Lisbon School of Economics & Management
Universidade de Lisboa

MASTER

IN ACCOUNTING

MASTER´S FINAL WORK

PROJECT

THE IMPACT OF THE EXPECTED CREDIT LOSS MODEL ON THE FINANCIAL STATEMENTS OF BANKS

RAMILYA ABDRASHITOVA
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MARCH-2022

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GLOSSARY

AFS – Available for Sale.

CET 1 Capital – Common Equity Tier 1 Capital.

EAD – Exposure at Default.

EBA – European Bank Authority.

ECL – Expected Credit Loss.

FVOCI – Financial Assets at Fair Value through Other Comprehensive Income.

FVTPL – Financial Assets at Fair Value Through Profit or Loss.

HTM – Held to Maturity Financial Investments.

IAS – International Accounting Standard.

IASB – International Accounting Standards Board.

IFRS – International Financial Reporting Standards.

LGD – Loss Given Default.

NAS – National Accounting Standards.

OCI – Other Comprehensive Income.

PD – Probability of Default.

PIT – Point in Time.

SICR – Significant Increase in Credit Risk.

SWOT – Strength Weaknesses Opportunities and Threats.

US GAAP – Generally Accepted Accounting Principles in United States.

OCI – Other Comprehensive Income.

ABSTRACT

Starting from 2005 all listed companies in the European Union are obliged to prepare and present consolidated financial statements in accordance with International Financial Reporting Standards (IFRS). During the past decade, IFRS had experienced substantial shift towards fair value accounting involving numerous assumptions and estimates as well as complex measurement and impairment approaches implicit in IFRS 9 Financial Instruments. These major changes have resulted in a completely different accounting overall, which significantly impacts the financial statements of companies in general and financial institutions in particular. Implementation of the new impairment standards is expected to improve transparency to investors and help to better reflect the emerging risks inherent in the loan portfolios of banks (Edwards, 2016).

Since the banking industry is a very relevant component of the world's economy, it is important to understand the challenges that the banks may face when adopting to IFRS9. Therefore, using a case study of a bank in a developing country, the aim of this project is to demonstrate how the main changes introduced by IFRS9, in particular the new impairment model, impact the financial statements of banks. The proposed case study will be useful to the students of master's program in accounting and finance in order to understand the practical application of the Expected Credit Loss (ECL) model for the impairment of credit loans and its effect on the overall financial statements of banks. The case study is also intended to enhance the students' understanding of the "real world situation" when it comes to adapting the financial statements to the new International Financial Reporting standard and to raise awareness of the perspective of the bank's management, supervisors, regulators as well as other stakeholders and users of financial reporting information.

KEYWORDS: IFRS 9; Expected Credit Loss; Impairments; Re-measurement; Banks financial stability

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1. INTRODUCTION

Through the presentation of a learning case, this work aims to further understand and contribute to the already existing knowledge on the impact of new Expected Credit Loss (ECL) model on the financial statements of the banks and other financial institutions**.** I will briefly describe the background of International Accounting Standard (IAS) 39, main changes in the accounting policy and explain the reasons why it became mandatory to replace it with International Financial Reporting Standard (IFRS) 9. The literature review will discuss whether ECL is generally a benefit or harm to banks' financial stability. Afterwards, I will present the case study for the students of the Master's program in Accounting and Finance, which is intended to facilitate the understanding and enhance the practical application of the ECL model in a "real world situation". The case will concentrate on recognition of the Loan Portfolio Impairment and calculation of Loan Loss Reserve in the financial statements of the hypothetical Bank applying IFRS 9. The students will be required not only to calculate the necessary provision but also to understand all the procedures needed to calculate the impairment loss, as well as the consequent interest income for impaired loans given the conditions of the case. Other parts of this work will include the teaching note to the case, describing the potential audience, objectives of the case, proposed session plan as well as suggested solutions to the questions raised for the case problems.

Problem Statement

Banks play a very important role in capital markets and is a crucial component of the world's economy, consequently many stakeholders (investors, shareholders, regulators and auditors) will be impacted by the very substantial changes in financial reporting of banks due to shifting from the Incurred loss model to the new ECL model for Loan Loss Provision calculation under the new IFRS 9. Some of the reasons why I had chosen to explore the effect of ECL on banks is because they are more complex, they are obligated to apply general approach while other entities may use simplified approach, banks generally have very substantial financial assets and are heavily regulated and supervised worldwide. I believe that it is therefore necessary to understand the effect of the new ECL model on the banks' financial statements and to facilitate the understanding by practical implementation of the proposed case study.

Research Question

The research question addressed in this work is how the new Expected Credit Loss model for calculating Loan Loss Provision, which replaced the previously applied Incurred Loss Model, impacts the bank´s financial statements.

2. THE CASE STUDY

EXPECTED CREDIT LOSS MODEL VS. INCURRED CREDIT LOSS MODEL: THE CASE OF ABC BANK

Mr. Delta (the CEO) was extremely proud to congratulate his entire team with impressive achievements at the celebration of the twentieth anniversary of the ABC Bank (the Bank). The institution was meeting its strategic goals, number of deposits and loans have been growing at steady rates, the quality of loan portfolio performing at excellent levels, shareholders and investors have been receiving annual returns and the size of the Bank had multiplied by 2 since the date of establishment.

His closing speech ended with a very ambitious statement: “We will grow our portfolio by 20% within the next two years and will become the largest bank in Latin America, providing access to financial products to a great number of clients. I believe in our team and I believe in our success”.

However, later that night the uplifted spirit of Mr. Delta was replaced with an overwhelming feeling of concern and anxiety. He came to realize that in order to expand the loan portfolio growth, the Bank needs to attract new international investors, the majority of whom require that the financial statements are prepared in accordance with International Financial Reporting Standards (IFRS) and undergo annual audit by a Big Four auditing firm. The Bank had always been preparing its financial statements using the National Accounting Standards (NAS), which fully satisfied the requirements of the National Bank (the main supervisor of the banks and financial institutions) of the country where it operates. The NAS implied the application of Incurred Credit Loss model similar to the concepts of IAS 39, whereby the impairment provisions were calculated based on the actual number of days the loans were in arrears. Mr. Delta was well aware of the recent implementation of IFRS9, entirely changing the existing loan impairment approach and the related calculations of interest income from loan portfolio. Nevertheless, it was never a concern for the Bank since the National standards continued applying the same methods for calculating the loan loss provisions.

Mr. Delta was suddenly faced with a difficult dilemma: 'should we switch to the IFRS? If we don't, would that imply foregoing the potential for expansion and growth? Is the cost of the endeavor too high, or the end justifies the means?'

The following morning key administrative personnel including the chief of legal, financial, investment and risk department have gathered in the conference room following the CEO's request for an urgent meeting.

Mr. Delta had begun by saying that the shareholders of the Bank have approved the expansion strategy after reviewing the extensive marketing research indicating great potential and high demand for loans, particularly in agricultural sector. "We know that we have to bring in new international investors with deep pockets in order to make this happen… We are talking roughly 600 million dollars to achieve the 20% target. Cecilia, have you contacted IFC, KfW and ResponsAbility to start negotiations regarding the long-term financing?"

"I am afraid we are not even meeting the first requirement in the list: financial statements must be presented in accordance with IFRS. This puts us out right away and cancels any chance…", Cecilia (the chief of investment department) started pessimistically, but was interrupted by the head of the legal department – Marko, who announced that the National Bank never prohibited using IFRS as main reporting standards for financial institutions. "However, if we were to switch, we would still be obliged to present all the mandatory financial reports to the National Bank based on the national accounting standards on the quarterly and annual basis".

Mr. Delta: "Thank you Marko, that would inevitably generate greater costs, but… What's your take on this, Jane?"

Jane (the head of financial and reporting department): "I would have to double check, but mainly what we would have to deal with is impairment of financial assets, application of Expected Credit Loss model to calculate the Loan Loss Provision and that would result in major changes, I believe. Most other national standards are practically aligned with those of IFRS".

"May I just add, that there is a possibility that this change may end up looking not as good as we may be expecting. I closely monitor the fulfilment of covenants with our existing investors, and so far, we have been performing well. However, the risk is that the day 1 effect after moving to ECL can be overwhelming for our shareholders and investors, with

immediate effects on profit and loss statement, looking rather unfavorable to say the least. In addition, we must be very precise and careful with our assumptions and estimates since the new model implies a fair degree of judgement when classifying the loans and calculating provisions, hence there is always a risk of being accused of earnings management", concluded Dylan (the head of risk department) with an evident look of concern on his face.

Mr. Delta: "I appreciate all your inputs on the matter…Let's get down to work now.

Jane, I need to see our recent financial statements (Appendix 1). Marko, get the written confirmation from the National Bank regarding the presentation of the financial statements and the reports to be submitted. Dylan and Cecilia, prepare a table of the current provisioning matrix based on the National Bank's rules (Appendix 2) and develop internal credit policy for the Expected Credit Loss model (Appendix 3). After I review everything, I will appoint a team in charge of compiling the statements according to IFRS and determine the deadlines. I must stress, that it is crucial that we know exactly what would be the impact of ECL application on our financial statements."

BRIEF HISTORY OF ABC BANK

ABC is one of the largest Banks in Latin America, specializing in micro loans with the mission of social orientation of alleviating poverty and promoting the economic development of the country, while generating stable returns for the shareholders.

After 20 years of successfully fulfilling its mission, the Bank reached a point when it needed to attract new international investors aiming to obtain long-term financing in order to achieve greater portfolio growth for meeting the higher demand for loans from potential borrowers.

The Bank had multiple experiences of working with multilateral organizations, European and USA NGOs and a few private investors in the past.

3. TEACHING NOTE

3.1. BACKGROUND

Why was IAS 39 replaced with IFRS 9?

In July 2014, the International Accounting Standards Board (IASB) issued IFRS 9 Financial Instruments which replaced IAS 39. The Standard became mandatorily effective for reporting periods beginning on or after January 1st 2018. This shift was caused mainly by the financial crisis which rendered most financial organizations unfit

for recognizing impairment losses. Huain (2012) had concluded that application of IAS 39 was an important factor that largely contributed to the financial crisis of 2008. Under IAS 39, impairment losses would only be recognized and accounted for when they occur. This caused a huge problem during the financial crisis as the loan defaulters would be recognized "too little, too late" (Hoogervorst, 2014) despite the banks' prediction of a possible loan defaulting in the future. According to Hoogervorst (2016), the main change after replacing IAS 39 is the expected credit loss model which leads to timely recognition of unavoidable losses in financial statements, explicitly in banks.

The second important reason for the introduction of the new standard was to simplify the understanding, interpretation and application of IAS 39 to both the users and preparers of financial statements, which had become particularly cumbersome due to very complex and difficult requirements for reporting financial instruments. Application of IAS 39 implied too many exceptions and different impairment models, therefore many entities struggled to apply the Standard in a correct and consistent manner (Ernst & Young, 2014). IAS 39 was based on rules, which eventually received a lot of criticism due to the lack of flexibility to adapt in situations involving innovative transactions (Gornjak, 2017). However, many scholars note that rules simplify the decision-making process and lead to anticipate and stable decisions in an unstable environment (Scapens, 1994).

In addition, the new standard was intended to bring convergence between the US GAAP and IFRS accounting standards thus, reducing the multiple differences. However, despite the extensive work performed between IASB and Financial Accounting Standards Board (FASB), the attempt to reach convergence was not fully successful.

3.2. WHAT ARE THE MAIN DIFFERENCES BETWEEN IAS 39 AND IFRS 9?

IFRS 9 is comprised of 3 main parts: Classification and measurement of financial assets and financial liabilities, Impairment and Hedge Accounting.

Changes in Impairment section will be described in greater detail since it is the main focus of this project.

1. CLASSIFICATION AND MEASUREMENT OF FINANCIAL INSTRUMENTS

IAS 39

There are four categories of financial assets that determine their measurement and have a specific definition:

- Held to maturity financial investments (HTM)

- Financial assets at fair value through profit or loss (FVTPL)
- Loans and receivables
- Available for sale (AFS)

There are two main categories of financial liabilities:

- Financial liabilities at fair value through profit or loss
- Other financial liabilities

Under IAS 39 financial assets may initially be categorized as FVTPL regardless of the starting classification provided that the fair value can be measured in a reliable manner.

IFRS 9

The classification of financial assets under the new standard relies on principles and implies more judgment. Under IFRS 9, financial assets are measured either at fair value or amortized cost after an entity performs two tests: 1) business model test - whether financial asset is held for the purpose of collecting contractual cash flows, to sell or both; 2) contractual cash flow test - whether contractual cash flows are comprised only of principal and interest or more than principal and interest.

Financial assets must pass both tests (the business model is held to collect and the contractual cash flows are comprised only of principal and interest) in order to be measured at amortized cost with gains and losses, related to interest or eventually a sale, recorded in the Income statement.

Financial assets are measured at Fair value through other comprehensive income (generally abbreviated as FVOCI) when the asset is held to collect contractual cash flows and sell and the cash flows are comprised only of principal and interest or the financial asset is an equity instrument and the entity made an irrevocable option to measure it at FVOCI, with the following recognition of gains and losses through Other Comprehensive Income (OCI).

All remaining financial assets that fail both test and do not meet the definition of amortized cost or FVOCI should be measured at fair value with gains and losses recorded in the Income Statement (FVTPL).

Financial liabilities classification is very similar to IAS 39:

- Financial liabilities measures at FVTPL, which include liabilities held for the purpose of trading
- Other financial liabilities measured at amortized cost.

The most important difference in the classification of financial liabilities is that under IFRS 9 when fair value gains and losses are related to changes in the company's own credit risk, they must be recognized in Other Comprehensive Income (instead of being recognized in profit or loss as required by IAS 39). These amounts do not get recycled to profit or loss during derecognition.

2. IMPAIRMENT OF FINANCIAL ASSETS

IAS 39

The previous standard (IAS 39) applies the *Incurred Loss Model,* which assumes that all loans will be repaid until there is actual evidence that proves deterioration (typically referred to as credit loss event). Consequently, the impairment or credit losses are recognized only when a credit loss event has already occurred. A provision for Loan Loss Reserve is created after the borrower stops meeting his payments obligations. For example, the client has defaulted on loan repayments for 60 days and according to the company's credit policy should be classified as 'substandard loan' with a corresponding provision of 15% of the carrying amount. The company will not recognize any provision until the loan payment is actually 60 days overdue.

This approach resulted in delaying the recognition of credit losses until there is objective evidence of impairment or the impairment of an asset is probable and estimable, meaning that the probability of loss amounting to at least 70%. The decision regarding the impairment amount is based on past events and current conditions without consideration of future losses, even in situations when they are expected. For instance, the borrower is in the agricultural business and his revenues are dependent upon sales of crops. Consider that there is a forecast of extremely hot temperatures during the summer with a 65% probability of drought which would inevitably lead to decreased levels of income as a result of poor harvest. Despite the obvious predisposition to the risk of impairment, the company would only recognize the provision after the borrower faces financial difficulties and stops repaying the loan commitments on timely basis.

The complexity of the standard is largely related to the application of different impairment models for various financial instruments based on impairment tests, which also includes equity investments classified as available for sale. Under IAS 39 there is a clear distinction between impairment and a decrease in value, so impairment testing becomes mandatory for all categories of assets except financial assets measured at fair value

through profit or loss. Impairments tests must be performed at each reporting period with amounts of impairment loss measured and recognized in the following manner:

- For loans and receivables or held-to-maturity investments carried at amortized cost, the impairment loss is calculated as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the financial asset's original effective interest rate which is calculated at the initial recognition. The carrying amount of the asset is later decreased directly or by using an allowance account. The amount of the loss should be recognized in profit or loss. The reversal of these impairment losses implies subsequent tests afterwards.
- For equity instruments (classified as available-for-Sale) that are not carried at fair value due to the fact that it cannot be reliably measured, or on a derivative asset that is linked to and must be settled by delivery of such an unquoted equity instrument, the impairment loss should be calculated as the difference between the carrying amount of the financial asset and the present value of estimated future cash flows using the current market rate of return for a similar financial asset for discounting. The reversal of this category of impairment losses is not allowed.
- For the other available-for-sale financial assets with a decline in the fair value registered directly in other comprehensive income, the cumulative loss (the difference between the acquisition cost and the current fair value less any impairment loss previously recognized) that had been recognized directly in other comprehensive income is reclassified from equity to profit or loss as a reclassification adjustment despite the fact that the financial asset has not been derecognized. Reversal of impairment losses through profit and loss is not allowed. However, since the standard is rich in exceptions, the impairment loss can be reversed with an amount of the reversal recognized in profit and loss. This exception applies when in a subsequent period the fair value of a debt instrument classified as available for sale goes up due to an event which occurred after the impairment loss was recognized. For individually significant financial assets the company must perform assessment of the objective evidence of impairment on individual basis. Nevertheless, IAS 39 (paragraph 64) provides for collective

assessment for impairment when individually assessed assets without impairment can be grouped with financial assets with corresponding credit risk statistics.

IFRS 9

The new impairment model results in early recognition because it is based on the expected credit losses, hence the name *Expected Credit Loss Model*. The expected losses are to be accounted for on the day an invoice is made that is at initial recognition of financial assets. This expected credit loss is then revised continuously till the day the credit is paid. The change leads to even recognition of credit losses over the lives of financial assets, however it requires substantial degree of judgement in order to estimate the amount of ECL provision using reasonable, unbiased and supported information about future economic conditions, past occurrences and current conditions (KPMG, 2014).

There are three main approaches for impairment:

1.General approach, which uses a three-stage model, is applied to investments in debt instruments such as loans and debt securities measured at amortized cost and FVOCI, loan commitments that are not measured at FVTPL, financial guarantee contracts that are not measured at FVTPL and some lease receivables under IFRS 16.

The three stages of the general approach can be summarized as follows:

Stage 1: Financial assets are classified in stage 1 when there was not a significant increase in credit risk (SICR) since the initial recognition. Initially, when the loan is originated or purchased, the company establishes a loan loss allowance based on expected credit losses resulting from possible events of default within the next 12 month. 12-month ECL must also be recognized at subsequent reporting dates when there is no indication that the credit risk on existing loans has increased significantly since the initial recognition. 12-month expected credit losses are a portion of the lifetime expected credit losses which are calculated by multiplying the probability of a default occurring on the asset in the next 12 months by the total (lifetime) expected credit losses that would result from that default. Afterwards, this amount is adjusted based on changes in forward looking information. For instance, if there is an expectation that the unemployment rate would increase, the probability of default (supported by historic records) should be adjusted. For the assets classified in this stage, interest income is calculated based on the gross carrying amount of the financial assets.

In order to identify if there was a significant increase in credit risk since the initial recognition, the company must assess the change in the probability of default for the entire expected life of the loan. The assessment requires a fair degree of judgement based on reasonable and supportable information and comparison between the Default Risk estimated at the reporting date and default risk at initial recognition. An entity usually has to elaborate a very extensive internal credit policy describing what exactly constitutes a significant increase in risk based on particular risk indicators, which may vary depending on internal management practices, nature of the activities and borrowers, types of products, lending terms, etc. As a general rule, the assessment of significant increase in credit risk entails identification of quantitative and qualitative criteria. Quantitative criteria typically include the number of days in arrears. IFRS 9 establishes a 30 day past due period as a 'backstop indicator', at which point the company must assume SICR. There is also a "rebuttable presumption" which considers loans to be credit impaired if they are in arrears of 90 days. Here the word rebuttable should be interpreted as follows: if the company can demonstrate and justify that a period longer than 90 days is more appropriate, it can substitute the 90-day presumption with a more relevant one.

Qualitative assessment usually implies choosing several factors from the non-exhaustive list suggested by the standard, including (BDO, 2018):

- General economic and/or market conditions
- Operating performance of the borrower
- Breaches of covenant
- Changes to contractual terms e.g. granting concessions such as interest waivers
- Cash flow or liquidity issues
- Significant change in credit rating
- Significant change in the value of the collateral
- Existing or expected adverse changes in the regulatory, economic, or technological environment that significantly affect, or are expected to affect, the borrower's ability to meet its debt obligations
- Payment delays and past due information.

Companies may develop risk rating systems with thresholds for establishing whether it falls under significant increase in credit risk based on the score or rating or consider internal or external qualitative indicators, such as past due information, significant

changes in external market indicators of credit risk for similar financial instruments with the same expected life or substantial change in the value of the collateral supporting the loan. It is very important that institutions properly disclose all these relevant inputs and information according to IFRS 7.

Stage 2: The loans are classified in Stage 2 if credit risk on a financial asset has increased significantly since the initial recognition and the loans are not credit impaired (a credit loss event did not occur). At this point an entity must recognize lifetime ECL, which are the expected credit losses that result from all possible default events over the expected life of the financial instrument. Lifetime ECL are the weighted average credit losses with the probability of default as the weight. Since ECLs also an important factor in duly repayments of loans, a credit loss usually referred to as cash shortfall arises even in situations when the company is expected to be fully repaid although later than the terms specified in the contract (PWC, 2017). Similarly to loans in Stage1, the amounts must be adjusted in accordance with changes in forward looking information. For the assets classified in this stage, interest income is calculated based on the gross carrying amount of the financial assets.

Stage 3: Financial assets are classified in stage 3 when they are credit-impaired. The financial asset is considered credit-impaired when it is non-performing or there is objective evidence of impairment. In that case lifetime ECL must be recognized and interest income should be calculated over the net carrying amount after the deduction of loss allowance. The practice of adjusting impairment amounts based on forward looking information is also applied to loans in Stage 3. Previously, under IAS 39 only financial assets that are currently classified in stage 3 were considered impaired at which point the bank recognized an impairment loss. Table I below summarizes the 3 stages of loan classification under the general approach stipulated by IFRS9.

TABLE I
STAGES OF LOAN CLASSIFICATION UNDER THE GENERAL APPROACH IFRS9

STAGE	IMPAIRMENT	INTEREST INCOME
STAGE 1 Performing Loans/initial recognition	No significant increase in credit risk since initial recognition. 12 months expected loss is established for loan loss allowance	Calculated over the gross carrying amount of financial assets

STAGE 2 Underperforming loans	Significant increase in credit risk since initial recognition but no credit loss event occurred yet. Lifetime ECL must be recognized as loan loss allowance	Calculated over gross carrying amount of financial assets
STAGE 3 Non-performing loans	Credit impaired financial assets-nonperforming assets or there is objective evidence of impairment. Lifetime incurred and expected losses must be recognized as loan loss allowance	Calculated over the net carrying amount after the deduction of loss allowance.

2.Simplified approach is applied to trade receivables, contract assets and lease receivables that do not have significant financing component. Simplified approach eliminates the need to calculate a 12-month ECL and make assessments to determine whether there has been a significant increase in credit risk since it is not practical to do so for short term receivables. A loss allowance is to be measured at initial recognition and throughout the life of the assets based on lifetime ECLs. Simplified approach sets out guidelines for companies to internally develop a convenient provision matrix which basically implies the calculation of the impairment on the basis of default rate percentage related to a group of financial assets. Typically, companies may segment their customers by geographical regions if historically there is a trend that customers of one region pay on a more consistent or reliable manner than those of the other, for instance urban and rural clients. Another example of financial assets of similar nature would be if the company identified that individual customers tend to overdue their payments compared to business companies. Segmenting is generally performed based on similar loss patterns that fall under the same geographical region, currency, customer rating and product type. The default rates must be derived from the companies own credit loss experience and adjusted for forward looking information. A relevant period of time should be selected for historical analysis, ideally not more than 2 years since the market information changes very rapidly. Since IFRS 9 does not establish a set of thresholds for categories, the companies should apply judgment to determine the expected loss rates, i.e., historical

default rates calculated based on the obtained data and aging analysis, and afterwards apply them to past due categories. For instance, the provision matrix developed by the company would typically be comprised of:

- current financial assets with historical loss rate or 1%
- 30 days overdue with application of 3% historical rate
- 60 days overdue with application of 10% historical rate
- 90 days overdue with historical rate of 15%
- more than 120 days overdue the relevant historical loss rate of 25%

The loss allowance differs as it moves within different ageing bands. The adjustments for forwards looking information may be based on historical factors such as decreased employment rates in some geographical area which led to 20% increase in losses for trade receivables. In that case the company adjusts its matrix to reflect the 20% potential unfavorable forecast.

3.Purchased or Originated Credit-impaired Assets approach is applied to those assets that are evidently impaired at the point of initial recognition such as loans acquired at a deep discount due to their credit risk. It is assumed that the 12-month ECLs are already embedded and reflected in the fair value, therefore there is no need for additional 12-month ECL allowance on initial recognition. The company would only need to recognize changes in lifetime ECLs in the following periods as an impairment gain or loss directly in Profit or Loss Statement.

The assessment of impairment is performed on individual or collective basis. In many cases the companies may face difficulties in identifying significant changes in credit risk on individual basis because of the lack of relevant credit risk information or extremely high costs and efforts to obtain it before the repayment of financial instrument is actually past due. Banks, for example, have tremendous amounts of small exposures to retail customers and small business borrowers, which are assessed on collective (aggregated) basis with consideration of historical and past due data as well as macroeconomic factors which could lead to future defaults (i.e., unemployment levels, interest rates). IFRS 9 specifically describes that the financial instruments must be grouped based on similar credit risk characteristics, for example same industry, collateral type, remaining term of maturity, geographical location of the borrower, credit risk rating. Individual assessment is likely to be performed by the banks and lenders to corporate borrowers or mortgage

loans when substantial amounts of debt are in place and it is more feasible to obtain and track information on individual case by case level. These loans are monitored on monthly basis usually using automated behavioral scoring process which traces past due information, level of indebtedness, other financial instruments that the clients currently have with the bank, outstanding loan amounts and maturities and loan to value measures. Supervisors usually establish additional requirements which vary in different countries. For example, the Central Bank of Portugal requires that individual assessment of all credits in stage 3 is performed when loans are above certain amount, based on materiality principle.

Nevertheless, IFRS 9 clearly specifies that if the bank or financial institution cannot obtain reasonable and supportable credit risk information without 'undue cost or effort', the lifetime expected losses must be assessed on a collective rather than individual basis.

Another important aspect related to ECL model is disclosures required by IFRS 9 and IFRS 7 because the model involves a very significant degree of judgement and any change or model adjustments may be crucial for the users' understanding. These generally include explanations of the inputs, assumptions and estimation techniques for measuring 12 month and lifetime expected credit losses.

Gornjak (2017) had summarized the main issues of previous and current impairment models presented in the comparative Table II below.

TABLE II

COMPARISON OF IMPAIRMENT MODELS UNDER IAS 39 AND IFRS 9

IAS 39 – INCURRED LOSS MODEL	*IFRS 9 – EXPECTED CREDIT LOSS MODEL*
Recognition of credit loss when there is objective evidence of impairment	Recognition of credit loss at initial recognition and each subsequent reporting period, even if they have not been incurred
Complex due to different impairment models for different financial assets	Unified impairment model (ECL) for all financial assets within the scope
Only past and current conditions are used for determining impairment	Past events, current conditions and reasonable and supportable

	forecasts of future economic conditions
Slow, gradual and protracted manner	Early, timely and prudential manner
Increases procyclicality	Decreases procyclicality

Source: Adapted from Gornjak (2017)

3. HEDGE ACCOUNTING

In general, the fundamentals of hedge accounting described in IAS 39 have not changed substantially in IFRS 9. The most important difference is that IFRS 9 allows a much broader range of circumstances where hedge accounting could be applied.

The most relevant changes are as follows:

- Under IAS 39 entities had limited choice of hedging instruments, while IFRS 9 allows to use any non-derivative financial asset or liability measured at fair value through profit or loss.
- Under IAS 39 it was only possible to use an entire non-financial item for hedging, while IFRS9 permits hedging a risk component of a non-financial item
- IFRS 9 simplified testing of hedge effectiveness using principle-based criteria. IAS 39 had established numerical thresholds and required that hedge effectiveness is tested both prospectively and retrospectively.
- Under IAS 39 the company was allowed to discontinue hedge accounting on voluntary basis, while IFRS 9 states that once you have begun applying hedge accounting, it can only be terminated if the hedge had expired or the management objectives had substantially changed.

Regardless of the changes related to the hedge accounting between the two standards, companies must be aware that hedge accounting is an option, not an obligation – both in line with IAS 39 and IFRS 9. There is also a possibility of not adopting hedge accounting under IFRS9 and continue using IAS 39 until IASB macro hedge project is completed.

3.3. THE PROCESS OF CALCULATING IMPAIRMENT USING GENERAL APPROACH

There are several methods for calculating loan loss provisions using general ECL approach, nevertheless financial institutions tend to prefer the probability of default method since they usually have large loan portfolios and elaborate internal credit rating

systems. In order to calculate impairment allowance on loans applying probability of default, banks need to consider three relevant functions:

- *Exposure at Default (EAD).* This amount is the outstanding loan balance at the reporting date
- *Probability of Default (PD).* This percentage is estimated by considering the likelihood of default over a certain period, in other words the probability that a default event will result in moving the loan to Stage 3. Banks determine the probability of default based on internal information (historical loss experience of the company, internal credit ratings, cash flow forecasts, etc.) or external information, such as external credit rating agencies. The calculation is made based on 12 months for Stage 1 loans and lifetime duration for loans in stage 2 and 3 after determining whether there has been a significant increase in credit risk since initial recognition, and consequent classification in stages. As previously mentioned, the historical PD is adjusted in accordance with the corresponding changes in forward looking macro-economic factors, such as unemployment or GDP forecast.
- *Loss given default (LGD).* This percentage represents an amount that would be lost in case of default. LGD is based on bank's analysis of historical recoveries after the default, which may include cash repayments, proceeds from realization, etc. The value of the borrower's collateral and the assets recovery rates are crucial factors that must be considered by lenders, because they directly impact the LGD. Financial institutions have the right to sell pledged assets to recover the amount lent in the event of the borrower's default, which consequently results in lower LGD. Terms of collateral provision are usually agreed upon and included in the loan agreement signed by the borrower and the lending institution.

The Expected Credit Loss is calculated using the following formula: *ECL=EAD*PD*LGD.*

Example:

A company has a loan with gross carrying amount of $2 million and interest rate of 1% with maturity of 2 years. The company had established that there has been no significant increase in credit risk since initial recognition, therefore at the reporting date the loan is still in stage 1. Assuming the following information at the reporting date:

- EAD is $1,200,000
- PD withing 12 months is 2%
- LGD 5%
- Discount rate 1%

ECL= 1,200,000*2%*5%= $1200

Next, following the requirement of IFRS 9, ECLs must be discounted to the reporting date using effective interest rate at recognition. PV of $1200 = $1188, which is the amount that the company should record as 12 months ECL in this case.

3.4. LITERATURE REVIEW

The aim of this chapter is to review the existing research on how the new ECL model for calculating LLP impacts the financial statements of banks after application of IFRS9 became mandatory in 2018.

Incurred Credit Loss model simply did not deliver

There has been an ongoing debate between the scholars on the topic of positive and negative changes brought about by the new standard, however it certainly did not leave the researchers indifferent, particularly regarding the impact of new provisioning approach on banks.

The proponents of ECL model noted that global financial crisis of 2008 clearly demonstrated that the provisions recognized under IAS 39 failed to reflect the real credit risk that the banks were facing, because they were not permitted to record allowances until the actual occurrence of an impairment already took place (Novotny-Farkas, 2016). Hoogervorst et al (2014) had supported the conclusions of Huain (2012) that the application of IAS 39 largely contributed to the financial crisis of 2008, because even if the banks could anticipate the possibility of loans defaulting in the future, impairment allowances were only created after the default, when it was already “too late”.

Advocates of IFRS 9 continuously criticized the rule-based backward-looking approach of the previous standard, which implied that only the past and current conditions could be considered for assessing credit risk (Sultanoglu, 2018); rules simply did not adapt and became useless in an environment which involved innovative transactions (Gornjak, 2017). This criticism could be argued by the earlier works of Scapens (1994), who stated that in unstable environments rules provided the possibility to make more predictable and stable decisions in addition to the fact that “principle-based approaches tend to lack

comprehensive operational guidance" (Benston, Bromwich, & Wagenhofer, 2006, p.169).

Another aspect that resulted in negative feedbacks of using incurred loss model was that it ultimately affected financial stability by creating procyclicality. Bouvatier and Lepetit (2008) had called for the need to implement forward looking provisioning system in Europe after their findings established that banks underestimated their expected credit risk during the economic growth. This led to reduction in loan loss provisioning and increased lending due to understated lending costs. They concluded that during the economically stressful times the banks were forced to make additional provisions on defaulted or problematic loans, which therefore resulted in lower incentive for expanding loan portfolio. Sultanoglu (2018) also expressly described that during the stable and growing economic conditions the levels of provisions remained very low which led to excessive lending and consequently overstated earnings, large dividend distributions and equity. His findings also confirmed that during the economic slowdown/recession/financial crisis the banks had to considerably increase their provisions, immediately effecting their profit and loss as well as capital. This inevitably resulted in banks' undertaking wrong decisions of reducing lending instead of choosing alternative solutions like raising additional capital or reducing dividend payments to comply with minimum regulatory requirements (Novotny-Farkas, 2016; Cohen and Edwards, 2017). The study performed by Beatty and Liao (2011) also proved that banks with greater delays in expected loss recognition decreased their lending during the economic downturn more than banks with smaller delays. Therefore, they concluded that the lending of banks with smaller delays in recording expected losses resulted in less procyclicality. Consequently, these banks would have less fluctuations during recessions since they had been consistently increasing their pre-provision equity during regular economic situations, so they would not have to make great adjustments and even if they reduced lending during the economic downturn their regulatory capital adequacy would not be greatly affected.

Expected Credit Loss model is in place. What is the impact?

According to the SWOT analysis of IFRS 9 performed by Huain (2012), the application of the new ECL model guarantees more precise and timely acknowledgment of credit risk, expends forward-looking information and refines transparency, while

focusing on shareholders. Among other relevant benefits of the new approach the author highlighted the fact that it addresses the issues related to financial crisis and reduces the complexity of classification and measurement. However, Huain (2012) noted that this approach had the following negative outcomes to financial institutions:

- introduction of new concepts, requiring a large degree of professional judgement that could lead to subjectivity;
- reduced levels of comparability as a result of different decisions (such as the choice of business model);
- complex credit-risk assessment approach with multiple stages;
- tarnished usefulness of financial statements at the early stages of adoption when both the previous and the new standards were displayed in presentations and disclosures;
- and substantial financial impacts in terms of provision levels and regulatory capital.

Benston et al. (2006) supported the analysis of Huain (2012) stating that the introduction of the standard based on principles eliminated the possibility to conduct useful comparisons across organizations, because standards usually required from the organizations the determination of assumptions and judgments that are confirmed and verified by the regulators and auditors. In addition, many scholars pointed out that during the transition to new accounting standards the operating costs of implementation are very high, as the companies need to understand and implement the mandatory new standards for compliance reasons. However, according Marshall's estimation (2015), the benefits will outweigh the incurred cost of implementing IFRS 9.

ECL Model introduced by IFRS 9 was intended to recognize credit losses in a timely and consistent manner before a financial asset becomes delinquent, which was not achieved by application of incurred loss model. Although Bischof et al. (2019) challenged this view, by demonstrating that banks' loss recognition was not inhibited under IAS 39, there is substantial empirical evidence concerning the negative effects of an undue delay in loan loss provisioning (Beatty and Liao, 2011). IFRS 9 might still be prone to this critique as it relies on point in time (PIT) estimates for the probability of default (PD) and only considers the last available data point, in order to reflect the economic characteristics of the financial instrument at the reporting date (IFRS 9 BC 5.282). This approach is related

to the general goal of financial reporting that is to offer information useful for decision makers of the reporting entity (IASB, 2010, 2018). However, it entails profound consequences, as this individual point may inflate during crisis and deflate when there is economic prosperity (Borio et al., 2001).

Since the introduction of the ECL approach, it was expected to have several significant financial implications, with banks being the most affected group. The changes that come from new accounting regulations influence impairment, profit and bank equity itself. The majority of studies in the field estimated the day-one effect on banks financial stability, with emphasis on the ECL model's impact on the capital regulatory reporting. First and foremost, the important day-one impact on the financial statements of banks was noticeable in profit and loss caused by material increase of impairment losses inevitably leading to reduced equity. The burden of additional impairment losses compared to IAS 39 were mostly related to those financial instruments that were classified in Stages 1 and 2, since impairment allowances in Stage 3 are relatively similar to incurred credit loss approach when the loans are considered as losses and require full provision or write off. Many stakeholders including regulators may show signs of concern for capital adequacy, and as for shareholders and investors, their dividends are usually distributed provided that the required level of capital adequacy is maintained. This aspect is highly relevant to the banks as it may determine their lending strategy and undertaking actions for raising additional capital. After the crisis of 2008, Basel III framework had tightened the capital requirements of banks with the intent to compare bank's capital with its assets in order to identify if the bank could resist the test of crisis. According to Basel III, the Bank's capital, which is required to absorb sudden losses that the bank may encounter during the normal operations, consists of Common Equity Tier 1(CET1) capital, Tier 1 capital and Tier 2 capital. Da-Rocha-Lopes (2019) noted that due to the decrease of profits the banks will quickly consume Common Equity Tier 1, which is considered to be an important indicator of capital adequacy standard ratio and a predominant component constituting 4,5% of the minimum Tier 1 capital ratio (7%) for banks stipulated by Basel III requirements. If CET1 ratios decline the banks will have to mitigate the impact on capital by reducing the levels of lending or by compulsively selling assets, which may negatively impact the economy overall.

Another impact identified in the previous research was the increased volatility of profit and loss between periods caused by shifts between stages of classification as a result of different impairment allowances calculated based on 12 month and lifetime ECL (Sultanoglu, 2018). According to the analysis conducted by KPMG in 2014, the banks that have loan portfolios primarily consisting of loans in Stage 2 or Stage 3 were expected to book higher provisions which instantly trigger the volatility of profit and loss. Consequently, many scholars argued that IFRS 9 does not eliminate the procyclicality, because when the economy moves from regular to stressful periods the banks will have to react by increasing their ECLs when they obtain adverse macroeconomic information. This will eventually lead to high lending prices and reduced volumes of lending by banks (Fraisse, Lé and Thesmar, 2015; Jiménez, Ongena, Peydro and Savurina, 2017).

In addition to the abovementioned consequences of implementing IFRS9, the banks' top management and board of directors have to make decisions about substantial changes and investments in IT infrastructures and training of employees to adjust their current systems to new ECL requirements. The high-level supervision and expensive technological investments will positively affect the overall credit risk management, however will inevitably increase of costs for the banks, especially in the initial stages of transition.

Implementation of ECL model involves a large degree of judgment in order to forecast future events and economic conditions that would allow timely recognition of losses, but the new standard only outlines guidelines for credit risk assessment which can be somewhat subjective (Beerbaum, 2015). The survey conducted by Deloitte (2016) showed that banks usually tend to apply references of probability of default and missed payments for risk assessment purposes because they cannot adhere to strict rules (Deloitte, 2016). These judgements may ultimately result in jeopardized comparability and reliability between financial reporting of banks as well as relevant changes in modelling that prevent harmonization (European Banking Authority, 2017), because based on initial credit risk classification, loans with similar attributes can be categorized into Stage 1 and into Stage 2 in different banks. Therefore, providing extensive and comprehensive disclosures becomes a crucial mitigating factor for banks to make sure the users of financial statements receive transparent and detailed quality information

regarding various models, assumptions, estimations and transitional impacts related to application of ECL.

3.5. TEACHING NOTES

ABSTRACT

ABC Bank is one of the largest financial institutions in Latin America. It always had outstanding financial performance, constant growth and improvements in operating efficiency each year. Financial statements had been prepared in accordance with the National Accounting Standards, however in the last period the Bank shifted towards the application of International Financial Reporting Standards. The management believed that the change would make the process of being audited by a Big Four Auditing company much smoother and most importantly would facilitate attracting more international investors for Senior and Subordinated Loans. The case analyzes the impact of the change from applying Expected Credit Loss Model when calculating Loan Loss Provisions as opposed to Incurred Credit Loss Model, as well the consequent effects on the financial statements of the Bank.

POTENTIAL AUDIENCE

This case is intended for the practical application in the MS level program as part of Advanced Financial Accounting Course.

PROGRAM	*COURSE*	*SECTION OF THE COURSE*
Master in Accounting	Advanced Financial Accounting	IFRS 9 IAS 39 Measurement of Financial Assets Impairment of Financial Assets ECL model versus ICL model

LEARNING OUTCOMES

This case is designed to enable students to:

- Understand the scope of impairment of financial assets
- Understand the classification of financial assets into stages
- Apply the Expected Credit Loss model for calculating the Loan Loss Provision
- Evaluate the effect of the ECL model on the profitability of the financial institution

TEACHING APPROACH AND STRATEGY

The case moderator should begin the class by explaining the nature and the scope of the IFRS 9, which entities are obliged to comply with the standard, and the main differences with the replaced IAS 39. The importance of the new Expected Credit Loss impairment model should be discussed along with the overall effect on the balance sheet and subsequent interest income calculation. Furthermore, it is essential to highlight the degree of discretion that the credit managers and administrative personnel obtain after the implementation of IFRS 9 in terms of deciding on the classification of the loans, i.e. the stage of impairment, and to discuss the concept of earnings management.

SESSION PLAN

The 90-minute session can be structured based on the approximate session plan below:

- Background and introduction to the IFRS 9 (10 minutes)
- Recognition of Financial Assets and Financial Liabilities (10 minutes)
- Derecognition of Financial Assets and Liabilities (25 minutes)
- Classification of financial assets and Liabilities (20 minutes)
- Impairment of Financial assets (25 minutes)

ASSIGNMENT QUESTIONS

1. Calculate the Provision under IAS 39 (Incurred Credit Loss Model is in line with the National Accounting Standards previously used by the Bank (Appendix2)).
2. Calculate Interest Income under IAS 39 and fill in the blanks in the financial reports applying the National Accounting Standards, in line with IAS 39 (Appendix 1).
3. Classify the Loans into stages based on the internal credit policy for ECL provisioning developed by the Bank (refer to Appendix 2 and 3).
4. Calculate the new Loan Loss Provision (LLP) based on ECL provisioning parameters (Appendix 3).
5. Calculate Interest Income under Expected Credit Loss model (IFRS 9)
6. What is the difference in the impact on the financial statements of ABC Bank when applying IFRS 9 instead of the National Accounting Standards (in line with IAS 39)?

ANALYSIS/ CASE SOLUTIONS

Question 1

LOAN CLASSIFICATION	*AMOUNT OUTSTANDING*	*GENERAL PROVISION*	*SPECIFIC PROVISION*
Normal	2 958 959	296	
Special Mention	8 419		253
Sub-Standard	6 855		1 371
Doubtful	43 362		15176
Loss	9 107		9 107
Total Provisions	**26 203**		
Total Loan Portfolio	**3 026 701**		

Question 2

BALANCE SHEET OF ABC BANK (IN US$K)	
ASSETS	
Cash on hand	280 571
Deposits in the National Bank	646 400
Deposits with other banks	355 341
Net Loans and advances	3 000 498
Gross Loans and advances	*3 026 701*
Total Provisions	*26 203*
Investment in subsidiaries	63 781
Net Fixed Assets	63 585
Intangible Assets	9 719
Other assets	41 387
TOTAL ASSETS	**4 461 282**
LIABILITIES	
Income tax liability	19 565
Employee benefits	22 447
Financial Liabilities	3 606 581
Due to other banks	*208 235*
Deposits from customers	*2 926 188*
Senior Debt	*355 147*
Subordinated debt	*117 011*
Other liabilities	61 727
TOTAL LIABILITIES	**3 710 321**
EQUITY	
Share capital	458 000
General Reserves	110 000
Retained Earnings	124 450
Income for the current year	58 511
TOTAL EQUITY	**750 961**
TOTAL LIABILITIES AND EQUITY	**4 461 282**

INCOME STATEMENT OF ABC BANK (IN US$K)	
Financial Income	
Interest Income	302 670
Fee and Commission Income	29 648
Interest Expense	(97 899)
Fee and Commission Expense	(1 068)
Net Financial Income	233 350
Loan Portfolio Provisions	(26 203)
Personnel Expenses	(97 713)
General and Administrative Expenses	(47 959)
Total Operating Expenses	(145 673)
Other Income	11 664
Profit before income tax	73 139
Income Tax (20%)	(14 628)
NET INCOME	**58 511**

Question 3

LOAN CLASSIFICATION	*CLASSIFICATION INTO STAGES BASED ON THE NUMBER OF DAYS IN ARREARS*	*AMENDMENTS BASED ON PORTFOLIO INFORMATION PROVIDED IN APPENDIX 3*	*TOTAL LOAN PORTFOLIO OUTSTANDING*
Stage 1: Performing	2 958 959	*minus 10% of construction loans(54 481) *minus 15% of agricultural loans(158 902)	***2 745 576***
Stage 2: Underperforming	15 274	*plus 10% of construction loans (54 481) *plus 15% of agricultural loans (158 902)	***228 657***
Stage 3: Non-performing	52 468		***52 468***
			3 026 701

Question 4

LOAN CLASSIFICATION	*TOTAL LOAN PORTFOLIO OUTSTANDING*	*EXPOSURE AT DEFAULT (EAD)*	*PROBABILITY OF DEFAULT (PD)*	*LOSS GIVEN DEFAULT (LGD)*
Stage 1: Performing	***2 745 576***	***1 510 067***	2%	4%
Stage 2: Underperforming	***228 657***	***251 523***	10% in the first 12 months 20% in the second 12 months	20% in the first 12 months 30% in the second 12 months
Stage 3: Non-performing	***52 468***	***57 715***	100%	35%

Exposure at Default (EAD)	**Stage 1**	**Stage 2**	**Stage 3**
	12 month ECL	Lifetime ECL	Lifetime ECL
Principle	*1 372 788*	*228 657*	*52 468*
Interest	*137 279*	*22 866*	*5 247*
Total EAD	***1 510 067***	***251 523***	***57 715***

Calculation of LLP applying ECL model

Stage 1

EAD	***PD***	***LGD***	***ECL ($)***	***Discount rate***	***PV of ECLs ($)***
1 510 067	2%	4%	1 208	10%	**$ 1 098**

Total Stage 1 (12 months ECL) $1 098

Stage 2

EAD	***PD***	***LGD***	***ECL ($)***	***Discount rate***	***PV of ECLs ($)***
125 761	10%	20%	2 515	10%	**$ 2 287**
125 761	20%	30%	7 546	10%	**$ 6 860**

Total Stage 2 (Lifetime ECL) $9 146

Stage 3

EAD	***PD***	***LGD***	***ECL ($)***	***Discount rate***	***PV of ECLs ($)***
57 715	100%	35%	20 200	10%	**$ 18 364**

Total Stage 3 (Lifetime ECL) $18 364

TOTAL LLP at the reporting date: $28 608

Question 5

LOAN CLASSIFICATION	*TOTAL LOAN PORTFOLIO OUTSTANDING*	*ECL PROVISION*	*INTEREST RATE*	***INTEREST INCOME***
Stage 1: Performing	$2 745 576	$1 098	10%	***$274 558***
Stage 2: Underperforming	$228 657	$9 146	10%	***$22 866***
Stage 3: Non-performing	$52 468	$18 364	10%	***$3 410***

TOTAL INTEREST INCOME: $300 834

Question 6

IMPACT ON THE FINANCIAL STATEMENTS OF ABC BANK WHEN APPLYING IFRS9 INSTEAD OF THE NATIONAL STANDARDS (IN LINE WITH IAS 39):

1) Day one effect of Loan Loss Provision increase by $ 2 405 (US K)

Loan Loss Provision under IAS 39	$ 26 203
Loan Loss Provision under IFRS 9	$ 28 608
Difference	**$ 2 405**

2) Assets decrease proportionate to provisions increase by $2 405 (US K)

Total Assets under IAS 39	$ 4 461 282
Total Assets under IFRS 9	$ 4 458 877
Difference	**$ 2 405**

3) Interest revenue decreased by $1 836 (US K)

Interest Income under IAS 39	$ 302 670
Interest Income under IFRS 9	$ 300 834
Difference	**$ 1 836**

4) Income taxes decreased by $ 849 thousand

Income Tax under IAS 39	$ 14 628
Income Tax under IFRS 9	$ 13 779
Difference	**$ 849**

5) Net income decreased by $ 3 393 (US K)

Net Income under IAS 39	$ 58 511
Net Income under IFRS 9	$ 55 118
Difference	**$ 3 393**

4. CONCLUSION

This work attempts to investigate the effect of the new IFRS 9 impairment model on the financial statements of banks. The transition from an incurred to an expected credit loss model implied tremendous changes for the banking sector with regard to recognizing and calculating the impairments. Previously banks realized losses when they already occurred. However, the introduction of ECL model obliges them to proactively recognize the anticipated losses by categorizing the loans into three stages and recording the corresponding provisions before the default actually takes place. This timely recognition is supposed to ensure more accurate information about provisioning, nevertheless ECL approach entails a substantial degree of judgements and assumptions regarding classification into stages and overall development of internal credit policy, which vary from one institution to another. The latter aspect makes it practically impossible to compare banks and financial institutions even if they are relatively of the same size, same geographical location, etc.

The results of the proposed case study demonstrate the aspects described in the literature review in line with findings of many respectable scholars. The day one effect of the transition from incurred to expected credit loss approach had resulted in higher provision levels. Higher provisions consequently led to lower income, in addition to reduced interest revenues as a result of staging (since interest on loans in stage three is calculated based on the net carrying amount instead of gross value).

The application of ECL has become effective in EU since 2018, however three years after there is still much confusion and debates regarding its effects. In the recent (November 2021) monitoring report of implementation of IFRS9 by EU institutions, the EBA had emphasized that they observed a wide variety of practices due to the level of judgement embedded in the standard. Various approaches have also been used with regard to incorporating forward looking information, especially since the beginning of pandemic crisis. These differences may affect the severity of assumptions for ECL, which is why it is absolutely crucial that government and supervising authorities continue playing an important role of supporting the banks during the continued process of implementing and adapting to the changes brought by IFRS 9.

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APPENDICES

APPENDIX 1

BALANCE SHEET OF ABC BANK (IN US$K)	
ASSETS	
Cash on hand	280 571
Deposits in the National Bank	646 400
Deposits with other banks	355 341
Net Loans and advances	?
Gross Loans and advances	*3 026 701*
Total Provisions	*?*
Investment in subsidiaries	63 781
Net Fixed Assets	63 585
Intangible Assets	9 719
Other assets	41 387
TOTAL ASSETS	**?**
LIABILITIES	
Income tax liability	19 565
Employee benefits	22 447
Financial Liabilities	3 606 581
Due to other banks	*208 235*
Deposits from customers	*2 926 188*
Senior Debt	*355 147*
Subordinated debt	*117 011*
Other liabilities	61 727
TOTAL LIABILITIES	**3 710 321**
EQUITY	
Share capital	458 000
General Reserves	110 000
Retained Earnings	124 450
Income for the current year	**?**
TOTAL EQUITY	**?**
TOTAL LIABILITIES AND EQUITY	**?**

APPENDIX 1(CONTINUED)

INCOME STATEMENT OF ABC BANK (IN US$K)	
Financial Income	
Interest Income	?
Fee and Commission Income	29 648
Interest Expense	(97 899)
Fee and Commission Expense	(1 068)
Net Financial Income	?
Loan Portfolio Provisions	?
Personnel Expenses	(97 713)
General and Administrative Expenses	(47 959)
Total Operating Expenses	*(145 673)*
Other Income	11 664
Profit before income tax	?
Income Tax (20%)	?
NET INCOME	?

APPENDIX 2

PORTFOLIO PROVISIONAL SCALE BASED ON THE REGULATION OF THE NATIONAL BANK INCURRED CREDIT LOSS MODEL

LOAN CLASSIFICATION	*NUMBER OF DAYS PAST DUE*	*PROVISION*	
		GENERAL	*SPECIFIC*
Normal	< 30 days	0,01%	-
Special Mention	31 – 90 days	-	3%
Sub-Standard	91 – 120 days	-	20%
Doubtful	121 – 360 days	-	35%
Loss	> 360 days	-	100%

LOAN CLASSIFICATION	*AMOUNT OUTSTANDING*	*GENERAL PROVISION*	*SPECIFIC PROVISION*
Normal	2 958 959	?	
Special Mention	8 419		?
Sub-Standard	6 855		?
Doubtful	43 362		?
Loss	9 107		?
Total Provisions	**?**		
Total Loan Portfolio	**3 026 701**		

APPENDIX 3

EXPECTED CREDIT LOSS MODEL

Credit and Legal department of the Bank had elaborated the following internal credit policy for classifying loans into stages and identifying the corresponding probabilities of default. Most of the figures are based on the past experience of the bank with relevant adjustments made for forward looking information regarding macroeconomic changes when necessary.

The impairment loss is recognized based on the classification into stages. Financial assets are classified in stage 1, when there is not a significant increase in credit risk since origination. Financial assets which are considered to have experienced a significant increase in credit risk since initial recognition are in Stage 2. Financial assets which have defaulted or are otherwise considered to be credit impaired are allocated to Stage 3. An assessment of whether credit risk has increased significantly since initial recognition considers the change in the risk of default occurring over the remaining expected life of the financial instrument.

In determining whether there has been a ***significant increase in credit risk***, the bank uses the following criteria:

Quantitative criteria:

The Bank adopted a conservative approach of considering exposures > 30 days past due to have suffered a significant increase in credit risk in line with IFRS 9.5.5.11.

Qualitative Criteria:

Assessment of significant increase in credit risk using qualitative criteria is always based on reasonable and supportable information available without undue cost.

The Bank had identified that the following qualitative criteria is most appropriate for identifying when the loans should move to Stage 2:

- Changes to contractual terms of the loan agreement. These include any type of restructuring: extending the maturity period, reducing interest rate, changing the repayment schedule, granting concessions such as interest waivers, etc.
- Breaches of covenants by corporate borrowers
- Information regarding cash flow or liquidity difficulties encountered by the borrower
- Significant change in credit rating of the borrower

- Substantial changes in the value of the collateral
- Information related to the worsening economic conditions of the sector where borrower operates

In determining whether there has been a ***credit event***, the bank uses the following criteria:

Quantitative criteria:

Based on historical analysis, the Bank had determined that all loans that are >120 days past due should be considered credit impaired. The record had proved that it is more indicative than the "rebuttable presumption" of 90 days suggested by IFRS 9.

Qualitative criteria:

Financial assets are considered credit-impaired when one or more events have occurred, which are expected to have detrimental effect on the future cash flows of the financial asset. The Bank had established that availability of objective evidence or observable data regarding the following events should result in the asset's classification into Stage 3:

- Significant financial difficulties encountered by the borrower
- There is a high probability that the borrower will enter bankruptcy or another type of financial reorganisation
- A breach of contract, such as a default or past-due event
- An active market for the financial asset ceases to exist due to financial difficulties
- The purchase or origination of a financial asset at a deep discount that reflects incurred credit losses.

Based on the historic data and forward-looking perspective, the bank estimates the following PD and LGD, per stage:

Stage 1

TYPES OF LOANS	*PROBABILITY OF DEFAULT*	*LOSS GIVEN DEFAULT*
Performing loans/initial recognition	2%	4%
This category includes only loans with *NO* significant increase in credit risk since initial recognition. 12 months expected loss is established for loan loss allowance Interest income should be calculated over the gross carrying amount of financial assets		

Stage 2

TYPES OF LOANS	*PROBABILITY OF DEFAULT* *	*LOSS GIVEN DEFAULT*
Underperforming loans	10% in the first 12 months 20% in the second 12 months	20% in the first 12 months 30% in the second 12 months
This category includes loans *WITH* significant increase in credit risk since initial recognition, but no credit loss event occurred yet. Lifetime ECL must be recognized as loan loss allowance Interest income should be calculated over the gross carrying amount of financial assets		

Stage 3

TYPES OF LOANS	*PROBABILITY OF DEFAULT*	*LOSS GIVEN DEFAULT*
Non-performing loans	100%	35%
This category includes all loans that become 120 days overdue and credit impaired loans with objective evidence of impairment. Lifetime ECL must be recognized as loan loss allowance. Interest income should be calculated over the net carrying amount of financial assets		

In order to perform collective assessment, the Bank had grouped its Loan Portfolio into the following segments/sectors based on similar characteristics:

SEGMENT/SECTOR	*OUTSTANDING AMOUNT*	*% OF TOTAL LOAN PORTFOLIO*
Agricultural Loans	1 059 345	35%
Mortgage Loans	363 204	12%
Individual Loans	393 471	13%
Trade and Commerce	454 005	15%
Construction	544 806	18%
Transportation	151 335	5%
Services	60 534	2%
Total Loan Portfolio	**3 026 701**	**100%**

*** Note:** When applying Probability of Default to the Total Exposure of Default for Stage 2 loans, the Bank assumes that 50% of EAD have the probability of defaulting in the first 12 months and the other 50% of EAD have the probability of defaulting in the second 12 months.

****** For the purposes of this assignment, assume that all loans in the Gross Loan Portfolio of the bank have maturity of 2 years with effective interest rate of 10% **payable in two annual installments**.

In addition, at the reporting date, the credit manager had reported the following information regarding the Loan Portfolio in the current year:

1. 10% of loans categorized as "normal" based on the national provisioning scale have requested a loan restructuring involving changes in repayment schedules and waiving of interest due to unforeseen economic difficulties in construction sector.
2. Due to severe climate conditions the management is expecting the loans in agricultural sector to experience delays in payments. Previous experience showed that at least 15% of borrowers are unable to meet their repayment schedules as a result of reduced income from selling their harvest. The loans are currently performing.