt, Morocco, Kenya and Botswana. Variables definitions are in Appendix 5-1.

5.5.2.5 Mitigating the Potential Endogeneity

The extant value relevance research usually employs the Ohlson (1995) model which considers market value as a linear function of the book value of equity and the discounted value of expected abnormal earnings (Barth *et al.*, 2001). This implies that the present value of the expected abnormal earnings is the difference between the market value and book value of equity and investors are prepared to pay for when buying stocks. Here the assumption is that earnings lead prices or market value and this is also the case for the earnings capitalization framework (ECF). However, due to accounting principles of conservatism, verifiability, and revenue recognition, earnings may not incorporate fully available market information and thus prices are likely to lead earnings (Ball *et al.*, 2010, Ball *et al.*, 2000, and Kothari and Sloan, 1992). This means that stock price or market value explains earnings and this is the assumption used by Basu (1997) to establish the reverse ERC model. In short, it means that there is a potential endogeneity between the market value of equity and earnings.

Accordingly, to ensure that the estimated coefficients are unaffected by the endogeneity effects, I use the one step system GMM dynamic panel data estimation and report results in Table 5-12. Blundell and Bond (1998) argue that when compared to others, this method leads to lowest bias of estimates and root mean square errors (RMSE). Separate sample results show no increase in ERC both when the firm effects are excluded and when they are included. Also, their corresponding z-statistics decrease in both scenarios after IFRS. Qualitatively similar results are obtained in dummy variable regressions but the corresponding z-statistics only decrease in M5. On the other hand, the BRC does not increase in separate sample regressions but the z-statistics increase from M1 to M2. The BRC increases in M5 but not in M6. The Wald χ^2 statistic is 0 and the probability is 1 across all models indicating that the results are significant and reliable. In summary, to a large extent these findings corroborate the main results reported in Table 5-1.

Table 5-12 The Value Relevance Coefficients and Power using the One Step System GMM

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \eta_i + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	-0.000*** (-4.383)	0.000*** (15.568)	-0.000*** (-3.513)	-0.000*** (-18.917)	-0.000*** (-46.207)	0.000*** (33.837)
$BV_{i,t}$	0.000*** (2.963)	0.000*** (12.465)	-0.000 (-0.392)	-0.000*** (-15.575)	-0.000*** (-21.643)	-0.000*** (-13.329)
$D^* BV_{i,t}$					0.000*** (44.929)	-0.000*** (-19.622)
$E_{i,t}$	-0.000* (-1.801)	0.000 (0.849)	-0.000 (-0.333)	-0.000*** (-11.395)	-0.000* (-1.949)	0.000*** (13.406)
$D^* E_{i,t}$					-0.000*** (-10.225)	0.000*** (14.356)
$\Delta E_{i,t}$	0.000** (2.048)	-0.000 (-1.078)	0.000*** (2.954)	0.000*** (8.594)	0.000*** (21.740)	-0.000*** (-12.041)
$D^* \Delta E_{i,t}$					0.000*** (5.521)	-0.000*** (-5.686)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1130	1323	2776	2776
Instruments	87	44	129	71	182	280
Wald χ^2	(13) = 0.00	(11) = 0.00	(16) = 0.00	(14) = 0.00	(16) = 0.00	(19) = 0.00
Prob > χ^2	1.000	1.000	1.000	1.000	1.000	1.000

Notes: This table reports the value relevance results from the dynamic panel data estimation especially the one step systems GMM. Only variables of interest are reported. The coefficients are relatively small compared to fixed effects and OLS regressions. The robust z-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed z-test. The firm, year and country effects are included. The country and year effects are included in order to control for macroeconomic differences which might affect the behaviour of the firms. Variables are as defined previously and are also included in Appendix 5-1 at the end of this chapter.

5.5.2.6 Data Winsorized at 1%

The results reported in Tables 5.1 to 5.12 are based on data winsorized at 5% (Barth *et al.*, 2008) and a total of 278 observations are winsorized for the whole sample. However, Hope *et al.*, (2008) suggest winsorizing data at 1%, and this leads to a total of 56 observations being winsorized for the whole sample. Results reported in *Appendix 2* indicate that both the BRC and an adjusted R^2 increase significantly after IFRS adoption while the ERC decreases.

5.5.2.7 Countries Classified by Years of Adoption

Since countries in the sample have different years of IFRS adoption (see *Appendix 1*), regression results may be affected by the heterogeneity in years of adoption. Consequently, I group countries with similar years of adoption and re-run the regressions. For instance, South Africa, Egypt and Kenya adopted IFRS in 2005 while Botswana and Morocco adopted IFRS in May 2006 and January 2008 respectively. Results reported in *Appendix 3* indicate that BRC, ERC and an adjusted R^2 increase after IFRS when the firm effects are not controlled. However, when firm effects are controlled, only the BRC and the adjusted R^2 increase. South Africa, Egypt and Kenya started harmonizing their local GAAP to IFRS in 1993, 1997 and 1998 respectively. In brief, the results are qualitatively similar to those reported in Table 5-1.

5.5.2.8 Mitigating the Effects of Uneven Country Sample Representation

To address the concern of uneven country sample representation, consistent with Hope *et al.*, (2008), I exclude the country with largest sample proportion (South Africa). This leads to a sample consisting of Egypt, Morocco, Kenya and Botswana with a total number of firm year observations of 840. Results reported in *Appendix 4* indicate that ERC, BRC and an adjusted R^2 increase after IFRS. However, results in *Appendix 5*, using weighted least squares (WLS) regressions, analytically weighted by the inverse of the square of price show that only the BRC increases after IFRS.

5.6 Chapter Summary

This chapter seeks to examine the value relevance of earnings and book value of equity before and after adoption of IFRS. It also examines the relative roles of culture and legal origin on the information content of earnings and book values of equity. Value relevance is operationalized by the change in ERC, BRC and the explanatory and predictive power of the regression model.

This study hypothesizes that ERC, BRC and adjusted R^2 increase after IFRS due to its market orientations. Also, it predicts that IFRS leads to a more decision useful information in civil law than common law countries and that the hypothesized increases in ERC, BRC and adjusted R^2 are hampered by the secretive culture prevalent in African countries. In order to test these hypotheses, a variant of Ohlson (1995) model is employed. Consistent with Hung and Subramanyam (2007), findings indicate that IFRS adoption increases the BRC and overall relative value relevance as measured through the adjusted R^2 but not the ERC.

The findings are also consistent with the IASB (2010) conceptual framework focus on the statement of financial position rather than the statement of financial performance in external financial reporting. The declining value relevance of earnings after IFRS may partly be attributed to fair value measurement errors and biases induced by the illiquidity of African capital markets and management discretion respectively. This decline is also consistent with prior studies such as Kim and Kross (2005), Francis and Schipper (1999) and Collins *et al.*, (1997) which conclude that the value relevance of earnings decline over time.

With respect to legal origin, consistent with prediction and Lantto (2007), IFRS increases the valuation role of the book value of equity and overall value relevance in code law but not common law firms. This implies that IFRS makes relatively greater improvements in African code law countries. Moreover, secretive culture is associated with a

higher ERC before IFRS and a higher BRC after IFRS. Before IFRS, secretive culture facilitated by lower level of disclosure requirements of local African GAAP is associated with managers reporting higher earnings. On the other hand, the higher BRC after IFRS may be explained by the interaction between secretive culture and the financial reporting flexibility offered under IFRS. In general, the findings have implications to the worldwide adoption and applicability of IFRS and the IASB and FASB convergence agenda.

The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity [IASB and FASB (2010) conceptual framework, OB 2]. This implies that useful accounting information is not only ought to be value relevant but also should safeguard the interests of other capital providers including lenders and other creditors. That is to say, accounting financial information should improve the stewardship role of management and several firms contractual obligations (e.g. between managers and shareholders, managers and debtholders or shareholders and debtholders) through earnings. Furthermore, it should assist the shareholders and other capital providers to assess whether the management has made effective and efficient use of resources entrusted to them and assess the performance of the management against rival firms' managements.

Accordingly, chapter six examines whether the introduction of IFRS in African capital markets is associated with greater loss over gains recognition timeliness. Basu (1997) argues that greater loss recognition timeliness over gains is suitable for the stewardship role of management and increases contracting efficiencies. Moreover, this asymmetry of timely loss over gains recognition of earnings is commonly referred to as conditional conservatism. In short, the following chapter examines whether IFRS changes conditional conservatism and the conditioning roles of culture and legal origin.

Appendix 5-1 Definitions of Variables

Variables	Definitions
$P_{i,t}$	Share price of the firm 3 months after the balance sheet date scaled by the beginning period stock price.
$RET_{i,t}$	Returns calculated as, $RET_{i,t} = (P_{i,t} - P_{i,t-1})/P_{i,t-1}$ over a 12 month period extending from 9 months prior to the fiscal year end to 3 months after the fiscal year end.
$E_{i,t}$	Earnings per share scaled by the beginning period stock price.
$\Delta E_{i,t}$	Change in earnings per share scaled by the beginning period stock price.
$BV_{i,t}$	Current net book value per share scaled by the beginning period stock price.
D	An IFRS dummy equal to 1 if a firm observation is from years following the adoption year and 0 otherwise.
$D*BV_{i,t}$	An interaction variable capturing the effect of IFRS adoption on book value of equity.
$D*E_{i,t}$	An interaction variable capturing the impact of IFRS on earnings per share.
$D*\Delta E_{i,t}$	An interaction variable capturing the effect of IFRS on change in earnings.
C	A legal origin dummy equal to 1 if a firm observation is from common law countries and 0 otherwise.
$C*BV_{i,t}$	An interaction variable capturing the incremental effect of common law legal origin on book value of equity before IFRS.
$C*D*BV_{i,t}$	An interaction variable capturing the incremental effect of common law legal origin on book value of equity after IFRS.
$C*E_{i,t}$	An interaction variable capturing the incremental effect of common law legal origin on earnings before IFRS.
$C*D*E_{i,t}$	An interaction variable capturing the incremental effect of common law legal origin on earnings after IFRS.
$C*\Delta E_{i,t}$	An interaction variable capturing the incremental effect of common law legal origin on earnings changes before IFRS.
$C*D*\Delta E_{i,t}$	An interaction variable capturing the incremental effect of common law legal origin on earnings changes after IFRS.

<i>SEC</i>	A secretive culture dummy equal to 1 if the secrecy value is greater than its median value and 0 otherwise. It is calculated as the summation of uncertainty avoidance and power distance less individualism (Hope <i>et al.</i> , 2008 and Gray, 1988) using Hofstede (1980) and House <i>et al.</i> , (2004) cultural dimension scores. For House <i>et al.</i> , (2004), individualism is calculated as; the average value of institutional collectivism (I), in group collectivism (II) and human orientation index scores.
<i>SEC*BV_{i,t}</i>	An interaction variable capturing the impact of secretive culture on book value of equity before IFRS.
<i>SEC*D*BV_{i,t}</i>	An interaction variable capturing the impact of secretive culture on book value of equity after IFRS.
<i>SEC*E_{i,t}</i>	An interaction variable capturing the impact of secretive culture on earnings before IFRS.
<i>SEC*D*E_{i,t}</i>	An interaction variable capturing the impact of secretive culture on earnings after IFRS.
<i>SEC*ΔE_{i,t}</i>	An interaction variable capturing the impact of secretive culture on earnings changes before IFRS.
<i>SEC*D*ΔE_{i,t}</i>	An interaction variable capturing the impact of secretive culture on earnings changes after IFRS.
<i>SIZE</i>	A proxy for firm size defined as the natural logarithm of the end of year market value of equity.
<i>LEV</i>	The ratio of total liability to net book value of equity.
<i>GROWTH</i>	The firm growth defined as the change in revenue or sales divided by total assets.

CHAPTER SIX

THE IMPACT OF IFRS ON ASYMMETRIC EARNINGS TIMELINESS AND CONDITIONAL CONSERVATISM

6.0 Chapter Abstract

In this chapter I examine whether IFRS adoption changes asymmetric earnings timeliness and conditional conservatism as a measure of stewardship in African capital markets. This is an important area of research because it carries crucial and decision useful information for compensation, firms' contractual obligations and stewardship of management (see FASB, 2010, SFAC No.8, paragraphs 1.25-1.28). In particular, I examine whether IFRS changes; (i) gains recognition timeliness, (ii) loss recognition timeliness, (iii) incremental loss recognition timeliness and (iv) overall earnings timeliness. As a way of extending prior research, I also examine the conditioning roles of culture and legal origin on asymmetric earnings timeliness.

The results do not provide empirical support suggesting that IFRS adoption increases good news and bad news recognition timeliness of earnings. Moreover, with respect to legal origin, consistent with prior studies such as Ball *et al.*, (2000, 2003) results show that firms from common law countries are timelier in recognizing bad news but less timely in recognizing good news compared to firms from code law countries. Nevertheless, overall joint bad and good news recognition timeliness of earnings measured through the adjusted R^2 decreases more in common law than code law firms after IFRS. Regarding culture, there is evidence suggesting that cultural conservatism is associated with a reduction in loss and incremental loss recognition timeliness before and after IFRS thus reducing conditional conservatism. However, I find that conservative culture is associated with greater gains recognition timeliness especially before IFRS. The policy implication is that IFRS earnings are not more timely in illiquid capital markets and that the usefulness of IFRS through asymmetric earnings timeliness is affected by culture and legal origin.

6.1 Introduction

This chapter examines whether IFRS adoption changes asymmetric timeliness of earnings and conditional conservatism. This research question is particularly important given the principles 'based' nature of IFRS and the inefficiencies and illiquidity of African capital markets. There are competing propositions regarding the impact on conservatism. The principles rather than the rules based accounting standards provide avenues for opportunistic behaviour and judgment by managers leading to distortion of reported earnings (Schipper, 2003). On the other hand, 'rules' based accounting standards undermine professional accounting judgment by putting in place well defined rules or guidance on accounting treatment in financial statements (Benston *et al.*, 2006). As a result, it may lead to misrepresentation of firms' underlying economic phenomena and smoothing of income in order to avoid large losses and hence favour the firms' contractual obligations and debt covenants (Barth *et al.*, 2008).

The inefficiency of African capital markets (Smith *et al.*, 2002 and Kenny and Moss, 1998) is likely to hinder the quicker incorporation of accounting information, especially earnings into share prices and the way earnings incorporate economic income (i.e. good and bad news). Furthermore, the less conservative nature of IFRS may also reduce African conservative accounting. Thus, this motivates the question; Does IFRS increase or reduce conditional conservatism in African capital markets as a measure of stewardship to capital providers?

There are particularly two kinds of conservatism, namely; unconditional and conditional conservatism (Ryan, 2006). Unconditional conservatism refers to predetermined understatement of the book value of net assets including immediate expensing of research development, advertising and intangible assets costs (Roychowdhury and Watts, 2007, Ryan, 2006 and Roberts *et al.*, 2005). Conversely, conditional conservatism refers to the more timely recognition of bad news than good news into earnings (Roychowdhury and Watts, 2007, Ryan, 2006 and Basu, 1997). Similarly, Hung and Subramanyam (2007, p.646) define income timeliness as "*the ability of net income to*

incorporate contemporary economic events". Also, in the same page, they define income conservatism as the *"ability of accounting income to differentially incorporate contemporary economic losses in a more timely fashion than economic gains"*. This is due to the concept that losses are recognized immediately as they occur whilst gains are deferred to future periods requiring a high degree of verifiable accounting information (Basu, 1997). Examples of conditional conservatism include; the existence of lower of cost or market value principle, and asset impairment (IAS 36).

Conditional conservatism carries vital information that triggers debt covenants and other contractual obligations in firms (Ballet *et al.*, 2010). In particular, it plays an important role in increasing contracting efficiencies among different firm parties such as debt-holders, bondholders, creditors and shareholders (Basu, 1997). In essence, this conservatism principle is rooted in the concept of, *"anticipate no profits but anticipate all losses"*. Consistent with prior studies such as Ball *et al.*, (2008), Hung and Subramanyam (2007), Ball *et al.*, (2000, 2003), and Basu (1997), this chapter focuses on conditional conservatism.

Prior studies on asymmetric earnings timeliness and conditional conservatism assume market efficiency and are largely carried out in the major economies such as U.S., U.K., Germany and Australia, among others ((see for instance; Ball *et al.*, (2008), Hung and Subramanyam (2007), Ball and Shivakumar (2005, 2006), Ball *et al.*, (2000, 2003) and Basu (1997)). An efficient market is one in which stock returns quickly reflect all publicly available news in an unbiased manner (Ballet *et al.*, 2010, p.14). However, emerging markets particularly African markets are illiquid and inefficient (Smith *et al.*, 2002 and Kenny and Moss, 1998). As a result, share prices may not respond and adjust fully and quickly to publicly available information including earnings. This may lead to the sensitivity of earnings to returns being untimely contrary to what is observed in the developed economies (see for instance; Barth *et al.*, 2008) when firms switch from local GAAP to International Financial Reporting Standards (IFRS). The IASB (2010) conceptual framework

requires that accounting information be value relevant, timely and predictive.⁴⁸

IFRS is stated as a set of high quality accounting standards compared to non-U.S. GAAP (Barth *et al.*, 2008 and Ball *et al.*, 2003) and is based on fair value accounting systems which are argued to be less conservative than the traditional historical cost accounting systems. Moreover, the new IASB (2010) conceptual framework issued on 28th September 2010 eliminates the conservatism principle because it conflicts with the neutrality attribute which forms part of faithful representation fundamental qualitative characteristics.

One point is that whilst IFRS is now widely adopted in Africa, there are very few empirical studies examining asymmetric earnings timeliness and conditional conservatism impact of IFRS. Thus, this chapter examines whether IFRS adoption changes asymmetric earnings timeliness and conditional conservatism and whether culture and legal origins impact on asymmetric earnings timeliness and conditional conservatism.

The results provide little empirical support suggesting that IFRS adoption increases asymmetric earnings timeliness and conditional conservatism. Regarding legal origin, the results show that firms from common law countries are timelier in recognizing bad news but less timely in recognizing good news than firms from code law countries. However, overall good and bad news timeliness of earnings (measured through the adjusted R^2) decreases to a greater extent in common law than code law countries. Moreover, consistent with prediction, there is evidence showing that cultural conservatism is associated with a reduction in loss, incremental loss recognition timeliness and thus conditional conservatism before and after IFRS. However, results also suggest that cultural conservatism leads to greater gains recognition timeliness especially before IFRS adoption. This may be attributed to the behaviour of managers in countries with high degree of conservative

⁴⁸Under the new IASB (2010) conceptual framework, relevance is a fundamental characteristic while timeliness is an enhancing qualitative characteristic of accounting information. Timeliness is further defined as the availability of information to a decision maker before it loses the capacity to influence decisions (Statement of Financial Accounting Concepts No 2, 1980).

culture reporting higher earnings to fulfil their expectations (Risberg, 2005).

The policy implications of these findings can be stated as follows; (i)IFRS earnings are untimely in illiquid capital markets (ii) cultural conservatism is one of the main determinants of asymmetric earnings timeliness and conditional conservatism thus accounting standards setters such as IASB and FASB should take it into consideration when promulgating accounting standards (iii) Legal origin matters in asymmetric earnings timeliness and conditional conservatism and (iv) Consistent with Ball (2006) and Schipper (2005), the practicability of internationalization of accounting standards through the IASB and FASB convergence agenda is not dependent upon the accounting standards per se but rather other factors such as cross-country cultural differences and legal origins.

6.2 Research Design

To assess the impact of IFRS adoption on asymmetric timeliness of earnings and conditional conservatism, consistent with prior research, I adopt the Basu (1997) reverse ERC model. This model originates from Beaver *et al.*, (1980) who argue that OLS standard errors and t-statistics are better specified when the leading and lagging variables act as independent and dependent variables respectively.⁴⁹ Ballet *al.*, (2010) argue that when the research objective is to assess the timeliness of accounting income in reflecting economic gains and or losses, then the appropriate dependent variable is accounting income.

Using econometric analysis, Dietrich *et al.*, (2007) strongly criticize the Basu (1997) model and argue that (i) it yields biased estimates due to return endogeneity, (ii) it leads to truncation bias when partitioning the returns into positive and negative returns and (iii) it does not measure and provide evidence of conservatism. However, Ballet *al.*, (2010) argue that Basu (1997) estimates are unaffected by either due to return endogeneity or truncation bias and that an incremental loss recognition coefficient is a valid measure of conditional conservatism.⁵⁰ Thus, to assess the incremental impact of IFRS adoption on asymmetric earnings timeliness and conditional conservatism, I introduce an IFRS dummy variable, *Don* the test variables into the Basu (1997) model as follows;

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

(1)

⁴⁹Here the assumption is that stock prices (returns) lead earnings (Kothari and Sloan, 1992) and this is due to the accounting principles of verifiability, conservatism, objectivity and revenue recognition which limit earnings to incorporate fully all available market information (Ball *et al.*, 2010) and thus do it with a lag.

⁵⁰Ball *et al.*, (2010) argue that even if return endogeneity may exist its impact is relatively small and it is not an issue in practice.

Where, D is an IFRS dummy equal to 1 if a firm observation is from years following the IFRS adoption year and 0 otherwise. $E_{i,t}$ is the earnings per share deflated by beginning period share price, $NEG_{i,t}$ is a dummy variable equal to 1 if $RET < 0$, = 0 otherwise, $RET_{i,t}$ is returns calculated as change in price levels divided by original prices on firm i extending from nine months prior to fiscal year end to 3 months after the fiscal year. $NEG_{i,t} * RET_{i,t}$ is an interaction variable capturing the sensitivity of earnings to bad news (negative returns) before IFRS. $D * NEG_{i,t} * RET_{i,t}$ is an interaction variable capturing the incremental effect of IFRS on bad news coefficient. $D * RET_{i,t}$ measures the incremental effect of IFRS on the arrival of news to the market (returns), i and t indicates firm and time respectively and $\varepsilon_{i,t}$ is a random or disturbance term of firm i at the end of the period t .

The intercept (α_0) captures prior news incorporated into earnings and is expected to be positive (Pope and Walker, 1999). The coefficients α_4 and α_5 measure the sensitivity of earnings to good news before and after IFRS respectively and represent the cost of capital if all available market information is fully incorporated into earnings. Moreover, α_2 and α_3 measure incremental loss recognition timeliness of earnings before and after IFRS respectively. Since, under conditional conservative accounting, earnings should be more sensitive to bad news than good news (Ball *et al.*, 2010, Barth *et al.*, 2008, Ball *et al.*, 2003, Pope and Walker, 1999, and Basu, 1997) thus conditional conservatism exists when either α_2 or $\alpha_3 > 0$. The coefficients, $\alpha_2 + \alpha_4$ and $\alpha_3 + \alpha_5$ measure the overall sensitivity of earnings to contemporaneous bad news before and after IFRS respectively (Pope and Walker, 1999). Overall earnings timeliness for both gains and losses is measured by the adjusted R^2 .

To further analyse the impact of IFRS adoption on asymmetric earnings timeliness, consistent with Ball *et al.*, (2003) and Basu (1997), I run various regressions including the regression of earnings on returns, “good” news regression and “bad” news regressions.

$$E_{i,t} = \alpha_0 + \alpha_1 RET_{i,t} + \alpha_2 D * RET_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$E_{i,t} = \beta_0 + \beta_1 POS * RET_{i,t} + \beta_2 D * POS * RET_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$E_{i,t} = \lambda_0 + \lambda_1 NEG * RET_{i,t} + \lambda_2 D * NEG * RET_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where *POS* is a dummy variable equal to 1 if $RET > 0$, = 0 otherwise. $POS * RET$ and $D * POS * RET$ are interaction variables measuring the sensitivity of earnings to good news before and after IFRS respectively. Equation 2 is a regression of earnings on pre and post contemporaneous returns. Equation 3 represents good news regression model while equation 4 is a bad news regression model.

To assess the impact of culture on asymmetric earnings timeliness and conditional conservatism before and after IFRS adoption, I introduce a culture variable, *CON* into equation 1 to form equation 5. It is an indicator variable equal to 1 if the conservatism value is greater than its median value and 0 otherwise. The inclusion of this variable is motivated by Kang *et al.*, (2004) and Dragomir *et al.*, (2010) who find that there is a direct relationship between cultural conservatism and accounting conservatism.

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 CON * NEG * RET_{i,t} + \alpha_4 D * NEG * RET_{i,t} + \alpha_5 CON * D * NEG * RET_{i,t} + \alpha_6 RET_{i,t} + \alpha_7 CON * RET_{i,t} + \alpha_8 D * RET_{i,t} + \alpha_9 CON * D * RET_{i,t} + \varepsilon_{i,t} \quad (5)$$

Where cultural conservatism (*CON*) is defined as uncertainty avoidance (*UA*) minus the summation of individualism index (*IND*) and masculinity index (*MASC*) (Hope *et al.*, 2008 and Gray, 1988) computed using Hofstede (1980) and House *et al.*, (2004) cultural dimension scores. However, consistent with prior studies such as Hope *et al.*, (2008), I exclude the masculinity index because it has insignificant influence on conservatism. Thus, conservatism is computed as, $CON = UA - IND$. $CON * NEG * RET_{i,t}$ and $CON * RET_{i,t}$ are interaction variables capturing the impact of conservative culture on the sensitivity of earnings to bad

and good news respectively before IFRS. $CON*D*NEG*RET_{i,t}$ and $CON*D*RET_{i,t}$ are interaction variables capturing the impact of conservative culture on the sensitivity of earnings to bad and good news respectively after IFRS.

To assess the impact of legal origin on earnings timeliness and conditional conservatism, I introduce a legal origin dummy, C , to the test variables in equation 1 to form equation 6. C is an indicator variable equal to 1 if a firm observation is from common law countries and zero otherwise.

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 C * NEG * RET_{i,t} + \alpha_4 D * NEG * RET_{i,t} + \alpha_5 C * D * NEG * RET_{i,t} + \alpha_6 RET_{i,t} + \alpha_7 C * RET_{i,t} + \alpha_8 D * RET_{i,t} + \alpha_9 C * D * RET_{i,t} + \varepsilon_{i,t} \quad (6)$$

Where $C*NEG*RET_{i,t}$ and $C*D*NEG*RET_{i,t}$ are interaction variables capturing common law legal effect on the sensitivity of earnings to bad news before and after IFRS adoption. $C*RET_{i,t}$ and $C*D*RET_{i,t}$ are interaction variables capturing the impact of common law legal origin on the sensitivity of earnings to good news before and after IFRS respectively.

The use of market based measures such as returns to proxy for good and bad news and as a measure of conditional conservatism is widely criticized in the literature (Ball and Shivakumar, 2005, Ball *et al.*, 2003, and Basu, 1997). As part of robustness check and additional analysis, consistent with prior studies, I employ the earnings persistence models. Earnings timeliness and persistence are argued to be two sides of the coin measuring the same phenomenon, the conditional conservatism (Basu, 1997). The greater the earnings timeliness, the less is earnings persistence. The logic behind this assertion is that the incorporation of current value relevant news into earnings depends upon whether it is good or bad news whereby more relevant news is impounded in earnings in bad news period than in good news period. Consequently, I adopt the following two models in testing the robustness

of the results. First, the change in earnings persistence model represented by equation 7 also used by Ball and Shivakumar (2005), Ball *et al.*, 2003 and Basu (1997) and second, the Enders and Granger (1998) model represented by equation 8 also used by Brauer *et al.*, (2010). Brauer *et al.*, (2010) argue that the advantage of equation 7 over 8 is that it is an appropriate measure of identifying transitory earnings components and it minimizes the influence of survival biases. However, they argue that the main advantage of equation 8 over 7 is that, in the long run, it yields smoothed coefficients or non oscillating impulse responses due to unexpected shocks in earnings and returns.

$$\Delta E_{i,t} = \beta_0 + \beta_1 NEG_{i,t-1} + \beta_2 \Delta E_{i,t-1} + \beta_3 D * \Delta E_{i,t-1} + \beta_4 NEG * \Delta E_{i,t-1} + \beta_5 D * NEG * \Delta E_{i,t-1} + \varepsilon_{i,t}$$

$$(7) \quad \Delta E_{i,t} = \gamma_0 + \gamma_1 NEG_{i,t-1} + \gamma_2 E_{i,t-1} + \gamma_3 D * E_{i,t-1} + \gamma_4 NEG * E_{i,t-1} + \gamma_5 D * NEG * E_{i,t-1} + \varepsilon_{i,t}$$

(8) Where $E_{i,t}$ and $E_{i,t-1}$ is current and lagged earnings per share respectively both scaled by the beginning period stock price, $\Delta E_{i,t}$ and $\Delta E_{i,t-1}$ is the change in the current and lagged earnings per share respectively both scaled by the beginning period stock price. $NEG_{i,t-1}$ is an indicator variable equal to 1 if the lagged change in earnings per share and lagged earnings per share are negative and 0 otherwise. $D * \Delta E_{i,t-1}$ is the interaction variable measuring the persistence of positive earnings changes after IFRS. $NEG * \Delta E_{i,t-1}$ and $D * NEG * \Delta E_{i,t-1}$ are interaction variables measuring the persistence of negative earnings changes before and after IFRS respectively.

Similarly, $D * E_{i,t-1}$ is an interaction variable measuring the persistence of positive earnings after IFRS. $NEG * E_{i,t-1}$ and $D * NEG * E_{i,t-1}$ are interaction variables capturing the persistence of lagged negative earnings per share before and after IFRS respectively. Losses are recognized more timely if β_4 , β_5 , γ_4 and γ_5 are less than zero implying that they are more transitory or less persistent. Moreover, positive values of alphas and betas imply higher persistence and lower timeliness of accounting income in recognizing available public news. As part of robustness check, consistent with prior studies (Ball *et al.*, 2008, Barth *et al.*, 2008,

Bushman and Piotroski, 2006, Ball and Shivakumar, 2005, and Ball *et al.*, 2000), I include firm size, leverage and accruals ratio as control variables (for further discussion see Section 6.4.8.8).

6.3Hypotheses Development

6. 3.1 Earnings Timeliness and Conditional Conservatism

If IFRS is a set of high quality accounting standards when compared to domestic accounting standards (Barth *et al.*, 2008), then *ceteris paribus*, IFRS is likely to lead to greater recognition timeliness of gains and losses than local GAAP. Further, Barth *et al.*, (2008) also argue that IFRS principles-based accounting standards limit managers' opportunistic discretion leading to higher accounting quality including timely recognition of gains and losses. Specifically, Barth *et al.*, (2008) predict and find that IFRS firms report large losses with higher frequencies than local GAAP firms. Moreover, Hung and Subramanyam (2007) find that IFRS earnings have less persistence which is a characteristic feature of quicker incorporation of economic events into earnings. This means that the timely incorporation of bad news makes earnings less persistent while the deferred nature of incorporating good news makes earnings more persistent (Basu, 1997). On the other hand, Barth *et al.*, (2008) note that, the flexible nature of IFRS can also provide managers with more opportunity to manage earnings and hence reduce its quality.

African accounting standards and systems are conservative in nature in contrast to IFRS (Gray, 1988). Also, the regulatory environments, legal systems and shareholders protection laws in Africa are not strong compared to those of developed countries (Anandarajan and Hasan, 2010; Bova, 2009 and Warsame, 2006). In particular, Bova (2009) argues that the capital market benefits of IFRS only accrue to firms that operate in strong regulatory regimes. Moreover, the illiquidity of African capital markets (Smith *et al.*, 2002

and Kenny and Moss, 1998) and poor market infrastructure (Prather-Kinsey, 2006) can hinder quicker incorporation of good and bad news into earnings. Even if Hung and Subramanyam (2007, 646) assert that fair values can improve the manner in which earnings incorporate economic gains and losses, this is unlikely to be the case in illiquid markets especially African capital markets. In light of these theoretical arguments, I predict and test the following four hypotheses:

H1: IFRS adoption does not significantly increase gains recognition timeliness in African capital markets.

H2: IFRS adoption does not significantly increase loss recognition timeliness in African capital markets.

H3: IFRS adoption does not significantly increase incremental loss recognition timeliness in African capital markets.

H4: IFRS adoption does not significantly increase overall earnings recognition timeliness as measured through the adjusted R^2 in African capital markets.

6.3.2 Culture

The idea that culture plays a deterministic role of accounting is a developing concept and can be traced back to the Gray (1988) seminal paper. Since then, empirical studies have focused on testing the four Gray (1988) hypotheses particularly in linking the secrecy hypothesis and the disclosure levels of accounting information. In this chapter, I test the relative role of cultural conservatism on asymmetric earnings timeliness and conditional conservatism under the accounting rule change from local GAAP to IFRS.

Kang *et al.*, (2004) predict and find that cultural conservatism is directly related to accounting conservatism. Dragomir *et al.*, (2010) hypothesize and find that even under IFRS;

the national accounting culture still affects accounting conservatism. Kang *et al.*, (2004) use non-operating accruals (NOA) while Dragomir *et al.*, (2010) use the ratio of provisions to total liability (PLR) as measures of accounting conservatism. The lower value of NOA and the higher value of PLR are indicative of accounting conservatism.

Based on Kang *et al.*, (2004) and Dragomir *et al.*, (2010), I argue that even if IFRS is regarded as a set of high quality accounting standards (Barth *et al.*, 2008), the prevailing conservative culture in Africa may influence firms' managers to report more gains than losses to avoid being held accountable by external investors (Risberg, 2005). Also, they are likely to anticipate all profits but not losses in order to make income statements more attractive to investors and other providers of capital. Moreover, due to the principles-based nature of IFRS, cultural conservatism ubiquitous in African countries is likely to facilitate managers to choose accounting choices in their favour rather than **exercising professional judgement**. Thus, I suggest that cultural conservatism affects gains and loss recognition timeliness differently. Using these arguments, I predict and test the following hypothesis:

H5: Cultural conservatism positively (negatively) affects gains (loss and incremental loss) recognition timeliness in African capital markets.

6.3.3 Legal origin

Generally, common law earnings are of higher quality than code law earnings (Barth *et al.*, 2008, Prather-Kinsey, 2006, Ball *et al.*, 2003 and Ball *et al.*, 2000) thus they exhibit more earnings timeliness and conditional conservatism. For instance, Ball *et al.*, (2003) report higher earnings timeliness for common law countries than East Asian and code law countries. However, in the context of Germany, Hung and Subramanyam (2007) document that IFRS earnings are not more conditionally conservative than German GAAP earnings. Nevertheless, they compare asymmetric earnings timeliness under the two accounting regimes (IFRS and

Germany GAAP) but do not examine the impact of legal origin under the two accounting regimes or regime change.

Timely financial accounts or reports are primarily needed for common law than code law countries users because in code law countries information is also channelled through other private networks (Ball *et al.*, 2003). Also, the market infrastructure necessitating the timely incorporation of market news (good or bad) into earnings is better for common law than code law countries (Prather-Kinsey, 2006). Based on these arguments I predict and test the following hypothesis:

H6: Asymmetric earnings timeliness increases more significantly after IFRS adoption in African common law countries than African code law countries.

6.4 Results

This Section reports the results about the impact of IFRS adoption on asymmetric earnings timeliness and conditional conservatism. Also, it reports the results about the relative roles of culture and legal origin on asymmetric earnings timeliness and conditional conservatism impact of IFRS.

6.4.1 The Basu (1997) Reverse ERC Model

Table 6-1 reports results on asymmetric earnings timeliness and conditional conservatism impact of IFRS from the OLS regressions. M1 and M2 represent separate sample Basu (1997) regressions while M3-M5 represents dummy variable regressions. Moreover, M3 represents the regression of earnings on returns while M4 is the Basu (1997) model regression and M5 represents the extended dummy variable Basu (1997) model regression.

6.4.1.1 Gains Recognition Timeliness

Separate sample regressions results indicate that the sensitivity of earnings to the arrival of news (returns) is negative and statistically insignificant prior to IFRS. However, it is positive but still statistically insignificant after IFRS. The IFRS incremental effect coefficient on the sensitivity of earnings to good news is statistically significantly negative in M3 and M5. This implies that IFRS results in reduced gains recognition timeliness. These findings are consistent with the prediction that IFRS does not increase gains recognition timeliness in African capital markets. The results are also consistent with Hung and Subramanyam (2007, Table 6, p.647) who find no evidence that IFRS earnings recognize good news more timely than German GAAP earnings.

The results are also similar to prior studies. For instance, Ball *et al.*, (2003, Table 2, p.250) report the earnings to good news sensitivity of 0.02 (t-stat = 4.07), 0.04 (t-stat = 9.92) and 0.00 (t-stat = -0.64) for four East Asian, code law and common law countries respectively. Moreover, Basu (1997, Table 1, p.13) reports the sensitivity of 0.059 statistically significant at 10%.

6.4.1.2 Loss Recognition Timeliness

Loss recognition timeliness is measured by the summation of the coefficient on $NEG*RET_{i,t}$ and $RET_{i,t}$ before and after IFRS. Separate sample regression results indicate that loss recognition timeliness decreases from 0.142 to 0.043. Similarly, the dummy variable regression (M5) shows that it decreases significantly from 0.239 to -0.135 after IFRS. These findings are also consistent with the prediction that IFRS does not increase loss recognition timeliness.

The loss recognition timeliness coefficients are somewhat similar to those of prior studies. For instance, Hung and Subramanyam (2007, Table 6, p.647) report a timely loss recognition coefficient of 0.18 for Germany and 0.26 for IFRS firms. Basu (1997, Table1,

p.13) reports the timely loss recognition coefficient of 0.275 while Ball *et al.*, (2003, Table 2, p.250) report the coefficient of 0.33, 0.07 and 0.02 for common law, code law and four East Asian countries of Hong Kong, Malaysia, Singapore and Thailand respectively.

6.4.1.3 Incremental Loss Recognition Timeliness

The incremental loss recognition coefficient which is also a measure of conditional conservatism and a focus of this chapter decreases after IFRS. For instance, in separate sample regressions it declines from 0.172 (t-stat = 2.134, $p < 0.05$) to 0.040 (t-stat = 1.366). Similarly, the IFRS incremental effect coefficient is negative implying declining incremental loss recognition timeliness. The results may be explained by the inefficiency and illiquidity of capital markets in Africa (Smith *et al.*, 2002 and Kenny and Moss, 1998), managers' attitude of not reporting losses to avoid responsibility (Risberg, 2005), and the complexity of fair value measurement principles especially mark to model accounting in illiquid markets. In summary, these results suggest that IFRS leads to a reduced conditional conservatism, which is also a measure of stewardship of management to capital providers.

These findings are consistent with Hung and Subramanyam (2007) who document that there is no clear evidence suggesting that IFRS earnings are more conditionally conservative than Germany GAAP earnings. However, they refute the findings by Barth *et al.*, (2008) who find that IFRS earnings are more conditionally conservative than non-IFRS firms. Moreover, the findings are also within similar ranges with prior studies. For instance, Basu (1997) reports an incremental loss recognition coefficient of 0.216 while Ball *et al.*, (2003) report a coefficient of 0.00 (t-stat = 0.08), 0.03 (t-stat = 4.35) and 0.33 (t-stat = 57.1) for East Asian, code law and common law countries. They also report the incremental loss recognition coefficients ranging from -0.01 for Thailand to 0.04 for Hong Kong.

6.4.1.4 Overall Earnings Timeliness (*Adj. R*²)

Overall earnings timeliness measured through the explanatory and predictive power of the model decreases after IFRS from 11.1% to 4% in separate sample regressions. However, dummy variable regressions show that it increases marginally from 6.1% in M4 to 6.7% in M5. In general, these findings do not support the hypothesis that IFRS results in increased overall earnings timeliness. These findings are also similar to those of prior studies. For instance, Hung and Subramanyam (2007) report an overall earnings timeliness of 6% for Germany and 16.6% for IFRS firms. The explanatory and predictive power of the model are also consistent with Lev (1989) who highlights that the adjusted R^2 s in earnings-returns relationship are usually less than 10%. In summary, overall findings suggest that IFRS earnings are not timelier and more conditionally conservative than African local GAAP earnings.

Table 6-1 The Impact of IFRS on Asymmetric Earnings Timeliness Coefficients

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions		
	Before	After			
	M1	M2	M3	M4	M5
α_0	0.179*** (9.928)	0.138*** (13.289)	0.177*** (10.276)	0.175*** (12.287)	0.208*** (11.491)
$NEG_{i,t}$	-0.087*** (-3.712)	-0.029** (-2.449)		-0.054*** (-4.399)	-0.056*** (-4.527)
$NEG * RET_{i,t}$	0.172** (2.134)	0.04 (1.366)		0.067* (1.951)	0.210*** (4.096)
$D * NEG * RET_{i,t}$					-0.094 (-1.601)
$RET_{i,t}$	-0.03 (-1.608)	0.003 (0.204)	0.044*** (4.584)	0.001 (0.122)	0.029*** (2.782)
$D * RET_{i,t}$			-0.035*** (-3.167)		-0.041*** (-3.567)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	1102	1322	2776	2747	2776
Adj. R ² (%)	11.1	4.0	5.6	6.1	6.7

Notes: This table reports the pooled OLS regression results about the impact of IFRS on asymmetric earnings timeliness and conditional conservatism. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Egypt, Morocco, Kenya and Botswana. The robust t-statistics are in parentheses where ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. $E_{i,t}$ is the earnings per share deflated by the beginning period stock price. $NEG_{i,t}$ is a dummy variable equal to 1 if $RET < 0$, = 0 otherwise, $RET_{i,t}$ is returns calculated as changes in price levels divided by original prices on firm i extending from nine months prior to fiscal year end to 3 months after the fiscal year. D is an IFRS dummy equal to 1 if a firm observation is from years following IFRS adoption year and 0 otherwise. $NEG * RET_{i,t}$ and $D * NEG * RET_{i,t}$ are interaction variables measuring the sensitivity of earnings on bad news before and after IFRS respectively. $D * RET_{i,t}$ is an interaction variable measuring the sensitivity of earnings on good news (arrival of news) after IFRS and $\varepsilon_{i,t}$ is the random or disturbance term of a firm i at the end of the period t .

6.4.2 The Earnings Sensitivity to Good versus Bad news

Table 6-2 reports the results on the sensitivity of earnings to good and bad news. In both panels, M1 and M2 represent the separate sample regressions while M3 and M4 represent dummy variable regressions.

Panel A reports the sensitivity of earnings to good news while panel B reports the sensitivity of earnings to bad news. Consistent with conditional conservative accounting, the results indicate that earnings are more sensitive to bad than good news. The sensitivity of earnings to good news is significantly negative before and after IFRS. Similarly, the IFRS incremental effect coefficient on the sensitivity of earnings to good news is positive (0.008, t-stat = 1.171) but it is not statistically significant. This implies that IFRS earnings do not recognize economic gains in a timely manner.

The sensitivity of earnings to bad news decreases significantly across all regressions. For instance, separate sample regressions indicate that it decreases from 0.300 (t-stat = 4.722, $p < 0.01$) in M1 to 0.085 (t-stat = 3.971, $p < 0.01$) in M2. Moreover, the incremental effect of IFRS on the sensitivity of earnings to bad news is statistically significantly negative (i.e. -0.159, t-stat = -2.796, $p < 0.01$). This indicates that IFRS significantly decreases the sensitivity of earnings to bad news and thus reduces conditional conservatism. Also, overall earnings timeliness captured by the explanatory and predictive power shows that earnings are timelier to bad news than good news. However, the sensitivity of earnings to both bad and good news decreases after IFRS. These findings corroborate the main results reported in Table 6-1. The findings are also consistent with prior studies such as Ball *et al.*, (2003) and Basu (1997) which consistently find that earnings are more sensitive to bad than good news. For instance, Basu (1997, Table 1, p.13) reports an overall earnings timeliness for bad news ranging from 5.59% to 10% while that for good news ranging from 1.07% to 3.55%.

Table 6-2 The Impact of IFRS on the Sensitivity of Earnings to Good versus Bad news

Panel A The Sensitivity of Earnings to Good news

$$\text{Model} = E_{i,t} = \beta_0 + \beta_1 POS * RET_{i,t} + \beta_2 D * POS * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions	
	Before	After		
	M1	M2	M3	M4
β_0	0.186*** (10.825)	0.148*** (17.125)	0.195*** (13.961)	0.180*** (9.505)
$POS * RET_{i,t}$	-0.030*** (-5.086)	-0.016*** (-4.149)	-0.022*** (-5.832)	-0.025*** (-4.896)
$D * POS * RET_{i,t}$				0.008 (1.171)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	1130	1323	2776	2776
Adj. R ² (%)	10.2	3.7	5.4	5.4

Notes: This table reports the pooled OLS regressions about the impact of IFRS on the sensitivity of earnings to good news. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. $E_{i,t}$ is the earnings per share deflated by the beginning period share price. D is an IFRS dummy variable equal to 1 if a firm observation is from years following IFRS adoption year and 0 otherwise. $POS_{i,t}$ is a dummy variable equal to 1 if $RET > 0$ and 0 otherwise. $POS * RET_{i,t}$ and $D * POS * RET_{i,t}$ are interaction variables capturing the sensitivity of earnings to good news before and after IFRS respectively. N is the number of observations and $\varepsilon_{i,t}$ is the random or disturbance term of the firm i at the end of the period t . The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Egypt, Morocco, Kenya and Botswana.

Panel B The Sensitivity of Earnings to Bad news

$$E_{i,t} = \alpha_0 + \alpha_1 NEG * RET_{i,t} + \alpha_2 D * NEG * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.160*** (9.715)	0.139*** (15.93)	0.177*** (13.06)	0.182*** (13.391)
NEG*RET _{i,t}	0.300*** (4.722)	0.085*** (3.971)	0.162*** (6.125)	0.266*** (5.505)
D*NEG*RET _{i,t}				-0.159*** (-2.796)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	1130	1323	2747	2776
Adj. R ² (%)	10.3	3.7	5.7	6.1

Notes: This table reports the pooled OLS regressions about the impact of IFRS on the sensitivity of earnings to bad news. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. $E_{i,t}$ is the earnings per share deflated by the beginning period share price. $NEG_{i,t}$ is a dummy variable equal to 1 if $RET_{i,t} < 0$, = 0 otherwise, $RET_{i,t}$ is calculated as changes in price levels divided by original prices on firm i extending from nine months prior to fiscal year end to 3 three months after the fiscal year end. D is an IFRS dummy equal to 1 if a firm observation is from years following IFRS adoption year and 0 otherwise. $NEG*RET_{i,t}$ and $D*NEG*RET_{i,t}$ are interaction variables measuring the sensitivity of earnings to bad news before and after IFRS. N is the number of observations and $\varepsilon_{i,t}$ is the random or disturbance term of a firm i at the end of the period t . The sample is comprised of 347 listed firms in five African stock markets including South Africa, Egypt, Morocco, Kenya and Botswana during the period 2002-2009.

6.4.3 The Year by Year Results

Table 6-3 reports results on yearly basis. On average, earnings are timelier in recognizing bad news than good news. For example, the average good news coefficient is -0.003 while that of bad news is 0.076. Also, the pooled good news coefficient is 0.001 (t-stat = 0.122) while that of bad news is 0.067 (t-stat = 1.951 at $p < 0.1$). The gain recognition timeliness coefficient is negative in 2003, 2004 and 2009 while it is positive but not statistically significant in the rest of the years. It changes the sign from negative to positive in 2005 the year when South Africa, Kenya and Egypt adopted IFRS.

Loss and incremental loss recognition timeliness is positive in all years except 2007 the year when the financial crisis occurred. The incremental loss recognition timeliness coefficient is positive and statistically significant only in the years 2003, 2006 and 2009. Overall earnings timeliness measured through the explanatory and predictive power of the model is higher in the years 2002, 2003 and 2004, which all lie well before IFRS adoption. These findings corroborate the results reported in Table 6-1.

Table 6-3 Asymmetric Earnings Timeliness Coefficients and Adjusted R² on Yearly Basis over the Sample Period

$$\text{Model} = E_{i,t} = \alpha_0 + \alpha_1 \text{NEG}_{i,t} + \beta_0 \text{RET}_{i,t} + \beta_1 \text{NEG} * \text{RET}_{i,t} + \varepsilon_{i,t}$$

Coeff.	YEARS									
	Pooled	2002	2003	2004	2005	2006	2007	2008	2009	Average
α_0	0.175*** (12.287)	0.139*** (6.756)	0.176*** (8.917)	0.145*** (6.771)	0.142*** (6.876)	0.149*** (8.728)	0.126*** (7.471)	0.097*** (4.738)	0.154*** (8.07)2	
$\text{NEG}_{i,t}$	-0.054*** (-4.399)	-0.065* (-1.852)	-0.059* (-1.731)	-0.137*** (-3.500)	-0.036 (-0.919)	-0.101*** (-2.979)	-0.092*** (-2.666)	0.005 (0.178)	-0.057* (-1.681)	
$\text{RET}_{i,t}$	0.001 (0.122)	0.028 (0.9)	-0.042 (-1.591)	-0.022 (-0.698)	0.036 (1.276)	0.007 (0.229)	0.022 (0.757)	0.017 (0.35)	-0.070** (-2.109)	-0.003
$\text{NEG} * \text{RET}_{i,t}$	0.067* (1.951)	0.163 (-1.45)	0.185* (1.779)	0.049 (0.432)	0.107 (1.135)	0.133* (1.66)	-0.211 (-0.952)	0.064 (1.077)	0.140** (2.083)	0.079
$\beta_0 + \beta_1$	0.068	0.191	0.143	0.027	0.143	0.14	-0.189	0.081	0.07	0.076
Year Effects	Yes									
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Adj.R ² (%)	6.1	17.2	9.4	11.0	5.3	2.5	1.4	2.6	9.3	7.4
N	2747	322	345	346	347	347	347	347	346	344

Notes: The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. $E_{i,t}$ is the earnings per share deflated by the beginning period share price, $\text{NEG}_{i,t}$ is a dummy variable equal to 1 if $\text{RET} < 0$, = 0 otherwise, $\text{RET}_{i,t}$ is returns calculated as change in price levels divided by original price on firm i extending from nine months prior to fiscal year end to 3 months after the fiscal year. $\text{NEG} * \text{RET}$ is an interaction variable capturing the sensitivity of earnings on bad news or negative returns. Country dummy variables are included to control for macroeconomic differences on the behaviour of companies. The sample period spans from 2002 to 2009 and involves 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco.

6.4.4 The Country by Country Results

Table 6-4 reports the country by country results. Generally they indicate that Egypt, Morocco and Botswana are timelier in recognizing good news than bad news and both gains and loss recognition timeliness decrease after IFRS. Risberg (2005) argues that pyramidal or code law firms' managers have a tendency of reporting higher earnings in order to make financial statements attractive to investors and other capital providers. Morocco and Egypt are code law countries while Botswana is a common law country (La Porta *et al.*, 1999, 1998). On the other hand, South Africa and Kenya which are both common law countries recognize bad news more rapidly than good news consistent with their market based accounting orientations (Ball *et al.*, 2003).

Incremental loss recognition timeliness decreases in South Africa and Kenya from 0.211 (t-stat = 3.043, $p < 0.001$) to -0.133 (t-stat = -1.699, $p < 0.1$) and from 0.842 (t-stat = 1.496) to -0.905 (t-stat = -1.626) respectively. However, it increases in Morocco and Botswana but the increase is only statistically significant in Botswana at 10% conventional level of significance. Overall earnings timeliness for the whole sample period measured through the adjusted R^2 is largest in Kenya followed by Botswana, Egypt, Morocco, and South Africa. After IFRS, overall earnings timeliness only increases slightly in South Africa (3.6% to 3.8%), Morocco (7.9% to 8.2%), Kenya (30.3% to 31.4%) and Botswana (14% to 14.1%). However, it decreases marginally in Egypt from 8.7% to 8.4%. Consistent with Ball *et al.*, (2000), these findings suggest that earnings timeliness differs in different countries and within groups of classifications e.g. common versus code law countries. Also, they suggest that IFRS does not result to an increase in gains, loss, incremental loss recognition timeliness and conditional conservatism in African countries.

Table 6-4 The Country by Country Results on Asymmetric Earnings Timeliness

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

	S.Africa		Egypt		Morocco		Kenya		Botswana	
Variable	Before	After	Before	After	Before	After	Before	After	Before	After
α_0	0.154*** (9.371)	0.163*** (3.000)	0.447*** (6.140)	0.457*** (6.098)	0.143*** (4.600)	0.161*** (5.122)	1.120*** (8.331)	1.189*** (8.635)	0.117*** (3.492)	0.107*** (3.233)
$NEG_{i,t}$	-0.074*** (-5.087)	-0.070*** (-4.749)	-0.054 (-1.011)	-0.055 (-1.033)	0.010 (0.362)	-0.012 (-0.426)	-0.283** (-2.554)	-0.269** (-2.340)	0.016 (0.578)	0.008 (0.298)
$NEG * RET_{i,t}$	0.112*** (2.848)	0.211*** (3.043)	-0.261** (-2.120)	-0.211 (-1.020)	0.03 (0.339)	-0.009 (-0.100)	0.328 (1.147)	0.842 (1.496)	0.078 (1.026)	-0.067 (-0.639)
$D * NEG * RET_{i,t}$		-0.133* (-1.699)		-0.066 (-0.253)		0.273 (1.027)		-0.905 (-1.626)		0.251* (1.900)
$RET_{i,t}$	-0.027** (-2.451)	-0.027* (-1.923)	0.121** (2.371)	0.151** (1.993)	0.116** (2.467)	0.128*** (2.633)	-0.1 (-0.885)	-0.079 (-0.529)	0.137*** (2.752)	0.149** (2.574)
$D * RET_{i,t}$		-0.003 (-0.109)		-0.068 (-0.678)		-0.337 (-1.521)		-0.097 (-0.550)		-0.031 (-0.341)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1931	1931	318	318	189	189	192	192	117	117
Adj. R ² (%)	3.6	3.8	8.7	8.4	7.9	8.2	30.3	31.4	14	14.1

Notes: The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. The sample period spans from 2002 to 2009 involving 347 firms from South Africa (242), Egypt (40), Morocco (24), Kenya (24) and Botswana (17). Variables are as defined previously.

6.4.5 Common versus Code Law Countries

Table 6-5 reports the regression results based on legal origin classification. Panel A represents dummy variable regression results while panel B represents separate sample regression results. Panel A results show that loss and incremental loss recognition timeliness is greater for common law than for code law firms (see M1-M4). However, gains recognition timeliness is greater for code law than for common law firms. This implies that common law firms earnings are more timely (untimely) in recognizing bad news (good news) than code law firm earnings.

While there is no evidence suggesting that loss and incremental loss recognition timeliness increase after IFRS in both groups, there is evidence showing that gains recognition timeliness decreases significantly after IFRS for both common and code law firms. Similarly, M6 and M7 indicate that the common law legal origin incremental effect coefficient is significantly positive for incremental loss recognition timeliness and negative for gains recognition timeliness before IFRS. However, after IFRS, the common law legal origin incremental coefficient for incremental loss recognition is negative while that of gains recognition timeliness is positive (see M7).

The explanatory and predictive power (capturing the overall earnings timeliness) increases slightly by 10% in common law firms and by 5.2% in code law firms (M1-M4). Also, it increases slightly from 6.1% in M5 to 6.5% in M6 and 7.4% in M7. Furthermore, results in panel B are qualitatively similar to results in panel A. Overall earnings timeliness decreases by 50% and 44.5% in common and code law firms respectively. In general, these findings are consistent with prior studies which find no evidence suggesting that IFRS leads to increased gains and loss recognition timeliness (e.g. Hung and Subramanyam, 2007) and those which find evidence that common law earnings are more conditionally conservative than code law earnings (e.g. Hung and Subramanyam, 2007 and Ball *et al.*, 2000, 2003).

Table 6-5 The Impact of Legal Origin on Asymmetric Earnings Timeliness

Panel A Dummy Variable Regressions

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 C * NEG * RET_{i,t} + \alpha_4 D * NEG * RET_{i,t} + \alpha_5 C * D * NEG * RET_{i,t} + \alpha_6 RET_{i,t} + \alpha_7 C * RET_{i,t} + \alpha_8 D * RET_{i,t} + \alpha_9 C * D * RET_{i,t} + \varepsilon_{i,t}$$

	Common Law		Code Law		Whole Sample		
	Before	After	Before	After			
Variable	M1	M2	M3	M4	M5	M6	M7
α_0	0.171*** (10.85)	0.229*** (8.367)	0.259*** (6.702)	0.256*** (6.551)	0.175*** (12.287)	0.179*** (12.502)	0.244*** (12.669)
$NEG_{i,t}$	-0.065*** (-4.786)	-0.065*** (-4.683)	-0.009 (-0.317)	-0.014 (-0.487)	0.054*** (-4.399)	-0.031** (-2.326)	-0.026** (-1.962)
$NEG * RET_{i,t}$	0.110*** (2.833)	0.182*** (2.748)	-0.060 (-0.774)	-0.088 (-0.796)	0.067* (1.951)	-0.05 (-0.936)	-0.014 (-0.157)
$C * NEG * RET_{i,t}$						0.269*** (3.222)	0.360*** (2.969)
$D * NEG * RET_{i,t}$		-0.078 (-1.141)		0.070 (0.504)			-0.049 (-0.576)
$C * D * NEG * RET_{i,t}$							-0.176 (-1.195)
$RET_{i,t}$	-0.015 (-1.365)	-0.006 (-0.489)	0.119*** (3.704)	0.153*** (4.217)	0.001 (0.122)	0.066*** (2.949)	0.089*** (4.053)
$C * RET_{i,t}$						0.073*** (-2.964)	0.094*** (-3.790)
$D * RET_{i,t}$		-0.037*** (-2.592)		-0.118** (-2.230)			0.056*** (-4.580)
$C * D * RET_{i,t}$							0.076** (2.573)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2240	2240	507	507	2747	2747	2747
Adj. R ² (%)	5.0	5.5	9.7	10.2	6.1	6.5	7.4

Notes: This panel reports results about the impact of legal origin on asymmetric earnings timeliness from dummy variable regressions. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. Variables are as defined previously and are also included in Appendix 6-1.

Panel B Separate Sample Regressions

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \beta_0 RET_{i,t} + \beta_1 NEG * RET_{i,t} + \varepsilon_{i,t}$$

	Common Law Sample		Code Law Sample	
	Before	After	Before	After
Variable	M1	M2	M3	M4
α_0	0.192*** (8.894)	0.151*** (13.654)	0.215*** (4.763)	0.090*** (4.836)
$NEG_{i,t}$	-0.122*** (-3.930)	-0.035*** (-2.602)	-0.017 (-0.405)	0.006 (0.404)
$NEG * RET_{i,t}$	0.236** (2.031)	0.088*** (2.703)	-0.043 (-0.346)	-0.009 (-0.247)
$RET_{i,t}$	-0.057*** (-2.903)	-0.014 (-1.034)	0.108* (1.740)	0.059*** (3.465)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	843	1114	259	208
Adj. R ² (%)	9.8	4.9	14.6	8.1

Notes: This panel reports results about the impact of legal origin on asymmetric earnings timeliness from separate sample regressions. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. Variables are as defined previously and are also included in Appendix 6-1.

6.4.6 Banks, Financial and Non-financial Classification

To this point, the analysis involves firms from all industries. However, due to the different nature of financial from non financial firms, the financial statements are also different. Accordingly, the sample is split into banks, financial and non-financial classifications and analyzed. The results based on this classification are reported in Table 6-6. They indicate that gains recognition timeliness decreases in all categories at 5% conventional level of significance or better. For instance, gains recognition timeliness decreases from 0.055 (t-stat = 0.731) to -0.300 (t-stat = -2.346, $p < 0.05$) and from 0.065 (t-stat = 1.511) to -0.094 (t-stat = -2.541, $p < 0.05$) in banks and financial firms respectively. Similarly, it decreases from 0.006 (t-stat = 0.481) to -0.036 (t-stat = -2.954, $p < 0.01$) in non financial firms.

Loss recognition timeliness decreases after IFRS across all categories with banks registering the highest decrease followed by financial and non financial firms. However, incremental loss recognition timeliness decreases to a greater extent in financial firms followed by non financial firms and banks although the decreases are statistically insignificant. Overall earnings timeliness measured through the adjusted R^2 is largest in banks followed by financial and non-financial firms. However, the incremental effect of IFRS on overall earnings timeliness is largest in financial firms (28.8%, increasing from 5.9% to 7.6%) followed by banks (9.9%, increasing from 12.1% to 13.3%) and non-financial firms (6.8%, increasing from 5.9% to 6.4%). Consistent with Deans (2007), these findings imply that IFRS is also incrementally useful in terms of asymmetric earnings timeliness to other sectors of economy other than banking.

Table 6-6 Comparative Analysis of Asymmetric Earnings Timeliness between Banks, Financial and Non-financial Firms

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

Variables	Banks		Financial		Non-Financial or Industrial	
	Before	After	Before	After	Before	After
α_0	0.506*** (5.45)	0.520*** (5.686)	0.236*** (5.349)	0.314*** (5.975)	0.166*** (11.262)	0.211*** (9.980)
$NEG_{i,t}$	-0.088 (-1.135)	-0.101 (-1.323)	-0.047 (-1.229)	-0.042 (-1.102)	-0.056*** (-4.436)	-0.057*** (-4.494)
$NEG * RET_{i,t}$	0.081 (0.337)	0.155 (0.538)	-0.005 (-0.044)	0.167 (1.112)	0.080** (2.366)	0.127** (2.192)
$D * NEG * RET_{i,t}$		-0.007 (-0.014)		-0.191 (-1.105)		-0.049 (-0.812)
$RET_{i,t}$	-0.012 (-0.158)	0.055 (0.731)	0.036 (-0.905)	0.065 (1.511)	-0.003 (-0.304)	0.006 (0.481)
$D * RET_{i,t}$		-0.300** (-2.346)		-0.094** (-2.541)		-0.036*** (-2.954)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	256	256	523	523	2224	2224
Adj. R ² (%)	12.1	13.3	5.9	7.6	5.9	6.4

Notes: This table reports OLS results on the impact of IFRS adoption on asymmetric earnings timeliness and conditional conservatism based on industry classification. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. The sample period spans from 2002 to 2009 and involves 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. N is the number of observations. All variables are as defined previously and are also included in Appendix 6-1 at the end of this chapter.

6.4.7 Conservative Culture and the Asymmetric Earnings Timeliness

Table 6-7 reports results on the impact of culture on asymmetric earnings timeliness and conditional conservatism before and after IFRS adoption. Countries with high degree of conservatism in the sample include Morocco, Egypt and Kenya while South Africa is lowly ranked (see Table 3). Botswana is excluded in this analysis due to lack of culture data as it is not included in both Hofstede (1980) and House *et al.*, (2004) culture survey studies. M1 is a base model, M2 and M3 represent the Hofstede (1980) sample regressions while M4 and M5 represent House *et al.*, (2004) culture sample regressions.

The Hofstede (1980) results indicate that cultural conservatism is associated with greater gains recognition timeliness before IFRS; however it decreases after IFRS. This finding may be explained by the tendency of managers in culturally embedded societies to report higher earnings than losses and by the lower quality of accounting disclosure in local African GAAP relative to IFRS. However, after IFRS the culture influence on the sensitivity of earnings to good news is likely to decline due to application of a less conservative standard, IFRS. Also, it may be interpreted that the internationalization of accounting standards through IFRS mitigates the influence of cultural conservatism on gains recognition timeliness.

On the other hand, the House *et al.*, (2004) results show positive gains recognition timeliness coefficients before and after IFRS although the coefficient is only statistically significant after IFRS. This may imply that cultural conservatism still positively influences gains recognition timeliness after IFRS and is consistent with Dahawy *et al.*, (2002) who find that culture still affects disclosure of accounting information after IFRS adoption in Egypt.

The incremental effect of cultural conservatism leads to a decrease in loss recognition timeliness after IFRS for both Hofstede (1980) and House *et al.*, (2004) culture sample

dummy variable regressions (see M3 and M5). Similarly, due to the same effect, incremental loss recognition timeliness declines across all models before and after IFRS. As predicted, this suggests that cultural conservatism results in a reduced loss, incremental recognition timeliness and conditional conservative accounting. The findings also suggest that cultural conservatism facilitates managers to conceal economic losses in order to fulfil their firms' contractual obligations.

Overall earnings timeliness increases marginally in Hosftede (1980) regression results. Furthermore, it decreases in House *et al.*, (2004) sample regression results. For instance, the adjusted R^2 increases from 6.2% in M1 to 6.3% and 7.1% in M2 and M3 respectively. However, for House *et al.*, (2004) regressions, overall earnings timeliness decreases from 6.2% in M1 to 4.9% and 5.3% in M4 and M5 respectively. These findings suggest that cultural conservatism is associated with reduced overall earnings timeliness.

While prior studies such as Dragomir *et al.*, (2010) and Kang *et al.*, (2004) find that cultural conservatism is directly related to accounting conservatism especially unconditional conservatism, I find that it is associated with greater (lower) gains recognition timeliness (loss and incremental loss recognition timeliness and thus conditional conservatism). Stated differently; cultural conservatism is associated with a reduction in contracting efficiencies between firm parties (e.g. managers, shareholders and debtholders) and the stewardship role of management to capital providers. In summary, these findings imply that national culture especially conservative culture is an important determinant of asymmetric earnings timeliness and conditional conservatism.

Table 6-7 The Impact of Culture on Asymmetric Earnings Timeliness

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 CON * NEG * RET_{i,t} + \alpha_4 D * NEG * RET_{i,t} + \alpha_5 CON * D * NEG * RET_{i,t} + \alpha_6 RET_{i,t} + \alpha_7 CON * RET_{i,t} + \alpha_8 D * RET_{i,t} + \alpha_9 CON * D * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Hofstede (1980) Scores			House <i>et al.</i> , (2004) Scores	
	M1	M2	M3	M4	M5
α_0	0.177*** (12.207)	0.182*** (12.396)	0.182*** (10.734)	0.167*** (11.267)	0.058 (1.512)
$NEG_{i,t}$	-0.058*** (-4.530)	-0.057*** (-4.383)	-0.060*** (-4.433)	-0.064*** (-4.718)	-0.056*** (-4.084)
$NEG * RET_{i,t}$	0.058* (1.649)	0.073** (1.997)	0.079** (2.039)	0.071** (1.976)	0.100*** (2.626)
$CON * NEG * RET_{i,t}$		-0.335* (-1.712)	-0.135 (-0.616)	-0.909** (-2.305)	-0.511 (-1.191)
$D * NEG * RET_{i,t}$			0.007 (0.168)		0.019 (0.445)
$CON * D * NEG * RET_{i,t}$			-0.056 (-0.748)		-0.232*** (-2.617)
$RET_{i,t}$	-0.002 (-0.155)	-0.006 (-0.555)	-0.006 (-0.523)	-0.006 (-0.556)	-0.005 (-0.399)
$CON * RET_{i,t}$		0.088** (2.243)	0.131*** (3.122)	0.078 (1.459)	0.022 (0.347)
$D * RET_{i,t}$			-0.003 (-0.163)		-0.02 (-1.068)
$CON * D * RET_{i,t}$			-0.691*** (-3.978)		0.085*** (2.955)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	2630	2630	2630	2438	2438
Adj. R ² (%)	6.2	6.3	7.1	4.9	5.3

Notes: This table reports the OLS results on the impact of cultural conservatism on asymmetric earnings timeliness. The robust t-statistics are in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. For Hofstede (1980) culture scores, the sample involves 230 firms from four countries namely; South Africa, Kenya, Egypt and Morocco. However, for House *et al.*, (2004) the sample comprises of from South Africa, Morocco and Egypt. Botswana and Kenya are dropped out due to lack of culture data. Variables are as defined previously and are also included in Appendix 6-1.

6.4.8 Robustness Tests and Additional Analyses

6.4.8.1 Asymmetric Earnings Timeliness Coefficients Using a Four Month Period Returns

Following the discussion in Section 5-3, I also calculate returns using a four month period after the fiscal year end and I report the results in Table 6-8. Separate sample regressions indicate that there is reduction in gains, loss, incremental loss and overall earnings recognition timeliness. For example, the incremental loss recognition timeliness decreases from 0.284 (t-stat = 3.190, $p < 0.05$) to 0.0586 (t-stat = 1.700). Similar finding is observed in M5 where the incremental impact of IFRS on incremental loss recognition coefficient is negative.

The gains recognition timeliness decreases from 0.086 (t-stat = 3.620, $p < 0.01$) to 0.0583 (t-stat = 4.100, $p < 0.01$). Moreover, the incremental impact of IFRS on gains recognition timeliness coefficient is statistically significantly negative in M3. The overall earnings timeliness measured by the predictive and explanatory power of the model shows similar trend. For instance, the adjusted R^2 decreases from 16.4% to 9.61% in the separate sample regressions. Also, it decreases from 13.6% in M3 to 12.3% and 12.8% in M4 and M5 respectively. These findings are qualitatively similar to those reported in Table 6-1 but the coefficients have improved to a large extent in Table 6-8. Again, the implication of these findings is that information content models seem also to be applicable to the developing markets of Africa.

Table 6-8 The Impact of IFRS on Asymmetric Earnings Timeliness When a Four Month Period Returns are Used.

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions		
	Before	After			
	M1	M2	M3	M4	M5
α_0	0.139*** (8.120)	0.1156*** (11.540)	0.140*** (11.06)	0.1534*** (11.310)	0.160*** (11.620)
$NEG_{i,t}$	0.0136 (0.560)	-0.0043 (-0.340)		-0.0031 (-0.250)	-0.006 (-0.460)
$NEG*RET_{i,t}$	0.284** (3.190)	0.0586 (1.700)		0.1064** (2.710)	0.1564** (2.780)
$D*NEG*RET_{i,t}$					-0.062 (-0.810)
$RET_{i,t}$	0.086*** (3.620)	0.0583*** (4.100)	0.136*** (12.190)	0.090*** (7.270)	0.1001*** (7.080)
$D*RET_{i,t}$			-0.059** (-3.120)		-0.0560 (-2.070)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	1116	1321	2776	2760	2760
Adj. R ² (%)	16.4	9.61	13.6	12.3	12.8

Notes: This table reports the pooled OLS regression results about the impact of IFRS on asymmetric earnings timeliness and conditional conservatism. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Egypt, Morocco, Kenya and Botswana. The robust t-statistics are in parentheses where ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. $E_{i,t}$ is the earnings per share deflated by the beginning period stock price. $NEG_{i,t}$ is a dummy variable equal to 1 if $RET < 0$, = 0 otherwise, $RET_{i,t}$ is returns calculated as changes in price levels divided by original prices on firm i extending from eight months prior to fiscal year end to four months after the fiscal year. D is an IFRS dummy equal to 1 if a firm observation is from years following IFRS adoption year and 0 otherwise. $NEG*RET_{i,t}$ and $D*NEG*RET_{i,t}$ are interaction variables measuring the sensitivity of earnings on bad news before and after IFRS respectively. $D*RET_{i,t}$ is an interaction variable measuring the sensitivity of earnings on good news (arrival of news) after IFRS and $\varepsilon_{i,t}$ is the random or disturbance term of a firm i at the end of the period t .

6.4.8.2 Robust Regressions

Table 6-9 reports results from the robust regressions. M1 and M2 represent separate sample regressions while M3-M5 represents dummy variable regressions. M3 regresses earnings on pre and post IFRS returns whilst M4 is a base model to dummy variable regression (M5).

Separate sample regressions show that loss, incremental loss and overall recognition timeliness decrease after IFRS while gains recognition timeliness increases from 0.108 (t-stat = 13.176, $p < 0.01$) to 0.128 (t-stat = 22.249, $p < 0.01$). Moreover, dummy variable regressions indicate that the IFRS incremental effect coefficient is negative for gains, loss and incremental loss recognition timeliness. This implies that IFRS leads to reduction in gains, loss and incremental loss recognition timeliness. Overall earnings timeliness decreases slightly from 35.3% in M1 to 35.2% in M2. However, it is increasing from 14.9% in M4 to 47.1% in M5 although this increase may be insignificant due to the fact that both gains and loss recognition timeliness decrease after IFRS.

In general, these findings support the hypotheses that IFRS does not significantly increase gains, loss, incremental loss and overall recognition timeliness and they are qualitatively similar to the main results reported in Table 6-1.

Table 6-9 Asymmetric Earnings Timeliness Coefficients and Explanatory Power from the Robust OLS Regressions

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

	Separate regressions		Dummy regressions		
	Before	After			
Variable	M1	M2	M3	M4	M5
α_0	0.141*** (11.604)	0.067*** (11.456)	0.191*** (22.909)	0.138*** (20.639)	0.172*** (18.427)
$NEG_{i,t}$	-0.024 (-1.371)	0.034*** -4.548		-0.019*** (-2.790)	0.021*** (2.954)
$NEG * RET_{i,t}$	0.119** (2.53)	-0.014 (-0.876)		0.075*** (4.667)	0.093*** (3.743)
$D * NEG * RET_{i,t}$					-0.091*** (-3.371)
$RET_{i,t}$	0.108*** (13.176)	0.128*** (22.249)	0.181*** (49.704)	0.037*** (9.617)	0.169*** (39.741)
$D * RET_{i,t}$			-0.069*** (-11.836)		-0.056*** (-8.898)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	1102	1322	2776	2747	2747
Adj. R ² (%)	35.3	35.2	52.2	14.9	47.4

Notes: This table reports results from the robust OLS regressions. The t-statistics are shown in the parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. The sample period spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. The country and year effects are included in order to control for macroeconomic differences affecting the behaviour of companies. Variables are as defined previously and are also included in Appendix 6-1.

6.4.8.3 Quantile Regressions

Basu (1997) assumes a piecewise linear relation between earnings and returns. However, Basu (2009) argues that the earnings-returns relation is not a piecewise linear because earnings do not necessarily follow normal distributions. Therefore, he argues that in order to better reflect accountants' decisions of recognizing bad and good news as they become available, it is rather appropriate to use the quantile (median) than OLS (mean) regressions. Moreover, Basu (2009) argues that it is also a way of improving income conservatism research methodologies.

For example during the sample period (2002-2009), earnings are right skewed. However, when the sample is split into pre and post-IFRS adoption periods, earnings are left skewed before IFRS and right skewed after IFRS. This implies that earnings reflect conditional conservatism before rather than after IFRS. The quantile (median) regression results are reported in Table 6-10. M1 and M2 represent separate sample regressions while M3-M5 represents dummy variable regressions.

Separate sample regression results indicate that loss, incremental loss and overall earnings recognition timeliness decrease after IFRS. On the other hand, gains recognition timeliness increases from 0.021 (t-stat= 5.519, $p < 0.01$) to 0.032 (t-stat = 5.308, $p < 0.01$). Dummy variable regression results indicate that the incremental effect of IFRS leads to statistically significant negative coefficients of gains, loss and incremental loss recognition timeliness. Moreover, Taking M4 as a base model for dummy variable regressions, overall earnings timeliness measured through the Pseudo R^2 increases slightly from 4.62% to 5.62% in M5. The inter quartile (0.75-0.25) regressions results (unreported for brevity) are qualitatively similar to these findings. In general, these findings support the main results reported in Table 6-1 and all the first four hypotheses in this chapter.

Table 6-10 Asymmetric Earnings Timeliness Coefficients and Explanatory Power from the Quantile Regressions

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions		
	Before	After			
	M1	M2	M3	M4	M5
α_0	0.145*** (25.327)	0.096*** (15.549)	0.160*** (24.120)	0.137*** (24.366)	0.184*** (28.313)
$NEG_{i,t}$	-0.043*** (-5.244)	0.003 (0.367)		-0.019*** (-3.330)	-0.012** (-2.481)
$NEG * RET_{i,t}$	0.146*** (6.554)	0.046*** (2.784)		0.049*** (3.637)	0.146*** (8.518)
$D * NEG * RET_{i,t}$					-0.094*** (-5.050)
$RET_{i,t}$	0.021*** (5.519)	0.032*** (5.308)	0.087*** (29.991)	0.037*** (11.229)	0.061*** (20.449)
$D * RET_{i,t}$			-0.037*** (-7.986)		-0.044*** (-10.107)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	1102	1322	2776	2747	2747
Pseudo R^2 (%)	7.32	3.27	4.94	4.62	5.61

Notes: This table presents regression results on asymmetric earnings timeliness from the quantile (median) regressions. The t-statistics are shown in parentheses. ***, **and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. The sample period spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. The country and time dummies are included in order to control for macroeconomic differences affecting the behaviour of companies. Variables are as defined previously and are also included in Appendix 6-1.

6.4.8.4 Earnings Persistence Tests

Table 6-11 reports regression results from earnings ‘change’ and ‘levels’ persistence models. In both models, the non-negative coefficients imply higher earnings persistence while negative coefficients mean less earnings persistence. The higher the earnings persistence, the lesser is earnings timeliness and vice versa and under accounting conservatism, negative earnings changes are less persistent than positive earnings changes (Ball and Shivakumar, 2005). M1 and M2 represent earnings change model while M3 and M4 represent earnings level model regressions.

Consistent with extant accounting conservatism literature, the earnings change model results indicate that positive earnings changes are more persistent than negative earnings changes. However, both the persistence of positive earnings changes and the timelier nature of negative earnings changes decline after IFRS. For instance, in M2, the positive earnings changes coefficient declines from 0.203 (t-stat = 5.417, $p < 0.01$) to 0.009 (t-stat = 0.134). Similarly, the negative earnings changes coefficient turns from -0.410 (t-stat = -7.665, $p < 0.01$) to 0.019 (t-stat = 0.175). The results are robust and qualitatively similar to earnings level models (M3 and M4).

Overall earnings timeliness measured through the explanatory and predictive power decreases marginally from 9.5% to 9.4% in earnings change model. However, it increases slightly from 13.3% to 13.4% in earnings level model. These changes in the explanatory and predictive power are relatively small to influence the inferences. In summary, the results from earnings persistence models suggest that earnings recognize bad news more rapidly than good news consistent with the conditional conservative accounting concept. Also, they corroborate the main results reported in Table 6-1.

Table 6-11 Asymmetric Earnings Timeliness Coefficients from Earnings Persistence Models

$$\Delta E_{i,t} = \beta_0 + \beta_1 NEG_{i,t-1} + \beta_2 \Delta E_{i,t-1} + \beta_3 D * \Delta E_{i,t-1} + \beta_4 NEG * \Delta E_{i,t-1} + \beta_5 D * NEG * \Delta E_{i,t-1} + \varepsilon_{i,t}$$

$$\Delta E_{i,t} = \gamma_0 + \gamma_1 NEG_{i,t-1} + \gamma_2 E_{i,t-1} + \gamma_3 D * E_{i,t-1} + \gamma_4 NEG * E_{i,t-1} + \gamma_5 D * NEG * E_{i,t-1} + \varepsilon_{i,t}$$

	Earnings Change Model		Earnings Level Model	
Variable	M1	M2	M3	M4
Constant	-0.018 (-0.725)	-0.019 (-0.724)	0.055*** (4.063)	0.091*** (3.092)
NEG _{i,t-1}	-0.007 (-0.620)	-0.006 (-0.576)	-0.008 (-0.764)	-0.009 (-0.822)
ΔE _{i,t-1}	0.205*** (5.626)	0.203*** (5.417)		
D*ΔE _{i,t-1}		0.009 (0.134)		
NEG*ΔE _{i,t-1}	-0.404*** (-9.175)	-0.410*** (-7.665)		
D*NEG*ΔE _{i,t-1}		0.019 (0.175)		
E _{i,t-1}			0.088*** (2.663)	0.111*** (3.089)
D*E _{i,t-1}				-0.309*** (-12.749)
NEG*E _{i,t-1}			-0.309*** (-12.924)	-0.095 (-1.484)
D*NEG*E _{i,t-1}				-0.038 (-0.360)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	2401	2401	2401	2401
Adj. R ² (%)	9.5	9.4	13.3	13.4

Notes: This table presents results on asymmetric earnings timeliness coefficients and power from earnings persistence models. The robust t-statistics are shown in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two tailed t-test. N is the number of observations. All variables are as defined previously and are also included in Appendix 6-1 at the end of this chapter.

6.4.8.5 Mitigating the Concerns of Uneven Sample Representation

One way of mitigating the effects of uneven country sample representation is excluding the country with highest sample proportion (Hope *et al.*, 2008). Other methods include the use of weights such as; firm's country of domicile (Kang *et al.*, 2004), the reciprocal of the country number of observations, $\frac{1}{N}$ (Hope *et al.*, 2008), the reciprocal of the square root of the summation of absolute value of book value per share and 0.1, i.e. $\frac{1}{\sqrt{(|BVPS| + 0.1)}}$ (Clarkson *et al.*, 2011) and the inverse of the square of price (Goncharov and Hodgson, 2011; Easton and Sommers, 2003) among others. For simplicity, consistent with Kang *et al.*, (2004), I use the firm's country of domicile as an analytical weight.

Table 6-12 reports weighted least square (WLS) regression estimates. Separate sample regressions show that loss, incremental loss and overall earnings recognition timeliness decline after IFRS. However, gains recognition timeliness increases slightly after IFRS from -0.016 (t-stat = -1.059) to 0.027 (t-stat = 2.721, $p < 0.01$). On the other hand, dummy variable regression results indicate that gains, loss and incremental loss recognition timeliness decrease after IFRS. However, overall earnings timeliness increases marginally from 0.095 to 0.108. In summary, these results are qualitatively similar to those reported in Table 6-1 and they do not provide practical evidence suggesting that IFRS increases asymmetric earnings timeliness and conditional conservatism.

Table 6-12 Weighted Least Squares (WLS) Regression Estimates on Asymmetric Earnings Timeliness

$$E_{i,t} = \beta_0 + \beta_1 NEG_{i,t} + \beta_2 NEG * RET_{i,t} + \beta_3 D * NEG * RET_{i,t} + \beta_4 RET_{i,t} + \beta_5 D * RET_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions		
	Before	After			
	M1	M2	M3	M4	M5
α_0	0.193*** (8.946)	0.131*** (12.686)	0.211*** (14.053)	0.207*** (14.951)	0.270*** (15.818)
$NEG_{i,t}$	-0.076*** (-2.945)	-0.014 (-1.252)		-0.048*** (-3.672)	-0.050*** (-3.867)
$NEG * RET_{i,t}$	0.173** (2.566)	0.018 (0.742)		0.055* (1.793)	0.114** (2.557)
$D * NEG * RET_{i,t}$					-0.060 (-1.216)
$RET_{i,t}$	-0.016 (-1.059)	0.027*** (2.721)	0.070*** (9.609)	0.024*** (2.779)	0.041*** (4.541)
$D * RET_{i,t}$			-0.050*** (-4.674)		-0.065*** (-5.709)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	1102	1322	2776	2747	2747
R^2 (%)	16.0	5.5	10.0	9.5	10.8

Notes: This table presents results from Weighted Least Square (WLS) regressions analytically weighted by the firm's country of domicile. The t-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. The sample period spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Egypt, Kenya, Morocco and Botswana. The country and year effects are included in order to control for the macroeconomic differences affecting the behaviour of firms. Variables are as defined previously and are also included in Appendix 6-1 at the end of this chapter.

6.4.8.6 Fixed Effects Regression Models

So far, the analysis of asymmetric earnings timeliness and conditional conservatism has not taken into account the unobservable heterogeneity or time invariant individual effect (η_i). The individual effect is usually not observable by the researcher and in this research setting it may include the propensity of managers to comply with the provisions and requirements of IFRS. As noted in Table 3 all countries in the sample have relatively low scores in terms of complying with international financial standards codes and lack IFRS enforcement mechanisms. Thus, the extent to which managers comply with IFRS requirements is likely to vary across countries.

The results which control for unobservable heterogeneity effects are reported in Table 6-13. All regressions represent fixed effects models after satisfying the Hausman (1978) test. Separate sample results show that gains recognition timeliness decreases after IFRS. This finding is further determined by dummy variable regressions (M3 and M5). Furthermore, the results show that loss recognition timeliness increases from -0.032 to 0.012 (M1 and M2). However, M5 indicates that loss recognition timeliness decreases. The IFRS incremental effect on incremental loss recognition timeliness is negative but statistically insignificant. Overall earnings timeliness increases slightly from 3.1% to 7.7% in separate sample regressions and from 4.9% to 5.5% in dummy variable regressions. In summary, to a large extent these findings provide support to the main results reported in Table 6-1.

Table 13 Asymmetric Earnings Timeliness Results from the Linear Fixed Effects Models

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \eta_i + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions		
	Before	After			
	M1	M2	M3	M4	M5
α_0	0.148*** (6.64)	0.116*** (12.688)	0.179*** (11.434)	0.173*** (12.939)	0.212*** (11.619)
$NEG_{i,t}$	-0.039 (-1.599)	-0.012 (-0.996)		-0.035*** (-2.611)	-0.039*** (-2.957)
$NEG * RET_{i,t}$	-0.099 (-1.031)	-0.042 (-1.352)		0.004 (0.122)	0.032 (0.547)
$D * NEG * RET_{i,t}$					-0.015 (-0.242)
$RET_{i,t}$	0.067** (2.576)	0.054*** (3.72)	0.071*** (6.752)	0.045*** (3.229)	0.056*** (3.665)
$D * RET_{i,t}$			-0.033*** (-2.612)		-0.044*** (-3.169)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	1102	1322	2776	2747	2747
Adj. R ² (%)	3.1	7.7	5.7	4.9	5.5

Notes: This table presents regression results on asymmetric earnings timeliness and conditional conservatism impact of IFRS from the fixed effects models. The robust z-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed z-tests. The sample period spans from 2002 to 2009 involving firms 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. The country and time dummies are included in order to control for macroeconomic differences affecting the behaviour of companies. N is the number of observations, η_i is the time invariant individual effect or unobservable heterogeneity which in this research setting may be the propensity of managers to comply with the provisions and requirements of IFRS. Variables are as defined previously and are also included in Appendix 6-1 at the end of this chapter.

6.4.8.7 Mitigating the Earnings-Returns Endogeneity

One critique to the Basu (1997) piece wise linear model is that it leads to biased estimates due to return endogeneity (Dietrich *et al.*, 2007). However, Ball *et al.*, (2010) argue that return endogeneity does not exist in practice and if it does its impact is relatively small. In order to reduce the impact of endogeneity problem on estimated parameters, I use the dynamic panel data models especially one step system generalized method of moments (GMM). The main advantage of the system GMM over the widely used Arellano and Bond (1991) difference GMM is that it leads to a lowest bias of estimated coefficients and root mean square errors (RMSE) and it increases precision (Blundell and Bond, 1998). However, the advantage of Arellano and Bond (1991) is that it eliminates the individual effect component and the intercept by differencing models. Moreover, I use the one step rather than the two steps system GMM because the accuracy and efficiency for the one step system GMM is similar to that of two steps system GMM.

The dynamic panel data estimated results from the one step system GMM are reported in Table 6-14. The results from M1 and M2 show that gains recognition timeliness decreases after IFRS. Similar results are observed in dummy variable regression (M4) where gains recognition timeliness changes from positive to negative. Loss recognition timeliness coefficient is unaltered in separate sample regressions although its corresponding z-statistic decreases after IFRS. However, it decreases in dummy variable regression (M4). Moreover, incremental loss recognition timeliness increases after IFRS in separate sample regressions. On the other hand, the IFRS incremental effect coefficient (M4) is negative and statistically significant at 1% implying declining incremental loss recognition timeliness and conditional conservatism. The Wald χ^2 statistic which shows the joint significance of the explanatory variables is zero across all models implying that the results may be relied upon. In summary, the findings corroborate the results reported in Table 6-1.

Table 14 The Results from theDynamic Panel Data Estimation, One Step System GMM

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \eta_i + \mu_{i,t}$$

Variable	Separate regressions		Dummy regressions	
	Before	After		
	M1	M2	M3	M4
α_0	-0.000*** (-14.504)	0.000*** (31.883)	-0.000*** (-14.653)	0.000*** (9.435)
$NEG_{i,t}$	0.000*** (7.152)	-0.000*** (-12.592)	0.000*** (17.112)	0.000*** (8.102)
$NEG * RET_{i,t}$	0.000 (0.709)	0.000*** (10.807)	0.000*** (7.456)	0.000*** (6.977)
$D * NEG * RET_{i,t}$				-0.000*** (-3.049)
$RET_{i,t}$	0.000*** (12.284)	-0.000*** (-26.753)	0.000*** (5.732)	0.000*** (8.499)
$D * RET_{i,t}$				-0.000*** (-8.623)
Year Effects	Yes	Yes		Yes
Country Effects	Yes	Yes		Yes
N	1102	1322	2747	2747
Number of Instruments	70	36	118	153
Wald χ^2	(13) = 0.000	(11) = 0.000	(15) = 0.000	(17) = 0.000
Prob > χ^2	1.000	1.000	1.000	1.000

Notes: This table presents regression results on asymmetric earnings timeliness coefficients from the one step system GMM dynamic panel data estimations. The robust z-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed z-test. The sample period spans from 2002 to 2009 involving firms 347 firms from five countries namely; South Africa, Kenya, Botswana, Egypt and Morocco. The country and time dummies are included in order to control for macroeconomic differences affecting the behaviour of companies. N is the number of observations, η_i is the time invariant individual effect or unobservable heterogeneity which in this research setting may be the propensity of managers to comply with the provisions and requirements of IFRS and μ is the error term. Variables are as defined previously and are also included in Appendix 6-1 at the end of this chapter.

6.4.8.8 Control Variables

As part of robustness check, consistent with prior studies e.g. Barth *et al.*, (2008), Ball and Shivakumar (2005) and Leuz *et al.*, (2003), I include the controls for firm size, leverage and earnings management. Ball and Shivakumar (2005) argue that due to agency costs' and litigations' concerns large firms are more likely to report losses in a timely fashion than small firms. Also, due to debt covenants and other contracting concerns, leveraged firms have more incentives to report timely earnings than unleveraged firms. This implies that firm size and leverage are likely to be positively related to loss and incremental loss recognition timeliness and thus conditional conservatism.

On the other hand, Leuz *et al.*, (2003) argue that managers use reporting discretion to smooth earnings through accruals and this practice is more evident in countries with weak shareholders and creditors protection rules. In particular, managers can overstate or understate earnings by using accounting accruals and hence degrading or enhancing the quality of earnings timeliness. Thus, in this chapter I use, firm size, leverage and accruals ratio as control variables. Firm size is defined as the natural logarithm of the end of year market value of equity; leverage is the ratio of the total liability to net book value of equity and accruals ratio is the absolute ratio of accounting accruals to cash flows from operations. An accruals ratio is a surrogate for the extent to which managers exhibit reporting discretion in earnings.

Table 6-15 presents regression results on the impact of IFRS adoption on asymmetric earnings timeliness and conditional conservatism when the firm effects of size, leverage and accruals ratio are included. The results are qualitatively similar to those reported in Table 6-1. In other words, the results reported in Table 6-1 are not affected by the firm characteristics of size, risk and earnings management.

Table 6-15 Asymmetric Earnings Timeliness Results : Firm Effects Controlled

$$E_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 NEG * RET_{i,t} + \alpha_3 D * NEG * RET_{i,t} + \alpha_4 RET_{i,t} + \alpha_5 D * RET_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.079*** (2.839)	0.080*** (5.197)	0.084*** (4.896)	0.139*** (6.651)
$NEG_{i,t}$	-0.086*** (-3.845)	-0.018* (-1.748)	-0.045*** (-4.102)	-0.047*** (-4.239)
$NEG * RET_{i,t}$	0.140* (1.764)	0.061** (2.534)	0.066** (2.167)	0.124** (2.250)
$D * NEG * RET_{i,t}$				-0.058 (-1.066)
$RET_{i,t}$	-0.005 (-0.225)	0.010 (0.728)	0.020* (1.730)	0.031** (2.517)
$D * RET_{i,t}$				-0.047*** (-4.208)
SIZE	0.021*** (4.944)	0.008*** (4.448)	0.015*** (7.213)	0.015*** (7.022)
LEV	0.003*** (4.487)	0.000*** (9.074)	0.001*** (10.740)	0.001*** (10.704)
ACC/CFO	-0.005 (-1.074)	0.005*** (3.206)	0.004** (2.000)	0.004* (1.803)
Firm Effects	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	1102	1322	2,747	2,747
Adj. R ² (%)	16.8	22.0	18.4	19.0

Notes: This table presents regression results on the impact of IFRS adoption on asymmetric earnings timeliness and conditional conservatism when the firm characteristics of size, risk and earnings management are included. The robust t-statistics are shown in parentheses. ***, ** and * represent robust statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. The definitions of the variables are as provided previously and are also included in Appendix 6-1 at the end of this chapter.

6.5 Chapter Summary

The main objective of this chapter is to examine whether IFRS adoption changes conditional conservatism as a measure of stewardship and whether culture and legal origin impact on asymmetric earnings timeliness and conditional conservatism. I hypothesize that although IFRS is widely regarded as a higher quality accounting standard compared to local GAAP (Barth *et al.*, 2008), the illiquidity of African capital markets and the less conservative nature of IFRS are likely to reduce gains, loss, incremental loss and overall earnings timeliness. To test these hypotheses, I use a modified dummy variable Basu (1997) ERC reverse.

The results do not provide empirical support that IFRS earnings are timely and conditionally conservative compared to local GAAP. The findings are consistent with Hung and Subramanyam (2007) who do not find evidence suggesting that fair value income is more conditionally conservative than German GAAP. However, the findings are inconsistent with other prior studies such as Barth *et al.*, (2008) who find that IFRS is associated with greater loss recognition timeliness and conditional conservatism. This inconsistency in findings may be partly attributed to inefficiency and illiquidity of African markets (Smith *et al.*, 2002 and Kenny and Moss, 1998), managers' attitude of not reporting losses on a timely manner to avoid their responsibility to capital providers (Risberg, 2005) and the measurement problems caused by fair valuation principles, especially marking to market models (Ball, 2008).

In summary, timeliness as an enhancing qualitative characteristic of useful accounting information (IASB, 2010) is not supported by these findings. Also, consistent with Ball *et al.*, (2003), results indicate that African common law earnings are more conditionally conservative than African code law earnings.

Moreover, empirical evidence suggests that cultural conservatism is associated with greater gains recognition timeliness before but not after IFRS. However, cultural conservatism leads to reduced loss and incremental loss recognition timeliness before and after IFRS. In other words, cultural conservatism reduces conditional conservatism but improves gains recognition timeliness. This finding is consistent with the view that firms from countries with high degree of cultural conservatism are aggressive reporters of gains rather than losses (Risberg, 2005). The implications of these findings are as follows; (i) IFRS earnings are untimely in frontier markets, (ii) Fair value accounting does not increase conditional conservatism in illiquid capital markets and is thus less suitable for contractual and covenant obligations, and (iii) Culture and legal origin are important determinants of asymmetric earnings recognition timeliness and conditional conservatism.

One of the decision useful information attributes is that accounting information should help investors, lenders and other creditors to make new predictions about the amount and timing of the return on an equity investment, loan, or other credit instrument, confirm or correct prior predictions, or both [IASB (2010) Conceptual Framework, BC 3.14, p.25]. This implies that apart from the value relevance and conditional conservatism attributes, accounting information should assist market participants to predict future operating cash flow. In this context, therefore the decision usefulness of IFRS is viewed as a package consisting of value relevance, asymmetric earnings timeliness and the prediction of future operating cash flow.

Consequently, chapter seven investigates whether IFRS is associated with greater predictive ability of earnings and cash flow. In particular, it examines the impact of IFRS on the predictive ability of contemporaneous earnings and operating cash flow. Moreover, it examines the impact of culture and legal origin on earnings and cash flow predictability impact of IFRS.

Appendix 6-1 Definitions of Variables

Variables	Definitions
$E_{i,t}$	Earnings per share scaled by the beginning period stock price.
$E_{i,t-1}$	Lagged earnings per share scaled by the beginning period stock price.
$RET_{i,t}$	Returns calculated as, $RET_{i,t} = (P_{i,t} - P_{i,t-1})/P_{i,t-1}$ over a 12 month period extending from 9 months prior to the fiscal year end to 3 months after the fiscal year end.
$\Delta E_{i,t}$	Change in earnings per share scaled by the beginning period stock price.
$\Delta E_{i,t-1}$	Lagged change in earnings per share scaled by the beginning period stock price.
$NEG_{i,t}$	A dummy variable equal to 1 if $RET < 0$, = 0 otherwise.
$NEG_{i,t-1}$	A lagged dummy variable equal to 1 if the lagged earnings per share or changes in earnings per share scaled by the beginning period stock price is less than zero or 0 otherwise.
$NEG * RET_{i,t}$	An interaction variable capturing the sensitivity of earnings on bad news before IFRS.
$NEG * E_{i,t-1}$	An interaction variable capturing the persistence of the lagged negative earnings per share before IFRS scaled by the beginning period stock price.
$NEG * \Delta E_{i,t-1}$	An interaction variable capturing the persistence of the lagged negative earnings changes per share before IFRS scaled by the beginning period stock price.
$POS_{i,t}$	A dummy variable equal to 1 if $RET > 0$, = 0 otherwise
$POS * RET_{i,t}$	An interaction variable capturing the sensitivity of earnings on good news before IFRS.
D	An IFRS dummy equal to 1 if a firm observation is from years following the adoption year and 0 otherwise.
$D * RET_{i,t}$	An interaction variable capturing the effect of IFRS adoption on the sensitivity of earnings to the arrival of news in the market (returns).
$D * NEG * RET_{i,t}$	An interaction variable capturing the effect of IFRS adoption on the sensitivity of earnings to bad news after IFRS.
$D * POS * RET_{i,t}$	An interaction variable capturing the effect of IFRS adoption on the sensitivity of earnings to good news after IFRS.
$D * E_{i,t-1}$	An interaction variable measuring the persistence of lagged earnings per share after IFRS scaled by the beginning period stock price.

$D*\Delta E_{i,t-1}$	An interaction variable capturing the persistence or timeliness of the lagged earnings changes per share after IFRS.
$D*NEG*E_{i,t-1}$	An interaction variable capturing the persistence of the lagged negative earnings per share after IFRS scaled by the beginning period stock price.
$D*NEG*\Delta E_{i,t-1}$	An interaction variable capturing the persistence of the lagged negative earnings changes per share after IFRS scaled by the beginning period stock price.
C	A legal origin dummy equal to 1 if a firm observation is from common law countries and 0 otherwise.
$C*RET_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the sensitivity of earnings to good news before IFRS.
$C*NEG*RET_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the sensitivity of earnings to bad news before IFRS.
$C*D*RET_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the sensitivity of earnings to good news after IFRS.
$C*D*NEG*RET_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the sensitivity of earnings to bad news after IFRS.
$CON_{i,t}$	A cultural conservatism dummy equal to 1 if the conservatism value is greater than its median or 0 otherwise. Conservatism is calculated as the difference between uncertainty avoidance and individualism (Hope <i>et al.</i> , 2008 and Gray, 1988) using Hofstede (1980) and House <i>et al.</i> , (2004) cultural scores. For House <i>et al.</i> , (2004), individualism is the average value of institutional collectivism (I), in group collectivism (II) and human orientation index scores.
$CON*RET_{i,t}$	An interaction variable capturing the impact of conservative culture on the sensitivity of earnings to good news before IFRS.
$CON*NEG*RET_{i,t}$	An interaction variable capturing the impact of conservative culture on the sensitivity of earnings to bad news before IFRS.
$CON*D*RET_{i,t}$	An interaction variable capturing the impact of conservative culture on the sensitivity of earnings to good news after IFRS.
$CON*D*NEG*RET_{i,t}$	An interaction variable capturing the impact of conservative culture on the sensitivity of earnings to bad news after IFRS.
$ACC/CFO_{i,t}$	The absolute ratio of the accounting accruals to cash flow from operations.

CHAPTER SEVEN

DOES IFRS INCREASE THE PREDICTIVE ABILITY OF EARNINGS AND OPERATING CASH FLOW?

7.0 Chapter Abstract

This chapter addresses two research questions; (i) whether IFRS adoption increases the predictive ability of earnings and cash flow and (ii) whether conservative culture prevalent in African countries and legal origin impact on earnings and cash flow predictability. This study is important and timely as IASB (2010) and FASB (2010) claim that fair value measures increase the predictive ability of earnings and cash flow. Motivated by the IASB and FASB view, I adopt the Kim and Kross (2005) model which regresses one-year-ahead operating cash flow on the contemporaneous earnings and operating cash flow. Kim and Kross (2005) argue that the presence of current operating cash flow in the model implies that earnings represent the accruals component of earnings.

The results do not provide empirical support to the assertion that IFRS adoption increases the predictive ability of the current operating cash flow and earnings. This may be explained by the fair value opponents' argument that fair value measures are more transitory, less persistent and less conservative. The contemporaneous cash flow dominates earnings in predicting future cash flow across all period before and after IFRS and in all alternative and robustness tests. Also, the predictive ability of earnings and cash flow decreases with increased number of prediction periods. Moreover, consistent with expectations, conservative culture is associated with a reduction (an increase) in the predictive ability of cash flow (earnings). The results also do not provide support to the contention that IFRS increases the predictive ability of earnings and cash flow more in common law than in code law firms.

7.1 Introduction

One of the objectives of general purpose financial reporting is to provide information that is useful to existing and potential investors, lenders and other creditors in assisting them to assess the amount, timing and uncertainty of future net cash inflow to the entity [IASB (2010) Conceptual Framework]. Stated differently; to be useful the accounting information should assist market participants to predict future net cash inflow (Schipper and Vincent, 2003).

The ability of earnings to predict future cash flow also provides an alternative measure of value relevance of earnings (Kim and Kross, 2005 and Francis and Schipper, 1999) because, theoretically, stock price is the present value of future net cash inflow. Thus, the relationship between ‘current earnings and stock prices’ and ‘current earnings and future cash flow’ are expected to be similar. The idea is that current earnings link to share prices through the Ohlson (1995) model and share prices link to future cash flow through the Earnings Capitalization Framework (ECF) and Residual Income Valuation Model (RIV). As a result, current earnings relate to future operating cash flow.

Motivated by the IASB (2010) conceptual framework, and the increased use of fair value measures in financial reporting, this chapter examines whether switching from local GAAP to IFRS is associated with higher earnings and cash flow predictability in African capital markets. In particular, I examine whether IFRS increases the ability of current earnings and cash flow to predict future operating cash flow.

Prior research examines (compares) the predictive ability of earnings and cash flow under (between) IFRS, U.S. GAAP or (and) Non-U.S. domestic accounting standards (see for instance; Atwood *et al.*, 2011, Goncharov and Hodgson, 2011, Van der Meulen *et al.*, 2007, Kim and Kross, 2005, Giner and Reverte, 2003 and Finger, 1994, among others) and is

concentrated in developed economies.⁵¹ This means they examine or compare the accounting quality attribute of prediction for different firms and accounting regimes, but they do not explicitly examine the impact of changing the accounting measurement system on earnings and cash flows predictability. Basuet *al.*, (1998) and Giner and Reverte (2003) argue that the predictive role of accounting information, especially related to the empirical consequences of accounting systems, is a scarcely researched area and thus a fruitful avenue for further research. In this chapter I extend prior studies by examining the impact of IFRS adoption on earnings and cash flow predictability using a sample of firms listed in African capital markets. I also extend prior research by examining the relative roles of culture and legal origin on earnings and cash flow predictability impact of IFRS.

The findings suggest that IFRS does not result in the increased predictive ability of cash flow and earnings. Moreover, the comparative analysis shows that cash flow dominates earnings in predicting future cash flow for both one year and two-year predictions. These findings lend support to the value relevance results reported in chapter 5 that value relevance of earnings declines with the adoption of IFRS.

In theory, the relationship between contemporaneous earnings and share prices is expected to be similar to the relationship between current earnings and future cash flow because share price is a discounted value of expected future cash flows. However, this relationship only holds if future cash flow and the correlation between future cash flow and current earnings are not noisy (Kim *et al.*, 2007). Furthermore, results indicate that, IFRS does not lead to incrementally more predictive ability of earnings and cash flow in common

⁵¹ Giner and Reverte (2003, Table 1, p.13) summarize about twenty studies on earnings prediction and valuation conducted prior to 2003. All these studies are conducted using either U.S. or European data with thirteen studies done in the U.S., four in the U.K. and three in Spain. This provides an overview of the concentration of earnings prediction studies in western countries.

law than in code law firms. Regarding culture, the results show that conservative culture is associated with increased predictive ability of earnings before and after IFRS. However, it leads to reduced predictive ability of contemporaneous cash flow both before and after IFRS.

7.2 Research Design

The primary objective of this chapter is to examine whether IFRS adoption increases the predictive ability of earnings and cash flow to help market participants to make new predictions, confirm or correct prior predictions or both [FASB (2010) Concepts Statement No. 8, BC 3.14]. I assess the impact of IFRS adoption on earnings and cash flow predictability by applying the Kim and Kross (2005) model.

Kim and Kross (2005) argue that although this model does not directly disentangle cash flow and accruals but the presence of cash flow in the model implies that earnings comprise of accounting accruals. However, as part of robustness check, I disaggregate earnings into cash flow and accounting accruals and re-run the regressions to assess their predictive abilities. Barth *et al.*, (2001) find that disaggregated earnings add incremental predictive ability over current operating cash flow. I extend the Kim and Kross (2005) model by introducing an IFRS dummy, D in order to capture the incremental effect of IFRS on the predictive ability of earnings and cash flow. Given the view by IASB(2010) and FASB (2010), this model allows researchers to test the individual predictive abilities of earnings and cash flow after IFRS adoption. The model is represented in equation 1;

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where, $CFO_{i,t+1}$ is one-year-ahead operating cash flow defined as the summation of income before depreciation and interest revenue less interest expense, tax expense and changes in working capital. $NI_{i,t}$ is income after depreciation minus the interest expense plus

interest revenue minus tax expense or simply the net income used to calculate the earnings per share excluding extraordinary items. D is an IFRS dummy variable equal to 1 if the firm observation is from years following the IFRS adoption year and 0 otherwise. $D*NI_{i,t}$ and $D*CFO_{i,t}$ are interaction variables capturing the incremental effect of IFRS on the predictive ability of earnings and cash flow respectively. Both earnings and cash flow are scaled by total assets.

The coefficients α_1 and α_2 measure the extent to which earnings add to the relationship between current and future operating cash flow before and after IFRS respectively. Also, α_3 and α_4 measure the extent to which cash flow contributes to the relationship between contemporaneous earnings and future operating cash flow before and after IFRS respectively. The combined explanatory and predictive power of earnings and cash flows is measured by the adjusted R^2 .

As discussed earlier on, I disaggregate earnings into accounting accruals and operating cash flow and assess their ability to predict the future operating cash flow by running the following model;

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 ACC_{i,t} + \alpha_2 D * ACC_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \varepsilon_{i,t} \quad (2)$$

Where $ACC_{i,t}$ is the accounting accruals obtained by subtracting the operating cash flow from earnings i.e. $ACC_{i,t} = NI_{i,t} - CFO_{i,t} = \Delta WC - Depreciation$. In order to assess the individual incremental predictive power of earnings and cash flow, consistent with Kim and Kross (2005) equation 1 is decomposed into the following two equations;

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \varepsilon_{i,t} \quad (3) \quad CFO_{i,t+1} = \alpha_0 + \alpha_1 CFO_{i,t} + \alpha_2 D * CFO_{i,t} + \varepsilon_{i,t}$$

(4)

The incremental predictive power of contemporaneous earnings over cash flow to explain future operating cash flow is given by $R_{NI}^2 = R_1^2 - R_4^2$ while that of cash flow over earnings is given by $R_C^2 = R_1^2 - R_3^2$. I also test the ability of contemporaneous earnings to predict future earnings by using equation 5.

$$NI_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \varepsilon_{i,t} \quad (5)$$

Where, α_1 and α_2 measure the degree of earnings persistence prior to and post IFRS adoption respectively. The predictive ability of earnings is measured through the explanatory and predictive power of the model. Equation 5 was also used by Giner and Reverte (2003).

As one way of testing the robustness of results, consistent with Van der Meulen *et al.*, (2007), I regress future earnings and cash flow on the contemporaneous and past earnings. Also, I regress future cash flow on the current and past cash flow. Schipper and Vincent (2003) argue that the predictive ability of earnings and cash flow is affected by the period of prediction and that a widely used one-year-ahead prediction period lacks conceptual grounds. Thus, I follow Van der Meulen *et al.*, (2007) and use the following models;

$$NI_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 NI_{i,t-1} + \alpha_4 D * NI_{i,t-1} + \varepsilon_{i,t} \quad (6)$$

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 NI_{i,t-1} + \alpha_4 D * NI_{i,t-1} + \varepsilon_{i,t} \quad (7)$$

$$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 D * CFO_{i,t} + \beta_3 CFO_{i,t-1} + \beta_4 D * CFO_{i,t-1} + \varepsilon_{i,t} \quad (8)$$

Positive coefficients imply higher persistence and or predictive power of earnings or cash flow and viceversa. To examine the impact of culture on earnings and cash flow predictability before and after IFRS, I introduce a cultural conservatism dummy, CON into test variables in equation 1 to form the following equation;

$$CFO_{i,t+1} = \beta_0 + \beta_1 NI_{i,t} + \beta_2 CON * NI_{i,t} + \beta_3 D * NI_{i,t} + \beta_4 CON * D * NI_{i,t} + \beta_5 CFO_{i,t} + \beta_6 CON * CFO_{i,t} + \beta_7 D * CFO_{i,t} + \beta_8 CON * D * CFO_{i,t} + \varepsilon_{i,t} \quad (9)$$

Where *CON* stands for conservative culture and it is a dummy variable equal to 1 if a conservatism score is greater than its median and 0 otherwise. Conservatism is defined as the difference between uncertainty avoidance and individualism (Gray, 1988) and is calculated using Hofstede (1980) and House *et al.*, (2004) culture values. Consistent with prior studies such as Hope *et al.*, (2008), I exclude masculinity because it has a relatively little impact on accounting values particularly conservatism. *CON*NI_{i,t}* and *CON*D*NI_{i,t}* are interaction variables capturing the impact of conservative culture on the predictive ability of earnings before and after IFRS respectively. *CON*CFO_{i,t}* and *CON*D*CFO_{i,t}* measure the impact of conservative culture on the predictive ability of cash flow before and after IFRS respectively. Other variables are as defined previously. Finally, to examine the impact of legal origin on earnings and cash flow predictability of IFRS, I introduce a legal origin dummy, *C* to equation 1 and form the following equation;

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 C * NI_{i,t} + \alpha_3 D * NI_{i,t} + \alpha_4 C * D * NI_{i,t} + \alpha_5 CFO_{i,t} + \alpha_6 C * CFO_{i,t} + \alpha_7 D * CFO_{i,t} + \alpha_8 C * D * CFO_{i,t} + \varepsilon_{i,t} \quad (10)$$

Where *C* is a legal origin dummy equal to 1 if the firm observation is from common law countries and 0 otherwise. *C*NI_{i,t}* and *C*D*NI_{i,t}* measure the incremental effect of the common law legal origin on the predictive ability of earnings before and after IFRS respectively. *C*CFO_{i,t}* and *C*D*CFO_{i,t}* measure the incremental effect of the common law legal origin on the predictive ability of contemporaneous operating cash flow before and after IFRS respectively. Control variables are discussed in Section 7.4.8.4.

7.3 Hypotheses Development

7.3.1 Earnings and Cash Flow Predictability

The historical cost accounting embraced by conservatism, objectivity and revenue-recognition principles has limited ability to reflect the market's expectations of future earnings and thus hinder its predictive ability (Kothari and Zimmerman, 1995). The impact of conservatism on the predictive ability of earnings and cash flow is dependent upon whether the undervaluation of assets and earnings is permanent or temporary (Giner and Reverte, 2003). They further argue that if the undervaluation is temporary it may reverse in the long run and hence increase the association between the contemporaneous earnings and future cash flow. In contrast, if the undervaluation is permanent, it is likely to lead to lower predictive ability of earnings and cash flow.

Unlike historical cost accounting, fair value accounting applies current market-based measures to value assets and liabilities at a balance sheet date with value increases or decreases taken into the income statement. Fair value proponents argue that the use of IFRS fair values portrays a realistic and a truer picture of the firm value and hence improves the ability of earnings to predict future cash flow. On the other hand, the inclusion of value gains or losses in the income statement makes earnings less persistent, more transitory and volatile thus reducing its ability to predict firm's future performance.

Atwood *et al.*, (2011) argue that IFRS increases reporting flexibility. Managers may use this flexibility to convey private information and hence increase the persistence and predictive ability of earnings. However, they can use the reporting flexibility to conceal relevant private information about firm's future performance and thus distort the persistence and predictability of earnings. Moreover, Schipper and Vincent (2003) argue that fair value income which is also based on the Hicksian theory of income lacks predictive ability

especially in capital-intensive businesses. They further argue that the predictive ability of earnings is directly related to the business model, economic factors and reporting choices. So far there are different conclusions on whether IFRS earnings increase persistence and the association between contemporaneous earnings and future cash flow (Atwood *et al.*, 2011). In Africa, many countries are label adopters of IFRS (Daske *et al.*, 2011); there are no sound enforcement mechanisms and regulations. Moreover, capital markets are illiquid hence the measurement of assets and liabilities under IFRS principles may become difficult. In turn, the quality of earnings is likely to be degraded and their predictive ability of earnings and cash flow lowered. Based on the above discussion and the FVA opponents' argument that fair value measures are more transitory and less persistent, I predict and test the following hypothesis:

H1: IFRS adoption adversely affectsthepredictive ability of earnings and cash flow in African capital markets

7. 3.2 Legal origin, Culture, and Earnings Cash Flow Predictability

7.3.2.1 Legal origin

The quality of accounting standards and earnings quality is dependent upon legal origin, whether they derive from common law or code law (Ball *et al.*, 2003, Giner and Reverte, 2003 and La porta *et al.*, 1997, 1998). Common law accounting systems are based on Anglo-Saxon principles that are market oriented while code law accounting systems are influenced by banks, governments and tax motives. It is widely asserted that common law accounting systems are of higher quality than code law accounting systems. For instance; Giner and Reverte (2003) find that U.K. firms' earnings (common law country) have higher predictive abilities than firms' earnings from Spain, France and Germany (code law countries). Ball *et al.*, (2003) document that common law earnings are of higher quality than code law and Asian countries' earnings. The African legal and accounting systems originate from Europe through

colonial influences and many accounting standards are conservative in nature. Thus, the shift from local GAAP to IFRS may have different impacts in various countries depending on their legal origins. This leads to the following hypothesis:

H2: The predictive ability of earnings and cash flow increases more in common law countries than code law countries after IFRS in African capital markets.

7.3.2.2 Culture

The reporting flexibility and discretion offered by IFRS may cause managers to manage earnings and hence affect their predictive abilities (Atwood *et al.*, 2011). Earnings management is somewhat facilitated by the culture surrounding firms' managers. For instance, Han *et al.*, (2010) find that managers from high individualistic and uncertainty avoidance culture engage more in earnings management practices. In particular, they find that discretionary accruals (both income-increasing and decreasing accruals) are statistically significantly positively related to individualism and negatively related to uncertainty avoidance. However, Callen *et al.*, (2011) document that earnings management is inversely related to individualism and directly related to uncertainty avoidance. Both income increasing and decreasing accruals affect their predictive abilities through additional volatility and reduced variability respectively (Han *et al.*, 2010) but their directional impacts are not immediately understood. The implication from this discussion is that culture affects the predictive ability of earnings and cash flow either directly or indirectly.

Gray (1988) hypothesizes that countries which are highly ranked in terms of uncertainty avoidance but lower in individualism and masculinity are more likely to rank highly in terms of conservatism. Since prior studies find little evidence between masculinity and accounting values especially conservatism (Hope *et al.*, 2008), and based on Callen *et al.*, (2011), one can predict that high level of cultural conservatism is directly related to earnings

management and thus predictive ability of earnings and cash flow. On the other hand, with reference to Han *et al.*, (2010) findings, one can predict that earnings management is inversely related to high levels of cultural conservatism. Given that African culture is conservative, it may reduce the predictive ability of IFRS earnings and cash flow. This background forms the basis of the following hypothesis:

H3: The predictive ability of earnings and cash flow is inversely related to cultural conservatism and its effect is more pronounced after IFRS.

7.4 Results

7.4.1 The Predictive Ability of Contemporaneous Earnings and Cash Flow

The results on the predictive ability of earnings and cash flow from the cross-sectional regressions based on the Kim and Kross (2005) model are reported in Table 7-1. Generally, the results indicate that contemporaneous operating cash flow better predicts future operating cash flow than current earnings.

Separate sample regression results indicate that both earnings and cash flow predictive coefficients increase after IFRS although the large increase is observed in operating cash flow. Similarly, the results from dummy variable regressions show that the incremental effect of IFRS on the predictive ability of earnings is negative while that of cash flow is positive. However, both predictive coefficients are statistically insignificant. This implies that IFRS adoption does not lead to an increase in the predictive ability of earnings and cash flow. The inability of IFRS earnings and cash flow to predict future operating cash flow may be attributed to the significant changes in the earnings and cash flow persistences (Kim and Kross, 2005) resulted from using a more transitory, less persistent and less conservative standard, IFRS.

Moreover, separate sample regressions show that the predictive power of earnings and cash flow increases slightly from 30.8% to 31.5% after IFRS and remains unchanged at 30.7% in dummy variable regressions. These findings suggest that IFRS does not lead to improved predictive ability and power of cash flow and earnings. Also, in general, contemporaneous cash flow dominates earnings in predicting future operating cash flow for both one and two years ahead predictions. These findings are consistent with Finger (1994) who concludes that current earnings do not dominate cash flow in predicting future cash flow. The view by the IASB (2010) that IFRS fair value measures lead to greater predictive ability of earnings and cash flow is not supported. This may imply that investors have lost confidence on IFRS fair value measures due to their low persistences and more transitory nature.

Table 7-1 The Impact of IFRS on the Predictive Ability of Earnings and Cash Flow

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy Regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.032*** (4.694)	0.027*** (4.786)	0.030*** (5.131)	0.025** (2.159)
$NI_{i,t}$	0.118** (2.025)	0.132*** (3.204)	0.133*** (4.565)	0.141*** (3.71)
$D*NI_{i,t}$				-0.024 (-0.427)
$CFO_{i,t}$	0.418*** (8.783)	0.473*** (12.523)	0.439*** (16.939)	0.425*** (12.927)
$D* CFO_{i,t}$				0.041 (0.816)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	783	976	2429	2429
Adj. R ² (%)	30.8	31.5	30.7	30.7

Notes: This table reports the predictive coefficients and power from the cross sectional pooled OLS regressions. The robust t-statistics are shown in parentheses. ***, ** and* denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. $CFO_{i,t+1}$ is one-year-ahead operating cash flow defined as the summation of income before depreciation and interest income less interest expense, tax expense and changes in working capital scaled by total assets. D is an IFRS dummy equal to 1 if a firm observation is from years following the IFRS adoption year and 0 otherwise. $NI_{i,t}$ is income after depreciation minus interest expense plus interest revenue minus tax expense scaled by total assets. $CFO_{i,t}$ is the contemporaneous operating cash flow scaled by total assets. $D*NI_{i,t}$ and $D*CFO_{i,t}$ are interaction variables capturing the incremental effect of IFRS on the predictive ability of earnings and cash flow respectively. N is the number of observations and $\varepsilon_{i,t}$ is the random or error term of the firm i at the end of the period t . The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Morocco, Botswana and Egypt.

7.4.2 The Predictive Ability of Accounting Accruals and Cash Flow

Paragraph OB17 of SFAC No. 8 documents that accrual accounting based information better provides a basis for assessing firm's past and future performance than information only based on cash flows. Also, Barth *et al.*, (2001) find that disaggregated earnings into accruals and cash flow provide incrementally more predictive ability than aggregated earnings. It is also argued that managers use accruals to manage earnings and to adjust the timing gap between accounting accruals and cash flows based information (Leuz *et al.*, 2003). Table 7-2 reports results on the predictive ability of accounting accruals and contemporaneous cash flow.

Generally, the results show that contemporaneous operating cash flow dominates accounting accruals in predicting future operating cash flow. Separate sample regressions indicate that the predictive ability of accounting accruals improves after IFRS from -0.008 (t-stat = -0.172) to 0.104 (t-stat = 2.641, $p < 0.01$). Consistent with Barth *et al.*, (2008), this may be a result of IFRS limiting opportunistic behaviour by managers on accruals management. Similarly the predictive ability of cash flow increases from 0.470 (t-stat = 12.064, $p < 0.01$) to 0.579 (t-stat = 16.593, $p < 0.01$). The IFRS incremental effect on the predictive coefficients is negative for accounting accruals and positive for cash flow (M4) although both coefficients are not statistically significant at conventional levels. Moreover, decomposing earnings into accounting accruals and cash flow has improved the predictive coefficients of cash flow compared to those reported in Table 7-1. The joint predictive power of accounting accruals and cash flow increases marginally from 30.1% to 31.3% in separate sample regressions. However, it decreases marginally from 30.1% to 30.0% in M3 and M4. This implies that there is little evidence suggesting that the joint predictive ability of accruals and cash flow increases after IFRS. In summary, these findings suggest that IFRS adoption does not result in greater predictive ability and power of contemporaneous cash flow and accounting accruals.

Table 7-2 The Predictive Coefficients and Power of Accounting Accruals and Cash Flow

$$CFO_{i,t+1} = \beta_0 + \beta_1 ACC_{i,t} + \beta_2 D * ACC_{i,t} + \beta_3 CFO_{i,t} + \beta_4 D * CFO_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy Regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.032*** (4.750)	0.030*** (5.439)	0.031*** (5.374)	0.022 (1.638)
$ACC_{i,t}$	-0.008 (-0.172)	0.104*** (2.641)	0.062** (2.524)	0.065** (2.231)
$D*ACC_{i,t}$				-0.003 (-0.064)
$CFO_{i,t}$	0.470*** (12.064)	0.579*** (16.593)	0.520*** (23.325)	0.506*** (19.025)
$D* CFO_{i,t}$				0.041 (1.09)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	783	976	2429	2429
Adj. R ² (%)	30.1	31.3	30.1	30.0

Notes: This table reports results on the predictive ability of accounting accruals and operating cash flow from pooled cross-sectional OLS regressions. The robust t-statistics are in parentheses where, ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. $CFO_{i,t+1}$ is one-year-ahead operating cash flow defined as the summation of income before depreciation and interest income less interest expense, tax expense and changes in working capital scaled by total assets. D is an IFRS dummy equal to 1 if a firm observation is from years following the IFRS adoption year and 0 otherwise. $ACC_{i,t}$ is accounting accruals defined as the difference between $NI_{i,t}$ and $CFO_{i,t}$. $CFO_{i,t}$ is the contemporaneous operating cash flow scaled by total assets and is as defined previously. $D*ACC_{i,t}$ and $D*CFO_{i,t}$ are interaction variables capturing the incremental effect of IFRS on the predictive ability of accounting accruals and the operating cash flow respectively. N is the number of observations and $\varepsilon_{i,t}$ is the random or error term of the firm i at the end of the period t . The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Morocco, Botswana and Egypt.

7.4.3 The Separate Predictive Ability of Earnings and Cash Flow

Table 7-3 reports results on the individual ability of earnings and cash flow to predict future operating cash flow (Earnings and cash flow models) and the ability of current earnings to predict future earnings (Earnings persistence model). The earnings and cash flow models show that contemporaneous cash flow dominates earnings in predicting future cash flow. For instance, the incremental predictive power of cash flow over earnings is 12.9% (30.7-17.8) while that of earnings over cash flow is 0.9% (30.7-29.8). Moreover, both models indicate that the incremental effect of IFRS on earnings and cash flow predictability is larger for cash flow than earnings; however both coefficients are not statistically significant implying that IFRS does not result in improved predictive ability of earnings and cash flow.

On the other hand, consistent with Giner and Reverte (2003) and Finger (1994), the earnings persistence model shows that current earnings are a significant predictor of future earnings. Furthermore, the incremental effect of IFRS on the predictive ability of earnings is positive but not statistically significant. Giner and Reverte (2003) use similar model in the context of Europe. They report the predictive coefficients of 0.635, 0.541, 0.411 and 0.377 and the predictive power of 50.1%, 25.1%, 20.5% and 14.1% for the U.K., Spain, France, and Germany respectively. In this chapter, I report the predictive coefficients ranging from 0.500 to 0.518 and the predictive power of 28.7%. In summary, the findings show little support suggesting that IFRS increases the ability of earnings and cash flow to predict future cash flow and earnings.

Table 7-3 The Comparative Predictive Ability of Earnings, Cash Flow and Earnings Persistence Models.

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \varepsilon_{i,t} \text{ Earnings Model}$$

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 CFO_{i,t} + \alpha_2 D * CFO_{i,t} + \varepsilon_{i,t} \text{ Cash Flow Model}$$

$$NI_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \varepsilon_{i,t} \text{ Earnings Persistence Model}$$

	Earnings Model		Cash Flow Model		Earnings Persistence Model	
Variable	M1	M2	M3	M4	M5	M6
α_0	0.057*** (9.279)	0.053*** (4.501)	0.031*** (5.454)	0.024** (2.226)	0.023*** (4.32)	0.012 (1.092)
$NI_{i,t}$	0.401*** (15.804)	0.394*** (12.471)			0.518*** (20.052)	0.500*** (15.963)
$D * NI_{i,t}$		0.018 (0.384)				0.05 (1.097)
$CFO_{i,t}$			0.505*** (23.884)	0.494*** (19.011)		
$D * CFO_{i,t}$				0.032 (0.842)		
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2429	2429	2429	2429	2429	2429
Adj. R ² (%)	17.8	17.8	29.8	29.8	28.7	28.7

Notes: This table reports the cross sectional pooled OLS results from the earnings, cash flow and earnings persistence models. The robust t-statistics are shown in parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. The sample period spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Egypt, Kenya, Morocco and Botswana. All variables are as defined previously and are also included in Appendix 7-1 at the end of this chapter.

7.4.3 The Year by Year Results

Table 7-4 reports the year by year results on the predictive ability of earnings and cash flow. The results show that contemporaneous cash flow dominates earnings in predicting future cash flow over time. For instance, the average earnings predictive coefficient is 0.135 while that of cash flow is 0.444. The highest earnings predictive coefficient is 0.211 occurring in 2008 by this year all countries had already adopted IFRS. The lowest earnings predictive coefficient is -0.005 which happened in 2002 during a strict pre-IFRS period (i.e. 2002-2004). However, the coefficient is not statistically significant.

Moreover, the highest cash flow predictive coefficient is 0.510 occurring in 2006. By this year, Botswana, South Africa, Kenya and Egypt had already adopted IFRS. The lowest cash flow predictive coefficient is 0.387 occurring in 2004 before all countries had adopted IFRS officially. Moreover, the average joint predictive power of earnings and cash flow is 30.8%. The highest and lowest predictive power of earnings and cash flow occur in 2003 and 2002 respectively. Also, it can be observed that the predictive coefficients and power change to a large extent from 2002 to 2003. It is not yet known what happened during these years. In summary, the results suggest that current operating cash flow dominates earnings in predicting future cash flow.

Table 7-4 The Predictive Ability of Earnings and Cash Flow on Yearly Basis

$$\text{Model} = CFO_{i,t+1} = \alpha_0 + \gamma_1 NI_{i,t} + \gamma_2 CFO_{i,t} + \varepsilon_{i,t}$$

Coeff.	YEARS							Avg
	2002	2003	2004	2005	2006	2007	2008	
α_0	0.040*** (5.41)	0.035*** (4.25)	0.050*** (6.24)	0.031*** (3.82)	0.027*** (3.84)	0.032*** (4.02)	0.038*** (4.518)	
$NI_{i,t}$	-0.005 (-0.06)	0.197** (2.33)	0.129* (1.69)	0.163* (2.2)	0.088 (1.41)	0.162** (2.23)	0.211** (2.578)	0.135
$CFO_{i,t}$	0.400*** (5.69)	0.494*** (6.78)	0.387*** (6.27)	0.453*** (5.93)	0.510*** (8.25)	0.474*** (7.27)	0.389*** (5.416)	0.444
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	347	347	347	347	347	347	347	347
Adj.R ² (%)	22.1	36.5	28.6	32.1	33.8	33.4	29.4	30.8

Notes: This table reports results on the predictive ability of earnings and cash flow on yearly basis. The robust t-statistics are in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-tests. $CFO_{i,t+1}$ and $CFO_{i,t}$ is the one-year-ahead and contemporaneous cash flow respectively defined as the income before depreciation minus interest expense plus interest revenue less tax expense and changes in working capital standardized by total assets. $NI_{i,t}$ is income after depreciation less interest expense plus the interest revenue less tax expense scaled by total assets. N is the number of observations and $\varepsilon_{i,t}$ is the random or error term of the firm i at the end of the period t . The sample period spans from 2002 to 2009 involving 347 firms from five countries namely; South Africa, Egypt, Kenya, Morocco and Botswana. The definitions of variables are also included in Appendix 7-1 at the end of this chapter.

7.4.4 Legal Origin and the Predictability of Earnings and Cash Flow

Table 7-5 reports results about the impact of legal origin on the predictive ability of earnings and cash flow. Panels A and B represent dummy variable and separate sample regressions respectively. Results in panel A show that the predictive ability of earnings decreases in common law firms and increases in code law firms (see for instance M2 and M4). However, both coefficient changes are not statistically significant at conventional levels. Similarly, the incremental effect of common law legal origin on the predictive coefficient of earnings before IFRS is -0.161 (t-stat = -1.911, $p < 0.1$) in M6 and -0.142 (t-stat = -1.566) in M7. Also, after IFRS, the incremental effect of common law legal origin is negative and insignificant.

On the other hand, the predictive coefficient of cash flow increases in common law firms and decreases in code law firms (M2 and M4) though the coefficient changes are statistically insignificant. The common law legal origin incremental effect on the predictive coefficient before IFRS is 0.114 (t-stat = 1.921, $p < 0.1$) and after IFRS is 0.044 (t-stat = 0.363). These findings suggest that to some extent, IFRS leads to the increased importance of cash flow in common law firms and earnings in code law firms. The explanatory and predictive power of the model is almost unaltered before and after IFRS in both common and code law firms (M1-M4) and in the whole sample regressions (M5-M7).

Separate sample regression results in panel B show qualitatively similar observations. For example, the predictive coefficient of earnings decreases in common law firms after IFRS but it increases in code law firms while that of cash flow increases in common law firms and decreases in code law firms. The overall joint predictive power of earnings and cash flow measured through the adjusted R^2 increases after IFRS to a larger extent in code law than common law. In summary, results do not support the assertion that the predictive ability of earnings and cash flow increases more in common than in code law countries after IFRS. Accordingly, hypothesis 2 is not supported.

Table 7-5 The Impact of Legal Origin on the Predictive Ability of Earnings and Cash Flow

Panel A Dummy Variable Regressions

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 C * NI_{i,t} + \alpha_3 D * NI_{i,t} + \alpha_4 C * D * NI_{i,t} + \alpha_5 CFO_{i,t} + \alpha_6 C * CFO_{i,t} + \alpha_7 D * CFO_{i,t} + \alpha_8 C * D * CFO_{i,t} + \varepsilon_{i,t}$$

	Common Law		Code Law		Whole Sample		
	Before	After	Before	After			
Variable	M1	M2	M3	M4	M5	M6	M7
α_0	0.031*** (4.986)	0.027* (1.909)	0.070*** (3.879)	0.063** (2.111)	0.030*** (5.131)	0.028*** (4.842)	0.035** (2.280)
$NI_{i,t}$	0.102*** (3.579)	0.116*** (3.098)	0.420*** (4.146)	0.388*** (3.190)	0.133*** (4.565)	0.266*** (3.446)	0.258*** (3.085)
$C * NI_{i,t}$						-0.161* (-1.911)	-0.142 (-1.566)
$D * NI_{i,t}$		-0.042 (-0.721)		0.100 (0.569)			0.048 (0.384)
$C * D * NI_{i,t}$							-0.074 (-0.598)
$CFO_{i,t}$	0.442*** (15.164)	0.421*** (11.079)	0.403*** (6.867)	0.416*** (6.144)	0.439*** (16.939)	0.355*** (6.987)	0.354*** (6.174)
$C * CFO_{i,t}$						0.114* (1.921)	0.102 (1.462)
$D * CFO_{i,t}$		0.064 (1.098)		-0.045 (-0.446)			-0.005 (-0.046)
$C * D * CFO_{i,t}$							0.044 (0.363)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1981	1981	448	448	2429	2429	2429
Adj. R^2 (%)	26.8	26.8	39.0	38.8	30.7	30.9	30.8

Notes: This panel reports results on the impact of legal origin on earnings and cash flow predictability from dummy variable regressions. The robust t-statistics are shown in parentheses. ***, **, and * denote robust statistical significance at the 1%, 5% and 10% level respectively according to the two tailed t-tests. Variables are as defined previously and are also included in Appendix 7-1 at the end of this chapter.

Panel B Separate Sample Regressions

$$CFO_{i,t+1} = \alpha_0 + \gamma_1 NI_{i,t} + \gamma_2 CFO_{i,t} + \varepsilon_{i,t}$$

	Common Law		Code Law	
	Before	After	Before	After
Variable	M1	M2	M3	M4
α_0	0.033*** (4.445)	0.028*** (4.873)	0.001 (0.052)	0.105*** (2.861)
$NI_{i,t}$	0.102* (1.695)	0.089** (2.194)	0.112 (1.006)	0.634*** (3.842)
$CFO_{i,t}$	0.404*** (6.778)	0.489*** (11.947)	0.362*** (4.028)	0.334*** (3.329)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	566	832	200	144
Adj. R ² (%)	22.5	29.7	21.0	42.7

Notes: This panel reports results on the impact of legal origin on earnings and cash flow predictability from separate sample regressions. The robust t-statistics are shown in parentheses. ***, **, and * denote robust statistical significance at the 1%, 5% and 10% level respectively according to the two tailed t-tests. Variables are as defined previously and are also included in Appendix 7-1 at the end of this chapter.

7.4.5 The Predictive Ability of Earnings and Cash Flow Based on Industry Classification

So far, the analysis is based on a sample consisting of different industries including banks, financial and non-financial firms. However, the nature of financial statements is different especially for financial and non-financial firms. Financial firms are heavily dependent on financial assets and liabilities. Accordingly, I classify firms into banks, financial and non-financial or industrial categories and report results relating to this classification in Table 7-6. This classification is important because fair values are commonly used in banks and other financial firms rather than industrial firms.

In general, except for banks, contemporaneous cash flow dominates earnings in predicting future operating cash flow. Moreover, the earnings predictive coefficients are

larger for banks followed by non financial and financial firms. Also, IFRS increases the predictive ability of earnings only in banks and non financial firms. On the other hand, the predictive ability of cash flow is larger for non financial firms followed by financial firms and banks. The incremental effect of IFRS on the predictive ability of cash flow is negative in banks and financial firms but positive in non-financial firms.

The predictive power measured through the adjusted R^2 is largest in non-financial firms followed by financial and bank firms. Moreover it increases slightly after IFRS in banks (from 13.3% to 13.6%) and non-financial firms (from 33.0% to 33.3%). However, it decreases marginally from 15.4% to 15.3% in financial firms. The changes in the predictive power are relatively small to influence inferences. Consistent with Deans (2007), results suggest that fair value measures are also important to other sectors of the economy apart from the banking industry. Generally, these findings provide no empirical support that IFRS increases the predictive ability and power of earnings and cash flow.

Table 7-6 An Industry Analysis on the Predictive Ability of Earnings and Cash Flow

$$CFO_{i,t+1} = \beta_0 + \beta_1 NI_{i,t} + \beta_2 D * NI_{i,t} + \beta_3 CFO_{i,t} + \beta_4 D * CFO_{i,t} + \varepsilon_{i,t}$$

	Banks		Financial		Non-Financial or Industrial	
Variables	Before	After	Before	After	Before	After
α_0	0.017 (1.169)	0.019 (1.270)	0.024** (2.191)	0.025** (2.247)	0.033*** (5.083)	0.035*** (5.295)
$NI_{i,t}$	0.473** (2.277)	0.362 (1.447)	0.096 (1.544)	0.095 (1.220)	0.124*** (4.001)	0.099*** (2.639)
$D * NI_{i,t}$		0.466 (0.901)		0.003 (0.023)		0.111 (1.491)
$CFO_{i,t}$	0.188** (2.226)	0.240** (2.495)	0.319*** (5.404)	0.334*** (4.876)	0.435*** (14.731)	0.421*** (11.470)
$D * CFO_{i,t}$		-0.306 (-1.212)		-0.087 (-0.524)		0.043 (0.681)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	231	231	469	469	1960	1960
Adj. R ² (%)	13.3	13.6	15.4	15.3	33.0	33.3

Notes: This table reports the cross sectional pooled OLS results on earnings and cash flow predictability impact of IFRS based on industry classification i.e. Banks, financial and non financial firms. The definitions for banks, financial and non-financial firms are as provided in chapters 5 and 6. The robust t-statistics are shown in parentheses. ***, **, and * denote robust statistical significance at 1%, 5% and 10% levels respectively according to the two tailed t-tests. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Morocco, Egypt, Kenya and Botswana. Variables are as defined previously and are also included in Appendix 7-1 at the end of this chapter.

7.4.6 The Country by Country Results on Earnings and Cash Flow Predictability

Table 7-7 reports the country by country results. They show that contemporaneous cash flow dominates earnings in predicting future cash flow in South Africa, Morocco and Kenya while earnings dominate in Egypt and Botswana. On the one hand, the incremental effect of IFRS on the predictive ability of earnings is positive but statistically insignificant in all countries except in South Africa where it is negative and statistically insignificant.

On the other hand, the incremental effect of IFRS on the predictive ability of cash flow is negative in all countries except in South Africa. In South Africa, the IFRS incremental effect is statistically significantly positive at 10% level of significance. The overall earnings and cash flow predictive power decreases slightly in all countries except South Africa. For instance, it decreases from 27.3% to 26.9%, 34.5% to 34.4%, and 26.0% to 25.4% and from 16.2% to 14.9% in Egypt, Morocco, Kenya and Botswana respectively. However, it increases slightly from 28.7% to 28.9% in South Africa. In summary, these findings reflect the pooled regression results reported in Table 7-1 and they suggest that IFRS does not lead to improved predictive ability of earnings and cash flow in African capital markets.

Table 7-7 The Earnings and Cash Flow Predictability Impact of IFRS: The Country by Country Results

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \varepsilon_{i,t}$$

SA			Egypt		Morocco		Kenya		Botswana	
Variable	Before	After	Before	After	Before	After	Before	After	Before	After
α_0	0.029*** (4.389)	0.032*** (4.754)	0.022 (1.132)	0.026 (1.31)	0.055** (2.073)	0.058** (2.186)	0.033 (1.450)	0.039 (1.564)	0.051 (0.926)	0.054 (0.956)
$NI_{i,t}$	0.082*** (2.747)	0.082** (2.220)	0.528*** (3.385)	0.472** (2.332)	0.336*** (2.658)	0.307** (2.458)	0.265* (1.878)	0.207 (1.182)	0.407** (2.260)	0.365* (1.778)
$D * NI_{i,t}$		-0.001 (-0.019)		0.200 (0.658)		0.574 (1.346)		0.233 (0.765)		0.209 (0.467)
$CFO_{i,t}$	0.475*** (14.920)	0.438*** (10.750)	0.321*** (3.926)	0.330*** (3.117)	0.468*** (5.276)	0.465*** (5.246)	0.359*** (3.830)	0.361*** (3.111)	0.265** (2.182)	0.285** (2.191)
$D * CFO_{i,t}$		0.130* (1.921)		-0.043 (-0.242)		-0.230 (-0.637)		-0.011 (-0.058)		-0.121 (-0.249)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1694	1694	280	280	168	168	168	168	119	119
Adj. R ² (%)	28.7	28.9	27.3	26.9	34.5	34.4	26	25.4	16.2	14.9

Notes: This table reports the country by country cross sectional OLS results. The robust t-statistics are in parentheses. ***, **, and * denote robust statistical significance at the 1%, 5% and 10% respectively according to the two-tailed t-test. The definitions of the variables are as provided previously and are also included in Appendix 7-1 at the end of this chapter. N is the number of observations and $\varepsilon_{i,t}$ is the random or error term of the firm i at the end of the period t .

7.4.7 Conservative Culture and the Predictive Ability of Earnings and Cash Flow

Table 7-8 reports results on the impact of culture on the predictive ability of earnings and cash flow. M1 is a base model while M2 and M3 represent dummy variable regressions which use the Hofstede (1980) cultural dimension scores. M4 and M5 represent dummy variable regressions which use the House *et al.*, (2004) culture scores.

The incremental effect of cultural conservatism on the predictive coefficient of earnings is significantly positive before IFRS in both Hofstede (1980) and House *et al.*, (2004) dummy variable regressions. After IFRS, the effect is still positive but it is only statistically significant in House *et al.*, (2004) dummy regressions. These findings may be attributable to; (i) the assertion that cultural conservatism facilitates managers to manage current earnings either upward or downward depending on the anticipation of future earnings and cash flow (Han *et al.*, 2010) and (ii) the argument that managers in culturally embedded countries report higher earnings to avoid the responsibility to investors and other capital providers (Risberg, 2005).

The incremental effect of conservative culture on the predictive ability of cash flow is negative across all models both before and after IFRS. Consistent with prediction, the effect is more pronounced after IFRS especially for House *et al.*, (2004) cultural values' regression results. This implies that conservative culture is associated with a reduction in the predictive ability of cash flow. The adjusted R^2 increases slightly from 32.4% to 35.0% in Hofstede (1980) and 35.2% in House *et al.*, (2004) dummy variable regressions. These findings suggest that cultural conservatism is an important control variable for earnings and cash flow predictability international accounting research. In summary, the findings are consistent with prediction especially on the impact of conservative culture on the predictive ability of cash flow but not earnings.

Table 7-8 The Impact of Culture on the Predictive Ability of Earnings and Cash Flow

$$CFO_{i,t+1} = \beta_0 + \beta_1 NI_{i,t} + \beta_2 CON * NI_{i,t} + \beta_3 D * NI_{i,t} + \beta_4 CON * D * NI_{i,t} + \beta_5 CFO_{i,t} + \beta_6 CON * CFO_{i,t} + \beta_7 D * CFO_{i,t} + \beta_8 CON * D * CFO_{i,t} + \varepsilon_{i,t}$$

Variable	Hofstede (1980) Scores			House <i>et al.</i> , (2004) Scores	
	M1	M2	M3	M4	M5
α_0	0.028*** (4.916)	0.031*** (5.536)	0.015** (2.390)	0.030*** (5.278)	0.015** (2.370)
$NI_{i,t}$	0.120*** (4.126)	0.102*** (3.470)	0.094*** (3.241)	0.101*** (3.382)	0.096*** (3.356)
$CON * NI_{i,t}$		0.514*** (5.401)	0.436*** (4.377)	0.633*** (5.584)	0.492*** (4.187)
$D * NI_{i,t}$			0.034 (0.911)		0.039 (1.049)
$CON * D * NI_{i,t}$			0.158 (0.573)		1.671** (2.329)
$CFO_{i,t}$	0.460*** (17.543)	0.455*** (17.125)	0.428*** (15.745)	0.460*** (16.732)	0.428*** (15.882)
$CON * CFO_{i,t}$		-0.105 (-1.409)	-0.105 (-1.327)	-0.198* (-1.920)	-0.125 (-1.177)
$D * CFO_{i,t}$			0.170*** (4.925)		0.168*** (4.922)
$CON * D * CFO_{i,t}$			-0.082 (-0.351)		-1.292* (-1.947)
Year Effects	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes
N	2310	2310	2310	2142	2310
Adj. R^2 (%)	32.4	33.2	35.0	33.8	35.2

Notes: This table reports the cross sectional OLS results about the impact of conservative culture on the predictive ability of earnings and cash flow. The robust t-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. For Hofstede (1980) regressions, the sample comprises of South Africa, Kenya, Morocco and Egypt. However, for House *et al.*, (2004), the sample consists of South Africa, Morocco and Egypt. Botswana and Kenya are dropped out due to lack of culture data. The definitions of variables are as reported in earlier chapters but are also included in Appendix 7-1 at the end of this chapter.

7. 4.8 Robustness Tests and Additional Analysis

7. 4.8.1 Robust Regressions

Table 7-9 reports results from the robust regressions. In general, the results indicate that contemporaneous cash flow dominates earnings in predicting future operating cash flow. In particular, separate sample regressions show that the predictive ability of earnings increases after IFRS while that of cash flow decreases. Similarly, the incremental effect of IFRS on the predictive ability of earnings is positive but statistically insignificant. On the contrary, the incremental effect of IFRS on the cash flow predictability is negative and statistically insignificant.

The overall joint predictive power of earnings and cash flow decreases from 54.0% to 47.0% in separate sample regressions. Similarly, dummy variable regressions show no significant increase in terms of the joint predictive power of earnings and cash flow after IFRS. For instance, the predictive power increases marginally from 50.8% to 50.9% after IFRS. In summary, these findings corroborate the results reported in Table 7-1 and they provide little empirical evidence suggesting that IFRS increases the predictive ability of earnings and operating cash flow.

Table 7-9 The Earnings and Cash Flow Predictive Coefficients from the Robust OLS Regressions

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy Regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.019*** (3.308)	0.013*** (2.591)	0.020*** (4.312)	0.026*** (3.050)
$NI_{i,t}$	0.082** (2.323)	0.159*** (4.929)	0.134*** (6.799)	0.120*** (4.918)
$D * NI_{i,t}$				0.036 (0.847)
$CFO_{i,t}$	0.667*** (21.922)	0.599*** (19.755)	0.625*** (35.11)	0.646*** (30.05)
$D * CFO_{i,t}$				-0.057 (-1.539)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	783	976	2429	2429
Adj. R ² (%)	54.0	47.0	50.8	50.9

Notes: This table reports the cross sectional robust OLS regressions results about the impact of IFRS on the predictive ability of earnings and cash flow. The t-statistics are shown in the parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Morocco, Botswana and Egypt. The definitions of variables are as provided in the previous chapters but are also included in Appendix 7-1 at the end of this chapter.

7. 4.8.2 Two-Years Prediction of Earnings and Cash flow

Schipper and Vincent (2003) argue that the prediction of earnings and cash flow is affected by the prediction period and that there is no theoretical ground for a usually one-year prediction. Therefore, I use Van der Meulen *et al.*, 's (2007) two-year prediction models as part of robustness check. Table 7-10 reports results on the ability of current and past earnings to predict one-year earnings and cash flow, and the ability of contemporaneous and one year lagged cash flow to predict one-year cash flow.

Consistent with Van der Meulen *et al.*, (2007), results indicate that current earnings are a better predictor of future earnings than lagged earnings. Moreover, the incremental effect of IFRS on the earnings persistence coefficient is positive for current earnings and negative for lagged earnings but both are not statistically significant. The explanatory and predictive power of earnings remains almost unaltered.

The contemporaneous and past cash flow dominates earnings in predicting future operating cash flow. Also, current cash flow and earnings better predict future operating cash flow than lagged cash flow and earnings respectively. The IFRS incremental effect coefficients on the current and lagged earnings are both negativesuggesting the inability of IFRS earnings to predict future cash flow. On the other hand, the incremental effect of IFRS on the contemporaneous cash flow is negative while that on the lagged cash flow is positive but both are statistically insignificant. Similarly, the explanatory and predictive power of earnings and cash flowremains almost unchanged after IFRS. In summary, these findings suggest that IFRS does not lead to increased predictive ability of earnings and cash flow and they corroborate the results reported in Table 7-1.

Table 7-10 The Earnings and Cash Flow Predictability: Two-Years Prediction

$$NI_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 NI_{i,t-1} + \alpha_4 D * NI_{i,t-1} + \varepsilon_{i,t} \quad \text{M1 and M2}$$

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 NI_{i,t-1} + \alpha_4 D * NI_{i,t-1} + \varepsilon_{i,t} \quad \text{M3 and M4}$$

$$CFO_{i,t+1} = \beta_0 + \beta_1 CFO_{i,t} + \beta_2 D * CFO_{i,t} + \beta_3 CFO_{i,t-1} + \beta_4 D * CFO_{i,t-1} + \varepsilon_{i,t} \quad \text{M5 and M6}$$

Variable	M1	M2	M3	M4	M5	M6
α_0	0.018*** (3.329)	0.015 (1.071)	0.057*** (9.183)	0.068*** (4.703)	0.032*** (5.589)	0.023* (1.878)
$NI_{i,t}$	0.463*** (12.949)	0.453*** (10.455)	0.344*** (10.265)	0.351*** (8.491)		
$D * NI_{i,t}$		0.023 (0.461)		-0.015 (-0.301)		
$NI_{i,t-1}$	0.140*** (4.085)	0.142*** (3.774)	0.158*** (4.848)	0.167*** (4.570)		
$D * NI_{i,t-1}$		-0.006 (-0.112)		-0.033 (-0.610)		
$CFO_{i,t}$					0.420*** (14.619)	0.426*** (12.125)
$D * CFO_{i,t}$						-0.015 (-0.351)
$CFO_{i,t-1}$					0.202*** (7.585)	0.189*** (6.377)
$D * CFO_{i,t-1}$						0.051 (1.106)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	2082	2082	2082	2082	2082	2082
Adj. R ² (%)	31.3	31.2	20.6	20.6	34.3	34.2

Notes: This table reports results about the impact of IFRS on the predictive ability of earnings and cash flow for the case of two-year prediction. The robust t-statistics are shown in parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% levels according to a two – tailed t-test. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Botswana, Egypt and Morocco. The definitions of variables are as provided in previous chapters but are also included in Appendix 7-1 at the end of this chapter.

7.4.8.3 Mitigating the Concerns of Uneven Sample Representation

To reduce the problems induced by uneven sample representation on estimated results, consistent with Kang *et al.*, (2004), I use the firm's country of domicile as an analytical weight and I report results in Table 7-11. Separate sample regressions show that both the predictive coefficients of earnings and cash flow increase after IFRS. However, the predictive power of earnings and cash flow decreases slightly from 33.1% to 32.7%.

On the other hand, the incremental effect of IFRS on the predictive ability of earnings is positive but not statistically significant. Moreover, the incremental effect of IFRS on the cash flow predictability is zero and statistically insignificant. Also, dummy variable regressions indicate that the joint predictive power of earnings and cash flow decreases marginally after IFRS from 33.0% to 32.9%. In summary, these findings suggest that IFRS does not increase the predictive ability of earnings and cash flow and are qualitatively not dissimilar to those reported in Table 7-1.

Table 7-11 Weighted Least Squares (WLS) Regression Estimates on Earnings and Cash Flow

Predictability Impact of IFRS

$$CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy Regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.030*** (3.378)	0.025*** (3.812)	0.028*** (4.761)	0.023** (2.346)
$NI_{i,t}$	0.107** (2.192)	0.204*** (5.184)	0.170*** (6.777)	0.162*** (5.349)
$D * NI_{i,t}$				0.025 (0.466)
$CFO_{i,t}$	0.427*** (11.651)	0.432*** (12.54)	0.418*** (20.143)	0.418*** (17.081)
$D * CFO_{i,t}$				0.000 (0.001)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	783	976	2429	2429
Adj. R^2 (%)	33.1	32.7	33.0	32.9

Notes: This table reports regression results from pooled cross sectional weighted least squares (WLS) regressions on the impact of IFRS adoption on the predictive ability of earnings and cash flow. The regressions are analytically weighted by the firm's country of domicile. The t-statistics are shown in the parentheses. ***, **, and * denote statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. The sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Morocco, Botswana and Egypt. The definitions of variables are as provided in previous chapters but are also included in Appendix 7-1 at the end of this chapter.

7.4.8.4 Controls for Size, Leverage and Accruals.

Atwood *et al.*, (2011) argue that earnings management reduces the predictive ability of earnings. This practice is facilitated by the reporting discretion available in accounting standards and is usually done by altering accounting accruals (Leuz *et al.*, 2003). Moreover, Leuz *et al.*, (2003) argue that although accounting reporting discretion can be used to increase the informativeness of earnings in regimes with strong shareholders protection rules, it distorts quality of earnings in weak shareholders protection rules' countries like African countries. Accordingly, I include the accruals ratio as a measure of the extent to which managers can exhibit discretion in reported earnings (Leuz *et al.*, 2003). Accruals ratio is defined as the absolute ratio of accounting accruals to cash flows from operations.

Also, I include firm size and leverage as control variables. Firm size and leverage are as defined previously or in Appendix 7-1. Since, large firms are usually followed by financial analysts, institutional investors and the financial press (Godfrey *et al.*, 2006), managers are compelled to disclose to the public any private information they possess relating to future cash flows. *Ceteris Paribus*, this implies that the predictive ability of earnings and cash flow is likely to be greater in large firms than in small firms. For instance, Collins *et al.*, (1987) find that earnings in large firms are less volatile and more predictable than earnings in small firms. On the other hand, since leverage is inversely related to ERC (Godfrey *et al.*, 2006), thus it is also expected to be indirectly related to the predictive ability of earnings and cash flow.

Table 7-12 reports results on the predictability of earnings and cash flow when the firm characteristics are included. The results show that the predictive ability of earnings and cash flow does not increase after IFRS consistent with the main results reported in Table 7-1. In short, the results are not affected by the firm characteristics of size, leverage and the accruals ratio.

Table 7-12 The Predictive Ability of Earnings and Cash Flow:Firm Effects Included.

$$\text{Model} = CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \sum CV_{i,t} + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions	
	Before	After		
	M1	M2	M3	M4
α_0	-0.010 (-0.852)	0.022** (2.077)	0.014* (1.937)	0.017 (1.321)
$NI_{i,t}$	0.097* (1.662)	0.140*** (3.715)	0.115*** (4.191)	0.114*** (3.133)
$D * NI_{i,t}$				0.002 (0.036)
$CFO_{i,t}$	0.385*** (8.090)	0.409*** (10.627)	0.413*** (16.408)	0.417*** (13.208)
$D * CFO_{i,t}$				-0.013 (-0.281)
$SIZE_{i,t}$	0.009*** (4.333)	0.003** (2.475)	0.006*** (5.720)	0.006*** (5.698)
$LEV_{i,t}$	-0.000 (-0.286)	0.000*** (8.829)	0.000*** (11.379)	0.000*** (11.216)
$ACC/CFO_{i,t}$	0.008*** (3.656)	-0.005*** (-5.126)	-0.003*** (-3.418)	-0.003*** (-3.375)
Firm Effects	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	783	976	2429	2429
Adj. R ² (%)	33.5	41.3	36.8	36.8

Notes: This table reports results about the impact of IFRS adoption on the predictive ability of earnings and cash flow when the firm effects are included. The robust t-statistics are shown in the parentheses. ***, ** and * denote robust statistical significance at the 1%, 5% and 10% respectively according to the two tailed t-test. Control variables (CV) include *FIRMSIZE*, *LEVERAGE* and *ACCRUALS RATIO*. The definitions of the variables are as provided previously but are also included in Appendix 7-1 at the end of this chapter.

7.4.8.5 Fixed Effects Regressions

The Hausman (1978) test shows that fixed effects regressions are appropriate for this sample data and their results are reported in Table 7-13. The separate sample regression results show that the earnings predictive coefficients are positive and they increase after IFRS but are not statistically significant. On the other hand, the cash flow predictive coefficients are statistically significantly negative before and after IFRS. Moreover, the dummy variable regression (M4) indicates that the predictive coefficients of earnings and cash flow decrease after IFRS. However, the decreases are not statistically significant. In short, there is no evidence suggesting that IFRS increases the predictive ability of earnings and cash flow.

Table 7-13 Earnings and Cash Flow Predictability from Fixed Effects Regressions

$$\text{Model} = CFO_{i,t+1} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 D * NI_{i,t} + \alpha_3 CFO_{i,t} + \alpha_4 D * CFO_{i,t} + \eta_i + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy Regressions	
	Before	After		
	M1	M2	M3	M4
α_0	0.131*** (15.488)	0.102*** (13.881)	0.083*** (15.459)	0.104*** (10.090)
$NI_{i,t}$	0.005 (0.054)	0.053 (0.961)	0.061* (1.912)	0.069* (1.751)
$D * NI_{i,t}$				-0.019 (-0.351)
$CFO_{i,t}$	-0.202*** (-2.887)	-0.240*** (-4.545)	0.065** (2.194)	0.087** (2.500)
$D * CFO_{i,t}$				-0.072 (-1.451)
Year Effects	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes
N	783	976	2429	2429
Adj. R ² (%)	5.1	4.6	1.1	1.4

Notes: ***, ** and * denote robust statistical significance at the 1%, 5% and 10% respectively.

7.5 Chapter Summary

This chapter examines whether IFRS adoption in Africa increases the predictive ability of contemporaneous earnings and cash flow and whether culture and legal origin impact on earnings and operating cash flow predictability. This research is important because one stated general purpose of financial reporting is to provide accounting information that is useful for predicting future firm performance (IASB, 2010). Thus, it is interesting to empirically examine whether or not the application of IFRS in African capital markets is associated with greater predictive power of earnings and cash flow.

This study puts forward three hypotheses. First; it hypothesizes that IFRS adoption decreases the predictive ability of earnings and cash flow, second; the predictive ability of earnings and cash flow increases more in common than civil law countries and last; it predicts that there is an indirect relationship between conservative culture and the predictive ability of earnings and cash flow. The Kim and Kross (2005) model is used to test these hypotheses.

Consistent with prediction, results indicate that IFRS adoption does not result in the improved predictive ability of cash flow and earnings. The findings are contrary to the IASB and FASB expectations. A number of factors can be attributed to these findings; one being the decreased accounting conservatism resulting from the application of IFRS (Kim and Kross, 2005). Another factor may be measurement errors associated with the increased earnings volatility as a result of including the transitory components of earnings such as unrealized gains and losses in the statement of comprehensive financial performance. The results also show that operating cash flows dominate earnings and accounting accruals in predicting future operating cash flow and that the predictive ability of earnings and cash flow decreases with increasing prediction periods.

With respect to legal origin, the results do not provide empirical evidence suggesting that IFRS leads to incrementally more predictive ability of earnings and cash flow in common law than in code law countries. The findings further indicate that conservative culture is associated with greater (lower) predictive ability of earnings (cash flow) both before and after IFRS adoption. The policy implication is that IFRS earnings and cash flow are less predictive in frontier markets. Also, culture and legal environment matter in the predictive role of earnings and cash flow before and after IFRS adoption.

To this end, the usefulness of IFRS should be gauged in its tripartite role of valuation, conditional conservatism and prediction. Say it differently, the decision on whether or not IFRS increases the usefulness of accounting information in African capital markets is based on these attributes altogether. Thus, the following chapter offers conclusions including the summary of findings, limitations and the policy implications of the research. Moreover, it suggests a number of avenues for future research.

Appendix 7-1 Definitions of Variables

Variables	Definitions
$CFO_{i,t+1}$	One year-ahead cash flow from operations defined as the income before depreciation- interest expense + interest revenue- tax expense – changes in working capital scaled by total assets.
$CFO_{i,t}$	Contemporaneous operating cash flow defined as the income before depreciation- interest expense + interest revenue- tax expense – changes in working capital scaled by total assets.
$NI_{i,t}$	Contemporaneous earnings defined as the income after depreciation - interest expense + interest revenue- tax expense scaled by total assets.
$CFO_{i,t-1}$	Lagged operating cash flow defined as the income before depreciation- interest expense + interest revenue- tax expense – changes in working capital scaled by total assets.
$NI_{i,t-1}$	Lagged earnings defined as the income after depreciation - interest expense + interest revenue- tax expense scaled by total assets.
$NI_{i,t+1}$	One year-ahead earnings defined as the income after depreciation - interest expense + interest revenue- tax expense scaled by total assets.
$ACC_{i,t}$	Accounting accruals defined as $NI_{i,t} - CFO_{i,t}$ scaled by total assets or simply; $ACC_{i,t} = \Delta WC - Depreciation$.
D	An IFRS dummy equal to 1 if a firm observation is from years following the adoption year and 0 otherwise.
$D * CFO_{i,t}$	An interaction variable capturing the effect of IFRS adoption on the predictive ability of current operating cash flow.
$D * NI_{i,t}$	An interaction variable capturing the effect of IFRS adoption on the predictive ability of current earnings.
$D * ACC_{i,t}$	An interaction variable capturing the effect of IFRS adoption on the predictive ability of current accounting accruals.
$D * CFO_{i,t-1}$	An interaction variable capturing the effect of IFRS adoption on the predictive ability of lagged operating cash flow.
$D * NI_{i,t-1}$	An interaction variable capturing the effect of IFRS adoption on the predictive ability of lagged earnings.
C	A legal origin dummy equal to 1 if a firm observation is from common law countries and 0 otherwise.
$C * NI_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the predictive ability of earnings before IFRS.
$C * D * NI_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the predictive ability of current earnings after IFRS.

$C*CFO_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the predictive ability of contemporaneous operating cash flow before IFRS.
$C*D*CFO_{i,t}$	An interaction variable capturing the incremental impact of common law legal origin on the predictive ability of contemporaneous operating cash flow after IFRS.
$CON_{i,t}$	A cultural conservatism dummy equal to 1 if the conservatism value is greater than its median or 0 otherwise. Conservatism is calculated as the difference between uncertainty avoidance and individualism (Hope <i>et al.</i> , 2008 and Gray, 1988) using Hofstede (1980) and House <i>et al.</i> , (2004) cultural scores. For House <i>et al.</i> , (2004), individualism is the average value of institutional collectivism (I), in group collectivism (II) and human orientation index scores.
$CON*NI_{i,t}$	An interaction variable capturing the impact of conservative culture on the predictive ability of current earnings before IFRS.
$CON*D*NI_{i,t}$	An interaction variable capturing the impact of conservative culture on the predictive ability of current earnings after IFRS.
$CON*CFO_{i,t}$	An interaction variable capturing the impact of conservative culture on the predictive ability contemporaneous operating cash flow before IFRS.
$CON*D*CFO_{i,t}$	An interaction variable capturing the impact of conservative culture on the predictive ability contemporaneous operating cash flow after IFRS.
$ACC/CFO_{i,t}$	The absolute ratio of the accounting accruals to cash flow from operations.

CHAPTER EIGHT

CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

8.0 Introduction

The main objective of this thesis was to examine whether the application of IFRS in African capital markets is associated with greater usefulness of accounting information after the introduction of IFRS and controlling for the impact of culture and legal origin. Usefulness is defined as per the IASB (2010) conceptual framework and operationalized as price relevant information content, conditional conservatism, and predictability. In general, based on the findings, the thesis concludes that IFRS has not improved the usefulness of accounting information in the frontier markets of Africa, because, although it is incrementally value relevant its conditional conservatism and earnings and cash flow predictability are lower.

In particular, it finds that; (i) IFRS leads to greater information content of the book value of equity and overall value relevance but not earnings (ii) IFRS is not associated with greater conditional conservatism as a measure of stewardship to capital providers (iii) IFRS does not result in greater predictive ability of earnings and cash flow and (iv) culture and legal origin matter in value relevance, asymmetric earnings timeliness and earnings and cash flow predictability. Accordingly, culture and legal environment are important control variables in international accounting research and matter in the internationalization and convergence of accounting standards.

The rest of the chapter proceeds as follows; Section 8.1 outlines the background, motivation and research objectives. Section 8.2 summarizes the research findings from the three empirical chapters. Moreover, Section 8.3 discusses the policy implications of the thesis

while Section 8.4 discusses the research constraints. Section 8.5 suggests a number of fruitful avenues for further research while Section 8.6 summarizes the chapter.

8.1 Background and Objectives

The motivation of this thesis arises from the contemporary debate on fair value versus historical cost accounting and the widespread adoption of IFRS in Africa. Fair value accounting (FVA) is widely accepted by IASB as its measurement basis and an important working principle of IFRS. However, FVA only works well in the presence of active and liquid markets (Ball, 2008), a condition that is unlikely to be met in emerging capital markets of Africa. Moreover, SFAS 157 and IFRS 13 emphasize the use of quoted prices from active markets (mark to market or pure FVA) and model (mark to model) especially in illiquid markets when valuing assets and liabilities. The latter approach is likely to be applicable in African capital markets due to lack of active and liquid markets (Smith *et al.*, 2002 and Kenny and Moss, 1998) leading to less reliable estimated values of assets and liabilities and thus earnings.

Furthermore, IFRS is based on Anglo-Saxon culture and focuses on market led economies (Walker, 2010). This implies that it may not be as useful to other types of economies such as government or bank coordinated economies prevalent in the majority of African countries. Further, African culture is characterized by higher power distance and uncertainty avoidance and lower individualism and masculinity (Hofstede, 1980) which translates into secrecy, conservatism, uniformity and statutory control (Gray, 1988).

Also, most of IFRS adopters in Africa lack enforcement mechanisms (see for instance; Table 3, p.60) leading to partial or selective adoption of IFRS (Daske *et al.*, 2011, Anandarajan and Hasan, 2010, World Bank, 2010a and Dahawy *et al.*, 2002). This implies that even if IFRS is of “higher quality” than local GAAP (Barth *et al.*, 2008) its

benefits are not likely to accrue in African countries in a similar way they accrue in developed countries where there are strong enforcement mechanisms (Ball *et al.*, 2000, La porta *et al.*, 1997, 1998, 1999). Moreover, in a similar line of reasoning, Ball (2006) and Ball *et al.*, (2003) argue that accounting standards alone do not necessarily guarantee accounting quality.

Motivated by this background, I examine whether IFRS improves the usefulness of accounting information in African capital markets regardless of legal origin and cultural differences. Despite the fact that IFRS is widely adopted in Africa (Deloitte, 2011), there are relatively few studies examining its usefulness. Consistent with the IASB (2010) conceptual framework which focuses mainly on equity investment, IFRS is considered useful if it leads to an increase in the informativeness of earnings and book value of equity, asymmetric earnings timeliness and conditional conservatism and the predictive ability of contemporaneous earnings and operating cash flow.

The research objectives were fourfold; (i) to examine whether IFRS increases the value relevance of earnings and book value of equity through ERC, BRC and adjusted R^2 (ii) to examine whether IFRS changes asymmetric earnings timeliness and conditional conservatism (iii) to examine whether IFRS increases the predictive ability of earnings and cash flow and (iv) to examine whether culture and legal origin impact on value relevance, asymmetric earnings timeliness and conditional conservatism and the predictive ability of earnings and cash flow.

8.2 Summary of Main Findings

This Section provides the summary of research findings. In particular, it summarizes the main findings from the three empirical chapters, namely; value relevance of IFRS, asymmetric

earnings timeliness and conditional conservatism and the predictive ability of earnings and cash flow.

8.2.1 The Value Relevance of Earnings and Book Value of Equity

In chapter five I examine whether IFRS increases the information content of earnings and book value of equity and whether culture and legal origin impact on value relevance of IFRS. The primary research design employed is a variant of the Ohlson (1995) model. I find that IFRS increases the valuation role of book value of equity and overall value relevance but not earnings. The results hold for a number of subsample divisions, and robust to a number of alternative and robustness tests. The declining value relevance of earnings may partly be explained by the loss of investors' confidence on earnings as a performance measure due to assertion that IFRS earnings are based on unrealistic and unreliable measurements in illiquid markets. Also, it may be attributed to the fact that IFRS earnings include unrealized gains and losses which are not firm performance-oriented measures.

The findings are consistent with prior research which shows a declining value relevance of earnings and an increasing value relevance of book value of equity (e.g. Hung and Subramanyam, 2007, and Francis and Schipper, 1999). Moreover, these findings are consistent with and support the IASB (2010) focus on the statement of financial position rather than the statement of financial performance.

Furthermore, results indicate that IFRS increases the information content of earnings and book value of equity more in code law than common law countries. This finding may be explained by at least two possible reasons; (i) before IFRS, code law countries had conceptually different accounting standards from IFRS in terms of their orientations (Anandarajan and Hasan, 2010 and World Bank, 2010a), and (ii) two of the three common law countries, South Africa and Kenya, started early alignment of their GAAP with IFRS

since 1993 and 1998 respectively. This might have led investors in these countries not to distinguish local GAAP from IFRS when they formally adopted IFRS in 2005.

With respect to culture, the secretive culture prevalent in African countries is associated with a higher ERC before IFRS and a higher BRC after IFRS. Also, it slightly increases overall value relevance as measured through the adjusted R^2 . The higher ERC before IFRS may partly be attributed to the argument that managers in secretive societies tend to report higher earnings to avoid the responsibility to capital providers (Risberg, 2005 and Dahawy *et al.*, 2002). Also, it may be explained by the low disclosure level of local GAAP relative to IFRS. However, after IFRS, the increase in BRC may be explained by the financial reporting flexibility offered by the IFRS especially in fair value hierarchy that allows subjective decisions and discretion on the assumptions, methods and inputs when measuring assets and liabilities.

8.2.2 Asymmetric Earnings Timeliness and Conditional Conservatism

In chapter six I examine whether IFRS changes asymmetric earnings timeliness and conditional conservatism and condition the analysis by the impact of culture and legal origin. I extend and use the Basu (1997) model and a number of alternative models and robustness tests. Consistent with conditional conservative accounting, earnings are timelier in recognizing bad news than good news. Moreover, I find evidence suggesting that IFRS leads to significant decrease in gains, loss and incremental loss recognition timeliness. This implies that IFRS results in reduced conditional conservatism thus it is relatively less suitable for contracting and stewardship purposes in African capital markets.

With regard to legal origin, consistent with prior studies, I find that common law earnings are timelier (untimely) in recognizing bad news (good news) than code law earnings. This means that African common law earnings are conditionally conservative when

compared to African code law earnings although this conservatism decreases after IFRS adoption. Furthermore, results show that cultural conservatism is associated with greater gains recognition timeliness especially before IFRS adoption. This observation may be attributed to the assertion that managers in culturally countries are aggressive reporters of gains rather than losses; in other words they tend to manage earnings upwards. However, after IFRS, the results may be attributed to the interaction between conservative culture and the financial reporting flexibility offered under IFRS. As a result, it reduces the tendency of managers to report more gains than losses in the statement of financial performance. Also, I find that cultural conservatism is associated with the reduction in loss, incremental loss and overall earnings timeliness.

8.2.3 Earnings and Cash Flow Predictability

In chapter seven I examine whether IFRS increases the predictive ability of earnings and cash flow and the conditioning roles of legal origin and culture. I extend and employ the Kim and Kross (2005) model. Consistent with the hypothesis, results suggest that IFRS does not lead to an increase in the predictive ability of cash flow and earnings. More importantly, I find that cash flow dominates earnings and accruals in predicting future operating cash flow for one year and two-years-ahead predictions. The results hold for a vast number of sub-sample divisions, alternative and robustness tests.

These findings do not support the IASB (2010) and FASB (2010) expectations that IFRS is associated with greater predictive ability of earnings and cash flow. This implies that IFRS neither increases the importance of cash flow nor the importance of earnings in African capital markets. The results may partly be explained by the fair value opponents' assertion that fair value measures are more transitory, more volatile and thus less predictable. This is due to inclusion of non performing items such as unrealized gains and losses in the statement of financial performance. Also, investors might be losing confidence on fair value measures

due to possible measurement errors and management bias resulted from applying IFRS in illiquid African markets.

The results based on common-code law dichotomization provide no empirical support to the contention that IFRS increases the predictive ability of earnings and cash flow more in common law than in code law firms. Furthermore, the findings show that conservative culture is associated with greater predictive coefficients of earnings especially before IFRS adoption. However, conservative culture is associated with the reduction of the predictive ability of cash flow.

8.3 Policy Implications

The findings of this thesis have a number of policy implications. First, results provide evidence on informed feedback to the fair value versus historical cost debate in that IFRS earnings are less informative to investors, less timely and less predictive in illiquid capital markets. This implies that IFRS earnings are not incrementally useful to market participants in the sampled African capital markets. This is in contrast to the widely advocated view by the IASB and fair value proponents that IFRS earnings are incrementally more useful than local GAAP earnings.

Second, culture is an important control variable to international accounting and finance research and one of the determining factors for successful implementation of IFRS adoption and the convergence of international financial reporting standards (IFRS). This conclusion is consistent with the Ball (2006) and Schipper (2005) argument that the internationalization of accounting standards is impeded by cross-country cultural differences among other factors.

Third, the findings that IFRS is incrementally more value relevant in code law than common law countries implies that IFRS is also useful to code law countries. However, the

findings that common law firms' earnings are more conditionally conservative than code law firms' earnings imply that capital providers have greater accounting safeguards in common law countries through the stewardship role of management. Also, the findings that IFRS does not lead to a greater predictive role of earnings and cash flow in both common law and code law countries, may imply that IFRS is less useful to market participants in African capital markets and that 'the one fits for all' rule of IFRS is likely to be less appropriate. In summary, the policy implication that emerges is that accounting standards should fit a particular kind of economy or business settings rather than trying to fit different types of economies and business settings to a single model of financial reporting (Walker, 2010). In short, the homogenization of international financial reporting standards (IFRS) and the global convergence agenda widely advocated by IASB and FASB may not be fully attainable.

Fourth, the view by IASB (2010) and FASB (2010) that IFRS increases the predictive ability of earnings and cash flow are not supported in African capital markets. This may partly be attributed to the lack of IFRS enforcement mechanisms leading to firms adopting IFRS selectively (Anandarajan and Hasan, 2010 and Dahawy *et al.*, 2002). As a result, the policy implication is that more regulation and enforcement mechanisms are required as Bova (2009) argues that the capital markets benefits of IFRS only accrue to firms operating in strong regulatory accounting systems.

8.4 Limitations

One of the main constraints to this thesis is data availability. Although by May 2011, twenty countries in Africa had already adopted IFRS (Deloitte, 2011); many of them do not have capital markets. For instance, Lesotho, Sierra Leone, Gambia and Madagascar lack capital markets which are an important source of market data.

Some countries (e.g. Tanzania, Malawi, Mauritius and Namibia) have relatively few listed companies during the sample period. Each of these countries has less than ten listed companies which meet the sample selection criteria. This renders difficult the country by country comparative analysis. A good example relating to data availability is Egypt. Despite the fact that it is the oldest stock market in Africa and the statistics reported in the DataStream and other sources showing that it has many listed firms, in reality the active firms in the Cairo and Alexandria Stock Exchange (CASE) do not exceed 40. For instance, while the DataStream shows that there are more than 367 firms for Egypt during the sample period, the World Bank (2010b) shows that it has an average listed companies of 671 (refer Table 3, p.60).

Also, many firms do not post the financial statements on their websites while others do not have websites at all, thus increasing the problem of data availability in Africa. Similarly, the level of financial accounting disclosure in many African capital market firms is relatively low compared to financial statements presented by companies in developed economies especially when compared to the U.S. and U.K. (Dahawy *et al.*, 2002).

8.5 Avenues for Future Research

This thesis can be extended in several ways. First, one can examine the usefulness of IFRS by comparing between adopters of IFRS (e.g. South Africa, Egypt, Morocco, Kenya and Botswana) and non-adopters of IFRS for example Nigeria, Algeria and Tunisia. A study of this nature is important because it will not only help accounting standard setters and regulators to compare the benefits of IFRS relative to local GAAP but also will assist countries which have not yet adopted IFRS to make informed decisions pertaining to economic consequences of IFRS.

Second, this thesis does not control for the individual sophistication of market participants such as financial analysts because intuitively the main objective is to generally examine whether the application of IFRS is associated with greater value relevance, asymmetric earnings timeliness and predictive ability of earnings and cash flow. As a way of developing this thesis, one can control for the individual sophistication of market participants and assess how it may affect value relevance, asymmetric earnings timeliness and earnings and cash flow predictability.

Third, in developing countries particularly African countries, audit firms play a significant role in ensuring that international accounting and auditing standards are adhered (Hope *et al.*, 2008). This implies that together with other factors, audit quality improves accounting quality. Therefore, along with culture and legal origin one can examine how audit quality measured through big and non-big audit firms (Hope *et al.*, 2008) affects the value relevance, asymmetric earnings timeliness and earnings and cash flow predictability during accounting regime change from local GAAP to IFRS.

Fourth, future research can also compare and examine the usefulness of IFRS between listed and unlisted firms. This is crucial in that some countries allow IFRS to be applied only to listed firms while others allow application to both listed and unlisted firms (see appendix 1). Thus the motivating research question is: Is IFRS useful to both listed and unlisted companies? The findings will be of great importance not only to standard setters but also to other countries which have not yet permitted IFRS to unlisted companies.

8.6 Chapter Summary

This chapter provides conclusions and opportunities for future research. Operationalized by value relevance, conditional conservatism and predictive ability of earnings and cash flow,

this thesis concludes that, IFRS has not improved financial reporting in African capital markets.

Specifically, the findings suggest that IFRS results in an increase in the valuation role of the book value of equity and overall value relevance but not earnings. Also, I find that IFRS leads to the decline in gains, loss, incremental loss and overall earnings timeliness and the predictive roles of earnings and cash flow. Furthermore, the results suggest that culture and legal origin are important determinants of the usefulness of accounting information and IFRS in Africa.

Moreover, Unlike Barth *et al.*, (2008), the findings provide little empirical support that IFRS improves the usefulness of accounting information in African capital markets. One might attribute these findings to lack of IFRS enforcement mechanisms, illiquidity of African capital markets, legal origin and cultural differences (Anandarajan and Hasan, 2010, World Bank, 2010a, Bova, 2009, Ball, 2006, 2008 and Schipper, 2005). The policy implication is that, the 'one fits for all' rule of IFRS and the widely advocated IASB and FASB global convergence agenda are likely to be less practicable in illiquid capital markets.

Data availability is the main challenge of this thesis and other studies examining the usefulness of accounting information in Africa. However, the sample representation of 347 firms from the five countries is still relatively large compared to previous studies in Africa such as Anandarajan and Hasan (2010), Prather-Kinsey (2006) and Dahawy *et al.*, (2002).

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Appendix 1 IFRS Adoption in Africa

Country	Listed Companies	Unlisted Companies	Stock Market and Year Established	Adoption
Botswana	Required for all domestic companies	Required for some and permitted for others	Botswana Stock Exchange(1989)	May2006
Gambia	No Capital Market	IFRS permitted	NA	
Ghana	Required for all domestic companies	Required for banks, utilities, brokerage, insurance, government companies from 2007, others 2009	Ghana Stock Exchange (1990)	Jan2007
Egypt	Required for all domestic companies	Not permitted	Cairo & Alexandria S E(1883)	2005
Kenya	Required for all domestic companies	IFRS required for all	Nairobi Stock Exchange(1954)	2005
Lesotho	IFRS permitted	Not permitted	NA	
Libya	Neither required nor permitted	Required for commercial banks	Libyan Stock Exchange(2007)	
Madagascar	No Capital Market	Required for some companies	NA	
Malawi	Required for all domestic companies	Not permitted	Malawi Stock Exchange(1995)	2005
Mauritius	Required for all domestic companies	Required for some, permitted for others	The Stock Exchange of Mauritius(1988)	2005
Morocco	Permitted to non banks but required to all domestic banks	Not permitted	Casablanca Stock Exchange(1929)	Jan-2008
Namibia	Required for all domestic companies	Not permitted	Namibian Stock Exchange(1992)	2005
Mozambique	IFRS permitted	Required for banks and large companies from 2010 and Medium-Sized 2011	Bolsa de Valores de Moçambique(1999)	2007
Sierra Leone	Required for all domestic companies	Required for some, IFRS for SMEs for others	NA	2005
South Africa	Required for all domestic companies	IFRS permitted or IFRS for SMEs	Johannesburg Stock Exchange(1887)	2005
Swaziland	IFRS permitted	Not permitted	Swaziland Stock Exchange(1990)	
Tanzania	Required for all domestic companies	Required for international companies	Dar Es Salaam Stock Exchange(1998)	2005
Uganda	IFRS permitted	Not permitted	Uganda Securities Exchange(1997)	2005
Zambia	IFRS permitted	Permitted	Lusaka Stock Exchange(1994)	2005
Zimbabwe	IFRS permitted	Not permitted	Zimbabwe Stock Exchange (1896-1993)	2005

Sources: Deloitte (2011), World Bank (2010a), Smith *et al.*, (2002), Kenny and Moss (1998), ASEA (2011), Warsame (2006) and eStandards forum (2010).

Appendix 2 The Impact of IFRS on ERC, BRC and Adjusted R² when Data are winsorized at 1%.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	0.966*** (6.205)	1.418*** (28.569)	0.940*** (6.094)	1.465*** (18.607)	0.994*** (5.387)	0.924*** (5.020)
$BV_{i,t}$	0.003 (0.395)	0.055** (2.438)	0.014 (1.368)	0.070*** (2.902)	-0.002 (-0.236)	0.012 (1.249)
$D^*BV_{i,t}$					0.055** (2.422)	0.050** (2.224)
$E_{i,t}$	0.326*** (5.027)	0.439*** (3.736)	0.371*** (4.621)	0.543*** (4.239)	0.440*** (6.490)	0.527*** (7.044)
$D^* E_{i,t}$					-0.185 (-1.609)	-0.147 (-1.320)
$\Delta E_{i,t}$	0.059 (1.370)	-0.157* (-1.671)	0.047 (1.046)	-0.132 (-1.328)	0.004 (0.089)	-0.001 (-0.017)
$D^* \Delta E_{i,t}$					0.011 (0.219)	0.030 (0.617)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1130	1323	1130	1323	2776	2776
Adj. R ² (%)	12.0	21.5	13.1	22.9	16.4	18.1

Notes: These results are estimated by annual OLS regressions when data are winsorized at 1% consistent with Hope *et al.*, (2008). The robust t-statistics are in parentheses. ***, ** and * denote statistical significance at 1%, 5% and 10% according to the two tailed t-tests. The data sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Botswana, Egypt and Morocco. $P_{i,t}$ is the closing price per share three months after the balance sheet date scaled by the beginning period share price. $BV_{i,t}$, $E_{i,t}$ and $\Delta E_{i,t}$ are the net book value per share, earnings per share and change in earnings per share respectively all scaled by the beginning period share price. $D^*BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on the book value of equity. $D^*E_{i,t}$ and $D^*\Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively. Control variables, country and time dummies are included. Control variables (CV) include; *FIRMSIZE*, *LEV* and *GROWTH* and are as defined previously. N is the number of observations and $\varepsilon_{i,t}$ is the random variable or an error term of a firm *i* at the end of the period *t*.

Appendix 3 The Impact of IFRS on ERC, BRC and Adjusted R² When Firms are Grouped According to Years of IFRS Adoption.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	0.966*** (11.650)	1.199*** (32.326)	0.930*** (9.886)	1.055*** (17.145)	0.983*** (16.325)	0.830*** (11.748)
$BV_{i,t}$	0.017 (1.022)	0.138*** (4.261)	0.025 (1.335)	0.193*** (5.509)	0.039** (2.092)	0.053*** (2.794)
$D^*BV_{i,t}$					0.119** (2.531)	0.124*** (2.587)
$E_{i,t}$	0.491*** (5.696)	0.797*** (4.950)	0.506*** (5.533)	0.727*** (4.518)	0.582*** (6.948)	0.589*** (6.641)
$D^* E_{i,t}$					0.585** (2.140)	0.464* (1.690)
$\Delta E_{i,t}$	0.115 (1.464)	-0.068 (-0.448)	0.085 (1.034)	-0.136 (-0.882)	0.033 (0.390)	0.008 (0.098)
$D^* \Delta E_{i,t}$					0.152 (0.483)	0.032 (0.102)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	918	1224	918	1224	2448	2448
Adj. R ² (%)	13.3	30.7	13.8	32.5	24.2	25.3

This table reports results from annual OLS regressions and consist of data from South Africa, Egypt and Kenya. All three countries adopted IFRS in 2005. The robust t-statistics are in parentheses.***, ** and * denote statistical significance at 1%, 5% and 10% according to the two tailed t-tests. $P_{i,t}$ is the closing price per share three months after the balance sheet date scaled by the beginning period share price. $BV_{i,t}$, $E_{i,t}$ and $\Delta E_{i,t}$ are the net book value per share, earnings per share and change in earnings per share respectively all scaled by the beginning period share price. $D^*BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on the book value of equity. $D^*E_{i,t}$ and $D^*\Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively. Control variables, country and time dummies are included. Control variables (CV) include; *FIRMSIZE*, *LEV* and *GROWTH* and are as defined previously. N is the number of observations and $\varepsilon_{i,t}$ is the random variable or an error term of a firm i at the end of the period t .

Appendix 4 The Impact of IFRS on ERC, BRC and Adjusted R² When South Africa is excluded from the Sample.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions				Dummy regressions	
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	0.782*** (6.687)	1.143*** (10.718)	0.534*** (3.695)	0.850*** (4.703)	0.721*** (7.849)	0.374** (2.319)
$BV_{i,t}$	-0.026 (-1.041)	0.328*** (3.378)	-0.006 (-0.218)	0.399*** (3.870)	0.034 (1.072)	0.061* (1.883)
$D^*BV_{i,t}$					0.151 (1.219)	0.164 (1.294)
$E_{i,t}$	0.438*** (4.015)	1.812*** (4.499)	0.454*** (3.887)	1.936*** (4.206)	0.583*** (5.058)	0.609*** (5.006)
$D^* E_{i,t}$					1.234** (2.235)	1.049* (1.830)
$\Delta E_{i,t}$	0.121 (0.779)	-0.561 (-1.008)	0.031 (0.165)	-0.384 (-0.655)	0.156 (0.745)	0.111 (0.496)
$D^* \Delta E_{i,t}$					0.476 (0.451)	0.539 (0.510)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	404	355	404	355	840	840
Adj. R ² (%)	28.8	38	30	38.7	29	30.2

This table reports results from annual OLS regressions and consist of data from Egypt, Kenya, Morocco and Botswana. South Africa is excluded in order to mitigate its influence on the entire sample. The robust t-statistics are in parentheses.***, ** and * denote statistical significance at 1%, 5% and 10% according to the two tailed t-tests. $P_{i,t}$ is the closing price per share three months after the balance sheet date scaled by the beginning period share price. $BV_{i,t}$, $E_{i,t}$ and $\Delta E_{i,t}$ are the net book value per share, earnings per share and change in earnings per share respectively all scaled by the beginning period share price. $D^*BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on the book value of equity. $D^*E_{i,t}$ and $D^*\Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively. Control variables, country and time dummies are included. Control variables (CV) include; *FIRMSIZE*, *LEV* and *GROWTH* and are as defined previously. N is the number of observations and $\varepsilon_{i,t}$ is the random variable or an error term of a firm i at the end of the period t .

Appendix 5 The Impact of IFRS on ERC, BRC and Adjusted R² Using Weighted Least Squares (WLS) Regressions.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 D^* BV_{i,t} + \alpha_3 E_{i,t} + \alpha_4 D^* E_{i,t} + \alpha_5 \Delta E_{i,t} + \alpha_6 D^* \Delta E_{i,t} + \sum CV + \varepsilon_{i,t}$$

Variable	Separate regressions		Dummy regressions			
	Before	After	Before	After		
	M1	M2	M3	M4	M5	M6
α_0	0.275*** (6.595)	0.863*** (33.173)	0.593*** (11.658)	0.870*** (34.372)	0.653*** (11.306)	0.995*** (13.752)
$BV_{i,t}$	0.082*** (7.866)	0.152*** (10.086)	0.078*** (7.613)	0.108*** (7.643)	0.041*** (4.195)	0.052*** (5.409)
$D^*BV_{i,t}$					0.089*** (3.880)	0.020 (0.850)
$E_{i,t}$	0.263*** (5.483)	0.328*** (5.245)	0.352*** (7.563)	0.047 (0.764)	0.311*** (6.398)	0.292*** (6.221)
$D^* E_{i,t}$					-0.272** (-2.564)	-0.597*** (-5.334)
$\Delta E_{i,t}$	0.428*** (9.974)	-0.723*** (-10.328)	0.514*** (12.378)	-0.771*** (-12.813)	0.424*** (9.477)	0.446*** (10.151)
$D^* \Delta E_{i,t}$					-1.743*** (-12.023)	-1.731*** (-12.344)
Firm Effects			Yes	Yes		Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	944	1167	944	1167	2414	2414
Adj. R ² (%)	41.1	20.6	47.6	45.6	30.9	35.7

This table reports results from the weighted least squares (WLS) regressions analytically weighted by the inverse of the square of price similar to Goncharov and Hodgson (2011) and Easton and Sommers (2003). The use of WLS regressions mitigates the effects of uneven country sample representation. The robust t-statistics are in parentheses.***, ** and * denote statistical significance at 1%, 5% and 10% according to the two tailed t-tests. The data sample period spans from 2002 to 2009 involving 347 firms from South Africa, Kenya, Botswana, Egypt and Morocco. $P_{i,t}$ is the closing price per share three months after the balance sheet date scaled by the beginning period share price. $BV_{i,t}$, $E_{i,t}$ and $\Delta E_{i,t}$ are the net book value per share, earnings per share and change in earnings per share respectively all scaled by the beginning period share price. $D^*BV_{i,t}$ is an interaction variable capturing the effect of IFRS adoption on the book value of equity. $D^*E_{i,t}$ and $D^*\Delta E_{i,t}$ are interaction variables capturing the effect of IFRS on earnings and change in earnings respectively. Control variables, country and time dummies are included. Control variables (CV) include; *FIRMSIZE*, *LEV* and *GROWTH* and are as defined previously. N is the number of observations.