

**THE MANDATORY ADOPTION OF  
INTERNATIONAL FINANCIAL REPORTING STANDARDS  
AND FINANCIAL STATEMENT COMPARABILITY:  
SOUTH AFRICAN EVIDENCE**

by

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Thesis submitted in fulfilment of the requirements for the degree

**PhD Accounting Sciences**

in the

**Department of Accounting**

in the

**FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES**

at the

**UNIVERSITY OF PRETORIA**

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**March 2017**

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## ACKNOWLEDGEMENTS

I wish to thank a number of people and institutions who contributed to the completion of my study:

- Prof. Elmar Venter, my supervisor – for your continuous support and guidance throughout the process. Your prompt and invaluable feedback every time made the completion of my study so much easier. Thank you for sharing your passion for research and accounting. You truly are a role-model to young academics.
- Prof. Madeleine Stiglingh, my co-supervisor – for making time in your busy schedule to provide your input. Thank you for your guidance, advice and encouragement throughout my study. It was a privilege to have worked with you on this.
- The University of South Africa – for providing me with funding to pursue the completion of my doctoral study on a full time basis.
- Prof. Mary Barth and Prof. Steven Cahan – for making time to discuss my study during their visits to South Africa.
- My colleagues in the Department of Financial Governance – for your interest and support throughout the process.
- Dr Idette Noomé – for language editing the final document.
- My parents, André and Elwee Meyer – for your love and support throughout my life and for giving me the opportunities in life which enabled me to be where I am today.
- My children, Louise and Jandré – for being there with your smiles and hugs and taking my mind off my study when I most needed it.
- My husband, André – for always believing in me and supporting me every step of the way. I would not have been able to complete this without your love and encouragement.

## ABSTRACT

# THE MANDATORY ADOPTION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS AND FINANCIAL STATEMENT COMPARABILITY: SOUTH AFRICAN EVIDENCE

by

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In this study, I examine whether the mandatory adoption of International Financial Reporting Standards (IFRS) in a country where local Generally Accepted Accounting Principles (GAAP) is of similar quality to IFRS is associated with changes in the comparability of financial statements. I also investigate the sources of any changes in the comparability of financial statements.

I use data from South Africa, where, word for word, prior to the mandatory adoption of IFRS, local GAAP was the same as IFRS, and enforcement remained unchanged. I use two different measures of comparability, one based on accounting data (accruals-cash flow measure) and the other based on both accounting data and market data (earnings-return measure). I compare South African firms with two different groups, namely other mandatory IFRS adopters and non-adopters.

My data show evidence of an increase in the comparability of the financial statements of South African firms with those of both adopters (both measures) and non-adopters (the earnings-return measure) following the mandatory adoption of IFRS. In additional analysis, I found a global increase in the comparability of firms'

financial statements that is consistent with market changes unrelated to IFRS adoption as one of the sources of the increase in comparability. Moreover, an incremental increase in the comparability of the financial statements of South African firms after the mandatory adoption of IFRS, relative to the increase in the comparability of the financial statements of non-adopting firms, is consistent with benefits from using the IFRS “label” and with the expanded IFRS network as sources of increased comparability.

**Key words:** IFRS; comparability; “label” benefits; network benefits

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## LIST OF ACRONYMS AND ABBREVIATIONS

FASB	Financial Accounting Standards Board
GAAP	Generally Accepted Accounting Principles
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IFRS	International Financial Reporting Standards
IIA	Institute of Internal Auditors
JSE	Johannesburg Stock Exchange
PwC	PricewaterhouseCoopers
SA GAAP	South African Generally Accepted Accounting Practice
SAICA	South African Institute of Chartered Accountants
SEC	Securities and Exchange Commission
UK	United Kingdom
UK GAAP	United Kingdom Generally Accepted Accounting Practice
US/USA	United States/United States of America
US GAAP	United States Generally Accepted Accounting Principles
WEF	World Economic Forum

# CHAPTER 1: INTRODUCTION

## 1.1 Background

The objective of my study is to determine whether the mandatory adoption of International Financial Reporting Standards (IFRS) in a country where local Generally Accepted Accounting Principles (GAAP) are of similar quality to IFRS is associated with changes in the comparability of financial statements. My study also aims to determine the sources of any such changes in the comparability of financial statements. Such evidence may be useful to regulators in countries with a set of local GAAP of similar quality to IFRS.

According to the Financial Accounting Standards Board (FASB), the need for a set of accounting standards that can be used globally arose in response to the globalisation of capital markets and increased cross-border capital flows (FASB 2013). The use of various accounting standards worldwide made the comparison of firms' financial statements in different countries difficult (Soderstrom & Sun 2007:677).

The first calls for global accounting standards were already made in the 1950s. Over the years, several projects were undertaken by international organisations to harmonise and converge accounting standards (FASB 2013), and global convergence of accounting standards increased rapidly in the 2000s. In September 2002, the International Accounting Standards Board (IASB) and the FASB agreed in the Norwalk agreement to start a project to converge United States Generally Accepted Accounting Principles (US GAAP) and IFRS (FASB 2005:1). In 2002, the European Union announced that as of 2005, all listed firms in Europe would be required to prepare financial statements in terms of IFRS (European Council 2002). This was followed by the adoption of IFRS in a number of countries outside Europe, including Australia (2005), South Africa (2005), Hong Kong (2005) and New Zealand (2007) (Daske, Hail, Leuz & Verdi 2008:1118; Pacter 2014:1; IFRS Foundation 2015). The use of a single global set of accounting standards was supported by the

G20, the World Bank, the International Monetary Fund, and the Basel Committee (Pacter 2014:1).

Currently, most capital markets require listed firms to report in terms of IFRS, or of IFRS as adopted in the country concerned, according to PricewaterhouseCoopers (PwC 2016a). A notable absence from the list of countries that have adopted IFRS is the United States of America (US). However, since 2007, the Securities and Exchange Commission (SEC) in the US does allow foreign firms to submit financial statements in accordance with IFRS as issued by the IASB without having to perform a reconciliation with US GAAP (Deloitte 2007). Other major economies that have not yet mandated the use of IFRS are Japan, India and China. However, Japan is currently considering increased use of IFRS, and India requires increased use of the Indian Accounting Standards, which have converged substantially with IFRS; China is in the process of fully converging its accounting standards with IFRS (PwC 2016a).

Increased use of IFRS has arisen from the need to enhance the comparability of financial statements globally. Consequently, regulators in a number of countries claim that the adoption of IFRS will result, among other things, in financial statements that are more comparable than those based on local GAAP (European Council 2002; Ludolph 2006).

A number of empirical studies suggest that comparability benefits arise with the mandatory adoption of IFRS, based on investor behaviour (Armstrong, Barth, Jagolinzer & Riedl 2010; Joos & Leung 2012), analyst following (Tan, Wang & Welker 2011), analyst forecast accuracy (Horton, Serafeim & Serafeim 2013) and capital market effects (Daske et al. 2008; Li 2010). These studies conclude that their results are consistent with increased comparability of financial statements after the adoption of IFRS. Considering comparability more directly, the studies by Barth, Landsman, Lang and Williams (2012), Cascino and Gassen (2015) and Yip and Young (2012) found that the comparability of financial statements increased after the mandatory adoption of IFRS. Both Barth et al. (2012:68) and Yip and Young (2012:1767) suggest that an increase in accounting quality in the wake of mandatory adoption of IFRS is the likely driver behind the increase in the comparability of the financial statements in their studies. This suggestion raises the question of whether it

is beneficial for a country with a local GAAP that is of similar quality to IFRS to adopt IFRS. The need to answer this question is strengthened by the findings of Daske et al. (2008:1089) and Florou and Pope (2012:1994) which suggest that the benefits of IFRS adoption are the greatest in countries with large pre-existing differences between the local GAAP and IFRS.

The question of whether increased comparability could lead to capital market benefits in countries with existing high quality accounting standards have been explored by Joos and Leung (2012) and Brochet, Jagolinzer and Riedl (2013). Both these studies propose that the adoption of IFRS in countries where local GAAP is of similar quality to IFRS is unlikely to affect accounting quality, but comparability benefits may still arise. Comparability benefits are expected because the cost for investors to compare firms is reduced, even if the pre-existing quality of accounting standards is already high (Hail, Leuz & Wysocki 2010:358; Leuz & Wysocki 2016:584). Joos and Leung (2012:578) found positive market reactions to the proposed adoption of IFRS in the US. Based on the view that US GAAP is considered to be of high quality,<sup>1</sup> the positive market reaction is consistent with comparability benefits expected to arise from the possible adoption of IFRS. Brochet et al. (2013:1373) used data from firms in the United Kingdom (UK) to evaluate comparability benefits with the adoption of IFRS.<sup>2</sup> They report reduced abnormal returns with insider purchases in the UK, which is consistent with increased comparability of financial statements, since the accounting quality remained unchanged (Brochet et al. 2013:1397). However, these studies did not measure comparability directly, but concluded that comparability benefits are likely, based on the setting and the capital market response to possible IFRS adoption announcements. The possibility that other unrelated market changes around the time of the announcements or the adoption of IFRS itself resulted in capital market benefits cannot be excluded.

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<sup>1</sup> IFRS and US GAAP, the two main reporting frameworks used globally, are generally considered to be high quality accounting standards (Daske 2006:330; Sun, Cahan & Emanuel 2011:842; Barth et al. 2012:72), because they are commonly assumed to provide greater quantity disclosures, higher information content and more value relevant information than local GAAP in most other countries (Daske 2006:332-333).

<sup>2</sup> Brochet et al. (2013:1373) argue that the quality of United Kingdom Generally Accepted Accounting Practice (UK GAAP) is similar to IFRS. Bae, Tan and Welker's (2008:602) measure only shows one difference between UK GAAP and IFRS.



Brüggemann, Hitz and Sellhorn (2013:2) and Leuz and Wysocki (2016:587-588) consider the possibility that capital market effects may occur around the time of the adoption of IFRS because of factors unrelated to IFRS adoption. This conclusion is based on the conflicting findings in the literature relating to financial reporting effects (accounting quality and comparability), compared to the mostly unanimous findings relating to increased capital market effects (Brüggemann et al. 2013:2).

Another factor that can possibly explain inconsistent findings in the IFRS adoption literature relates to changes in enforcement or the institutional environment that occurs concurrent with the adoption of IFRS in a given country. Christensen, Hail and Leuz (2013:171) claim that changes in enforcement rather than changes in standards can be associated with the increase in liquidity noted after IFRS adoption in Europe. They also argue that a lack of liquidity benefits for firms across all countries in their study suggests that the comparability of financial statements did not improve with the mandatory adoption of IFRS. However, Barth and Israeli (2013:179) point out some of the challenges in attempting to separate the impact of new standards and that of enforcement changes, and conclude that both high quality accounting standards and strong enforcement are necessary to achieve the required benefits.

## **1.2 The study problem**

The above discussion suggests that there are benefits from the adoption of IFRS even in countries with local GAAP of similar quality to IFRS. However, it also draws attention to the difficulty of separating the effects attributable to IFRS from factors unrelated to the decision to adopt IFRS. It seems likely that any benefit from the adoption of IFRS in countries with local GAAP of similar quality to IFRS may be attributable to increased comparability, rather than quality. However, because the accounting amounts determined under local GAAP would be similar to those prepared in terms of IFRS, the source of such increased comparability is not clear.

Sources of benefits around the IFRS adoption period can be either directly related to the IFRS adoption decision or to concurrent changes unrelated to the IFRS adoption decision. I first consider sources of benefits that relate directly to the IFRS adoption decision. In a country with local GAAP of similar quality to IFRS, it is likely that the

amounts in the financial statements themselves will not differ substantially from the amounts determined in accordance with IFRS. However, it is possible that global investors' perception of the quality of those amounts could change in instances where the IFRS "label" is better known than the local GAAP. Adopting IFRS in full would then eliminate any concerns that investors might have regarding differences between local GAAP and IFRS. This argument could imply that the market is not efficient. However, based on the limited attention hypothesis of Hirshleifer and Teoh (2003:342), one can argue that IFRS adoption in countries already using high quality standards similar to IFRS makes it more salient to investors that those countries are reporting in terms of high quality accounting standards, thereby reducing their information acquisition and processing costs. I refer to this source as the IFRS "label" change.<sup>3</sup>

Secondly, in considering the sources of comparability changes, it is important to remember that comparability implies that the financial statements of one firm is measured relative to the financial statements of another firm. Accordingly, any changes made to the accounting amounts of other firms in other countries can affect the comparability of a firm that have not made any changes. The second source of changes in comparability that relates to IFRS adoption is the adoption of IFRS by other countries, and I refer to this source as network benefits.<sup>4</sup>

Changes made to the accounting amounts of comparable firms can also be unrelated to the IFRS adoption decision. For firms that have not adopted IFRS, convergence to IFRS or other improvements to standards applied by those firms could alter their accounting amounts. Changes made to IFRS standards around the time of IFRS adoption are unrelated to the IFRS adoption decision per se, but could affect the accounting amounts of IFRS adopters (Capkun, Collins & Jeanjean 2016:357). Changes in the institutional environment, such as enforcement changes, can also occur around the time of IFRS adoption. A number of countries have made

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<sup>3</sup> The "label" adoption of IFRS has a negative connotation in the literature. The concern in the literature relates to firms that claim to report under IFRS, but in fact continue with previous low quality reporting standards and practices (Daske, Hail, Leuz & Verdi 2013:497). I do not use the "label" change in the negative sense, but focus on the benefits of referring to standards that are better known globally.

<sup>4</sup> Meeks and Swann (2009:194) and Hail et al. (2010:358) consider the possibility of network benefits as more firms join the IFRS network. Ramanna and Sletten (2014:1517) suggest that expected network benefits are one of the drivers of countries' decision to adopt IFRS.

enforcement changes at the same time as adopting IFRS, which makes it difficult to separate the effects of the change in standards from those of the change in enforcement (Leuz & Wysocki 2016:585).

Lastly, it is possible that changes unrelated to the financial reporting environment could affect the markets and how the markets view comparability. Leuz and Wysocki (2016:585) argue that these changes could include other regulatory changes, changes in technology or other market shocks. Barth et al. (2012:88) raise the possibility that increased globalisation as a result of increased global foreign investment can also lead to increased comparability of financial statements.

To disentangle the effects of the sources that relate to IFRS adoption from the effects of sources unrelated to IFRS adoption requires a setting where some of these sources were constant. Thus, firstly, the research question of my study requires a setting where the switch from local GAAP to IFRS resulted in few changes to standards and to the resulting amounts in the financial statements prepared in terms of those standards. Secondly, because the literature shows that enforcement is associated with IFRS adoption benefits, the study also calls for a setting where enforcement of standards remained relatively unchanged over the IFRS adoption period. Brüggemann et al. (2013:22) suggest that single country studies provide opportunities to control better for concurrent changes that might also have an impact on the capital markets, and that are difficult to control in cross-country studies. Chen and Schipper (2016:272-273) also believe that country-specific analyses of the effects of IFRS adoption can provide a better understanding of the mechanisms that provide the observed results. By understanding what happens in a specific country with the adoption of IFRS and comparing the outcomes to those in other countries with different outcomes would make it possible to predict better what would happen if IFRS were to be adopted somewhere else. The current cross-country studies are unable to make such predictions, as the differences between the countries are not considered in detail.

### 1.3 The South African case

The adoption of IFRS in South Africa provides a suitable setting for my study. In South Africa, the adoption of IFRS resulted in the replacement of one set of high quality standards, South African Generally Accepted Accounting Practice (SA GAAP), with another set of high quality accounting standards, IFRS.<sup>5</sup> According to the South African Institute of Chartered Accountants (SAICA), at the time of the adoption of IFRS, the South African standards were, word for word, the same as IFRS (SAICA 2004), since South Africa's accounting standards were already harmonised with IFRS in 1995 (IFRS Foundation 2015). Moreover, from 2003, all IFRS standards issued by the IASB were adopted in South Africa without any amendments (SAICA 2003). The South African case is therefore different from that of most other countries that adopted IFRS, because some other countries replaced lower quality domestic accounting standards with higher quality IFRS.<sup>6</sup> This fact limits the possibility of extending the results of prior studies of mandatory IFRS adoption in other countries to countries that already applied high quality accounting standards prior to the adoption of IFRS. My study provides an opportunity to distinguish between quality and comparability, because the quality of the standards can be expected to be high across the IFRS adoption period in the South African case.

Because the literature shows that enforcement is associated with the benefits of IFRS adoption, the study also calls for a setting where the enforcement of standards remained relatively unchanged over the IFRS adoption period. Christensen et al. (2013:155) found that South Africa did not make any substantive changes in enforcement between 2001 and 2009.<sup>7</sup>

The literature has further shown that IFRS adoption benefits are greater in countries with strong institutional environments. South Africa's auditing and reporting

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<sup>5</sup> IFRS are generally considered to be high quality accounting standards (Daske 2006:330; Sun, Cahan & Emanuel 2011:842; Barth et al. 2012:72). Since SA GAAP was exactly the same as IFRS, SA GAAP can also be considered to be a set of high quality accounting standards.

<sup>6</sup> The adoption of IFRS for some countries in Europe, for example, was seen as replacing lower quality accounting standards with higher quality accounting standards (Armstrong et al. 2010).

<sup>7</sup> Christensen et al. (2013:172) based their assessments on surveys sent to the national regulators of each country. Their survey asked whether there had been a change in enforcement for the period 2001 to 2009. It included questions relating to the timing of the establishment of an enforcement institution, whether annual reports must be filed with them, whether and when action has been taken against any firms and what the situation regarding enforcement was before any changes were made.

environments have consistently been ranked in the top 20 in the World Economic Forum's (WEF's) global competitiveness reports (2002-2008), suggesting a strong financial reporting environment. South Africa's stock exchange, the Johannesburg Stock Exchange (JSE),<sup>8</sup> is the largest stock exchange in Africa and the 19<sup>th</sup> largest stock exchange in the world, based on market capitalisation (JSE 2013). The JSE has also been ranked in the top 20 in the WEF's global competitiveness reports (2003-2008) in terms of the regulation of the securities exchange.

South Africa therefore provides for a suitable setting to focus on possible changes in comparability following the adoption of IFRS, because the pre-existing quality of accounting standards is considered to be high. In addition, South Africa has a strong financial reporting environment and there were no changes in enforcement at the time and following the adoption of IFRS.

In addition, the South African setting provides an opportunity to distinguish between possible sources of changes in comparability after the adoption of IFRS. The accounting amounts of South African firms are unlikely to have been affected by IFRS adoption, and it is likely that they remained unchanged. Hence, any increase in the comparability of financial statements relating to IFRS adoption must either stem from changes in the markets' perceptions regarding the comparability of South African firms' financial statements ("label" benefits), or alternatively from changes in the financial statements of comparable firms from countries that adopted IFRS (network benefits), or both. To distinguish between these two sources of comparability changes, I assess separately the comparability between the financial statements of South African firms and those of adopters, and between those of South African firms and those of non-adopters.<sup>9</sup> To investigate the possibility that changes in the comparability of financial statements of South African firms are unrelated to IFRS adoption, I also consider changes in the comparability of financial statements of South African firms relative to changes in the comparability of financial statements of non-adopters globally. In Section 1.4, I explain how I use these separate

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<sup>8</sup> The JSE is a stock exchange in South Africa managed by the JSE Limited (JSE 2009).

<sup>9</sup> Non-adopters refer to firms from countries that did not adopt IFRS in the period considered in my study (2002-2008).

comparisons to disentangle the sources of changes in the comparability of financial statements.

#### **1.4 Main hypotheses**

The objective of my study is to determine whether the mandatory adoption of IFRS in a country where local GAAP is of similar quality to IFRS is associated with changes in the comparability of financial statements. My study also aims to determine the sources of such changes (if any) in the comparability of financial statements. To achieve these objectives, I test two hypotheses.

Firstly, I consider whether there was an increase in the comparability of the financial statements of South African firms with those of firms from other countries that adopted IFRS at the same time. I posit that the comparability between the financial statements of South African firms and those of other IFRS adopters increased following the adoption of IFRS in South Africa. The most likely source of such an increase is network benefits, because changes are made to the accounting amounts of firms when those firms adopt IFRS, and their financial statements became more similar to South African firms' financial statements. In addition, the market could view the financial statements of South African firms differently following the "label" change from SA GAAP to IFRS.

Secondly, I consider whether there was a change in the comparability of financial statements of South African firms with those of firms from countries that did *not* adopt IFRS at the same time. Since the accounting amounts for both the South African firms and the non-adopters would have remained unchanged, I do not expect comparability based on accounting amounts to change. However, it is possible that the markets might view the financial statements of South African firms after the adoption of IFRS differently, because IFRS is better known globally than SA GAAP. Any increase in the comparability with non-adopters is probably attributable to the "label" change from SA GAAP to IFRS in South Africa. On the other hand, one could argue that institutional investors and analysts are sophisticated users (Florou & Pope 2012:1994; Bradshaw, Bushee & Miller 2004:797) and are aware of the fact that SA GAAP and IFRS were the same at the time of the adoption of IFRS. Based on these



opposing arguments, I make no formal prediction regarding changes in the comparability between the financial statements of South African firms and those of non-adopters after the adoption of IFRS in South Africa.

Lastly, to assess whether any changes in comparability could be attributed to accounting quality, I investigate whether accounting quality in South Africa has changed since the adoption of IFRS. Although I have argued that SA GAAP was, word for word, the same as IFRS at the time when IFRS was adopted, any changes made to IFRS (Capkun et al. 2016:352) or changes in the interpretation of accounting standards by South African firms (United Nations 2007:14; Bromfield 2013) could arguably affect accounting quality and comparability.

## 1.5 Research design

I test my two hypotheses relating to the comparability of South African firms' financial statements with those of other IFRS adopters and non-adopters by means of multivariate regression analyses. The concept of comparability is expressed by Paragraph QC23 of *The Conceptual Framework for Financial Reporting* (IASB 2010) as follows: “[L]ike things must look alike and different things must look different.” To assess comparability changes, I use two different measures of comparability based on the prior literature (De Franco, Kothari & Verdi 2011; Yip & Young 2012; Cascino & Gassen 2015; Neel 2016). These two comparability measures are based on the view that financial statement comparability is achieved when two firms that face similar economic events also produce similar accounting amounts (De Franco et al. 2011:899). Using these direct measures of comparability, rather than measures that infer comparability changes based on market outcomes, provides an opportunity to consider possible sources of changes in comparability (De George, Li & Shivakumar 2016:919).

The first measure that I chose, and that I refer to as the earnings-return measure, uses earnings as a proxy for the accounting amounts and stock returns as a proxy for economic events (De Franco et al. 2011:899; Yip & Young 2012:1772; Cascino & Gassen 2015:248; Neel 2016:8). My second measure, the accruals-cash flow measure, uses accruals as a proxy for accounting amounts, and cash flows as a

proxy for economic events (Cascino & Gassen 2015:248; Neel 2016:9). A difference between these two measures is that the earnings-return measure is calculated using both accounting amounts and market data, whereas the accruals-cash flow measure is based on accounting amounts only. I have already suggested that the “label” change to IFRS could be a possible source of comparability benefits. Any such benefit would be reflected in a measure using market data, and not in the accounting amounts. Therefore, using two measures of comparability and two different groups of firms to assess comparability changes (adopters and non-adopters) provide an opportunity to consider the likely sources of changes in comparability.

Based on my first hypothesis, any increase noted (using the accruals-cash flow measure) in the comparability of South African firms’ financial statements with those of adopters would be consistent with network benefits as the likely source. Based on my second hypothesis, the absence of a change noted (using the accruals-cash flow measure) in the comparability of South African firms’ financial statements with those of non-adopters would suggest that the accounting amounts of South African firms and non-adopters did not change. However, a change noted (using the accruals-cash flow measure) in the comparability of South African firms’ financial statements with those of non-adopters would suggest that either convergence or other improvements to accounting standards by non-adopters or within IFRS changes (relevant for South African firms) are possible sources of comparability changes.

Also based on my first hypothesis, an increase noted (using the earnings-return measure) in the comparability of South African firms’ financial statements with those of adopters would reflect the joint effects of network benefits and the “label” benefits as the likely sources of changes in comparability. Based on my second hypothesis, the absence of any change in the comparability of South African firms’ financial statements with those of non-adopters (revealed by using the earnings-return measure) would suggest that no benefits accrued from the “label” change to IFRS in South Africa. However, an increase in the comparability of South African firms’ financial statements with those of non-adopters using the earnings-return measure, coupled with no increase using the accruals-cash flow measure could suggest that possible “label” benefits arose from South Africa’s adoption of IFRS. If both measures reflect an increase in comparability, the sources of the change could be



either convergence or other improvements to accounting standards by non-adopters, within IFRS changes relevant to South African firms or benefits arising from the “label” change to IFRS. However, the possibility that other unrelated market changes at the time of the adoption of IFRS may have affected comparability cannot be excluded and is considered in my additional analysis.

My South African sample includes all South African firms listed on the main board of the JSE for the period from 2002 to 2008. To evaluate comparability changes, I compare the South African firms with comparable firms from the G20 countries (both mandatory IFRS adopters and non-adopters).

## **1.6 Summary of findings**

Consistent with Hypothesis 1, I found an increase in the comparability of the financial statements of South African firms with those of other adopters after the adoption of IFRS, based on both the accruals-cash flow and the earnings-return measures of comparability. Since the accounting amounts of South African firms were not expected to change, the increase noted using the accruals-cash flow measure (based on accounting amounts only) suggests that the accounting amounts of other adopters became more similar to those of South African firms, which were effectively already applying IFRS. This finding suggests that one of the sources of comparability changes are network benefits following the adoption of IFRS by other countries. By contrast, it is not possible to distinguish between the sources of comparability increases using the earnings-return measure of comparability, so the increase could reflect the joint effect of network benefits and the IFRS “label” benefits in South Africa.

Consistent with Hypothesis 2, using the accruals-cash flow measure, I found no evidence of an increase in the comparability of financial statements of South African firms with those of non-adopters after the adoption of IFRS. Based on this finding, I conclude that the accounting amounts of non-adopters did not change significantly as a result of convergence or other improvements to accounting standards. It also suggests, consistent with the fact that SA GAAP is, word for word, the same as IFRS, that the accounting amounts of South African firms did not change significantly.

However, using my earnings-return measure of comparability, I found a significant increase in the comparability of financial statements of South African firms with those of non-adopters. This finding is consistent with the “label” benefits of IFRS as a possible source of comparability changes following the adoption of IFRS in South Africa.

Although my findings using the earnings-return measure of comparability could suggest benefits with the “label” change to IFRS, I cannot exclude the possibility that other concurrent market changes unrelated to IFRS adoption could have affected the outcomes of the analysis using my earnings-return measure. To evaluate this possibility, I performed a number of additional analyses.

In my first additional analysis, I considered the association between the number of GAAP differences eliminated between two countries following the adoption of IFRS and any changes in the comparability of financial statements from those countries. I did this test to evaluate whether the changes in comparability merely occurred around the time of IFRS adoption or whether it was associated with the number of GAAP differences eliminated (in other words, with IFRS effects). An association between the number of GAAP differences eliminated with IFRS adoption and changes in the comparability of financial statements suggests that the change in comparability is associated with network benefits. Using my accruals-cash flow measure, I found that the number of GAAP differences eliminated between two countries<sup>10</sup> (IFRS adopter countries and South Africa) after the adoption of IFRS seemed to be associated with an increase in the comparability of financial statements. This finding provides further evidence that network benefits following the adoption of IFRS by other countries is a likely source of comparability benefits for South African firms. I found no association between the number of GAAP differences eliminated and my earnings-return measure of comparability. This finding suggests that the earnings-return measure using market data does not only capture changes in the provisions of standards and shows that the earnings-return measure could be affected by other changes in the market. I have argued previously that these changes

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<sup>10</sup> In South Africa there were no differences between local GAAP and IFRS (Bae et al. 2008:602); thus any differences eliminated related to differences between the local GAAP and IFRS of the comparable adopting firm’s country.

can relate either to “label” benefits with the adoption of IFRS in South Africa or to unrelated market changes around the time of the adoption of IFRS.

To distinguish between “label” benefits and unrelated market changes as possible sources of changes in comparability, I performed further additional analyses. Firstly, I found a global increase in the comparability of financial statements following the adoption of IFRS. This increase was not limited to firms that adopted IFRS and was also found between non-adopting firms, suggesting that market changes unrelated to IFRS adoption could explain the changes in the comparability of firms’ financial statements worldwide. Secondly, I found that the comparability of South African firms’ financial statements increased significantly more than that of non-adopting countries’ firms. This incremental benefit for South African firms is consistent with both network benefits following the adoption of IFRS by other countries, and “label” benefits arising from the adoption of IFRS in South Africa.

Lastly, consistent with SA GAAP’s being word for word the same as IFRS, I found no significant change in accounting quality in South Africa following the adoption of IFRS. This finding eliminates accounting quality changes as a potential source of the changes in the comparability of South African firms’ financial statements.

To conclude, I found an increase in the comparability of financial statements for South African firms after the mandatory adoption of IFRS in 2005. My findings suggest that the increase in comparability is associated with both sources that relate to the IFRS adoption decision, and sources that are unrelated to the IFRS adoption decision. My analyses show a global increase in the comparability of firms’ financial statements, consistent with market changes unrelated to IFRS adoption as a source of the increase. However, the data show an incremental increase in the comparability of financial statements for South African firms consistent with IFRS “label” benefits. In addition, I found evidence of network benefits with the adoption of IFRS by other countries as a source of the increase in the comparability of financial statements.

## 1.7 Contribution

My study makes a contribution to the growing body of literature on the mandatory adoption of IFRS, and more specifically on the effects of IFRS adoption on the comparability of financial statements. My study extends previous cross-country comparability studies (Barth et al. 2012; Yip & Young 2012; Cascino & Gassen 2015; Neel 2016) by focusing on a single country with no differences between its local GAAP and IFRS. Using a single country study provides an opportunity to control better for concurrent changes unrelated to the IFRS adoption decision that might also affect expected benefits (Brüggemann et al. 2013:22). Using the unique South African setting to distinguish between comparability and quality as likely sources of capital market benefits, my study also complements the single-country studies by Joos and Leung (2012) and Brochet et al. (2013), who studied comparability benefits in countries where accounting quality was already considered to be high before IFRS adoption. More specifically, my study considers the sources of changes in comparability following the adoption of IFRS.

By performing an in-depth investigation of sources of changes in the comparability of financial statements following IFRS adoption, I make a contribution to different areas of the IFRS adoption literature. My findings show that both the adoption of IFRS and changes unrelated to IFRS adoption are likely sources of increased comparability following the adoption of IFRS. Evidence consistent with a global increase in the comparability of financial statements in the period following IFRS adoption supports the likelihood that market changes unrelated to the IFRS decision could explain inconsistencies found in the IFRS adoption literature between financial reporting effects and capital market effects (Brüggemann et al. 2013:19; Leuz & Wysocki 2016:592).

However, I found an incremental increase in the comparability of financial statements for South African firms following IFRS adoption. This finding provides evidence of the sources of changes in the comparability of financial statements that can be attributed to IFRS adoption. My study is the first to find an increase in comparability with the “label” change following the adoption of IFRS in a country that already applied high quality accounting standards. My study also provides evidence consistent with the

argument that network benefits arise from the adoption of IFRS, as suggested by Meeks and Swann (2009:194), Hail et al. (2010:358) and Ramanna and Sletten (2014:1520).

My study also makes a practical contribution. I provide evidence consistent with the achievement of the stated objective in the IFRS Foundation and the IASB's (2015) mission statement to increase the transparency of financial markets by means of the increased comparability of financial statements. It also provides empirical evidence to the JSE and SAICA that one of the proposed benefits of adopting IFRS in South Africa has materialised (Ludolph 2006). These findings may be useful to regulators from countries that already have high quality accounting standards and are contemplating the adoption of IFRS.

## **1.8 Structure of the thesis**

The remainder of my thesis is structured as follows: Chapter 2 presents background on the South African accounting environment; Chapter 3 contains a review of the IFRS adoption literature and the development of the hypotheses; Chapter 4 explains the research design; Chapter 5 presents the main comparability results; Chapter 6 contains additional analyses to supplement the main results; Chapter 7 investigates changes in accounting quality following the adoption of IFRS in South Africa; and finally, Chapter 8 concludes the thesis.

## CHAPTER 2: SOUTH AFRICAN ACCOUNTING ENVIRONMENT

### 2.1 Introduction

In order to contextualise my research on the association between the mandatory adoption of IFRS and the comparability of South African firms' financial statements, it is necessary to understand the accounting environment in South Africa. In this chapter, I begin by providing a brief history of the development of accounting standards in South Africa, to show that South African accounting standards have been closely aligned with International Accounting Standards (IAS)<sup>11</sup> from inception. I then discuss the institutional environment and the enforcement of accounting standards in South Africa, because both these factors are relevant to the possible benefits of IFRS adoption.

### 2.2 The history of accounting standards in South Africa

A mandate to establish accounting standards in South Africa is expressed in the *Companies Act, No. 61 of 1973* (hereafter *Companies Act*). The *Companies Act* is applicable to both public and private firms in South Africa that are incorporated in terms of this Act. The *Companies Act* states:

The annual financial statements of a firm shall in conformity with generally accepted accounting practice, fairly present the state of affairs of the firm and its business as at the end of the financial year concerned and the profit or loss of the firm for that financial year. (South Africa 1973)

In order to develop “generally accepted accounting practice” as required by the *Companies Act*, the national coordinating body of Chartered Accountants in South Africa at the time, the National Council of Chartered Accountants, established the Accounting Practices Board. An Accounting Practices Committee was also formed to advise the Accounting Practices Board on technical matters and to receive suggestions from the accounting profession (IFRS Foundation 2015:1; Verhoef

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<sup>11</sup> IAS were issued by the International Accounting Standards Committee (IASC), whereas IFRS are issued by the International Accounting Standards Board (IASB), which succeeded the IASC. The IASB has amended some IAS (Barth et al. 2012:69). Any reference to IFRS refers to either IAS or IFRS.

2012:[11]).<sup>12</sup> During the same period, the IASC was formed to address the increasing need to compare financial statements from different jurisdictions. From the start, the National Council of Chartered Accountants decided to work closely with the IASC in the development of SA GAAP (Verhoef 2012:[12-13]). The first statement of SA GAAP was issued in South Africa in 1974 (Verhoef 2012:[14]).

In 1979, the IASC conducted a survey to determine to what extent countries' accounting standards were in line with the accounting standards set by the IASC. It was determined that, apart from a few exceptions, the South African accounting standards were comparable to the IASC standards (Verhoef 2012:[14]).

In 1993, the Accounting Practices Board suggested that the South African standards should be based on the standards issued by the IASC, namely IAS. This suggestion was approved by then national coordinating body of Chartered Accountants in South Africa, SAICA,<sup>13</sup> so, from 1995, SA GAAP was harmonised with IAS. At that point, SAICA decided that IAS would only be amended where necessary to be relevant to South African circumstances (Verhoef 2012:[16-17]; IFRS Foundation 2015:2).

Since October 2000, the JSE has required listed firms' annual financial statements to comply with the *Companies Act* and either SA GAAP or IFRS (Verhoef 2012:[19]). To monitor compliance with SA GAAP or IFRS, in 2002, the JSE and SAICA together formed the GAAP Monitoring Panel, which reports to the JSE on any non-compliance with these standards (Verhoef 2012:[20]; SAICA 2013a).

In 2003, SAICA announced that IFRS would be issued without any amendments as SA GAAP. This change was possible as a result of the harmonisation project that started in 1995. The differences that remained were mostly editorial, implementation dates and additional disclosures. Statements that were not going to be revised were re-issued to ensure that the text was the same as that in the IFRS. At that stage, a dual numbering system was used, indicating both the IFRS and SA GAAP number (SAICA 2003:1-2). The *Companies Act* still required financial statements to comply

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<sup>12</sup> I used square brackets to indicate pages in Verhoef's paper, which is a pdf where pages are not numbered in the original.

<sup>13</sup> The National Council of Chartered Accountants was replaced by SAICA in January 1980 (Verhoef 2012:[14]).



with “generally accepted accounting practice”. Accordingly, SAICA obtained legal opinion, stating that additional disclosures might be needed where a firm did not comply fully with SA GAAP. The Accounting Practices Board determined that once a firm had adopted IFRS and also complied with local statements of SA GAAP, and interpretations that specifically deal with matters relating to South Africa (AC 500 series), it would be deemed to comply with SA GAAP, and thus the requirement of the *Companies Act* to comply with “generally accepted accounting practice” would be met (SAICA 2003:2-3).<sup>14</sup>

The decision that IFRS would be issued as SA GAAP was taken as a result of the announcement by the JSE that from 1 January 2005 all listed firms would be required to comply with IFRS (SAICA 2003:1). Where a firm has a dual listing, with the primary listing in another country, the firm does not have to comply with IFRS, and can apply the local GAAP required in the country of the primary listing (IFRS Foundation 2015).

### **2.3 SA GAAP versus IFRS**

As I have already mentioned, SA GAAP was similar to IFRS when the decision was taken in 2003 to issue IFRS as SA GAAP without any changes. This implies that at the time of the formal adoption of IFRS in South Africa for listed firms, SA GAAP was identical to IFRS. This was confirmed in a technical publication by SAICA (2006), which states that “where an entity is preparing financial statements in terms of Statements of GAAP they are in effect complying with IFRS”. However, South African firms reporting under SA GAAP could not claim compliance with IFRS, as transitional differences still remained (United Nations 2007:5).

Commenting on the IFRS adoption process in South Africa, Kim Bromfield (2013), a technical partner at KPMG South Africa, stated that as a result of the harmonisation of SA GAAP with IFRS, the IFRS adoption in South Africa was “relatively painless”.

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<sup>14</sup> Legal backing for the use of IFRS in South Africa was provided when the *Companies Act, No. 71 of 2008* became effective on 1 May 2011. New regulations were also published that allowed the use of either IFRS, IFRS for small and medium enterprises, or SA GAAP, depending on the classification of the firms. Firms listed on the JSE were still required to prepare financial statements using IFRS (Bromfield 2013; SAICA 2014). Since the IFRS standards were adopted as SA GAAP without any changes from 2003, a decision was made to withdraw SA GAAP for all financial years beginning on or after 1 December 2012 (SAICA 2013b:1). This announcement had no effect on listed firms, as they were already required to report in terms of IFRS.



The biggest challenges that the firms faced resulted from new and revised standards that became effective at the time when South Africa adopted IFRS. In Appendix A, I provide a list of all the new and revised standards that became effective during the period under review in my study, 2002 to 2008. Most of these were effective for annual periods beginning on or after 1 January 2005. To provide direct evidence on this issue, I analyse the IFRS 1 reconciliations of South African firms. The standards that had the most significant effect on South Africa with the adoption of IFRS were IFRS 2 – *Share-based Payments*, IFRS 3 – *Business Combinations* (effective for all business combinations on or after 31 March 2004) and the resulting changes to IAS 36 – *Impairment of Assets* and IAS 38 – *Intangible Assets* and also the improvements to IAS 16 – *Property, Plant and Equipment*.

Another observation regarding the adoption of IFRS in South Africa was that the local interpretation of standards was not always in line with international interpretations. During the adoption process, technical experts from firms and auditing firms reviewed accounting policies and practices, and identified some differences in the application of standards; notably, operating leases were not accounted for on a straight-line basis by South African firms (United Nations 2007:14; Bromfield 2013). This review process is another benefit of the adoption of IFRS, as a number of these divergences in practice could be eliminated (United Nations 2007:11). Other differences in interpretation related to the incorrect treatment of cash discounts, settlement discounts, rebates and extended payment terms that affected IAS 2 – *Inventory*, and IAS 18 – *Revenue* (United Nations 2007:16).

To evaluate the statement that SA GAAP was the same as IFRS when IFRS was mandated in South Africa, I analyse the IFRS 1 – *First-time Adoption of IFRS*-reconciliations of 31 mandatory adopters included in the top 50 firms, by market capitalisation, listed on the JSE<sup>15</sup> (see Table 2.1, overleaf).

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<sup>15</sup> Of the Top 50 companies, two firms did not report in terms of SA GAAP before the adoption of IFRS, 15 firms adopted IFRS before the mandatory adoption date, and data were not available for one firm. I excluded one firm that I considered an outlier based on adjustments not in line with other firms.

**Table 2.1:**

**Analysis of IFRS 1 reconciliations of South African firms included in Top 50**

	Date of transition		Profit or loss	
	R million	Percentage adjustment	R million	Percentage adjustment
<b>SA GAAP previously reported</b>	<b>235,131</b>		<b>69,921</b>	
<b>Total adjustment</b>	<b>-3,865</b>	<b>-1.64%</b>	<b>-2,079</b>	<b>-2.97%</b>
<b>New and revised standards</b>	<b>-991</b>	<b>-0.42%</b>	<b>-1,696</b>	<b>-2.43%</b>
IFRS 2 – <i>Share-based Payments</i>	-197	-0.08%	-1,195	-1.71%
IFRS 3 – <i>Business Combinations</i>	-2,203	-0.94%	22	0.03%
IAS 16 – <i>Property, Plant and Equipment</i>	1,274	0.54%	-162	-0.23%
IAS 17 – <i>Leases</i>	-37	-0.02%	-8	-0.01%
IAS 21 – <i>The Effects of Changes in Foreign Exchange Rates</i>	-25	-0.01%	-687	-0.98%
IAS 27 – <i>Consolidated and Separate Financial Statements</i>	21	0.01%	233	0.33%
IAS 38 – <i>Intangible Assets</i>	157	0.07%	-22	-0.03%
IAS 39 – <i>Financial Instruments: Recognition and Measurement</i>	21	0.01%	123	0.18%
IFRIC 1 – <i>Changes in Existing Decommissioning, Restoration and Similar Liabilities</i>	-2	0.00%	0	0.00%
<b>Divergences in practice</b>	<b>-1,706</b>	<b>-0.73%</b>	<b>-360</b>	<b>-0.51%</b>
IAS 2 – <i>Inventory</i> and IAS 18 – <i>Revenue</i>	-247	-0.11%	-303	-0.43%
IAS 17 – <i>Leases</i>	-1,459	-0.62%	-57	-0.08%
<b>Transitional provisions</b>	<b>-993</b>	<b>-0.42%</b>	<b>388</b>	<b>0.55%</b>
IAS 19 – <i>Employee Benefits</i>	-904	-0.38%	265	0.38%
IAS 21 – <i>The Effects of Changes in Foreign Exchange Rates</i>	-	0.00%	121	0.17%
IAS 39 – <i>Financial Instruments: Recognition and Measurement</i>	-89	-0.04%	2	0.00%
<b>Entity specific and other</b>	<b>-175</b>	<b>-0.07%</b>	<b>-411</b>	<b>-0.59%</b>
<b>Reported in terms of IFRS</b>	<b>231,266</b>		<b>67,842</b>	

On the date of the transition to IFRS, the total adjustments reduced equity reported under SA GAAP by 1.64%. Adjustments relating to divergences in practice reduced equity by 0.73%, of which 0.62% was for operating leases not accounted for on a straight-line basis. New and revised standards resulted in an overall reduction in equity of 0.42%. This includes an increase of 0.54% for property, plant and equipment adjustments, and a decrease of 0.94% relating to business combinations adjustments. Transitional provisions resulted in a decrease of 0.42%, of which 0.38% related to the election by firms to recognise all actuarial gains and losses at the date of transition. A further reduction of 0.07% was for adjustments that were entity-specific or not specified. The reconciliation of profit or loss reported under previous

GAAP showed a total decrease in profit of 2.97%. New and revised standards resulted in a decrease of 2.43%, of which 1.71% related to IFRS 2 – *Share-based Payments*. The other adjustments were a 0.51% decrease relating to divergences in practice, a 0.55% increase relating to transitional provisions and a 0.59% decrease that was entity-specific.

The above analysis supports the statement that SA GAAP was the same as IFRS at the time of the adoption of IFRS, since the largest of these adjustments relate to new standards, a divergence in practice specifically relating to operating leases, and a transitional provision that gave firms the option to recognise actuarial gains and losses at the date of transition to IFRS.<sup>16</sup>

The first part of this chapter summarised the events leading up to the development of the first accounting standard in South Africa in 1974 to the adoption of IFRS by firms listed on the JSE from 1 January 2005. The next part of this chapter focuses on the South African institutional environment and, more specifically, on the financial reporting environment in which these standards are applied and enforced.

## **2.4 South African institutional environment**

### **2.4.1 Introduction**

Studies on the mandatory adoption of IFRS indicate that capital market benefits with the adoption of IFRS are most evident in countries with strong institutional environments (Daske et al. 2008:1086; Yu 2010:44; Li 2010:607; Shima & Gordon 2011:481; Byard, Li & Yu 2011:69; Florou & Pope 2012:1993). Li (2010:610) and Florou and Pope (2012:1995) state that higher quality accounting standards alone are not sufficient to provide higher quality financial reporting and capital market benefits. The study by Christensen et al. (2013:147) suggests that it is the changes in

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<sup>16</sup> IFRS 1 paragraph 20 states the following relating to actuarial gains and losses: “Under IAS 19 Employee Benefits, an entity may elect to use a ‘corridor’ approach that leaves some actuarial gains and losses unrecognised. Retrospective application of this approach requires an entity to split the cumulative actuarial gains and losses from the inception of the plan until the date of transition to IFRSs into a recognised portion and an unrecognised portion. However, a first-time adopter may elect to recognise all cumulative actuarial gains and losses at the date of transition to IFRSs, even if it uses the corridor approach for later actuarial gains and losses. If a first-time adopter uses this election, it shall apply it to all plans.”

reporting enforcement (an institutional variable) that are associated with capital market benefits, rather than the changes in accounting standards.

Different definitions and proxies are used in the literature to capture the institutional environment in accounting studies. Often studies use a country's legal tradition – common law or code law (Armstrong et al. 2010:46; Barth et al. 2012:69; Yip & Young 2012:1775) – or legal enforcement (Daske et al. 2008:1116; Neel 2011:17; Barth et al. 2012:69; Christensen et al. 2013:149) to represent a country's institutional environment. Some recent studies have used measures capturing the enforcement of accounting standards that have a more severe impact on the accounting environment (Brown, Preiato & Tarca 2014:2; Preiato, Brown & Tarca 2015:1). Examples of these measures include the existence of an enforcement body that monitors compliance with accounting standards, the review of financial statements by an enforcement body, enforcement action taken when accounting standards are not complied with, and the existence of reports detailing the findings of reviews to indicate that the enforcement body is active.

The results of studies based on the institutional environment and the resulting impact on the quality of amounts reported in financial statements could vary depending on how the institutional environment is defined and measured. This is evident in the study by Yu (2010:44), who used a measure of the enforcement of accounting standards developed by Preiato, Brown and Tarca (2009), and who found that a lack of enforcement of accounting standards has a negative impact on the holdings by foreign mutual funds (this measure was only available for the European Union). However, when Yu (2010) used a broader measure of legal enforcement (the rule of law index and the anti-director index), the findings suggest that in countries where the general legal environment is weak, the adoption of IFRS can provide additional protection for investors and increase investment by mutual funds in these countries.

Next, I explore some of the measures that have been used most frequently in the literature and what the literature says about the South African institutional environment.

#### **2.4.2 Legal tradition**

Various studies, such as those by Ball, Kothari and Robin (2000:47), Leuz, Nanda and Wysocki (2003:516), Armstrong et al. (2010:58), Barth et al. (2012:90), and Yip and Young (2012:1788), claim that one of the factors that influence a country's institutional environment is a country's legal tradition. Countries are either classified as common law or code law countries. The difference between these two types of countries regarding standard setting is that in common law countries the accounting standards are shaped by the requirements of investors, whereas in code law countries the requirements of government take precedence (Soderstrom & Sun 2007:689).

IFRS was mostly developed by countries with a common law tradition, and it is generally expected that enforcement of these accounting standards is stronger in common law countries than in code law countries (Ball et al. 2000:20; Barth et al. 2012:69). Ball et al. (2000:47) found that common law countries are more conservative, requiring more timely recognition of accounting income and losses. Armstrong et al. (2010:58) found a negative market reaction to the possible adoption of IFRS in the European Union for firms in code law countries, and concluded that this confirms that investors in code law countries have a negative view of the enforcement of IFRS.

Yip and Young (2012:1788) distinguish between common law and code law countries to determine the impact of the mandatory adoption of IFRS on comparability. They found that financial statements from countries that come from similar legal traditions are more likely to show improved comparability than when they come from different institutional backgrounds. Barth et al. (2012:90) found greater comparability between firms that have adopted IFRS in common law countries and US GAAP firms (the US also has a common law system), than between firms that have adopted IFRS in code law countries and US GAAP firms.

South Africa has a mixed legal system which was strongly influenced by Roman-Dutch law and British law. Customary law as applied in the various African cultures in the country continues to co-exist in areas governed by local Traditional Authorities.

Roman-Dutch law was introduced in South Africa when the Dutch occupied South Africa in 1652. In 1806 the British settled in South Africa, but Roman-Dutch law was still the common law of the country. English then became the official language of the courts and British procedures were introduced in the courts. The impact of the British legal system grew because judges and magistrates trained in Britain or came from Britain. Often judges would consult British case law, and a number of South African laws were based on British laws (Nagel, Boraine, Lotz, Olivier, Otto, Prozesky, Roestoff & Van Jaarsveld 1994; South Africa 2015b). As South Africa only became independent from Britain in 1931, its legal system and government have been strongly influenced by British common law (Prather-Kinsey 2006:145).

Most of the studies that have included the legal tradition of either code law or common law as a variable have classified South Africa as a common law country, suggesting an institutional environment focused on the needs of investors (Ball et al. 2000:20; Leuz et al. 2003:517; Barth et al. 2012:80).

### **2.4.3 Legal enforcement**

Another factor that has been frequently used as representing a country's institutional environment is legal enforcement. Various proxies have been used in the IFRS adoption literature to represent a country's legal enforcement, namely the rule of law index<sup>17</sup> (Daske et al. 2008:1119; Kaufmann, Kraay & Mastruzzi 2009; Neel 2011:17), the regulatory quality index<sup>18</sup> (Christensen et al. 2013:149), the public enforcement index<sup>19</sup> (Barth et al. 2012:75) and an average of three measures (efficiency of the legal system, the rule of law index and the level of corruption) developed by La Porta, López de Silanes, Shleifer and Vishny (1998; also see Li 2010:623).

The abovementioned measures have been frequently used because they are available for a large number of countries and capture some of the differences in legal

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<sup>17</sup> The rule of law index was developed by Kaufmann et al. (2009). It captures the general legal environment of a country and includes the level of contract enforcement, property rights, the quality of the police and the legal system, and also the extent of crime and violence.

<sup>18</sup> The regulatory quality index developed by Kaufmann et al. (2009) measures a country's regulatory quality and the extent to which a country can develop and execute new policies and regulations that encourage the development of a private sector.

<sup>19</sup> This public enforcement index includes various indexes that capture the public enforcement of securities regulation.



enforcement that distinguish different countries from one another (Brown et al. 2014:2). In all of the abovementioned studies, legal enforcement was found to be an important determinant in achieving comparability and/or capital market benefits.

In the studies that included South Africa as one of the sample countries to evaluate the effect of legal enforcement on the adoption of IFRS, South Africa was generally indicated as having low levels of enforcement (Daske et al. 2008:1118; Neel 2011:23; Barth et al. 2012:80; Christensen et al. 2013:157). To distinguish between high and low enforcement countries, the studies indicate a country as having high enforcement if its index is above the median for the countries included in the sample and as low enforcement if it is below the median (Daske et al. 2008:1118; Neel 2011:23; Christensen et al. 2013:157). For example, based on Daske et al.'s (2008:1118) sample of 26 countries, South Africa is classified as a country with low levels of enforcement. A country's classification as high or low enforcement in these studies therefore depends on which countries are included in the sample and also how many countries are included.

If one applies the same method of classification and the same proxies as those used by Daske et al. (2008:1118), Neel (2011:23) and Christensen et al. (2013:157), but extends the sample to all countries (in excess of 195 countries) included in the indexes developed by Kaufmann et al. (2009), the enforcement classification could differ. Table 2.2 shows the estimates of the rule of law index, as well as the regulatory quality index by Kaufmann et al. (2009) for South Africa and its ranking compared to the other countries included in the survey from 2002 to 2008. For the rule of law index, South Africa's ranking ranged from 82<sup>nd</sup> out of 196 countries (highest ranking), to 93<sup>rd</sup> out of 210 countries (lowest ranking) and for the regulatory quality index from 61<sup>st</sup> out of 197 countries (highest ranking) to 74<sup>th</sup> out of 207 countries (lowest ranking). Using the high-low (median) split used in abovementioned studies and including all the countries indexed by Kaufmann et al. (2009), for both measures, South Africa would have been ranked as a high enforcement country for the entire period, as its index is above the median level. Based on this, I argue that South Africa has an above average level of legal enforcement, rather than a low level.

**Table 2.2:**

**Rule of law index and regulatory quality index**

<b>South Africa</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Rule of law estimate*	0.06	0.02	0.15	0.16	0.24	0.13	0.12
Rank	82/196	93/201	88/208	90/208	87/210	91/210	93/210
Regulatory quality estimate*	0.53	0.58	0.55	0.48	0.55	0.42	0.63
Rank	61/197	61/197	65/204	72/205	67/206	74/207	61/206

\*A higher rule of law index indicates a stronger general legal environment and similarly a higher regulatory quality index indicates a higher level of regulatory quality.

**2.4.4 Financial reporting environment**

The above measures mostly consider the general institutional or legal environment of a country. It is also possible that a country's financial reporting environment could differ from the general institutional environment. Brown et al. (2014:2) argue that the proxies used for the legal environment do not necessarily reflect a country's enforcement of accounting standards, and also do not capture changes in the enforcement of accounting standards with the adoption of IFRS. This could be true in a country such as South Africa, where, on the one hand, there is a highly developed financial market, and, on the other hand, there are serious concerns regarding the security situation and the business cost of crime, violence and corruption (WEF 2012:37-41).

Brown et al. (2014:1) developed an index to measure the strength of auditing and the enforcement of accounting standards in a country. Based on their index, South Africa measured either below or slightly above the mean and median levels for the 51 countries included in their study, which considered the levels for 2002, 2005 and 2008. Using their measure, South Africa scored 11 out of 56 in 2002 (mean 17.88 and median 16) and 29 out of 56 in both 2005 (mean 27.39 and median 26) and 2008 (mean 30.84 and median 28).

Although this measure suggests an increase in enforcement in South Africa between 2002 and 2005, I question some of the sources used for South Africa. For example, with regard to South Africa, Brown et al. (2014:37) indicate that the Financial Services Board is the regulator. However, the JSE is the regulator, which is in turn supervised by the Financial Services Board. The Financial Services Board is also



responsible for legal processes, as the JSE has no criminal jurisdiction (JSE 2015a). Brown et al. (2014:47) scored South Africa zero out of six for 2002, 2005 and 2008 for both “taken enforcement action” and “level of resourcing”.<sup>20</sup> This score is probably based on Brown et al.’s (2014) use of the Financial Services Board as the regulator in their study.

Furthermore, the JSE and SAICA established the GAAP monitoring panel in 2002 to oversee compliance with accounting standards. Since the inception of the panel in 2002, 34 firms have been referred for review. In 2007 alone, six firms were referred to the GAAP monitoring panel for review, of which five were required to reissue financial statements and one had to correct disclosure (SAICA 2008). To put this in context, the European Securities Markets Authority (2014) reported that 18 firms were required by enforcers in Europe to reissue financial statements in 2013. Review of financial statements as well as revise and reissue of financial statements were measures used by Brown et al. (2014:16) to determine whether enforcement action has been taken.<sup>21</sup> If Brown et al. (2014:47) used the information from the GAAP monitoring panel, it could have changed the total index score for South Africa. Moreover, the review of financial statements and reporting on surveillance programs were only included in Brown et al.’s (2014:47) score for South Africa from 2005, although the GAAP monitoring panel, which performed these duties, was already established in 2002. Lastly, Brown et al. (2014:47) scored South Africa zero in 2002 for quality assurance, oversight body and sanctions applied for non-compliance, but gave full scores for 2005 and 2008. This score was probably based on assuming that the Independent Regulatory Board of Auditors was the auditing oversight body in South Africa established in 2005. However, the Independent Regulatory Board of Auditors replaced the Public Accountants’ and Auditors’ Board which regulated the auditing profession since 1951 in South Africa (Verhoef 2012:[3],[18]).

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<sup>20</sup> They measured “taken enforcement action” by reviewing reports to determine whether annual financial statements were reviewed, and whether firms were required to revise and reissue financial statements. They measured “level of resourcing” as the number of staff at the regulator (Brown et al. 2014:16).

<sup>21</sup> One could also argue that in countries where no revision and reissue of financial statements were required, the standards are being applied consistently and to a high standard. One would still expect to see that the financial statements are being reviewed. Review of financial statements is included in the “taken enforcement action” index item by Brown et al. (2014:16).

Two of Brown et al.'s (2014:16) measures that could be questioned in general are the “level of litigation risk” and the measure of “sets standards”. The “level of litigation risk” is dated, as it is based on scores calculated in 1997 that measure the possibility that litigation will be taken against auditors. This measure was assumed to be the same for the three periods, and therefore does not capture any changes in enforcement. With regard to “sets standards”, Brown et al. (2014:16) argue that a local enforcement body that sets standards suggests higher accounting quality, because the body would be more involved with the process. This goes against the assumptions underlying the global adoption of IFRS, as the standards are set by the IASB and enforced by the countries that have elected to adopt the standards.

A measure of audit quality used in a study by Lamoreaux, Michas and Schultz (2015:716) was developed by Michas (2011:1762-1764). This measure is based on 13 questions in four main categories, namely auditor education, auditing standards, auditor independence and auditor oversight. The scoring was based on data from the World Bank's Reports on the Observance of Standards and Codes in the early 2000s. South Africa scored 9.5 out of 13, which was higher than the mean values in both the studies by Lamoreaux et al. (2015:716) and Michas (2011:1740).

There is also other evidence that suggests that South Africa's auditing and reporting environment and the securities exchange are highly regarded. Over my sample period (2002 to 2008), South Africa was ranked consistently amongst the top 20 countries by the WEF's global competitiveness report on the strength of its auditing and reporting standards. This evidence suggests that South Africa has an auditing and reporting environment which is comparable to that of countries like the UK, Australia and the US. South Africa was also amongst the top 20 countries for the efficacy of its corporate boards, the protection of minority shareholder's interests and the regulation of the securities exchange. These three measures also provide some indication of the strength of financial markets in South Africa (see Table 2.3 for South Africa's relative ranking for each of these measures over the sample period).<sup>22</sup>

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<sup>22</sup> The changes in the rankings do not necessarily indicate changes in the institutional environment as the measures are annual relative rankings. Since South Africa's ranking remained in the top 20 for all years in my sample, I argue that South Africa did not experience major changes to its institutional environment.

**Table 2.3:**

**South Africa's ranking in WEF's global competitiveness report**

Indicators <sup>23</sup>	2001- 2002	2002- 2003	2003- 2004	2004- 2005	2005- 2006	2006- 2007	2007- 2008
<b>Number of countries in survey</b>	<b>75</b>	<b>80</b>	<b>102</b>	<b>104</b>	<b>117</b>	<b>125</b>	<b>131</b>
Strength of auditing and reporting standards	-*	17	15	6	5	7	6
Efficacy of corporate boards	13	12	9	8	8	8	4
Protection of minority shareholder's interests	-	-	15	15	15	17	13
Regulation of securities exchange	-	-	12	6	-	-	5

\* The hyphen (-) indicates that the indicator was not measured for that specific year.

Leuz et al. (2003:507) found that the protection of minority shareholders' rights and legal enforcement in a country were negatively associated with earnings management, indicating that countries with strong protection of minority shareholders and strong legal enforcement tend to have higher accounting quality.<sup>24</sup> In their study, South Africa was indicated as having the fifth lowest level of earnings management out of 31 countries, confirming strong protection of minority shareholders (see Table 2.3) and legal enforcement. Leuz et al. (2003:511) measured earnings management for the period 1990 to 1999. This falls outside my sample period, but it suggests the presence of a strong financial reporting environment even before the mandatory adoption of IFRS in 2005.

Another factor affecting the financial reporting environment in South Africa is the country's commitment to good corporate governance. In 1994, the King Committee issued the first King Report on Corporate Governance, followed by King II in 2002 (Cliffe Dekker Attorneys 2002).<sup>25</sup> All firms listed on the JSE are required to comply with the requirements of the King Reports (JSE 2015b). The first two King Reports laid the foundation internationally for the requirement that firms consider all stakeholders in their activities and corporate reporting (Brennan & Solomon

<sup>23</sup> The table was prepared using the rankings of the *Global Competitiveness Report* for each of the years as indicated in the table (WEF 2002, 2003, 2004a, 2004b, 2005, 2006, 2007).

<sup>24</sup> Earnings management is often used as a measure of accounting quality. Low levels of earnings management suggest higher accounting quality (Barth, Landsman & Lang 2008:469; Ahmed, Neel & Wang 2013:1344).

<sup>25</sup> King II was replaced by King III in 2009. King III focuses on integrated reporting and requires reporting on financial and sustainability aspects to be combined into an integrated report (PwC 2009). King IV was issued in November 2016. King IV focuses on transparent corporate governance and requires firms to explain how the principles are applied (PwC 2016b).

2008:890). An article published in the *Internal Auditor*<sup>26</sup> after the second King report was issued claimed the following: “South Africa has taken the lead in defining corporate governance in broadly inclusive terms” (Barrier 2003). This statement indicates that the King Reports, which South African listed firms are required to comply with, are highly respected globally.

This section has indicated that an assessment of the financial reporting environment separately from the general institutional environment is essential, as the financial reporting environment impacts more directly on the successful adoption of IFRS in a country than the general institutional environment. I have also provided evidence on the financial reporting environment in South Africa and more specifically on the strength of accounting and auditing standards, as well as the country’s commitment to good corporate governance.

#### **2.4.5 Changes in the enforcement of accounting standards**

The last aspect that needs to be considered that relates to the institutional environment, and more specifically the financial reporting environment, is changes in the enforcement of the accounting standards. Over a decade ago, Ball (2006:15) already raised concerns regarding the consistent implementation of IFRS around the world. He indicated that each country’s accounting system is, to a large extent, influenced by that country’s economic and political power, and that this power will continue to affect accounting systems even with the adoption of IFRS. Ball (2006:17) also raised concerns about the enforcement of IFRS, as the IASB is only a standard-setter and does not have any powers to enforce the standards. The power of regulatory bodies around the world differs greatly, and in most countries is not considered to be very strong (Ball 2006:18). These points raised by Ball (2006) indicate that a change in enforcement is required in countries with weak regulatory bodies to ensure successful implementation of IFRS.

Studying the impact of changes in enforcement with the mandatory adoption of IFRS, Christensen et al. (2013:171) claimed that it was the enforcement changes that occurred concurrently with IFRS adoption that are associated with liquidity changes

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<sup>26</sup> The *Internal Auditor* is a bi-monthly magazine issued by the Institute of Internal Auditors (IIA) for its members. The IIA is an international body with more than 180 000 members globally (IIA 2015).

and that IFRS per se had virtually no effect. In Barth and Israeli's (2013) discussion of Christensen et al.'s (2013) work, they concluded that the design by Christensen et al. (2013) does not permit the conclusion that either enforcement of standards or the adoption of IFRS results in liquidity benefits, but show that, in some cases, changes in accounting standards can result in liquidity benefits, and in other cases, changes in enforcement can result in liquidity benefits. However, to achieve optimal benefits, changes in standards *and* changes in enforcement should be made.

Christensen et al. (2013:155) claim in their study that South Africa did not make any substantive changes in enforcement between 2001 and 2009. They assessed the level of change by sending surveys to the relevant countries' national regulators. I have already argued above that South Africa's financial reporting environment is highly regarded and that enforcement of accounting standards was above average even before the adoption of IFRS. The fact that South Africa did not make any significant changes in enforcement also affords me the opportunity to focus my study on the effects that the adoption of IFRS has had on the comparability of financial statements, rather than the effects of changes in enforcement.

## **2.5 Conclusion**

The first part of the chapter provided the history of the development of accounting standards in South Africa. This history shows that the South African standard setters worked closely with international accounting bodies in developing its standards, enabling them to harmonise the South African accounting standards with IFRS and eventually to adopt IFRS. It also shows that the South African accounting standards were identical to IFRS even before the mandatory adoption in 2005, and therefore the quality of these South African accounting standards can be expected to be the same as the quality of IFRS.

The second part of this chapter discussed the literature relating to the importance of a strong institutional environment and strong enforcement of accounting standards in order to achieve the required financial reporting and capital market benefits. A number of studies have classified South Africa as a country with a weak institutional environment, but I have argued that the South African auditing and reporting

environment is comparable to that in other countries with strong institutional environments. South Africa also did not make any significant changes to enforcement, which allows me to focus on the adoption of IFRS, independent of changes in enforcement.

## **CHAPTER 3: LITERATURE REVIEW**

### **3.1 Introduction**

The main objective of my study is to determine whether the mandatory adoption of IFRS is associated with changes in the comparability of financial statements in a country where local GAAP is of a similar quality to IFRS. In order to achieve the objective of my study, I developed hypotheses relating to the comparability of financial statements after reviewing the relevant literature.

In this chapter, I provide an introduction to the IFRS adoption literature and point out the expected associations between the adoption of IFRS, financial reporting effects (accounting quality and financial statement comparability) and capital market benefits. In this review, I identify areas in the literature that require further examination and explain how the South African setting can provide insights into the comparability of financial statements following the adoption of IFRS. I then develop my hypotheses based on the literature review.

### **3.2 Introduction to the adoption of IFRS**

It has been argued that the introduction and implementation of global standards would improve the comparability of financial statements of firms from different countries, at a lower cost, and would facilitate cross-border investment (Tweedie & Seidenstein 2004:589-591). When they announced the mandatory adoption of IFRS in a number of countries, regulators claimed that the quality of financial statements would increase, and that financial statements prepared in terms of IFRS would be more transparent and comparable than financial statements based on local GAAP (European Council 2002; Ludolph 2006).

Several studies have since provided evidence on the capital market effects of both the voluntary adoption of IFRS (Daske 2006; Covrig, DeFond & Hung 2007) and its mandatory adoption (Daske et al. 2008; Li 2010; DeFond, Hu, Hung & Li 2011; Florou & Pope 2012). Most of the evidence has come from the European Union



(Daske 2006; Li 2010; DeFond et al. 2011), but some studies have also been done on markets in the rest of the world (Covrig et al. 2007; Daske et al. 2008; Florou & Pope 2012). These studies argue that the capital market effects can be attributed either to an improvement in accounting quality or to alternatively improved comparability of financial statements (Daske et al. 2008:1091-1092; Li 2010:611). This literature is summarised in Figure 3.1 and discussed further below.

**Figure 3.1:**  
**Consequences of the adoption of IFRS**

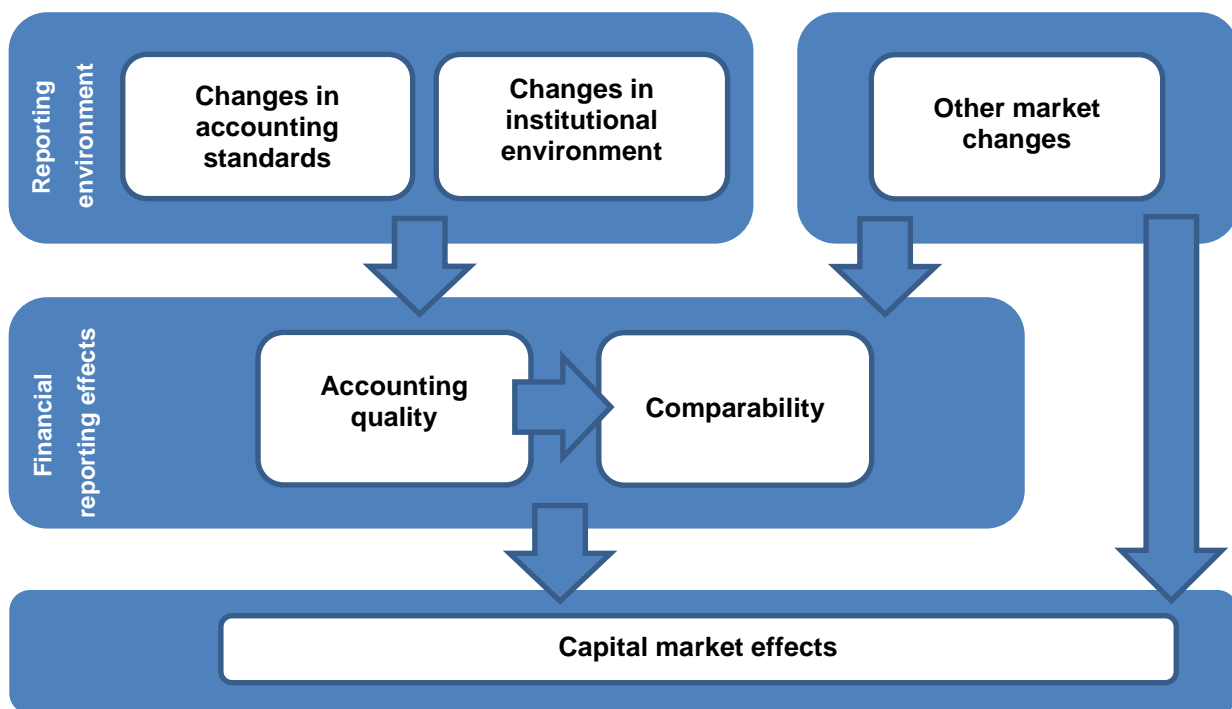


Figure 3.1 indicates that a change in the reporting environment – either as a result of changes in accounting standards, or changes in the institutional environment, or both – can lead to financial reporting effects. These effects might include changes in accounting quality, or the comparability of financial statements, or both. The financial reporting effects are also expected to result in capital market effects, such as reduced cost of capital, increased liquidity, and increased foreign investment (Daske et al. 2008:1092). Thus far, no conclusive evidence has been reported that shows incontrovertibly that the mandatory adoption of IFRS is indeed associated with changes in accounting quality, the comparability of financial statements, or both. However, the literature is mostly in agreement on the capital market effects



(Brüggemann et al. 2013:2; Leuz & Wysocki 2016:587-588). This raises questions about the channel through which the mandatory adoption of IFRS affects capital markets. It also raises the possibility that the capital market effects are not attributable to IFRS adoption, but that these apparent effects merely occurred around the time of IFRS adoption (Leuz & Wysocki 2016:588). Moreover, Brüggemann et al. (2013:2) have pointed out the difficulty in separating capital market effects relating to IFRS adoption from other concurrent market changes.

Below, I discuss each of the main aspects of Figure 3.1, namely changes in the reporting environment, financial reporting effects and capital market effects, to establish the channels proposed by the literature and how these can be empirically assessed. In addition, I consider the effects of other concurrent market changes on financial reporting and capital markets.

### ***3.2.1 Changes in the reporting environment***

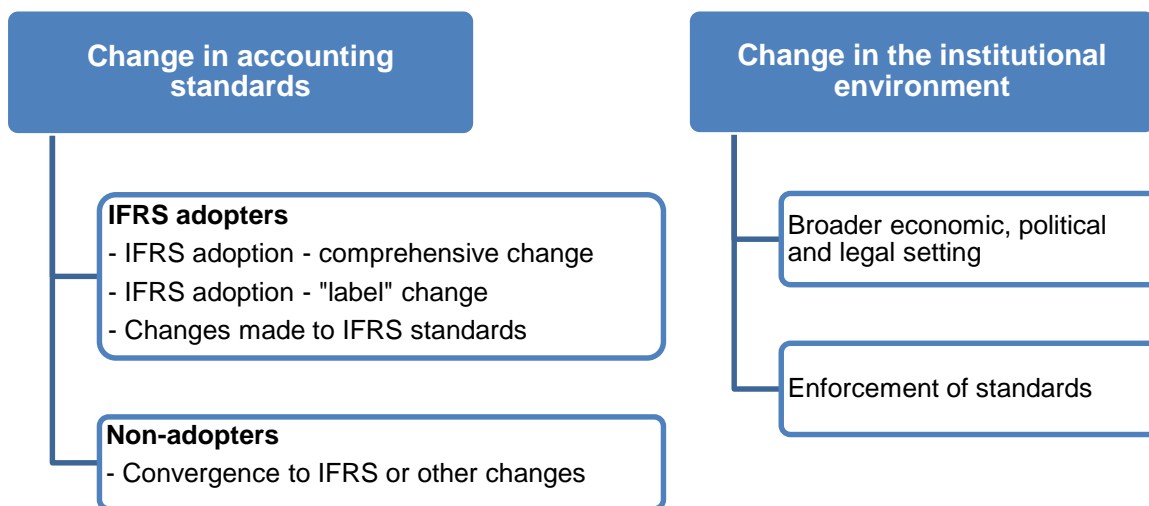
Changes in the reporting environment can result from changes in accounting standards, or changes in the institutional environment, or both. I now consider these kinds of changes.

Accounting standards changes can take various forms. Firstly, countries or firms can adopt a new set of standards such as IFRS. For some countries, this could be a comprehensive change, but for other countries, it could merely be a “label” change; for example, South Africa was already using accounting standards identical to IFRS when the country adopted IFRS (SAICA 2006). Secondly, changes can be made to IFRS standards that could come into effect at the same time as the adoption of IFRS, or following the adoption of IFRS (Bromfield 2013; Capkun et al. 2016:352). Thirdly, for non-adopters, accounting standards can change because of changes made by standard setters, such as convergence to IFRS or other improvements to standards.

Another aspect that relates to changes in the reporting environment is changes to the institutional environment in which a firm operates. In the literature, two country-level factors have been identified as having an impact on the extent of the financial reporting effects and the capital market benefits arising from the adoption of IFRS.

These are the institutional environment (Daske et al. 2008:1086; Yu 2010:44; Li 2010:607; Byard et al. 2011:69; Shima & Gordon 2011:481; Florou & Pope 2012:1993) and the enforcement of the standards (Barth et al. 2012:69; Christensen et al. 2013:171). The institutional environment refers to the broader economic, political and legal setting of a country, whereas the enforcement of the standards that is part of the institutional environment is more closely related to the financial reporting environment. The abovementioned changes to the reporting environment are summarised in Figure 3.2, below.

**Figure 3.2:**  
**Changes to the reporting environment**



There is some debate as to whether it is the changes in accounting standards that are associated with the financial reporting and capital market effects, or whether changes in the enforcement of standards are responsible for these effects. Christensen et al. (2013:147) argue that enforcement changes are associated with liquidity changes following the mandatory adoption of IFRS, but that the change in accounting standards had virtually no effect. In line with this argument, Preiato et al. (2015:44) found no change in analysts' forecast properties with the mandatory adoption of IFRS, after controlling for enforcement change. Consequently, they concluded that the change in accounting standards had no impact on the reporting environment. Commenting on the difference-in-differences design used by Christensen et al. (2013) and their interpretation of their results, Barth and Israeli (2013:179) point out that it is challenging to attempt to separate the impact of the

new standards and enforcement changes. They stress the interdependence between the quality of accounting standards and the enforcement of those standards. In this regard, they state: “The benefits of enforcement depend on the quality of the standards being enforced, and the benefits of accounting standards depend on the strength of the enforcement of the standards.” Consistent with Barth and Israeli (2013), Daske et al. (2013:535), in their comments on the importance of the reporting environment, stress that there is no conclusive evidence that the standards are not important. DeFond et al. (2011:256) emphasise that the adoption of a new set of accounting standards will only improve the comparability of financial statements if the new standards are implemented well.

These studies indicate that it is difficult to disentangle the effect of new standards being adopted from the enforcement of these standards, because strong enforcement is important to achieve the hoped-for benefits of high quality standards. In my study, focusing on South Africa – a country that already had a strong financial reporting environment before the adoption of IFRS, and that did not make any significant changes in enforcement during the period under review (see Chapter 2) – affords me an opportunity to consider the effects of a “label” change in the accounting standards, namely the adoption of IFRS, rather than of a change in the enforcement of the standards. In terms of Figure 3.2, the changes in the reporting environment for South Africa at the time of the adoption of IFRS are either the “label” change when IFRS was mandated, or changes made to IFRS at the same time, or both.

### **3.2.2 *Financial reporting effects***

The adoption of IFRS is expected to result in increased accounting quality, or in comparability of financial statements, or both. Several studies have been conducted on both these aspects (Barth et al. 2008; Barth et al. 2012; Yip & Young 2012; Ahmed et al. 2013), but thus far the literature does not provide clear evidence that the mandatory adoption of IFRS is indisputably associated with changes in accounting quality, or the comparability of financial statements, or both (Brüggemann et al. 2013:2; Leuz & Wysocki 2016:587-588).

A study conducted in the European Union by Armstrong et al. (2010) found initial indications that improved quality and increased comparability of financial statements are expected after the adoption of IFRS. They examined market reactions after announcements regarding possible adoption of IFRS in the European Union. Firms with lower information quality and higher information asymmetry before the adoption of IFRS had a positive market reaction, indicating that investors expected both information quality and financial statement comparability to improve after the adoption of IFRS.

A number of studies have been carried out on the effects on accounting quality of both voluntary adoption of IFRS (Daske & Gebhardt 2006:461; Barth et al. 2008:496) and of mandatory adoption of IFRS (Chen, Tang, Jiang & Lin 2010:220; Ahmed et al. 2013:1369). The findings of these studies have been mixed. Barth et al. (2008:496) found that the accounting quality of firms that voluntarily adopted IFRS was higher than those of firms applying local GAAP. Similarly, Daske and Gebhardt (2006:494) and Chen et al. (2010:272) found an improvement in accounting quality after the adoption of IFRS. However, in contrast to the last three studies mentioned, Ahmed et al. (2013:1369) found a decrease in the accounting quality of the firms in their study after the mandatory adoption of IFRS. Ahmed et al. (2013) argue that the difference between their results and those reported by Barth et al. (2008) is probably a result of self-selection in studies examining voluntary adopters; Ahmed et al. (2013) point out that the results for voluntary adopters should not be generalised to mandatory adopters. Ahmed et al. (2013:1345) attribute the difference between their results and those of Chen et al. (2010), who also studied mandatory adoption of IFRS, to differences in research design.

The differences between findings relating to changes in accounting quality for voluntary adopters as opposed to those for mandatory adopters have been investigated by Christensen, Lee, Walker and Zeng (2015) and Capkun et al. (2016). Christensen et al. (2015:56) found no increase in accounting quality for mandatory adopters, but reported an increase in accounting quality for voluntary adopters after the adoption of IFRS. They conclude that reporting incentives drive the accounting

quality changes, rather than the adoption of the standards in itself.<sup>27</sup> However, Capkun et al. (2016:380) attributed differences in their findings regarding voluntary and mandatory adopters to changes made to IFRS at the time of mandatory adoption of IFRS in 2005, rather than to reporting incentives. They found that accounting quality decreased for both voluntary and mandatory adopters in the post-2005 period, which suggests that changes made to IFRS in 2005, rather than reporting incentives, are associated with the noted changes in accounting quality, and can explain the differences between accounting quality increases for voluntary adopters in earlier years, compared to decreases for mandatory adopters since 2005.

Some of the findings (outlined above) that accounting quality decreased after the mandatory adoption of IFRS raise the question of what the actual source of the capital market benefits after the adoption of IFRS was. Ahmed et al. (2013:1369) suggest that capital market benefits previously attributed to improved accounting quality resulting from the mandatory adoption of IFRS might in fact be a result of other factors, such as improved comparability.

Several studies have suggested that comparability benefits have arisen from mandatory adoption of IFRS. These studies did not examine comparability benefits directly, but concluded that increased comparability of financial statements following the adoption of IFRS was consistent with their findings on investor behaviour (Armstrong et al. 2010; Joos & Leung 2012), analyst following (Tan et al. 2011), analyst forecast accuracy (Horton et al. 2013), cross-border information transfers (Wang 2014; Yip & Young 2012) and capital market effects (Daske et al. 2008; Li 2010). However, Christensen et al. (2013:171) suggest that a lack of liquidity benefits for firms from all countries in their sample indicate that the comparability of financial statements did not improve with the mandatory adoption of IFRS, as liquidity benefits should not be limited to the countries that made changes in enforcement. Importantly, Christensen et al. (2013) did not test comparability benefits directly, but concluded, based on their liquidity results that limited comparability benefits arose from the mandatory adoption of IFRS.

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<sup>27</sup> Christensen et al. (2015:32) distinguish between firms' reporting incentives, arguing that voluntary adopters' incentives to adopt IFRS differ from those of mandatory adopters, who are forced to adopt.

Studies that examined directly the comparability effects after mandatory adoption of IFRS were conducted by Barth et al. (2012), Yip and Young (2012) and Cascino and Gassen (2015). These studies adapted a comparability measure originally developed by De Franco et al. (2011). Barth et al. (2012:68) found increased comparability of financial statements of mandatory IFRS adopters with financial statements of firms from the US in the post-adoption period.<sup>28</sup> Similarly, Yip and Young (2012:1767) found an increase in comparability between firms in the European Union after mandatory IFRS adoption. Cascino and Gassen (2015:242) examined countries from across the world, but found only a marginal increase in comparability after mandatory IFRS adoption. They found that firms with strong enforcement and high compliance incentives experienced larger increases in the comparability of financial statements.

Barth et al. (2012:90) found that three measures of accounting quality – less earnings smoothing, accrual quality and timeliness – are potential sources of increased comparability. Yip and Young (2012:1767) suggest that accounting quality is one of the main factors contributing to the improvement of information comparability. These two studies suggest that the two financial reporting factors (accounting quality and comparability) which have been argued to affect the capital markets are not independent of one another.

Where firms in a country already have to report in terms of high quality accounting standards, it is unlikely that any capital market benefits that arise from a shift to a similar or identical set of standards can be attributed to increased accounting *quality*. It is more likely that an expected increase in the *comparability* of financial reporting will drive investors' perceptions regarding possible capital market benefits of such a change (Joos & Leung 2012:602). In considering the adoption of IFRS in the US, the SEC (2007:12) argued that, given the increasing number of countries that had adopted IFRS, US firms might benefit from adopting IFRS, because it would allow investors to compare US firms more effectively with their foreign competitors, who are reporting under IFRS. US firms currently report under US GAAP. The two main reporting frameworks used globally, US GAAP and IFRS, are generally considered to

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<sup>28</sup> Lang and Stice-Lawrence (2015:126) found, based on textual analysis of annual reports, that comparability also increased between mandatory adopters and US firms after the adoption of IFRS.

be high quality accounting standards (Daske 2006:330; Sun, Cahan & Emanuel 2011:842; Barth et al. 2012:72).

The expectation that a change from one set of high-quality standards to another set of high-quality standards is associated with capital market benefits is important for my study, because the adoption of IFRS in South Africa also resulted in the replacement of one set of high-quality standards (SA GAAP) with another (IFRS). As SA GAAP was identical to IFRS when IFRS was mandatorily adopted in 2005, it can be argued that any capital market benefits derived from the adoption of IFRS in South Africa is more likely to be due to an increase in the comparability of financial statements than to an increase in the quality of accounting standards. The South African setting therefore provides me with an opportunity to focus on the effects of comparability, rather than the effect of changes in quality.<sup>29</sup>

### **3.2.3 Capital market effects**

Although the aim of my study is to assess changes in the comparability of financial statements with the adoption of IFRS, it is important to understand the expected association between financial reporting and capital market effects to evaluate the IFRS adoption literature and the expected benefits fully.

An important concept relevant to the effect that financial reporting (quality and comparability) has on capital markets is information asymmetry. This concept refers to a situation where one party has more or better information than another party (Scott 2012). Information asymmetry is affected by variations in accounting standards and disclosure requirements, and also by the enforcement of these standards and requirements (Ahearne, Grier & Warnock 2004:322). Economic theory states that increased disclosure reduces information asymmetry. The term “increased disclosure” can refer to the quantity of disclosure, or to the quality of disclosure (Leuz & Verrecchia 2000:92). Both accounting quality and comparability have been argued

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<sup>29</sup> The main focus of my study is changes in the comparability of financial statements. I have argued that the quality of accounting standards in my case study country, South Africa, remained the same. But as Figures 3.1 and 3.2 suggest, other factors (such as changes made to IFRS standards, changes in the institutional environment, or other market changes) may be associated with changes in comparability or accounting quality. If any changes in the comparability of financial statements of South African firms are found, I will perform additional analysis in an attempt to gain a better understanding of which factors are the most likely contributors to the changes in comparability.



to have an effect on information asymmetry. Ahearne et al. (2004:313) attribute information asymmetries between local and foreign investors to the poor quality of financial statements in certain countries. Chen, Ding and Xu (2014:53) found that foreign direct investment increased after convergence to IFRS – this finding is consistent with an increase in comparability and the argument that increased comparability reduces information asymmetry.

The quality and comparability of information has a direct impact on the cost of information. Ahearne et al. (2004:313) found that the cost of obtaining information has a bigger impact on information asymmetry than direct transaction costs or capital market restrictions. If such costs are too high, it has a negative impact on foreign investment (Young & Guenther 2003:557). Barth, Clinch and Shibano (1999:225) found that the harmonisation of accounting standards reduces the “expertise acquisition cost” of foreign investors who want to invest in a country.<sup>30</sup> Thus, improving the quality and comparability of financial statements reduces the cost for investors to interpret and compare financial statements from different countries (Daske & Gebhardt 2006:331-332; Hail et al. 2010:358), which in turn reduces information asymmetry and home bias<sup>31</sup> (Ahearne et al. 2004:333). Hence, a reduction in information asymmetry increases stock liquidity and foreign investment. In addition, increased stock liquidity reduces transaction costs, and consequently the cost of capital drops (Joos 2000:125; Leuz & Verrecchia 2000:91). Decreasing the risk for investors by reducing information asymmetry also lowers a firm’s cost of capital (Daske & Gebhardt 2006:332; Armstrong et al. 2010:32). In addition, an increase in investment by foreigners reduces a firm’s cost of capital, as risk sharing between domestic and foreign investors increases (Chan, Covrig & Ng 2009:230).

The aforementioned paragraph suggests the expected links between financial reporting quality, comparability, and capital market effects. Thus far, research on the effects of IFRS adoption on capital markets has focused mostly on cost of capital (Daske & Gebhardt 2006; Daske et al. 2008; Li 2010; Daske et al. 2013), liquidity

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<sup>30</sup> Expertise acquisition costs refer to the cost incurred by foreign investors to become skilled in interpreting and analysing the local accounting standards of another country (Barth et al. 1999:203).

<sup>31</sup> Home bias is investors’ preference for investing in domestic equities (Ahearne et al. 2004:314).



(Daske et al. 2008; Daske et al. 2013; Christensen et al. 2013) and foreign investment (Covrig et al. 2007; DeFond et al. 2011; Florou & Pope 2012).

The studies that focused on mandatory IFRS adoption have mostly reported capital market benefits (Daske et al. 2008; Li 2010; Yu 2010; DeFond et al. 2011; Florou & Pope 2012). Studies by Daske et al. (2008:1085) and Li (2010:633) found a decrease in cost of capital with mandatory IFRS adoption. Daske et al. (2008:1085) also found an increase in average stock liquidity with mandatory IFRS adoption. Yu (2010:47) and DeFond et al. (2011:241) both reported an increase in foreign mutual fund holdings following mandatory IFRS adoption.<sup>32</sup> Florou and Pope (2012:1993) found an increase in institutional investments following mandatory adoption of IFRS. In contrast to these studies, which reported capital market benefits, Christensen et al. (2013:147) found that only countries that made substantial changes to enforcement at the time of mandatory IFRS adoption experienced increased liquidity.

Similar to Christensen et al. (2013), but focusing only on voluntary adopters, Daske et al. (2013:496) found a reduction in cost of capital and an increase in liquidity for “serious adopters”, but not for “label adopters”,<sup>33</sup> and they stress the importance of the reporting environment. Another study using data on the voluntary adoption of IFRS is the study by Daske (2006), which found no decrease in cost of capital for German firms that adopted IFRS or US GAAP in the period before mandatory IFRS adoption (Daske 2006:369). One possible explanation could be that comparability between firms in the same country decreases if some firms in the country report using local GAAP, and other firms report using IFRS or US GAAP (Daske 2006:369), indicating that comparability rather than quality is the key to capital market benefits.

While the capital market benefits of adopting IFRS have been widely researched, the association between financial reporting effects and capital market benefits with the adoption of IFRS are still unclear (Christensen et al. 2013:147; Neel 2016:5). Some studies have attributed any apparent benefits to an increase in comparability (Daske

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<sup>32</sup> Yu (2010:35) attributes increased foreign mutual fund investment to a reduction in GAAP differences between the investor fund and the investee, but DeFond et al. (2011) attribute it to increased use of uniform accounting standards.

<sup>33</sup> In Daske et al.'s (2013:497) study, “serious” adopters refer to firms that make a concerted effort to change the reporting environment; “label” adopters refer to firms that merely adopt IFRS in name.

et al. 2008:1132; Li 2010:607; DeFond et al. 2011:241). However, Daske et al. (2008:1132) were unable to find significant results linking comparability with the capital market benefits. Li (2010:607) and DeFond et al. (2011:241) based their conclusions on indirect measures of comparability, namely differences in accounting standards and the use of uniform accounting standards. Barth, Landsman, Young and Zhuang (2014:313) caution against the use of such indirect measures, as these relate to differences in the provision of standards, and not necessarily to differences in accounting amounts.

Neel's (2016) study attributes changes in capital market benefits to an increase in comparability. His study found that an increase in quality had limited effect. He measured comparability relative to other mandatory adopters, and 77% of his sample firms were from the European Union. It is possible that his results are driven by the institutional environment of the European Union, and that different results could be obtained in another setting. Daske et al. (2008:1089) and Christensen et al. (2013:149) suggest that capital market effects with mandatory IFRS adoption are stronger in the European Union than in other countries included in their studies. Both studies attributed this difference to concurrent changes in the enforcement of accounting standards in the European Union, and also an overall stronger legal and regulatory environment.

Although there is some evidence that comparability rather than quality drives capital market benefits of IFRS adoption, the source of the comparability effects is still unclear. The abovementioned studies mostly considered changes in the accounting standards and the institutional environment, but have not considered the possible effect(s) of other concurrent market changes.

#### **3.2.4 Other market changes**

Another factor that should also be considered in assessing financial reporting and capital market effects with the adoption of IFRS is concurrent market changes unrelated to the financial reporting decision. The possibility that other market changes unrelated to IFRS adoption are the reason for the discrepancy between the financial reporting effects and the capital market effects were raised by Brüggemann

et al. (2013:19) and Leuz and Wysocki (2016:588). These authors posit that the mixed results regarding financial reporting effects around the time of mandatory IFRS adoption, compared to increased capital market effects around the same time, suggest that the capital market effects around the time of IFRS adoption may be coincidental, and are not necessarily a result of IFRS adoption.

Although Neel (2016:1) found an association between changes in the comparability of financial statements and capital market effects after mandatory IFRS adoption, one should not exclude the possibility that other market changes had an impact on both the comparability changes and the capital market effects. Barth et al. (2012:88) postulate that increased globalisation resulting from increased global foreign investment was the driver behind the increased comparability of the financial statements of US firms with those of IFRS adopters, although they could not present any supporting evidence.

Even though evidence relating to the influence of other market changes on financial reporting and capital market effects around the time of IFRS adoption is limited, the possibility that such factors exist should not be overlooked. Leuz and Wysocki (2016:585) suggest that a number of economic changes unrelated to IFRS adoption – for example, other regulatory changes, changes in technology or market shocks – could have occurred at the same time, and may have affected empirical findings. Brüggemann et al. (2013:22) suggest that single country studies provide opportunities to control better for concurrent changes that might have an impact on the capital markets and that are difficult to control for in cross-country studies.

### **3.2.5 The South African case**

The above literature review suggests benefits with the adoption of IFRS even in countries with local GAAP of a similar quality to IFRS. However, the literature also highlights the difficulty of separating the effects attributable to IFRS from those of factors unrelated to the IFRS adoption decision. In my study, I specifically consider the following two questions: Is there a change in the comparability of financial statements after IFRS adoption in a country where the local GAAP was already of similar quality to IFRS before the adoption of IFRS? If there is a change in the

comparability of financial statements, what are the sources of this change? As suggested in Figure 3.1, the source(s) of change would be changes in accounting standards, the institutional environment and/or other market changes. These changes can specifically relate to IFRS adoption, or they can be unrelated to the IFRS adoption decision. Establishing these sources could also assist in identifying the sources of any capital market benefits that may arise from adopting IFRS.

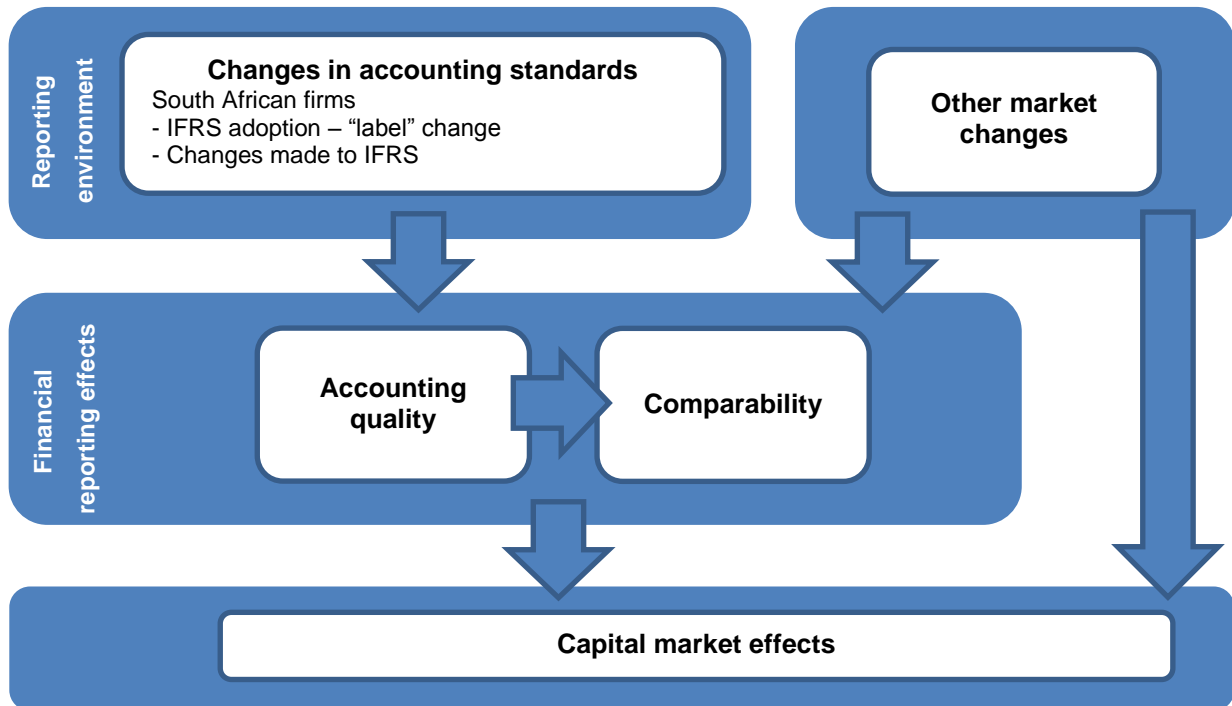
The South African reporting environment provides a unique setting to investigate these questions. SA GAAP was, word for word, the same as IFRS before the JSE mandated IFRS for listed firms for financial periods beginning on or after 1 January 2005.<sup>34</sup> Any benefits around the adoption of IFRS in South Africa are more likely to be due to an increase in the comparability of financial statements than their quality. Hence, my study focuses on comparability, although I also assess any possible quality changes. Furthermore, since South Africa did not make any changes to its enforcement at the time when IFRS was adopted, it eliminates enforcement changes as a source of comparability changes. Another relevant consideration relates to the effect that changes to IFRS standards around the time of the adoption of IFRS could have had on accounting quality and also comparability.<sup>35</sup> Lastly, other concurrent market changes unrelated to the IFRS adoption decision should be considered in assessing comparability changes. From a South African perspective, the consequences of the adoption of IFRS as illustrated in Figure 3.1 and 3.2 and discussed above can be summarised as shown in Figure 3.3.

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<sup>34</sup> In 2003 it was decided to issue IFRS in South Africa without amendment. SA GAAP was harmonised with IAS since 1995, so the only differences that remained were editorial differences, implementation dates and additional disclosures (SAICA 2003).

<sup>35</sup> In considering quality changes with IFRS adoption in South Africa, it is important to look at changes made to IFRS at that time. Some new standards were issued, and, as a result of the IASB's improvement project, some standards were revised at the time when South Africa adopted IFRS. Appendix A provides details of the new and revised standards, and their effective dates. These changes were made to enhance the quality of IFRS and improve convergence with national GAAPs (Ernst & Young 2008). These within-IFRS changes could have affected the quality of South African firms' financial statements prepared in terms of IFRS after mandatory adoption, as they were not part of SA GAAP prior to the mandatory IFRS adoption. These within-IFRS changes do not relate to the IFRS adoption decision *per se*, and may have affected accounting quality in South Africa regardless of whether firms continued to prepare financial statements in terms of SA GAAP or adopted IFRS.

**Figure 3.3:**  
**Consequences of the adoption of IFRS in South Africa**



This section has provided an introduction to the literature relating to the adoption of IFRS and has indicated how the South African setting can offer useful insights. I have discussed the expected associations between changes in the reporting environment, financial reporting effects and capital market benefits. In addition, I have given reasons for making expected changes in financial statement comparability the focus of my study. In the next sections, I develop my hypotheses relating to the comparability of the financial statements of South African firms.

### 3.3 Hypotheses development: Comparability

To examine the question of whether the mandatory adoption of IFRS is associated with changes in the comparability of financial statements, the importance of comparability must first be discussed. *The Conceptual Framework for Financial Reporting* of both the IASB (2010:para. BC3.33) and the FASB (2010:para. BC3.33) state: “One of the most important reasons that financial reporting standards are needed is to increase the comparability of reported financial information.” They also state:

Users' decisions involve choosing between alternatives, for example, selling or holding an investment, or investing in one reporting entity or another. Consequently, information about a reporting entity is more useful if it can be compared with similar information about other entities and with similar information about the same entity for another period or another date. (IASB 2010: para QC20; FASB 2010: para QC20)

They add: "For information to be comparable, like things must look alike and different things must look different" (IASB 2010: para QC23; FASB 2010: para QC23). These comments indicate how much importance the IASB and FASB attach to the comparability of financial statements in order for investors to make informed decisions regarding their investment choices.

The last statement – "[f]or information to be comparable, like things must look alike and different things must look different" – has since been used to develop a direct measure of comparability (Barth et al. 2012; Yip & Young 2012; Cascino & Gassen 2015). De Franco et al. (2011:899) were the first to conceptually define comparability as follows: "Two firms have comparable accounting systems if, for a given set of economic events, they produce similar financial statements". The comparability measures that are used in the studies by De Franco et al. (2011), Barth et al. (2012), Yip and Young (2012) and Cascino and Gassen (2015) incorporate both market data (stock price or stock return as the economic events) and financial statement data (earnings or book values as the accounting amounts). It can therefore be argued that any changes in the accounting amounts based on changes in the accounting frameworks could have an impact on the comparability of two firms. Also, any changes in the market's perception regarding comparability could affect market data, and, as a result, the comparability measure of the two firms.

As SA GAAP was already identical to IFRS prior to the JSE mandating IFRS for listed firms, one would not expect to find a significant change in accounting amounts of South African firms. This is supported in a statement by SAICA (2006:n.p.) that "where an entity is preparing financial statements in terms of Statements of GAAP they are in effect complying with IFRS". However, the market could view the change from SA GAAP to IFRS as significant because SA GAAP is not as well-known globally as IFRS. Changes in comparability can also occur as a result of changes in the accounting amounts of firms in other countries that South African firms are



compared with.<sup>36</sup> Below, I explore these two factors that can affect comparability, the fact that comparability is measured relative to another firm or country, and also the “label” change from SA GAAP to IFRS.

### ***3.3.1 Comparability measured relative to another firm or country (network benefits)***

The prior literature argues that comparability benefits are positively associated with the extent of pre-existing differences between local GAAP and IFRS (Neel 2011:47; Tan et al. 2011:1307; Horton et al. 2013:419). This reasoning ignores the fact that comparability is measured relative to another firm or country. For example, assume that two neighbouring countries, X and Y, both apply the same local GAAP, which deviates substantially from IFRS. Country X decides to adopt IFRS, but Country Y does not. As a result of Country X’s adoption of IFRS, the financial statements of firms in Country X may become more comparable to firms in other countries that also apply IFRS, but less comparable to the financial statements of firms in Country Y. Cascino and Gassen (2015:255) found that a reduction in differences between two countries’ accounting standards increased the comparability between financial statements of firms in these countries.<sup>37</sup>

Other studies also indicate that it is not only the change in accounting standards in a specific country that is relevant. DeFond et al.’s (2011:243) study does not focus on the level of change between local GAAP and IFRS within one country, but rather on the increase in the number of firms within the same industry that used the same accounting standards as the IFRS-adopting firm between the pre- and post-IFRS adoption periods. They found an increase in foreign mutual fund ownership for firms from countries where there was a significant increase in peers in the industry applying IFRS after mandatory IFRS adoption. This implies that even when there are no changes in the extent of difference between local GAAP and IFRS in a specific

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<sup>36</sup> Changes made by comparable firms can be a result of IFRS adoption or for non-adopters, convergence changes or other improvements to standards.

<sup>37</sup> Cascino and Gassen (2015:254) found that firms in countries with fewer differences between their local GAAP before mandatory IFRS adoption have more comparable financial statements in the pre-IFRS period than firms in countries with larger differences between their local GAAP. Their findings show that a larger reduction in differences between the accounting standards used by firms from countries after mandatory IFRS adoption result in more comparable financial statements between firms from these countries (larger values represent accounting standards that become more similar).

country (for example, South Africa), comparability benefits could arise when other countries with more differences between local GAAP and IFRS adopt IFRS, and the number of firms in an industry worldwide using IFRS increases. This effect can also be referred to as the network benefit. As more firms adopt IFRS, the network of IFRS users increases, and all firms that form part of the network benefit (Meeks & Swann 2009:194; Hail et al. 2010:358). Ramanna and Sletten (2014:1517) argue that expected network benefits are one of the determinants of countries' IFRS adoption decision.

Barth et al. (1999:221) investigated capital market benefits that arise from the harmonisation of accounting standards. Their model indicates that there are benefits (lower expertise acquisition costs and increased price informativeness), but that the benefits are not necessarily evident in the particular country that changes its accounting standards. For example, foreign investors from one country (Country A) benefit (from lower expertise acquisition costs) if a country that they want to invest in (Country B) harmonises its accounting standards with those of Country A. In addition, the domestic investors in Country B benefit (from lower expertise acquisition costs), because they become experts in Country A's accounting standards. The latter benefit might not be evident in Country B, but will be evident in Country A, as it increases price informativeness in Country A. The abovementioned studies indicate that comparability benefits could be evident in a country that does not make any changes to its accounting standards. Comparability benefits could thus be a result of other countries' changes in accounting standards.

Brochet et al. (2013) investigated comparability from the perspective of a single country, the UK, where there were few differences between UK GAAP and IFRS (according to Bae et al.'s (2008:600) measure). They attribute lower abnormal returns on insider purchases after the adoption of IFRS to improved comparability, rather than to improved information quality, because the quality of the financial statements was already considered high in the pre-IFRS adoption period. Lower abnormal returns on insider purchases are consistent with reduced information asymmetry resulting from increased comparability between the pre- and post-IFRS adoption periods. Such benefits are attributed to the improvement in the quality of financial statements of other countries and firms adopting IFRS, making them more



comparable to those of UK firms.

In South Africa, there were even fewer differences between the local GAAP, SA GAAP, and IFRS prior to IFRS adoption than in the UK. According to Bae et al. (2008:600), for South Africa there were no differences, and for the UK there was one.<sup>38</sup> Based on the above, comparability could increase for South African firms as other countries adopt IFRS, and become more comparable with South Africa.

### **3.3.2 IFRS “label” change in South Africa**

Regardless of whether or not South Africa adopted IFRS, it could be argued that if South Africa continued to use SA GAAP, there would still be comparability benefits when other countries adopted IFRS (which is identical to SA GAAP) and such firms became more comparable to South African firms using SA GAAP (which is identical to IFRS). There could, however, also be benefits in using the IFRS “label”.

The mandatory adoption of IFRS in South Africa can possibly be viewed as a “label” change, but not in a negative sense as implied in the literature. Ball (2006:22-24) highlights the concerns about adopting IFRS in name only. When a firm indicates that it complies with IFRS, its financial statements are considered to be of high quality. It does not cost anything for a country to say that it has adopted IFRS. Dong (2014:96) raises the question of whether IFRS convergence is merely a “label” change or whether it does indeed result in material capital market benefits for countries. Daske et al. (2013:497) distinguish between firms that merely adopt IFRS in name (“label adopters”) and those that make a concerted effort to change their reporting environment (“serious adopters”). These studies are concerned with firms or countries that claim to report under IFRS (implying high quality reporting standards), but in fact continue with previous low quality reporting standards and practices.

The above concerns by Ball (2006) and Dong (2014) indicate that there could

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<sup>38</sup> The only country other than South Africa with zero differences, according to Bae et al.’s (2008:600) measure, is Singapore. Several studies indicate that Singapore adopted IFRS in 2003 (Daske et al. 2008:1118; Tan et al. 2011:1316; Horton et al. 2013:405). However, although Singapore Financial Reporting Standards are substantially aligned with IFRS, the use of a new financial reporting framework identical to IFRS is only mandated from 2018 when companies will have to apply IFRS 1 (IFRS Foundation 2015).

possibly be benefits in using the IFRS “label”. South Africa’s “label” change is different, in that South Africa already applied high quality accounting standards in a strong reporting environment before adoption, and merely changed the name for identical standards from SA GAAP to IFRS. Therefore, the change in South Africa could possibly be seen as a “label” change, not because of the changes in the reporting environment, as defined by Daske et al. (2013), but because SA GAAP was the same as IFRS prior to the formal adoption of IFRS.

Adopting IFRS in full eliminates any concerns that investors might have regarding carve-outs, additional provisions, changes as a result of translations or timing differences, which apply when local GAAP is based on IFRS. The elimination of these concerns could enhance markets’ perceptions of the comparability of South African firms’ financial statements.

Further support for IFRS “label” benefits can be traced in the literature on home bias. Ahearne et al. (2004:313) found that the cost of information has a significant effect on home bias. Covrig et al. (2007:44) and Yu (2010:49) reported that the adoption of IFRS has a positive impact on foreign investment, as it reduces foreign investors’ costs in processing information and making decisions. The fact that South African firms were applying IFRS was not transparent under the SA GAAP label. This could have increased information acquisition costs for foreign investors. When South African firms adopted IFRS, investors and analysts were no longer required to make any assessments regarding the differences or similarities between SA GAAP and IFRS. Tan et al. (2011:1307) noted that analyst following increased after mandatory adoption of IFRS, especially among those analysts that already followed firms reporting under IFRS. Therefore, even though SA GAAP was identical to IFRS even prior to IFRS adoption, an increase in analyst following of South African firms might be found after mandatory adoption of IFRS, or South African firms might be more readily included by investors for review, resulting in comparability benefits.

Arguments for the IFRS “label” benefits can also be found in the theories relating to limited attention and the salience of reported information. Limited attention refers to an individual’s limited ability to process information, and as a result to disregard certain information (Hirshleifer & Teoh 2003:341). The salience of reported

information refers to the prominence with which certain information stands out from other information (Hirshleifer & Teoh 2003:342). Hence, information that is less prominent and that requires more processing could be considered to a lesser extent by investors and analysts (Hirshleifer & Teoh 2003:351). The fact that South African firms used SA GAAP before the adoption of IFRS may have resulted in analysts or investors disregarding South African firms in their analyses, as it would have required more processing in order to conclude that SA GAAP is the same as IFRS. Since the adoption of IFRS, analysts familiar with IFRS require no additional processing in order to include South African firms in their analyses. This could therefore result in IFRS “label” benefits, as investors view South African firms differently when they report under IFRS, compared to their reporting under SA GAAP, even though the accounting amounts are no different.

The above discussion points to two possible explanations for finding an increase in the comparability of the financial statements of South African firms with those of firms from across the world after the adoption of IFRS. The first explanation is an increase in the comparability of financial statements as a result of other countries’ firms adopting IFRS, or network benefits. The second is the results of changing the “label” from SA GAAP to IFRS. These benefits would not be equally evident when South African firms are compared with all firms around the world. Hence, I compare South African firms with two different groups. The first group is firms from countries that adopted IFRS at the same time as South Africa, and the second group is firms from countries that did not adopt IFRS but used the same non-IFRS accounting standards before and after the mandatory adoption of IFRS in South Africa.

### ***3.3.3 Comparability between South Africa and IFRS adopters***

With the mandatory adoption of IFRS in South Africa in 2005, one would expect financial statements of South African firms to become more comparable with financial statements of firms in countries that adopted IFRS at the same time (for example, the European Union) and whose local GAAP differed from IFRS before the adoption. I expect the changes that these firms made to result in accounting amounts that are more comparable with those of South African firms. The market would then assess the comparability of financial statements from before and after IFRS adoption in

South Africa differently, as a result of the joint effect of changes in the actual amounts of the other countries that adopted IFRS, and the IFRS “label” change in South Africa. It is difficult to disentangle the effect of these two, but they both predict increased comparability.

Therefore, Hypothesis 1, stated in the alternative form, is the following:

*H1: On average, comparability between the financial statements of firms in South Africa and those of other mandatory IFRS adopters increased after the mandatory adoption of IFRS in South Africa.*

### **3.3.4 Comparability between South Africa and non-adopters**

With regard to the comparability of the financial statements of South African firms with those of firms in other countries that continued to use the same non-IFRS accounting standards (non-adopters) before and after mandatory IFRS adoption in South Africa, one would not expect to see any change in the comparability of the accounting amounts, because firms in both countries continued to prepare financial statements using the same accounting frameworks. This is because the financial statement amounts of South African firms would have been determined in a similar way, whether they used SA GAAP or IFRS, and there would be no changes in respect of the accounting amounts of the non-adopters. The change from SA GAAP to IFRS could result in comparability benefits for South Africa, because the IFRS “label” is better known than SA GAAP, and is associated with higher quality earnings and more comparable information.

If there are comparability benefits with the “label” change to IFRS in South Africa, it could be evident in comparability with countries that have adopted IFRS (see Hypothesis 1) and countries that continued to use the same reporting standards as before (non-adopters). One would expect any changes in comparability with non-adopters to be a result of the expected benefits associated with the “label” change in South Africa, rather than with changes in the accounting framework.

Alternatively, there are at least two reasons why no comparability benefits may be associated with the “label” change in South Africa. One could argue that institutional

investors, who are considered to be sophisticated users that have the time and resources to analyse and interpret financial statements (Florou & Pope 2012:1994; Bradshaw et al. 2004:797), would be aware of the fact that SA GAAP and IFRS were identical at the time of the IFRS adoption. The same would apply to analysts who have to understand and analyse financial statements. Even if investors understand that South African firms' financial statements are prepared in terms of a high quality accounting framework (IFRS) after the mandatory adoption of IFRS, comparability of financial statements of South African firms may not increase in relation to those of firms in non-adopting countries. This is because the application of the accounting frameworks of the non-adopting countries may not result in amounts comparable to those determined in accordance with IFRS. Based on this discussion, I made no prediction regarding comparability with non-adopters and state my second hypothesis in the null form:

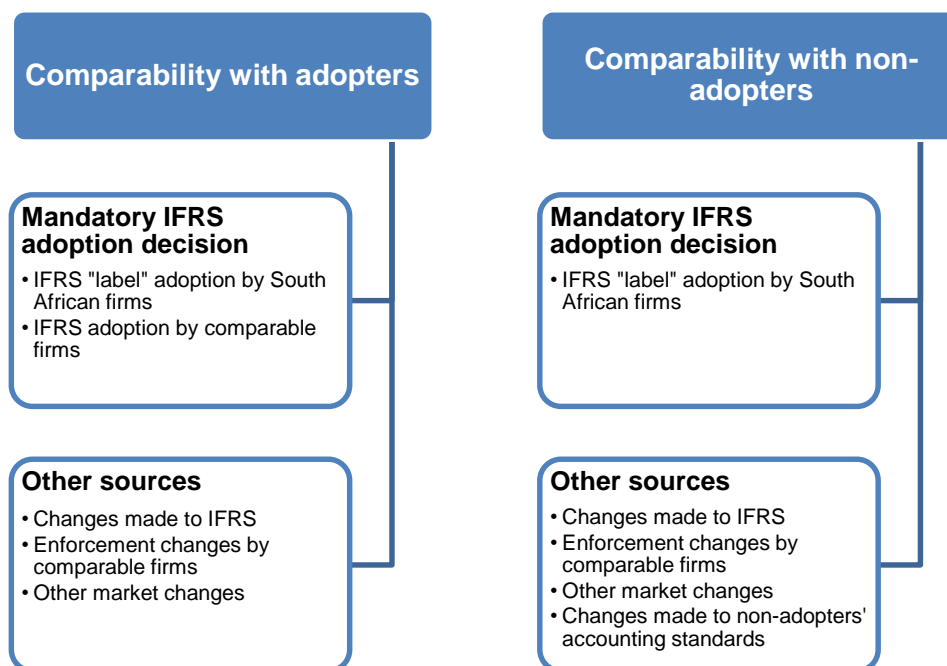
*H2: On average, comparability between the financial statements of firms in South African and those of non-adopters did not change after the mandatory adoption of IFRS in South Africa.*

There are factors other than the IFRS "label" change that could also affect comparability between South African firms and both adopters, and non-adopters, that should be considered in testing Hypotheses 1 and 2. One of these factors is changes in enforcement in either South Africa or the comparable firm's country. Daske et al. (2008:1089) suggest that the capital market benefits for voluntary adopters in the year of the mandatory adoption of IFRS could possibly be attributed to changes in enforcement. Neel (2011:47), Barth et al. (2012:68) and Cascino and Gassen (2015:242) found increased comparability for firms in countries with higher levels of enforcement; therefore it could be argued that changes in enforcement could affect the comparability of financial statements even if the reporting standards did not change. This is supported by Christensen et al.'s (2013:171) finding that increased liquidity was limited to countries in the European Union that made substantive changes to the enforcement of the standards. Christensen et al. (2013:171) also reported increased liquidity in Japan, a country that made enforcement changes, but did not adopt IFRS at the same time. I have already established that South Africa did not make any changes in enforcement (see Section 2.3.5). However, enforcement could have changed in the country of a comparable firm.

Another reason for an increase in comparability with non-adopters that is not related to the IFRS “label” change in South Africa can be changes made to IFRS standards themselves during my sample period, or changes made to non-adopting firms’ local GAAP. Any changes made to IFRS during my sample period to improve accounting quality could affect the comparability of the financial statements of South African firms with those of both adopters and non-adopters: any changes made to IFRS are not related to the IFRS adoption decision, since these changes would have affected SA GAAP, even if South African firms had not adopted IFRS. As a result, I classify such changes as “other sources” that are not related to the IFRS adoption decision (see Figure 3.4). The same is applicable to non-adopters, where changes were made to their local GAAP or in countries that were in the process of converging with IFRS during the period of my study. If these changes resulted in accounting amounts that are more comparable with IFRS, it would also affect my results. Lastly, other concurrent market changes as discussed in Section 3.2.4 can affect comparability changes. These other factors that can be sources of comparability changes, together with the mandatory IFRS changes, are summarised in Figure 3.4, below.

**Figure 3.4:**

**Sources of comparability effects for South African firms**



### 3.4 Conclusion

In this chapter I have reviewed the literature relating to the mandatory adoption of IFRS and the expected links between changes in the financial reporting environment, financial reporting effects and capital market benefits. Questions have been raised about whether it is changes in the accounting standards or changes in the institutional environment that result in financial reporting and capital market effects. In addition, the possibility has been raised that other concurrent market changes around the time of the mandatory adoption of IFRS could influence the financial reporting and capital market effects. Using a single country study that allows me to control better for concurrent changes and focus on a setting where there was no change in enforcement with mandatory IFRS adoption provided me with an opportunity to focus on the effects of the IFRS standards. The fact that SA GAAP was the same as IFRS at the time of IFRS adoption also provided an opportunity to focus on changes in the comparability of financial statements rather than on changes in the quality of the standards.

Based on the above review, I predicted that South African firms experienced an increase in the comparability of their financial statements with those of other adopters following mandatory IFRS adoption. An increase in the comparability of financial statements was expected, even though South African firms in the past applied SA GAAP (which was already identical to IFRS). This increase in comparability was expected to arise from network benefits with the adoption of IFRS by other countries, and from the fact that the IFRS “label” is better known globally.

I did not make any prediction regarding changes in the comparability of financial statements of South African firms with those of non-adopters. Although I have argued that there could be benefits in using the IFRS “label”, there are other factors that suggest otherwise.

The next chapter provides details on the research design that I followed to address each of the hypotheses developed in this chapter.



## **CHAPTER 4: RESEARCH DESIGN**

### **4.1 Introduction**

The objective of my study is to determine whether the mandatory adoption of IFRS in a country, such as South Africa, where local GAAP is of similar quality (or indeed identical) to IFRS is associated with changes in the comparability of financial statements and to identify the sources of any such changes. This chapter provides details of the research design that I followed to achieve these objectives.

First, I position my research in the appropriate research paradigm and research strategy. Then I present my sample and data collection methods. The remainder of the chapter discusses the details of the research design used to test my hypotheses.

### **4.2 Research strategy**

My research falls within a positivist research paradigm. It can be classified as positivist research because I attempt to obtain objective evidence on the relationships between financial statement and economic measures. My research strategy is quantitative, since the measure of the comparability of financial statements is quantified and analysed using inferential statistical data analysis techniques. I performed multivariate regression analyses to determine the associations between the mandatory adoption of IFRS and the comparability of financial statements.

### **4.3 Initial sample selection and data collection**

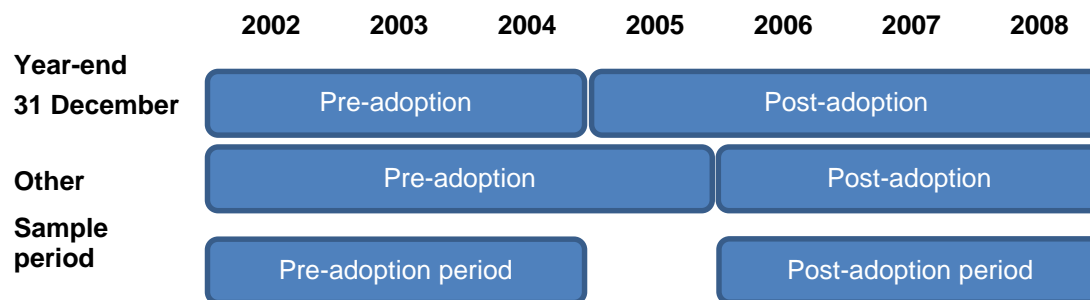
My South African sample consisted of all firms listed on the JSE from 2002 to 2008. The sample period starts three years before and ends three years after the mandatory adoption of IFRS in South Africa in 2005. Firms listed on the JSE were required to report in terms of IFRS for all financial years ending on or after 31 December 2005. As a result, firms with a December year-end reported in terms of IFRS for the first time in 2005 and all other firms had to do so in 2006. To ensure consistent application of accounting standards by the listed firms, I excluded 2005



from my sample period – in 2005, some firms applied SA GAAP and others used IFRS. Therefore my pre-adoption period was 2002 to 2004 and my post-adoption period was 2006 to 2008 (see Figure 4.1, below).

**Figure 4.1:**

**Pre- and post-IFRS adoption periods in South Africa**



In line with the studies by Cascino and Gassen (2015:250) and Neel (2016:7), I chose to include firms that have data available for all the years in both the pre- and the post-adoption periods in my sample. This was to ensure that any changes in comparability from the pre- to the post-adoption period were not a result of changes in the sample. I collected data from the Thomson Reuters Datastream database (including Worldscope). Datastream provides financial and market-related data for firms worldwide.

For my hypotheses, I needed to compare South African firms with firms from countries with mandatory IFRS adoption at the same time as South Africa, as well as firms from non-adopting countries. I selected comparable firms from the G20 countries. The G20 consists of 19 countries, plus the European Union. The members of the G20 represent the world’s largest advanced and emerging economies and make up 75% of international trade (G20 2015). South Africa is also a member of the G20 (G20 2015). Also included in the G20 are the BRICS countries, which include Brazil, Russia, India, China and South Africa. The BRICS countries represent five of the major emerging economies and it is expected that these countries will account for almost 50% of the global gross domestic product by 2020 (South Africa 2015a). See Appendix B for a list of the G20 countries.

## 4.4 Research design

### 4.4.1 Hypotheses

In Chapter 3, I developed two hypotheses relating to the comparability of the financial statements of firms in South Africa after the mandatory adoption of IFRS. As SA GAAP was already identical with IFRS even before the mandatory adoption of IFRS, one would expect limited comparability benefits. However, as I argue in Chapter 3, there might be comparability benefits as a result of other countries adopting IFRS (network benefits) and possibly also as a result of the IFRS “label”, which is better known globally than SA GAAP. Hypothesis 1 focuses on firms that also adopted IFRS at the same time as South Africa, whilst Hypothesis 2 focuses on firms from non-adopting countries. For ease of reference, the two hypotheses developed in Chapter 3 are repeated here.

I argued that the market would assess the comparability between the financial statements of South African firms and those of other IFRS adopters differently after the adoption of IFRS in South Africa, as a result of the joint effect of changes in the actual amounts of the other countries that adopted IFRS and the IFRS “label” change in South Africa. Hypothesis 1, stated in the alternative form, is the following:

*H1: On average, comparability between the financial statements of firms in South Africa and those of other mandatory IFRS adopters increased after the mandatory adoption of IFRS in South Africa.*

Although I have argued that there might be benefits in using the IFRS “label”, I also considered other factors that suggest that there might not be comparability benefits associated with the “label” change in South Africa. Since the accounting amounts were also unlikely to have changed for either South African firms or non-adopters, I made no prediction regarding changes in the comparability of financial statements of South African firms with those of non-adopters. Hypothesis 2, stated in the null form, is the following:

*H2: On average, comparability between the financial statements of firms in South African and those of non-adopters did not change after the mandatory adoption of IFRS in South Africa.*

Below, I provide more detail on my comparability measures and also explain the steps that I followed to calculate these measures. I used a difference-in-differences design to test my hypotheses.

#### **4.4.2 Background to comparability measures**

In line with the prior literature, I based my comparability measures on the argument that financial statement comparability is achieved when two firms that face similar economic events also produce similar accounting amounts (De Franco et al. 2011:899; Barth et al. 2012:73; Yip & Young 2012:1771; Neel 2016:8). De Franco et al. (2011:899) defined an accounting system as “a mapping from economic events to financial statements”, which they illustrated as follows:

$$\text{Financial statements}_i = f_i(\text{Economic Event}_i) \quad (1)$$

Based on Equation (1), the accounting system of firm  $i$ , represented by  $f_i()$ , results in a set of financial statements based on the economic events faced by firm  $i$ . Therefore it can be argued that if two firms with similar accounting systems face the same economic events, the accounting systems should produce similar financial statements. As a result these financial statements are then comparable.

In line with De Franco et al.’s (2011:899) study, my first proxy for economic events is stock return. Stock return is often used in accounting studies as a proxy for the net effects of a firm’s economic events, and provides a measure of a firm’s equity value (Barth et al. 2012:73). Stock return (*Return*) is measured as the percentage change in the share price from nine months before the financial year-end to three months after the financial year-end, and it is adjusted for any dividends or share splits or consolidations.

The JSE requires every firm to publish its financial statements three months after the firm’s year-end (JSE 2015b). My study examines comparability of financial statements, so I use the share price that also reflects the financial statement

information.<sup>39</sup> My proxy for the financial statements is earnings, which provides a summary measure of the income statement of a firm (De Franco et al. 2011:899; Barth et al. 2012:73). *Earnings* is measured as the net income before extraordinary items for the financial year, divided by the market value of common shareholders' equity nine months before the financial year-end. Based on Equation (1), my first equation to estimate firm *i*'s accounting function is the following:

$$Earnings_{it} = \alpha^i + \beta^i Return_{it} + \varepsilon_{it} \quad (2a)$$

The accounting function of firm *i* is represented by  $\alpha^i$  and  $\beta^i$ , and similarly  $\alpha^j$  and  $\beta^j$  represent the accounting function of firm *j*. If I apply the accounting functions of both firm *i* and firm *j* to the same economic event ( $Return_{it}$ ), and if the two accounting systems are comparable, the estimated earnings will be similar. Therefore smaller differences in the estimated amounts represent more comparable accounting systems.

In line with Cascino and Gassen (2015:248) and Neel (2016:9), I included a second measure of comparability. My second comparability measure associates current year cash flows (economic event) with accruals (financial statements). The association between cash flows and accruals represents a key aspect of the financial reporting process (Cascino & Gassen 2015:248). Accruals affect the quality of earnings and predict future cash flows, which can affect the volatility and predictability of earnings (Dichev & Tang 2009:162). *Cash flow* is measured as operating cash flows. I calculated *Accruals* as net income before extraordinary items, less operating cash flow. Hribar and Collins (2002:105) advise researchers to measure accruals using the cash flow statement rather than the balance sheet, because accruals using the balance sheet method incorrectly include non-operating events that do not affect the income statement. Both *Cash flow* and *Accruals* are scaled by lagged total assets. The second equation used to estimate firm *i*'s accounting function is the following:

$$Accruals_{it} = \alpha^i + \beta^i Cash\ flow_{it} + \varepsilon_{it} \quad (2b)$$

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<sup>39</sup> Although the other countries that South African firms are compared with might have other requirements, Barth et al. (2012:91) and Neel (2016:8) examined comparability around the mandatory adoption of firms worldwide, and also measured returns as the percentage change in the share price from nine months before the financial year-end to three months after.

These two comparability measures (the earnings-return measure and accruals-cash flow measure) can be complementary, because each of them has benefits and shortcomings. Stock returns include any differences between countries' and industries' cost of capital, whereas cash flows do not (Barth et al. 2012:73). Cash flows are not affected by differences in market efficiencies across countries, whereas stock returns are affected (Cascino & Gassen 2015:248). Stock returns also include investors' long-term expectations, while cash flows do not (Barth et al. 2012:73; Neel 2016:10). A difference between these two measures is that the earnings-return measure uses both accounting data and market data to measure comparability, whereas the accruals-cash flow measure uses accounting amounts only.<sup>40</sup>

In this section, I have explained the basic principles behind the calculation of my comparability measures and the proxies that I used to determine the accounting functions of the firms. Below I explain how I created my comparability sample and I provide the steps that I followed to calculate the comparability measures.

#### **4.4.3 Calculation of comparability measures**

To achieve the objectives of my study, I compared South African firms with both IFRS adopters and non-adopters. The adopters and non-adopters were selected from G20 member countries. Firms were matched based on size (total asset value measured in US dollars on 31 December 2005<sup>41</sup>), industry (based on the two-digit SIC code), and similar year-ends. Similar to the method followed by Yip and Young (2012:1773), a match was only made if the value of total assets of the smaller firm was at least 50% of the total assets of the largest firm.<sup>42</sup> Matching the firms based on size and industry reduces the effect that differences in cost of capital due to size and industry can have on economic outcomes, and also other differences that are

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<sup>40</sup> Francis, LaFond, Olsson and Schipper (2004:969) categorise accounting quality measures as either "accounting-based" or "market-based" measures by distinguishing between those that include accounting amounts only and those that are based on both accounting amounts and market data.

<sup>41</sup> I use 31 December 2005, the date of the mandatory adoption of IFRS in South Africa. As this is a date between my pre- and post-adoption periods it is used as a proxy for the size of the firms in both periods.

<sup>42</sup> De Franco et al. (2011:904) created pairs by randomly selecting 10% of the possible firm *i-j* pairs whereas Yip and Young (2012:1773) matched each firm with only one foreign firm based on size and industry. I match each of my South African firms with all possible foreign firms that meet my matching criteria (size, industry and year-end).

unrelated to financial reporting (Barth et al. 2012:74). By matching firms based on the same year-end, I ensured that each pair of two firms was compared over the same period, as recommended by Yip and Young (2012:1771).

I constructed my comparability measures using three steps below. I explain the steps based on Equation (2a), because the procedures using Equation (2b) are the same.

*Step 1: Estimation of accounting function*

In line with Yip and Young (2012:1772), using ordinary least squares regression, I estimated the accounting functions for each of the South African firms (*SA*) and all the matched foreign firms (*FOR*) using Equation (2a). Using annual firm data, I estimated the accounting functions separately for the pre- and the post-adoption periods.<sup>43</sup> This process generated coefficients  $\alpha^{SA}$  and  $\beta^{SA}$  for each South African firm and coefficients  $\alpha^{FOR}$  and  $\beta^{FOR}$  for each foreign matched firm separately, for both the pre- and the post-adoption periods. These coefficients represent the accounting function of each firm.

*Step 2: Estimation of financial statement effect*

Once Equation (2a) had been determined for each *SA* and *FOR* firm for the pre- and the post-adoption periods, I calculated Equations (3) to (6) for each pair. Each of the pairs consisted of one South African firm (*SA*) and one foreign firm (*FOR*). For each firm-year (*t*), I calculated the estimated earnings ( $E(\text{Earnings})$ ) for each *SA* and each *FOR* firm, based on its own accounting function and the accounting function of its matched firm.

$$E(\text{Earnings}_{SA_t}^{SA}) = \alpha^{SA} + \beta^{SA} \text{Return}_{SA_t} \quad (3)$$

$$E(\text{Earnings}_{SA_t}^{FOR}) = \alpha^{FOR} + \beta^{FOR} \text{Return}_{SA_t} \quad (4)$$

$$E(\text{Earnings}_{FOR_t}^{FOR}) = \alpha^{FOR} + \beta^{FOR} \text{Return}_{FOR_t} \quad (5)$$

$$E(\text{Earnings}_{FOR_t}^{SA}) = \alpha^{SA} + \beta^{SA} \text{Return}_{FOR_t} \quad (6)$$

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<sup>43</sup> De Franco et al. (2011) used quarterly data in the US setting. Quarterly data are not available in an international setting, so I used annual data, in line with Barth et al. (2012), Cascino and Gassen (2015) and Neel (2016:8). In additional tests, Cascino and Gassen (2015:247) and Neel (2016:8) found that using semi-annual data for a reduced sample did not affect their inferences.

### Step 3: Calculation of differences

For each year, I calculated the absolute difference between Equations (3) and (4) and Equations (5) and (6) for each firm-pair. The mean of these two differences is  $CompEarn_{SA,FOR}$  for the pair for the year. The closer the value is to zero, the more comparable the accounting amounts of the pair are. I multiplied all these values by -1, to ensure that greater values represent greater comparability, as in Equation (7):

$$CompEarn_{SA,FORt} = -1/2 \times (|E(Earnings_{SA,t}^{SA}) - E(Earnings_{SA,t}^{FOR})| + |E(Earnings_{FOR,t}^{FOR}) - E(Earnings_{FOR,t}^{SA})|) \quad (7)$$

To calculate my comparability measure for the SA and FOR pair in each of the pre- and post-adoption periods ( $p$ ), I calculated the mean of  $CompEarn_{SA,FORt}$  for the three years in the pre-adoption period (2002 to 2004) and the three years in the post-adoption period (2006 to 2008), using Equation (8):

$$CompEarn_{SA,FORp} = 1/3 \times \sum_{t=2}^{t-2} CompEarn_{SA,FOR} \quad (8)$$

$CompEarn$  was my comparability measure, using returns as the economic event and earnings as the proxy for the financial statements for the pair for period  $p$ , where period  $p$  represents either the pre- or the post-adoption period. Similarly, I calculated  $CompAccr$ , my comparability measure, using cash flows as the economic event and accruals as the proxy for the financial statement.

The three steps above created my firm-pair measures of comparability,  $CompEarn$  and  $CompAccr$ . My firm-pair measures are similar to the measures used by De Franco et al. (2011:900), Barth et al. (2012:74), and Yip and Young (2012:1773). Barth et al. (2012:74) and Yip and Young (2012:1773) included each firm in only one firm-pair, whilst De Franco et al. (2011:900) allowed firms to be matched more than once and to be included in more than one firm-pair. My firm-pairs were matched in a manner similar to that used by De Franco et al. (2011:900); although each of my firm-pairs is unique, individual firms could be included in more than one pair. This could



increase dependence between observations and exaggerate outlier effects. To overcome this potential problem, I turned to the literature to determine a firm-level measure of comparability.

Various combinations and aggregations of firm-pairs have been used in the literature to calculate firm-level comparability measures. De Franco et al. (2011:901) created two firm-level measures of comparability. Their first measure was calculated using the average comparability measure of the four firms that are the most comparable to the relevant firm. Their second measure was calculated using the median comparability value of all the firms in the same industry as the relevant firm. Neel (2016:9) used De Franco et al.'s (2011:901) second firm-level measure to calculate his comparability measure, but Cascino and Gassen (2015:248) calculated an industry-level comparability measure for pairs of countries. I used combinations of these methods to create my firm-level measure of comparability.

Since the objective of my study is to measure comparability separately between South African firms and adopters and South African firms and non-adopters, my firm-level comparability measure also had to be able to distinguish between these two groups. Furthermore, since accounting standards vary across countries and the IFRS decision is made at a country level, I created a firm-country measure of comparability to measure comparability for each South African firm with all matched peers in each foreign country. To do this, I calculated a firm's (Firm A's) comparability with a foreign country (Country B) as the mean *CompEarn* (*MeanCompEarn*) of all matches made between that South African firm (Firm A) and all matched firms in that foreign country (Country B). This produced a firm-level measure of comparability for Firm A with foreign Country B. Similarly, I calculated *MeanCompAccr* as the mean *CompAccr* of all matches made between each South African firm and all matched firms in the foreign country.<sup>44</sup>

#### **4.4.4 Regression analysis**

I tested my hypotheses relating to the comparability of South African firms' financial statements after the mandatory adoption of IFRS in South Africa using a difference-

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<sup>44</sup> Collectively, I refer to *CompEarn* and *MeanCompEarn* as my earnings-return measures, and to *CompAccr* and *MeanCompAccr* as my accruals-cash flow measures.

in-differences design. I used the following ordinary least squares regression to test my hypotheses relating to comparability (firm and period subscripts omitted):

$$Comp = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls) + \varepsilon \quad (9)$$

where *Comp* stands for *CompEarn*, *MeanCompEarn*, *CompAccr* or *MeanCompAccr*, *Post* refers to the period after the adoption of IFRS and takes a value of one for the post-IFRS adoption period (see Figure 4.1 above), and zero otherwise; and *Adopter* equals one if the foreign firm in the firm-pair is from an IFRS-adopting country and zero otherwise (see Appendix B).

I regressed my comparability measures (*Comp*) on an indicator variable *Post* to distinguish between the pre- and the post-IFRS adoption periods, an indicator variable *Adopter* to distinguish between comparability with other mandatory adopters and comparability with non-adopters, the interaction between these two indicator variables (*Post x Adopter*) and a number of control variables. The indicator variables allowed me to perform a 2 x 2 analysis of the effect of the mandatory adoption of IFRS in South Africa on the comparability of financial statements between South African firms and other mandatory adopters, versus non-adopters, across the pre- and the post-adoption period, as illustrated in Table 4.1.

**Table 4.1:**  
**Research design to evaluate Hypotheses 1 and 2**

		Pre-adoption (2002 – 2004)	Post-adoption (2006 - 2008)	Difference	
		(a)	(b)	(b) - (a)	
<b>Adopters</b>	(i)	$\gamma_0 + \gamma_2$	$\gamma_0 + \gamma_1 + \gamma_2 + \gamma_3$	$\gamma_1 + \gamma_3$	(H1)
<b>Non-adopters</b>	(ii)	$\gamma_0$	$\gamma_0 + \gamma_1$	$\gamma_1$	(H2)
<b>Difference</b>	(i) - (ii)	$\gamma_2$	$\gamma_2 + \gamma_3$	$\gamma_3$	

Using Table 4.1, I evaluated Hypotheses 1 and 2 as follows: For Hypothesis 1, a significant, positive value for the sum of  $\gamma_1$  (*Post*) and  $\gamma_3$  (*Post x Adopter*) indicates that the comparability of the financial statements of South African firms with those of

other mandatory adopter firms increased significantly after the mandatory adoption of IFRS. With reference to Hypothesis 2, a significant, positive value for  $\gamma_1$  (*Post*) indicates that the comparability of the financial statements of South African firms with those of non-adopter firms increased significantly after the mandatory adoption of IFRS in South Africa. An insignificant coefficient would be consistent with the prediction of Hypothesis 2 that the comparability between the financial statements of South African firms and those of non-adopters did not change with the mandatory adoption of IFRS in South Africa.

Using Table 4.1 also allowed me to perform additional comparisons on the comparability of South African firms' financial statements with those of adopters and non-adopters in the pre- and the post-adoption periods, for which I did not develop a specific hypothesis. A significant positive (negative) value for  $\gamma_2$  (*Adopter*) indicates that the financial statements of South African firms were more (or less) comparable to the financial statements of mandatory adopters than to the financial statements of non-adopters in the pre-adoption period. Similarly a significant positive (or negative) value for the sum of  $\gamma_2$  (*Adopter*) and  $\gamma_3$  (*Post x Adopter*) indicates that the financial statements of South African firms were more (or less) comparable to the financial statements of mandatory adopters than to the financial statements of non-adopters in the post-adoption period. A significant positive (or negative) value for  $\gamma_3$  (*Post x Adopter*) suggests that the comparability of the financial statements of South African firms with those of mandatory adopters increased (or decreased) significantly more (or less) from the pre- to the post-adoption periods, relative to the comparability of the financial statements of South African firms with those of non-adopters.

As a control for other factors that could possibly affect comparability, I included the following variables that are applicable for each firm-pair: *Legal*, a dummy variable that equals one if the foreign country's legal system classification is the same as South Africa's legal system classification, which is common law,<sup>45</sup> and zero otherwise (Yip & Young 2012:1775). This control variable attempts to control for differences in the institutional and reporting environments at a high level. I expected this coefficient

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<sup>45</sup> South Africa's classification as a common law country is discussed in Section 2.4.2. This classification is consistent with that used in other studies that used legal tradition as a proxy for the institutional environment (Ball et al. 2000:20; Leuz et al. 2003:517; Barth et al. 2012:80).

to be positive, as firms with a similar legal system classification should be more comparable.

Other factors that could also affect comparability are differences in the economic characteristics of firms (size difference and book-to-market difference). Although I matched firms by size, there could still be differences. To control for size differences in each firm-pair, I used the *Size ratio*, measured as the proportion of the smallest firm's total assets to the largest firm's total assets (Yip & Young 2012:1775). I included the book-to-market difference (*BTM diff*), measured as the absolute value of the difference in the book-to-market ratio of the two firms (De Franco et al. 2011:927-928). I measured both of these control variables at the end of the firm's 2005 financial year-end, the same date that I used to measure total assets to match my firms. For *Size ratio*, a higher value represents firms that are more similar; therefore I expected the coefficients to be positive, as firms that are more similar in terms of size should be more comparable. I expected the coefficient for *BTM diff* to be negative, as firms that have different book-to-market ratios should be less comparable.<sup>46</sup>

I included industry fixed effects based on the SIC divisional classifications.<sup>47</sup> Standard errors are clustered by foreign country.<sup>48</sup> Consistent with Cascino and Gassen (2015:279), I did not cluster standard errors by year, as my comparability measure was averaged in the pre- and the post-adoption period. Bertrand, Duflo and Mullainathan (2004:274) reported that collapsing data into pre- and post-adoption periods reduces serial correlation problems that can lead to inconsistent standard

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<sup>46</sup> Comparing similar firms from extreme quintiles (large firms with large firms, and small firms with small firms) and different firms from extreme quintiles (large firms with small firms, and small firms with large firms), De Franco et al. 2011 (2011:906) found that similar firms based on size were more comparable than different firms, but that based on the book-to-market ratio, similar firms were only slightly more comparable than different firms.

<sup>47</sup> Cascino and Gassen (2015:253) and Neel (2016:12) included fixed effects, based on the two-digit SIC codes. Having smaller samples reduces the number of observations possible for each classification, limiting cross-sectional variation for many of the two-digit codes. As a result, I used a coarser industry classification. My classification was based on the divisional SIC classification, where the two-digit SIC codes are grouped as follows: Agriculture, Forestry and Fishing (01–09), Mining (10–14), Construction (15–17), Manufacturing (20–39), Transportation and Public Utilities (40–49), Wholesale Trade (50–51), Retail Trade (52–59), Finance, Insurance, Real Estate (60–67), Services (70–89) and Public Administration (91–99) (North Carolina State University 2016).

<sup>48</sup> Cascino and Gassen (2015:255) clustered observations by both country and peer country, because they measured comparability from the perspective of various countries. I only measured comparability from the South African perspective. Neel (2016:12) calculated a firm-level (firm *i*) measure of comparability, using median comparability for all comparable firms (firm *j*) across various countries and clusters by firm *i*'s country.

errors when performing difference-in-differences analysis. Similar to Barth et al. (2012:77), I winsorized my continuous variables at the top and bottom five per cent to limit the impact of outliers.

#### **4.5 Conclusion**

In this chapter, I have provided details of my research design and the collection of the data for my research. My two hypotheses, as developed in Chapter 3, are addressed in this chapter, and I have discussed the regression model used to test them. The various proxies have been described in detail, as have the different control variables that are included in the regressions.

## CHAPTER 5: COMPARABILITY RESULTS

### 5.1 Introduction

In this chapter, I present the results relating to the main objective of this study, namely to determine whether the mandatory adoption of IFRS in South Africa, as a country where local GAAP was identical to IFRS before IFRS adoption, is associated with changes in the comparability of financial statements and what the likely sources of any such changes are.

After presenting my initial sample, I report the results for the earnings-return measures of comparability, and thereafter for the accruals-cash flow measures of comparability. In my discussion of the results, I consider the validity of the hypotheses that I developed in Chapter 3 relating to the comparability of the financial statements of South African firms. Finally, I indicate my conclusions on the association between mandatory IFRS adoption in South Africa and the comparability of financial statements.

### 5.2 Initial sample

I obtained my initial South African sample from the Thomson Reuters Datastream database (including Worldscope). I required all firms to be included in my initial sample to have data available for all three years in both the pre-adoption (2002 to 2004) and the post-adoption (2006 to 2008) periods, for either the *CompEarn* or the *CompAccr* measure (see discussion in Section 4.4.3), resulting in two different samples for the respective comparability measures. I only included firms for which in Worldscope the “market” is indicated as South Africa, and the “primary quote” is indicated as the JSE. These requirements ensured that the South African firms chosen are not influenced by other markets or other countries’ regulatory requirements. Furthermore, since the firms I chose were matched based on similar year-ends, and to ensure that this was consistent throughout my sample period, I excluded any firms that changed their year-ends during my sample period.

Table 5.1 details my sample selection procedure.<sup>49</sup> For the sample of South African firms, I was only interested in firms that implemented the mandatory adoption of IFRS for year-ends beginning on or after 1 January 2005. Therefore I excluded all voluntary adopters (any firms that adopted IFRS before 2005) and any firm that did not report under SA GAAP for any of the years before 2005. For all other adopting countries, I excluded voluntary adopters and firms that did not report under the relevant country's local GAAP for any of the three years before 2005. I also excluded firms from the adopting countries that did not report under IFRS for all three years in the post-adoption period. Furthermore, I excluded firms that (according to the Worldscope database) continued to use local GAAP (non-adopters/classification error), after the required IFRS adoption date.<sup>50</sup> Lastly, I excluded firms that had missing accounting standards data in Worldscope. For non-adopters, I excluded all firms that did not report under the relevant country's local GAAP for the entire period of my study (2002 to 2008) and any firms with missing accounting standards data.

The above process generated 167 unique South African firms. For some firms, all the information was available for my *CompEarn* measure (163 firms), whereas for others, all the information to calculate *CompAccr* (166 firms) was available.

Similarly, the process generated 3 061 unique firms from all the IFRS-adopting countries and 10 390 unique firms from all the non-adopting countries in the G20. Details by country are presented in Table 5.2, which also shows the stock exchanges that the firms were selected from, each country's legal tradition and the GAAP differences, according to Bae et al. (2008:600-601). For most of the countries, I only selected firms from the largest stock exchange in the country concerned. However, where a country has more than one stock exchange of similar size, or another large stock exchange, more than one stock exchange was included.

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<sup>49</sup> The tables detailing the analysis results are clustered at the end of the chapter for the convenience of the reader. The same applies to the results tables for Chapters 6 and 7.

<sup>50</sup> To determine the accounting standards used, I used the "accounting standards followed" field (07536) in Worldscope. Daske et al. (2013:544) claim that there are some classification errors in this field. One explanation for these errors can be insufficient disclosure by a reporting firm (Barth et al. 2012:77). To limit the effect of these errors, I excluded firms where Worldscope reports that the firm continued to use local GAAP after the required IFRS adoption date. This could either be a classification error, or it could indicate a firm that is allowed to continue to report under local GAAP. For example, some countries in the European Union allow or require firms to report under local GAAP in their individual accounts (European Commission 2002).



### 5.3 Comparability sample: *CompEarn*

To generate the comparability sample for the *CompEarn* comparability measure, I matched the 163 South African firms with available *CompEarn* data with all the possible foreign firms (adopters and non-adopters), based on size, industry and year-end. The number of matches made between South African firms and foreign firms are set out by country in Panel A of Table 5.3. A total of 2 421 unique firm-pair matches were made, of which 757 were between South African firms and other IFRS adopting firms, and 1 664 were between South African firms and non-adopting firms.

For the IFRS-adopting countries, the most matches were made between South African firms and Australian ones (296 matches – 39%). For non-adopting countries, the most matches were made between South African firms and US firms (746 matches – 45%). Australia and the US were also the two countries with the most firms included in the initial sample for the respective groups (see Table 5.2). No matches were found for the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, Russia or Saudi Arabia (not included in Table 5.3). These countries had fewer than eight firms included in my initial sample (see Table 5.2) and none of these firms could be matched with a South African firm based on size, industry and year-end. These countries had a limited number of firms with data available for the entire period reviewed in my study. Most of the firms with available data that were excluded from my initial sample were either voluntary adopters or did not use its home base country's local GAAP.

### 5.4 Descriptive statistics: *CompEarn*

Panel A of Table 5.3 provides the country-level means for the regression variables (excluding the indicator variables). I show the mean values for *CompEarn* separately for the pre- and the post-adoption periods. I calculated the difference per country for *CompEarn* between the pre- and the post-adoption periods, and performed a t-test to determine whether or not the mean *CompEarn* values differed significantly between

the pre- and the post-adoption periods.<sup>51</sup> The discussion below, in Sections 5.4.1 to 5.4.4, focuses on these univariate results. However, my inferences are based on the multivariate results, which are discussed in Section 5.5.

#### **5.4.1 *CompEarn*: Pre-IFRS adoption period**

Column 3 in Panel A of Table 5.3 reports the mean comparability (*CompEarn*) values between South African firms and firms from each of the IFRS-adopting and non-adopting countries in the pre-IFRS period. I also report the mean *CompEarn* values combined for the adopter and non-adopter groups. These preliminary results suggest that there is no significant difference (0.0137) between the comparability of the financial statements of South African firms and those of adopters (-0.3379), versus the comparability of the financial statements of South African firms and those of non-adopters (-0.3516) in the pre-adoption period (p-value=0.3692, not tabulated).

Focusing only on countries with more than ten observations in the pre-adoption period, of the firms in all the adopting countries, Australian firms (with 296 firm-pair matches) are the least comparable to South African firms, with a mean *CompEarn* of -0.4762. Spanish firms (with 19 firm-pair matches) have a mean *CompEarn* of -0.1219, and are thus the most comparable to South African firms out of all the adopters. Of all the non-adopting countries, Argentinian firms (with 11 firm-pair matches) are the least comparable to South African firms, with a mean *CompEarn* of -0.5818. Firms in China (with 204 firm-pair matches) are on average the most comparable to South African firms, with a mean *CompEarn* of -0.1360, relative to other non-adopters in the pre-adoption period.

Based on prior research, the above results are surprising. I expected firms from common law countries (Barth et al. 2012:68) and firms with more similar local GAAP (Cascino & Gassen 2015:254) to be more comparable to South African firms. Firms in Australia, which is a common law country similar to South Africa, and where there were few differences between local GAAP and IFRS before the adoption of IFRS,<sup>52</sup>

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<sup>51</sup> I present the descriptive statistics only for my *CompEarn* measure. As the results are disaggregated per country, statistical power is weak to perform t-tests at a country level using the *MeanCompEarn* measure.

<sup>52</sup> There were no differences between SA GAAP and IFRS and four differences between Australian local GAAP and IFRS (Bae et al. 2008:601).

turned out to be the least comparable to South African firms of the firms in all the adopting countries in the pre-adoption period. China, on the other hand, is a code law country, and there were nine differences between its local GAAP and IFRS (Bae et al. 2008:601), but its firms were the most comparable to South African firms of the firms in all the non-adopting countries.

The *BTM diff* between South African and Australian matched firms and South African and Chinese matched firms could possibly explain the results. The mean *BTM diff* for the South African and Australian matched firms, at 0.6588, is higher than the average *BTM diff* of 0.4745 (see Panel B of Table 5.3), whilst the *BTM diff* for South African firms matched with Chinese firms is 0.3426. Firms with a larger *BTM diff* have previously been found to be less comparable than firms with a smaller *BTM diff* (De Franco et al. 2011:906). It is also possible that these results were driven by the fact that individual firms in the country-level sub-samples were matched multiple times. To address this potential concern, I included another measure of comparability, *MeanCompEarn*, in my main analysis: data were averaged per South African firm at a foreign country level. I also controlled for *BTM diff* in my multivariate regressions.

#### **5.4.2 *CompEarn: Post-IFRS adoption period***

Column 4 in Panel A of Table 5.3 reports the mean *CompEarn* for each of the countries in the post-IFRS adoption period. The mean *CompEarn* for adopters is -0.1963 and for non-adopters -0.2051. The difference of 0.008 between the two groups remains insignificant ( $p$ -value=0.3561, not tabulated).

Focusing only on firms with more than ten observations, in the post-adoption period, Spanish firms (adopters) and Indian firms (non-adopters) are, on average, the most comparable to South African firms, whereas Australian firms (adopters) and Argentinian firms (non-adopters) are the least comparable.

If comparability were only driven by the accounting standards used in each country, I would expect to find similar post-adoption comparability values between South African firms and all firms from adopting countries, because these firms have all been using similar accounting standards in the post-adoption period. However, as Panel A

of Table 5.3 shows, *CompEarn* in the post-adoption period for adopters ranges from -0.0511 to -0.2653, suggesting that other factors also affect comparability. These factors might be the institutional environment of the country, the specific industry that a firm trades in, the difference in size between the two firms, or the book-to-market difference between the two firms.

#### ***5.4.3 CompEarn: Differences between the pre-adoption and post-adoption periods***

The increase or decrease in the comparability of financial statements of South African firms with those of firms from the respective countries from the pre- to the post-adoption period is reported in Column 5 in Panel A of Table 5.3. A t-test of the significance of the difference is reported in Column 6. Overall, the increase of 0.1415 in the comparability of the financial statements of South African firms with those of adopting firms from the pre- to the post-IFRS adoption period is significant. This provides univariate evidence consistent with Hypothesis 1.

Of the 18 adopting countries, the comparability of the financial statements of South African firms with those of firms in other adopting countries improved from the pre- to the post-adoption period for firms in 15 countries – significantly so for nine countries. Decreases in comparability were evident for Greece, the Netherlands and Slovenia, but these decreases are not statistically significant.

As with the results for the adopters, the univariate results for the non-adopters suggest that there was an overall significant increase in the comparability of the financial statements of South African firms with those of firms in non-adopting countries from the pre- to the post-adoption period (there was a difference of 0.1465). These univariate results mean that the null hypothesis (Hypothesis 2) that the comparability between the financial statements of South African firms and those of non-adopters remained unchanged has to be rejected. Possible explanations for this increase can be “label” benefits with the adoption of IFRS by South Africa, changes in IFRS themselves that improved comparability with non-adopters, changes in the institutional environment (enforcement changes) of the foreign country, concurrent

market changes unrelated to IFRS adoption or convergence of local accounting standards with IFRS by non-adopters (see Figure 3.4).

If comparability is indeed driven by enforcement changes or changes made to the accounting standards, I expect the increase or decrease in the comparability of financial statements with individual non-adopting countries to vary, depending on the extent to which these factors are present. The comparability of the financial statements of South African firms with those of foreign firms increased with firms in nine out of the ten non-adopting countries, with a significant increase reported for four countries. For one country, China, there was a significant decrease in the comparability of the financial statements of Chinese firms with those of South African firms from the pre- to the post-adoption period.

The above results must be interpreted with caution, as these are only preliminary results and do not include control variables. Also, the results for my sample, specifically at a country level, may have been driven by the fact that individual firms were matched multiple times. For example, in the Chinese sample, although there are 204 firm-pairs, one South African firm is included in 80 of these pairs. If this firm is excluded, there is an insignificant decrease in the comparability of the financial statements of South African firms with those of Chinese firms, from -0.1863 to -0.2154. To address this concern, my multivariate analyses included a firm level measure of comparability, *MeanCompEarn*, where data were averaged per South African firm at a foreign country level, and a number of control variables were added.

#### **5.4.4 *CompEarn: Other descriptive statistics***

In Panel B of Table 5.3, I report the firm-pair descriptive statistics. *CompEarn* has a mean value of -0.2748 and a median of -0.1584. In Panel C of Table 5.3, I report the Spearman (Pearson) correlations above (or below) the diagonal for the dependent and control variables used in my *CompEarn* regression. In both the Spearman and the Pearson correlations, *CompEarn* is negatively and significantly correlated with *BTM diff* (at a one per cent level of significance). The negative *BTM diff* was expected, because firms with larger differences in economic characteristics should be less comparable.

The significant negative correlation between *CompEarn* and *Legal* was not expected, as it suggests that firms in South Africa (a common law country) are more comparable to firms in code law countries. The lack of significant correlation between *CompEarn* and *Size ratio* could be due to the matching of firms based on size. These aspects are further analysed in the main results.

## 5.5 Multivariate results: Earnings-return measures

Table 5.4 reports the multivariate regression results for Equation (9), measuring comparability using the *CompEarn* and *MeanCompEarn* measures, respectively. I applied Equation (9) to two different earnings-return measures to check the robustness of my results to alternative comparability measures. To calculate these measures, I selected my sample of 2 421 unique firm-pairs, as described in Section 5.3, above. My sample included all possible matches made between South African firms and foreign firms that met the matching criteria. For each firm-pair, I calculated *CompEarn* for both the pre-adoption and the post-adoption periods, resulting in 4 842 firm-pair observations – 2 421 firm-pair observations in each of the pre-adoption and post-adoption periods. Next, I calculated a firm-level measure of comparability with each foreign country. I calculated every firm's (Firm A's) comparability with a foreign country (Country B) as the mean *CompEarn* (*MeanCompEarn*) of all matches made between the South African firm (Firm A) and all matched firms in that particular foreign country (Country B). This produced a firm-level measure of comparability for Firm A with foreign Country B. For my *MeanCompEarn* measure, I had 1 060 firm-foreign country observations – 530 firm-foreign country observations in the pre-adoption period and 530 observations in the post-adoption period.

Panel A of Table 5.4 reports the coefficients and t-statistics clustered by foreign country. I included industry fixed effects.<sup>53</sup> The results reported in Panel A for *Intercept*, *Post*, *Adopter*, *Post x Adopter* and certain combinations of these variables

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<sup>53</sup> Another possibility was to include country fixed effects, but there are linear combinations of other variables (specifically *Legal* and *Adopter*) already in the model that captured their effect. As a result, country fixed effects were not included in the model.

were then used to prepare Panels B and C of Table 5.4. The results of these variables are discussed by referring to these reconstructed panels.

The coefficients for my control variables are reported in Panel A of Table 5.4. As expected, I found a significant negative coefficient for *BTM diff*, indicating that firms with higher book-to-market differences tend to be less comparable. However, as Yip and Young (2012:1777) also found, the coefficient for *Size ratio* was not significant in either of my regressions, probably because firms were matched on the basis of size. Contrary to my expectation and the findings by Barth et al. (2012:81) and Yip and Young (2012:1777),<sup>54</sup> I found a negative coefficient for *Legal*, which is significant in the *CompEarn* regression. Although the coefficient remained negative in the *MeanCompEarn* regression, it is not significant. This could indicate that the significance in the *CompEarn* regression is driven by individual firms' being matched multiple times. The negative coefficient could be a result of the somewhat mixed legal system used in South Africa (see Section 2.4.3) and may mean that a classification of South Africa as a purely common law country as is generally used in the literature is not appropriate.

In Table 4.1, I explained the research design to evaluate my hypotheses. For ease of reference, I repeat Table 4.1 below.

**Table 4.1:**

**Difference-in-differences design to evaluate Hypotheses 1 and 2**

		Pre-adoption (2002 – 2004)	Post-adoption (2006 - 2008)	Difference	
		(a)	(b)	(b) - (a)	
<b>Adopters</b>	(i)	$\gamma_0 + \gamma_2$	$\gamma_0 + \gamma_1 + \gamma_2 + \gamma_3$	$\gamma_1 + \gamma_3$	(H1)
<b>Non-adopters</b>	(ii)	$\gamma_0$	$\gamma_0 + \gamma_1$	$\gamma_1$	(H2)
<b>Difference</b>	(i) - (ii)	$\gamma_2$	$\gamma_2 + \gamma_3$	$\gamma_3$	

In order to evaluate the regression results, I combined some of the coefficients reported in Panel A of Table 5.4 and also test the significance of the combined

<sup>54</sup> Barth et al. (2012:81) found firms in the US (a common law country) to be more comparable to firms from common law countries than to firms from code law countries after the adoption of IFRS. Yip and Young (2012:1777) found that firms from different countries are less comparable when they have different legal origins.



coefficients. These results are reported in Panels B and C of Table 5.4 for the two earnings-return measures of comparability. To construct the analysis, I added the coefficients of the variables reported in Panel A of Table 5.4 as illustrated in Table 4.1. For example, in Panel B (*CompEarn*), I calculated the value for adopters in the pre-adoption period (-0.3080) as the sum of the intercept<sup>55</sup> (-0.3539) and the coefficient of *Adopter* (0.0460). Also, the value for adopters in the post-adoption period (-0.1664) was calculated as the sum of the intercept (-0.3539) and the coefficients of *Post* (0.1465), *Adopter* (0.0460) and *Post x Adopter* (-0.0049). The difference in the comparability of the financial statements of South African firms with those of adopters in the post-adoption period, as opposed to in the pre-adoption period, is the difference between -0.1664 and -0.3080, which equates to an increase in comparability of 0.1415, or alternatively the sum of *Post* (0.1465) and *Post x Adopter* (-0.0049). To test whether this difference is significant, I performed an F-test to determine whether  $Post + Post \times Adopter = 0$ . The results for the F-tests are reported in Panel A of Table 5.4, and are also used to indicate the significance of differences in Panels B and C of Table 5.4 between adopters in the pre-adoption and post-adoption periods ( $Post + Post \times Adopter = 0$ ) and between adopters and non-adopters in the post-adoption period ( $Adopter + Post \times Adopter = 0$ ).

### ***5.5.1 Earnings-return measures: Change for adopters from the pre-adoption to the post-adoption period***

To evaluate whether Hypothesis 1 was true, I needed to compare the comparability of the financial statements of South African firms with those of firms from other IFRS-adopting countries in the pre-adoption period to the comparability of those financial statements in the post-adoption period. A comparison of the two columns in Panel B of Table 5.4 shows that the comparability of the financial statements of South African firms with those of adopters increased significantly from the pre-adoption to the post-adoption periods. The increase in comparability of 0.1415 from -0.3080 in the pre-adoption period to -0.1664 in the post-adoption period is statistically significant at a one per cent level. Similar results are reported in Panel C of Table 5.4, using the

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<sup>55</sup> With industry fixed effects included in the regression, the intercept varies for each of the industries included. The results reported in Panel B and C of Table 5.4 are the comparability values for my first industry. For each of the other industries, the coefficient for that specific industry had to be added to the intercept value. However, as the same values are included in each of the four boxes as illustrated in Table 4.1, the differences would remain the same.

*MeanCompEarn* proxy. I found the increase in comparability to be statistically significant at a one per cent level.

These results provide evidence consistent with Hypothesis 1, which posits that, after mandatory IFRS adoption, the financial statements of South African firms became more comparable to those of firms in other countries that implemented mandatory IFRS adoption. Given that SA GAAP was identical to IFRS prior to the adoption of IFRS, the most likely source of this increase in the comparability of financial statements from the pre-adoption to the post-adoption period is the joint effect of changes in the actual accounting amounts of other countries that adopted IFRS, and their accounting amounts becoming more comparable to those of South African firms (network benefits), and the likelihood that the IFRS “label” change in South Africa signalled higher comparability. I could not exclude the possibility that the source of the increase in comparability is changes made to IFRS around the time of the adoption of IFRS, enforcement changes by the other countries that adopted IFRS, or other concurrent market changes that are unrelated to the IFRS adoption decision. I therefore explored these issues further in the additional analyses reported in Chapter 6.

### ***5.5.2 Earnings-return measures: Change for non-adopters from the pre-adoption to the post-adoption period***

Similar to the results for adopters, a comparison of the two columns in Panels B and C of Table 5.4 shows a significant increase in the comparability of the financial statements of South African firms with those of non-adopters from the IFRS pre-adoption to the post-adoption periods in South Africa. The increase in comparability based on the *CompEarn* measure from -0.3539 to -0.2075 is statistically significant at a five per cent level. These results are even stronger for the *MeanCompEarn* measure, where the increase is significant at a one per cent level, with standard errors clustered by foreign country.<sup>56</sup>

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<sup>56</sup> As a sensitivity check to the foreign country clustering of standard errors, I also clustered standard errors by firm-pair (firm-country for *MeanCompEarn*) and industry respectively. These alternative methods of standard error clustering (untabulated) did not alter my inferences relating to either Hypothesis 1 or 2, and the increases in the comparability of financial statements remained statistically significant. In all instances, the statistical significance remained the same, except for an increase in the comparability of the financial statements with those of non-adopters using the *CompEarn*

Based on a number of factors that could have an impact on the comparability of the financial statements of South African firms with those of non-adopters, I made no prediction regarding the change in the comparability of financial statements with non-adopter firms following mandatory adoption of IFRS in South Africa, and I stated Hypothesis 2 in the null form. These results imply that I have to reject the null hypothesis that the comparability of the financial statements of South African firms with those of firms in non-adopting countries did not change following the mandatory adoption of IFRS in South Africa. This increase in comparability is consistent with capital market participants' perceptions regarding the "label" benefits of the adoption of IFRS in South Africa. Alternatively, the increase in the comparability of the South African firms' financial statements with those of non-adopters could be due to concurrent market changes unrelated to IFRS adoption. It is also possible that the increase in comparability could be driven by changes unrelated to the markets' perceptions, and specifically related to accounting amounts that changed. Such changes could include changes in the enforcement of accounting standards or changes in the accounting standards of the foreign country, or changes in IFRS that improved comparability with non-adopters.

When considering comparability changes, Barth et al. (2012:90) raised the possibility that market-based measures could suggest an increase in comparability if investors attain a better understanding of the association between accounting amounts and stock prices when more countries adopt IFRS, even if the accounting amounts do not change. Whereas regulators might regard an increase in the association between accounting amounts and stock prices as indicative of increased comparability, standard setters might look at the comparability of financial statements more specifically relating to accounting amounts (Barth et al. 2012:90).

My second measure of comparability, which used cash flows as the economic event and accruals as the proxy for the financial statement, did not include any market perceptions and was calculated using only accounting amounts. A comparison of the results of the two different measures might provide evidence on whether the changes

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measure, where the increase was significant at a one per cent (10%) level when standard errors were clustered by firm-pair (industry).

using my earnings-return measure were driven by market perceptions (either the IFRS “label” change or other market changes) or changes in the comparability of accounting amounts (changes to IFRS, changes to non-adopters’ accounting standards or enforcement changes by the non-adopters). These results are discussed in Sections 5.6 to 5.8.

### **5.5.3 Earnings-return measures: Adopters versus non-adopters**

Although my two hypotheses are independent of each other (the first relates to comparability with adopters, and the second to comparability with non-adopters), a comparison of these two groups can provide evidence regarding the sources of comparability changes following the adoption of IFRS in South Africa. Below, I compare these two groups in both the pre-adoption and the post-adoption periods, as well as the change in comparability between South African firms and adopters relative to non-adopters from the pre-adoption period to the post-adoption period.

The analysis for *CompEarn* reported in Panel B of Table 5.4 shows no significant difference between the comparability of the financial statements of South African firms with those of adopters, and the comparability of the financial statements of South African firms with those of non-adopters in the pre-adoption period (-0.3080 versus -0.3539). Consistent with the results for *CompEarn*, Panel C (*MeanCompEarn*) shows no significant difference in the comparability of the financial statements of the two groups with those of South African firms in the pre-adoption period.

Comparing adopters and non-adopters in the post-adoption period, there is some evidence that South African firms’ financial statements are more comparable to the financial statements of adopters than to the financial statements of non-adopters. Panel B of Table 5.4 shows a comparability of -0.1664 with adopters, compared to that with non-adopters of -0.2075, although the difference is not significant. However, Panel C reports significantly higher comparability with adopters in the post-adoption period, with comparability with adopters at -0.1433 compared to comparability with non-adopters at -0.1979. The difference of 0.0546 is significant at a five per cent level.

The results across both analyses show no significant difference in the comparability change between the financial statements of South African firms and those of mandatory adopters, relative to the comparability change between the financial statements of South African firms and those of non-adopters (the difference in the differences is insignificant). As comparability increased significantly between South African firms and both these groups following the adoption of IFRS, the result could suggest a number of things. It is possible that the effect of the IFRS adoption decision by comparable adopting firms did not drive the comparability increase, although Panel C of Table 5.4 suggests that the financial statements of South African firms are more comparable to those of adopters than to those of non-adopters in the post-adoption period. Alternatively, the IFRS adoption decision, together with the global convergence of accounting standards is associated with an increase in comparability with both adopters and non-adopters. Enforcement changes by adopters and non-adopters could also be driving the increase. These factors are likely to affect the accounting amounts that are reported, and the accruals-cash flow measure may provide further insight into these possibilities. Other possible reasons relate to the markets' perceptions regarding the "label" change to IFRS, or alternatively, other market changes unrelated to the IFRS adoption decision.

#### **5.5.4 Earnings-return measures: Summary**

In summary, the findings for my *CompEarn* and *MeanCompEarn* measures of comparability suggest a macro shift in the comparability of the financial statements of South African firms following IFRS adoption with the financial statements of both adopters and non-adopters. While overall results suggest that there are no significant difference in the comparability of financial statements in the pre-adoption period between South African firms and adopters versus South African firms and non-adopters, Panel C of Table 5.4 provides some evidence that comparability is higher in the post-adoption period between adopters and South African firms relative to the comparability between non-adopters and South African firms.

In the next sections, I review my results for Hypotheses 1 and 2, where comparability is measured using my accruals-cash flow measures. Whereas my earnings-return

measures use stock return as a proxy for a firm's economic events (which includes the markets' assessment of comparability), my accruals-cash flow comparability measures are based purely on financial statement information. For my accruals-cash flow measures, I used cash flows as a proxy for the economic events and accruals as a proxy for the financial statements.

## 5.6 Comparability sample: *CompAccr*

I generated my comparability sample for the *CompAccr* comparability measure in a similar way as I generated that for my *CompEarn* measure: I matched the 166 South African firms with available *CompAccr* data with all possible foreign firms based on size, industry and year-end. The number of matches between South African firms and firms in each of the G20 countries is reported in Panel A of Table 5.5. A total of 2 471 unique firm-pair matches were made, with 674 matches between South African firms and other mandatory IFRS adopting firms, and 1 797 matches were made between South African firms and non-adopting firms.

The most matches with an individual country were made between South African firms and Australian firms (301 matches – 45%) in the adopters group, and between South African firms and US firms (837 matches – 47%) in the non-adopters group. No matches were found with firms in Austria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Slovakia, Russia and Saudi Arabia. The countries with no firm-matches were the same as for my *CompEarn* measure, with the addition of Austria and Luxembourg. Both Austria and Luxembourg had ten firms with available data to include in my initial *CompEarn* sample, but only one firm with available data to include in my initial *CompAccr* sample (see Table 5.2).

## 5.7 Descriptive statistics: *CompAccr*

Panel A of Table 5.5 shows the country-level means for the regression variables (excluding the indicator variables). I show the mean values for *CompAccr* separately for the pre-adoption and the post-adoption periods. I calculated the differences between these periods by country for *CompAccr* and performed a t-test to determine whether the mean *CompAccr* values differed significantly between the pre-adoption



and the post-adoption periods.<sup>57</sup> The discussion that follows in Sections 5.7.1 to 5.7.4 focuses on these univariate results. However, my inferences are based on the multivariate results discussed in Section 5.8.

### **5.7.1 *CompAccr*: Pre-IFRS adoption period**

Column 3 in Panel A of Table 5.5 reports the mean comparability (*CompAccr*) values between South African firms and firms from each of the IFRS-adopting and non-adopting countries in the pre-IFRS period. I also report the mean *CompAccr* values for the two groups. Unlike my results for *CompEarn*, the preliminary results for *CompAccr* suggest that there was a significant difference between the comparability of the financial statements of South African firms with those of adopters (-0.2607), versus the comparability of the financial statements of South African firms with those of non-adopters (-0.1480), with non-adopters being significantly more comparable to South African firms (p-value<0.0001, not tabulated).

Focusing only on countries with more than ten observations, of all the IFRS-adopting countries, the financial statements of Australian firms (-0.3525) were the least comparable to those of South African firms before the mandatory adoption of IFRS; the financial statements of Italian firms (-0.1532) were the most comparable. Similar to the findings regarding *CompEarn* in Table 5.3, the financial statements of Chinese firms (with a mean *CompAccr* of -0.1032) were the most comparable to those of South African firms among all the non-adopting firms. The financial statements of Canadian firms (-0.2426) were the least comparable.

As with the univariate results for *CompEarn*, the *CompAccr* univariate results at the country level were surprising. Australia and Canada are both common law countries with few differences between local GAAP and IFRS before the adoption of IFRS (Australia had four differences, Canada had five differences). Italy and China are both code law countries, with more differences between local GAAP and IFRS (Italy had 12 differences, China had nine differences), according to Bae et al. (2008:601-602). As discussed in Section 5.4.1, it is possible that these results were driven by

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<sup>57</sup> I present the descriptive statistics only for my *CompAccr* measure. The results are disaggregated per country, so the statistical power is too weak to perform t-tests at a country level using the *MeanCompAccr* measure.



other factors not considered in the univariate analysis, such as industry differences, size differences or book-to-market differences. As with the country-level analysis for *CompEarn* presented in Table 5.3, the *BTM diff* between South African firms and Australian firms and the *BTM diff* between South African firms and Chinese firms could possibly explain the results for *CompAccr*. The mean *BTM diff* for the South African and Australian matched firm-pairs at 0.6945 is higher than the average *BTM diff* of 0.4805 (Panel B of Table 5.5), and the *BTM diff* for South African firms matched with Chinese firms is 0.3442. I expected that firms with a larger *BTM diff* would be less comparable than firms with a smaller *BTM diff*, in line with the prior findings of De Franco et al. (2011:906). This underscores the importance of including *BTM diff* as a control variable in the multivariate analyses.

### **5.7.2 *CompAccr*: Post-IFRS adoption period**

The mean *CompAccr* for each of the countries in the post-adoption period is reported in Column 4 in Panel A of Table 5.5. The mean *CompAccr* for adopters is -0.2355 and for non-adopters it is -0.1417. The difference between the two groups remains significant (p-value<0.0001, not tabulated).

Focusing on the individual countries with more than ten observations, I found that the financial statements of Swedish firms (adopters) and Indian firms (non-adopters) were on average the most comparable to those of South African firms in the post-adoption period. The financial statements of Australian firms (adopters) and Canadian firms (non-adopters) remained the least comparable to those of South African firms.

The univariate analysis for *CompAccr*, specifically relating to adopters, suggests that differences in the comparability of the financial statements remained after the mandatory adoption of IFRS. These differences could be country-specific (such as the institutional environment), industry-specific, or firm-specific (such as size or book-to-market differences). In my multivariate regression, I controlled for these factors.

### ***5.7.3 CompAccr: Differences between the pre-adoption and post-adoption periods***

Column 5 in Panel A of Table 5.5 reports the increase or decrease in the comparability of financial statements of foreign firms with those of South African firms from the pre-adoption period to the post-adoption period, based on my *CompAccr* measure. Overall, the increase of 0.0253 in the comparability of the financial statements of South African firms with those of firms from other IFRS-adopting countries from the pre-adoption period to the post-adoption period is significant. This provides univariate evidence consistent with Hypothesis 1. This result is also consistent with the univariate results obtained for *CompEarn* (reported in Table 5.3).

The comparability of the financial statements of South African firms with those of firms in the 16 IFRS-adopting countries included in this study improved from the pre-adoption period to the post-adoption period for ten countries, and significant increases were found for three of those countries. Comparability decreased for firms in six countries, but none of the decreases were statistically significant. The lack of significant increases in the comparability of the financial statements of South African firms with those of firms from Australia and the UK (both with large sample representation) was expected, as for both of these countries there were few differences between their local GAAP and IFRS before the adoption of IFRS.

The overall increase in the comparability of the financial statements of South African firms with those of firms in non-adopting countries from the pre-adoption period to the post-adoption period was not significant. Contrary to the results using *CompEarn* (see Table 5.3), these univariate results do support the null hypothesis (Hypothesis 2) that the comparability of the financial statements of South African firms with those of non-adopters remained unchanged.

Focusing on the individual non-adopting countries, the comparability of the financial statements of South African firms increased for four out of the ten countries, with a significant increase reported for two countries, namely Japan and the US. Of the six countries for which there was a decrease in the comparability of the financial

statements with those of South African firms, there was a significant decrease for only one country, China.

There are a number of possible reasons for an increase or decrease in the comparability of financial statements with non-adopters from the pre-adoption period to the post-adoption period using the *CompAccr* measure. Christensen et al. (2013:171) note that Japan implemented substantive enforcement changes in 2005, and that there was an increase in liquidity around these enforcement changes. It is possible that these enforcement changes could result in increased comparability with South Africa, as an IFRS adopter that reported in terms of SA GAAP (which was already identical to IFRS before the adoption).

The increase in the comparability of the financial statements of South African firms with those of US firms may be a result of the convergence of IFRS and US GAAP, which has been ongoing since September 2002 (FASB 2005:1). In Appendix A, I indicate all amendments and new issues to IFRS that became effective during the sample period. Similarly, changes would have been made to US GAAP.

The decrease in comparability with the financial statements of Chinese firms was unexpected, because China issued new accounting standards in 2006 that became effective from 1 January 2007, and that were substantially converged with IFRS (Deloitte 2006:1). However, these standards would only have been applied at most for two of the three years included in my post-adoption period analysis.

The above univariate results are only preliminary results and exclude the effect of control variables. Hence, I base my inferences on the discussion of the multivariate analyses considered in Section 5.8.

#### **5.7.4 *CompAccr*: Other descriptive statistics**

In Panel B of Table 5.5, I report the firm-pair descriptive statistics for my *CompAccr* sample. *CompAccr* had a mean value of -0.1730 and a median of -0.0979. Panel B of Table 5.5, reports the Spearman (Pearson) correlations above (below) the diagonal for the dependent and control variables used in my *CompAccr* regression. The

correlations for the *CompAccr* sample were similar to the correlations for the *CompEarn* sample. In both samples, the comparability measure (*CompEarn* and *CompAccr*) had a significant negative correlation (at a one per cent level) with *BTM diff* and *Legal* and an insignificant correlation with *Size ratio*.

## 5.8 Multivariate results: Accruals-cash flow measures

In Table 5.6, I report the multivariate regression results for Equation (9), measuring comparability using the *CompAccr* and *MeanCompAccr* measures. I applied Equation (9) to two different accruals-cash flow measures to check the robustness of my results to alternative comparability calculations. To calculate these measures, I selected my sample of 2 471 unique firm-pairs as described in Section 5.6 above. The sample included all possible matches made between South African firms and foreign firms that met the matching criteria. For each firm-pair, I calculated *CompAccr* for both the pre-adoption and the post-adoption periods, resulting in 4 942 firm-pair observations – 2 471 firm-pair observations in each of the pre-adoption and post-adoption periods. I also calculated a firm-level measure of comparability with each foreign country, *MeanCompAccr*. *MeanCompAccr* was calculated in a manner similar to that explained in Section 5.5 for *MeanCompEarn*. For my *MeanCompAccr* I used 976 firm-foreign country observations – 488 firm-foreign country observations in the pre-adoption period and 488 in the post-adoption period.

Panel A of Table 5.6 reports the coefficients and t-statistics clustered by foreign country. I included industry fixed effects. The results reported in Panel A for *Intercept*, *Post*, *Adopter*, *Post x Adopter* and some combinations of these variables were then used to prepare Panels B and C of Table 5.6. The results of these variables are discussed by referring to these reconstructed panels.

The coefficients for my control variables used with the *CompAccr* and *MeanCompAccr* dependent variables are reported in Panel A of Table 5.6, and are similar to the results reported in Table 5.4 using *CompEarn* and *MeanCompEarn* as the comparability measures. As expected, I found a negative coefficient for *BTM diff*, indicating that firms with higher book-to-market differences tended to be less comparable. This coefficient is significant at a one per cent level in the

*MeanCompAccr* regression and at a five per cent level in the *CompAccr* regression. The coefficient for *Legal* was negative in both regressions, and significant at a ten per cent level in the *CompAccr* regression. The coefficient for *Size ratio* was negative and insignificant in both regressions, which is similar to the results reported in Table 5.4 for *CompEarn* and *MeanCompEarn*.

I have already explained in Section 5.5 how I used Table 4.1 to construct Panels B and C of Table 5.4. The same procedure was followed to construct Panels B and C of Table 5.6. Below, I discuss the various comparisons made in Panels B and C of Table 5.6 and evaluate my hypotheses using the *CompAccr* and *MeanCompAccr* measures of comparability.

### **5.8.1 Accruals-cash flow measures: Change for adopters from the pre-adoption period to the post-adoption period**

Hypothesis 1 proposes that, on average, the comparability between the financial statements of firms in South Africa and those of other mandatory IFRS adopters increased after the mandatory adoption of IFRS in South Africa. To evaluate this hypothesis, I compared the comparability of the financial statements of South African firms with those of firms in other IFRS-adopting countries in the pre-adoption period to the comparability of those financial statements in the post-adoption period. Results for *CompAccr* in Panel B of Table 5.6 indicate a significant increase in comparability of 0.0253, from -0.4198 in the pre-adoption period to -0.3945 in the post-adoption period.

The results for *MeanCompAccr* as reported in Panel C of Table 5.6 suggest that there was no significant increase in the comparability of the financial statements of South African firms with those of adopters. The lack of significance using *MeanCompAccr* may indicate that the results using *CompAccr* were affected by the individual firms included in more than one pair. However, all my results as reported in Tables 5.3 to 5.6 are based on two-tailed statistical significance tests. Hypothesis 1 proposes an increase in comparability, so a one-tailed test of statistical significance

was appropriate. This results in a statistically significant increase in comparability with adopters at a ten per cent level ( $p\text{-value}=0.07225$ , not tabulated).<sup>58</sup>

Although the results are weak, there is some evidence of an increase in the comparability of the financial statements of South African firms with those of adopter firms from the pre-adoption period to the post-adoption period, based on my *CompAccr* and *MeanCompAccr* measures of comparability. As a result, I do not reject the hypothesis that, on average, the comparability between the financial statements of firms in South Africa and those of other mandatory IFRS-adopters increased after the adoption of IFRS.

This result, based on my accruals-cash flow measures, is not as strong as the results reported in Section 5.5.2 for my earnings-return measures of comparability, which indicated a significant increase at a one per cent level in the comparability between the financial statements of South African firms and those of firms from adopting countries after the mandatory adoption of IFRS. This difference in results can be ascribed to the possibility that one of the measures captures a different aspect of comparability, or to the possibility that one of the measures does not capture comparability at all. However, Cascino and Gassen (2015:254) validated both these comparability measures and found both to be sufficient to capture the effect of accounting standards and changes in accounting standards on financial statement comparability. Although Neel (2016:10) has raised the possibility that the accrual measure could be an oversimplification of the financial reporting process, his results using both measures produced similar results. Hence, it is likely that the measures capture different aspects of comparability.

In developing the hypothesis relating to the comparability between the financial statements of South African firms and those of firms in other IFRS-adopting countries, I argued that comparability between these firms could increase as a result of network benefits after changes in the accounting amounts of other countries that adopted IFRS, and possibly of the “label” change to IFRS in South Africa. My

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<sup>58</sup> Since the F-test tests only one constraint, the F-value equals the squared t-statistic. The p-value for a one-tailed test when only one constraint is tested can be calculated by dividing the p-value obtained from the F-test by two, similar to using a t-test.

accruals-cash flow measures of comparability are unlikely to capture any of the “label” benefits, as they are purely based on accounting amounts. Therefore any increase in the comparability of financial statements is likely to be consistent with changes in the accounting amounts of the comparable adopting firm. However, where firms are already reporting in terms of a local GAAP similar to IFRS, or where there are few differences compared to IFRS, that increase or change could be marginal. In my adopter group, 420 of the 674 firm-pair matches were between South African firms and firms from countries with fewer than five differences between local GAAP and IFRS before the adoption of IFRS.<sup>59</sup> The fact that these firms are included in the sample could explain the marginal increase in the comparability of financial statements using the accruals-cash flow measures, because changes in accounting amounts for these firms are expected to be minimal.

The difference shown in my results may therefore be attributed to the unique South African setting, where SA GAAP was already identical to IFRS prior to IFRS adoption. The sources of the highly significant increase in comparability of financial statements reported using my earnings-return measures, compared to a much lower significant increase using my accruals-cash flow measures, could be either the IFRS “label” benefits (as capital market participants perceive the comparability of financial statements in South Africa to be different in the post-adoption period) or other market changes unrelated to IFRS adoption. However, one must also consider the possibility that changes to IFRS, which are unrelated to the IFRS adoption decision, could alter the accounting amounts.

### ***5.8.2 Accruals-cash flow measures: Change for non-adopters from the pre-adoption period to the post-adoption period***

My second hypothesis, relating to non-adopters, was stated in the null form. It proposed that the comparability between the financial statements of South African firms and those of non-adopters did not change after the mandatory adoption of IFRS in South Africa. Consistent with Hypothesis 2, my results as reported in Panels B and C of Table 5.6 showed no significant change in the comparability of the financial statements of South African firms with those of non-adopters from the pre-adoption

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<sup>59</sup> These firms are in Australia (four differences), Ireland (one difference), Netherlands (four differences) and the UK (one difference) - differences according to Bae et al. (2008:601-602).



period to the post-adoption period. For *CompAccr*, I found an insignificant increase of 0.0063, from -0.3930 to -0.3867, and for *MeanCompAccr*, an insignificant decrease of -0.0195, from -0.4480 to -0.4675, with standard errors clustered by foreign country.<sup>60</sup>

This result is not consistent with the results obtained using my earnings-return measures of comparability. For both earnings-return measures, I found a significant increase in the comparability of the financial statements of South African firms with those of non-adopters from the pre-adoption period to the post-adoption period in South Africa. In my assessment of the results of the earnings-return measures of comparability between the financial statements of South African firms and those of non-adopters in Section 5.5.3, I argued that the sources of the increase in comparability could be “label” benefits arising from the adoption of IFRS, concurrent unrelated market changes, changes in the institutional environment, accounting standards changes made by the comparable non-adopting country, or changes in IFRS. However, the lack of a significant increase in comparability using my accruals-cash flow measure (which is based purely on financial statement information and excludes any market data) suggests that the increase in comparability reported using my earnings-return measures is consistent with either “label” benefits arising from the adoption of IFRS for South African firms or concurrent unrelated market changes rather than changes that are also likely to affect the accounting amounts, such as accounting standards changes by the non-adopting country, changes in IFRS, or changes in the institutional environment.

### **5.8.3 Accruals-cash flow measures: Adopters versus non-adopters**

To evaluate the changes in the comparability between the financial statements of South African firms and those of adopters or those of non-adopters from the pre-adoption period to the post-adoption period fully, it is useful to compare these groups

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<sup>60</sup> As a sensitivity check to the foreign country clustering of standard errors, I also clustered standard errors by firm-pair (firm-country for *MeanCompAccr*) and industry. These alternative methods of standard error clustering (untabulated) did not alter my inferences. Although I did not find a significant increase in the comparability of the financial statements with adopters when standard errors were clustered by industry, I did find that the comparability of financial statements increased significantly more for South African firms with mandatory adopters than for South African firms with non-adopters (using my *MeanCompAccr* measure).

in the pre- and post-adoption periods, as well as the relative changes between the groups from the pre-adoption period to the post-adoption period.

The analysis for *CompAccr* reported in Panel B of Table 5.6 shows that the financial statements of South African firms are significantly more comparable to those of firms in non-adopting countries than to those of firms in IFRS-adopting countries in the pre-adoption period. The difference of -0.0268 (-0.3930 compared to -0.4198) is significant at a ten per cent level. However, using *MeanCompAccr*, there was no significant difference between the two groups, suggesting that the results for *CompAccr* might be affected by South African firms' inclusion in multiple firm-pair matches.

Considering the comparability of the financial statements of South African firms with both adopters and non-adopters in the post-adoption period, the overall results shows no significant difference between the comparability of the financial statements of South African firms with those of adopters versus the comparability of the financial statements of South African firms with those of non-adopters.

Considering the results for  $\gamma_3$  (*Post x Adopter*), there is some evidence for *MeanCompAccr*, as reported in Panel C of Table 5.6, that the comparability of financial statements of South African firms increased significantly more with those of mandatory adopters than with those of non-adopters. The relative increase of 0.0384 is significant at a ten per cent level. It is likely that the source of this additional increase is the change in accounting amounts of the other adopting countries now reporting in terms of IFRS.

#### **5.8.4 Accruals-cash flow measures: Summary**

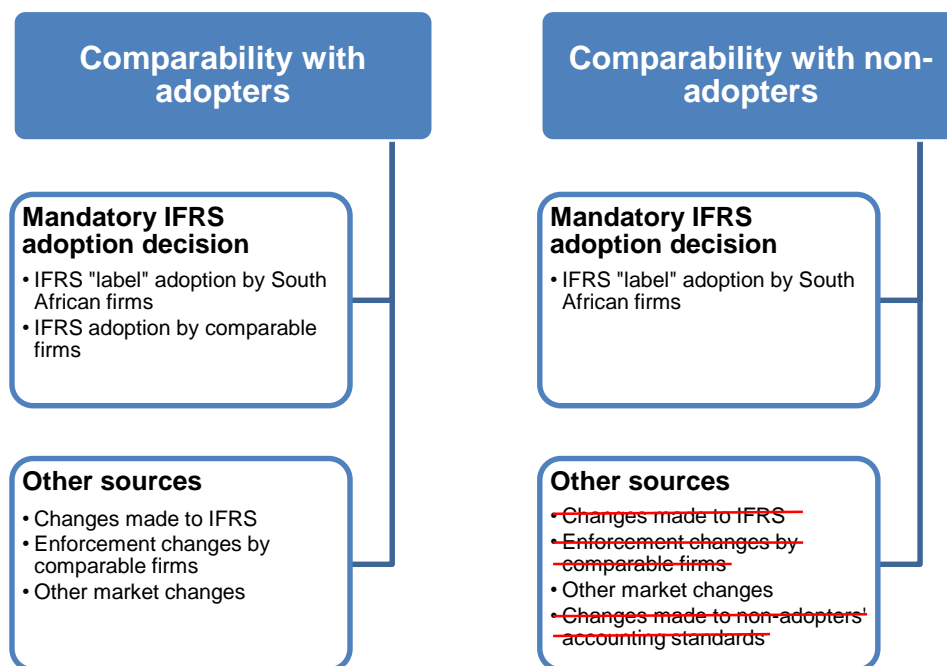
When I evaluated the comparability between the financial statements of South African firms and those of adopters, and between the financial statements of South African firms and those of non-adopters independently, my accruals-cash flow measures of comparability provided some evidence of an increase after IFRS adoption in the comparability of the financial statements of South African firms with those of adopters, and showed no change in the comparability of the financial

statements with those of non-adopters. In addition, when the changes in the comparability between the financial statements of South African firms and those of these two groups were compared, as shown in Panel C of Table 5.6, it is clear that the comparability increased significantly more for the financial statements of South African firms with those of mandatory adopters than for the financial statements of South African firms with those of non-adopters.

Referring back to Figure 3.4 (presented again for ease of reference), based on the results using my accruals-cash flow measures, it is plausible for some of the possible sources of comparability effects to be eliminated.

**Figure 3.4:**

**Sources of comparability effects for South African firms**



Since the accruals-cash flow measure excludes market-based data, it does not provide any evidence on market perceptions, and thus, based on the accruals-cash flow measure, I cannot conclude that there are possible IFRS "label" benefits or deduce the effects of other market changes. Using the accruals-cash flow measure, one would expect that changes made to IFRS standards or to non-adopters' accounting standards, and enforcement changes, to change accounting amounts. Likewise one would then expect changes in the accruals-cash flow measure. The

absence of an increase in comparability with non-adopters suggests that these changes are not the main sources of comparability changes with non-adopters. Although these changes can also be reflected in the markets' perceptions, it is unlikely that these changes would be the main drivers of comparability changes using the earnings-return measures if there are no significant changes in the accounting amounts using the accruals-cash flow measures. Consequently, I eliminated these possible sources of comparability changes between South African firms and non-adopters.

With regard to the comparability between the financial statements of South African firms and those of other adopters, it seems likely that, given some evidence of an increase in comparability after IFRS adoption, the source of the increase is network benefits arising from IFRS adoption by comparable firms, together with possible enforcement changes made in the home countries of these firms. However, I cannot exclude the possibility that changes made to IFRS standards could have increased comparability between the financial statements of South African firms and those of other IFRS adopters. This possibility is explored further in Chapter 7, where I evaluate whether accounting quality changed for South African firms from the pre-adoption period to the post-adoption period.

## **5.9 Conclusion**

An increase in comparability after mandatory IFRS adoption has been presented globally as one of the benefits associated with IFRS adoption (Tweedie & Seidenstein 2004:589-591). Similarly, increased comparability has been touted as one of the benefits that will arise from IFRS adoption in South Africa (Ludolph 2006).

However, the South African situation is different from that in most other countries that have adopted IFRS, because, at the time when IFRS was adopted, the South African accounting standards were already identical to IFRS (SAICA 2004). South Africa's accounting standards were harmonised with IFRS from 1995 onwards (IFRS Foundation 2015); from 2003, all IFRS standards issued by the IASB were adopted in South Africa without any amendments (SAICA 2003).

Previous studies have suggested that the benefits of IFRS adoption are greatest for countries with large pre-existing differences between their local GAAP and IFRS (Daske et al. 2008; Florou & Pope 2012), raising the question as to what the source of benefits (if any) would be from a South African perspective. I have argued in my hypothesis development that the sources of an increase in comparability from a South African point of view are either network benefits arising when other countries adopt IFRS, or “label” benefits arising from market participants’ assessing the comparability of financial statements differently after IFRS adoption in South Africa. However, other concurrent market changes, changes made to IFRS standards, changes made to other countries’ local accounting standards or enforcement changes cannot be excluded. In assessing comparability, I compared South African firms with two different groups, namely firms from other countries that adopted IFRS, and non-adopter firms, in an attempt to distinguish between various sources of benefits.

The results presented in this chapter, based on my earnings-return measures of comparability, suggest a macro shift in the comparability of the financial statements of firms in South Africa following IFRS adoption with those of both adopters and non-adopters. However, my accruals-cash flow measures of comparability suggest some increases in the comparability of financial statements of firms in South Africa after IFRS adoption with those of adopters, but no increase with those of non-adopters. The difference in the results found for these two measures is in itself a possible indication of the source of the comparability benefits arising in South Africa from the adoption of IFRS.

My results suggest that market participants regard the financial statements of South African firms as more comparable to those of global firms in the post-IFRS adoption period than they did in the pre-IFRS adoption period. Some change in the comparability of accounting amounts is thus probably associated with network benefits. It is uncertain whether the markets’ view is driven by the “label” change to IFRS or other market changes that occurred around the time when IFRS was adopted. These potential sources of changes in comparability are explored further in Chapter 6. The weak evidence that the change in comparability of accounting amounts is associated with network benefits after the adoption of IFRS by other

countries is also considered further in Chapter 6. Another factor that should be considered when assessing comparability changes is the possibility that the accounting quality of South African firms changed with the adoption of IFRS, either with the elimination of inconsistencies between SA GAAP and IFRS, or with changes made to IFRS. Considering this possibility, in Chapter 7, I evaluate whether the accounting quality of South African firms changed after the adoption of IFRS.



**Table 5.1:**  
**Initial sample composition**

	South African firms	Foreign firms	
		Adopters	Non-adopters
Firms with available data	226	4 766	11 667
<b>Exclude</b>			
Not primary quote	(8)	(416)	(650)
Year-end changed	(28)	(178)	(305)
Voluntary adopters	(20)	(386)	-
Not local GAAP	(1)	(143)	(239)
Non-adopters/Classification error	(2)	(549)	-
Accounting standards not disclosed	-	(33)	(83)
Initial sample	167	3 061	10 390
<i>CompEarn</i> data	163	2 965	9 527
<i>CompAccr</i> data	166	2 589	9 902



**Table 5.2:**  
**Sample composition by foreign country**

*Panel A: Adopters*

	Stock exchange	Legal tradition <sup>61</sup>	GAAP differences <sup>62</sup>	Firms with available data	Not primary quote	Year-end changed	Voluntary adopters	Not local GAAP	Non-adopters/ classification errors	Accounting standards not disclosed	Initial sample	CompEarn data	CompAccr data
Australia	Australian	Common	4	928	(40)	(32)	(9)	(4)	(2)	(1)	840	797	826
Austria	Vienna	Code	12	68	(6)	(1)	(39)	(4)	-	(8)	10	10	1
Belgium	Euronext.liffe Brussels	Code	13	105	(5)	(2)	(23)	(3)	(5)	(1)	66	65	42
Czech Republic	Prague	Code	14	12	(1)	-	(4)	-	-	-	7	7	4
Denmark	Copenhagen	Code	11	150	(9)	(4)	(14)	(2)	(25)	(1)	95	95	90
Estonia	Tallinn	Code	7	-	-	-	-	-	-	-	-	-	-
Finland	Helsinki	Code	15	116	(2)	(1)	(11)	-	-	-	102	99	99
France	Euronext.liffe Paris	Code	12	577	(37)	(22)	(9)	(5)	(91)	(1)	412	405	370
Germany	Frankfurt	Code	11	590	(84)	(18)	(224)	(91)	(44)	(4)	125	124	112
Greece	Athens	Code	17	233	-	-	(3)	(3)	(1)	(9)	217	217	31
Hungary	Budapest Stock Exchange	Code	13	20	(2)	(1)	(10)	-	(1)	-	6	6	4
Ireland	Dublin London <sup>63</sup>	Common	1	86	(47)	(3)	-	(1)	(7)	-	28	26	28
Italy	Milan	Code	12	210	(7)	(7)	(2)	(3)	(9)	(1)	181	169	133

<sup>61</sup> The classification of each country's legal tradition is based on prior research (Barth et al. 2012:75; Leuz et al. 2003:516-517; La Porta et al. 1998:1130-1131) and where it was not available based on the classification by the Central Intelligence Agency (n.d.).

<sup>62</sup> The number of differences between local GAAP and IFRS based on 21 key accounting rules using a survey conducted in 2001 (Bae et al. 2008:601-602).

<sup>63</sup> A large number of Irish companies are listed on the London Stock Exchange. Irish companies also reported in terms of UK GAAP before the adoption of IFRS (Bae et al. 2008:600). Ireland is a common law country similar to the UK. Firms listed on both the Dublin and London Stock Exchanges reported in terms of the same accounting standards and are listed in countries with the same legal tradition. Therefore I included firms listed on the London Stock Exchange with the "market" indicated as Ireland in my Ireland group. However, only two of these firms are included in my *CompEarn* and *CompAccr* data, as a number of firms were excluded because the London Stock Exchange was not those firms' primary quotes.

	Stock exchange	Legal tradition <sup>61</sup>	GAAP differences <sup>62</sup>	Firms with available data	Not primary quote	Year-end changed	Voluntary adopters	Not local GAAP	Non-adopters/ classification errors	Accounting standards not disclosed	Initial sample	CompEarn data	CompAccr data
Latvia	Riga	Code	NA	-	-	-	-	-	-	-	-	-	-
Lithuania	Lithuania	Code	NA	2	-	-	(2)	-	-	-	-	-	-
Luxembourg	Luxembourg	Code	18	19	(1)	(1)	(4)	(1)	(2)	-	10	10	1
Netherlands	Euronext.liffe Amsterdam	Code	4	116	(8)	(2)	(4)	(6)	(8)	-	88	88	88
Poland	Warsaw	Code	12	81	-	-	(5)	(11)	-	(2)	63	62	49
Portugal	Euronext.liffe Lisbon	Code	13	56	(12)	-	(5)	-	(3)	-	36	35	34
Slovakia	Bratislava	Code	NA	4	-	-	(2)	-	(1)	-	1	1	-
Slovenia	Ljubljana	Code	9	5	-	-	(1)	-	-	-	4	4	1
Spain	Madrid Madrid SIBE	Code	16	116	(7)	-	(2)	(1)	(10)	(1)	95	94	5
Sweden	Stockholm	Code	10	310	(80)	(10)	(5)	-	(17)	(2)	196	188	194
UK	London	Common	1	962	(68)	(74)	(8)	(8)	(323)	(2)	479	463	477
				4 766	(416)	(178)	(386)	(143)	(549)	(33)	3 061	2 965	2 589

*Panel B: Non-adopters*

	Stock exchange	Legal tradition	GAAP differences	Firms with available data	Not primary quote	Year-end changed	Voluntary adopters	Not local GAAP	Non-adopters/ classification errors	Accounting standards not disclosed	Initial sample	CompEarn data	CompAccr data
Argentina	Buenos Aires	Code	14	65	(2)	(2)	-	-	-	(2)	59	58	28
Brazil	Sao Paulo	Code	11	59	-	-	-	(3)	-	-	56	53	26
Canada	Toronto TSX Ventures	Common	5	821	(139)	(39)	-	(13)	-	(10)	620	599	528
China	Shanghai Shenzen	Code	9	1 187	-	-	-	(140)	-	(6)	1 041	973	1 036
India	National India BSE Limited	Common	8	637	(272)	(22)	-	-	-	(3)	340	320	272
Indonesia	Indonesia	Code	4	401	(107)	(2)	-	-	-	(2)	290	266	290
Japan	Tokyo Japan OTC	Code	9	3 046	(90)	(89)	-	(43)	-	(12)	2 812	2 620	2 792
Mexico	Mexico	Code	1	98	(4)	-	-	(1)	-	(1)	92	80	88
Russia	MICEX	Code	16	26	(2)	-	-	(20)	-	(1)	3	3	-
Saudi Arabia	Riyadh	Islam	NA	-	-	-	-	-	-	-	-	-	-
South Korea	Kosdaq Korea	Code	6	769	(15)	(26)	-	(12)	-	(11)	705	667	586
US	Nasdaq Non-Nasdaq OTC New York	Common	4	4 558	(19)	(125)	-	(7)	-	(35)	4 372	3 888	4 256
				11 667	(650)	(305)	-	(239)	-	(83)	10 390	9 527	9 902

**Table 5.3:**  
**Sample distribution and descriptive statistics: *CompEarn***

*Panel A: Sample distribution and country-level descriptive statistics*

	n	Pre- adoption <i>CompEarn</i>	Post- adoption <i>CompEarn</i>	Difference	t- test	Size ratio	<i>BTM</i> diff
<b>Adopters</b>							
Australia	296	-0.4762	-0.2653	0.2109	***	0.7307	0.6588
Austria	2	-0.1219	-0.0824	0.0395	*	0.6803	0.3009
Belgium	14	-0.3508	-0.1282	0.2226	**	0.7585	0.3200
Denmark	24	-0.4663	-0.2275	0.2388	**	0.7393	0.3682
Finland	25	-0.2586	-0.1585	0.1001	**	0.7771	0.2702
France	110	-0.2469	-0.1519	0.0950	***	0.7191	0.4397
Germany	21	-0.3237	-0.1099	0.2138	***	0.7278	0.4748
Greece	36	-0.1600	-0.2315	-0.0716		0.7247	0.4777
Ireland	9	-0.2413	-0.0913	0.1499		0.8087	0.5215
Italy	41	-0.2153	-0.1649	0.0504		0.7054	0.3998
Luxembourg	4	-0.3455	-0.1602	0.1853		0.6908	1.0231
Netherlands	19	-0.1338	-0.1545	-0.0207		0.6746	0.2913
Poland	7	-0.4476	-0.3261	0.1215		0.7492	0.4992
Portugal	7	-0.1647	-0.1395	0.0252		0.7716	0.3727
Slovenia	1	-0.0266	-0.0511	-0.0245		0.9132	0.1472
Spain	19	-0.1219	-0.0848	0.0370		0.7683	0.2112
Sweden	40	-0.2569	-0.1157	0.1411	***	0.7005	0.3124
UK	82	-0.2496	-0.1298	0.1198	***	0.7168	0.3877
<b>Adopters (i)</b>	<b>757</b>	<b>-0.3379</b>	<b>-0.1963</b>	<b>0.1415</b>	<b>***</b>	<b>0.7274</b>	<b>0.4973</b>
<b>Non-adopters</b>							
Argentina	11	-0.5818	-0.3777	0.2041		0.6894	0.5171
Brazil	9	-0.3308	-0.1755	0.1553		0.7130	0.2444
Canada	69	-0.2779	-0.2645	0.0134		0.7078	0.5200
China	204	-0.1360	-0.2804	-0.1444	***	0.7290	0.3426
India	50	-0.2528	-0.0751	0.1777	***	0.7236	0.3412
Indonesia	20	-0.4080	-0.3683	0.0398		0.7067	0.7628
Japan	378	-0.2371	-0.1102	0.1269	***	0.7253	0.5509
Mexico	9	-0.4860	-0.2364	0.2495		0.7526	0.8955
South Korea	168	-0.2838	-0.1946	0.0892	***	0.7203	0.6228
US	746	-0.4910	-0.2312	0.2597	***	0.7308	0.4910
<b>Non-adopters (ii)</b>	<b>1 664</b>	<b>-0.3516</b>	<b>-0.2051</b>	<b>0.1465</b>	<b>***</b>	<b>0.7266</b>	<b>0.4642</b>
<b>Total</b>	<b>2 421</b>						
<b>(i) - (ii)</b>		<b>0.0137</b>	<b>0.0088</b>				



*Panel B: Firm-pair descriptive statistics*

Variable (n=4 842)	Mean	Standard deviation	Lower quartile	Median	Upper quartile
<i>CompEarn</i>	-0.2748	0.3037	-0.3268	-0.1584	-0.0731
<i>Post</i>	0.5000	0.5001	0.0000	0.5000	1.0000
<i>Adopter</i>	0.3127	0.4636	0.0000	0.0000	1.0000
<i>Legal</i>	0.5171	0.4998	0.0000	1.0000	1.0000
<i>Size ratio</i>	0.7268	0.1436	0.5995	0.7171	0.8542
<i>BTM diff</i>	0.4745	0.4624	0.1478	0.3181	0.6296

*Panel C: Correlations*

(n=4 842)	<i>CompEarn</i>	<i>Legal</i>	<i>Size ratio</i>	<i>BTM diff</i>
<i>CompEarn</i>	1	<b>-0.2021</b>	-0.0096	<b>-0.0735</b>
<i>Legal</i>	<b>-0.2150</b>	1	0.0152	-0.0193
<i>Size ratio</i>	0.0052	0.0147	1	-0.0150
<i>BTM diff</i>	<b>-0.1587</b>	-0.0076	-0.0014	1

\*, \*\*, \*\*\* denotes significance at the ten, five and one per cent levels, respectively, all two-tailed.

Table 5.3 reports the comparability sample and descriptive statistics for my *CompEarn* dependent variable and the independent variables. Panel A reports the sample distribution of all matches made between South African firms and foreign firms by country as well as the country-level descriptive statistics. The t-test determines whether the mean *CompEarn* values differ significantly between the pre- and the post-adoption periods. Panel B reports the firm-pair descriptive statistics for all variables. Panel C reports the Spearman (Pearson) correlations above (below) the diagonal for my dependent and control variables. Significant correlations at a one per cent level appear in bold.

All variables are defined in Appendix C. All continuous variables are winsorized at the top and bottom five per cent.

**Table 5.4:**  
**Earnings-return regressions**

$$Comp_{SA,FOR} = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls) + \varepsilon \quad (9)$$

*Panel A: Regressions*

	<b>CompEarn</b> <b>(n=4 842)</b>		<b>MeanCompEarn</b> <b>(n=1 060)</b>	
<i>Intercept</i>	-0.3539 (-8.58)	***	-0.3171 (-5.01)	***
<i>Post</i>	0.1465 (2.29)	**	0.1192 (4.60)	***
<i>Adopter</i>	0.0460 (0.93)		0.0511 (1.41)	
<i>Post x Adopter</i>	-0.0049 (-0.07)		0.0035 (0.11)	
<i>Legal</i>	-0.0831 (-3.74)	***	-0.0131 (-0.52)	
<i>Size ratio</i>	0.0095 (0.30)		-0.0199 (-0.22)	
<i>BTM diff</i>	-0.1182 (-4.50)	***	-0.1784 (-13.39)	***
Fixed effects	Industry		Industry	
F-statistic				
Overall model	(1231.28)	***	(303.47)	***
<i>Post + Post x Adopter = 0</i>	(20.15)	***	(40.08)	***
<i>Adopter + Post x Adopter = 0</i>	(1.42)		(4.56)	**
Adjusted R <sup>2</sup>	0.1542		0.2058	

*Panel B: Difference-in-differences analysis - CompEarn (n=4 842)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=757)	-0.3080	-0.1664	0.1415 (H1) (20.15) ***
<b>Non-adopters</b> (n=1 664)	-0.3539	-0.2075	0.1465 (H2) (2.29) **
<b>Difference</b>	0.0460 (0.93)	0.0410 (1.42)	-0.0049 (-0.07)

*Panel C: Difference-in-differences analysis - MeanCompEarn (n=1 060)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=272)	-0.2660	-0.1433	0.1227 (H1) (40.08) ***
<b>Non-adopters</b> (n=258)	-0.3171	-0.1979	0.1192 (H2) (4.60) ***
<b>Difference</b>	0.0511 (1.41)	0.0546 (4.56) **	0.0035 (0.11)

\*, \*\*, \*\*\* denotes significance at the ten, five and one per cent levels, respectively, all two-tailed.

Table 5.4 reports the multivariate regression results for Equation (9) with comparability measured using the *CompEarn* and *MeanCompEarn* measures. Panel A reports the regression coefficients for these two different measures. *CompEarn* is a firm-pair measure of comparability. *MeanCompEarn* is a firm-country measures of comparability where I calculated a firm's (Firm A) comparability with a foreign country (Country B) as the mean *CompEarn* of all matches made between a South African firm (Firm A) and all firms in that foreign country (Country B). This generated a firm-country measure of comparability for Firm A with Country B. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country. Panels B and C report the difference-in-differences analysis of the comparability between the financial statements of South African firms and those of adopters versus those of non-adopters for each of my two measures. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the t-statistics or F-statistics (all two-tailed) as indicated in Panel A.

All variables are defined in Appendix C. For the *MeanCompEarn* regression, *Size ratio* and *BTM diff* are measured as the mean value of all the matches included in the firm-level measure of comparability.

All continuous variables are winsorized at the top and bottom five per cent.



**Table 5.5:**  
**Sample distribution and descriptive statistics: *CompAccr***

*Panel A: Sample distribution and country-level descriptive statistics*

	n	Pre- adoption <i>CompAccr</i>	Post- adoption <i>CompAccr</i>	Difference	t- test	Size ratio	<i>BTM</i> diff
<b>Adopters</b>							
Australia	301	-0.3525	-0.3464	0.0061		0.7294	0.6945
Belgium	5	-0.2113	-0.1820	0.0294		0.7803	0.3674
Denmark	23	-0.1618	-0.1678	-0.0060		0.7414	0.3626
Finland	26	-0.2858	-0.1643	0.1216	**	0.7839	0.4124
France	100	-0.1899	-0.1493	0.0406	*	0.7195	0.4511
Germany	18	-0.1972	-0.1170	0.0801		0.7215	0.5107
Greece	2	-0.0886	-0.1057	-0.0171		0.6304	0.3128
Ireland	9	-0.1547	-0.1099	0.0448		0.8088	0.5338
Italy	22	-0.1532	-0.1288	0.0244		0.6811	0.4192
Netherlands	19	-0.1619	-0.2315	-0.0696		0.6746	0.2912
Poland	5	-0.1767	-0.3105	-0.1337		0.7310	0.1834
Portugal	7	-0.1132	-0.1193	-0.0061		0.7718	0.3886
Slovenia	1	-0.0410	-0.0522	-0.0111		0.9132	0.1472
Spain	2	-0.0329	-0.0179	0.0151		0.7824	0.0743
Sweden	43	-0.2503	-0.1145	0.1358	***	0.7004	0.3004
UK	91	-0.1573	-0.1378	0.0195		0.7152	0.4053
<b>Adopters (i)</b>	<b>674</b>	<b>-0.2607</b>	<b>-0.2355</b>	<b>0.0253</b>	<b>**</b>	<b>0.7254</b>	<b>0.5314</b>
<b>Non-adopters</b>							
Argentina	9	-0.1955	-0.2517	-0.0562		0.7211	0.5705
Brazil	3	-0.0522	-0.0297	0.0225		0.7739	0.3025
Canada	56	-0.2426	-0.1989	0.0437		0.6972	0.5039
China	215	-0.1032	-0.1732	-0.0699	***	0.7279	0.3442
India	42	-0.0828	-0.1061	-0.0233		0.7163	0.3320
Indonesia	25	-0.1282	-0.1450	-0.0168		0.7250	0.7595
Japan	454	-0.1245	-0.1100	0.0145	*	0.7298	0.5546
Mexico	8	-0.0620	-0.2120	-0.1500		0.7774	0.9270
South Korea	148	-0.1400	-0.1473	-0.0073		0.7141	0.6277
US	837	-0.1719	-0.1463	0.0257	***	0.7275	0.4013
<b>Non-adopters (ii)</b>	<b>1 797</b>	<b>-0.1480</b>	<b>-0.1417</b>	<b>0.0063</b>		<b>0.7261</b>	<b>0.4614</b>
<b>Total</b>	<b>2 471</b>						
<b>(i) - (ii)</b>		<b>-0.1127</b>	<b>-0.0938</b>		<b>***</b>		<b>***</b>



*Panel B: Firm-pair descriptive statistics*

Variable (n=4 942)	Mean	Standard deviation	Lower Quartile	Median	Upper Quartile
<i>CompAccr</i>	-0.1730	0.1917	-0.2038	-0.0979	-0.0529
<i>Post</i>	0.5000	0.5001	0.0000	0.5000	1.0000
<i>Adopter</i>	0.2728	0.4454	0.0000	0.0000	1.0000
<i>Legal</i>	0.5407	0.4984	0.0000	1.0000	1.0000
<i>Size ratio</i>	0.7259	0.1430	0.6005	0.7133	0.8522
<i>BTM diff</i>	0.4805	0.4826	0.1477	0.3181	0.6223

*Panel C: Correlations*

(n=4 842)	<i>CompAccr</i>	<i>Legal</i>	<i>Size ratio</i>	<i>BTM diff</i>
<i>CompAccr</i>	1	<b>-0.0676</b>	-0.0191	<b>-0.1514</b>
<i>Legal</i>	<b>-0.1615</b>	1	0.0016	<b>-0.0428</b>
<i>Size ratio</i>	-0.0025	0.0012	1	-0.0095
<i>BTM diff</i>	<b>-0.1410</b>	-0.0222	0.0004	1

\*, \*\*, \*\*\* denotes significance at the ten, five and one per cent levels, respectively, all two-tailed.

Table 5.5 reports the comparability sample and descriptive statistics for my *CompAccr* dependent variable and the independent variables. Panel A reports the sample distribution of all matches made between South African firms and foreign firms by country as well as the country-level descriptive statistics. The t-test determines whether the mean *CompAccr* values differ significantly between the pre- and the post-adoption periods. Panel B reports the firm-pair descriptive statistics for all variables. Panel C reports the Spearman (Pearson) correlations above (below) the diagonal for my dependent and control variables. Significant correlations at a one per cent level appear in bold.

All variables are defined in Appendix C. All continuous variables are winsorized at the top and bottom five per cent.

**Table 5.6:**  
**Accruals-cash flow regressions**

$$Comp_{SA,FOR} = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls) + \varepsilon \quad (9)$$

*Panel A: Regressions*

	<b>CompAccr (n=4 942)</b>	<b>MeanCompAccr (n=976)</b>
<i>Intercept</i>	-0.3930 (-14.92) ***	-0.4480 (-10.86) ***
<i>Post</i>	0.0063 (0.47)	-0.0195 (-1.31)
<i>Adopter</i>	-0.0268 (-1.96) *	-0.0109 (-0.68)
<i>Post x Adopter</i>	0.0189 (1.03)	0.0384 (1.97) *
<i>Legal</i>	-0.0246 (-1.75) *	-0.0066 (-0.41)
<i>Size ratio</i>	-0.0125 (-0.61)	-0.0045 (-0.09)
<i>BTM diff</i>	-0.0420 (-2.29) **	-0.0322 (-4.25) ***
Fixed effects	Industry	Industry
F-statistic		
Overall model	(3901.40) ***	(1073.61) ***
Post + Post x Adopter = 0	(3.96) *	(2.27)
Adopter + Post x Adopter = 0	(0.23)	(1.85)
Adjusted R <sup>2</sup>	0.2318	0.1647

*Panel B: Difference-in-differences analysis - CompAccr (n=4 942)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=674)	-0.4198	-0.3945	0.0253 (H1) (3.96) *
<b>Non-adopters</b> (n=1 797)	-0.3930	-0.3867	0.0063 (H2) (0.47)
<b>Difference</b>	-0.0268 (-1.96) *	-0.0079 (0.23)	0.0189 (1.03)

*Panel C: Difference-in-differences analysis - MeanCompAccr (n=976)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=230)	-0.4589	-0.4401	0.0189 (H1) (2.27)
<b>Non-adopters</b> (n=258)	-0.4480	-0.4675	-0.0195 (H2) (-1.31)
<b>Difference</b>	-0.0109 (-0.68)	0.0274 (1.85)	0.0384 (1.97) *

\*, \*\*, \*\*\* denotes significance at the ten, five and one per cent levels, respectively, all two-tailed.

Table 5.6 reports the multivariate regression results for Equation (9) with comparability measured using the *CompAccr* and *MeanCompAccr* measures. Panel A reports the regression coefficients for these two different measures. *CompAccr* is a firm-pair measure of comparability. *MeanCompAccr* is a firm-country measure of comparability where I calculated a firm's (Firm A) comparability with a foreign country (Country B) as the mean *CompAccr* of all matches made between a South African firm (Firm A) and all firms in that foreign country (Country B). This generated a firm-country measure of comparability for Firm A with country B. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country. Panels B and C report the difference-in-differences analysis of comparability between the financial statements of South African firms and those of adopters versus those of non-adopters for each of my two measures. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the t-statistics or F-statistics (all two-tailed) as indicated in Panel A.

All variables are defined in Appendix C. For the *MeanCompAccr* regression *Size ratio* and *BTM diff* are measured as the mean value of all the matches included in the firm-level measure of comparability.

All continuous variables are winsorized at the top and bottom five per cent.

## CHAPTER 6: ADDITIONAL ANALYSES

### 6.1 Introduction

In the previous chapter, I evaluated whether the adoption of IFRS is associated with a change in the comparability of financial statements of South African firms. Overall, the results suggest an increase in the comparability of financial statements with those of both adopters and non-adopters after the adoption of IFRS in South Africa.

Considering the comparability between the financial statements of South African firms and those of adopters, I found some evidence of an increase in the comparability of accounting amounts that are consistent with network benefits that arise when comparable firms adopted IFRS. I probe this aspect further in this chapter. To evaluate whether IFRS adoption does indeed drive my results, I consider the association between the extent of pre-existing local GAAP, and any changes in the comparability of financial statements after IFRS adoption.

Further evidence in Chapter 5 suggests that the increase noted in the wake of IFRS adoption in South Africa between the comparability of South African firms' financial statements and those of both adopters and non-adopters, using a market-based measure, is possibly associated with the "label" change to IFRS in South Africa, or alternatively with other market changes that occurred around the time of IFRS adoption. In this chapter I consider these two possibilities further.

Another consideration that could possibly influence my results is differences in comparability changes across industries. To address this concern, I consider the possibility that my results are driven by differences across industries.

This remainder of this chapter consists of four more main sections. Section 6.2 considers the association between pre-existing GAAP differences and comparability changes. In Section 6.3, I evaluate the potential effects of industry differences on comparability changes. Then, in Section 6.4, I evaluate whether other market

changes may be driving comparability increases since IFRS adoption in South Africa. Finally, I indicate my conclusions on my additional analysis in Section 6.5.

## **6.2 Comparability and GAAP differences**

The first additional analysis that I performed to supplement my results in Chapter 5 is a consideration of the effect of pre-existing differences between local GAAP and IFRS on the change in comparability of financial statements after the mandatory adoption of IFRS.

### **6.2.1 *Prior research***

One of the factors that the literature has found to have an impact on the magnitude of the benefits of adopting IFRS (such as an improved analyst information environment, an increase in market liquidity, reduced cost of capital, and an increase in institutional investment) is the extent of pre-existing differences between local GAAP and IFRS (Byard et al. 2011:95; Daske et al. 2008:1132; Florou & Pope 2012:2023). This point is particularly important in my study, as SA GAAP was already identical to IFRS before the mandatory adoption of IFRS in South Africa (SAICA 2006). Hence, one would expect limited benefits for South African firms.

However, as other countries adopt IFRS and more firms globally report in terms of IFRS, one would expect to find an increase in comparability with the financial statements of South African firms. This increase would be the outcome of network benefits: if more firms adopt IFRS, those that already report in terms of IFRS should benefit, because the entire IFRS network expands (Hail et al. 2010:358). Some studies that focus not only on the extent of standards differences in a particular country, but also on the GAAP difference between two countries, were undertaken by Bae et al. (2008), Yu (2010), Cascino and Gassen (2015), and Francis, Huang and Khurana (2016). All four studies based their GAAP difference measure on the number of differences between local GAAP and 21 key accounting rules, determined by Bae et al. (2008). Each of these studies calculated a measure of the GAAP

differences between each country-pair included in its respective sample. Although the calculations differed, the principles remained the same.<sup>64</sup>

The findings of the abovementioned studies are consistent with increased benefits for firms, as the GAAP differences decrease between the home countries of firms and analysts (Bae et al. 2008), firms and investors (Yu 2010), peers (Cascino & Gassen 2015) or acquirers and target firms (Francis et al. 2016). Bae et al. (2008:613) found that the number of foreign analysts from one country that follow firms from another country increases when GAAP differences between the two countries decrease. Similarly, Yu (2010:35) associated an increase in foreign mutual fund investment after mandatory IFRS adoption with a reduction in GAAP differences between investor funds' and investees' home countries. Although Cascino and Gassen (2015:254-255) found the increase in comparability that accompanied IFRS adoption to be marginal in economic terms, they reported a statistically significant increase in the comparability of financial statements when the GAAP differences between two countries decreased. Francis et al. (2016:1323) concluded that country-pairs with more differences between their local accounting standards in the pre-IFRS adoption period experienced larger increases in merger and acquisition activity in the post-adoption period.

The findings of the abovementioned studies are all relevant to my study, as they suggest that, based on expected network benefits, South Africa could expect an increase in the comparability of its financial statements as other countries adopt IFRS. My results (as presented in Chapter 5 and summarised in Table 6.1) suggest some increase in the comparability of financial statements for South African firms

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<sup>64</sup> Bae et al. (2008:600) and Cascino and Gassen (2015:278) calculate their measures similarly. Where both countries conform to IFRS with regard to an item, they deem two countries to have similar GAAP for that item. Where two countries both differ from IFRS for a specific item, they also deem the two countries to have similar GAAP for that item. They only consider two countries to be different if one country conforms to IFRS, whereas the other one does not. Yu (2010:55) also regards two countries to have similar GAAP for an item when both countries comply with IFRS. However, where both countries differ from IFRS, Yu (2010) only regards two countries to be similar when both are from the same legal origin. Both these methods can mean that countries which do not have similar accounting standards could still be regarded as being similar. When two countries do not conform to IFRS for a specific accounting item, it does not necessarily mean that those countries conform to one another. The benefit of using South Africa as the reference is SA GAAP did not differ from IFRS at all, based on the measure by Bae et al. (2008:600). Hence, any difference in another country can be regarded as a difference between that other country and South Africa.



with global firms following the mandatory adoption of IFRS, but the sources of this increase in the comparability of financial statements are still unclear.

**Table 6.1:**

**Summary of comparability findings following the adoption of IFRS in South Africa**

<b>Comparable firms</b>	<b>Earnings-return measures</b>	<b>Accruals-cash flow measure</b>
<b>Adopters</b>	Increase	Increase
<b>Non-adopters</b>	Increase	None

The results of my earnings-return measures of comparability, where the comparability of the financial statements of South African firms increased (both with those of firms in other adopting countries and with those of firms in non-adopting countries), suggest that it is not only the change in GAAP differences from the pre- to the post-IFRS adoption periods between South Africa and other countries that could explain my findings in Chapter 5. There was no change in GAAP differences between South African firms and firms in non-adopting countries after IFRS adoption, so any increase in the comparability of the financial statements of South African firms with those of non-adopters (using the earnings-return measures) is likely to have been driven by factors other than pre-existing GAAP differences. However, the results of my accruals-cash flow measures of comparability suggest that the change in GAAP differences after IFRS adoption could explain my comparability findings in Chapter 5. Although I only found weak evidence that (based on my accruals-cash flow measure) the comparability of financial statements increased between firms in South Africa and other mandatory adopters after the mandatory adoption of IFRS in South Africa, this finding could have been driven by the inclusion in the sample of a number of countries where there were few differences between local GAAP and IFRS (and consequently SA GAAP). In addition, I found no such increase in the comparability between the financial statements of South African firms and those of non-adopters, which also suggests that the change in GAAP differences after IFRS adoption could explain the comparability findings in Chapter 5.

In the sections below, I provide additional evidence to probe these considerations further.

### 6.2.2 Research design

To provide evidence of a possible association between changes in the comparability of financial statements and pre-existing GAAP differences, I used a changes model similar to that used by Cascino and Gassen (2015:254). Although a changes model decreases the sample size, it has a number of benefits. Difference-in-differences studies are often affected by serial correlation problems (Bertrand et al. 2004:249). Using a changes model that captures the difference between the pre-adoption and the post-adoption period reduces remaining serial correlation problems further (Cascino & Gassen 2015:249). Moreover, a changes model helps to overcome the concern of possible correlated omitted variables, in that a change in the dependent variable is directly related to the change in the independent variable (Yu 2010:36). A changes model also addresses firm- and country-level factors that are unrelated to the financial reporting environment (Florou & Pope 2012:1995).

I used the following changes model to test the association between pre-existing GAAP differences and changes in the comparability of financial statements after the mandatory adoption of IFRS in South Africa (firm and period subscripts omitted):

$$\Delta MeanComp = \gamma_0 + \gamma_1(\Delta GAAP\ diff) + \gamma_2(\Delta Size\ ratio) + \gamma_3(\Delta BTM\ diff) + \varepsilon \quad (11)$$

where  $\Delta MeanComp$  stands for the change in the comparability measures (either  $MeanCompEarn$  or  $MeanCompAccr$ )<sup>65</sup> from the period prior to IFRS adoption and the period after it. Higher values of  $\Delta MeanComp$  capture greater increases in comparability from before to after IFRS adoption.

The GAAP difference ( $GAAP\ diff$ ) for a particular country captures the extent to which that foreign country's accounting standards had to change from the pre-adoption period to the post-adoption period to become IFRS. Because SA GAAP was the

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<sup>65</sup> I only use  $MeanCompEarn$  and  $MeanCompAccr$  for this analysis, because my results in Chapter 5 suggested that the results using  $CompEarn$  and  $CompAccr$  might be affected by the fact that individual firms are included in more than one pair.

same as IFRS in the pre-IFRS adoption period, the GAAP difference for a particular country also captures the extent to which that foreign country's accounting standards had to change from before to after IFRS adoption to become similar to the accounting standards used by South African firms after the mandatory adoption of IFRS in South Africa. I measured the *GAAP diff* in the pre-IFRS adoption period as the number of differences between a country's accounting standards and IFRS in 2001, based on Bae et al.'s (2008:601-602) estimation.<sup>66</sup> For South Africa there were no differences between local GAAP and IFRS, so the differences in accounting standards between each foreign country and South Africa in the pre-adoption period is the *GAAP diff* of the foreign country. In the post-IFRS adoption period, the accounting standards used by firms in countries that adopted IFRS should be no different from those used by South African firms (all of which also adopted IFRS). The  $\Delta GAAP diff$  for each South African and foreign firm pair is the absolute value of the change in GAAP differences from before to after IFRS adoption between South Africa and the foreign firm's country. For adopters, this equals the *GAAP diff* of the foreign firms' country in the pre-adoption period, and for non-adopters it is zero.<sup>67</sup> In other words, higher values of  $\Delta GAAP diff$  in absolute terms suggest a greater change in accounting standards from before to after IFRS adoption. I expected the coefficient for  $\Delta GAAP diff$  to be positive, as I expected firm-pairs where the change in GAAP differences was greater from before to after IFRS adoption to have larger increases in comparability.

I measured the  $\Delta Size ratio$  as the change in the proportion of the smallest firm's total assets to the largest firm's total assets from the pre- to the post-adoption period. I expected the coefficient for the  $\Delta Size ratio$  to be positive, because firms that become more similar in size (the *Size ratio* increase) should become more comparable. I measured the  $\Delta BTM diff$  as the change in the absolute value of the difference in the book-to-market ratio of the two firms in each pair from before to after

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<sup>66</sup> Although Bae et al.'s (2008) measure used survey results based on accounting standards effective on 31 December 2001 (Nobes 2001:5) and did not consider changes leading up to the point of IFRS adoption, the measure indicates the overall changes required by countries to change from local GAAP at the end of 2001 to IFRS in 2005.

<sup>67</sup> It is possible that due to convergence by non-adopters to IFRS some differences identified by Bae et al. (2008) were eliminated after IFRS adoption, but there is no readily available measure for *GAAP diff* in the post-adoption period, as confirmed by Lamoreaux et al. (2015:713), who also used Bae et al.'s (2008) measure, and who, due to the lack of a more recent measure, limited their tests focused on GAAP differences to the period from 1999 to 2003.

adoption.<sup>68</sup> I expected the coefficient for the  $\Delta BTM\ diff$  to be negative, because firms where there is a decrease (increase) in their book-to-market difference are expected to become more (less) comparable. I measured a change in comparability using my firm-level measures of comparability, namely *MeanCompEarn* and *MeanCompAccr*; therefore I measured both the  $\Delta Size\ ratio$  and the  $\Delta BTM\ diff$  as the mean value of all the matches included in the firm-level measure of comparability.

Consistent with my analysis in Chapter 5, I clustered standard errors by foreign country. The purpose of using a changes model is to capture the effect of changes in the independent variables on the dependent variable. Hence, I did not include fixed effects, as these are unlikely to have changed from before to after IFRS adoption.

### 6.2.3 Results

It is plausible to predict that the comparability of financial statements increased between firms in South Africa and firms in other countries as the pre-existing GAAP differences between these firms decreased after mandatory adoption of IFRS in South Africa and in those countries. Based on my results reported in Table 6.2, there is some evidence to support this prediction.

Using  $\Delta MeanCompAccr$  to measure the change in comparability, I found a positive and significant coefficient of 0.0033 for  $\Delta GAAP\ diff$  (significant at a 10 per cent level). This coefficient suggests that my comparability measure increased with 0.0033 for each GAAP difference eliminated after IFRS adoption.

However, the results reported in Table 6.2, using  $\Delta MeanCompEarn$  to measure the change in comparability, do not support the prediction that the comparability of financial statements should increase as GAAP differences are eliminated. Instead, I found an insignificant negative coefficient of -0.0018. This result suggests that the increase in comparability after mandatory IFRS adoption (as reported in Chapter 5) using a market measure of comparability (*MeanCompEarn*) was probably not driven by pre-existing GAAP differences.

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<sup>68</sup> For the pre-adoption period, I calculated both measures ( $\Delta Size\ ratio$  and  $\Delta BTM\ diff$ ) using the 2003 financial year-end data (the midpoint of my pre-adoption period). For the post-adoption period, I calculated both measures using the 2007 financial year-end data (the midpoint of my post-adoption period).

My results are similar to those of Cascino and Gassen (2015:255). They found that their coefficient of *IFRS\_EFFECT*, measured in a similar manner to my *GAAP diff*, was negative and insignificant in their earnings-return regression, and positive and insignificant in the accrual-cash flow regression.<sup>69</sup>

The results reported in Table 6.2 corroborate the results reported in Chapter 5. Based on my accruals-cash flow measures, I found some evidence (see Chapter 5) of an increase in the comparability after IFRS adoption between the financial statements of South African firms and those of adopters, and no change between the financial statements of South African firms and those of non-adopters. The evidence in Chapter 5 suggested that these results might have been driven by GAAP differences between South African firms and adopters that were eliminated with the adoption of IFRS. The results using the  $\Delta MeanCompAccr$  proxy corroborate the findings in Chapter 5, suggesting that an increase in the comparability of financial statements is associated with the number of pre-existing GAAP differences before the adoption of IFRS.

These results further support the explanation in Section 5.8.1 for finding only weak evidence of an increase in the comparability between the financial statements of South African firms and those of other adopters using my accruals-cash flow measures. If a reduction in GAAP differences between two firms from the period before to the period after IFRS adoption is indeed associated with the change in the comparability between the financial statements, then the overall increase in comparability for all firms would be influenced by the extent of the pre-adoption differences between the accounting standards of South African firms and those of comparable firms. In my sample of firms from adopting countries, 420 of the 674 firm-pair matches were between South African firms and firms from countries with fewer than five differences between local GAAP and IFRS before the adoption of IFRS. Limited changes in the comparability of accounting amounts are to be expected for

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<sup>69</sup> They found significant increases using alternative measures of comparability. They concluded that the effect of mandatory IFRS adoption – measured using Bae et al.'s (2008) measure of GAAP differences – on the comparability of financial statements appear to be marginal.

these firm-pairs, and could explain the weak results in Chapter 5 using the accruals-cash flow measure.

Using my earnings-return measures of comparability in Chapter 5, I found an increase in the comparability between the financial statements of South African firms and those of firms from both IFRS-adopting and non-adopting countries, suggesting that comparability changes may not in fact be driven by changes in the standards through IFRS adoption alone. The results reported in Table 6.2 for the  $\Delta MeanCompEarn$  proxy support the results in Chapter 5, as they indicate that the increase in comparability – using a market-based measure of comparability – is not driven by pre-existing GAAP differences. It therefore appears that changes in the standards through the adoption of IFRS do not drive the comparability increase (using a market-based measure of comparability). This finding is consistent with the results in Chapter 5, suggesting that the possible sources of the increase in comparability (using the earnings-return measure) is either “label” benefits with the adoption of IFRS in South Africa, or other market changes around the time of the adoption of IFRS, or both.

The other variables in the regression behaved as I expected. I found a positive coefficient for  $\Delta Size$  which was significant at a one per cent level in the  $\Delta MeanCompAccr$  regression. This result suggests that the comparability of financial statements increases when firms become more similar in size. I found a negative coefficient for  $\Delta BTM diff$  in both regressions, which was significant at a one per cent level in the  $\Delta MeanCompEarn$  regression. The result for  $\Delta BTM diff$  suggests that where firms become more similar in terms of their book-to-market differences (the difference is reduced), these firms have higher financial statement comparability.

#### **6.2.4 Conclusion: GAAP differences**

To conclude, the above results suggest that a reduction in GAAP differences between two firms after IFRS adoption is associated with an increase in the comparability of their financial statements. The effect is only evident when one uses a comparability measure that incorporates only financial statement information ( $MeanCompAccr$ ). By contrast, the results are insignificant when one uses a



measure that incorporates market data (*MeanCompEarn*) and thus includes capital market participants' perceptions regarding the adoption of IFRS. The lack of any clear association when a market-based measure is used suggests that the sources of comparability changes are either "label" benefits with the adoption of IFRS, or other market changes around the time of IFRS adoption, based on the markets' perceptions.

### 6.3 Potential industry differences

It is possible that changes in the comparability between the financial statements of South African firms and those of firms from other countries differ across industries. I therefore analysed industry effects in more detail in this section.

One industry that is particularly relevant in South Africa is mining. The mining industry (basic materials) is the largest sector on the JSE. It accounts for approximately 26% of the JSE's market capitalisation (Mayer 2013).<sup>70</sup> Furthermore, the mining industry is subject to different accounting standards from those used in other industries, which could result in changes in the comparability of financial statements that are different compared to the other industries. Below, I discuss the different accounting standards applicable to the mining industry. Next, I evaluate comparability for the industry on its own, using my comparability measures, and then I consider the comparability for my total sample, excluding the mining industry.<sup>71</sup>

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<sup>70</sup> Since a number of the mining firms have their primary listings in other countries and are excluded from my sample, mining firms did not represent the largest sector in my sample. They formed the third largest sector. I have the following number of mining observations for each of my measures: *CompEarn*: 294 firm-pair observations, *CompAccr*: 310 firm-pair observations, *MeanCompEarn*: 34 firm-country observations, and *MeanCompAccr*: 36 firm-country observations.

<sup>71</sup> Another industry that could have an impact on my results is the financial services industry. The financial services industry accounts for approximately 20% of the value of the JSE (Mayer 2013). Financial services firms are often excluded in the literature, as these firms are subject to different regulations (Yip & Young 2012:1771) and their accruals processes are different (Peasnell, Pope & Young 2000:318). As one of the comparability measures that I used considers accrual data, I re-performed the tests that I reported in Chapter 5 for the total sample, excluding the financial services industry (not tabulated). These results, using my earnings-return measures, did not change my inferences in Chapter 5. Similar to my findings in Chapter 5, using the accruals-cash flow measures, I found evidence of a significant increase in comparability between the financial statements of South African firms and those of firms in mandatory adopter countries, and no significant increase in comparability between the financial statements of South African firms and those of non-adopters. The difference between the increased comparability of the financial statements of South African firms with those of mandatory adopters, relative to the increased comparability of the financial statements of South African firms with non-adopters was not significant ( $\gamma_3 \cdot Post \times Adopter$ ). Overall, excluding the financial services firms did not change my inferences made in Chapter 5.



### **6.3.1 Mining industry differences**

Before the IASB issued IFRS 6 – *Exploration for and Evaluation of Mineral Resources*, the exploration and evaluation of mineral resources by mining companies were not addressed by any IFRS, and were also specifically excluded from IAS 16 – *Property, Plant and Equipment* and IAS 38 – *Intangible Assets* (IASB 2013:IFRS 6.IN1).

Various methods to account for exploration and evaluation costs have been developed over the years, the most commonly applied of which are the full cost method and the successful efforts method (Cortese, Irvine & Kaidonis 2009:28). Under the full cost method, all costs relating to exploration and evaluation costs are capitalised, whereas under the successful efforts method, only costs relating to successful projects can be capitalised and the remainder is expensed (Bryant 2003:6). Worldwide, Australia was the only country that developed an accounting standard for the mining industry, and required companies to apply the area of interest method, which is similar to the successful efforts method (Cortese et al. 2009:36). It is clear from the above that the different methods applied in the industry can lead to different accounting results, and could affect the comparability of financial statements in the industry.

After the issuing of IFRS 6 – *Exploration for and Evaluation of Mineral Resources* in December 2004, effective for all annual periods beginning on or after 1 January 2006, one would expect to find increased comparability of financial statements across the industry. However, IFRS 6 allowed firms to continue to use the accounting policies relating to the recognition and measurement of exploration and evaluation assets that these firms applied before the adoption of IFRS 6. In addition, IFRS 6 introduced impairment recognition criteria for exploration and evaluation assets which differ from the criteria in IAS 38 (IASB 2013:IFRS 6.IN5).

IFRS 6 came into effect during the period that I tagged as the post-IFRS adoption period in my study. However, it was already issued in December 2004, and early adopters could have applied it from 2005. Given that firms were allowed to continue to use their previously applied accounting policies, I did not expect to find a

significant increase in the comparability between the financial statements of South African mining firms and those of mining firms from other IFRS-adopting countries after IFRS adoption. Similarly, I did not expect to find a significant increase in the comparability between the financial statements of South African mining firms and those of mining firms from non-adopting countries after IFRS adoption. However, IFRS 6 allowed firms to change their accounting policies relating to exploration and evaluation expenditures if doing so resulted in financial statements that were more relevant, and not less reliable or more reliable, and not less relevant to users of financial statements (IASB 2013:IFRS 6.13). This option can lead to more comparable financial statements, or to less comparable financial statements, as some firms might elect to change policies, whilst others might not. Also, with regard to mining firms from IFRS-adopting countries, the remaining IFRS standards became applicable and could have some effect on the comparability of the financial statements of mining firms.

In the next section, I provide additional evidence on the impact of the adoption of IFRS on the comparability of the financial statements of South African mining firms.

### ***6.3.2 Mining industry: Research design and results***

To evaluate the impact of the adoption of IFRS on the comparability of the financial statements of South African mining firms, I estimated Equation (9) for all the mining firms included in my original samples (reported in Table 6.3). In addition, I present further results in Table 6.4, where the mining firms are excluded from my original samples, as used in Chapter 5. Consistent with the regressions reported in Chapter 5, all continuous variables were winsorized at the top and bottom five per cent. I included industry fixed effects where more than one industry was included in the sample, and clustered standard errors by foreign country in all samples.

As I explained in Section 5.5, I used Table 4.1 to construct Panels B and C of Table 5.4. The same procedure was followed to construct Panels B and C of Table 6.3 and Panels B, C, D and E of Table 6.4. I now discuss the various comparisons made in these panels, and evaluate the impact of IFRS adoption on the comparability

of the financial statements of South African mining firms using my comparability measures.

The samples using only firms from the mining industry are small, and the results should therefore be interpreted with caution. Since I only have 34 and 36 observations respectively for my firm-level measures of comparability, *MeanCompEarn* and *MeanCompAccr*, I did not include these measures in my analysis when I evaluated comparability changes for the firms in the mining industry. I focused on the results using my firm-pair measures of comparability, *CompEarn* and *CompAccr*, as presented in Panels A, B and C of Table 6.3.

The results for my *CompEarn* measure, as reported in Panel B of Table 6.3, suggest that the comparability between the financial statements of South African mining firms and those of mining firms from other IFRS-adopting countries increased significantly after the mandatory adoption of IFRS. Panel B of Table 6.3 reports an increase in comparability of 0.2095, from -0.6257 in the pre-adoption period to -0.4162 in the post-adoption period. This difference is significant at a one per cent level. Regarding the comparability of South African firms' financial statements with those of non-adopters, I found an increase of 0.0638. This increase is not significant. Panel B of Table 6.3 shows that in the pre-adoption period South African mining firms were significantly less comparable to firms in other IFRS-adopting countries (-0.6257) than to mining firms in non-adopting countries (-0.5186). In the post-adoption period, there is no significant difference in the comparability between the financial statements of South African mining firms and those of firms from the respective groups (-0.4162 versus -0.4548). After IFRS adoption, comparability increased significantly more between the financial statements of South African mining firms and those of adopters than between the financial statements of South African mining firms and those of non-adopters (0.1456).

In contrast to the results for my *CompEarn* measure, my *CompAccr* measure suggests a significant decrease in the comparability between the financial statements of South African mining firms and both those of mining firms from other IFRS-adopting countries and non-adopting countries after the mandatory adoption of IFRS. The comparability of South African firms' financial statements with those of adopting

(non-adopting) firms decreased by -1.1185 (-0.4805) from -0.0539 (-0.5381) in the pre-adoption period to -1.1724 (-1.0187) in the post-adoption period. There was no significant difference between the two groups in either the pre- or the post-adoption periods. Comparability decreased significantly more between the financial statements of South African mining firms and those of adopters after IFRS adoption compared to the financial statements of South African mining firms and those of non-adopters (-0.6380).

The difference between the results for *CompEarn* and *CompAccr* could likely be attributed to the fact that the *CompEarn* measure includes market data that also captures markets' perceptions, whereas *CompAccr* is measured using financial statement data only. The increase in the comparability discussed above between the financial statements of South African mining firms and those of adopters, measured using the *CompEarn* measure, compared to the decrease using the *CompAccr* measure, could suggest that the markets perceive these firms to be more comparable, whilst the *CompAccr* measure, which is based on accounting amounts, suggests otherwise.

Most of the results for my *CompEarn* and *CompAccr* measures for the mining industry are not consistent with the results reported for the full samples in Chapter 5. The only result that is consistent with my full sample (see Panel B of Table 5.4) is the increase in the comparability between the financial statements of South African mining firms and those of firms from other adopting countries using the *CompEarn* measure (see Panel B of Table 6.3). Although I found an increase in comparability with non-adopters, this increase is not significant, whereas in the full sample the increase is significant. The *CompAccr* measure reports a significant decrease in the comparability between the financial statements of South African firms with both those of adopters and non-adopters (see Panel C of Table 6.3), compared to a significant increase with those of adopters in the full sample, and an increase (albeit not significant) with those of non-adopters (see Panel B of Table 5.6).

The above results, although they are based on a small sample size, suggest that there are comparability differences across industries, and that the comparability between the financial statements in the mining industry before and after the

mandatory adoption of IFRS is different from the comparability of the financial statements in other industries. The decrease in comparability from before IFRS adoption to after IFRS adoption, using the *CompAccr* measure, can possibly be linked to regulation changes in the industry that are country-specific. Alternatively, the effects of adjustments made in the post-adoption period with regard to different impairment recognition criteria or changes in accounting policies relating to exploration and evaluation expenditure introduced in IFRS 6 could explain the decrease in comparability. Moreover, the small sample size could also affect the result, so a more detailed study including mining firms from other countries could provide further evidence on the comparability of financial statements of mining firms after IFRS adoption. In essence, these results suggest that the averages of the mining industry behave differently to the averages of the other industries.

To determine whether my results in Chapter 5 were influenced by the inclusion of the mining industry, I reviewed the results for my full sample, excluding the mining industry.

### **6.3.3 Results excluding the mining industry**

The results for my full sample, excluding the mining industry, are reported in Panels A, B, C, D and E of Table 6.4. The exclusion of the mining industry did not significantly alter the inferences I made in Chapter 5.

Similar to the results for the full sample (see Panels B and C of Table 5.3), my results using the earnings-return regressions excluding the mining industry suggest a significant increase in the comparability between the financial statements of South African firms and those of firms in both IFRS-adopting countries and non-adopting countries after the adoption of IFRS (see Panels B and C of Table 6.4).

The results for the *CompAccr* measure were stronger when the mining industry was excluded from the full sample, and the results using the *MeanCompAccr* measure were similar. The results using the *CompAccr* measure, as presented in Panel D of Table 6.4, suggest a significant increase (at a one per cent level) in the comparability between the financial statements of South African firms and those of firms from

IFRS-adopting countries after IFRS adoption, and no significant increase in the comparability with the financial statements of firms in countries that did not adopt IFRS. These results also suggest that after IFRS adoption, the comparability between the financial statements of South African firms and those of mandatory adopters increased significantly more than the comparability between the financial statements of South African firms and those of non-adopters (significant at a five per cent level). This was not the case in the full sample, where the relative increase between the two groups was not significant (see Panel B of Table 5.6).

The *MeanCompAccr* results excluding the mining industry reported in Panel E of Table 6.4 is similar to the results for the full sample reported in Panel C of Table 5.6. The results based on two-tailed statistical significance tests suggest no significant increase in the comparability between the financial statements of South African firms and those of adopters or between the financial statements of South African firms and those of non-adopters after mandatory IFRS adoption. However, a one-tailed test of statistical significance indicates a statistically significant increase in comparability with adopters at a ten per cent level ( $p\text{-value}=0.08165$ , not tabulated). Also see to similar results reported for the full sample in Section 5.8.1. In addition, the results excluding the mining firms suggest (similar to the full sample) that the comparability of the financial statements of South African firms with those of mandatory adopters increased significantly more than the comparability of the financial statements of South African firms with those of non-adopters. The relative increase of 0.0320 is significant at a ten per cent level.

The relatively stronger increase in the comparability of financial statements using the earnings-return measures compared to that shown using the accruals-cash flow measures may be driven by the market data included in the earnings-return measures. Earnings-return measures also capture market perceptions regarding the comparability of financial statements after IFRS adoption. These perceptions could be driven by other market changes, unrelated to the IFRS decision, at the time of the IFRS adoption, or by benefits arising from using the IFRS “label”, such as the elimination of concerns that investors might have regarding carve-outs, additional provisions, changes as a result of translation, or timing differences, when local GAAP is based on IFRS.

The significant increase in the comparability between the financial statements of South African firms and those of adopters when I used the accruals-cash flow measures, versus the absence of a significant increase in the comparability between the financial statements of South African firms and those of non-adopters is consistent with network benefits that may arise when other countries adopt IFRS and possibly change their enforcement at the same time. Together with other market changes and the “label” change to IFRS, network benefits after the adoption of IFRS by other countries are a possible source of comparability increases between the financial statements of South African firms and those of adopters, as noted when I used the earnings-return measure. The absence of a significant increase in the comparability between the financial statements of South African firms and those of non-adopters, as reported when I used the accrual-cash flow measure, suggests that the increase using the earnings-return measure is consistent with other market changes or the “label” change to IFRS by South African firms, rather than changes in enforcement or changes to IFRS, or to non-adopters’ accounting standards.

#### **6.3.4 Conclusion: Industry differences**

The above results suggest that the exclusion of the mining industry did not alter my inferences for the remaining sample. However, the results for the mining industry on its own suggest that comparability in this industry before and after the mandatory adoption of IFRS did differ from that in the other industries. Hence, future research is required to gain a more comprehensive understanding of the differences in this industry.

#### **6.4 Other market changes**

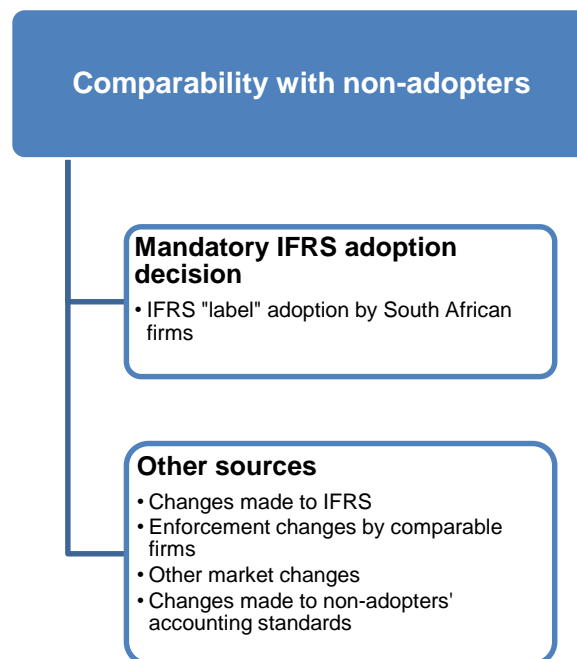
The results that I reported in Chapter 5 using my earnings-return measures of comparability suggest a macro shift in the comparability of the financial statements of firms in South Africa after IFRS adoption with those of both adopters and non-adopters. The increase in the comparability of financial statements with firms from IFRS-adopting countries is consistent with Hypothesis 1. The increase reported in the comparability of financial statements with firms from non-adopting countries means



that Hypothesis 2, which proposes that there will be no increase in the comparability of financial statements, has to be rejected.

To understand the increase in the comparability between the financial statements of firms in South Africa and those of non-adopters, it is essential to consider the possible sources of the increase. In Figure 3.4, I presented the likely sources of changes in the comparability between the financial statements of South African firms and those of both adopters and non-adopters after the adoption of IFRS (see Section 3.3.4). For ease of reference, I repeat the possible sources of comparability changes between the financial statements of South African firms and those non-adopters in Figure 6.1 below.

**Figure 6.1:**  
**Sources of comparability changes between South African firms and non-adopters**



These sources can possibly be traced back to the IFRS adoption decision by South African firms, or to other sources unrelated to the IFRS adoption decision, but which can affect either the South African firms' or the comparable non-adopting firms' financial statements. From a South African perspective, the IFRS adoption decision is merely a "label" change, as SA GAAP was identical to IFRS prior to adoption.

Other sources unrelated to the IFRS adoption decision include changes made to IFRS and which may have affected South African firms' financial statements, enforcement changes, other market changes, or changes made to non-adopters' accounting standards. Three of these factors, namely changes to IFRS, changes in enforcement, and changes to non-adopters accounting standards, could affect both the accounting amounts and the markets' perceptions. The "label" change for South African firms and other market changes would probably only affect the markets' perceptions.

I first consider factors which could affect accounting amounts. The accounting amounts of adopters in the post-adoption period could be affected by changes to IFRS that could improve the comparability between the financial statements of IFRS adopters and those of non-adopters. This is specifically relevant for South Africa, which effectively already applied IFRS (as SA GAAP was the same as IFRS) in the pre-adoption period, and continued to do so when IFRS was officially adopted in 2005. Any changes made to IFRS that became effective in the post-adoption period could have changed the comparability between the financial statements of South African firms and those of non-adopters, compared to the pre-adoption period. Leuz and Wysocki (2016:585) point out that a number of countries changed their regulatory environment at the same time as they adopted IFRS, which makes it difficult to separate the effects of these two concurrent changes. Although I made the argument in Section 2.4.5 that South Africa did not make changes in enforcement during my sample period, it is possible that some of the home countries of the comparable non-adopter firms did change their reporting environment, resulting in changes in the comparability of their financial statements. Other possible changes that could alter the accounting amounts reported by non-adopting firms relate to changes in accounting standards by non-adopters' countries as a result of convergence strategies or other accounting standard changes.

Of the remaining two sources, one relates directly to the IFRS adoption decision, namely the "label" change to IFRS by South African firms. The other refers to market changes unrelated to the decision to adopt IFRS. If there is any benefit in using the IFRS "label", it could influence the markets' perception of the comparability of the financial statements of South African firms. Leuz and Wysocki (2016:585) warn that it

is difficult to separate the IFRS adoption effect from other institutional and market changes which are unrelated to the decision to adopt IFRS, but that took place during the same period. Both these factors are more likely to affect the market-based measure than the measure based purely on accounting information.

Based on my accruals-cash flow measures, which consider accounting amounts only, I found no increase in the comparability between the financial statements of South African firms and those of non-adopters. This finding suggests that the increase in comparability using my earnings-return measure is consistent with “label” benefits or other concurrent market changes, rather than to changes in enforcement or changes to IFRS, or to the accounting standards of non-adopters. Although the last mentioned changes could also change the markets’ perceptions, the absence of change found by means of the accruals-cash flow measure suggests that these changes are not the main drivers of comparability changes between the financial statements of South African firms and those of non-adopters. To explore the factors that could influence an increase in comparability with non-adopters further, I investigated the comparability of the financial statements of firms from non-adopting countries and also considered how the comparability of the financial statements of firms in those countries compared with the comparability of the financial statements of firms in South Africa.

#### **6.4.1 Research design: Non-adopters’ comparability**

In my first set of tests, I performed the same comparability tests for the financial statements of firms in non-adopting countries that I performed in Chapter 5 for the financial statements of South African firms. Any increases in the comparability of financial statements of non-adopters might suggest that the increase is consistent with unrelated concurrent market changes, rather than with IFRS adoption. Such an increase could further suggest that even if South Africa did not adopt IFRS and continued to use SA GAAP, there would have been an increase in the comparability of the financial statements of South African firms.

To generate my comparability sample for the first set of tests, I matched the non-adopting firms with all possible foreign firms (adopters and non-adopters) based on

size, industry and year-end. I limited the firms that I included to the firms matched with South African firms in Chapter 5. I excluded mining firms, because the results reported in Section 6.3 suggested that the comparability of the financial statements of firms in the mining industry before and after the mandatory adoption of IFRS was different to that of firms in the other industries. I did not match any firms with other firms from the same country, as I wanted to evaluate cross-country comparability. I also excluded South African firms, as I did not want my results to be affected by the inclusion of South Africa. I altered Equation (9) to measure comparability between two foreign firms (FOR1 and FOR2), rather than between a South African firm and a foreign firm.

$$Comp_{FOR1, FOR2} = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls) + \varepsilon \quad (12)$$

where *Comp* stands for *MeanCompEarn* or *MeanCompAccr*.<sup>72</sup> All the other variables are the same as the ones in Equation (9), except for *Legal*, which I replaced with *Same legal*. *Same legal* is a dummy variable that equals one if the two foreign firms come from countries with the same legal origin, and zero otherwise (Yip & Young 2012:1775). As in my analyses in Chapter 5, I used a difference-in-differences design to evaluate my results. Consistent with the regressions performed in Chapter 5, I winsorized all the continuous variables at the top and bottom five per cent. I included industry fixed effects, and standard errors were clustered by matched foreign country.

#### **6.4.2 Results: Non-adopters' comparability**

The results to assess the comparability of the financial statements of firms from non-adopting countries with those of both adopters and other non-adopters are reported in Table 6.5. The regression results using *MeanCompEarn* and *MeanCompAccr* are presented in Panel A of Table 6.5. The difference-in-differences analyses are presented in Panels B and C. I used the results from Panel A to construct Panels B and C and discuss my results with reference to Panels B and C.

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<sup>72</sup> I only used *MeanCompEarn* and *MeanCompAccr* for this analysis, as my results in Chapter 5 suggested that the results using *CompEarn* and *CompAccr* might be affected when individual firms are included in more than one pair.

The results reported in Panel B of Table 6.5, using *MeanCompEarn* as my comparability measure, suggest a global shift in the comparability of financial statements after mandatory IFRS adoption by a number of countries in 2005. The comparability between the financial statements of non-adopters and those of adopters increased significantly from the pre-adoption to the post-adoption period. The increase in comparability of 0.0610, from -0.2571 in the pre-adoption period to -0.1961 in the post-adoption period, is statistically significant at a five per cent level. Similarly, the comparability between the financial statements of non-adopters and those of other non-adopters increased significantly from the pre-adoption to the post-adoption period. The increase in comparability of 0.0980, from -0.2962 in the pre-adoption period to -0.1982 in the post-adoption period, is statistically significant at a one per cent level.

Evaluating the differences in the comparability between the financial statements of non-adopters and those of the two groups (adopters and non-adopters), there is no significant difference, in either the pre-adoption period (0.0392) or the post-adoption period (0.0021). The difference of -0.0370 in the comparability change between the financial statements of non-adopters and those of adopters versus the comparability change between the financial statements of non-adopters and those of other non-adopters is not statistically significant.

The increase in the comparability between the financial statements of non-adopters and those of adopters using my *MeanCompEarn* measure can possibly be explained by the fact that 47% of the non-adopting firms compared with adopters are firms in the US. A study by Barth et al. (2012:90) found an increase in the comparability between the financial statements of firms that adopted IFRS with those of firms in the US. However, a review of the descriptive statistics (not tabulated) suggests that the comparability between the financial statements of all non-adopting countries (except for China and Japan) and those of adopters increased after 2005. Furthermore, the descriptive statistics (not tabulated) show an increase in the comparability between the financial statements of all non-adopting countries and those of other non-adopters. These results suggest that the source of some of the increase in comparability could be other unrelated market changes. Alternatively, convergence

by non-adopters to IFRS, or enforcement changes can explain the increase in comparability.

In contrast, I found no increase in the comparability of financial statements using my *MeanCompAccr* measure between the financial statements of non-adopters and those of either adopters or other non-adopters. Moreover, there is no significant difference in the comparability between the financial statements of non-adopters and those two groups in the pre-adoption or post-adoption periods. See Panel C of Table 6.5 for the results. The results using the *MeanCompAccr* measure, which only includes financial statement information, suggest that the financial statements did not change significantly, and point to other unrelated market changes as a possible reason for the noted increase in the comparability of financial statements using the *MeanCompEarn* measure, which includes market data. Consequently, one can argue that even if South Africa did not adopt IFRS in 2005, the increase in the comparability of the financial statements of South African firms reported in Chapter 5 may have been present because non-adopters also experienced an increase in the comparability of their financial statements with both those of adopters and those of other non-adopters after 2005.

To investigate whether South Africa reaped an incremental benefit from adopting IFRS, compared to those who did not adopt IFRS, I performed further tests in which I evaluated the comparability between the financial statements of South African firms and those of adopters relative to the comparability between the financial statements of non-adopter firms and those of non-South African adopters using a difference-in-differences design.

#### **6.4.3 Research design: South Africa versus non-adopters comparability**

In my second set of tests, I assessed the comparability of the financial statements of South African firms against the comparability of the financial statements of non-adopter firms. These tests could provide evidence on whether it was beneficial for South Africa to change to the IFRS “label” when it changed from SA GAAP to IFRS. If comparability between the financial statements of South African firms and those of adopters increased more than the comparability between the financial statements of

firms from non-adopting countries and those of adopters, it can be argued that there were benefits in changing to the IFRS “label”. I used the following ordinary least squares regression to evaluate the comparability of the financial statements of South African firms against the comparability of the financial statements of non-adopting firms (firm and period subscripts omitted):

$$Comp = \gamma_0 + \gamma_1(Post) + \gamma_2(SA) + \gamma_3(Post \times SA) + \sum \gamma_j(Controls) + \varepsilon \quad (13)$$

where *Comp* stands for *MeanCompEarn* or *MeanCompAccr*. I regressed my comparability measures (*Comp*) on an indicator variable, *Post*, to distinguish between the periods before and after IFRS adoption. I used an indicator variable called *SA* to distinguish between the comparability of South African firms and the comparability of non-adopter firms, the interaction between these two indicator variables (*Post x SA*) and a number of control variables. I performed two regressions, one using *MeanCompEarn* and one using *MeanCompAccr*, to evaluate the comparability of South African firms’ financial statements with those of adopter firms against the comparability of non-adopter firms’ financial statements with those of adopter firms.

My matching procedures and the samples were the same as those I described in Section 6.4.1. Consistent with the regressions that I performed in Chapter 5 and in Section 6.4.1, all the continuous variables were winsorized at the top and bottom five per cent. I included industry fixed effects, and standard errors were clustered by matched foreign country.

#### **6.4.4 Results: South Africa versus non-adopters comparability**

The results to evaluate the comparability of the financial statements of South African firms with those of adopters versus the comparability of the financial statements of firms from non-adopting countries with those of non-South African adopters are reported in Table 6.6. The regression results using *MeanCompEarn* and *MeanCompAccr* are presented in Panel A of Table 6.6, and the difference-in-differences analyses are presented in Panels B and C. I used the results from Panel A to construct Panels B and C. I discuss my results with reference to Panels B



and C.

In Panel B of Table 6.6, I present the difference-in-differences results of the comparability of the financial statements of South African firms and non-adopting firms with those of adopter firms, using the *MeanCompEarn* measure of comparability. The results show a statistically significant increase in the comparability of the financial statements of IFRS adopter firms with both those of South African firms (0.1140) and those of firms from non-adopting countries (0.0578) after the adoption of IFRS. The results are consistent with the results reported in Chapter 5 and Section 6.4.2.

The results also suggest that there is no significant difference between the comparability of the financial statements of South African firms and those of adopters, compared to the comparability of the financial statements of non-adopter firms and those of adopters in the pre-adoption period. However, there is some evidence that the financial statements of South African firms are more comparable with those of adopters than the financial statements of non-adopters with those of adopters in the post-adoption period. In addition, the difference-in-differences analysis shows that comparability increased significantly more between the financial statements of South African firms and those of mandatory adopters, compared to the increase in the comparability of the financial statements of non-adopter firms with those of mandatory adopters. The difference of 0.0563 is significant at a one per cent level.

In Section 6.4.2, I reported that the findings suggested an increase in the comparability between the financial statements of non-adopters and those of both adopters and other non-adopters, and argued that other unrelated market changes are likely to have had an effect on the comparability of financial statements globally. However, the results reported in Panel B of Table 6.6 shows that firms in South Africa, whose local GAAP was identical to IFRS before the adoption of IFRS, experienced a significantly larger increase in the comparability of their financial statements with those of adopters than the increase experienced by non-adopters. This result suggests that the increase in the comparability of the financial statements of South African firms was not merely a consequence of other unrelated market

changes. The difference-in-differences analysis points to an additional benefit for South African firms. The source of this additional benefit can be the joint effect of network benefits, as other countries adopted IFRS and their firms' financial statements become more comparable to those of South African firms, and market participants began to see the financial statements of South African firms as more comparable to those of other adopters after the "label" change to IFRS by South Africa.

If the difference-in-differences analysis using the *MeanCompAccr* measure of comparability shows a significantly greater increase in the comparability of South African firms' financial statements with those of adopters compared to the comparability of the financial statements of non-adopters with those of adopters, one can argue that the additional benefit for South Africa is consistent with network benefits (as other countries adopt IFRS and their financial statements become more comparable to those of South African firms). In that case, there might not be any benefit in changing to the IFRS "label". This measure uses only financial statement information to assess the similarity of firms' accounting functions. However, the results reported in Panel C of Table 6.6 using the *MeanCompAccr* measure show no significant difference in the comparability change of the financial statements of South African firms with those of adopters, compared to the comparability change of the financial statements of non-adopters with those of adopters (the difference in the differences is insignificant).

Although Panel C of Table 6.6 shows an increase in both the comparability between the financial statements of South African firms and those of adopters and the comparability between the financial statements of non-adopters and those of adopters, the increase using a two-tailed significance test is not significant. Using a one-tailed test, the increase in the comparability between the financial statements of South African firms and those of adopters is significant at a ten per cent level ( $p=0.0903$ , not tabulated). The results also show significantly lower comparability (at a one per cent level) between the financial statements of South African firms and those of adopters, compared to the comparability between the financial statements of non-adopters and those of adopters in the pre-adoption period. Comparability between the financial statements of South African and those of adopters remained

lower compared to the comparability between the financial statements of non-adopters and those of adopters in the post-adoption period, but the difference was not significant anymore. This change between the pre-adoption and the post-adoption periods suggest some shift in comparability, even though the difference-in-differences analysis showed no significant change. This shift in comparability is to be expected, as adopters are now using accounting standards (IFRS) that are the same as the accounting standards previously used by South Africa (SA GAAP, which was identical to IFRS at the time of adoption).

The insignificant difference in the comparability change between the two groups (South African firms and adopters versus non-adopter firms and adopters), using the *MeanCompAccr* measure, and the significant difference, using the *MeanCompEarn* measure, suggests that South Africa experienced an increase in comparability, in addition to the comparability increase associated with unrelated market changes and IFRS adoption by comparable firms. This additional comparability benefit is consistent with “label” benefits arising from the adoption of IFRS by South Africa, together with network benefits as other countries adopted IFRS.

#### **6.4.5 Conclusion: Other market changes**

My results reported in this section suggest a global increase in the comparability of financial statements after the adoption of IFRS. This increase is not limited to firms that adopted IFRS, and is also found between non-adopting firms, suggesting that market changes unrelated to IFRS adoption could explain the change in the comparability of firms’ financial statements worldwide. However, further analyses suggest that the results are not limited to these unrelated market changes. The additional increases in the comparability between the financial statements of South African firms and those of adopters, relative to the comparability increase between the financial statements of non-adopters and those of adopters, is consistent with both network benefits after the adoption of IFRS by other countries and the “label” change to IFRS by South Africa.

## 6.5 Conclusion: Additional analyses

In this chapter, I considered three factors that may have influenced my results and the conclusions reached in Chapter 5. The first of these is the association between pre-existing differences between local GAAP and IFRS, and the change in the comparability of financial statements. The second is the differences in the comparability of financial statements for the mining industry. The third is the possibility that unrelated market changes rather than mandatory adoption of IFRS was the source of the increase in the comparability of financial statements in the post-adoption period.

The three factors that I analysed provide additional insight into the results reported in Chapter 5. Firstly, the extent of the pre-existing GAAP differences between two firms that are compared is associated with the increase in the comparability of financial statements after IFRS adoption using the accruals-cash flow measure. This could explain why the increase in comparability is marginal in certain instances. Secondly, my additional analysis suggests that the changes in the comparability of financial statements in the mining industry after the adoption of IFRS are different to my overall results, but this does not change the inferences I made in Chapter 5. Lastly, my additional analysis suggests a global shift in the comparability of financial statements around the period of mandatory IFRS adoption by a number of countries. However, the results also indicate that South African firms experienced an incremental increase in the comparability of their financial statements, relative to the increase in the comparability of the financial statements of non-adopters. Hence I posit that both network benefits and the “label” change to IFRS by South Africa is associated with the increased comparability of South African firms’ financial statements.

Another aspect to consider in evaluating changes in comparability is shifts in accounting quality. Barth et al. (2012:90) and Yip and Young (2012:1769) have concluded that accounting quality is one of the potential drivers of the increase in the comparability of financial statements after the adoption of IFRS. Consequently, it should be considered whether the incremental increase in the comparability of the financial statements of South African firms after the adoption of IFRS could be

related to an improvement in accounting quality. This aspect is considered further in Chapter 7.

**Table 6.2:**

**Changes model: *MeanCompEarn* and *MeanCompAccr***

$$\Delta MeanComp = \gamma_0 + \gamma_1(\Delta GAAP\ diff) + \gamma_2(\Delta Size\ ratio) + \gamma_3(\Delta BTM\ diff) + \varepsilon \quad (11)$$

	<i>ΔMeanCompEarn</i> (n= 530)	<i>ΔMeanCompAccr</i> (n=477)
<i>Intercept</i>	-0.1135 (-5.77) ***	-0.0186 (-1.71) *
<i>ΔGAAP diff</i>	-0.0018 (-0.72)	0.0033 (1.85) *
<i>ΔSize ratio</i>	0.1290 (1.66)	0.1216 (2.95) ***
<i>ΔBTM diff</i>	-0.1494 (-6.00) ***	-0.0168 (-1.42)
F-statistic		
Overall model	(14.95) ***	(6.64) ***
Adjusted R <sup>2</sup>	0.1025	0.0364

\*, \*\*, \*\*\* denotes significance at a ten per cent, five per cent and one per cent level, respectively, all two-tailed.

Table 6.2 reports the regression coefficients for Equation (11) with changes in comparability measured using the *ΔMeanCompEarn* and *ΔMeanCompAccr* measures. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country.

All variables are defined in Appendix C. *ΔSize ratio* and *ΔBTM diff* are measured as the change in the mean value of all the matches included in the firm-level measure of comparability.

All continuous variables are winsorized at the top and bottom five per cent.

**Table 6.3:**  
**Regression: Mining industry**

$$Comp_{SA,FOR} = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls) + \varepsilon \quad (9)$$

*Panel A: Regressions*

	<i>CompEarn</i> n=294		<i>CompAccr</i> n=310	
<i>Intercept</i>	-0.5186 (-5.98) ***		-0.5381 (-0.42)	
<i>Post</i>	0.0638 (1.07)		-0.4805 (-3.34) **	
<i>Adopter</i>	-0.1071 (-4.00) **		0.4842 (1.97)	
<i>Post x Adopter</i>	0.1456 (2.42) *		-0.6380 (-4.4) **	
<i>Legal</i>	-0.1048 (-9.41) ***		-1.0833 (-4.07) **	
<i>Size ratio</i>	0.3762 (4.83) ***		0.6686 (0.52)	
<i>BTM diff</i>	-0.0923 (-1.96)		-0.3559 (-0.82)	
Fixed effects	None		None	
F-statistic				
Overall	(2041.25) ***		(104184) ***	
<i>Post + Post x Adopter = 0</i>	(475.15) ***		(4194.46) ***	
<i>Adopter + Post x Adopter = 0</i>	(1.30)		(1.07)	
Adjusted R <sup>2</sup>	0.0925		0.0343	





Panel B: Difference-in-differences analysis – *CompEarn* (n=294)

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=136)	-0.6257	-0.4162	0.2095 (475.15) ***
<b>Non-adopters</b> (n=11)	-0.5186	-0.4548	0.0638 (1.07)
<b>Difference</b>	-0.1071 (-4.00) **	0.0386 (1.30)	0.1456 (2.42) *

Panel C: Difference-in-differences analysis – *CompAccr* (n=310)

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=143)	-0.0539	-1.1724	-1.1185 (4194.46) ***
<b>Non-adopters</b> (n=12)	-0.5381	-1.0187	-0.4805 (-3.34) **
<b>Difference</b>	0.4842 (1.97)	-0.1538 (1.07)	-0.6380 (-4.40) **

\* \*\*, \*\*\* denotes significance at a ten per cent, five per cent and one per cent level, respectively, all two-tailed.

Table 6.3 reports the multivariate regression results for Equation (9) for the mining industry with comparability measured using the *CompEarn* and *CompAccr* measures. Panel A reports the regression coefficients for the two different measures. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country. Panels B and C report the difference-in-differences analysis of the comparability of the financial statements of South African firms with those of adopters versus those of non-adopters for each of my two measures in the mining industry. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the t-statistics or F-statistics (all two-tailed) as indicated in Panel A.

All variables are defined in Appendix C.

All continuous variables are winsorized at the top and bottom five per cent.

**Table 6.4:**  
**Regression: Excluding mining industry**

$$Comp_{SA,FOR} = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls) + \varepsilon \quad (9)$$

*Panel A: Regressions*

	Earnings-return measures		Accruals-cash flow measure	
	<i>CompEarn</i>	<i>MeanComp-Earn</i>	<i>CompAccr</i>	<i>MeanComp-Accr</i>
	n=4 548	n=1 026	n=4 632	n=940
<i>Intercept</i>	-0.3199 (-4.97) ***	-0.2806 (-4.18) ***	-0.0094 (-0.77)	-0.0595 (-2.25) **
<i>Post</i>	0.1461 (2.27) **	0.1204 (4.36) ***	0.0029 (0.25)	-0.0160 (-1.21)
<i>Adopter</i>	0.0530 (1.06)	0.0575 (1.59) **	-0.0342 (-2.52) **	-0.0075 (-0.56)
<i>Post x Adopter</i>	-0.0125 (-0.17)	0.0015 (0.04)	0.0344 (2.31) **	0.0320 (1.85) *
<i>Legal</i>	-0.0813 (-3.65) ***	-0.0111 (-0.43)	-0.0198 (-1.56)	-0.0047 (-0.32)
<i>Size ratio</i>	-0.0088 (-0.39)	-0.0072 (-0.08)	-0.0177 (-1.34)	0.0276 (0.71)
<i>BTM diff</i>	-0.1172 (-4.35) ***	-0.1804 (-12.95) ***	-0.0328 (-2.20) **	-0.0275 (-3.70) ***
Fixed effects	Industry	Industry	Industry	Industry
F-statistic				
Overall	(501.77) ***	(242.78) ***	(432.72) ***	(485.3) ***
<i>Post + Post x Adopter = 0</i>	(17.58) ***	(43.80) ***	(16.75) ***	(2.06)
<i>Adopter + Post x Adopter = 0</i>	(1.36)	(4.70) **	(0.00)	(1.73)
Adjusted R <sup>2</sup>	0.1545	0.2059	0.1075	0.0694

*Panel B: Difference-in-differences analysis – CompEarn  
(n=4 548)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=621)	-0.2669	-0.1333	0.1336 (17.58) ***
<b>Non-adopters</b> (n=1 653)	-0.3199	-0.1737	0.1461 (2.27) **
<b>Difference</b>	0.0530 (1.06)	0.0405 (1.36)	-0.0125 (-0.17)

*Panel C: Difference-in-differences analysis – MeanCompEarn  
(n=1 026)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=264)	-0.2231	-0.1012	0.1218 (43.80) ***
<b>Non-adopters</b> (n=249)	-0.2806	-0.1602	0.1204 (4.36) ***
<b>Difference</b>	0.0575 (1.59) **	0.0589 (4.70) **	0.0015 (0.04)

*Panel D: Difference-in-differences analysis – CompAccr  
(n=4 632)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=531)	-0.0435	-0.0062	0.0374 (16.75) ***
<b>Non-adopters</b> (n=1 785)	-0.0094	-0.0065	0.0029 (0.25)
<b>Difference</b>	-0.0342 (-2.52) **	0.0003 (0.00)	0.0344 (2.31) **

*Panel E: Difference-in-differences analysis – MeanCompAccr  
(n=940)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=222)	-0.0671	-0.0510	0.0160 (2.06)
<b>Non-adopters</b> (n=248)	-0.0595	-0.0755	-0.0160 (-1.21)
<b>Difference</b>	-0.0075 (-0.56)	0.0244 (1.73)	0.0320 (1.85) *

\*, \*\*, \*\*\* denotes significance at a ten per cent, five per cent and one per cent level, respectively, all two-tailed.

Table 6.4 reports the multivariate regression results for Equation (9) for the samples as in Chapter 5, excluding the mining industry. Comparability is measured using the *CompEarn*, *MeanCompEarn*, *CompAccr* and *MeanCompAccr* measures. Panel A reports the regression coefficients for the four different measures. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country. Panels B, C, D and E report the difference-in-differences analysis of comparability between the financial statements of South African firms and those of adopters versus those of non-adopters for each of my four measures for the samples as indicated in Chapter 5, excluding the mining industry. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the t-statistics or F-statistics (all two-tailed) as indicated in Panel A.

All variables are defined in Appendix C. For the *MeanCompEarn* and *MeanCompAccr* regressions *Size ratio* and *BTM diff* are measured as the mean value of all the matches included in the firm-level measure of comparability.

All continuous variables are winsorized at the top and bottom five per cent.

**Table 6.5:**

**Regressions: Non-adopting countries' comparability with adopters and other non-adopters**

$$Comp_{FOR1, FOR2} = \gamma_0 + \gamma_1(Post) + \gamma_2(Adopter) + \gamma_3(Post \times Adopter) + \sum \gamma_j(Controls_j) + \varepsilon \quad (12)$$

*Panel A: Regressions*

	<i>MeanCompEarn</i> (n=24 134)	<i>MeanCompAccr</i> (n=21 358)
<i>Intercept</i>	-0.2962 (-8.78) ***	-0.0786 (-4.45) ***
<i>Post</i>	0.0980 (3.10) ***	0.0082 (0.57)
<i>Adopter</i>	0.0392 (1.23)	0.0078 (0.53)
<i>Post x Adopter</i>	-0.0370 (-0.93)	-0.0025 (-0.16)
<i>Same Legal</i>	0.0035 (0.24)	0.0257 (2.14) **
<i>Size ratio</i>	-0.0169 (-0.50)	-0.0146 (-1.03)
<i>BTM diff</i>	-0.1946 (-13.04) ***	-0.0302 (-3.71) ***
Fixed effects	Industry	Industry
F-statistic		
Overall	(91.54) ***	(68.95) ***
<i>Post + Post x Adopter = 0</i>	(6.29) **	(0.76)
<i>Adopter + Post x Adopter = 0</i>	(0.01)	(0.16)
Adjusted R <sup>2</sup>	0.1436	0.1464

*Panel B: Difference-in-differences analysis – MeanCompEarn (n=24 134)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=6 936)	-0.2571	-0.1961	0.0610 (6.29) **
<b>Non-adopters</b> (n=5 131)	-0.2962	-0.1982	0.0980 (3.10) ***
<b>Difference</b>	0.0392 (1.23)	0.0021 (0.01)	-0.0370 (-0.93)

*Panel C: Difference-in-differences analysis – MeanCompAccr (n=21 358)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>Adopters</b> (n=5 831)	-0.0708	-0.0651	0.0056 (0.76)
<b>Non-adopters</b> (n=4 848)	-0.0786	-0.0704	0.0082 (0.57)
<b>Difference</b>	0.0078 (0.53)	0.0053 (0.16)	-0.0025 (-0.16)

\*, \*\*, \*\*\* denotes significance at a ten per cent, five per cent and one per cent level, respectively, all two-tailed.

Table 6.5 reports the multivariate regression results for Equation (12). Comparability is measured using the *MeanCompEarn* and *MeanCompAccr* measures between firms from non-adopting countries and both adopters and non-adopters. Panel A reports the regression coefficients for these two different measures. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country. Panels B and C report the difference-in-differences analysis of the comparability of the financial statements of non-adopting firms with those of adopter firms versus those of other non-adopter firms for each of my two measures. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the t-statistics or F-statistics (all two-tailed) as indicated in Panel A.

All variables are defined in Appendix C. *Size ratio* and *BTM diff* are measured as the mean value of all the matches included in the firm-level measure of comparability.

All continuous variables are winsorized at the top and bottom five per cent.

**Table 6.6:**

**Regression: South African firms' comparability versus non-adopting firms' comparability with non-South African adopters**

$$Comp = \gamma_0 + \gamma_1(Post) + \gamma_2(SA) + \gamma_3(Post \times SA) + \sum \gamma_j(Controls) + \varepsilon \quad (13)$$

*Panel A: Regressions*

	<i>MeanCompEarn</i>	<i>MeanCompAccr</i>
	n=14 400	n=12 106
<i>Intercept</i>	-0.1456 (-3.42) ***	-0.0679 (-5.43) ***
<i>Post</i>	0.0578 (2.48) **	0.0052 (0.82)
<i>SA</i>	-0.0278 (-1.3)	-0.0258 (-3.24) ***
<i>Post x SA</i>	0.0563 (3.28) ***	0.0101 (1.03)
<i>Same Legal</i>	0.0131 (0.87)	0.0233 (1.83) *
<i>Size ratio</i>	-0.0158 (-0.33)	0.0129 (1.02)
<i>BTM diff</i>	-0.1958 (-10.37) ***	-0.0369 (-3.51) ***
Fixed effects	Industry	Industry
F-statistic		
Overall	(2615.22) ***	(854.83) ***
<i>Post + Post x SA = 0</i>	(44.24) ***	(1.97)
<i>SA + Post x SA = 0</i>	(6.22) **	(2.23)
Adjusted R <sup>2</sup>	0.1418	0.1731

*Panel B: Difference-in-differences analysis – MeanCompEarn (n=14 400)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>South Africa</b> (n=264)	-0.1734	-0.0594	0.1140 (44.24) ***
<b>Non-adopters</b> (n=6 936)	-0.1456	-0.0878	0.0578 (2.48) **
<b>Difference</b>	-0.0278 (-1.3)	0.0284 (6.22) **	0.0563 (3.28) ***

*Panel C: Difference-in-differences analysis – MeanCompAccr (n=12 106)*

	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference
<b>South Africa</b> (n=222)	-0.0936	-0.0783	0.0153 (1.97)
<b>Non-adopters</b> (n=5 831)	-0.0679	-0.0626	0.0052 (0.82)
<b>Difference</b>	-0.0258 (-3.24) ***	-0.0157 (2.23)	0.0101 (1.03)

\*, \*\*, \*\*\* denotes significance at a ten per cent, five per cent and one per cent level, respectively, all two-tailed.

Table 6.6 reports the multivariate regression results for Equation (13). Comparability is measured using the *MeanCompEarn* and *MeanCompAccr* measures. Panel A reports the regression coefficients for these two different measures. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by foreign country. Panels B and C report the difference-in-differences analysis of the comparability of the financial statements of South African firms with those of adopters versus the comparability of the financial statements of non-adopter firms with those of adopters for each of my two measures. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the t-statistics or F-statistics (all two-tailed) as indicated in Panel A.

All variables are defined in Appendix C. *Size ratio* and *BTM diff* are measured as the mean value of all the matches included in the firm-level measure of comparability.

All continuous variables are winsorized at the top and bottom five per cent.



## CHAPTER 7: ACCOUNTING QUALITY

### 7.1 Introduction

In Chapter 6, I performed additional analyses to determine whether the findings relating to the increase in the comparability of financial statements of South African firms that I documented in Chapter 5 could be attributed to IFRS adoption. The last set of additional analyses in Chapter 6, relating to other market changes, suggested a global shift in the comparability of financial statements around the time of mandatory IFRS adoption by a number of countries. This improvement in comparability appeared to hold even for firms in non-adopting countries. However, the results showed an incremental increase in the comparability of the financial statements of South African firms, compared to that of firms in non-adopting countries. I have argued that this incremental benefit is consistent with both network benefits and “label” benefits arising from the adoption of IFRS by South Africa.

Another explanation for the incremental increase in the comparability of the financial statements of South African firms after IFRS adoption could be related to an improvement in accounting quality. I have already pointed out that South African firms reported in terms of SA GAAP, which was identical to IFRS, and therefore it is unlikely that South African accounting quality changed when the use of IFRS became mandatory for all listed South African firms. However, accounting quality is influenced both by the quality of the standards and by the quality of their application. Thus, it is possible that changes made to the IFRS standards during my sample period could have changed the quality of the standards. Also, although there were no changes in enforcement in South Africa across the IFRS adoption period, firms’ internal reporting incentives may have increased. This could have resulted in firms’ improving their accounting quality.

In this chapter, I perform a number of tests on the accounting quality of financial statements of South African firms after the mandatory adoption of IFRS to establish whether improved accounting quality is a plausible explanation for the incremental

increase in the comparability of the financial statements of South African firms over that experienced by firms in non-adopting countries.

## 7.2 Prior research

One of the objectives of the IASB is to develop a set of high quality financial reporting standards that can help users of financial statements to make economic decisions (IASB 2013:A6). The two fundamental qualitative characteristics of useful financial information are relevance and faithful representation. Financial information is relevant when it can affect users' decision-making; faithful representation is achieved when the underlying economics of a firm is presented in a manner that is complete, neutral and free from error (IASB 2010). There is no clear definition of accounting quality (Ahmed et al. 2013:1344), but it is logical to assume that the better the financial information reflects a firm's underlying economics, the higher the quality. Indicators of higher accounting quality used in the literature include less earnings management, more timely recognition of losses, more value relevant accounting amounts (Barth et al. 2008:468), increased information content of earnings announcements (Landsman, Maydew & Thornock 2012:34), increased disclosure and less standardised disclosure (Lang & Stice-Lawrence 2015:131).

Prior research suggests a number of reasons why the adoption of IFRS could result in higher quality financial statements than those prepared using local accounting standards (Barth et al. 2008:471; Ahmed et al. 2013:1347). Firstly, IFRS are considered to be principles-based standards that reduce the number of accounting alternatives allowed under local GAAP. Secondly, IFRS require certain accounting measurements that reflect a firm's underlying economics better (Barth et al. 2008:471). Both principles-based accounting standards and the use of accounting measurements, such as fair value accounting, are expected to reflect a firm's economic performance better and thus increase accounting quality. Furthermore, reducing the number of accounting alternatives also reduces management discretion and opportunities to manage earnings (Barth et al. 2008:471; Ahmed et al. 2013:1347).

Arguments against finding an increase in accounting quality with the adoption of IFRS can be found in the characteristics of principles-based standards and the reduction of the allowed accounting alternatives. Principles-based standards are considered to be more flexible, and provide less guidance to managers, allowing for more inconsistent application and thus increased opportunity for earnings management (Barth et al. 2008:472; Ahmed et al. 2013:1348; Capkun et al. 2016:353). Moreover, reducing the allowed alternatives may restrict management's ability to reflect the economic performance and position of the firm accurately, and may consequently lower accounting quality (Barth et al. 2008:472; Ahmed et al. 2013:1348). Also, if a country adopts IFRS without proper enforcement of the standards, the expected increase in accounting quality might not materialise (Barth et al. 2008:472).

A number of empirical studies have been performed to assess changes in accounting quality after IFRS adoption.<sup>73</sup> Van Tendeloo and Vanstraelen (2005), Daske and Gebhardt (2006), Hung and Subramanyam (2007), and Barth et al. (2008) investigated voluntary adopters. Chen et al. (2010), Sun et al. (2011), Landsman et al. (2012), Zeghal, Chtourou and Fourati (2012), Ahmed et al. (2013), and Lang and Stice-Lawrence (2015) investigated mandatory adopters. The studies by Christensen et al. (2015) and Capkun et al. (2016) investigated both voluntary and mandatory adopters. The findings of these studies have been mixed.

Using country-specific evidence from Germany,<sup>74</sup> Van Tendeloo and Vanstraelen (2005:177) found no difference in earnings management between voluntary IFRS

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<sup>73</sup> I do not review the value relevance literature in this study. The value relevance literature considers the association between accounting amounts and stock prices (Barth, Beaver & Landsman 2001:79). The aim of this chapter is to assess whether the accounting quality of South African firms changed after IFRS adoption, independently of the markets' perceptions of that quality. To establish whether the incremental increase in comparability for South African firms is associated with the "label" change to IFRS, I need to exclude the possibility that changes in accounting amounts could explain changes in the comparability of South African firms.

<sup>74</sup> Germany provided the ideal setting to compare financial reporting and capital market effects between voluntary adopters of IFRS and firms that continued to apply local (in this case, German) accounting standards. Listed firms in Germany were allowed to report in terms of either IFRS or US GAAP, rather than German accounting standards. This provided a setting where a sufficient number of firms reported in terms of either IFRS or German accounting standards to perform empirical analyses. In addition, German accounting standards were not highly regarded by international investors. This provided an opportunity to assess whether accounting standards can change accounting quality (Van Tendeloo & Vanstraelen 2005:157; Daske & Gebhardt 2006:330; Hung & Subramanyam 2007:624; Barth et al. 2008:474).

adopters and non-adopters, after controlling for earnings management incentives. Also using data from Germany, Hung and Subramanyam (2007:652) found weak evidence that losses were recognised in a more timely manner under IFRS. Both studies concluded that high quality standards alone are insufficient to change accounting quality. In contrast to the above individual country research, Daske and Gebhardt (2006:494) used data from three European countries. They found an increase in accounting quality after voluntary IFRS adoption. Similarly, using a sample of global firms, Barth et al. (2008:496) found that the accounting quality of firms which voluntarily adopted IFRS was higher than that of firms which applied local GAAP.

Consistent with the findings by Daske and Gebhardt (2006) and Barth et al. (2008), studies by Chen et al. (2010:272) and Zeghal et al. (2012:1) found an improvement in accounting quality after the mandatory adoption of IFRS in the European Union. Sun et al. (2011:856) reported a significant increase in accounting quality for two of their five accounting quality measures for mandatory adopters, compared to a control group of matched US firms. Landsman et al. (2012:53) and Lang and Stice-Lawrence (2015:110) found a greater increase in accounting quality for mandatory adopters than for non-adopters.<sup>75</sup> However, Ahmed et al. (2013:1369) found a decrease in accounting quality after mandatory IFRS adoption. Ahmed et al. (2013:1345) attributed the differences between their own findings and those of Chen et al.'s (2010) study to different proxies and differences in the research design. Comparing their own study to the study by Barth et al. (2008), Ahmed et al. (2013:1369) concluded that the differences were likely to be a result of self-selection for voluntary adopters.

The different findings relating to changes in accounting quality between voluntary and mandatory adopters have been investigated further by Christensen et al. (2015) and Capkun et al. (2016). Christensen et al. (2015:56) studied changes in

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<sup>75</sup> Landsman et al. (2012) and Lang and Stice-Lawrence (2015:110) used different approaches from other accounting quality studies evaluating accounting quality. Landsman et al. (2012:53) found a greater increase in the information content of earnings announcements of mandatory adopters than of non-adopters, suggesting higher accounting quality for mandatory adopters. Lang and Stice-Lawrence (2015:110) performed textual analysis of annual reports from various countries – reports from mandatory IFRS adopters were longer and more comparable, and used less standardised (“boilerplate”) disclosure than those of non-adopters, also suggesting higher accounting quality.

accounting quality after the adoption of IFRS for both voluntary and mandatory adopters in Germany. They found no increase in accounting quality for mandatory adopters compared to an increase in accounting quality for voluntary adopters. They concluded that reporting incentives drove the accounting quality changes, rather than the adoption of the standards.

Capkun et al. (2016:353) attribute the mixed results reported by Barth et al. (2008:496) on voluntary adopters, and by Ahmed et al. (2013:1369) on mandatory adopters, to changes made to IFRS after 2005 that allowed for more flexibility and provided less implementation guidance. They based their conclusion on their finding that earnings management increased from before 2005 to after 2005 for three groups of firms that they identified. The three groups were firms that voluntarily adopted IFRS prior to 2005 (early adopters), firms in countries that allowed for early adoption of IFRS but only mandatorily adopted IFRS in 2005 (late adopters), and firms in countries that did not allow for early adoption of IFRS but mandatorily adopted IFRS in 2005 (mandatory adopters). All three groups experienced an increase in earnings management after 2005, so they concluded that their findings are consistent with changes made to the IFRS standards, rather than with reporting incentives. However, Zeghal et al. (2012:22) found no change in accounting quality after IFRS adoption for firms in countries in the European Union that had already converged their local accountings standards to IFRS to a large extent prior to mandatory IFRS adoption. This finding would suggest that the changes made to IFRS did not significantly change accounting quality in the post-adoption period.

The above literature review shows the differences in findings relating to changes in accounting quality after IFRS adoption. In the next section, I discuss the literature in the South African context.

### **7.3 South African context**

I presented a review of the South African accounting environment in Chapter 2. Aspects discussed in Chapter 2 that are relevant to accounting quality are how SA GAAP compared to IFRS before the adoption of IFRS (see Section 2.3), the

South African financial reporting environment (see Section 2.4.4) and changes in enforcement (see Section 2.4.5).

SA GAAP was, word for word, the same as IFRS at the time of the mandatory adoption of IFRS in South Africa (SAICA 2006), but at the same time, a number of new and revised IFRS standards became effective (Bromfield 2013). In addition, a review of the local interpretation of the IFRS standards at the time has revealed inconsistencies with international interpretations.<sup>76</sup> These inconsistencies were eliminated at the time of IFRS adoption (United Nations 2007:11).<sup>77</sup> These new and revised standards, as well as the changes in interpretations, could have resulted in a change in accounting quality after IFRS adoption.

Because SA GAAP was identical to IFRS, it can be argued that accounting quality in South Africa was already high in the pre-adoption period. Lamoreaux et al. (2015:717) also claimed that South Africa had high accounting quality based on no differences between local GAAP and IFRS, using the Bae et al. (2008) measure. Leuz et al. (2003:515) found that South Africa had the fifth lowest level of earnings management out of 31 countries for the period from 1990 to 1999, suggesting high accounting quality. In addition South Africa's auditing and reporting environments have been highly ranked in the WEF's global competitiveness reports (2002-2008).<sup>78</sup>

Another factor that could affect accounting quality in South Africa is changes in the enforcement of standards (see Section 2.4.5). Christensen et al. (2013:155) indicated that South Africa did not make any substantive changes in enforcement between 2001 and 2009. It is therefore unlikely that any changes in accounting quality could be attributed to changes in enforcement.

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<sup>76</sup> The most notable inconsistency related to operating leases that were not accounted for on a straight-line basis (Bromfield 2013; United Nations 2007:14). Other inconsistencies in interpretation related to the incorrect treatment of cash discounts, settlement discounts, rebates and extended payment terms that affected IAS 2 – *Inventory* and IAS 18 – *Revenue* (United Nations 2007:16).

<sup>77</sup> During the IFRS adoption process, firms were required to assess their current financial reporting policies and procedures. This was done through consultation with internal and external consultants. Consistent interpretation was achieved through collaboration by experts in the industry (United Nations 2007:11). Corrections to financial statements were made, based on the findings of these assessments.

<sup>78</sup> South Africa was ranked fifth in the WEF (2005) global competitiveness report for the strength of its auditing and reporting standards for the 2005/2006 period. See Section 2.4.4 for a discussion of South Africa's financial reporting environment.



To summarise, it is possible that accounting quality in South Africa may have changed after the adoption of IFRS. However, since the local standards were already the same as IFRS, and since there were no substantive changes in enforcement, any changes are likely to have been the result of new or revised IFRS standards or, alternatively, changes in the interpretation of IFRS. Another possibility is that changes in accounting quality could be associated with changes in firms' financial reporting incentives (Van Tendeloo & Vanstraelen 2005:159; Christensen et al. 2015:58). I controlled for changes in reporting incentives when I evaluated the effect of the adoption of IFRS on accounting quality in South Africa. A decrease in accounting quality (as indicated by an increase in earnings management) would be consistent with the findings of Capkun et al. (2016:380) that changes made to IFRS after 2005 are associated with increased earnings management. If there was an increase in accounting quality, it is possible that such an increase contributed to the increase in the comparability of financial statements of South African firms, as reported in Chapter 5 and 6. Barth et al. (2012:90) and Yip and Young (2012:1767) suggest that accounting quality is one of the main factors contributing to the improvement of information comparability.

In the next section, I present my research design to assess accounting quality in South Africa.

#### **7.4 Research design**

The aim of this chapter is to assess whether there was a change in accounting quality in South Africa after the mandatory adoption of IFRS. Similar to Barth et al. (2008:494) and Chen et al. (2010:239), I compared the accounting quality of mandatory IFRS adopters in South Africa in the pre-adoption period to the accounting quality in the post-adoption period. I used a balanced sample where the observations in the pre- and post-adoption periods were the same in respect of the number of firms and firm-years.



#### **7.4.1 Accounting quality measures**

In line with prior research on accounting quality changes with the adoption of IFRS, I used earnings management and timely loss recognition as indicators of accounting quality (Barth et al. 2008:475; Chen et al. 2010:229; Ahmed et al. 2013:1345; Capkun et al. 2016:360). This literature interprets lower levels of earnings management and more timely recognition of losses as indicators of higher accounting quality (Barth et al. 2008:475; Ahmed et al. 2013:1345).

In my study, I used two earnings management measures, namely earnings smoothing and managing towards a target. Consistent with prior studies by Lang, Raedy and Wilson (2006:261-262), Barth et al. (2008:476) and Ahmed et al. (2013:1351), I used three proxies to measure earnings smoothing. The first proxy is the variability of change in net income – more variability in earnings is consistent with less earnings smoothing and therefore less earnings management and higher accounting quality (Barth et al. 2008:475; Chen et al. 2010:229; Ahmed et al. 2013:1345). The second proxy for earnings smoothing is the ratio of the variability of change in net income to the variability of change in cash flows (Lang et al. 2006:262; Barth et al. 2008:476; Chen et al. 2010:230; Ahmed et al. 2013:1345). Generally, it is expected that firms with more variability in cash flows should accordingly have more variability in net income. However, when a firm manages net income through the use of accruals, the variability of the net income will be less than the variability of cash flows (Barth et al. 2008:483). Therefore, a lower ratio of the variability of change in net income to the variability of change in cash flows suggests more income smoothing, and consequently more earnings management and lower accounting quality. The third proxy for earnings smoothing is based on the correlation between cash flows and accruals. Managers may have incentives to increase accruals (and earnings) when cash flows are low (Lang et al. 2006:262; Barth et al. 2008:476). Hence, a less negative correlation suggests less earnings smoothing and higher accounting quality.

With regard to managing towards a target, managers may have incentives rather to report small positive income than losses (Burgstahler & Dichev 1997:124; Leuz et al. 2003:511; Lang et al. 2006:262; Barth et al. 2008:477). Burgstahler and Dichev

(1997:121) suggest that managers avoid reporting losses to reduce the cost of the firm in transacting with stakeholders. Alternatively, the loss aversion theory can explain it. Hayn (1995:132), who investigated firm earnings, found a higher concentration of firms reporting earnings above zero than those reporting earnings below zero, consistent with the management of earnings to avoid reporting losses. Therefore a lower frequency of small positive earnings is interpreted as indicative of less earnings management and consequently of higher accounting quality.

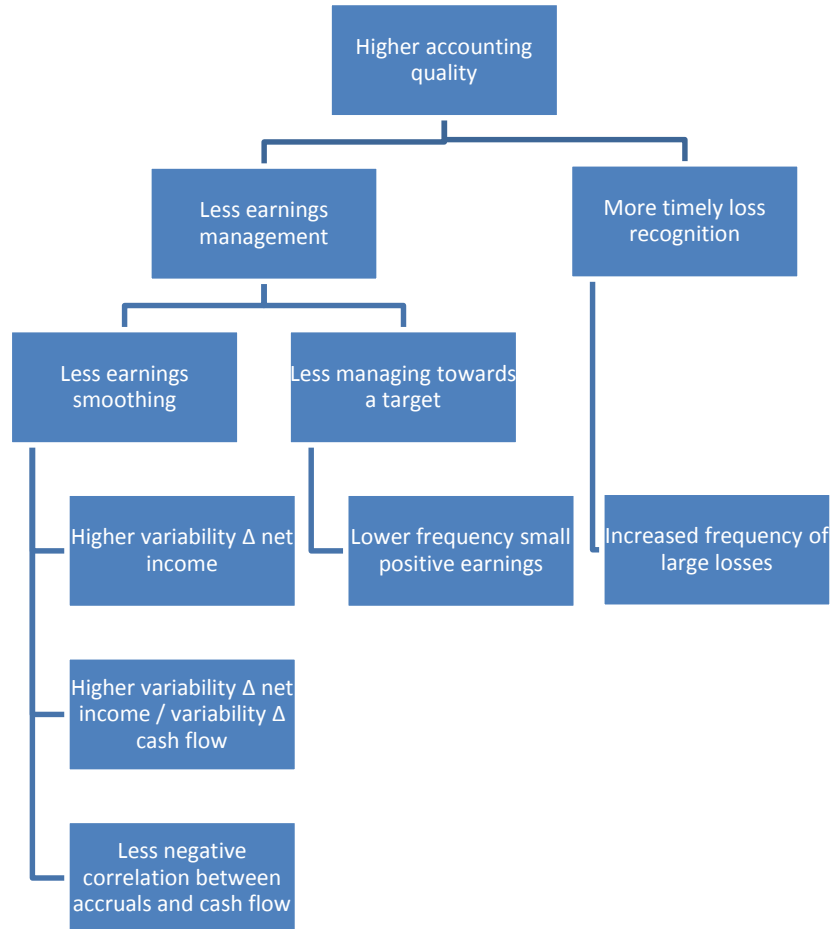
My second earnings management measure, namely timely recognition of losses, stems from the view that higher quality earnings is achieved when losses are recognised as they occur, rather than being deferred to later periods (Ball et al. 2000:2; Lang et al. 2006:263; Barth et al. 2008:477). Based on this view, an increase in the occurrence of large recognised losses would suggest an increase in accounting quality.

I did not include the value relevance metrics used in Barth et al. (2008:486), because the aim of my tests was to assess whether the accounting quality of South African firms changed after IFRS adoption, independently of the markets' perceptions of that quality. To establish whether the incremental increase in comparability for South African firms is associated with possible "label" benefits arising from IFRS adoption, I needed to exclude the possibility that changes in accounting amounts could explain changes in the comparability of South African firms. The value relevance metrics capture the association between stock prices and earnings; thus, it is not based solely on accounting amounts, and as a result might also capture the markets' perception regarding accounting quality.

The indicators of accounting quality and how these are measured in my study are summarised in Figure 7.1, overleaf. In the next section, I discuss my research design to evaluate accounting quality using each of the five proxies set out in Figure 7.1. These proxies are (1) the variability of change in net income; (2) the ratio of the variability of change in net income relative to the variability of change in cash flows; (3) the correlation between accruals and cash flows; (4) the frequency of small positive earnings; and (5) the frequency of large losses. The proxies are categorised under two main indicators of accounting quality, namely earnings management and

timely loss recognition. Earnings management is further subdivided into earnings smoothing and managing earnings towards a target.

**Figure 7.1:**  
**Measures of accounting quality**



### 7.4.2 Earnings smoothing

Following Lang et al. (2006:262), Barth et al. (2008:481-484) and Ahmed et al. (2013:1351), my three proxies for earnings smoothing were (1) variability of change in net income, (2) the ratio of the variability of change in net income to the variability of change in cash flows, and (3) the correlation between accruals and cash flows. These proxies were determined from four variables. These four variables were  $\Delta NI$ ,  $\Delta CF$ ,  $CF$  and  $ACC$ , where  $\Delta NI$  is change in net income before extraordinary items, and net income is scaled by total assets at the end of the year;<sup>79</sup>  $\Delta CF$  is change in

<sup>79</sup>  $\Delta NI = (\text{Net income before extraordinary items}_t / \text{Total assets}_t) \text{ minus } (\text{Net income before extraordinary items}_{t-1} / \text{Total assets}_{t-1})$

operating cash flows, and cash flows are scaled by total assets at the end of the year,  $CF$  is operating cash flows scaled by total assets at the end of the year, and  $ACC$  is net income before extraordinary items less operating cash flows scaled by total assets at the end of the year.

I did not use the above variables in their original form to calculate the earnings smoothing proxies, but instead, similar to Lang et al. (2006:261), Barth et al. (2008:482) and Ahmed et al. (2013:1351), I attempted to extract the effects of factors unrelated to the IFRS adoption decision. To achieve this, I regressed each of the four earnings smoothing variables ( $ESV$ ) on proxies for factors that are unrelated to the IFRS adoption decision, but could affect these  $ESV$ . These factors are the following reporting incentives that have been found to be determinants of earnings quality: financial leverage, firm growth, the issue of new equity or debt, asset turnover, firm size and cash flows from operations. Financial leverage has been found to be positively associated with earnings management which could either be due to debt covenant restrictions, financial distress, the need for finance or similar incentives (Dechow, Ge & Schrand 2010:380). Growth firms are expected to be more inclined to manage earnings to increase net income (Dechow et al. 2010:380; Sun et al. 2011:847). Shivakumar (2000:369) found that firms manage earnings upward before the issue of new equity, and similar results are expected for new debt issues (Lang et al. 2006:260; Barth et al. 2008:469; Sun et al. 2011:847). Lang et al. (2006:260) expected the capital intensity of a firm represented by asset turnover to affect earnings management. Larger firms were expected to have higher earnings quality, probably as a result of better internal controls (Armstrong et al. 2010:45; Dechow et al. 2010:380). Lastly, cash flows from operations were expected to affect accounting amounts (Lang et al. 2006:261).

$$ESV_{it} = \beta_0 + \beta_1 Lev_{it} + \beta_2 Growth_{it} + \beta_3 Eissue_{it} + \beta_4 Dissue_{it} + \beta_5 Turn_{it} + \beta_6 Size_{it} + \beta_7 CF_{it} + \varepsilon_{it} \quad (14)$$

where  $ESV$  stands for  $\Delta NI$ ,  $\Delta CF$ ,  $CF$  or  $ACC$ ;  $Lev$  is total liabilities at the end of the year divided by total book value of equity at the end of the year;  $Growth$  is percentage change in sales;  $Eissue$  is percentage change in common stock;  $Dissue$  is percentage change in total liabilities;  $Turn$  is sales divided by total assets at the

end of the year; *Size* is the natural logarithm of market value of equity at the end of the year; *CF* is annual operating cash flows scaled by total assets at the end of the year.<sup>80</sup> I included industry fixed effects (Barth et al. 2008:483; Ahmed et al. 2013:1351).

In order to calculate my three earnings proxies, I estimated Equation (14) pooling all firm-year observations in the pre- and the post-adoption periods. I retained the residuals from Equation (14) (indicated with  $\hat{r}$ ) for each of my earnings smoothing variables (Lang et al. 2006:262; Barth et al. 2008:482; Ahmed et al. 2013:1351). I calculated my first earnings smoothing proxy, variability of change in net income ( $\Delta NI^r$ ), as the variance of residuals using  $\Delta NI$  as the dependent variable in Equation (14) for each South African firm in the pre- and post-adoption periods respectively. My second earnings smoothing proxy was calculated in a manner similar to the first, but for the second proxy I used the ratio of the variability of change in net income ( $\Delta NI^r$ ) to the variability of change in cash flows ( $\Delta CF^r$ ). Higher values for these two proxies suggest more variability, which is consistent with less earnings smoothing.

My third earnings smoothing proxy, the correlation between accruals and cash flows, was the Spearman correlation between the residuals using *ACC* as the dependent variable ( $ACC^r$ ) in Equation (14) and the residuals using *CF* as the dependent variable ( $CF^r$ ). A less negative correlation suggests less earnings smoothing.

Following Barth et al. (2008:481), Ahmed et al. (2013:1352) and Capkun et al. (2016:360), I performed a t-test based on the empirical distribution of the differences to test for significant differences between the pre- and post-IFRS adoption period for each of the three income smoothing proxies. To obtain the empirical distribution for each proxy, I randomly selected firm observations, with replacement, to create samples that are equal in size to my original samples. This was repeated 1 000 times. For each sample I calculated the difference for the specific measure between the two periods. I then performed a t-test on the empirical distribution of the differences to evaluate whether the difference between the two periods is significant.

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<sup>80</sup> I did not include *CF* as a control variable in Equation (14) when *CF* and *ACC* were my dependent variables.

### 7.4.3 Managing earnings towards a target

For my second earnings management measure, namely managing towards a target, my proxy was the frequency of small positive earnings. To determine this proxy, I estimated the following ordinary least squares regression:<sup>81</sup>

$$SPOS_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Lev_{it} + \beta_3 Growth_{it} + \beta_4 Eissue_{it} + \beta_5 Dissue_{it} + \beta_6 Turn_{it} + \beta_7 Size_{it} + \beta_8 CF_{it} + \varepsilon_{it} \quad (15)$$

where *SPOS* (my proxy for managing towards small positive earnings) is an indicator variable equal to one if the net income before extraordinary items scaled by total assets at the end of the year was between 0 and 0.01, and zero otherwise (Lang et al. 2006:262; Barth et al. 2008:485; Ahmed et al. 2013:1352), and *Post* refers to the period after the adoption of IFRS, and takes a value of one for the post-IFRS adoption period (2006 to 2008), and zero otherwise.<sup>82</sup> A significant negative coefficient for *Post* indicates less earnings management in the post-adoption period, as it shows that small positive earnings occurred less often in this period. The other variables controlled for factors other than the adoption of IFRS that might have influenced firms to manage earnings. These variables are consistent with Equation (14). I included industry fixed effects (Ahmed et al. 2013:1352). I estimated standard errors using bootstrapping (1 000 repetitions)<sup>83</sup> and clustered them by firm and year.<sup>84</sup> Two-way clustering of standard errors allows for the correction of both cross-sectional and time-series dependencies (Gow et al. 2010:483).

<sup>81</sup> In line with Lang et al. (2006:262), Barth et al. (2008:485) and Chen et al. (2010:256), I estimated Equations (15) and (16) using an ordinary least squares model, rather than a logit model. According to Barth et al. (2008:485) and Chen et al. (2010:256), Green (1993) reports that logit models can be sensitive to heteroscedasticity. Using a logit model for Equations (15) and (16) did not change my inferences.

<sup>82</sup> Similar to Ahmed et al. (2013:1352) and Chen et al. (2010:231), I used *SPOS* as my dependent variable and *Post* as my independent variable. Using *Post* as my dependent variable and *SPOS* as my independent variable similar to Barth et al. (2008:485) did not change my inferences.

<sup>83</sup> Using 10 000 repetitions did not change my inferences.

<sup>84</sup> Gow, Ormazabal and Taylor (2010:490) warn against violation of the asymptotic properties of clustering when the number of time periods is small. They recommend using methods identified in econometrics literature to address this concern, such as bootstrapping methods, as described by Cameron, Gelbach and Miller (2008).

#### 7.4.4 Timely loss recognition

My final proxy for accounting quality was large negative net income, *LNEG*, which I used to measure timely loss recognition. As for Equation (15), I estimated the following ordinary least squares regression:

$$LNEG_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Lev_{it} + \beta_3 Growth_{it} + \beta_4 Eissue_{it} + \beta_5 Dissue_{it} + \beta_6 Turn_{it} + \beta_7 Size_{it} + \beta_8 CF_{it} + \varepsilon_{it} \quad (16)$$

where *LNEG* is an indicator variable equal to one if the net income before extraordinary items scaled by total assets at the end of the year was less than -0.2, and zero otherwise (Lang et al. 2006:263). A significant positive coefficient for *Post* indicates more timely recognition of losses in the post-adoption period, as it indicates that large losses occur more often. The remainder of the variables were the same as those defined in Equations (14) and (15). I included industry fixed effects (Ahmed et al. 2013:1352). Standard errors were estimated using the bootstrap method (1 000 repetitions)<sup>85</sup> and were clustered by firm and year.

In the next two sections, I present my sample and my results based on the research design described above.

### 7.5 Sample

To evaluate whether accounting quality in South Africa changed from the pre-IFRS adoption period (2002 to 2004) to the post-IFRS adoption period (2006 to 2008), I started with the 167 unique South African firms identified for the comparability samples as I outlined in Section 5.2. Consistent with my comparability sample, only firms for which data were available to calculate the accounting quality proxies for the three years before IFRS adoption (2002 to 2004) and the three years after IFRS adoption (2006 to 2008) were included in my sample. I excluded two firms that did not have all the required data for the entire period under review. The remaining sample consisted of 990 firm-year observations for 165 South African firms (six observations per firm). Similar to Barth et al. (2008:487) and consistent with my

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<sup>85</sup> Using 10 000 repetitions did not change my inferences.



comparability tests, I winsorized all continuous variables at the top and bottom five per cent to limit the impact of outliers.

## 7.6 Descriptive statistics

The descriptive statistics for the accounting quality variables are reported in Table 7.1. The mean value and standard deviation are reported separately for the pre-adoption and the post-adoption period for each of the test and control variables. I also report the difference in the mean values from the pre-adoption to the post-adoption period and indicate whether the mean values differ significantly between the two periods.

The first three test variables,  $\Delta NI$ ,  $\Delta CF$  and  $CF$ , all decreased from the pre-adoption to the post-adoption period, with  $\Delta NI$  and  $CF$  showing a significant decrease. Accruals increased significantly (to become less negative) from -0.0418 in the pre-adoption period, to -0.0061 in the post-adoption period. The increase in accruals could suggest more income smoothing, as managers compensated for lower cash flows. Firms managed less towards small positive earnings,  $SPOS$ , in the post-adoption period, but the decrease is statistically insignificant. By contrast, firms reported large negative net income,  $LNEG$ , less frequently in the post-adoption period, which suggests less timely recognition of losses and lower accounting quality. These findings are preliminary, and do not take into consideration the effect of control variables.

The descriptive statistics for the control variables are also included in Table 7.1. The control variables suggest that sales growth ( $Growth$ ) was significantly higher in the post-adoption period. Moreover, firms issued more debt and equity instruments in the post-adoption period – both  $Eissue$  and  $Dissue$  were significantly higher. Firms were significantly larger ( $Size$ ) in the post-adoption period, but asset turnover ( $Turn$ ) was significantly lower. There is no significant difference in leverage ( $Lev$ ) between the two periods. In the next section, I evaluate accounting quality in South Africa after the adoption of IFRS, taking the control variables into consideration.

## 7.7 Results

The results for my accounting quality measures are presented in Tables 7.2 to 7.4. Table 7.2 presents the earnings smoothing measures for South African firms in the pre-adoption and post-adoption periods. The results for managing towards a target (small positive earnings) are presented in Table 7.3. Timely loss recognition (large negative net income) is presented in Table 7.4.

### 7.7.1 Earnings smoothing

The results in Table 7.2 show no significant change in income smoothing by South African firms from the pre-IFRS adoption period to the post-IFRS adoption period. The first income smoothing proxy, namely variability of change in net income ( $\Delta NI'$ ), decreased from 0.0135 in the pre-adoption period to 0.0091 in the post-adoption period. Similarly, the ratio of the variability of change in net income ( $\Delta NI'$ ) to the variability of change in cash flows ( $\Delta CF'$ ) decreased from 10.5008 to 7.1173. Lower variability suggests more income smoothing. The third income smoothing proxy, namely correlation between accruals ( $ACC'$ ) and cash flows ( $CF'$ ), also decreased (became more negative) from -0.5261 to -0.5265. None of the differences between the two periods are significant, which suggests that the accounting quality remained unchanged from the pre-adoption to the post-adoption periods.

### 7.7.2 Managing towards a target

My results for managing towards a target are presented in Table 7.3. I first discuss the control variables in Equation (15) before turning to the main variable of interest. I found a significant positive association between financial leverage ( $Lev$ ) and small positive earnings ( $SPOS$ ), suggesting that firms with higher financial leverage were more likely to manage towards a target. I found a significant negative association between debt issues ( $Dissue$ ), asset turnover ( $Turn$ ), cash flows from operations ( $CF$ ) and small positive earnings ( $SPOS$ ). These results suggest that firms issuing less debt that had lower turnover of assets and lower cash flows from operations were more likely to manage towards small positive earnings. I found no significant association between sales growth ( $Growth$ ), equity issue ( $Eissue$ ), firm size ( $Size$ ), and small positive earnings ( $SPOS$ ).

Turning to my variable of interest, a significant negative coefficient for *Post* in Equation (15) would indicate less earnings management (higher accounting quality) in the post-adoption period, because it would indicate that small positive earnings occurred less often. However, I found an insignificant coefficient for *Post*. This finding suggested that there was no change in firms' managing earnings towards small positive earnings from the pre-adoption to the post-adoption period.

### **7.7.3 Timely loss recognition**

My results for timely loss recognition are presented in Table 7.4. I first discuss the control variables in Equation (16), and then turn to the main variable of interest. I found a significant positive association between financial leverage (*Lev*) and large negative earnings (*LNEG*), showing that firms with higher financial leverage were more likely to recognise losses in a timely manner. There was a significant negative association between sales growth (*Growth*), firm size (*Size*), cash flows from operations (*CF*) and large negative earnings (*LNEG*). These significant negative associations suggest that firms that had lower sales growth, were smaller in size and had lower cash flows from operating activities were more likely to recognise losses in a timely manner. I found no significant association between equity issue (*Eissue*), debt issue (*Dissue*), asset turnover (*Turn*) and large negative earnings (*LNEG*).

Consistent with the results for the income smoothing proxies and managing towards a target proxy, the results for timely loss recognition in Table 7.4 show no significant change from the pre-adoption to the post-adoption period. In Equation (16), where I evaluated the recognition of large negative net income (*LNEG*), the variable of interest, *Post*, had an insignificant coefficient. The insignificant coefficient for *Post* in Equation (16) suggests that there was no change in the timeliness of loss recognition from the pre-adoption period to the post-adoption period.

The above results suggest that there was no significant change in accounting quality for South African firms from the period before IFRS adoption to the period after IFRS adoption. These results are consistent with the findings by Zeghal et al. (2012:22) that accounting quality did not change after the mandatory adoption of IFRS for firms that reported in terms of local GAAP that were substantially converged with IFRS.

These results also support the argument that accounting quality did not change when the use of IFRS was mandated for all listed South African firms. This argument was made because South African firms reported in terms of SA GAAP before the mandatory adoption of IFRS (at the time of IFRS adoption, SA GAAP was an exact replica of IFRS) and there were no substantive changes in enforcement.

Based on the findings by Capkun et al. (2016:380) that changes made to IFRS after 2005 are associated with increased earnings management (decline in accounting quality), one would expect to find that earnings management increased for South African firms after IFRS adoption. Four of the five accounting quality proxies in my study showed a decrease in accounting quality consistent with Capkun et al.'s (2016:380) argument, but none of these decreases were significant.<sup>86</sup> This finding supports the argument that the South African setting is unique in that accounting quality remained essentially unchanged after IFRS adoption.

## 7.8 Conclusion

I have argued throughout my study that the South African accounting environment provides a unique setting to evaluate whether the adoption of IFRS is associated with changes in the comparability of financial statements, and to determine what the source(s) of any comparability changes may be. My results in this chapter indicate that the accounting quality of South African firms did not change significantly after IFRS adoption, consistent with the fact that SA GAAP was identical to IFRS when the use of IFRS became mandatory for listed South African firms.

It is therefore unlikely that the additional increase in the comparability of financial statements of South African firms, compared to the comparability of the financial statements of non-adopter firms (using my earnings-return measure, as documented in Section 6.4.4) was related to changes in accounting quality as a result of the adoption of IFRS, or as a result of changes made to IFRS standards. Hence, the

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<sup>86</sup> Including *Aud*, *Numex* and *Close* as additional control variables in Equation (14), (15) and (16), in line with Barth et al. (2008:482), changed the significance for one of the five proxies. The correlation between accruals (*ACC*) and cash flows (*CF*) decreased (became more negative) significantly from the pre-adoption to the post-adoption period, suggesting more income smoothing. However, this finding is based on a smaller sample, as the data for *Close* were only available for some of the companies.

additional increase in comparability is more consistent with network benefits and “label” benefits after the adoption of IFRS by South Africa. Using the IFRS “label” would reduce concerns that investors might have regarding carve-outs, additional provisions, changes as a result of translation or timing differences when SA GAAP was based on IFRS. The elimination of such concerns makes it plausible that the markets’ perceptions of the comparability of South African firms’ financial statements improved.



**Table 7.1:**  
**Descriptive statistics: Accounting quality variables**

	Pre-adoption (n=495)		Post-adoption (n=495)		Post – Pre	
	Mean	Standard deviation	Mean	Standard deviation	Mean difference	t-test
<b>Test variables</b>						
<i>ΔNI</i>	0.0141	0.1055	0.0033	0.0924	-0.0108	*
<i>ΔCF</i>	0.0073	0.0949	-0.0006	0.0839	-0.0079	
<i>CF</i>	0.0944	0.1005	0.0838	0.0942	-0.0106	*
<i>ACC</i>	-0.0418	0.0980	-0.0061	0.0897	0.0356	***
<i>SPOS</i>	0.0465	0.2107	0.0343	0.1823	-0.0121	
<i>LNEG</i>	0.0707	0.2566	0.0343	0.1823	-0.0364	**
<b>Control variables</b>						
<i>Lev</i>	2.2373	3.2724	2.1797	3.2660	-0.0575	
<i>Growth</i>	0.1172	0.2801	0.1956	0.2872	0.0784	***
<i>Eissue</i>	0.0317	0.1037	0.0471	0.1128	0.0154	**
<i>Dissue</i>	0.1276	0.3986	0.2823	0.4571	0.1547	***
<i>Turn</i>	1.3033	0.8925	1.1395	0.8698	-0.1638	***
<i>Size</i>	5.7978	2.3676	6.8712	2.2557	1.0734	***

\*, \*\*, \*\*\* denotes significance at a ten, five and one per cent level, respectively, all two-tailed.

Table 7.1 reports the descriptive statistics for the test variables and control variables used to determine my accounting quality proxies. The summary statistics are reported separately for the pre-adoption (2002 to 2004) and post-adoption (2006 to 2008) periods, as well as the difference in the mean values. The t-test determines whether the mean values between the pre-adoption and the post-adoption periods differed significantly from each other.

All variables are defined in Appendix C.

All continuous variables are winsorized at the top and bottom five per cent.

**Table 7.2:**

**Comparison of earnings smoothing measures for South African firms prior to and after IFRS adoption**

$$ESV_{it} = \beta_0 + \beta_1 Lev_{it} + \beta_2 Growth_{it} + \beta_3 Eissue_{it} + \beta_4 Dissue_{it} + \beta_5 Turn_{it} + \beta_6 Size_{it} + \beta_7 CF_{it} + \epsilon_{it} \quad (14)$$

	Pre-adoption (n=495)	Post-adoption (n=495)	p-values
Variability of $\Delta NI^r$	0.0135	0.0091	0.1350
Variability of $\Delta NI^r$ over $\Delta CF^r$	10.5008	7.1173	0.6730
Correlation of $ACC^r$ and $CF^r$	-0.5261	-0.5265	0.5620

\*, \*\*, \*\*\* denotes significance between the pre- and post-adoption periods at a ten, five and one per cent level, respectively, all two-tailed.

Table 7.2 reports the earnings smoothing measures for South African firms separately for the pre-adoption (2002 to 2004) and post-adoption (2006 to 2008) periods. Variables indicated with a (<sup>r</sup>) are the residuals from the regression of my earnings smoothing variables (*ESV*) on a number of control variables including industry fixed effects, using Equation (14). Variability of  $\Delta NI^r$  ( $\Delta CF^r$ ) is the variance of the residuals from Equation (14). Variability of  $\Delta NI^r$  over  $\Delta CF^r$  is the variability of  $\Delta NI^r$  divided by variability of  $\Delta CF^r$ . Correlation of  $ACC^r$  and  $CF^r$  is the Spearman correlation between the residuals from Equation (14) with  $ACC$  and  $CF$  as the *ESV*, respectively. All other variables are defined in Appendix C. Using a bootstrapping approach, replicated 1 000 times, I used a t-test based on the empirical distribution of the differences to test for significant differences between the pre-adoption and post-adoption periods. The p-values are reported in Column 4. All continuous variables are winsorized at the top and bottom five per cent.



**Table 7.3:**  
**Managing towards a target regression**

$$SPOS_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Lev_{it} + \beta_3 Growth_{it} + \beta_4 Eissue_{it} + \beta_5 Dissue_{it} + \beta_6 Turn_{it} + \beta_7 Size_{it} + \beta_8 CF_{it} + \varepsilon_{it} \quad (15)$$

	<b>SPOS</b> <b>n=990</b>
<i>Intercept</i>	0.0174 (0.83)
<i>Post</i>	-0.0099 (-0.93)
<i>Lev</i>	0.0194 (3.24) ***
<i>Growth</i>	0.0254 (0.87)
<i>Eissue</i>	-0.0009 (-0.02)
<i>Dissue</i>	-0.0246 (-3.84) ***
<i>Turn</i>	-0.0167 (-1.73) *
<i>Size</i>	-0.0030 (-1.03)
<i>CF</i>	-0.1136 (-1.92) *
Fixed effects	Industry
Overall F-statistic	(2.93) ***
Adjusted R <sup>2</sup>	0.1232

\*, \*\*, \*\*\* denotes significance at a ten, five and one per cent level, respectively, all two-tailed.

Table 7.3 reports the ordinary least squares regression results for Equation (15) using *SPOS* as the dependent variable. *SPOS* is the proxy for managing towards a target. *SPOS* is an indicator variable equal to one if net income before extraordinary items scaled by total assets at the end of the year is between 0 and 0.01, and zero otherwise. *Post* is an indicator variable equal to one for the post-IFRS adoption period (2006 to 2008), and zero otherwise. All other variables are defined in Appendix C. The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by firm and year. All continuous variables are winsorized at the top and bottom five per cent.

**Table 7.4:**  
**Timely loss recognition regression**

$$LNEG_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Lev_{it} + \beta_3 Growth_{it} + \beta_4 Eissue_{it} + \beta_5 Dissue_{it} + \beta_6 Turn_{it} + \beta_7 Size_{it} + \beta_8 CF_{it} + \varepsilon_{it} \quad (16)$$

	<b>LNEG</b> <b>n=990</b>
<i>Intercept</i>	0.3349 (4.34) ***
<i>Post</i>	-0.1173 (-0.78)
<i>Lev</i>	0.0079 (2.35) **
<i>Growth</i>	-0.0889 (-2.98) ***
<i>Eissue</i>	0.0002 (0.00)
<i>Dissue</i>	-0.0004 (-0.01)
<i>Turn</i>	-0.0001 (-0.01)
<i>Size</i>	-0.0194 (-4.38) ***
<i>CF</i>	-0.3429 (-3.34) ***
Fixed effects	Industry
Overall F-statistic	(4.23) ***
Adjusted R <sup>2</sup>	0.1616

\*, \*\*, \*\*\* denotes significance at a ten, five and one per cent level, respectively, all two-tailed.

Table 7.3 reports the ordinary least squares regression results for Equation (16) using *LNEG* as the dependent variable. *LNEG* is an indicator variable equal to one if the net income before extraordinary items scaled by total assets at the end of the year is less than -0.2, and zero otherwise. *Post* is an indicator variable equal to one for the post-IFRS adoption period (2006 to 2008), and zero otherwise. All other variables are defined in Appendix C.

The t-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by firm and year.

All continuous variables are winsorized at the top and bottom five per cent.

## CHAPTER 8: CONCLUSION

### 8.1 Introduction

In my study, I investigated whether there was a change in the comparability of financial statements after mandatory IFRS adoption in a country where local GAAP was of similar quality to IFRS. I also explored the sources of such changes.

Regulators in a number of countries have claimed that one of the benefits of mandatory IFRS adoption is increased comparability of financial statements (European Council 2002; Ludolph 2006; SEC 2007:12). Even in countries with few differences between local GAAP and IFRS, the cross-country comparability of financial statements is expected to increase (Ludolph 2006). This raises the question of the source of such benefits, because, assuming that IFRS is a high quality accounting framework, firms in countries with few pre-existing differences between local GAAP and IFRS are already reporting in terms of high quality standards.

To explore this question, my study used South African data. I deemed South Africa to be a suitable setting, because SA GAAP was already identical with IFRS at the time when IFRS adoption in South Africa became mandatory (SAICA 2006), and because South Africa did not make any substantial changes in enforcement at the time of IFRS adoption (Christensen et al. 2013:155). This provides an opportunity to focus on the potential benefits of IFRS adoption that are not related to accounting quality or the enforcement of standards.

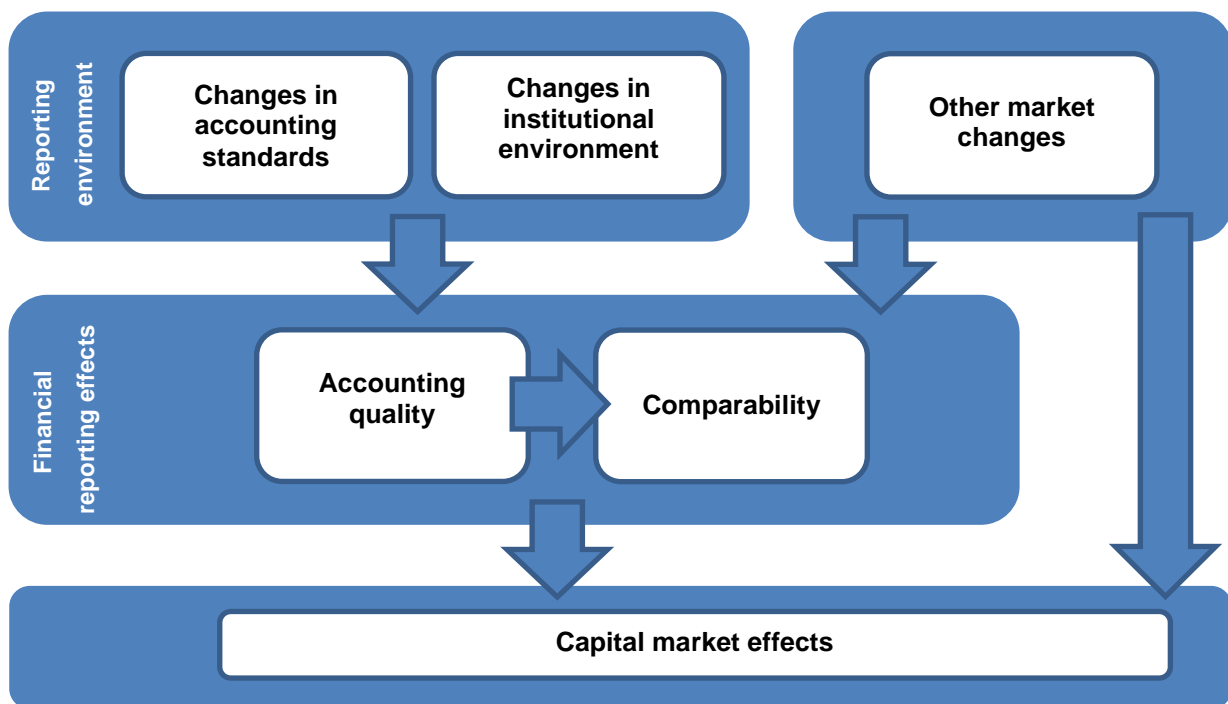
In my study, I have argued that the sources of any increase in the comparability of financial statements that occurred concurrent with the adoption of IFRS in South Africa can be classified into two categories, namely (1) IFRS-related sources; and (2) sources unrelated to IFRS. The IFRS-related sources would be (1) a perceived increase in the comparability of South African firms' financial statements because the IFRS "label" is better known than SA GAAP; and (2) network benefits arising from the adoption of IFRS by other countries. I did not specifically identify the sources unrelated to IFRS adoption, but these could include changes made to IFRS,

convergence to IFRS, improvements to accounting standards by non-adopters and enforcement changes (Christensen et al. 2013), or other market changes, such as other regulatory changes, changes in technology, and other market shocks (Leuz & Wysocki 2016:585), as well as increased globalisation (Barth et al. 2012:88).

## 8.2 Background to my study

To evaluate the findings of my study, I repeat Figure 3.1 below for the convenience of readers. This figure presents the possible sources of financial reporting effects and capital market effects.

**Figure 3.1:**  
**Consequences of the adoption of IFRS**



Researchers argue that changes in accounting standards such as the adoption of IFRS are associated with changes in accounting quality (Barth et al. 2008; Chen et al. 2010) or comparability (Barth et al. 2012; Yip & Young 2012; Cascino & Gassen 2015), which in turn are expected to be associated with capital market effects (Daske et al. 2008; Li 2010). Others claim that changes in the institutional environment, such as enforcement changes, rather than changes in standards, are the sources of financial reporting and capital market effects (Christensen et al. 2013). Some studies

suggest that comparability changes rather than quality are the drivers behind capital market effects (Ahmed et al. 2013; Neel 2016), while other studies posit that an increase in the quality of the standards themselves is the likely driver behind an increase in comparability (Barth et al. 2012; Yip & Young 2012). Inconsistency between the findings on the financial reporting effects and capital market effects in IFRS adoption studies raises two questions: Are the capital market effects documented in IFRS adoption studies associated with the adoption of IFRS? Or are the documented capital market effects consistent with other market changes unrelated to IFRS adoption? (Brüggemann et al. 2013; Leuz & Wysocki 2016). In my study, I distinguish between sources that relate to the IFRS adoption decision, and ones unrelated to the IFRS adoption decision.

The adoption of IFRS at a country level can be either a comprehensive change in accounting standards, or a mere “label” change. I consider IFRS adoption to involve a comprehensive change if local GAAP differs substantially from IFRS. I consider it to involve only a “label” change if local GAAP was the same as IFRS prior to the adoption of IFRS. I do not refer to a “label” change in the negative sense in which the term is used in the literature, and where it refers to firms or countries that claim to report under IFRS but in fact continue with previous low quality reporting standards and practices (Daske et al. 2013). In my study, I look at a “label” change from a positive perspective, and refer to firms that continue to use the same high quality accounting standards under a “label” that is better known globally.

My use of South Africa as a setting to evaluate changes in the comparability of financial statements after the adoption of IFRS enabled me to eliminate changes in enforcement (the institutional environment) and changes in accounting quality with the adoption of IFRS as sources of comparability changes. However, given that comparability of one firm’s financial statement is measured relative to the financial statement of another firm, these changes may still be relevant in relation to the comparable firm, if that firm is domiciled in another country. In order to identify the adoption of IFRS by other countries as a source of changes in the comparability of financial statements, I evaluated comparability between the financial statements of South African firms and those of other mandatory IFRS adopters separately from the comparability of the financial statements of South African firms and those of non-

adopters. Holding all other factors constant, I proposed that the comparability between the financial statements of South African firms and those of other mandatory adopters increased after the adoption of IFRS because the financial statements of the other adopters became more similar to those of firms in South Africa (Hypothesis 1). I also proposed that the comparability between the financial statements of South African firms and those of non-adopters remain unchanged, because South African firms were effectively already applying IFRS (Hypothesis 2, which was stated in the null form).

### **8.3 Findings**

My main comparability findings are presented in Chapter 5. Using an earnings-return measure of comparability, I found a significant increase in the comparability between the financial statements of South African firms and those of both adopters and non-adopters. These findings are consistent with Hypothesis 1, but led me to reject Hypothesis 2 (that the comparability between the financial statements of South African firms and those of non-adopters did not change after the adoption of IFRS). My findings using the second measure of comparability, the accruals-cash flow measure, are consistent with both my hypotheses. I found some evidence of a significant increase in the comparability between the financial statements of South African firms and those of adopters, but not between the financial statements of South African firms and those of non-adopters.

To evaluate these findings, it is important to understand the difference between the two measures. The earnings-return measure uses both market data (returns) and accounting amounts (earnings) to measure comparability. The accruals-cash flow measure uses only accounting amounts (accruals and cash flow). Hence, the earnings-return measure includes the markets' perceptions regarding comparability, whereas the accruals cash flow only includes changes in comparability based on accounting amounts.

With regard to comparability between the financial statements of South African firms and those of non-adopters, only the change identified using the earnings-return measure was statistically significant. This suggests that the market viewed the

comparability of the financial statements of South African firms differently, although the comparability of the accounting amounts remained unchanged. The lack of evidence of a statistically significant change, using the accruals-cash flow measure, suggests that convergence or other changes to non-adopters' standards, enforcement changes by non-adopters, or changes made to IFRS were not likely to have been the drivers of the comparability changes, using the earnings-return measure of comparability. I make this argument because all these changes are likely to have had a direct effect on accounting amounts. Therefore, if the comparability of the accounting amounts did not change, the increase in comparability as perceived by the markets is consistent with either IFRS "label" benefits for South African firms, or alternatively with concurrent market changes unrelated to IFRS adoption.

There is evidence based on both comparability measures that comparability between the financial statements of South African firms and those of adopters increased significantly. The increase (based on the accruals-cash flow measure) suggests that accounting amounts became more similar. Given that the accounting amounts for South African firms did not change significantly,<sup>87</sup> this increase in comparability is consistent with changes in the accounting amounts of the comparable IFRS-adopting firm(s). It is also possible that enforcement changes occurred around the same time in other IFRS-adopting countries. However, I did not attempt to separate enforcement and changes in accounting standards. Considering the significant increase in the comparability between the financial statements of South African firms and those of adopters (using the earnings-return measure), it is likely that the market assessed the comparability of financial statements in South Africa differently after IFRS adoption as a result of the joint effect of network benefits and IFRS "label" benefits in South Africa. However, the possibility that other unrelated market changes at the time of the IFRS adoption affected comparability cannot be excluded.

To probe the sources of comparability changes after the adoption of IFRS further, I performed a number of additional analyses in Chapter 6. Firstly, using the accruals-cash flow measure, I found an association between the extent to which the pre-

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<sup>87</sup> The lack of significant change in the accounting amounts reported by South African firms and those reported by non-adopters (using the accruals-cash flow measure) also suggests that accounting amounts for South African firms did not change significantly.



adoption GAAP differences between two firms were eliminated with the adoption of IFRS, and the increase in the comparability of their financial statements. I did not find a similar association using the earnings-return measure. The accruals-cash flow results support my finding in Chapter 5 that the adoption of IFRS by a comparable adopting firm and the resulting changes in their accounting amounts were one of the likely drivers of the increase in the comparability between the financial statements of South African firms and those of other mandatory adopters. The absence of a significant association between the extent of the pre-adoption GAAP differences eliminated and the change in comparability using the earnings-return measure suggests that factors other than the extent of the GAAP differences were the drivers of the increase in comparability. As argued previously, these factors are likely to have been the “label” change to IFRS by South Africa, or other unrelated market changes around the time of the adoption of IFRS.

In my second set of analyses, I considered the possibility that differences in comparability changes amongst different industries could have affected my results. One such industry that is particularly relevant in South Africa and that is subject to different IFRS requirements is the mining industry. I found that the change in the comparability of the financial statements of South African mining firms with those of both adopter and non-adopter mining firms was indeed different to the change in comparability found in the other industries. However, excluding the mining industry firms from my sample did not change the inferences I made in Chapter 5.

In my last set of additional analyses in Chapter 6, I considered the possibility that other market changes around the time of the adoption of IFRS could explain the increase in comparability after IFRS adoption. Firstly, using my earnings-return measure, I found a significant increase in the comparability between the financial statements of non-adopters and those of both adopters and other non-adopters, after the mandatory adoption of IFRS by a number of countries in 2005. I did not find any significant increases using the accruals-cash flow measure. These results suggest that market changes unrelated to the IFRS adoption decision in 2005 could explain changes in comparability and possibly other capital market benefits worldwide.

Secondly, to evaluate whether the changes in the comparability of the financial statements of South African firms were related to the IFRS “label” change in South Africa, I evaluated comparability changes between the financial statements of South African firms and those of adopters relative to the comparability changes between the financial statements of non-adopters and those of adopters. The absence of incremental benefits for South African firms compared to non-adopters, specifically relating to the earnings-return measure, would suggest that there was no benefit from the “label” change to IFRS. My findings are consistent with “label” benefits’ arising from the adoption of IFRS, because there was a significantly higher increase in the comparability measured using the earnings-return measure between the financial statements of South African firms and those of other adopters, relative to the comparability of the financial statements of non-adopter firms and those of other adopters. The lack of a significant difference using the accruals-cash flow measure suggests that the additional benefit using the earnings-return measure is consistent with “label” benefits as a source of comparability changes, and that the change was not driven only by changes in the comparability of accounting amounts.

In Chapter 7, I tested directly whether the accounting quality of the financial statements of South African firms changed after mandatory IFRS adoption. I aimed to establish whether accounting quality is a plausible explanation for the incremental increase in comparability for South African firms. Consistent with the fact that SA GAAP was the same as IFRS before mandatory IFRS adoption in South Africa, I did not find a significant change in the accounting quality of South African firms’ financial statements after the adoption of IFRS. This provides evidence that accounting quality changes are an unlikely source of the comparability increases found after the adoption of IFRS in South Africa.

To conclude, I found that the comparability between the financial statements of South African firms and those of both adopters and non-adopters increased after the mandatory adoption of IFRS in 2005. The likely sources of the increase are changes in the accounting amounts of comparable firms in other countries that adopted IFRS (network benefits), the “label” change to IFRS by South Africa, and other unrelated market changes that occurred around the time of the adoption of IFRS. Furthermore,

I found no evidence of a change in the accounting quality in South Africa after the mandatory adoption of IFRS.

#### **8.4 Contribution**

My study contributes to the growing body of IFRS adoption literature in a number of ways. It is the most comprehensive investigation on the sources of IFRS comparability benefits to date. It extends previous comparability studies by Barth et al. (2012), Yip and Young (2012), Cascino and Gassen (2015) and Neel (2016) by focusing on a single country where there were no differences between local GAAP and IFRS. In addition, using a different setting than previous single country studies, my study complements studies that investigated expected (Joos & Leung 2012) and actual (Brochet et al. 2013) comparability benefits noted with the adoption of IFRS in a country with few differences between local GAAP and IFRS, where accounting quality is already considered to be high. In particular, my study identified likely sources of such comparability benefits and considered both sources related to IFRS adoption and sources unrelated to IFRS adoption.

My study contributes to the literature by providing evidence that it is likely that other concurrent market changes around the time of IFRS adoption contributed to a global increase in comparability. This evidence supports the possibility that market changes unrelated to the IFRS decision could explain the inconsistencies found in the IFRS adoption literature between financial reporting effects and capital market effects (Brüggemann et al. 2013:19; Leuz & Wysocki 2016:592).

Focusing on the South African setting, I provide evidence of an incremental increase in the comparability of financial statements based on IFRS relative to the increase in the comparability of the financial statements of non-adopters around the time of IFRS adoption. This finding suggests that there is an increase in the comparability of financial statements in addition to the increase attributable to other concurrent market changes. This finding provides evidence consistent with an increase in comparability after the adoption of IFRS, even in a country where there were no differences between local GAAP and IFRS.

My study is the first study to find evidence of benefits arising from the “label” change to IFRS in a country that already applied high quality accounting standards. I found an increase in the comparability of the financial statements of South African firms which is likely to have stemmed from the elimination of possible concerns that investors might have had regarding carve-outs, additional provisions, changes as a result of translation or timing differences when countries apply local GAAP based on IFRS, rather than IFRS.

My study contributes to the previous literature on network benefits arising from the adoption of IFRS (Meeks & Swann 2009:194; Hail et al. 2010:358; Ramanna & Sletten 2014:1517). My study provides evidence of network benefits as a source of changes in the comparability of financial statements after IFRS adoption by other countries. As more firms globally use the same accounting standards, comparability benefits might occur even in a country that has not made changes to its accounting standards (Barth et al. 1999:221). It also supports the findings by Barth et al. (2012:88) that comparability increases as the mandatory use of IFRS becomes more widespread.

Even though my study does not directly link the increase in comparability to capital market effects, it supports the suggestions by Ahmed et al. (2013:1369) and findings by Neel (2016:1) that changes in comparability rather than quality could explain some of the capital market benefits with the adoption of IFRS. Although the studies by Barth et al. (2012:90) and Yip and Young (2012:1767) suggest that an increase in accounting quality is a potential source of an increase in comparability after IFRS adoption, my study found no related change in accounting quality after IFRS adoption in South Africa. However, my study does not suggest that quality is not important, because the quality of accounting standards in South Africa was already considered to be high even before IFRS adoption.

Lastly, my study provides evidence on the debate on whether changes in accounting standards or changes to the enforcement of standards lead to financial reporting or capital market effects (Christensen et al. 2013:147; Barth & Israeli 2013:178). I found an increase in the comparability of financial statements after mandatory IFRS adoption in South Africa, where there were no substantive changes in enforcement

(Christensen et al. 2013:155). Considered along with the findings by Christensen et al. (2013:147), my results support the conclusion by Barth and Israeli (2013:178) that both changes in enforcement and the adoption of IFRS are associated with benefits.

## **8.5 Implications**

My study has provided evidence of the benefits of adopting IFRS even in countries that have substantially converged with IFRS even before IFRS adoption. These findings would be relevant to countries such as China and India, two large countries that do not yet require IFRS, but already apply accounting standards that are substantially converged with IFRS (IFRS Foundation 2016:10).

Secondly, my study has provided evidence consistent with a stated objective in the mission statements of the IFRS Foundation and the IASB (2015), namely the objective to increase transparency in financial markets through increased comparability of financial statements. My study has also provided empirical evidence to the JSE and SAICA that one of the proposed benefits of IFRS adoption in South Africa (Ludolph 2006), namely increased comparability, has indeed materialised.

Thirdly, my study suggests that countries that already apply IFRS can benefit from the adoption of IFRS by other countries. This implies that increased use of IFRS globally will benefit all jurisdictions that already apply IFRS, and not just the countries that make the decision to adopt IFRS. This finding could suggest that the global benefits could be substantial if the US were to decide to adopt IFRS in future.

## **8.6 Limitations**

A number of limitations should be considered in evaluating the contribution and implications of my study. Firstly, I considered comparability from the point of view of a single country, South Africa, which has unique institutional features. Using a single country limits the possibilities of extending the results to firms in other countries (Barth et al. 2012:72).

Secondly, although I have argued that South Africa did not make any changes to enforcement around the time of the mandatory adoption of IFRS, I did not distinguish

between mandatory adoption of IFRS and any institutional changes at the time. This is relevant to my conclusion that comparability increased as other countries adopted IFRS. My study therefore assumed that when standards are adopted, they are also enforced.

Thirdly, while my study suggests that other concurrent market changes unrelated to IFRS adoption are likely to have increased comparability worldwide, I cannot rule out the possibility that other concurrent market changes specific to South Africa affected the comparability of the financial statements of South African firms. Furthermore, although my study suggests the effects of other concurrent market changes, the aim of my study was not to identify these changes. It is possible that the global financial crisis of 2007 to 2008, which falls into my sample period, could be one such change.

Fourthly, my difference-in-differences analysis on the assessment of the comparability of South African firms against the comparability of non-adopter firms to identify possible “label” benefits relies on a control sample of firms in different countries with different institutional environments. Moreover, the mandatory adoption of IFRS is clustered in time. Both of these factors make it difficult to separate the IFRS adoption effect from other economic and institutional changes (Christensen et al. 2013:151; Cascino & Gassen 2015:272).

Finally, the focus of my study is the comparability changes after IFRS adoption. I have not considered the capital market benefits that might result from increased comparability of financial statements, or the costs associated with the adoption of IFRS.

## **8.7 Suggestions for future research**

A number of possible areas for future research can be identified and are discussed below.

My study was limited to the financial reporting effects after the adoption of IFRS in South Africa. Based on the prior literature and the findings of my study, one might expect capital market benefits to arise from the adoption of IFRS in South Africa.

However, the literature has shown that capital market benefits are greater for firms in countries where there are more differences between local GAAP and IFRS (Daske et al. 2008; Florou & Pope 2012). Future research into the capital market benefits in South Africa after the mandatory adoption of IFRS could provide useful insights into the association between changes in comparability and capital market benefits after IFRS adoption in a country with few (or no) differences between local GAAP and IFRS.

In my study, I have identified three likely sources of changes in the comparability of financial statements after the adoption of IFRS in South Africa, namely the IFRS “label” change, network benefits arising from the adoption of IFRS by other countries, and market changes unrelated to IFRS. Different institutional settings and time periods can be used to understand these sources better, and whether the findings hold in different settings. Similar studies can be conducted in future when other countries such as Singapore, which currently has standards that are closely aligned with IFRS, adopts standards identical to IFRS. In the case of Singapore, when companies will be required to apply IFRS 1, they will be able to claim compliance with both IFRS and the new Singapore financial reporting framework (IFRS Foundation 2015). The Singapore setting will provide another opportunity to assess the possible “label” benefits with the adoption of IFRS, as some firms may indicate compliance with IFRS, whilst others may indicate compliance with the new Singapore financial reporting framework.

To address the concerns by Ball (2006) that firms or countries could claim that they report under IFRS, while in fact they continue to apply previous low quality reporting standards and practices, my study can be replicated in countries with weak enforcement and low quality local GAAP. By evaluating accounting quality changes and comparability changes after the adoption of IFRS in countries with weak enforcement and low quality local GAAP, one can assess how the market might evaluate “label” benefits where the accounting quality does not improve.

Another source of comparability changes relates to network benefits after the adoption of IFRS by other countries. In that case, the comparability of countries that have already adopted IFRS should increase when other countries mandate the use



of IFRS. Based on Figure 3.1, it is expected that changes in comparability would be associated with capital market benefits. Future studies can therefore investigate whether firms that already apply IFRS experience changes in the comparability of their financial statements and capital market benefits when other countries adopt IFRS in later years. However, if the network perspective is considered, the relative increase in the number of firms joining the IFRS network may be small in later years, and the incremental benefits for firms that adopted IFRS earlier may also be relatively small (Hail et al. 2010:371; Meeks & Swann 2009:200).

I found that concurrent market changes unrelated to the decision to adopt IFRS is a likely source of changes in the comparability of financial statements after the adoption of IFRS in South Africa. Identifying these market changes could assist in controlling better for these changes and isolating the effects of IFRS adoption.

One of the measures used in my additional analysis to provide further evidence on the sources of comparability changes is Bae et al.'s (2008) measure. This measure is often used in studies to evaluate differences between countries' local GAAP and IFRS, and it is based on data from 2001 (Nobes 2001:5). The measure does not consider changes made up to the adoption of IFRS in 2005 or in later years for non-adopters. Updating their measure at various points in time could assist researchers to achieve more accurate evaluations of the effects of differences in accounting standards on financial reporting and capital market effects.

Lastly, in my study, I have provided some evidence that changes in the comparability of the financial statements of firms in the mining industry are different to the comparability of the financial statements of other industries. The increase found in the comparability between South African mining firms' financial statements and those of adopters using the earnings-return measure, compared to the decrease using the accruals-cash flow measure, could suggest that the market perceives these firms to be more comparable, whilst the accruals-cash flow measure based on financial statements data suggests otherwise. The differences in comparability changes could possibly be related to IFRS 6, but this possibility requires further investigation. A study into changes in the comparability of mining firms globally after the adoption of

IFRS, and specifically considering the effect of IFRS 6, could provide useful insights to standard-setters.

## 8.8 Concluding remarks

Although the mandatory adoption of IFRS has been widely researched, Chen and Schipper (2016:272-273) call for more focused research in this area:

[W]e believe that country-specific analyses have the potential to provide useful empirical evidence as to which specific aspect of IFRS has a specific posited effect, thereby shedding light on the causal channel through which IFRS adoptions affect capital market outcomes.

My study is a response to their call. Using data from South Africa, a country that already reported in terms of accounting standards identical to IFRS prior to the mandatory adoption of IFRS, I have provided evidence on the sources of comparability changes after IFRS adoption in such a setting. I have identified network benefits, “label” benefits and other concurrent market changes as the likely sources of the changes noted in the comparability of financial statements.

My study also addresses concerns expressed in the literature on whether IFRS adoption or other concurrent market changes are associated with financial reporting or capital market effects (Brüggemann et al. 2013). My study has provided evidence that both IFRS adoption and other market changes are associated with changes in the comparability of financial statements.

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<sup>88</sup> IFRS stands for *International Financial Reporting Standards*, but the Foundation is widely known as the *IFRS Foundation*, and the full term is not used.

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## APPENDIX A: IFRS: EFFECTIVE DATES AND AMENDMENTS

The table below provides details of all significant amendments or new issues that were made to IFRS during the period of my study. The table is an extract from a summary prepared by Deloitte (2015), adjusted based on details in individual standards (IASB 2013).

Standard		Amendments	Issue date	Effective date
IFRS 1	First time Adoption of International Financial Reporting Standards	Original issue	2003	First IFRS financial statements for a period beginning on or after 1 January 2004
IFRS 2	Share-based Payment	Original issue	2004	Annual periods beginning on or after 1 January 2005
IFRS 3	Business Combinations	Original issue	2004	Business combinations after 31 March 2004
IFRS 4	Insurance Contracts	Original issue	2004	Annual periods beginning on or after 1 January 2005
		Amendment for financial guarantee contracts	2005	Annual periods beginning on or after 1 January 2006
IFRS 5	Non-current Assets Held for Sale and Discontinued Operations	Original issue	2004	Annual periods beginning on or after 1 January 2005
IFRS 6	Exploration for and Evaluation of Mineral Assets	Original issue	2004	Annual periods beginning on or after 1 January 2006
IFRS 7	Financial Instruments: Disclosures	Original issue	2005	Annual periods beginning on or after 1 January 2007



Standard		Amendments	Issue date	Effective date
IAS 1	Presentation of Financial Statements	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
		Amendment to add disclosures about an entity's capital	2005	Annual periods beginning on or after 1 January 2007
IAS 2	Inventories	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 8	Accounting Policies, Changes in Accounting Estimates and Errors	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 10	Events after the Reporting Period	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 16	Property, Plant and Equipment	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 17	Leases	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 19	Employee Benefits	Amendment adding an option to recognise actuarial gains and losses in full, outside profit or loss, in a statement of changes in equity	2004	Annual periods beginning on or after 1 January 2006
IAS 21	The Effects of Changes in Foreign Exchange Rates	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 24	Related Party Disclosures	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 27	Consolidated and Separate Financial Statements	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 28	Investments in Associates	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005



Standard		Amendments	Issue date	Effective date
IAS 31	Interests in Joint Ventures	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 32	Financial Instruments: Presentation	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 33	Earnings per Share	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005
IAS 36	Impairment of Assets	Revised as part of business combinations project	2004	Business combinations after 31 March 2004
IAS 38	Intangible Assets	Revised as part of business combinations project	2004	Business combinations after 31 March 2004
IAS 39	Financial Instruments: Recognition and Measurement	Comprehensive revision (improvements project)	2003	Annual periods beginning on or after 1 January 2005
		Amendment for macro hedging	2004	Annual periods beginning on or after 1 January 2005
		Amendment for day 1 gain/loss transition	2004	Annual periods beginning on or after 1 January 2005
		Amendment for hedges of forecast intra group transactions	2004	Annual periods beginning on or after 1 January 2006
		Amendment for fair value option	2005	Annual periods beginning on or after 1 January 2006
		Amendment for financial guarantee contracts	2005	Annual periods beginning on or after 1 January 2006
IAS 40	Investment Property	Revised (improvements project)	2003	Annual periods beginning on or after 1 January 2005

## APPENDIX B: SAMPLE COUNTRIES

This annexure provides a list of all the countries included in my samples. The countries below are the members of the G20, plus South Africa. The G20 consists of 19 countries, plus the European Union. I divided the countries into mandatory adopters and non-adopters. This was done with reference to the jurisdictional profiles prepared by the IFRS Foundation (2015) and a document prepared by PwC (2013) with IFRS adoption details for each country. The mandatory adopters adopted IFRS at the same time as South Africa (2005); non-adopters did not adopt IFRS during my sample period (2002 – 2008).

### **Mandatory adopters**

Australia  
France<sup>90</sup>  
Germany  
Italy  
UK  
European Union<sup>91</sup>  
Austria  
Belgium  
Czech Republic  
Denmark  
Estonia  
Finland  
Greece  
Hungary  
Ireland  
Latvia  
Lithuania  
Luxembourg  
The Netherlands  
Poland  
Portugal  
Slovakia  
Slovenia  
Spain  
Sweden

### **Non-adopters<sup>89</sup>**

Argentina  
Brazil  
Canada  
China  
India  
Indonesia  
Japan  
Mexico  
Russia  
Saudi Arabia  
South Korea  
USA

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<sup>89</sup> I exclude Turkey, which adopted IFRS in 2008 (PwC 2013:208).

<sup>90</sup> France, Germany, Italy and the UK are also members of the European Union, but are shown separately, as they are also individual members of the G20.

<sup>91</sup> I only include European countries that were members of the European Union in 2005, the date of mandatory adoption of IFRS in the European Union. I exclude Cyprus and Malta, which adopted IFRS before 2005 (IFRS Foundation 2015).

## APPENDIX C: VARIABLE DEFINITIONS

<b>Variables to construct comparability measures</b>			
<b>Variable</b>	<b>Definition</b>	<b>Reference</b>	<b>Data source<sup>92</sup></b>
<i>Earnings</i>	Net income before extraordinary items for the financial year divided by the market value of common shareholders' equity nine months before the financial year-end.	De Franco et al. (2011:900) Barth et al. (2012:91) Neel (2016:8) Cascino and Gassen (2015:248)	Net income before extraordinary items (WC01551) Market value of common shareholders' equity (MV)
<i>Return</i>	The percentage change in the share price from nine months before the financial year-end to three months after and adjusted for any dividends or share splits or consolidations.	De Franco et al. (2011:900) Barth et al. (2012:91) Yip & Young (2012:1772) Neel (2016:8) Cascino and Gassen (2015:248)	Return Index (RI)
<i>Cash flow</i>	Operating cash flows scaled by lagged total assets	Barth et al. (2012:91)	Operating cash flows (WC04860) Total assets (WC02999)
<i>Accruals</i>	Net income before extraordinary items less operating cash flows scaled by lagged total assets	Hribar and Collins (2002:109)	Net income before extraordinary items (WC01551) Operating cash flows (WC04860) Total assets (WC02999)

<sup>92</sup> Worldscope, unless indicated otherwise.



<b>Comparability regression variables</b>			
<b>Variable</b>	<b>Definition</b>	<b>Reference</b>	<b>Data source</b>
<i>CompEarn</i>	Comparability measure using returns as the economic event and earnings as the proxy for the financial statements based on DeFranco et al's (2011) comparability measure.	De Franco et al. (2011:900) Barth et al. (2012:91) Yip and Young (2012:1772) Neel (2016:8) Cascino and Gassen (2015:248)	
<i>CompAccr</i>	Comparability measure using cash flows as the economic event and accrual as the proxy for the financial statement.	Cascino and Gassen (2015:248) Neel (2016:9)	
<i>MeanCompEarn</i>	Average <i>CompEarn</i> for firm i per foreign country		
<i>MeanCompAccr</i>	Average <i>CompAccr</i> for firm i per foreign country		
<i>Post</i>	An indicator variable equal to one for the post-IFRS adoption period (2006 to 2008), and zero otherwise.		
<i>Adopter</i>	An indicator variable equal to one if the foreign firm is in a country that was a mandatory IFRS adopter in 2005, and zero otherwise.		
<i>Post x Adopter</i>	An interaction term between the two indicator variables, <i>Post</i> and <i>Adopter</i> .		
<i>Legal</i>	An indicator variable equal to one if the foreign country's legal origin is common law, and zero otherwise.	Yip and Young (2012:1775)	Barth et al. (2012:75) Leuz et al. (2003:516) La Porta et al. (1998:1130-1131)
<i>Size ratio</i>	The proportion of the smallest firm's total assets to the largest firm's total assets in the firm pair measured in US dollars at the end of the firm's 2005 financial year-end.	Yip and Young (2012:1775)	Total assets (WC02999)

Variable	Definition	Reference	Data source
<i>BTM diff</i>	The absolute value of the difference in the book-to-market ratio of the two firms in the pair measured at the end of the firm's 2005 financial year-end.	De Franco et al. (2011:927-928)	Common shareholders' equity (WC03501) Market value of common shareholders' equity (MV)

Additional analysis regression variables			
Variable	Definition	Reference	Data source
$\Delta MeanCompEarn$	Change from the pre- to the post-adoption period of the average <i>CompEarn</i> for firm <i>i</i> per foreign country.		
$\Delta MeanCompAccr$	Change from the pre- to the post-adoption period of the average <i>CompAccr</i> for firm <i>i</i> per foreign country.		
$\Delta GAAP diff$	The absolute value of the change in GAAP differences from the pre- to the post-adoption period based on the Bae et al. (2008:601-602) GAAP difference measure.		
$\Delta Size ratio$	The change in the proportion of the smallest firm's total assets to the largest firm's total assets from the pre- to the post-adoption period measured at the end of the firm's 2003 and 2007 financial years respectively.		
$\Delta BTM diff$	The change in the absolute value of the difference in the book-to-market ratio of the two firms from the pre- to the post-adoption period measured at the end of the firm's 2003 and 2007 financial years respectively.		
<i>Same legal</i>	An indicator variable equal to one if the two foreign firms come from countries with the same legal origin, and zero otherwise.	Yip and Young (2012:1775)	Barth et al. (2012:75) Leuz et al. (2003:516) La Porta et al. (1998:1130)

Variable	Definition	Reference	Data source
SA	An indicator variable equal to one if the firm is from South Africa, and zero otherwise.		
Post x SA	An interaction term between two indicator variables, <i>Post</i> and <i>SA</i> .		

Accounting quality test variables			
Variable	Definition	Reference	Data source
ESV	Earnings smoothing variables that is either $\Delta NI$ , $\Delta CF$ , $CF$ or $ACC$		
$\Delta NI$	Change in net income before extraordinary items, where net income is scaled by total assets at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489)	Net income before extraordinary items (WC01551) Total assets (WC02999)
$\Delta CF$	Change in operating cash flows, where cash flows are scaled by total assets at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489)	Operating cash flows (WC04860) Total assets (WC02999)
CF	Operating cash flows scaled by total assets at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489)	Operating cash flows (WC04860) Total assets (WC02999)
ACC	Net income before extraordinary items less operating cash flows scaled by total assets at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489)	Net income before extraordinary items (WC01551) Operating cash flows (WC04860) Total assets (WC02999)

Variable	Definition	Reference	Data source
<i>SPOS</i>	An indicator variable equal to one if the net income before extraordinary items scaled by total assets at the end of the year is between 0 and 0.01, and zero otherwise.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Net income before extraordinary items (WC01551) Total assets (WC02999)
<i>LNEG</i>	An indicator variable equal to one if the net income before extraordinary items scaled by total assets at the end of the year is less than -0.2, and zero otherwise.	Lang et al. (2006:268) Barth et al. (2008:489)	Net income before extraordinary items (WC01551) Total assets (WC02999)
<i>Post</i>	An indicator variable equal to one for the post-IFRS adoption period (2006 to 2008), and zero otherwise.	Barth et al. (2008:485)	

Accounting quality control variables			
Variable	Definition	Reference	Data source
<i>Lev</i>	Total liabilities at the end of the year divided by total book value of equity at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Total liabilities (WC03351) Common shareholders' equity (WC03501)
<i>Growth</i>	Percentage change in sales.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Net sales or revenues (WC01001)
<i>Eissue</i>	Percentage change in common stock.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Common shares outstanding (WC05301)
<i>Dissue</i>	Percentage change in total liabilities.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Total liabilities (WC03351)

<b>Accounting quality control variables</b>			
<b>Variable</b>	<b>Definition</b>	<b>Reference</b>	<b>Data source</b>
<i>Turn</i>	Sales divided by total assets at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Net sales or revenues (WC01001) Total liabilities (WC03351)
<i>Size</i>	Natural logarithm of market value of equity (in millions) at the end of the year.	Lang et al. (2006:268) Barth et al. (2008:489) Ahmed et al. (2013:1359)	Market value of common shareholders' equity (MV)
<i>Numex</i>	Number of exchanges on which a company is listed.	Barth et al. (2008:489)	Stock exchange(s) listed (WC05427)
<i>Aud</i>	An indicator variable equal to one if the firm is audited by PwC, KPMG, Ernst & Young or Deloitte, and zero otherwise.	Barth et al. (2008:489)	Parent auditor (WC07800)
<i>Close</i>	Percentage closely held shares reported by Worldscope.	Barth et al. (2008:489)	Percentage closely held shares (WC08021)