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THE IMPACT OF THE EXPECTED CREDIT LOSS MODEL ON SOUTH AFRICA'S LARGEST BANKS

**A Minor Dissertation Submitted in Partial Fulfilment of the
Degree of**

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COLLEGE OF BUSINESS AND ECONOMICS

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By

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2022

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DECLARATION

I certify that the minor dissertation submitted by me for the degree Master of Commerce in International Accounting at the University of Johannesburg is my independent work and that it has not been submitted by me for a degree at another university.

CHARITY MOENG



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Abstract

Banks play a critical function in the economy and bank regulation is fundamental to providing a stable banking and financial sector. IFRS 9 is a relatively new accounting standard for financial instruments that was released by the IASB in July 2014 to replace IAS 39. IFRS 9 requires an earlier and more accurate recognition of impairment of loans, based on the forward-looking expected credit loss model, to reflect the true economic value of the loans.

IFRS 9 will have an impact on accounting for loan provisions, decision-making, and processes for collection of forward-looking information, and is expected to have a significant impact on the financial results reported by banks at date of initial application and going forward. This study aimed at analysing the impact of the initial adoption and post application of the ECL model on the regulatory capital and credit risk of the five biggest banks in South Africa. The research sought to determine how adopting the ECL provisioning model has affected the regulatory capital adequacy, specifically the CET1 ratio, and credit risk of the banks.

The objective of the study was achieved through interpretative content analysis of the Annual Financial Statements and IFRS 9 transitional reports of the banks sampled. A mixed methods approach was applied using both quantitative and qualitative information extracted from these reports. The numerical data was used to compute ratios (capital adequacy and credit risk ratios). The statistical analysis of the ratios and numerical discussions of figures presented constitute the quantitative approach. The interpretation of the ratios as well as the analysis of disclosures of financial information constitutes the qualitative approach.

The findings of the study show that all five banks reported a marginal decrease in total equity at date of initial application. The average decrease for all five banks in the CET1 ratio on DIA was 26 basis points, after the phase-in of the SARB Directive 5/2017. A significant decrease in equity and capital ratios was also noted during the COVID-19 pandemic period in 2020 (post-application of IFRS 9). There was a significant increase noted in the total impairment provisions in the balance sheet for all banks on date of initial application. For the four-year period post application of IFRS 9, there was an increase in total impairment provisions during the COVID-19 pandemic period.

This study contributes to research relating specifically to South African banks and it highlights the impact of the ECL model on the regulatory capital and credit risk of the banks selected. The study recommends that for future studies more such reviews be performed for smaller banks in South Africa and further research should monitor the long-term effects of applying the ECL model as this study only reviewed the first four years for the five largest banks in South Africa.



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Abbreviations

Abbreviation	Meaning
AC	Amortised cost
AFS	Available for sale
BCBS	Basel Committee on Bank Supervision
BIS	Bank of International Settlements
CAR	Capital adequacy ratio
CCR	Counterparty credit risk
CET1	Common Equity Tier 1
DIA	Date of initial application
ECL	Expected credit loss
FASB	Financial Accounting Standards Board
FCAD	Financial Crisis Advisory Group
FSB	Financial Services Board
FSCA	Financial Sector Conduct Authority
FSRA	Financial Sector Regulation Act
FVOCI	Fair value through other comprehensive income
FVTPL	Fair value through profit or loss
GAAP	Generally Accepted Accounting Principles
G10	Group of Ten
HTM	Held to maturity
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standard
IL	Incurred loss
ISP	Interest in suspense
LCR	Leverage Coverage Ratio
NSFR	Nets Stable Funding Ratio
NPL	Non-performing loans
PA	Prudential Authority
RWA	Risk-Weighted Assets
SARB	South African Reserve Bank
SIRC	Significant increase in credit risk

Chapter 1: Background, research problem, and methodology

1.1 Background

In July 2014, the International Accounting Standards Board (IASB) issued a new International Financial Reporting Standard 9 (IFRS 9) – *Financial Instruments*. A key concern that arose from the 2007/2008 global financial crisis was that the “incurred loss model” in International Accounting Standard 39 (IAS 39) contributed to the delayed recognition of credit losses (European Financial Reporting Advisory Group, 2009; Ernst & Young, 2014). One of the main objectives of IFRS 9 was to address this concern. During the 2007/2008 global financial crisis, it was observed that US banks managed earnings through discretionary recognition of credit losses (Cohen, Cornett, Marcus & Tehrani, 2014; Casta, Lejard & Paget-Blanc, 2019). Credit losses were not recognised in a timely manner and, as a result, the incurred loss (IL) model was criticised by many stakeholders who felt that its backward-looking approach resulted in the “too-little-too-late” recognition of credit losses, and thus delaying the reporting of bad news and inducing more bank lending (Cohen & Edwards, 2017). IAS 39 is widely described as a complex accounting standard and has become a controversial topic in the accounting industry (Löw, Schmidt & Thiel, 2019). The credit losses raised under IAS 39 were based on historic data and did not incorporate data on future expected losses. Owing to the above noted deficiencies, the IASB revised IAS 39 and introduced a forward-looking expected credit loss (ECL) model under IFRS 9. With the implementation of IFRS 9, any financial instrument that is held at Amortised Cost (AC) or Fair Value Through Other Comprehensive Income (FVOCI) is impaired using the ECL model (IASB, 2014).

The main difference between the incurred loss and ECL models is that under IAS 39, the incurred loss model requires credit losses to be recognised only when a credit loss event occurs. However, the ECL model under IFRS 9 requires credit losses to be recognised for all exposures, from the time that a loan is originated, based on the deterioration of credit risk since initial recognition (Novotny-Farkas, 2016; Ernst & Young, 2018). This means that previously, impairment losses were only recognised when evidence of a loss

had been identified. As a result, reporting entities were not permitted to proactively consider potential expected losses.

Paragraph 55 of IFRS 9 states that, “It is no longer necessary for a credit event to have occurred before credit losses are recognised. Instead, an entity must account for expected credit losses and changes in those expected credit losses.” Furthermore, paragraph 5.5.4 of IFRS 9 requires entities to incorporate best available forward-looking information when recognising impairment losses (IASB, 2014). As a result, the ECL model replaced the incurred loss model to achieve a more timely and adequate estimation of impairment losses. The ECL model is expected to better reflect changes in the credit quality of financial instruments and provide true economic value of loans. This is because in its measurement of ECL, IFRS 9 requires reporting entities to incorporate information from past events, current conditions, and reasonable and supportable forecasts. The ECL model is therefore considered an improvement as it considers a broader range of credit information and improves the usefulness and relevance of financial statements (Novotny-Farkas, 2016; Löw *et al.*, 2019 and Albrahimi, 2020).

The replacement of IAS 39 with IFRS 9 has a significant impact on accounting, as well as on processes, decision-making, activities and financial statements (Gornjak, 2017). Sanchidrian and Garcia (2017) highlight that the primary goal of accounting standard setters such as the IASB is to develop standards that bring transparency, accountability, and efficiency to financial markets. This aligns with The Conceptual Framework for Financial Reporting (IASB, 2018), which states that, “The objective of general-purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions relating to providing resources to the entity.” To achieve the objective mentioned above, the information contained in the financial reports must adhere to the qualitative characteristics of relevance and faithful representation (IASB, 2018). This is especially true for the banking industry as banks, being regulated institutions, are vital for financial stability. Owing to the nature of their assets (mainly loans), banks need to correctly apply the requirements of IFRS 9 for impairment recognition to produce financial information that is relevant and

reliable and which meets the needs of all stakeholders, including shareholders, lenders, and bank regulators.

Financial instruments represent a major portion of the assets of most banks. The complex requirements of IFRS 9 require banks to develop systems and processes that will generate sound information to attain a high quality, robust, and consistent implementation of the IFRS 9 ECL model (Beerbaum & Ahmad, 2015). IFRS 9 should result in a quicker recognition of loan losses, mitigate procyclicality, and contribute to an improvement of credit quality control systems in the banking industry which will enhance financial stability (Novotny-Farkas, 2016; Sanchidrian & Garcia, 2017; Kruger, Rosch & Scheule, 2018). Based on IFRS 9 ECL model, banks now must estimate possible future credit losses from initial recognition, even if it is likely that the loan will be collected in full from the client (PwC, 2017). This addresses the weakness of the incurred loss model that allowed banks to postpone recognising unavoidable credit losses for too long. An additional consequence of IFRS 9 is that there are significant amendments to International Financial Reporting Standard 7 (IFRS 7) – *Financial Instruments: Disclosures*, especially relating to credit risk and credit losses (PwC, 2017). IFRS 7 is the updated accounting standard that provides principles on how to disclose financial instruments transactions. This means banks should have systems, processes and resources that are able to collect the data and information required to provide these comprehensive disclosures.

1.1 Research problem

The transition from the incurred loss model in IAS 39 to the expected credit loss model in IFRS 9 has major implications for banks, including those in South Africa. Banks are faced with the challenge to improve and change their current reporting systems and processes to change the way they calculate, recognise, report, and disclose credit losses to comply with the requirements of IFRS 9. This transition will result in earlier and increased recognition of credit losses, which will significantly affect the numbers reported in the annual financial statements of the banks (Kruger *et al.*, 2018). IFRS 9 is applicable for financial periods beginning on or after 1 January 2018. Thus, post implementation financial statements, specifically for banks, will be greatly impacted. The difference in the

accounting treatment of credit losses under IAS 39 and IFRS 9 will have a significant impact on the banking sector, specifically on regulatory capital and credit risk of the banks.

As prescribed by Basel III, the ECL provisioning model will significantly impact the regulatory capital of the banks. Basel III introduced increased capital requirements post the 2007/2008 global financial crisis to ensure that banks remain solvent in times of economic downturns. Novotny-Farkas (2016) and Löw *et. al* (2019) raise the concern that since the ECL model incorporates earlier and larger impairment allowances, this will have a direct impact on the regulatory capital and credit ratios reported by the banks. This study contributes to research on how the ECL provisioning model has affected the regulatory capital and credit risk ratios of banks in South Africa.

1.2 Research objective

The primary objective of this research was to analyse the impact of the initial adoption and post application of the ECL model per IFRS 9 on the annual financial results reported by the five biggest banks in South Africa. The research aims to determine how adopting the ECL provisioning model has affected the regulatory capital adequacy and credit risk of the banks. To achieve the research objective, the sub-objectives were pursued:

- I. To analyse the impact of the IFRS 9 ECL model on the banks' regulatory capital, specifically the CET1 ratio, at date of initial application and four years post IFRS 9 application. The four years' worth of post application information was used for this study since IFRS 9 only became applicable from 1 January 2018, at the time of data collection banks had applied this standard for a maximum of 4 years thus there is a limitation on the availability of data.
- II. To recalculate and analyse the capital ratios, impairment coverage ratios, and credit risk ratios of the banks at date of initial application and four years post IFRS 9 application to determine the impact of the ECL model on the banks' capital adequacy and credit risk.

1.3 Research motivation and contribution

Empirical literature on the transition and post implementation of the ECL model for banks is developing. The researcher noted a few research publications that focused on the

quantitative analysis of the transition to the ECL model and impact on financial statements for large banks in UK, Canada and USA. To date no research could be found that related to South African banks. This study thus contributes to research relating specifically to South African banks because of institutional and jurisdiction differences between South African banks and those in the UK, Canada and USA. The study only covers the five biggest banks in South Africa (based on their total asset value) and focuses on the banks' transition to ECL model and the initial and post implementation impact on the banks' regulatory capital and credit risk.

1.4 Research approach and methodology

This research was conducted using the mixed methods approach. Plano Clark and Ivankova define mixed methods research as “a process of research in which researchers integrate quantitative and qualitative methods of data collection and analysis to best understand a research purpose”(Plano Clark & Ivankova, 2016:3). Another definition is supplied by Creswell and Plano Clark (2007:5), and they regard mixed thus:

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As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides better understanding of research problems than either approach alone.

The research methodology that was applied to this research is content analysis. According to Leedy and Ormrod (2013), “Content analysis is a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes or biases.” This methodology was deemed appropriate as the researcher studied and analysed the content of the Annual Financial Statements of the five biggest banks in South Africa. The study specifically focused on the financial statements and disclosure notes that were included in the annual financial reports as this is where the impact of IFRS 9 was reflected. This was done to determine the initial adoption impact and post application impact of the expected credit loss model per IFRS 9 on the regulatory capital and credit risk of the five biggest banks in South Africa.

1.5 Population, sampling and data analysis

The population for this research was made up of the Annual Financial Statements of all banks that are registered as per the South African Reserve Bank (SARB). The population size is fifteen South African banks that are currently being regulated by the SARB. South African banks play a key role in the financial services sector of the African continent. This is because South African banks are among the biggest banking corporations in Africa. The contribution they make to the South African economy is undisputable. The researcher used purposive sampling, which involves selecting those individuals or objects that will yield the most information regarding the topic under investigation (Leedy & Ormrod, 2013). Thus, the researcher selected a sample out of the wider population, which consists of the five biggest banks in South Africa.

The data used were extracted from the published Annual Financial Statements of Standard Bank Group, ABSA Group Bank, FirstRand Bank Group, Nedbank Group, and Investec Bank for the financial years-ended 2017 to 2022. The study specifically focused on these financial year-ends as IFRS 9 is applicable to financial periods starting on or after 1 January 2018. Therefore, the transition, initial, and post application impact of the ECL model is reflected in the financial periods above. The banks indicated above have been selected because they represent the five biggest banks in South Africa. This is according to the “SA Major Banks Analysis” conducted by PwC in April 2019. Research performed by a rating and research firm called S&P Global in April 2019 also confirms that these banks are the five biggest banks in South Africa based on their total asset value. Updated statistics from the SARB show that these banks are the five largest banks and collectively held 89,79% of the total banking assets in South Africa as at 31 March 2022 (SARB & PA annual report 2021/2022). The PDF versions of published, audited Annual Financial Statements were sourced from the official websites of the sampled banks. These reports contained both quantitative data and qualitative comments and disclosures, and this supported the mixed methods approach that was adopted. The research conducted was specifically limited to the five sampled banks. The results of the study have not been extrapolated to the entire South African banking industry.

The researcher also considered the IFRS 9 transition reports that were produced by some of these banks. These were also obtained from their official websites. The reports contained comprehensive accounting disclosures and commentary relating to the impact of transitioning to IFRS 9, which assisted in the analysis performed.

The researcher studied, analysed and interpreted information in the Annual Financial Statements and disclosure notes, and, afterwards, tabulated results and performed used descriptive statistics to analyse the data. This was done to draw conclusions on the outcome of recognising impairment losses using the ECL model.

1.6 Trustworthiness and ethical considerations

Trustworthiness is the degree of confidence that qualitative researchers have in their data, assessed using the criteria of credibility, transferability, dependability, conformability and authenticity (Polit & Beck, 2012). The researcher deemed the data trustworthy as they were obtained from published Annual Financial Statements, which had been audited and were publicly available. This meant the data used in the research were reliable and valid.

Leedy and Ormrod (2013) explain that most ethical issues in research fall into one of four categories, namely protection from harm, voluntary and informed participation, right to privacy, and honesty with professional colleagues. The category that was most applicable to this research is honesty with professional colleagues. The researcher has ensured that findings are reported in a complete and honest manner. The researcher also ensured that no data were fabricated and that there was no plagiarism or documentary theft included in the report.

Chapter 2: Literature Review

2.1 Introduction

The previous chapter highlighted some of the weaknesses of IAS 39. It mentioned how the incurred loss model resulted in the delayed recognition of credit losses because it was based on historic data that did not incorporate data on future expected losses. It also provided reasons for which the IASB then developed IFRS 9 to replace IAS 39. In this chapter, the study discusses relevant regulations and legislation that were introduced post the 2007/2008 global financial crisis with the purpose of improving financial reporting by banks. The two that are discussed and which are relevant to this study as they relate to regulatory capital adequacy, credit disclosure, and credit losses are the development of Basel III and The Financial Sector Regulation Act 9 of 2017 (FSRA). The chapter then discusses the key changes of IFRS 9, specifically the ECL impairment model. The basic workings of the ECL impairment model are explained, and the chapter concludes by highlighting the differences between ECL provisioning and Basel III capital requirements.

2.2 Development and implementation of Basel III in South Africa

2.2.1 The Basel accord adoption and weaknesses of Basel I and Basel II

Banks play a critical function in the economy of any country and they can disrupt economic development if not properly regulated. Problems in the banking sector can have severe implications on the economy; therefore, bank regulation is very fundamental. One of the most important rationales for bank regulation is to provide a stable banking and financial sector (Barth, Caprino & Levine, 2006). Basel Accords were developed to provide banking regulation, guidelines, and best practices regarding capital risk, market risk and operational risk. The core objective of Basel Accords is to improve the quality of global banking supervision to promote financial stability in the economy (Balin, 2008; Gabriel, 2016; Ramutshila, 2019). An international body known as the Basel Committee on Banking Supervision (BCBS) that is headquartered at the Bank for International Settlements (BIS) in Basel Switzerland drafts the Basel Accords. The aim of this committee is to improve stability of the global financial sector by implementing global

banking regulation and supervision (BIS, 2014–(b)). The central bank governors of the Group of Ten (G10) countries established the BCBS in 1974. This was in response to several financial disruptions that occurred in the international financial markets during the 1970s. The BCBS cannot enact legally binding banking standards but the member states (members of the Basil Committee) themselves must implement and enforce the recommendations of the BCBS (Balin, 2008). The SARB, as the central bank of South Africa which is responsible for bank regulation in South Africa, has been a member of the Basel Committee since 2009. South African banks are regulated in accordance with the Basel Committee's recommendations on banking supervision as the decision to implement any of the BCBS standards rests with the central banks of individual countries (SARB, 2014).

In 1988, the BCBS released Basel I, which was called the International Convergence of Capital Measurement and Capital Standards. This accord was formally implemented in December 1992. Basel I introduced a basic weighted capital adequacy ratio, which only considered credit risk, set at 8% of total capital. It required banks to hold a minimum total capital equal to risk-adjusted assets of 8% and at least 4% of Tier 1 (core) capital. The aim of this accord was to protect the economic system by allowing banks to have enough capital to absorb unexpected negative economic shocks (Dinamona, 2008). Lind (2005) and Dupuis (2006) support this and explain that a bank's capital serves as buffer against losses, and banks with sufficient capital are better able to manage their risk and reduce their chances of bank failure by absorbing temporary losses, allowing the bank to remain solvent until profitability is restored. Capital is needed to reduce volatility in the bank's earnings and to encourage prudence amongst bank owners, as their own capital is at stake. The capital adequacy ratio (CAR) provides a measure of how much capital a bank has, reported as a percentage of a bank's risk weighted credit exposures. According to Beers (2021), the purpose of CAR is to establish that banks have enough capital and reserves to handle certain amounts of losses before being at risk for becoming insolvent. Basel I required capital to be split into two classes: Tier 1 and Tier 2. Tier 1 consists mainly of equity, and Tier 2 consists mainly of debt instruments and cannot exceed Tier 1. This Basel I capital adequacy ratio (CAR) is determined by using the following formula:

Basel 1 Capital Ratio = Tier 1 capital + Tier 2 capital

Risk weighted assets ≥ 8%

Although this capital ratio was introduced as a method to establish minimum regulatory capital requirements within the banking sector, it had some shortcomings. Balin (2008) explains the weaknesses and criticisms of Basel I capital ratio as follows:

- Basel I has a limited scope as it only covers credit risk and only targets G10 countries;
- It omits operational risk and market discipline;
- It only considered adequate capital to guard against risk in the creditworthiness of a bank's loan book;
- It did not mandate capital to guard against other risks such as changes in interest rates and general macroeconomic downturns;
- It allowed banks to make their own interpretations of its rules that lead to financial institutions taking improper risks and holding low capital reserves, and
- The absent effects of emerging markets and the limited scope of Basel I was inadequate to ensure international financial stability.

In response to the inadequacies of Basel I noted above, Basel II was then published by the BCBS in June 2004. Basel II was an improvement as it was founded on three pillars. Pillar one deals with minimum capital requirements associated with credit risk, market risk and operational risk. This improved the quality of the capital ratio by incorporating operational risk and market risk (in addition to credit risk) and narrowing down the definition of capital to only include high quality equity in Tier 1 capital (Calver & Owladi, 2017). The Basel II capital ratio is determined as follows:

Basel 2 Capital Ratio = Tier 1 capital + Tier 2 capital + Tier 3 capital

Credit risk + Market risk + Operational risk > 8%

Pillar two deals with supervisory review to ensure sound risk management practices. Pillar three established core disclosure by banks to improve market discipline. Danila (2012)

and Gabriel (2016) conclude that although Basel II was an improvement, the 2007/2008 global financial crisis highlighted its weaknesses, as it was not able to strengthen the international banking system enough to respond to the challenges of the financial crisis. It did not address macro variables, procyclicality, liquidity risk and trading book related issues. It also allowed banks to have excessive leverage, low quality and inadequate capital, as well as insufficient liquidity buffers.

Capital adequacy for banks and the way banks provide for impairment of financial instruments received special attention after the 2007/2008 global financial crisis. Ramutshila (2019) and Sadien (2017) explain that there were calls for banks to hold more capital and increase their liquidity reserves to create buffers to better absorb losses during times of credit crisis. The result is that the 2007/2008 global financial crisis encouraged a revamp of financial regulation, especially a review of banking regulation. The BCBS then developed Basel III in response to the financial crisis with the aim of strengthening the regulation, supervision, and risk management of banks. Two key changes that were introduced by Basel III were increased capital requirements and new liquidity ratios to ensure that banks are resilient and they remain solvent in times of stress (BIS, 2014-(a)). This study only focuses on Basel III, as it is the latest to be adopted by South African banks, as phased in between 1 January 2013 and 1 January 2019 (SARB, n.d). Basel III standards aim to enhance capital regulation for banks by introducing higher capital and liquidity requirements. The current research only focused on the new capital requirements covered in Basel III, as they are relevant to the research topic (specifically the impact of ECL provisioning on regulatory capital and vice versa).

2.2.2 Basel III capital requirements

Basel III includes robust and high-quality capital requirements to ensure quality, consistent, and transparent capital base reported by banks (BIS, 2010). As mentioned above, Basel III was introduced after the 2007/2008 global financial crisis and it replaced Basel II with the aim to increase the level of capital requirements to ensure that banks are sufficiently resilient to withstand losses in times of stress and economic downturns. The capital requirements of Basel III as highlighted by BIS (2011) are summarised below:

- The total capital ratio (calculated by dividing a bank's capital by its risk-weighted assets - RWA) must at all times be at least 8%;
- Basel III increases the quality of capital (the numerator of the ratio) by separating it into two tiers (Tier-1 capital and Tier-2 capital);
- Tier-1 capital (going concern capital), which must at all times be at least 6% of the RWA, is further broken down into two categories: "Common Equity Tier (CET) 1" and "Additional Tier 1";
- CET 1 (including common shares, share premium, and retained earnings), which is viewed as high quality capital base, must at all times be at least 4.5% of RWA;
- Additional Tier 1 must at all times be at least 1.5% of RWA;
- Tier-2 capital (going-concern capital) mostly consist of subordinated debt and is set at 2% of RWA, and
- Basel III introduces a capital conservation buffer (that did not exist under Basel II) of 2.5% of CET 1 capital.

The table below was adopted from Shakdwipee and Mehta (2017), and it shows some of the shortcomings of Basel II and how these were addressed in Basel III.

Table 2.1: Improvements of Basel III over Basel II

Shortcomings of Basel II	Improvements in Basel III
Unclear and inconsistent capital definition	Enhanced transparency, consistency of quality of capital base.
Exposure to some risk not addressed (e.g. re-securitisation)	Risk coverage includes securitisations, off-balance sheet items and counterparty credit risk (CCR)
Inadequate treatment of Liquidity Risk	Enhanced liquidity standards including Leverage Coverage Ratio (LCR) and Nets Stable Funding Ratio (NSRF)
Excessive Balance Sheet growth despite relatively small levels of capital	Leverage ratio introduced as a risk-invariant measure of Balance Sheet growth

Causes pro-cyclical amplification of shocks in financial sector	Adoption of measures to counteract pro-cyclicality
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(Source: Shakdwipee & Mehta, 2017)

Other changes introduced in Basel III that are not covered above include new liquidity standards and pillar three regulatory disclosure. This study focused only on capital adequacy, specifically the impact of ECL provisioning per IFRS 9 on the CET 1 ratio. Cohen and Edwards (2017) explain that in their supervisory guidance of 2015, the BCBS supported ECL provisioning standards, but concern was raised about its implications for regulatory capital. Novotny-Farkas (2016) and Löw *et. al* (2019) concur with this line of thought and explain that compared to the incurred loss model of IAS 39, the ECL model of IFRS 9 incorporates earlier and larger impairment allowances and it is more closely aligned with regulatory expected loss.

Since loan loss provisions are used as an input in regulatory capital calculations, the ECL model of IFRS 9 will have a direct impact on regulatory capital. The CET1 ratio is expected to decrease owing to the change from the incurred to the expected credit loss model (Novotny-Farkas, 2016; Löw *et al.*, 2019). The key concern was that the impact of ECL provisioning could be significantly more material than expected and thus result in a significant decline in capital ratios. Löw *et al.* (2019) expect that the overall first-time application effect of IFRS 9 on the CET1 ratio will be low to moderate in the first year as the European Parliament and European Commission agreed to implement a five-year phase of the transitional impact on regulatory capital for European banks. Regulators, academics, and consultants expect that the CET1 ratio will be negatively impacted by between 0 to 100 basis points, many expecting an average impact of about 50 basis points (Löw *et al.*, 2019). Therefore, this paper investigates the impact of ECL provisioning on the CET 1 ratio of the five biggest banks in South Africa to analyse the impact for South African banks.

2.3 The Twin Peak: The Financial Sector Regulation Act (Act 9 of 2017)

As mentioned above, the FSRA is another piece of bank regulation introduced after the 2007/2008 global financial crisis. The FSRA is a South African legislation applicable only to financial entities operating within South Africa. South Africa has reformed its model for financial regulation by moving from a silo approach (sectorial regulators supervised different financial institutions) towards a Twin Peaks model introduced by the FSRA (Heerden & van Niekerk, 2017). Section 7 of the FRSA highlights the objectives of the act as follows:

To achieve a stable financial system that works in the interests of financial customers, and supports balanced and sustainable economic growth in the Republic, by establishing, in conjunction with the other financial sector laws, a regulatory and supervisory framework that promotes financial stability; the safety and soundness of financial institutions; the fair treatment and protection of financial customers; the efficiency and integrity of the financial system; the prevention of financial crime; financial inclusion and confidence in the financial system.

Heerden and van Niekerk (2017) explain the prominent features of the FSRA thus:

- It imposes a financial stability and bank regulation mandate on the SARB.
- It establishes a separate juristic person located within the SARB, the Prudential Authority (PA), tasked to oversee all financial institutions and not only banks. The objective of the PA is to promote and enhance the safety and soundness of regulated financial institutions.
- It replaces the Financial Services Board (FSB) with the Financial Sector Conduct Authority (FSCA), a juristic person located separately from the SARB and PA. The FSCA protects customers through supervision of market conduct of all financial institutions including banks.

The FSRA promotes financial stability in South Africa, especially in the banking sector by creating certainty in setting out the mandates of the SARB, PA and FSCA and their roles and responsibilities in terms of financial stability. As mentioned earlier in this chapter,

bank regulation is fundamental and assists in securing the financial stability and economic development of any country.

2.4 Introduction to IFRS 9

Following the 2007/2008 global financial crisis, many regulators, policy-makers, accounting researchers, and investors raised concerns regarding the weaknesses of IAS 39 (Gomaa, Kanagaretnam, Mestelman & Shehat, 2019). The inadequacies of IAS 39 became a focus point for the IASB after this financial crisis. The main weakness that was highlighted is that IAS 39 was inconsistent with the way companies manage and operate their businesses and risks. Most concerning, IAS 39 deferred the recognition of credit losses until too late in the credit cycle (Krüger et al., 2018). IAS 39 appeared to have facilitated and not helped prevent incorrect accounting reporting which, in part led to the 2007/2008 global financial crisis.

In response to these concerns, the IASB developed a new standard *IFRS 9 Financial Instruments*, which was issued in July 2014 and became effective for reporting periods beginning on or after 1 January 2018 (IASB, 2014). The main purpose of IFRS 9 was to address and overcome the weaknesses of IAS 39 stated above, and provide an improved, principle-based and forward-looking accounting standard that would deal with financial instruments.

The three main changes that were introduced in IFRS 9 are (Ernst & Young, 2017):

- it contains a new approach to classify and measure financial instruments;
- a forward-looking impairment model, and
- hedge-accounting.

Table 2.2 below, which was adapted from an article by Gornjak (2017), summarises the comparisons of key categories between IAS 39 and IFRS 9

Table 2.2: Comparison of key categories between IAS 39 and IFRS 9

Category	IAS 39	IFRS 9
The purpose of the standard	Applies to all financial assets, with a few exceptions	The same as IAS 39
Initial recognition of assets	When the organisation becomes party to the contractual provisions	The same as IAS 39
Initial measurement	The fair value including transaction costs (for financial assets that are not intended for trading purposes)	The same as IAS 39
Subsequent measurement	<p>The following categories were noted:</p> <p>The fair value</p> <p>Amortized cost</p> <p>Cost (for the share-based instruments, which do not have a reliable fair value measurement)</p>	<p>The following categories were noted:</p> <p>Fair value through profit or loss (FVTPL)</p> <p>Amortized cost (AC)</p> <p>Fair value through other comprehensive income (FVOCI)</p>
Types of classification	<p>Four classification buckets:</p> <p>Available for sale (AFS)</p> <p>Held to maturity (HTM)</p> <p>Loans and receivables</p> <p>Fair value through profit or loss (FVTPL)</p>	<p>Three classification buckets:</p> <p>Fair value through profit or loss (FVTPL)</p> <p>Amortized cost (AC)</p> <p>Fair value through other comprehensive income (FVOCI)</p>
Reclassification	Reclassification is prohibited through profit or loss after initial recognition.	Allowed when there is a change of business model.
Equity instruments	All equity instruments available for sale are measured at a fair	Irrevocable choice to designate as fair value

	value in another comprehensive income.	through other comprehensive income, fair value through profit and loss if held for trading
Gains and losses	Usually through profit or loss	The same as IAS 39
Impairment	Several models of impairment, model of incurred losses	A unified model of impairment for all financial instruments – the forward-looking expected loss model

Source: Gornjak (2017)

The most important of the changes discussed above and included in Table 2.2 is the introduction and implementation of the forward-looking ECL impairment model. The incurred loss model under IAS 39 required that recognition of impairment losses be triggered by a loss event subsequent to origination. It prevented reporting entities from recognising impairments in advance during economic downturns and did not allow the incorporation of the effect of future events occurring after the balance sheet date, even if the events were expected (Novotny-Farkas, 2016). This caused banks to delay the recognition of credit losses even when there was clear evidence that the loans would not be fully recovered, the impact of which was overstated financial assets (loans).

The new ECL model in IFRS 9 requires that impairment allowances be recognised for all exposures, from the time that a loan is originated, based on the deterioration of credit risk since initial recognition (Novotny-Farkas, 2016 and EY, 2018). This means that entities are required to be proactive and to raise provisions for credit losses as soon as a financial instrument is recognised in the financial statements, and not only when a loss event occurs. Entities are required to consider not only losses that have already occurred or current losses but also the expected credit losses that are expected to result from the increase in risk exposure of the financial instrument (Gomma *et al.*, 2019). This addresses the delayed recognition of credit losses under IAS 39 as IFRS 9 demands timely

recognition of credit losses based on past events, current conditions and the best available forward-looking information (Novotny-Farkas, 2016; IASB, 2018).

Casta *et al.* (2019) emphasise the above point by explaining that the development of the ECL model in IFRS 9 was aimed at improving the timely recognition of credit losses by anticipating future losses, and therefore avoiding unexpected depletion of income, as what was seen under the incurred loss model of IAS 39 during the 2007/2008 global financial crisis. The ECL impairment model ensures that entities properly accrue for expected losses and accumulate adequate reserves during good economic periods so that they can absorb credit losses during economic downturns (Gomma *et al.*, 2019). What happened during the 2007/2008 global financial crisis is that banks recorded foreseeable losses at once, which had a significant negative impact on bank earnings. IFRS 9 prevents this by requiring provisions for loan losses to be recognised on an expected basis that aims to smooth credit losses by starting provisioning immediately after initial recognition of financial instruments in the financial statements (Casta *et al.*, 2019). The earlier recognition of impairment losses is expected to increase loan loss provisions. Research performed by Löw *et al.* (2019) states an expected increase of about 13% to 50% in loan loss provisions. The increase is expected to be driven by a transfer of performing loans to stage 2 loans on initial application of IFRS 9. This is supported by Casta *et al.* (2019) who explains that expected losses recognised for performing loans will decrease banks' retained earnings on first time adoption of IFRS 9 and give rise to "day-one-losses" on date of initial application.

The ECL model is more information sensitive compared to the incurred loss model of IAS 39 as it requires entities to consider reasonable and supportable future forecasts of economic conditions (IASB, 2014). Banks must consider any information, including forward-looking information, that potentially indicates that the loans are impaired and take this into account when determining the amount for impairment allowances that they need to recognise. Financial statements are now driven by future expectations and not historical prices or information. IFRS 9 has created a significant shift in accounting since it is a principle-based standard that incorporates forward-looking information in the

calculation of impairment allowances. There is a shift from looking back to forward-looking (Gornjak, 2017). This improves the usefulness of information regarding the credit losses in the banks' financial statements. There is an expectation that the earlier recognition of loan losses would mitigate procyclicality, reduce capital inadequacy concerns during a crisis and thus enhance financial stability (Krüger *et al.*, 2018). It will also provide users of the financial statements with more timely, relevant, and reliable information.

In a study of the African Bank's credit risk disclosure, Ramutshila (2019) summarises the differences between these two models by incorporating the table below (Table 2.3) which was developed by the EFRAG, a European accounting body that provided guidance on the difference between the ECL model and the Incurred Credit Loss (ICL) model (EFRAG, 2009).

Table 2.3: Fundamental differences between the ICL model and ECL model

ICL model (IAS 39)	ECL model (IFRS 9)
Loss is recognised only when there is objective evidence of the loss event.	Uses forward looking information to project the expected loss of the financial asset even before the loss event occurs.
It is subjective in nature because it waits for the credit risk event which may vary from one company to another.	It is objective in nature because IFRS 9 has standardised the process of raising impairments and little to no room for judgement has been left.
Incurred credit losses have a higher procyclical nature, i.e. the impact of economic conditions on impairments will be considered only when the actual event is evident / has occurred.	Expected credit losses are expected to react less to economic downturns. This is because the expected credit loss model applies to the exposures that include the weighted average of all the economic scenarios.

Source: adapted from Ramutshila (2019)

2.4.1 Basic workings of the ECL model:

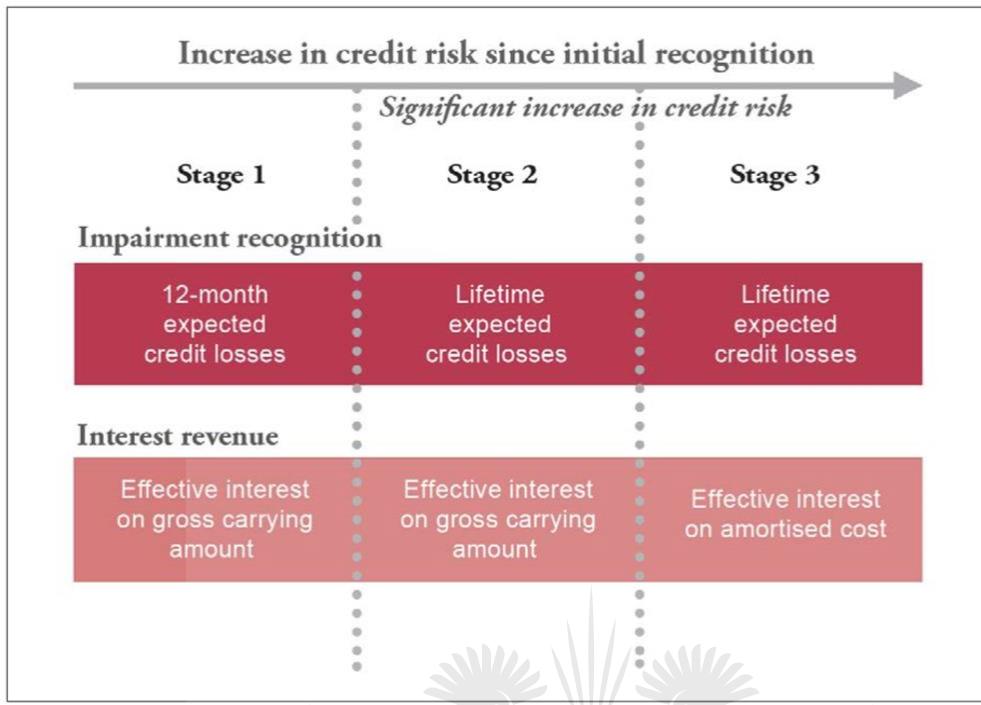
A basic explanation of the workings of the ECL model is that it works as a “loss allowance” model that recognises a provision for the expected credit losses on financial instruments before any of these losses have been incurred. It then requires the amount recognised for the expected credit losses to be updated at each reporting date to reflect the increase/decrease in credit risk of the financial instrument (Gornjak, 2017). This applies to loans and receivables that are measured at Amortised Cost or at Fair Value Through Other Comprehensive Income (FVOCI) (IASB, 2014).

The expected credit losses recognised are calculated in the following manner:

- (a) identifying scenarios in which a loan or receivable defaults;
- (b) estimating the cash shortfall that would be incurred in each scenario if a default were to happen;
- (c) multiplying that loss by the probability of the default happening, and
- (d) summing the results of all such possible default events (PWC, 2017).

The ECL model requires that banks and other companies report expected credit losses in three stages based on the credit risk of the loans after initial recognition. Stage 1 represents all financial instruments purchased or originated, which, at reporting date, have no significant increase in credit risk or low credit risk. These are also known as performing loans. For stage 1, the reporting entity must report “12-month expected credit losses”. For stage 2, which represents financial instruments with a significant increase in credit risk (SICR), and stage 3, which are financial instruments with realised evidence of impairment (also known as non-performing loans), the reporting entity must report the full “lifetime expected credit loss” for these financial instruments (Edwards, 2016; Novotny-Farkas, 2016; Gornjak, 2020). This is shown in Figure 2.1 below, which presents the three stages of impairment as required by IFRS 9.

Figure 2.1: IFRS 9 impairment stages



Source: Adapted from IASB Project Summary: *IFRS 9 Financial Instruments*, July 2014.

In its supervisory guidance of 2015, the BCBS highlights that banks must maintain sound corporate governance over their credit risk management and ECL estimation processes. The BCBS further stresses that banks should assess their credit risk management, ECL measurement and factor these into their assessment of the bank's capital adequacy (BCBS, 2015). As mentioned previously, the BCBS supports ECL provisioning but accepts that regulatory capital models have different objectives and inputs to ECL provisioning per IFRS 9. Since regulators use financial statements information to calculate regulatory capital numbers, financial reporting and bank supervision are closely intertwined (Bushman & Landsman, 2010). Table 2.4 below shows the difference between IASB and FASB ECL approaches compared to Basel capital models.

Table 2.4: Differences between IASB and FASB ECL approaches and Basel capital models.

Performing assets and under-performing assets (with a significant increase in credit risk)

		IASB	FASB	Basel Committee
PD	Measurement period	12 months (Stage 1) Lifetime (Stage 2)	Lifetime	12 months
	Cycle sensitiveness	Point-in-time , considering forward-looking information, including macroeconomic factors		Economic cycle
LGD/ EAD	Measurement	Neutral estimate, considering forward-looking information, including macroeconomic factors		Downturn estimate

Source: BCBS (2016).

2.5 Chapter summary

The literature review provided the researcher with theoretical understanding of the topic and background knowledge for the research. The main themes covered are the development of bank regulation and legislation introduced after the 2007/2008 global financial crisis to improve banks financial reporting. Basel III was the focus, which introduced robust and high-quality capital requirements that would aid banks to hold enough buffers to absorb unexpected losses during times of credit crisis. The FSRA was implemented in South Africa, and it introduced the Twin Peak model consisting of the PA and FSCA to improve financial stability. Most importantly, IFRS 9 was introduced to replace IAS 39. IFRS 9 requires banks to raise impairment provisions for loans using the ECL model to ensure that adequate and timely provisions are raised based on forward-looking information. The ECL provisions are expected to have a significant impact on regulatory capital, especially the CET1 ratio.

Chapter 3: Research design and methodology

3.1 Introduction

Chapter 2 above highlighted new legislation and regulations that were introduced post the 2007/2008 global financial crisis to improve bank reporting and regulation. It further elaborated on the weaknesses of IAS 39 and explained changes that were introduced in IFRS 9 to address these weaknesses. The main change that was highlighted was the forward-looking ECL model. The chapter also briefly discussed the basic workings of the ECL model and explained differences of this model compared to the incurred loss model. The purpose of this chapter is to outline the research design and methodology that were adopted throughout this study in analysing the impact of the initial adoption and post application of the ECL loss model on the regulatory capital and credit risk of the five biggest banks in South Africa. The chapter begins by explaining the philosophical approach applied in the study. This is followed by detailing the research methodology and design. The chapter concludes with the basis of sampling and data analysis methods.

3.2 Research philosophy and approach

Inaga and Schneider (2005) define research as “a theory based systematic investigation of, or inquiry into, specific phenomena for the purpose of discovering new facts or critical exposing of existing knowledge”. There are different research paradigms that can be applied depending on the study that is conducted. This study was performed within the interpretative paradigm, which is a philosophical system of knowledge in which the researcher assumes that reality is created and interpreted by people (Antwi & Hamza, 2015). This methodology provides an understanding of the social reality based on the subjective interpretation of the researcher, and it does not only describe phenomena but also assesses the human influences and reasons for the phenomena (Coetsee, 2011). This methodology was appropriate for this study as the researcher sought to study, analyse and interpret the financial results of the five biggest banks in South Africa to determine the impact of applying the ECL model. Under this methodology, interpretation is more subjective as it is coloured by the researcher’s own views, beliefs, personal experiences and existing knowledge, and the researcher cannot be detached from the

subjects under study (McKerchar, 2010). Since the analysis performed by the researcher on the data collected in this study was subjective, it was reflective of an interpretative research.

3.3 Research methodology and design

Leedy and Ormrod (2013) explain that there are many research problems that have both qualitative and quantitative aspects. To fully address them, a researcher then must use both qualitative and quantitative research techniques (Leedy & Ormrod, 2013). On one hand, quantitative research is defined as “a research approach that examines the relationship between variables by collecting and analysing numeric data expressed in numbers or scores” (Plano Clark & Ivankova, 2016). On the other hand, qualitative research is seen as “a research approach that focuses on exploring individuals’ experiences with a phenomenon by collecting or analyzing narrative or text data expressed in words or images” (Plano Clark & Ivankova, 2016). This methodology is aimed at describing, interpreting, verifying or evaluating the research topic (Leedy & Ormrod, 2013). As mentioned in Chapter 1, this research was conducted using a mixed methods approach. Johnson, Onwuegbuzie and Turner (2007) describe mixed methods research as a research methodology in which the researcher combines quantitative and qualitative research methods, concepts, techniques or approaches in a single study for the purposes of obtaining a fuller picture and deeper understanding of the phenomenon.

The interpretative content analysis that was performed in this study was on both quantitative and qualitative information extracted from the Annual Financial Statements and IFRS 9 transition reports of the five banks selected for this study. The numerical data contained in these reports was used to compute ratios and the statistical analysis of the ratios and numerical discussions of figures presented constitute the quantitative approach. The interpretation of the ratios and the analysis of further disclosures in the Annual Financial Statements and IFRS 9 transition reports constitute the qualitative approach. Thus, the mixed methods approach was deemed appropriate for this study as both quantitative and qualitative data were collected simultaneously, and analysed and interpreted in parallel.

3.4 Population, sampling and data collection

The population for this research comprised of the Annual Financial Statements of all banks that are registered as banks in South Africa as per the South African Reserve Bank (SARB) regulations. The population size is fifteen South African banks that are currently being regulated by the SARB. The researcher used purposive sampling. This involves selecting those individuals or objects that will yield the most information regarding the research topic under investigation (Leedy & Ormrod, 2013). The researcher applied purposive sampling and selected a sample out of the wider population. The sample comprised of the five largest banks in South Africa, namely Standard Bank Group, ABSA Group Bank, FirstRand Bank Group, Nedbank Group, and Investec Bank. Capitec Bank and African Bank were not included in the sample above as they ranked sixth and seventh respectively based on Tier 1 capital and bank asset value. The five banks listed above were selected because they represent the five biggest banks in South Africa. This is according to the "SA Major Banks Analysis" conducted by PwC in April 2019 and was confirmed by research performed by a rating firm called S&P Global in 2019 based on the banks' asset value. The above rankings were the latest results that the researcher could find upon commencement of data collection in 2019. The SARB confirmed that these banks were the five largest banks, which collectively held 89.79% of the total banking sector assets as at 31 March 2022, which percentage had been 90.05% when it was measured in March 2021 (SARB & PA annual report 2021/2022).

The Annual Financial Statements of the banks indicated above were used as the unit of account for this study. The PDF version of published, audited Annual Financial Statements were sourced from the official websites of these banks. The Annual Financial Statements are publicly available and were used to collect the data. They contain both quantitative data and qualitative comments and disclosures, which supports the mixed methods approach that was adopted.

The data collection technique used is content analysis. According to Leedy and Ormrod (2013) content analysis is a detailed and systematic examination of the contents of a body

of material for identifying patterns, themes or biases (Leedy & Ormrod, 2013). With content analysis of Annual Financial Statements, this methodology involves gathering qualitative and quantitative data from the Annual Financial Statements and codifying the data into predefined categories, themes and patterns to perform an analysis to derive patterns in the presentation and reporting of financial information (Guthrie & Abeysekera, 2006; Steenkamp & Northcott, 2008). This methodology was deemed appropriate for this study as the researcher sought to study, analyse, and interpret the qualitative and quantitative data contained in the Annual Financial Statements (secondary data) of the five biggest banks in South Africa. The content analysis focused on the financial statements as well as IFRS 9 transition reports. The financial statements and disclosure notes are where the impact of the ECL model is mainly reflected. The IFRS 9 transition report provides a comprehensive set of accounting and regulatory disclosures relating to IFRS 9. These reports provided further detailed information that assisted in quantitatively and qualitatively analysing the impact of applying the ECL model.

3.5 Data analysis

The study focused on analysing the Annual Financial Statements of the five biggest banks in South Africa for financial years starting on or after 1 January 2018 (this is the date when IFRS 9 became applicable) to determine the impact of adopting the ECL provisioning model at date of initial application (DIA). The Annual Financial Statements for the financial periods ending 2017 and 2018 were used to analyse the pre-adaptation financial results. A comparison was performed between the financial statements prepared using the incurred loss model per IAS 39 (financial periods ending 2017/2018) and those prepared using the ECL model per IFRS 9 (financial periods starting on or after 1 January 2018). The Annual Financial Statements of these banks for the year ended 2018 to 2021 were also analysed to determine the initial and post application impact of the ECL provisioning model over a four-year period. The four years' worth of post application information was used for this study, and this aligns the study with the SARB Directive 5 of 2017: *Regulatory treatment of accounting provisions – interim approach and transitional arrangements including disclosure and auditing aspects*. This directive allows banks to apply a three-year transition of the day 1 impact, with the net impact on CET1, total capital

adequacy, and risk weighted assets (RWA) phased-in on a straight-line basis over three years (SARB, 2017). Therefore, this study also analysed and determined how each bank had applied this phased-in approach per SARB Directive 5 over the three years and what the impact was on the financial results of each bank. Since IFRS 9 only became applicable from 1 January 2018, at the time of data collection banks had applied this standard for a maximum of 4 years; thus, there is a limitation on the availability of data. The availability of Annual Financial Statements also contributed to the use of four years' worth of financial information.

For the interpretative content analysis to be effective, the categories for the analysis must be clearly defined beforehand (Guthrie & Abeysekera, 2006). In analysing the impact of adopting the ECL model at DIA, the focus was on changes in capital adequacy of each bank (refer to 2.1.2) as well as impact on key credit risk ratios for each bank. A comparison was performed on what these ratios were when the bank applied the incurred loss model per IAS 39 (using 2017/2018 annual financial reports) and what the change was with the initial adoption of the ECL model of IFRS 9 on DIA. The numerical information contained in the Annual Financial Statements (quantitative data) constituted the data used to calculate the capital adequacy ratios as well as the credit risk ratios. The descriptive information and commentary in the Annual Financial Statements constituted the qualitative data. This data are included in the disclosure notes to the financial statements, executive summary, directors' report, audit committee's report and IFRS 9 transition report. They provide background information to the financial figures reported. The data relating to IFRS 9, together with the ratios calculated, were used to determine and interpret the impact of applying the ECL model on DIA. Many researchers have identified credit risk as the most prominent risk for banks as it has direct influence on the financial performance of a bank (Moloi, 2016). Several empirical studies have been performed on the financial statement impact of the transition and post-application of the ECL model for large banks in Europe. Table 3.1 below provides a list of observed financial statement impacts on the ECL model as identified from different empirical studies.

Table 3.1: Financial statement impact on ECL model

Observed impact on financial statements	Methodology used	Ratios analysed	Scholars who performed the study
Overall high-level balance sheet impact.	Quantitative analysis	High-level balance sheet items, focus on retained earnings, total equity, CET1 and NPLs	Löw et al. (2019)
Effect on equity	Quantitative analysis	Regulatory capital and CET 1 ratio	Krüger et al. (2018); Löw et al. (2019); Casta et al. (2019)
Impairments effects	Quantitative analysis	Impairment of advances (Stage 1, 2 and 3), impairment effect on equity	Novotny-Farkas (2016); Löw et al. (2019)
Classification and measurement effects	Quantitative analysis	Composition of new IFRS 9 portfolio	Löw et. al (2019)
Impact of impairment volatility on earnings quality	Simulation study	Coverage ratio for stage 1, 2 and 3 and other components that contribute to impairment volatility	Novotny-Farkas (2016); Stander (2021)
Financial credit risk disclosure in terms of IFRS 7	Simulation study	Credit risk disclosure	Novotny-Farkas (2016); Stander (2021)
Impact of IFRS 9 on retained earnings & other equity reserves	Quantitative analysis	Model was implemented and analysed	Casta et al. (2019)
How IFRS 9 interacts with the 3 pillars of Bank regulation	Quantitative analysis	Impairment of advances (Stage 1, 2 and 3), impairment effect on equity,	Novotny-Farkas (2016)

	regulatory capital and CET1 ratio	
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Ernst & Young (2018) and Deloitte (2019) both released publications that analysed the transition impact of the ECL model on the financial statements of large banks in Europe, UK, and Canada. The publications focused on the following key financial statement impacts: Regulatory capital impact (CET 1 ratio and total capital), increase in loan allowances (stage 1, 2 and 3), coverage ratios and write-offs. The key financial statements indicated above are also highlighted in the IFRS 9 transition reports of the FirstRand Bank Group and Standard Bank Group. Based on the empirical studies mentioned above, as well as the information reviewed in the IFRS 9 transition reports and audit firm publications, Table 3.2 below was derived to show the capital adequacy and credit risk indicators that this study focused on. Capital adequacy and credit risk indicators included in the Table 3.2 below were identified as the key financial impacts of the ECL model and were thus the focus point of this study. Other financial ratios were not considered as they can be greatly influenced by other changes in the overall economic environment rather than the IFRS 9 ECL model effect.

Table 3.2: Analysis of impact on DIA of ECL model

Bank:	DIA		
	IAS 39 (2017/2018 financial year- end)	IFRS 9 adjustment	IFRS 9 (at DIA)
Capital adequacy			
Total capital adequacy %			
Tier 1 ratio			
Tier 2 ratio			
CET1 ratio			
Change to Retained earnings			

Groups total equity			
Credit risk			
Impairment of advances			
Stage 1			
Stage 2			
Stage 3			
Total coverage ratio %			
Specific coverage ratio %			
Performing book coverage ratio %			
Stage 3 loans / NPL			
Stage 3 loans / NPL as % of total advances			
NPL coverage			
Gross advances			
Advances net of credit impairments			
Net loans-to-deposits			
Net loans-to-core-deposits			
Credit risk (this period)			
Gross bad debts written off to gross loans and advances			

Source: Researcher's derivation

For analysing the post application impact of the ECL model, the same capital adequacy and credit risk ratios detailed in Table 3.2 above were calculated for each bank. The ratios, together with the qualitative data as explained above, were analysed for the pre-adoption financial periods (2017/2018 financial year-end) as well as for year 1, year 2, year 3 and year 4 post application of IFRS 9. (Refer to Table 3.4 below for the financial year ends for each bank for the pre-adoption period as well as the four years post application that were analysed.) The researcher studied, analysed and interpreted the information in the annual financial reports for the periods selected. The researcher then

tabulated results and performed statistical analysis to interpret the data. This was done to draw conclusions on the outcomes of pre-adoption and post application impact of applying the ECL model. Table 3.3 below shows the key ratios that were considered for each bank for the pre-adoption period and the post application analysis.

Table 3.3: Pre-adoption period and post application ratio analysis

Bank:	Pre-adoption period (year- ended 2017/2018)	Four-year post application impact			
		Year 1	Year 2	Year 3	Year 4
Capital adequacy					
Total capital adequacy%					
Tier 1 ratio					
Tier 2 ratio					
CET1 ratio					
Change to Retained earnings					
Groups total equity					
Credit risk					
Impairment of advances					
Stage 1					
Stage 2					
Stage 3					
Total coverage ratio %					
Specific coverage ratio %					
Performing book coverage ratio %					
Stage 3 loans / NPL					

Stage 3 loans / NPL as % of total advances					
NPL coverage					
Gross advances					
Advances net of credit impairments					
Net loans-to-deposits					
Net loans-to-core-deposits					
Credit risk (this period)					
Gross bad debts written off to gross loans and advances					

The researcher acknowledges that the five banks selected in the sample had different financial year-ends and this affected comparability in analysing the impact of applying the ECL model. Since IFRS 9 became applicable for financial periods starting on or after 1 January 2018, this date was considered as the date of initial adoption (DIA) for banks that have a 31 December year-end. These were categorised as group A. One bank has a 31 March year-end and it was categorised as group B, with a DIA of 1 April 2018. A Bank with a 30 June year-end was categorised as group C, with a DIA of 1 July 2018. All the selected banks elected not to restate comparatives as permitted by IFRS 9. As a result, the impact of adopting IFRS 9 has been applied retrospectively with an adjustment to the bank's opening reserve on DIA. The annual financial reports for the year ended 31 December 2018 (group A), 31 March 2019 (group B) and 30 June 2019 (group C) were analysed to determine the impact of applying the ECL model at DIA and the initial impact for year 1. The annual financial reports for the years ended 31 December 2019, 2020 and 2021 were used to analyse the second, third, and fourth year post-application impact for group A. The same was done on annual financial reports for the years ended 31 March 2020, 2021 and 2022 for group B and year ended 30 June 2020, 2021 and 2022 for group C. Not all banks published an IFRS 9 transition report, as it was not mandatory for banks

to do so. Only FirstRand Bank Group and Standard Bank Group published transition report and they were obtained from their official websites. The sample selected and data collected are summarised in Table 3.4 below.

Table 3.4: Summary of sample selected and data collected

	Group A	Group B	Group C
Year-end	31 December	31 March	30 June
Bank	ABSA Group Bank	Investec Bank	FirstRand Bank Group
	Nedbank Group		
	Standard Bank Group		
DIA	1 January 2018	1 April 2018	1 July 2018
Year 1 impact	31 December 2018	31 March 2019	30 June 2019
Year 2 impact	31 December 2019	31 March 2020	30 June 2020
Year 3 impact	31 December 2020	31 March 2021	30 June 2021
Year 4 impact	31 December 2021	31 March 2022	30 June 2022
IFRS 9 transition report	Standard Bank Group	None	FirstRand Bank Group

3.6 Trustworthiness and ethical considerations

According to Polit and Beck (2012), trustworthiness is the degree of confidence researchers have in their data, assessed using the criteria of credibility, transferability, dependability, conformability, and authenticity. The researcher deems the data used in this study to be trustworthy, as it was obtained from published, audited annual financial reports. Thus, the data used in this study is valid and reliable.

The most relevant ethical issue applicable to this study is honesty with professional colleagues. The researcher ensured that findings are reported in a complete and honest manner. The researcher also ensured that no data are fabricated and that there is no plagiarism or documentary theft included in the report.

3.7 Research methodology conclusion

The research paradigm applied is interpretative paradigm as it is based on the researcher's subjective analysis and interpretation of the financial results of the five biggest banks in South Africa to determine the impact of applying the ECL model on regulatory capital and credit risk of the banks. The research objective was achieved through interpretative content analysis of the Annual Financial Statements and IFRS 9 transitional reports of the banks sampled. The research was concluded using a mixed method approach as both quantitative and qualitative information extracted from the Annual Financial Statements and IFRS 9 transition reports was used to perform the interpretative content analysis. The data collection technique applied was content analysis of the Annual Financial Statements of the bank for the financial years ended 2017 to 2022. The data was analysed as described in section 3.4 and details of the results are included in the following chapter.



Chapter 4: Results

4.1 Introduction

The analysis of the impact of initial adoption and post application of the ECL impairment model on the regulatory capital and credit risk of the five biggest banks in South Africa was performed through an interpretative content analysis of the banks' annual financial reports. Key capital adequacy and credit risk ratios (refer to Table 3.2) were calculated and analysed for each bank for the pre-adoption period as well as for the four-year post adoption periods of IFRS 9 (refer to Section 3.4 and Table 3.3). A mixed methods approach was applied, where both the quantitative and qualitative data from the annual financial reports and IFRS 9 transitional reports were analysed and interpreted to determine the impact of applying the ECL impairment model for the banks. The focus was on the effect caused by IFRS 9 ECL model on regulatory capital, specifically the CET1 ratio (refer to Section 2.1.2). The study also considered the impact on key credit risk ratios to provide a comprehensive view of applying the ECL impairment model. (Refer to Table A1.0 in Annexure A for ratios that were re-performed based on the financial data obtained from the banks' annual financial reports.) Table 4.1 below shows descriptive statistics that were used to explain trends and patterns noted in the ratios determined in Table A1.0 (Annexure A). This chapter details the actual results that were observed.

Table 4.1 Descriptive statistics of ratios re-performed (Period: 2017/2018 to 2021/2022)

	Minimum	Mean / Median	Maximum	Range	Standard Deviation
Total capital adequacy %	15%	16%	20%	5%	1%
Tier 1 ratio	11%	13%	17%	6%	1%
CET1 ratio	11%	12%	16%	5%	1%
Tier 2 ratio	2%	3%	4%	3%	1%
Total impairment coverage ratio	1%	3%	5%	4%	1%
Stage 1 coverage ratio	0%	1%	1%	1%	0%
Stage 2 coverage ratio	3%	7%	12%	9%	3%

Stage 3 coverage ratio	19%	42%	54%	35%	9%
Credit loss ratio	0%	1%	2%	2%	0%

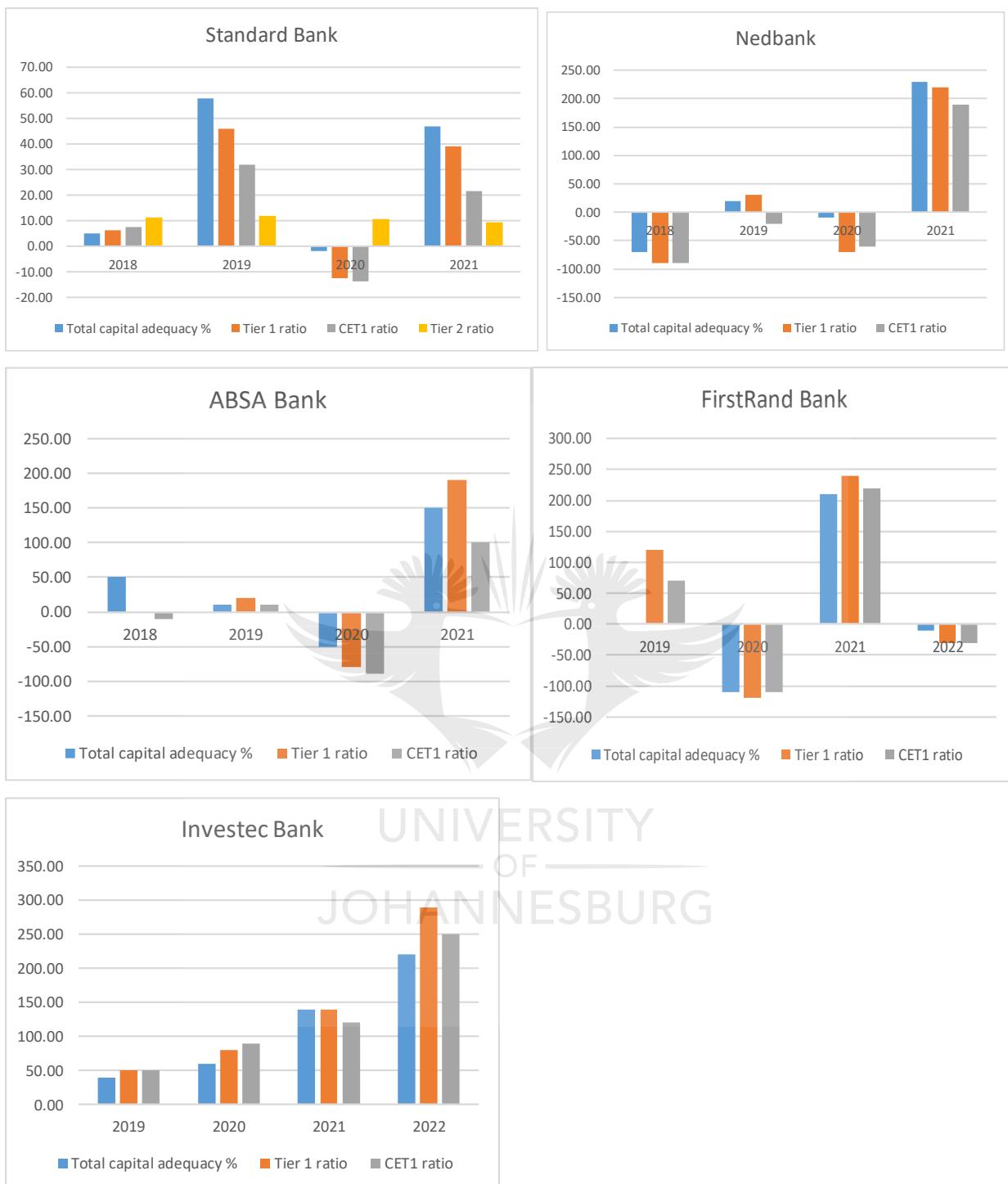
4.2 Regulatory capital impact

As explained in Chapter 2, paragraph 2.3, with the implementation of IFRS 9, it was expected that the banks would experience reductions in equity and regulatory capital. Some researchers expected that the earlier and larger provisions under the ECL model would negatively impact equity and regulatory capital (Novontny-Farkas, 2016; Cohen & Edwards, 2017; Löw *et al.*, 2019). One of the major concerns highlighted in Chapter 2 was that the ECL provisioning model will result in a significant decline in capital ratios, especially the CET1 ratio. This is because IFRS 9 compelled the banks to adjust their impairment provisions upwards on DIA, which upward adjustment will reduce equity reserves on DIA. As mentioned in Chapter 2, IFRS 9 introduced a new ECL model that requires increased and earlier recognition of impairment losses to reflect the real underlying economic value of loans. This increase will directly affect regulatory capital through a reduction of retained earnings, as, permitted by IFRS 9, all the sampled banks elected not to restate comparative information but to apply IFRS 9 retrospectively, with an adjustment to the bank's opening reserves on DIA. This adjustment (decrease in equity) will immediately be reflected in the CET1 ratio on DIA. The impact on the CET1 ratio was a key indicator used by majority of the banks to quantify the IFRS 9 transition impact in the annual financial reports. All five banks elected to apply the three-year phase-in outlined in the SARB's Directive 5/2017. This was stated in the notes to the financial statements of all five banks. As explained in Section 3.2, this directive allows a three-year phase-in of the transitional impact of IFRS 9 on the CET1 ratio.

The effect caused by the IFRS 9 ECL impairment model as depicted in Figure 4.1 is displayed by changes in basis points of the total capital adequacy percentage, Tier 1 ratio, CET1 ratio and Tier 2 for the four-year post application period. Table A1.0 in Annexure A shows movement in total equity and actual ratios that were calculated at DIA and four-year post application for each bank. All five banks experienced a minor reduction in equity (retained earnings and groups' total equity) on DIA. Standard Bank's total equity reduced

by 3.5%, Nedbank by 3.7%, ABSA by 5.3%, FirstRand Bank by 4.2%, and Investec Bank by 2.3%. On DIA, after phase-in of Directive 5/2017, Standard Bank had a 20-basis points reduction in CET1 ratio, Nedbank 60 basis points, ABSA 10 basis points, FirstRand 20 basis points, and Investec Bank 20 basis points. This amounts to an average of 26 basis points reduction in the CET1 ratio for all five banks. All five banks in the sample did not report a significant impact on equity because of reclassification and measurement per IFRS 9. The application of the ECL impairment model was the key driver in the negative equity effect and reduction in capital ratios for all the banks. This impact was because of adopting IFRS 9 and not because of changes in the credit quality of the banks' loans. The credit quality of the banks' loans remained unchanged on DIA, but applying the rules of the ECL model resulted in a decline in CET1 ratios as explained above.

The initial impact of the ECL model on regulatory capital on DIA was not substantial and was further reduced by several partially offsetting factors. These factors include IFRS 9 transition adjustment, deferred tax asset impact, and positive classification and measurement effects on accounting reserves at transition. The study noted that the impact on regulatory capital, specifically the CET1 ratio, was not as significant as expected on DIA. This finding supports what was mentioned in Section 2.1.2, that Löw et al. (2019) predicted the overall first-time application effect of IFRS 9 on the CET1 ratio to be low to moderate in the first year, especially after considering the transition adjustment. The average decrease of 26 basis points noted in this study is in line with the expected decrease of between 0 to 100 basis points noted by Löw et al. (2019). The concern raised by Novotny-Farkas (2016) and Cohen and Edwards (2017) that the impact on the CET1 ratio might be significant on DIA did not prove true for the South African banks that were sampled in this study as noted from the results explained above. The impact noted was low to moderate, and not significant.



(Figure 4.1 Percentage change in capital ratios)

Figure 4.1 highlights that in the year 2020, most banks (except Investec Bank) reported a substantial decrease in all capital ratios. This was mainly driven by the unprecedented COVID-19 pandemic and the subsequent lockdowns that led to a rapid slowdown in

global economic growth, including South Africa (with varying levels of lockdown restrictions implemented from time to time). In response to the pandemic and economic crisis, the SARB cut interest rates by 300 basis points, which was implemented in stages. This provided cash-flow relief to customers as installments on variable interest rate loans decreased but also resulted in lower income for banks. Increased job losses and economic pressures affected customers' ability to repay outstanding debt, which translated into higher impairment charges determined by the forward-looking ECL model. The banks offered further cash-flow relief to customers through payment holidays and fees concessions on qualifying loans. The impact of the COVID-19 pandemic resulted in lower earnings and higher ECL impairments for the banks that negatively affected capital ratios. The average decrease noted during this period on the CET1 ratio was around 36.7 basis points. Despite this, all banks remained resilient and maintained strong capital ratios that were above minimum regulatory requirements. The minimum regulatory requirements are set per Basel III at 7.25% for CET1 ratio, 8.75% for Tier 1 ratio and 10.75% for Total capital ratio. All five banks exceeded the minimum requirements even during the pandemic period as shown in Table A1.0 of Annexure A. In the following year (2021), all banks reported an improvement in capital ratios, as there were lower levels of lockdown restrictions and an improved economic growth in South Africa. Going forward there may be more volatility in capital ratios as impairment levels change and all banks have now fully utilised the SARB Directive 5/2017 (transitional relief). This corroborates the aim of Basel III regarding setting higher capital and liquidity requirements to ensure that banks are resilient and remain solvent in times of stress and economic downturns. Sadien (2017) supports the fact that South African banks and the South African banking sector in general are well capitalised. In Sadien's research, the top five South African banks sampled significantly exceeded minimum regulatory requirements and displayed healthy capital positions even when strict capital requirements were introduced with the implementation of Basel III. This proved true even during the COVID 19 pandemic, when the top five banks' capital position remained stable.

4.3 Impairment impact

The study analysed changes in the banks' total impairment provisions, impairment charge and coverage ratios at transition to IFRS 9 on DIA, as well as the subsequent changes during the four-year post application of IFRS 9. Changes were compared to the IAS 39 equivalent (pre-adoption period). The results are displayed in the graphs below. (Refer to Table A1.0 in Annexure A for actual ratios that were recalculated.)

4.3.1 Total impairment provisions

Each bank reported an increase in the total level of impairment of advances provisions in the balance sheet at transition to IFRS 9 on DIA. This is in line with expectations by Low et al. (2019), cited in Chapter 2 of this study (refer to Section 2.3), that the increase will be between 13% to 50%. Provisions for impairment of advances in the balance sheet represents the accumulated loan loss provisions over several years. This balance increases with additional loan loss provisions and decreases with amounts written-off as irrecoverable. Pre-application of IFRS 9 total impairment provisions consisted of portfolio provisions (for performing loans) and specific provisions (for non-performing loans). From transition to IFRS 9 and post-application, the total impairment provisions consist of Stage 1, Stage 2 and Stage 3 provisions for loans in each of these three buckets. The classification of loans from performing loans and non-performing loans (under IAS 39) to Stage 1, Stage 2, and Stage 3 loans (under IFRS 9) did not change substantially at DIA. This is supported by Low et al. (2019) and Deloitte (2019) who also note that the classification of loans did not change substantially with transition to IFRS 9. Figure 4.2 shows the percentage change of the total impairment provision in the balance sheet from pre-application period based on IAS 39 to IFRS 9 on DIA. Standard Bank had the largest increase of 59%, followed by ABSA and FirstRand both at 57%. Investec increased by 38% and Nedbank was the lowest with an increase of only 20%. The average percentage increase for all sampled banks was around 46%. The average increase is within the range 13% to 50% noted in Chapter 2. The main drivers of the increase were the 12-month ECL for Stage 1 loans, and the lifetime ECL on Stage 2 and Stage 3 loans. IFRS 9 requires that a minimum of a 12-month ECL be maintained for Stage 1 loans compared to the minimum three-month emergence period as per IAS 39. Since most banks have most of

their loans under the Stage 1 bucket, this significantly increases the ECL impairment provision for Stage 1 loans. The lifetime ECL requirement for all exposures for which there has been a significant increase in credit risk (Stage 2 loans) and impaired loans (Stage 3 loans) also contributed significantly to the increase noted. This corroborates what was noted in the literature review, that the application of the ECL model will result in earlier and higher impairment provisions (Kruger *et al.*, 2018). Other factors that contributed to immaterial increase are off-balance sheet exposures. IFRS 9 requires that ECL impairment provisions be recognised for off-balance sheet exposures such as unutilised loan commitments, guarantees and letters of credit. The forward-looking expectations and interest in suspense (ISP) had a minor contribution to the increase. ISP is accounted for differently under IAS 39 and IFRS 9. Under IFRS 9, ISP must be presented as part of both the carrying value of the financial instrument and the related ECL provision. Under IAS 39, ISP is not reflected on the balance sheet at all. Therefore, under IFRS 9 both the carrying amount and the ECL provision will be greater than under IAS 39. However, this does not affect the net carrying value of the loan.

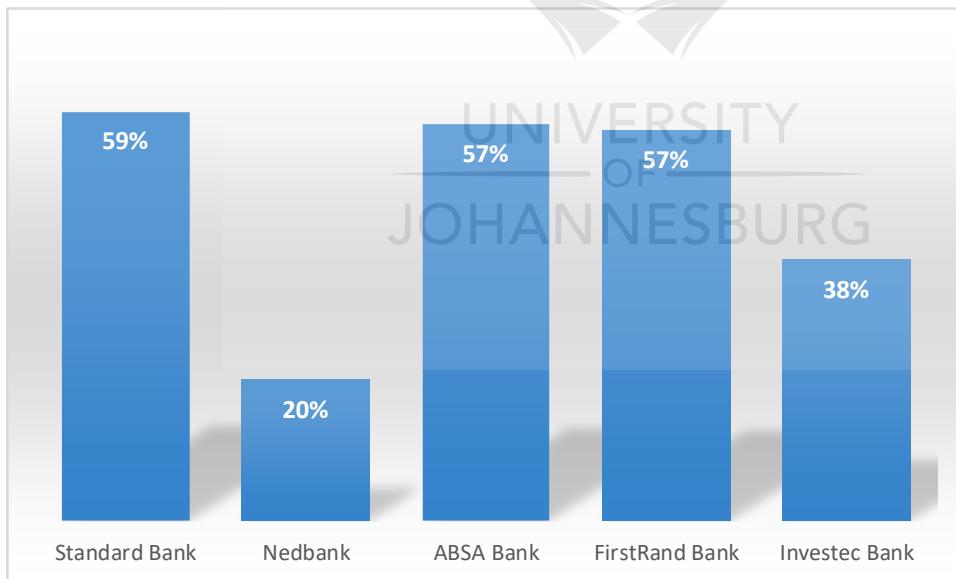
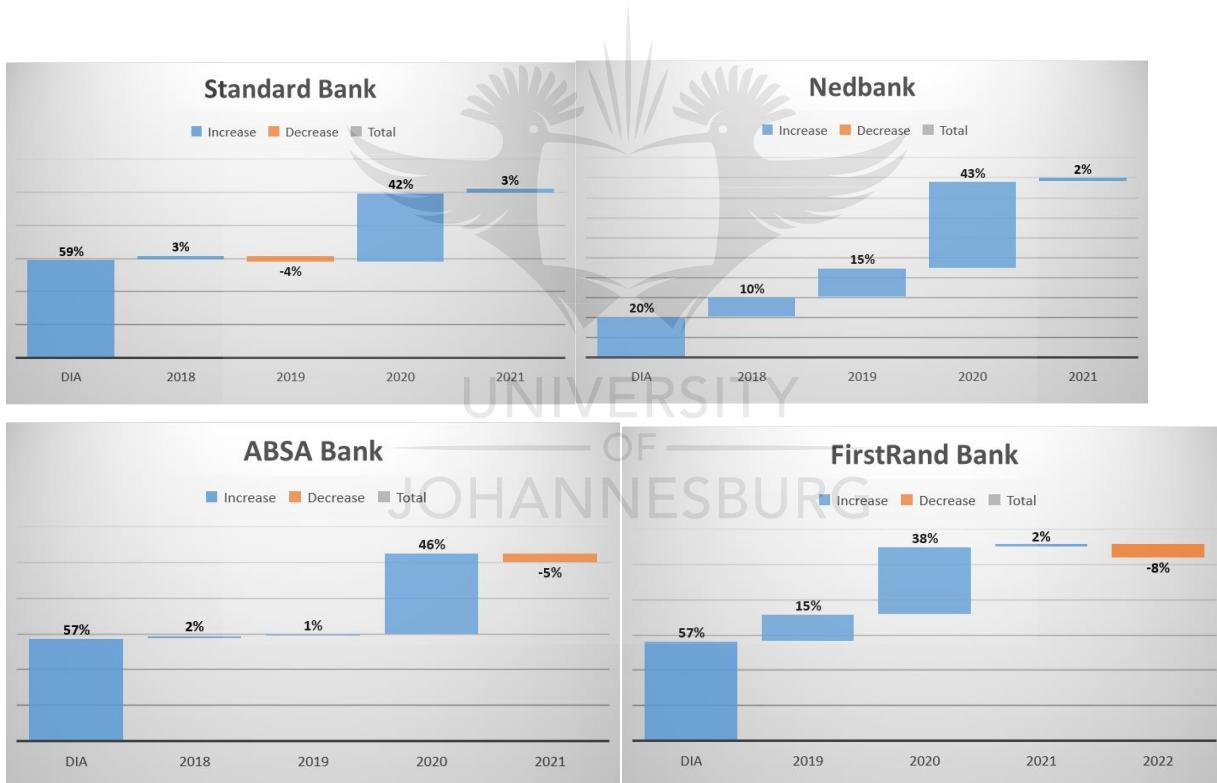


Figure 4.2: Percentage change in total impairment provisions at transition to IFRS 9

Looking at the four-year post application, impairment provisions remained relatively flat for all banks within the first two years. There was a spike during the COVID-19 period

(year-ended 2020). This supports what was indicated in the literature review, that the impairment provisions are expected to generally remain fairly stable, and will only become volatile during periods of economic uncertainty or credit crisis, with the incorporation of forward-looking information. During the pandemic period, banks revised their credit models to include new forward-looking information and abnormal economic uncertainty, resulting from the pandemic. Many customers lost their jobs and could not repay their debts, which increased stage 3 loans for the banks. Banks reported a substantial amount of loans that had a significant increase in credit risk that migrated from stage 1 to stage 2 and resulted in increased in impairment provisions based on lifetime ECL provisioning. Figure 4.3 shows the year-on-year percentage increase or decrease for total impairment provision as at DIA and for the four-year post application period.



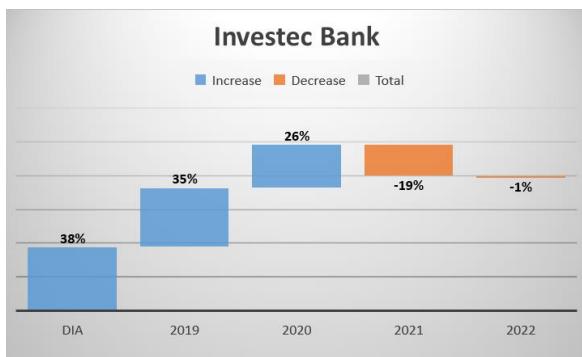


Figure 4.3: Year-on-year percentage increase or decrease on total impairment provisions

The results shows that all banks experienced a large growth in impairment of advances during the pandemic period (also noted in Section 4.2 above). The average increase noted was 39% for the banks sampled. The increase at DIA exceeded the increase noted during the pandemic period. In 2021, all banks had a significantly lower increase in total impairment provision compared to the previous year. An improved macroeconomic environment and growth in the South African gross domestic product (GDP) resulted in a marginal increase in total impairment provisions. Banks also reported better collection experience from cuts of interest rates introduced in 2020. Some banks had also created some overlay provisions specific to the COVID-19 pandemic period. These provisions were slowly released as the economic environment improved and became more stable.

4.3.2 Impairment charge

The impairment charge represents the total income statement charge for increase in impairment provisions. In Chapter 2 (Section 2.3), it was mentioned that the impairment charge is expected to increase upon transitioning to IFRS 9 as some performing loans will migrate to stage 2 loans and result in higher impairment charges (Kruger *et al.*, 2018). Figure 4.4 compares the total income statement impairment charge under IAS 39 (2017) with that of IFRS 9 (2018 and going forward). This is done to highlight the portion of the change in total balance sheet impairment provisions (refer to 4.3.1 above) that have a direct impact of reducing retained earnings. Retained earnings is one of the components used for determining regulatory capital resources before other regulatory adjustments. Comparing the historical IAS 39 impairment charge with that of IFRS 9 provides an

indication of the relative impact to regulatory capital because of transition from the incurred loss model to the ECL forward-looking model. Figure 4.4 also shows movement in impairment charge for the four-year post application of IFRS 9. There was a marginal increase in the impairment charge from the historical IAS 39 incurred loss model to the IFRS 9 ECL model. This is in line with the expectations noted in Chapter 2 and in the above section of the current chapter. Note-worthy increase occurred during the pandemic period (2020) where impaired loans grew. This corroborates the results noted in sections 4.2 and 4.3.1 above.

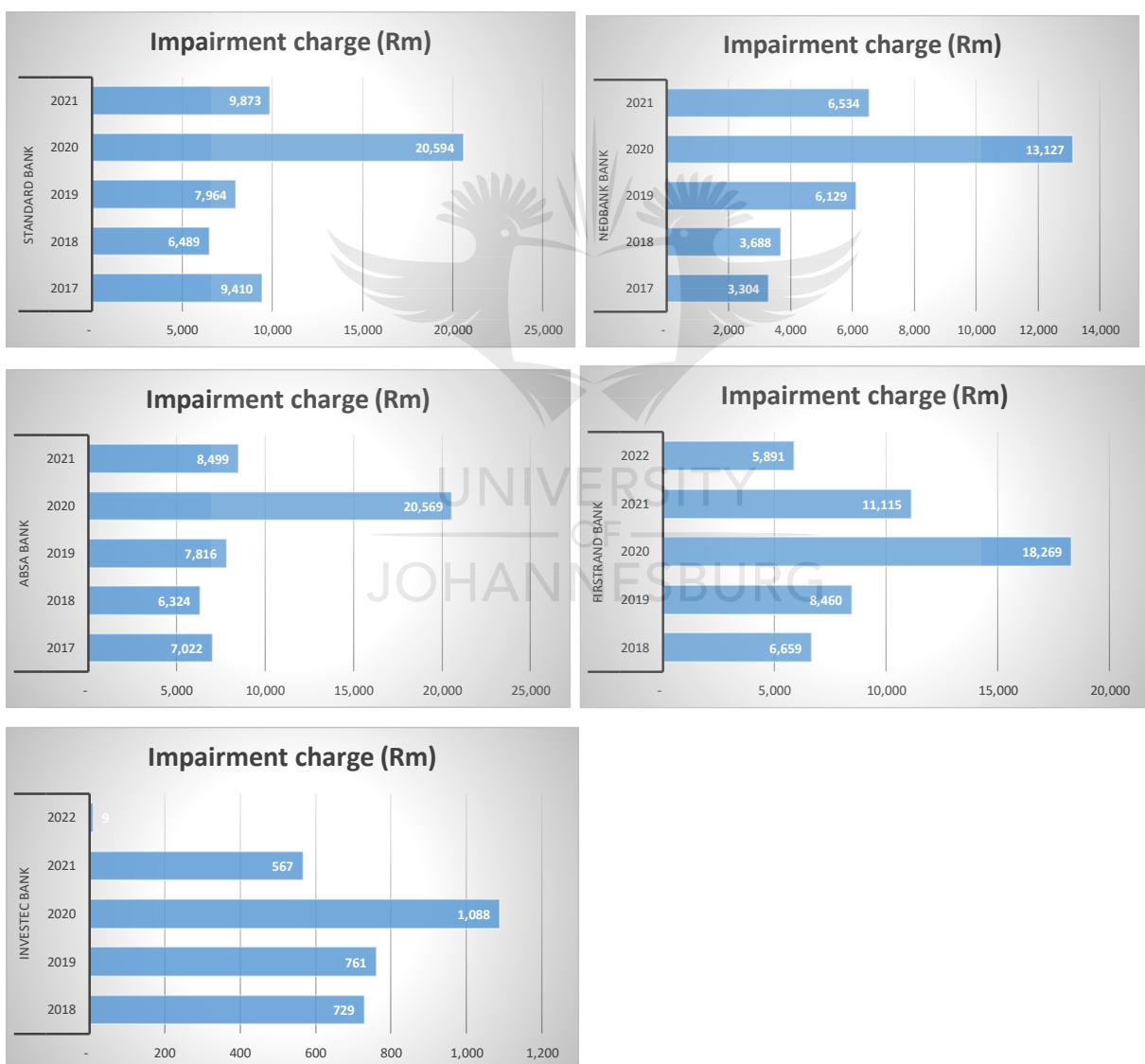


Figure 4.4: Impairment charge pre-adoption and post application of IFRS 9

4.3.3 Impairment coverage ratios

The coverage ratios that were analysed for pre-application period are total impairment coverage ratio, specific coverage ratio, and performing book coverage ratio. For the four-year post application period, the study focused on stages 1, 2 and 3 coverage ratios. (Refer to Table A1.0 in Annexure A for recalculation of these ratios.) Each ratio is calculated by taking the on-balance sheet ECL provision and dividing it by the gross on-balance sheet exposure or loan that it relates to. This gives an indication of the percentage of the exposure that will be covered by the provision if the loan were to be impaired, and it provides an indication whether adequate provisions are raised.

Figure 4.5 presents the results of the ratios that were calculated, and Figure 4.6 shows how the coverage ratios changed year-on year for the four-year post IFRS 9 application.

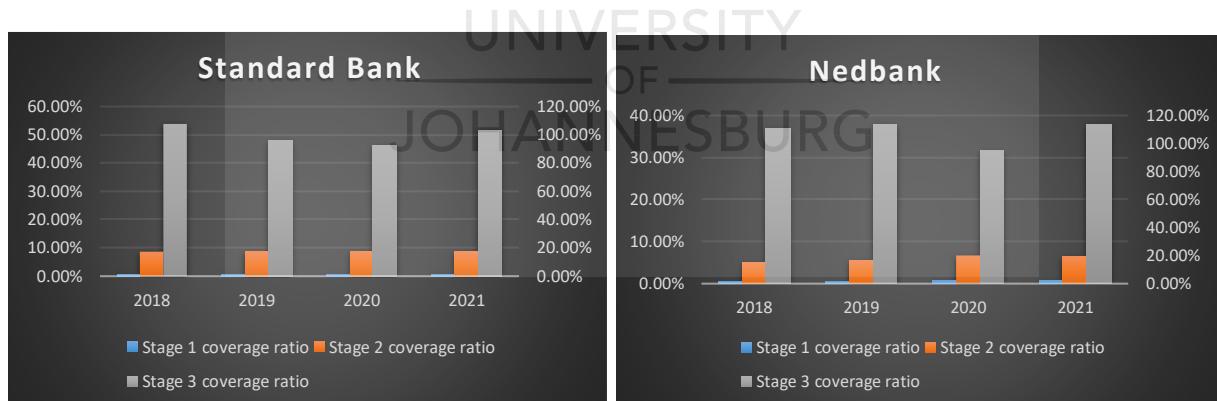
	Standard Bank					Nedbank Bank				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Total impairment coverage ratio	2.14%	3.28%	2.99%	3.93%	3.61%	1.69%	2.22%	2.38%	3.38%	3.40%
Specific coverage ratio	44.23%					36.17%				
Performing book coverage ratio	0.71%					0.71%				
Stage 1 coverage ratio		0.56%	0.48%	0.55%	0.49%		0.45%	0.49%	0.65%	0.69%
Stage 2 coverage ratio		8.43%	8.43%	8.44%	8.49%		4.97%	5.31%	6.61%	6.44%

	Standard Bank					Nedbank Bank				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Stage 3 coverage ratio		53.86%	48.19%	46.13%	51.68 %		36.80%	37.90%	31.55%	37.97%
Credit loss ratio	0.86%	0.87%	0.68%	0.83%	0.92%	0.49%	0.53%	0.82%	1.61%	0.83%

	ABSA Bank					FirstRand Bank				
	2017	2018	2019	2020	2021	2018	2019	2020	2021	2022
Total impairment coverage ratio	2.52%	3.58%	3.31%	4.76%	4.17%	1.83%	3.05%	4.35%	4.48%	3.74%
Specific coverage ratio	43.10 %					36.20 %				
Performing book coverage ratio	0.70%					0.89%				
Stage 1 coverage ratio		0.55%	0.55%	0.92%	0.81%		0.72%	1.03%	0.97%	0.95%
Stage 2 coverage ratio		6.09%	6.39%	7.07%	6.88%		9.80%	11.34 %	12.00 %	10.78 %
Stage 3 coverage ratio		45.12 %	43.66 %	42.48 %	44.62 %		45.84 %	44.71 %	46.35 %	50.83 %
Credit loss ratio	0.87%	0.73%	0.80%	1.92%	0.77%	0.80%	0.95%	2.00%	1.23%	0.68%

	Investec Bank				
	2018	2019	2020	2021	2022
Total impairment coverage ratio	0.56%	0.99%	1.18%	0.96%	0.91%
Specific coverage ratio	27.79%				
Performing book coverage ratio	0.25%				
Stage 1 coverage ratio		0.20%	0.40%	0.38%	0.32%
Stage 2 coverage ratio		4.10%	2.80%	2.80%	3.50%
Stage 3 coverage ratio		47.20%	43.20%	18.50%	22.50%
Credit loss ratio	0.28%	0.27%	0.37%	0.18%	0.00%

Figure 4.5: Coverage ratios pre and post IFRS 9 application



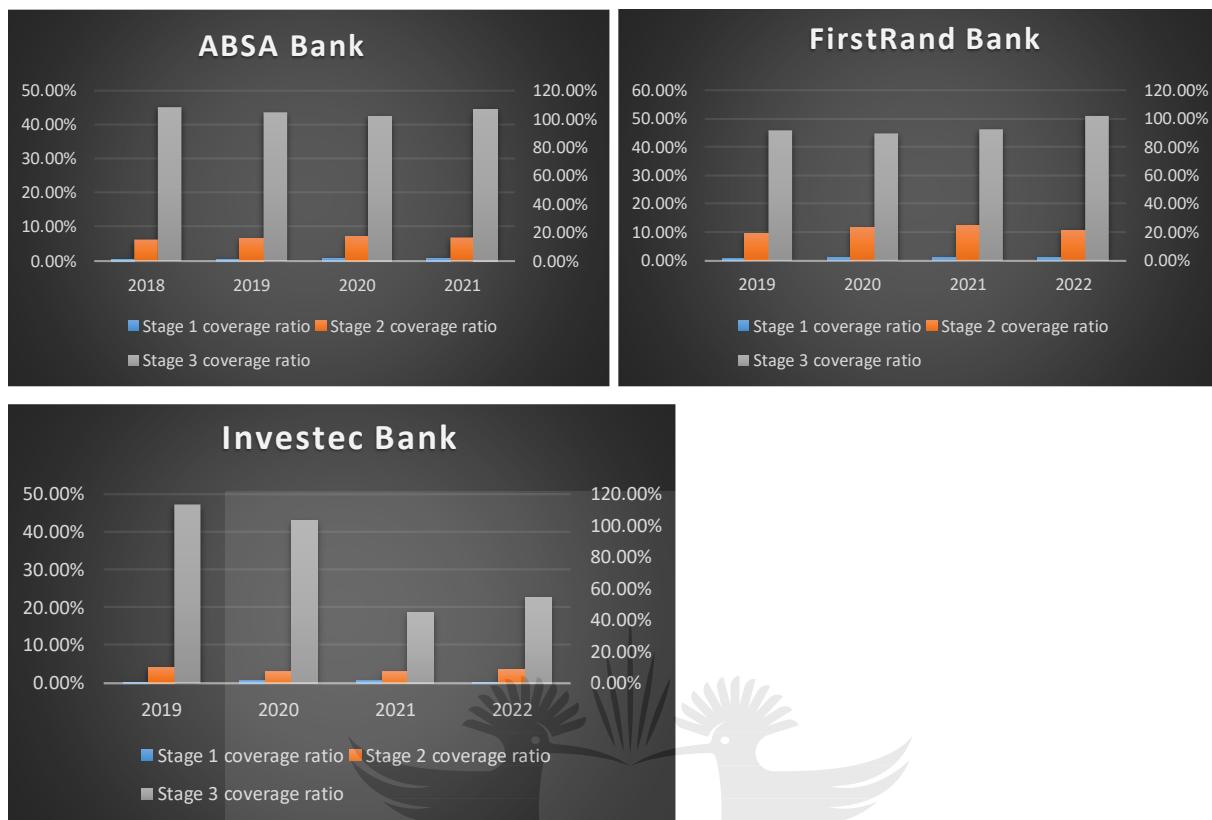


Figure 4.6: Coverage ratios post IFRS 9 application

There was a marginal increase in the total impairment coverage ratio from pre-application period (IAS 39) to transition to IFRS 9 on DIA. As some loans transitioned from Stage 1 to Stage 2, there was a decrease from the performing book coverage ratio compared to the Stage 1 coverage ratio in the first year of IFRS 9 application. The specific coverage ratio increased when compared to the stage 3 coverage ratio owing to the lifetime ECL impairment provisioning for impaired loans. Coverage ratios then remained flat during the periods post IFRS 9 application and only increased during the COVID-19 pandemic period.

4.4 Chapter summary

This chapter was dedicated to presentation of data and analysis of results. On regulatory capital impact, it was noted that all banks applied IFRS 9 retrospectively with a marginal

decrease to reserves (equity) on DIA. There was an average decrease of 26 basis points on the CET1 ratio for all the banks on DIA. During the COVID-19 pandemic period most banks (except for Investec) reported a substantial decrease in all capital ratios analysed. Despite this, the banks remained strongly capitalised and reported capital ratios that were above minimum regulatory requirements. The impairment analysis revealed that each bank reported an increase in total impairment of advances on transition to IFRS 9 on DIA. The four-year period post application of IFRS 9, impairment provisions remained fairly flat for the first two years and spiked during the COVID-19 pandemic period. The next chapter provides a comprehensive summary of the findings noted in Chapter 4 as well as recommendations for future studies.



Chapter 5: Conclusions and recommendations

5.1 Introduction

This chapter provides a summary of the research background, research objective, research approach, and results of the study. It also highlights the conclusions of the study and gives recommendations for future studies.

5.2 Overall conclusion

5.2.1 Background summary

Banks play a critical function in the economy of any country, and bank regulation is fundamental as the banking sector can have severe implications on the economy. Post the 2007/2008 global financial crisis, several new regulations and legislations were introduced to improve financial reporting by banks. IFRS 9 is a new accounting standard for financial instruments that was released by the IASB in July 2014 to replace IAS 39. The main deficiency of IAS 39 that required focus after the financial crisis was that it deferred recognition of credit losses until too late in the credit cycle. The significant change that was introduced by IFRS 9 was the forward-looking ECL impairment model. This model replaced the incurred loss model of IAS 39. It requires an earlier and more accurate recognition of impairment of loans, based on forward-looking information to reflect the true economic value of the loans.

IFRS 9 became effective for reporting periods starting on or after 1 January 2018. This standard is expected to have a major impact on the financial results reported by banks at date of initial application and going forward. The standard will impact accounting for loan provisions, decision-making, processes for collection of forward-looking information and results and disclosures reported in annual financial reports (Gornjak, 2017; Kruger *et al.*, 2018).

Basel III was also introduced post the 2007/2008 global financial crisis to respond to the weaknesses of Basel II. The two key changes that were introduced by Basel III are increased capital requirements and revised liquidity ratios to ensure that banks remain

resilient and solvent in times of credit crisis and economic downturns. Capital adequacy for banks and the way banks provide for impairment of financial instruments was the main focus post the global financial crisis. Basel III introduced high quality and robust capital requirements, especially for the CET1 ratio. In Section 2.1.2, it was noted that the BCBS supports the IFRS 9 ECL provisioning but had concerns that it would significantly reduce the banks' regulatory capital. Since the ECL model of IFRS 9 incorporates earlier and larger impairment provisions, it was expected that it would have a direct impact on regulatory capital. The CET1 ratio is expected to decrease significantly due to the change from the incurred loss model of IAS 39 to the ECL model of IFRS 9.

Empirical literature on the transition and post implementation of the ECL model for banks is developing. The researcher noted a few research publications that focused on the quantitative analysis on the transition to the ECL model and impact on financial statements for large banks in the UK, Canada, and the USA. To date, no research was found that related to South African banks. The background summary lays a foundation to give rationale for the study.

5.2.2 Research approach and results summary

Based on the above, the aim of this study was to analyse the impact of the initial adoption and post application of the ECL model on the financial results reported by the five biggest banks in South Africa. The research sought to determine how adopting the ECL provisioning model has affected the regulatory capital adequacy, specifically the CET1 ratio, and credit risk of the banks. As no empirical research could be found that relates to South African banks, this study contributes to pioneer research relating specifically to South African banks. The objective was achieved through interpretative content analysis of the annual financial reports and IFRS 9 transitional reports of the banks selected through purposive sampling. The annual financial reports used in this study are those of the five largest banks in South Africa, namely Standard Bank Group, ABSA Group Bank, FirstRand Bank Group, Nedbank Group, and Investec Bank.

To achieve the objective of the research, a mixed methods approach was used. The study focused on analysing the annual financial reports of the five biggest banks in South Africa for financial years starting on or after 1 January 2018 (this is the date when IFRS 9 became applicable) to determine the impact of adopting the ECL provisioning model at date of initial application. The annual financial reports for the financial periods ending 2017 and 2018 were used as a base to analyse the pre-adoption financial results. A comparison was then performed between the financial reports prepared using the incurred loss model per IAS 39 (financial periods ending 2017/2018) and those prepared using the ECL model per IFRS 9 (financial periods starting on or after 1 January 2018). The annual financial reports of these banks for the year ended 2018 to 2021 were also analysed to determine the initial and post application impact of the ECL provisioning model over a four-year period.

The interpretative content analysis performed was on both quantitative and qualitative information extracted from the annual financial reports and IFRS 9 transition reports of the selected banks. The numerical data contained in these reports were used to compute ratios. The statistical analysis of the ratios and numerical discussions of figures presented constitute the quantitative approach. The interpretation of the ratios and the analysis of further disclosures in the annual financial reports and IFRS 9 transition reports constitute the qualitative approach. Thus, a mixed methods approach guided the study. (Refer to table 3.2 for ratios analysed for capital adequacy and credit risk at DIA; Table 3.3 for ratios analysed for pre-adoption and post application of IFRS 9, and Table 3.4 for a summary of the sample selected and data that were collected.)

As noted in Chapter 2, it was expected that the ECL model would have a material negative effect on regulatory capital, especially the CET1 ratio (Novotny-Farkas, 2016; Cohen & Edwards, 2017). All five banks reported a marginal decrease in total equity at DIA. The average decrease for all five banks in the CET1 ratio on DIA was 26 basis points, after the phase-in of the SARB Directive 5/2017. Application of the ECL model was the key driver of the decrease noted; the impact of reclassification and measurement per IFRS 9 was immaterial. This finding is in line with the expectation noted in Chapter 2, where the

average decrease was expected to be between 0 and 100 basis points based on research by Low *et al.* (2019).

A significant decrease in equity and capital ratios was also noted during the COVID-19 pandemic in 2020 (post-application of IFRS 9). The average decrease in the CET1 ratio during this period was around 36.7 basis points. However, all banks remained resilient during this period and maintained capital ratios that were above the minimum regulatory requirement. One intention of Basel III and IFRS 9 is to increase the financial stability of banks by improving credit risk management and a timelier recognition of credit losses (Novotny-Farkas, 2016). This proved to be true for all banks sampled as they all reported strong capital ratios even during the pandemic.

There was a significant increase noted in the total impairment provisions in the balance sheet for all banks on DIA. The average increase was 46% for all the banks. The main contributors to this increase were the 12-month ECL for Stage 1 loans and the lifetime ECL for Stage 2 and Stage 3 loans. Other contributors noted were ECL for off-balance sheet items, forward-looking expectations and ISP. This increase meets the expected average increase of 13% to 50% noted in Chapter 2 (refer to 2.3 and 4.3). For the four-year period post application of IFRS 9, there was a spike in total impairment provisions during the COVID-19 pandemic, same as with capital ratios as mentioned above. The average for this increase was 39% for the banks sampled. Periods post pandemic remained flat with no major movements noted. Based on the literature reviewed, it was expected that the impairment would generally remain stable post implementation of IFRS 9 and that there would be volatility during times of economic uncertainty or credit crisis (refer to 2.1.3).

There was a marginal increase for all banks in the impairment charge of the income statement from the historical IAS 39 incurred loss model to the IFRS 9 ECL model at DIA. Note-worthy increase occurred during the pandemic (2020), when impaired loans grew. This corroborates the results noted above.

Lastly, for coverage ratios there was a marginal increase in the total impairment coverage ratio from pre-application period (IAS 39) to transition to IFRS 9 on DIA. Coverage ratios then remained flat during the periods post IFRS 9 application and only increased during the COVID-19 pandemic. This is in line with the trends noted in the total impairment provision in the balance sheet and impairment charge in the income statement.

5.2.3 Conclusions

To conclude, this study contributes to understanding the impact of applying the ECL model on the financial results of South African banks. The analysis revealed that the first-time adaptation of IFRS 9 did not materially impact the regulatory capital of the banks at DIA. A minor decrease was noted on the CET1 ratio that was not as material as initially expected. Credit risk ratios were also not materially impacted upon applying the IFRS 9 ECL model. Post application, the ECL model had an impact on capital ratios and credit risk ratios which resulted from the COVID-19 pandemic. South African banks remained resilient during the pandemic, which proves that IFRS 9 has assisted the banks in managing their credit risk during times of economic downturns.

5.3 Limitations of the study

The study was only based on the five biggest banks in South Africa. The results are therefore not ordinarily extrapolatable to the entire South African banking industry. The study is thus not meant to provide conclusive results but to highlight the impact of the ECL model on certain aspects of the financial results reported by the banks. It focuses only on the impact of capital adequacy and credit risk ratios of the banks. Though the results may not be generalised, they contribute to understanding how the ECL model has impacted banks in South Africa. Results are subjective as interpretative content analysis was used to determine the results. Also, the analysis is limited to descriptive statistics and content analysis, no statistical tests were performed.

5.4 Recommendations for future studies

The researcher recommends that for future studies more such reviews be performed for more banks in South Africa and not just the largest five. This way, a determination of the

effect of the ECL provisioning model for smaller banks would be achieved. In addition, further research should monitor the long-term effects of applying the ECL model as this study only reviewed the first four years for the five largest banks in South Africa.



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ANNEXURE A

Table A1.0 Analysis of ECL impact at DIA and post application of IFRS 9

Bank: Standard								
Type of ratio	Formula	IAS 39	IFRS 9 adjustment	IFRS 9	Four-year post application impact			
		(2017 year-end)		(at DIA)	Year 1	Year 2	Year 3	Year 4
Capital adequacy								
Total capital adequacy %	Total qualifying capital and reserves/RWA	14.83%			14.88%	15.46%	15.44%	15.91%
Tier 1 ratio	Core equity/RWA	13.06%	-0.26%	12.80%	13.00%	13.46%	13.33%	13.72%
Tier 2 ratio	Secondary banks capital/RWA	1.77%			1.88%	2.00%	2.11%	2.20%
CET1 ratio	CET 1 capital/RWA	12.36%			12.43%	12.75%	12.61%	12.83%
Retained earnings (Rm)	Total retained earnings at year-end	144 539	(5 302)	139 237	149 118	159 063	163 065	178 771
Groups total equity (Rm)	Total equity at year-end	190 017	(6 637)	183 380	199 063	209 484	215 272	242 849
Credit risk								
Impairment of advances (Rm)	Impaired advances	22 444	13 290	35 734	36 685	35 279	49 986	51 398
Stage 1			6 142	6 142	5 740	5 138	6 175	6 390
Stage 2		7 174	1 245	8 419	7 144	7 527	10 555	8 879
Stage 3		15 270	5 903	21 173	23 801	22 614	33 256	36 129
Total impairment coverage ratio %	Total impairments as a % of net loans	2.14%	1.22%	3.44%	3.28%	2.99%	3.93%	3.61%
Specific coverage ratio %	Specific impairments as % of NPLs (stage 3 loans)	44%			54%	48%	46%	52%
Performing book coverage ratio %	Portfolio impairments as % of performing book (stages 1 & 2 loans)	0.71%			1.20%	1.12%	3.45%	1.07%

Bank: Standard								
Type of ratio	Formula	IAS 39	IFRS 9 adjustment (2017 year-end)	IFRS 9 (at DIA)	Four-year post application impact			
					Year 1	Year 2	Year 3	Year 4
Stage 1 coverage ratio	Stage 1 impairment / stage 1 loans	N/A		0.56%	0.48%	0.55%	0.49%	
Stage 2 coverage ratio	Stage 2 impairment / stage 2 loans			8.43%	8.43%	8.44%	8.49%	
Stage 3 coverage ratio	Stage 3 impairment / stage 3 loans			53.86%	48.19%	46.13%	51.68%	
Gross advances (Rm)	Total advances	1 070 471	(9 472)	1 060 999	1 156 232	1 216 346	1 321 241	1 475 726
Advances net of credit impairments (Rm)	Advances - credit impairments	1 048 027	(9 472)	1 038 555	1 119 547	1 181 067	1 271 255	1 424 328
Net loans-to-deposits	Net loans/total deposits	84.25%			82.47%	82.81%	78.28%	80.17%
Net loans-to-core-deposits	Net loans/core deposits	90.97%			90.23%	90.50%	85.21%	87.20%
Credit risk (this period)	Provision for bad debt expenses (this period)/ gross loans (this period)	2.10%	1.26%	3.36%	3.17%	2.90%	3.78%	3.48%
Credit loss ratio	Impairment charge on loans and advances as a percentage of daily average gross loans and advances	0.86%			0.87%	0.68%	0.83%	0.92%
Gross bad debts written off to gross loans and advances	Write offs/gross loans and advances				0.81%	1.07%	0.65%	0.90%
Credit impairment charge	Write offs/gross loans and advances	9 410			6 489	7 964	20 594	9 873
NPLs as % of advances	NPLs/gross loans and advances	3.22%			3.82%	3.86%	5.46%	4.74%

Bank: Nedbank		DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment	IFRS 9	Four-year post application impact			
		(2017 year-end)		(at DIA)	Year 1	Year 2	Year 3	Year 4
Capital adequacy								
Total capital adequacy %	Total qualifying capital and reserves/RWA	15.50%			14.80%	15.00%	14.90%	17.20%
Tier 1 ratio	Core equity/RWA	13.40%			12.50%	12.80%	12.10%	14.30%
Tier 2 ratio	Secondary banks capital/RWA	2.10%			2.30%	2.20%	2.80%	2.90%
CET1 ratio	CET 1 capital/RWA	12.60%	-0.60%	12.00%	11.70%	11.50%	10.90%	12.80%
Retained earnings (Rm)	Total retained earnings at year-end	60 546	(3 838)	56 708	63 159	67 374	67 880	77 756
Groups total equity (Rm)	Total equity at year-end	88 539	(3 232)	85 307	91 271	98 449	100 444	109 511
Credit risk								
Impairment of advances (Rm)	Impaired advances	12 002	2 446	14 448	15 845	18 179	26 077	26 581
Stage 1			2 806	2 806	2 889	3 455	4 237	4 573
Stage 2		4 921	(1 035)	3 886	3 587	3 932	6 772	6 543
Stage 3		7 081	675	7 756	9 369	10 792	15 068	15 465
Total impairment coverage ratio %	Total impairments as a % of net loans	1.69%			2.22%	2.38%	3.38%	3.40%
Specific coverage ratio %	Specific impairments as % of NPLs (stage 3 loans)	36.17%	3.13%	39.30%	37.13%	39.12%	33.35%	37.89%
Performing book coverage ratio %	Portfolio impairments as % of performing book (stages 1 & 2 loans)	0.71%	0.22%	0.93%	0.94%	1.00%	1.51%	1.50%

Bank: Nedbank		DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment	IFRS 9	Four-year post application impact			
		(2017 year-end)		(at DIA)	Year 1	Year 2	Year 3	Year 4
Stage 1 coverage ratio	Stage 1 impairment / stage 1 loans	N/A		0.45%	0.49%	0.65%	0.69%	
Stage 2 coverage ratio	Stage 2 impairment / stage 2 loans			4.97%	5.31%	6.61%	6.44%	
Stage 3 coverage ratio	Stage 3 impairment / stage 3 loans			36.80%	37.90%	31.55%	37.97%	
Gross advances (Rm)	Total advances	722 331		728 513	782 334	798 129	807 885	
Advances net of credit impairments (Rm)	Advances - credit impairments	710 329		712 668	764 155	772 052	781 304	
Net loans-to-deposits	Net loans/total deposits	92.06%		86.30%	84.49%	80.95%	80.40%	
Net loans-to-core-deposits	Net loans/core deposits	98.24%		93.10%	90.26%	85.30%	82.98%	
Credit risk (this period)	Provision for bad debt expenses (this period)/ gross loans (this period)	1.66%		2.17%	2.32%	3.27%	3.29%	
Credit loss ratio	Impairment charge on loans and advances as a percentage of daily average gross loans and advances	0.49%		0.53%	0.82%	1.61%	0.83%	
Gross bad debts written off to gross loans and advances	Write offs/gross loans and advances	0.65%		0.55%	0.74%	0.93%	1.01%	
Credit impairment charge	Write offs/gross loans and advances	3 304		3 688	6 129	13 127	6 534	
NPLs as % of advances	NPLs/gross loans and advances	2.71%		3.46%	3.53%	5.66%	5.05%	

Bank: ABSA		DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment (2017 year-end)	IFRS 9 (at DIA)	Four-year post application impact			
		Year 1		Year 2	Year 3	Year 4		
Capital adequacy								
Total capital adequacy %	Total qualifying capital and reserves/RWA	14.90%		14.90%	15.40%	15.50%	15.00%	16.50%
Tier 1 ratio	Core equity/RWA	12.80%	-0.10%	12.70%	12.80%	13.00%	12.20%	14.10%
Tier 2 ratio	Secondary banks capital/RWA	2.10%	-0.10%	2.20%	2.60%	2.50%	2.80%	2.40%
CET1 ratio	CET 1 capital/RWA	12.10%	-0.10%	12.00%	12.00%	12.10%	11.20%	12.20%
Retained earnings (Rm)	Total retained earnings at year-end	87 982	(5 413)	82 569	89 124	95 021	97 010	113 327
Groups total equity (Rm)	Total equity at year-end	108 506	(5 769)	102 737	112 853	121 840	127 546	143 506
Credit risk								
Impairment of advances (Rm)	Impaired advances	18 874	10 829	29 703	30 167	30 381	44 227	41 920
Stage 1					4 022	4 600	7 346	7 179
Stage 2		5 560			4 862	5 232	8 557	7 196
Stage 3		13 314			21 283	20 549	28 324	27 545
Total impairment coverage ratio %	Total impairments as a % of net loans	2.52%			3.58%	3.31%	4.76%	4.17%
Specific coverage ratio %	Specific impairments as % of NPLs (stage 3 loans)	43.10%			45.10%	43.70%	42.50%	44.60%
Performing book coverage ratio %	Portfolio impairments as % of performing book (stages 1 & 2 loans)	0.70%			1.00%	1.10%	1.70%	1.50%
Stage 1 coverage ratio	Stage 1 impairment / stage 1 loans	N/A			0.55%	0.55%	0.92%	0.81%
Stage 2 coverage ratio	Stage 2 impairment / stage 2 loans				6.09%	6.39%	7.07%	6.88%
Stage 3 coverage ratio	Stage 3 impairment / stage 3 loans				45.12%	43.66%	42.48%	44.62%

Bank: ABSA		DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment (2017 year-end)	IFRS 9 (at DIA)	Four-year post application impact			
		Year 1		Year 2	Year 3	Year 4		
Gross advances (Rm)	Total advances	768 646		871 887	947 359	974 196	1 048 185	
Advances net of credit impairments (Rm)	Advances - credit impairments	749 772	(6 990)	742 782	841 720	916 978	929 969	1 006 265
Net loans-to-deposits	Net loans/total deposits	90.57%			93.81%	92.99%	85.58%	81.78%
Net loans-to-core-deposits	Net loans/core deposits	108.68%			114.32%	110.97%	98.84%	91.53%
Credit risk (this period)	Provision for bad debt expenses (this period)/ gross loans (this period)	2.46%			3.46%	3.21%	4.54%	4.00%
Credit loss ratio	Impairment charge on loans and advances as a percentage of daily average gross loans and advances	0.87%	-0.04%	0.83%	0.73%	0.80%	1.92%	0.77%
Gross bad debts written off to gross loans and advances	Write offs/gross loans and advances				0.86%	0.99%	0.76%	1.29%
Credit impairment charge	Write offs/gross loans and advances	7 022			6 324	7 816	20 569	8 499
NPLs as % of advances	NPLs/gross loans and advances	4.02%			5.41%	4.96%	6.82%	5.87%

Bank: FirstRand			DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment (2018 year-end)	IFRS 9 (at DIA)	Four-year post application impact				
		Year 1		Year 2	Year 3	Year 4			
Capital adequacy									
Total capital adequacy %	Total qualifying capital and reserves/RWA	16.80%		16.80%	16.80%	15.70 %	17.80%	17.70%	
Tier 1 ratio	Core equity/RWA	12.80%	-0.10%	12.70%	14.00%	12.80 %	15.20%	14.90%	
Tier 2 ratio	Secondary banks capital/RWA	4.00%	-0.10%	4.10%	2.80%	2.90%	2.60%	2.80%	
CET1 ratio	CET 1 capital/RWA	12.70%	-0.20%	12.50%	13.40%	12.30 %	14.50%	14.20%	
Retained earnings (Rm)	Total retained earnings at year-end	70 611	(5 067)	65 544	75 543	72 615	85 584	89 828	
Groups total equity (Rm)	Total equity at year-end	90 900	(3 783)	87 117	99 428	100 038	112 379	113 680	
Credit risk									
Impairment of advances (Rm)	Impaired advances	15 148	7 930	23 078	27 303	37 772	38 469	35 349	
Stage 1		3 720	1 540	5 260	5 959	8 047	7 493	7 584	
Stage 2		3 760	2 773	6 533	5 663	8 598	9 295	8 096	
Stage 3		7 668	3 617	11 285	15 681	21 127	21 681	19 669	
Total impairment coverage ratio %	Total impairments as a % of net loans	1.83%	0.92%	2.75%	3.05%	4.35%	4.48%	3.74%	
Specific coverage ratio %	Specific impairments as % of NPLs (stage 3 loans)	36.20%	7.40%	43.60%	45.80%	44.70 %	46.40%	50.80%	
Performing book coverage ratio %	Portfolio impairments as % of performing book (stages 1 & 2 loans)	0.89%	0.52%	1.41%	1.31%	1.94%	2.14%	1.80%	
Stage 1 coverage ratio	Stage 1 impairment / stage 1 loans	N/A			0.72%	1.03%	0.97%	0.95%	
Stage 2 coverage ratio	Stage 2 impairment / stage 2 loans				9.80%	11.34 %	12.00%	10.78%	

Bank: FirstRand		DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment	IFRS 9	Four-year post application impact			
		(2018 year-end)		(at DIA)	Year 1	Year 2	Year 3	Year 4
Stage 3 coverage ratio	Stage 3 impairment / stage 3 loans				45.84%	44.71 %	46.35%	50.83%
Gross advances (Rm)	Total advances	858 954	2 007	860 961	921 846	905 712	896 424	979 436
Advances net of credit impairments (Rm)	Advances - credit impairments	843 806	(5 923)	837 883	894 543	867 940	857 955	944 087
Net loans-to-deposits	Net loans/total deposits	86.34%	3.01%	89.35%	84.52%	79.70 %	75.55%	77.38%
Credit risk (this period)	Provision for bad debt expenses (this period)/ gross loans (this period)	1.80%	0.88%	2.68%	2.96%	4.17%	4.29%	3.61%
Credit loss ratio	Impairment charge on loans and advances as a percentage of daily average gross loans and advances	0.80%			0.95%	2.00%	1.23%	0.68%
Credit impairment charge	Write offs/gross loans and advances	6 659			8 460	18 269	11 115	5 891
NPLs as % of advances	NPLs/gross loans and advances	2.47%	0.54%	3.01%	3.71%	5.22%	5.63%	4.26%

Bank: Investec		DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment (2018 year-end)	IFRS 9 (at DIA)	Four-year post application impact			
				Year 1	Year 2	Year 3	Year 4	
Capital adequacy								
Total capital adequacy %	Total qualifying capital and reserves/RWA	15.40%		15.80%	16.40%	17.80%	20.00%	
Tier 1 ratio	Core equity/RWA	11.00%		11.50%	12.30%	13.70%	16.60%	
Tier 2 ratio	Secondary banks capital/RWA	4.40%		4.30%	4.10%	4.10%	3.40%	
CET1 ratio	CET 1 capital/RWA	10.70%		11.20%	12.10%	13.30%	15.80%	
Retained earnings (Rm)	Total retained earnings at year-end	21 855	-954	20 901	24 597	26 259	29 597	28 981
Groups total equity (Rm)	Total equity at year-end	38 415	-894	37 521	41 760	41 748	46 954	46 840
Credit risk								
Impairment of advances (Rm)	Impaired advances	1 434		1 976	2 670	3 359	2 728	2 694
Stage 1				592	538	1 056	984	868
Stage 2		639		269	441	423	416	620
Stage 3		795		1 115	1 691	1 880	1 328	1 206
Total impairment coverage ratio %	Total impairments as a % of net loans	0.56%		0.78%	0.99%	1.18%	0.96%	0.91%
Specific coverage ratio %	Specific impairments as % of NPLs (stage 3 loans)	27.79%		47.17%	43.19%	18.49%	22.47%	
Performing book coverage ratio %	Portfolio impairments as % of performing book (stages 1 & 2 loans)	0.25%		0.37%	0.53%	0.51%	0.51%	
Stage 1 coverage ratio	Stage 1 impairment / stage 1 loans	N/A			0.20%	0.40%	0.38%	0.32%
Stage 2 coverage ratio	Stage 2 impairment / stage 2 loans				4.10%	2.80%	2.80%	3.50%
Stage 3 coverage ratio	Stage 3 impairment / stage 3 loans				47.20%	43.20%	18.50%	22.50%

Bank: Investec			DIA						
Type of ratio	Formula	IAS 39	IFRS 9 adjustment (2018 year-end)	IFRS 9	Four-year post application impact				
		(at DIA)		Year 1	Year 2	Year 3	Year 4		
Gross advances (Rm)	Total advances	258 136	-4172	253 964	272 074	287 305	285 968	297 451	
Advances net of credit impairments (Rm)	Advances - credit impairments	254 304	-2316	251 988	269 404	283 946	283 240	294 757	
Net loans-to-core-deposits	Net loans/core deposits	76.90%			76.60%	73.60%	73.50%	68.40%	
Credit risk (this period)	Provision for bad debt expenses (this period)/ gross loans (this period)	0.56%			0.98%	1.17%	0.95%	0.91%	
Credit loss ratio	Impairment charge on loans and advances as a percentage of daily average gross loans and advances	0.28%			0.27%	0.37%	0.18%	0.00%	
Credit impairment charge	Write offs/gross loans and advances	729			761	1 088	567	9	
NPLs as % of advances	NPL/gross loans and advances	1.11%			1.30%	1.50%	2.50%	1.80%	

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