DOI: 10.31460/mbdd.422581

EXPECTED CREDIT LOSS MODEL BY IFRS 9 AND ITS POSSIBLE EARLY IMPACTS ON EUROPEAN AND TURKISH BANKING SECTOR*

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Dünyası Dergisi
Eylül 2018; 20(3); 476-506

ABSTRACT

IFRS 9 – ″Financial Instruments″, the replacement of IAS 39 – ″Financial Instruments: Recognition and Measurement″ was issued by International Accounting Standards Board in July, 2014 and became mandatory on January 1, 2018. The significant change implemented in the new standard is about the "impairment" phase which is based on "Expected Credit Losses" (ECL) rather than "Incurred Credit Losses". In this study, the measurement and recognition of allowances for impairment are explained and then the expected possible qualitative and quantitative effects of this transition primarily in the European Banking Industry are analyzed and compared with Turkish Banking Industry. It is expected that, ECL application by European banks would result in on average 13%-18% increase in loss provisions and Common Equity Tier 1 (CET1) and total capital ratio decrease by on average 45-75 basis points (bps) and 35-50 bps, respectively whereas the total amount of provisions will be diminishing by 4.1% and will have 33 bps and 21 bps positive impacts on CET1 and total capital adequacy ratio on average, respectively for Turkish banks.

Keywords: IFRS 9, Expected Credit Loss, ECL, Impairment, Loan Loss Provision

JEL Classification: M40, M41, M48.

UFRS 9 – BEKLENEN KREDİ ZARARLARI MODELİ UYGULAMASININ AVRUPA VE TÜRKİYE BANKACILIK SEKTÖRÜ ÜZERİNDEKİ OLASI ETKİLERİNİN DEĞERLENDİRİLMESİ

ÖZ

Uluslararası Muhasebe Standartları Kurulu, 2014 yılının Temmuz ayında, UMS 39'un "Finansal Araçlar: Muhasebeleştirme ve Ölçme"nin yerine UFRS 9 - "Finansal Araçlar" Standardını yayınlamıştır. Yeni standart 1 Ocak 2018'den itibaren yürürlüğe girmiştir. Yeni standarttaki en önemli değişiklik, "değer

* Date of submission: 10.05.2018; date of acceptance: 23.05.2018.
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düşüklüğü" bölümünde yapılan "Gerçekleşen Kredi Zararları" yerine "Beklenen Kredi Zararları" uygulamasıdır. Bu çalışmada, yeni standarda göre değer düşüklüğü karşılıklarının ölçümü ve muhasebeleştirilmesi açıklandıktan sonra, Avrupa Bankacılık Sektöründe bu geçişin beklenen muhtemel nitel ve nicel etkileri analiz edilip, sonuçları Türk Bankacılık Sektörü ile karşılaştırılmıştır. Avrupa'da bu geçiş sonucu, karşılıkların ortalama olarak % 13 -% 18 aralığında artması, buna bağlı olarak da çekirdek sermaye ve toplam sermaye yeterliliği rasyosunda sırasıyla, ortalama 45-75 ve 35-50 baz puanlık düşüş beklenmektedir. Türkiye'deki beklenti ise, sonuçların tam tersi yönde olacağıdır. Türkiye'deki bankalar için toplam karşılıklar tutarının % 4,1 düşmesi ve çekirdek sermaye ve toplam sermaye yeterliliği rasyolarında ise, sırasıyla, 33 ve 21 baz puanlık pozitif etki olması beklenmektedir.

Anahtar Kelimeler: UFRS 9, Beklenen Kredi Zararları Modeli, Kredi Karşılıkları.

JEL Sınıflandırması: M40, M41, M48.

1. INTRODUCTION

IFRS 9 – ″Financial Instruments″, the replacement of IAS 39 – ″Financial Instruments: Recognition and Measurement″ was issued by International Accounting Standards Board (IASB) in July, 2014 and became mandatory on January 1, 2018. The new standard will apply to a wide range of entities including financial and non-financial that hold financial assets measured at amortized cost, financial assets (debt instruments) measured at fair value through other comprehensive income (FVTOCI) and financial assets measured at fair value through profit or loss (FVTPL).

The new standard is introduced with 3 Phases: Phase 1 – Classification and Measurement of Financial Assets, Phase 2 – Three Stage Modelling for Impairment and Phase 3 – Hedge Accounting.

In particular, the impairment phase (Phase 2) is at the forefront of the Standard due to the transition from the Incurred Loss Model to Expected Credit Loss Model (ECL). Relatedly, the IASB's Chairman stated in one of his speeches that Phase 2 will have the biggest impact especially on the banks because of the ECL Model that requires early recognition of loss allowances (Hoogervorst 2016).

The new impairment model in IFRS 9 aims to recognize the provision for expected credit losses before they happen and update them at each reporting period to reflect the changes in credit risks since initial recognition. Thus, it will ensure the timely recognition of credit losses and therefore will lead to more accurate and transparent information for the financial statement users. On the other hand, it may rocket the credit loss allowances and result in volatile profit or loss due to changes in the state of economy such as high level of allowances during unfavorable and low level of allowances during favorable economic conditions. Particularly, the banks are expected to be the most affected group since they hold a significant portfolio of loans in their financial statements.

The aim of this study is to explain briefly the measurement and recognition of allowances for credit losses according to the new impairment approach in IFRS 9 and examine the expected possible qualitative and quantitative effects of this transition primarily in the European Banking Industry and compare them with Turkish Banking Industry. Surveys have been carried out by European Banking Authority (EBA) who is held responsible for ensuring the implementation of IFRS 9 by the EU banks and also Big 4 audit firms aiming at analyzing the level of preparedness, potential quantitative and qualitative impacts and the implementation process. According to EBA results, impairment provisions are expected to increase by 13%-18% on average and Common Equity Tier 1 (CET1) and total capital ratio decrease by on average 45-75 basis points (bps) and 35-50 bps, respectively. Big 4 results were also parallel with EBA results.

In Turkey, the Banking Regulation and Supervision Agency (BRSA) has conducted two analysis studies in 2016 and 2017 to assess the impact of implementing ECL in terms of specifically the levels of provisions and the capital adequacy. However, the results are opposing with the ones done in Europe, that is, the total amount of provisions is expected to decrease by 4.1% and 33 bps and 21 bps positive impact on CET1 and total capital adequacy ratio on average, respectively.

2. NEED FOR A CHANGE

In IAS 39, impairment allowances are recognized based on the ″Incurred Loss Model″. In this model, banks record loss allowances only at the existence of an ″objective evidence″ (e.g.

borrower's significant financial difficulty, decrease in collateral values, risk of bankruptcy). In other words, they are not allowed to do it until the real occurrence of an impairment or the existence of a probability of default that is close or equal to 100% (Novotny-Farkas 2016). This practice has therefore been highly criticized for deferring the recognition of credit losses until too late (Hoogervorst 2014).

Another critic was about its being backward-looking and rule-based approach. The reporting entities were allowed to consider only the past and current conditions when assessing the quality of such risky financial assets even if the management has intuitively available information about probable future losses. This is because it will require considerable level of managerial judgement which IAS 39 did not embody such a principle (Huian 2012).

Furthermore, from a financial stability perspective, procyclicality was another important concern addressed under the incurred loss approach. During upswings, the level of loss allowances will be low which results in excessive lending and at the same time, overstated earnings, dividend distributions and regulatory capital whereas in a downturn, banks will experience sharp rise in expected losses which this time hits both profit and loss and also capital, and hence will choose the way of reducing lending instead of raising new capital or cutting dividend payments to maintain minimum regulatory capital requirements (Novotny-Farkas 2016; Cohen and Edwards 2017). Numerous studies have been done about the issue that the incurred loss approach increases procyclicality whereas expected credit loss model reduces it or at least keeps it natural. (Laeven and Majnoni 2003; Beatty and Liao 2011; Bushman and Williams 2012).

As a consequence, those failing issues prevailing in IAS 39 became evident in the global financial crisis period and G20 leaders, investors, regulatory authorities, standard setters have called on the IASB to take action. Finally, IASB revised the rule-based incurred loss application of impairment model and shifted to a forward-looking, principle-based approach, called Expected Credit Loss Model.

3. EXPECTED CREDIT LOSS MODEL FOR IMPAIRMENT UNDER IFRS 9

The main purpose of ″impairment″ in IFRS 9 is to establish an ″expected credit losses″ model that reflects the changes in the credit quality of a financial instrument, such as deterioration or improvement over its remaining expected lifetime. Hence, the ″Expected Credit Loss Model″ is introduced by IFRS 9 that is based on "expected credit losses" rather than "incurred credit losses". According to ECL Model, instead of recognizing the impairment via identifying a credit loss event, the banks will proactively estimate "expected losses' (ECLs) by incorporating not only the historical and current data but also reasonable and supportable information that includes forecasts of future economic conditions (forward-looking).

The complexity will also be overcome by the use of a unified model (ECL) for all financial instruments instead of different impairment models for different financial instruments. According to IASB, the application of a single model will both increase the comparability of amounts recognized in profit or loss and reduce the complexity associated with the use of multiple models in IAS 39 (KPMG 2014).

According to the SWOT analysis done by Huian (2012) for the new ECL model, ensuring more accurate and timely recognition, using forward-looking information, improving transparency, prudence and providing extensive disclosures were counted as strengths of new approach. On the other hand, considerable level of judgement, the operating costs of implementation, complex credit-risk assessment approach with multiple stages and severe financial impacts in terms of provision levels and regulatory capital were found as threats. The comparative impairment issues by 2 methods are presented in the following table (Gornjak 2017):

Table 1. Comparison of Incurred Loss Model and Expected Credit Loss Model

IAS 39 – Incurred Loss Model	IFRS 9 – Expected Credit Loss Model
▪ recognition of credit loss when there is an 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 instruments	▪ 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

The scope of financial assets that will be subject to new impairment model in Phase 2 is provided in Table 2 (IFRS 9 5.5.1):

Table 2. Scope of Financial Assets Subject to Impairment

▪ Financial assets (debt instruments) measured at amortized cost – loans, debt securities, bank balances and deposits and trade receivables,
▪ Financial assets (debt instruments) measured at fair value through FVTOCI
▪ Lease receivables under IAS 17 *Leases*
▪ Contract assets under IFRS 15 *Revenue from Contracts with Customers*
▪ Loan commitments and financial guarantee contracts that are not measured at fair value through profit or loss

3. 1. Recognition of Expected Credit Losses

According to IFRS 9, ECLs are recognized right from origination which would directly solve the problem of late recognition of "trigger" loss events. Therefore, for all financial assets that are subject to impairment even if they are of high quality, recognition will start with 12-month ECLs at initial recognition. In the subsequent periods, with the exception of purchased or originated credit-impaired financial assets, the entities are then required to assess the credit quality of their assets in terms of probability of default and depending on the change in the credit quality, they are required to measure the loss allowance at an amount equal to the 12-month or lifetime expected credit losses (IFRS 9 paragraphs 5.5.3 and 5.5.5).

12-month ECL is defined as the portion of lifetime ECLs that occur as a result of possible default within 12 months after the reporting period or a shorter period if the expected life of a financial asset is less than 12 months. According to IASB, 12-month ECLs would be proxy for the upcoming ECLs and also would fix the problem of interest revenue overstatement existing in IAS 39 (EY 2014).

Lifetime ECL is defined as the expected credit losses that result from all possible default events over the life of the financial instrument. When a significant deterioration occurs after initial recognition, a loss allowance is recognized at the reporting date based on the present value of all cash shortfalls over the remaining expected life of the financial asset (IFRS 9 paragraphs 5.5.3 and 5.5.15).

3.2.Measurement of Expected Credit Losses

IFRS 9 defines ECLs as the weighted average of expected credit losses with the respective risks of a default occurring as the weightings (IFRS 9 Appendix A). *Credit losses* are cash shortfalls representing the difference between the present value of all contractual cash flows due to an entity and the present value of all cash flows expected to be received by the entity. The standard does not provide a single method of measuring expected credit losses provided that it might vary based on the type of instrument and the available information but it requires that any measurement of ECL should take into account the followings (IFRS 9 paragraphs 5.5.17):

- an unbiased evaluation of a range of possible outcomes and their probabilities of occurrence (probability-weighted amount);
- the time value of money; and
- reasonable and supportable information that is available without undue cost or effort about past events, current conditions and reasonable and supportable forecasts of future economic conditions.

The first of the aforementioned elements could be derived by evaluating a range of possible scenarios considering the amount and timing of the cash flows for particular outcomes and the estimated probability of those outcomes through their credit risk management systems. Under IAS 39, the entities were using the best estimate of the ultimate outcome, however as seen in IFRS 9, it is the probability-weighted outcome (KPMG 2014). For the time value of money, effective interest rate (EIR)[1] is the input that discounts the cash shortfalls where the standard provides EIRs to be used for different types of financial instrument. Lastly, it is very clear that, considerable judgment will be used by the entities for determining them and the degree of judgement depends on the availability of detailed supportable information which should include

[1] Credit-adjusted EIR is used for purchased or originated credit impaired financial assets in Credit Adjusted Approach

factors that are specific to the borrower, general economic conditions and an assessment of both the current and the future conditions.

In practice, banks may use their existing calculation processes and information for Basel regulatory requirements modified for IFRS 9 and also the models and processes they have developed for stress testing (EY 2014).

Hence, total ECL will be calculated with a formula of:

$$\sum_{t=1}^{T} \mathrm{PDt} \times \mathrm{EADt} \times \mathrm{LGDt} \times \mathrm{EIRt}$$

where:

PD : Probability of Default; estimate the likelihood of default over the expected life

EAD : Exposure at Default; estimate of an exposure at a future default date – the balance of exposure after principle and interest payments.

LGD : Loss Given Default; estimate of the loss arising on default. It is the difference between expected cash flows that are due and the expected amount from collaterals. It is generally referred as a percentage of EAD.

EIR : Effective Interest Rate; used to discount an expected loss to a present value

12-month ECL is computed mostly without EIR due to the immateriality of discounting. All parameters are expected to be updated with respect to new information arrivals at time t. However, LGD may be assumed to be constant for many ECL models, therefore the ECL is computed based on changes in PD and EIR (Novotny-Farkas 2016). To calculate those parameters, especially the banks will need to set up their own internal credit rating systems and use a set of econometric models such as the Logit Model or models used by credit rating agencies (EY 2014).

IFRS 9 requires entities to estimate the expected losses based on the formula above according to one of three approaches stated below:

- *General Approach* – applies to all loans and receivables not eligible for the other approaches;
- *Simplified Approach* – applies to certain trade receivables or contract assets of one year or less and "IFRS 15 contract assets" and "IFRS 16 Leases";
- *Credit Adjusted Approach* – applies to purchased or originated credit-impaired assets (e.g., junk bonds).

3.2.1. The General Approach

Under the General approach, with the exception of purchased or originated credit-impaired assets[2], the entities are required to follow a three-stage process through assessing the credit quality of their assets in terms of probability of default at each reporting period after initial recognition and determine the expected credit losses accordingly based on either 12-month ECL or lifetime ECL. The three stages in which financial assets are classified according to relative credit risk at the reporting date are explained below:

- *Stage 1* - includes "Performing" group of financial assets that have not been significantly deteriorated since initial recognition or the ones bearing low credit risk at the reporting date. For financial assets in Stage 1, entities are required to measure the loss allowance at an amount equal to 12-month ECLs (i. e. ECL = 12-month PD x LGD) and the interest revenue is calculated from the gross carrying amount of the financial assets before ECL adjustment.
- *Stage 2* - is made of "Under-Performing" group of financial assets that have deteriorated significantly in credit quality since initial recognition with lack of objective evidence of a credit loss event. When a financial asset moves to stage 2, entities are required to recognize lifetime ECLs but the interest revenue is still calculated from the gross carrying amount of the financial assets before ECL adjustment.
- *Stage 3* - comprises of "Non-Performing" group of financial assets that have objective evidence of default at the reporting date. The application is equivalent to the recognition of impaired assets under IAS 39, that is the loss allowance will be equal to the lifetime

[2] *Purchased or originated credit impaired* financial assets are not treated under the General Approach because they are impaired right from origination and their losses are already reflected in the fair values at initial recognition.

ECLs. In this stage, the interest revenue is then calculated from the net amount (i.e. the difference between gross carrying amount of the financial assets and the ECL).

To assess the significant increase in credit risk of a financial asset passing from Stage 1 to Stage 2, the banks may adopt various approaches by using with reasonable and supportable information that is available without undue cost or effort which again embraces a considerable judgment. The standard has provided a list of sixteen indicators, both quantitative and qualitative (B5.5.17 (a-p)) factors that the banks should consider for subsequent significant risk assessments such as missed payments, increases in credit spreads, external credit downgrades, variations in PDs or has established a ″rebuttable presumption″ of *30 days* past due. According to Deloitte Banking Survey conducted in 2016, 30 days past due appeared to be the most common indicator of 'significant increase in credit risk' (71% on average).

The standard term *default* is the critical factor for the assessment of moving from Stage 2 to Stage 3 but the term itself and the conditions that underpin it are not directly defined in the standard. Instead, it guides the entities to make their own definitions that should be in line with the ones used for their internal credit risk management purposes and take into account the qualitative indicators (e.g., breaches of financial covenants) in addition to days past due. However, to prevent the possible discrepancies, the standard makes a ″rebuttable presumption″ by stating that default does not occur later than when a financial asset is 90 days past due unless an entity has reasonable and supportable information to demonstrate an alternative criterion. According to Deloitte Banking Survey, on average 80% of banks intent to define default as '90 days past due'.

The use of 12-month or lifetime ECL depends on which stage the financial assets are in that is determined based on the course of the risk in their credit level since initial recognition. If the credit exposures have not been significantly deteriorated in the subsequent period, 12-month ECL, otherwise lifetime ECL is used for loss allowance. As all the financial assets within the impairment scope of IFRS 9 carries with some implicit risk of default (i.e. loans, receivables), they all have expected losses at initial recognition. Therefore, 12-month ECL is calculated and recognized in Stage 1 for those type of assets having implicit default risk plus the ones where their credit quality has not declined since acquisition. Subsequently, in the case of significant deterioration, the financial assets move from Stage 1 to Stage 2 and therefore lifetime ECL is

applied. The General Approach also allows passing from lifetime to 12-month expected credit losses when the credit risk is reversed after the initial recognition (IFRS 9 par. 5.5.11). Figure 1 summarizes shifting between stages required by the General Approach.

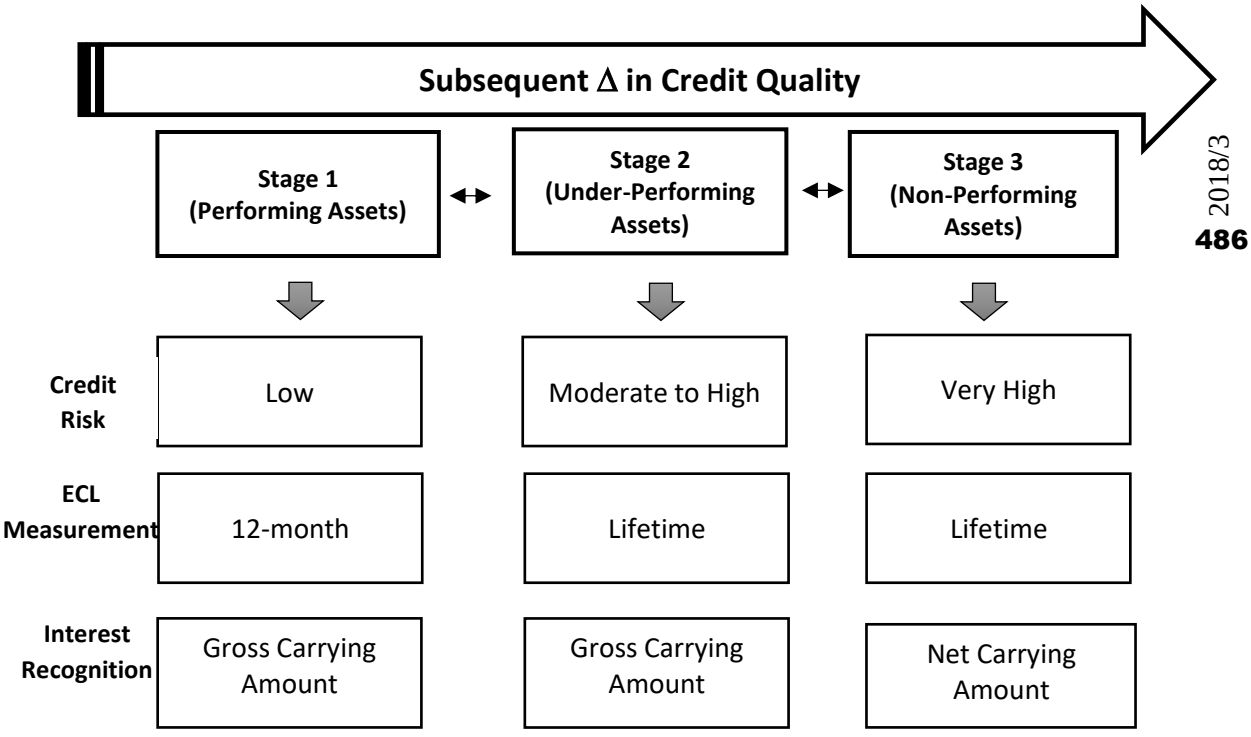


Figure 1. General Three-Stage ECL Model

The three-stage General approach could be explained better with the following example:

Example: A bank gives loan to a customer in the amount of 100.000 TL at the beginning of Year 1. The maturity of the loan is 5 years. The effective annual interest rate is 11%. The bank's estimated LGD for every year is estimated to be 25%. At initial recognition, the loan has a low credit risk, therefore under the new impairment model, 12-month expected credit losses will be recognized as it will be in Stage 1. The estimated PD within the next 12-month period is 1%, allowance for impairment loss will be recognized as follows:

ACCOUNT NAME	DEBIT	CREDIT
Impairment Loss	250*	
Loss Allowance		250

*100.000x25%x1%

In the second year, a significant deterioration of the credit quality occurred but there is no objective evidence of an impairment loss (e.g. 30 days past due). The loan will pass to Stage 2 and lifetime expected credit losses will be recognized. New PD is estimated as 5%, LGD is same as previous year and 20.000 TL was collected during the period (EAD will be equal to 80.000 TL). The bank recognizes the lifetime expected credit losses, as follows:

ACCOUNT NAME	DEBIT	CREDIT
Impairment Loss	562*	
Loss Allowance		562

*[(80.000x25%x5%)//1,11^2)] – 250 TL

Assume that the loan defaults at the end of Year 3 with PD = 100% and will pass to Stage 3. The allowance will be accounted as:

ACCOUNT NAME	DEBIT	CREDIT
Impairment Loss	13.811*	
Loss Allowance		13.811

*[(80.000x25%x100%)//1,11^3)] – 812 TL

In the Incurred Loss Model by IAS 39, the impairment loss of 14.623 TL would be recognized only when the loss event occurred, that is at the end of Year 3 and it would be “too late”.

3.2.2. The Simplified Approach

The Standard also proposed a Simplified Approach option for the entities to facilitate the frequent track of changes in credit risk for some group of financial assets such as: (a) trade receivables and contract assets of one year or less with no financing component; (b) trade receivables and contract assets that do constitute a financing transaction in accordance with IFRS 15; lease receivables within the scope of IFRS 16. For the ones in (a), the entities do not necessarily need to calculate 12-month ECL and to assess when a significant increase in credit risk has occurred, instead, recognize a loss allowance directly as lifetime ECLs from the very beginning (IFRS 9 paragraphs 5.5.3 and 5.5.15) which makes sense as they are at most 12

months old. The standard also allows the entities to choose this approach as an option for the ones in (b). These simplifications will avoid having to perform significant risk assessments for financial assets with low credit risk (PWC 2014).

3.2.3. Credit Adjusted Approach

Purchased or originated credit-impaired financial assets are not treated under the General Approach because they are impaired right from origination and their losses are already reflected in their amortized cost by using credit-adjusted EIR at initial recognition. Therefore, in order to avoid double-counting, no further 12-month ECL allowance is recognized. In the subsequent periods, the cumulative changes in lifetime expected credit losses are recognized. Also, for the interest revenue, credit-adjusted EIR is used for those type of instruments.

A decision tree for ECL measurement can be drawn as follows:

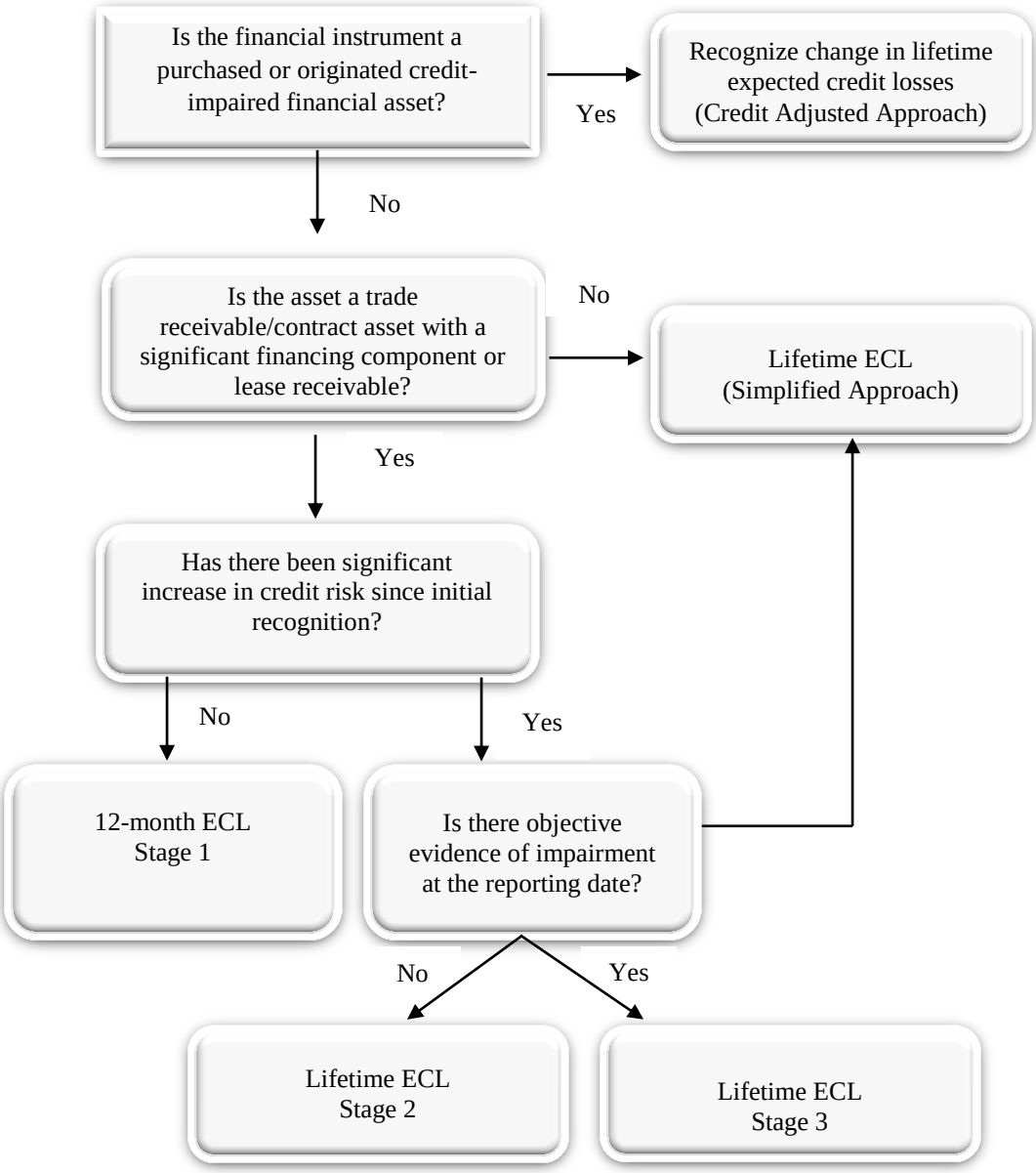


Figure 2. ECL Measurement Decision Tree

4. EARLY EXPECTED IMPACTS OF IMPAIRMENT UNDER IFRS 9 ON BANKING INDUSTRY

The new impairment approach introduced with the ECL Model by IFRS 9 aims to recognize a credit loss before a financial instrument becomes delinquent and when it becomes mandatory in 2018 for all listed entities holding debt-type assets, the banks will probably the most affected group due to material increase of impairment loss allowances causing a decline in equity.

The new ECL approach is expected to have some significant financial implications. First, more accurate and transparent reporting of profit or loss amounts and asset qualities which will enhance the investors' confidence in financial reporting (European Financial Reporting Advisory Group 2015). The other is the implementation of more cautious and less cyclical lending strategies (ESRB 2017). Providing 12-month ECL in Stage 1 will reduce the overstatement of profits and thus decrease distributing dividends out of those overstated profits. Hence, the banks would maintain higher capital which would protect them as well as lessen excessive loan growth in the financial market when the economy worsened. This means that procyclicality will still exist through ECL approach but as a natural form expected from the economy (Novotny-Farkas 2016). The combined positive effects of all these is the expected improvement in financial stability which was significantly deteriorated during the global financial crisis (Beatty and Liao 2011; Bushman and Williams 2015; Novotny-Farkas 2015).

On the other hand, it brings more impairment loss burden to the banks compared to IAS 39 and the main driver of it will be the recognition of additional ECLs for the instruments classified in Stage 1 and Stage 2, not that the impairment allowances provided for Stage 3 that are exactly the same with IAS 39. This burden is expected to have a direct day-one impact on the profit or loss and consequently capital adequacy of banks. First, their profit is anticipated to be lower which will take the attention of investors and regulators in terms of dividend distribution and capital adequacy, respectively. This is very crucial for banks considering that they must maintain a basic level of capital adequacy to distribute dividends and avoid being forced to take actions like raising equity, decreasing new lending and selling assets (ESRB, 2017). Second, the fall in profits will consume the banks' CET1, thus decrease the CET1 ratios. As CET1 is known to be an important indicator of capital adequacy standard ratio and a vital portion (4.5%) of the bank's minimum Tier 1 capital ratio (7%) according to Basel III capital

requirements, lower values of CET1 ratios will force banks to accommodate the impact on CET1 by either lowering the level of new lending or through asset sales (ESRB, 2017) which in turn negatively affect the economy. Third, shifts from Stage 1 to Stage 2 or 3 will increase the volatility of profit or loss between periods due the different levels of impairment losses (12-month versus lifetime) in those stages. Therefore, especially the banks having a portfolio of large number of loans lying in either Stage 2 or Stage 3 are expected to report higher provisions that triggers the volatility of profit or loss immediately (KPMG 2014). Hence, some think that, this would cause again procyclicality to continue as was in IAS 39. In other words, when the economy passes from normal to crisis period, there will be a sudden reaction by banks provided that their ECLs will rise when adverse macroeconomic information received. This may cause high lending prices accompanied with a reduction in bank lending (Fraisse, Lé and Thesmar 2015; Gropp, Mosk, Ongena and Wix 2016; Jiménez, Ongena, Peydro and Savurina 2017; Abad and Suarez 2017).

When estimating ECLs, a wider network of information about arrears will be used by the banks, including forecasts of future events and economic conditions. Under IAS 39, as the banks were relying solely on the past credit-related information (e.g. missed payments, forbearances) they were able to calculate and record only the actual losses whereas after the transition they will use forward-looking information to account also for possible future losses. Although this will help the banks to avoid late loss recordings, the degree of judgements is, of course, expected to be so high especially when the forecast horizon increases (shifts from Stage 1 to Stage 2 or 3) triggering the availability of detailed information. As discussed previously, this is mostly because the standard only provides some guidelines for doing credit risk assessments instead of proposing a rule-based approach, that is again very much judgmental. In relation to this, the survey results reveal that changes in PDs and missed payments are the most common indicators for them while doing risk assessments as there are no strict rules to follow (Deloitte 2016). Hence there are two important expected consequences of all these; one is to put the comparability and reliability in jeopardy and, the other is the significant change in modelling that will prevent the harmonization (European Banking Authority 2017). Depending on the credit risk defined at origination, a loan with same characteristics could be classified in Stage 1 for one bank and in Stage 2 for another (PWC 2014).

Besides, in order to meet the requirements of forthcoming use of expected credit loss model, the banks will recognize that they must make fundamental changes or even new investments in technical and human resources such as developing convenient IT systems and having more and well-trained staff for running statistical ECL models. Banks using internal ratings-based approach (IRB banks) may prefer to adopt their existing systems since it involves similar expected loss approach to regulatory capital requirements of Basel II but still it may need some adjustments due to the new ECL requirements. The banks with standardized approach (SA banks), which are mostly small ones will need to make significant investments in new models and IT infrastructures to avoid several methodological differences that exist in SA. The expected radical change in technology and human capital infrastructure will require a high level of supervision, that is, the involvement of key stakeholders such as board of directors (BOD), audit committee, senior management and internal/external auditors. Hence, it is accepted that all these changes will be too costly for banks but at the same time will have a positive effect regarding the decision-making process of credit risk management.

As discussed in greater above, the complexity of modelling, the use of estimates leading to higher levels of judgement plus the changes in financial results with the transition will strictly require to provide extensive and comparable both qualitative and quantitative information to financial statement users. Therefore, extensive and high-quality level of disclosures for providing information about modelling choices, underlying model assumptions, ECL parameters and the retrospective financial statement impacts of the transition on the date of initial application will be essential to enhance the transparency of financial statements.

4.1. European Banking Industry

In 2016 and 2017, EBA conducted a 2-stage survey for the expected impact assessment of the new standard on a sample of 54 banks (2016 – 58 banks) across European Economic Area (20 countries). The sample is composed of 74% large banks and is representative of the banking sector in the EU consisting of a range of banks in terms of size, business model and risk profile. The main objective of this survey was to collect information about the level of preparedness, potential quantitative and qualitative implications and implementation processes. The response rate for all the data including qualitative and quantitative was very high (91%). EBA

summarized the impacts estimated by the European banks both in terms of qualitative and quantitative aspects.

Qualitative Impacts:

- **Degree of Preparedness:** 68% were in the ″building″, only 13% passed to the ″testing″ and the remaining was in the ″advanced design″ phase.
- **Involvement of Key Stakeholders:** need for robust governance process where the Board of Directors (BOD), audit committee, senior management, external auditors and the role of the various departments would be responsible for the ECL implementation. Among those, the most actively involved group was found to be senior management whereas BOD, audit committee involvement was very limited.
- **Methodology for ECL measurement:** need for adjustment for IRB models or develop new ECL models, validate and back-test annually or more frequently of each component in ECL Model (i.e. PD, LGD, EAD and EIR) and perform the assessment of the appropriateness of the exposures into stages if General Approach was chosen. A majority group preferred to use PD x LGD x EAD without discounted cash flow approach for 12-month ECL and PD x LGD x EAD with discounted cash flow for lifetime ECL.
- **Use of Forward-Looking Information:** 68% estimate ECL by using forward-looking information for a time horizon of 3 and 15% for a time horizon of 5 years by using externally or/and internally generated data. 58% of the banks will use probability-weighted ECL based on a number of scenarios, 17% will use one single scenario based on the most likely outcome with an adjustment and the remaining will use both depending on the exposure. For the vast majority, PD was the parameter that would be adjusted for each scenario more than the LGD, EAD.
- **Assessment of Significant Increase in Credit Risk:** Most banks would do assessment of significant increase in the credit quality using more quantitative indicators compared to qualitative. The primary quantitative indicator would be the change in PD and credit scoring or the rating of an exposure were also most commonly used indicators. For the qualitative indicators, they would use mostly the watch-lists.

Quantitative Impacts:

- Larger banks using IRB for measuring credit risk estimated a higher increase in provisions compared to smaller banks using a standardized approach (SA) but the estimated impact on the capital will be just the opposite due to the prudential treatment of provisions in the sense that the new impact of IFRS 9 on the capital would be absorbed under IRB approach.
- The main driver of the impact was meant to be the ***ECLs for Stage 2 exposures***.
- Total impairment provisions were expected to increase by 13% on average and up to 18% for 75% of respondents
- CET1 and total capital ratio were expected to decrease by on average 45 bps and 35 bps and by up to 75 bps for CET1 and 50 bps for total capital ratio according to 86% and 76% of respondents, respectively.
- 72% (80% is larger banks) anticipated a volatility in profit or loss which is mainly due to shifting from Stage 1 to Stage 2 (from 12-month ECL to lifetime ECL), and also to the use of forward-looking information in the calculation of ECLs that needs to be reassessed at each reporting period

Similar surveys were also conducted by major consulting firms such as Deloitte (2016) with 91 banks (76% Europe), 43 banks in 10 counties by PricewaterhouseCoopers (2016) and 29 top-tier banks worldwide by Ernst and Young (2017) to scrutinize the same issues that were tested by EBA. According to Deloitte's Global Banking IFRS Survey results, the estimated increase of impairment provisions will be 25%, reduction of up to 50 basis points in CET1 and increase volatility in profit or loss whereas PWC results expect an increase between 0-10% by 19% of respondents and 10-30% by 32% respondents. The expected increase in provisions according to Ernst and Young results was found to be 15% and the majority of respondents expect the estimated impact on CET 1 ratio to be between 0 %-0.25 %. The qualitative aspects and their responses were very much parallel with EBA results.

4.2. Turkish Banking Industry

The impact on the Turkish Banking Industry is the regulatory change that has taken place through the abolishment of the old regulation – "Regulation on the Procedures and Principles

for Determination of Qualifications of Loans and Other Receivables by Banks and Provisions to be Set Aside" that was effective since 2006 and the issuance of the new regulation in accordance with IFRS 9 – "Regulation on the Procedures and Principles for Determination of Classification of Loans by Banks and Provisions to be Set Aside" (Regulation) dated June 22, 2016 # 29750 by the BRSA and thus the accompanying quantitative impact expected in the provisioning. The new Regulation was approved to be implemented in 2017 but a 1-year adjustment period has been granted to the banks until 1 January 2018. Thus, the full effects will be seen in 2018.

4.2.1. Issuance of New Regulation by the BRSA

The new Regulation sets the principles by dividing the group of banks into the applicants and non-applicants of IFRS 9. This would imply that, the applicants will be in full compliance with IFRS 9 and the banks that are not going to apply IFRS 9 by providing the necessary grounds to the BRSA (i.e. irrelevance with their operations, not prepared for IFRS 9 until 1/1/2018) will continue to be subject to the provisions of the Regulation. However, non-applicants are very few (7 out of 49).

The rules and principles related to the classification of loans, the allocation of provisions and the collaterals (guarantees) required to be taken into consideration stated in the new Regulation are explained below:

i. Classification of Loans

Banks, including their overseas branches, have to classify and monitor their loans according to the five groups listed below based on the recovery capabilities and debtors' creditworthiness levels:

Performing Loans (Stage 1 & 2)	Non-Performing Loans (Stage 3)
▪ Group 1: Loans of a Standard Nature ▪ Group 2: Loans Under Close Monitoring	▪ Group 3: Loans with Limited Recovery ▪ Group 4: Loans with Suspicious Recovery ▪ Group 5: Loans Having the Nature of Loss

The loan classification which was also existing in the ex-Regulation (2006) is currently revised with the following additions made to comply with IFRS 9:

i. *To be classified in Group 1:*
   - the presumption of overdue payment ≤ 30 days criterion
   - the recognition of allowance based on 12-month ECL in accordance with IFRS 9

ii. *To be classified in Group 2:*
   - the consideration of additional factors for the assessment of changes in credit risk such as adverse changes in business, financial or macroeconomic conditions
   - particular emphasis on the use of collaterals and without resorting to collaterals, risk of fully recover
   - the new and revised classification criterions for Group 2:
     - the presumption of overdue payment over 30 days criterion in ex-Regulation is changed as 30 days ≤ past due ≤ 90 days or
     - the existence of a significant increase in the credit risk in accordance with IFRS 9 or
     - the occurrence of net realizable value of collaterals ≤ the book value of the financial asset for such loans that are fully collateralized or
     - the occurrence of being subject to restructuring while being followed in Group 1 or 2, however which do not carry the condition of delaying time to be classified among Non-Performing Loans or
     - the occurrence of being subject to restructuring and reclassified as Performing Loans while being followed in any Group of Non-Performing Loans due to the existence of net realizable value of collaterals ≤ the book value of the financial asset

iii. *To be classified in Group 3:*
   - the consideration of additional factors for the assessment of changes in credit risk such as adverse changes in business, financial or macroeconomic conditions

- particular emphasis on the use of collaterals and without resorting to collaterals, limited means for total recovery or are likely to lead to losses in case of the existence of net realizable value of collaterals ≤ the book value of the financial asset or inadequacy of capital to make payments
- the new and revised classification criterions for Group 3:
  - the presumption of 90-day delay for default definition that is consistent with IFRS 9
  - the occurrence of being subject to restructuring and moved from Non-Performing Loans to Performing Loans but the existence of overdue payment over 30 days in 12-month period or subject to restructuring again in the first year

For Group 4 and 5, other than the acceptance of presumptions of 180-day for Group 4 and 1-year for Group 5 delay for default, no changes are made in the Regulation.

Such a kind of loan classification that neither exists in IAS 39 nor IFRS 9 provides great convenience in provisioning for Turkish banks. The banks that are applying IFRS 9 will refer to the classification rules in the Regulation but will provide allowances according to IFRS 9.

The classification of loans in terms of Performing and Non-Performing with their characteristics is stated below in the tabular form:

Table 3a. Classification of Performing Loans

PERFORMING LOANS (Stage 1 & 2 Loans)	
Group 1 Loans of Standard Nature	**Group 2** Loans Under Close Monitoring
– no current or expected repayment problems – payment delays ≤ 30 days – totally recoverable/collectable – no decline in the creditworthiness of borrowers – the recognition of 12-month ECL	– no current payment problems but require close monitoring –30 days ≤ past due ≤ 90 days or – without resorting to collaterals, risk of fully recover – the existence of a significant increase in the credit risk in accordance with IFRS 9 or – the occurrence of net realizable value of collaterals ≤ the book value of the financial asset for such loans that are fully collateralized or – the occurrence of being subject to restructuring while being followed in Group 1 or 2, however which do not carry the condition of delaying time to be classified among Non-Performing Loans or – the occurrence of being subject to restructuring and reclassified as Performing Loans while being followed in any Group of Non-Performing Loans due to the existence of net realizable value of collaterals ≤ the book value of the financial asset

Table 3b. Classification of Non-Performing Loans

NON-PERFORMING LOANS		
Group 3 Loans with Limited Recovery	**Group 4** Loans with Suspicious Recovery	**Group 5** Loans Having the Nature of Loss
– debtors suffered deterioration – without resorting to collaterals, limited means for total recovery or are likely to lead to losses in case of the existence of net realizable value of collaterals ≤ the book value of the financial asset or inadequacy of capital to make payments – 90 days ≤ payment delays ≤ 180 days – the presumption of 90-day delay for default definition that is consistent with IFRS 9 – restructured and moved from Non-Performing Loans to Performing Loans but the existence of overdue payment over 30 days in 12-month period or subject to restructuring in the first year	– debtors suffered substantial deterioration – quite likely that full recovery cannot be achieved without resorting to collaterals – 180 days ≤ payment delays ≤ 365 days – no present nature of loss due to the possible contribution by means of mergers, opportunities for securing new financing or capital expansion to debtors' creditworthiness – presumptions of 180-day delay for default definition	– debtors' credit worthiness has completely disappeared and believed that recovery is not possible – payment delays ≥ 365 days – presumptions of 365-day delay for default definition

When the classification in the BRSA Regulation is adapted to the General Approach under IFRS 9, the Performing Loans groups (Group 1 and 2) are considered as Stage 1 and Stage 2, the Non-Performing Loans groups (Group 3, 4 and 5) will be treated as Stage 3 loans.

ii. Allowance for ECL

With respect to provisioning, those banks who will apply IFRS 9, the BRSA will require to be in full compliance with IFRS 9 in terms of providing ECLs. On the other hand, the non-applicants will continue to provide provisions in accordance with the Articles 10, 11, 13 and 15 in the new Regulation instead of IFRS 9. A comparative table is stated below that summarizes

the principles of provisioning for applicants and non-applicants of IFRS 9 in the new Regulation and the ex-Regulation:

Table 4. Comparative Rules for Allocating Allowances

Provisions	New Regulation (#29750)		Ex-Regulation (#26333)
	IFRS 9 Applicants	**IFRS 9 Non-Applicants (Articles # 10, 11, 13 and 15)**	**All Banks**
General Provision	Group 1 & 2: 12-month ECL and Lifetime ECL	– 1,5% for Group 1 (both cash and non-cash) – 3% for Group 2 (both cash and non-cash)	– 1% for Group 1 cash and 0,2% for non-cash loans – 2% for Group 2 cash and 0,4% for non-cash loans
Special Provision	Group 3, 4 and 5: Lifetime ECL	– minimum 20% of Group 3 – minimum 50% of Group 4 – 100% of Group 5	– minimum 20% of Group 3 – minimum 50% of Group 4 – 100% of Group 5

In the ex-Regulation, all of the banks were providing general and special provisions according to the different fixed rates required by the BRSA for cash and non-cash loans (Table 4). In the current position, as the banks are grouped into applicants and non-applicants, the banks that are applying IFRS 9 will be required to calculate general and special provisions based on 12-month or lifetime ECL whereas the non-applicants will continue to provide general provisions by using the new fixed rates stated in the current Regulation. However, when the new rates in the new Regulation are compared with the ones in the ex-Regulation, there is a 50% increase in the general provision rates for cash loans. Another significant amendment is made with respect to the non-cash loans; the non-applicants will calculate provisions by applying the general provision rate for cash loans (1,5% and 3%) over the amount of risk calculated according to the "Regulation Regarding the Measurement and Evaluation of Banks' Capital Adequacy". This means that, those who do not apply IFRS 9 will face a serious burden

of allowance because the new Regulation now uses the provision rates of cash loans for non-cash loans. This will mean that banks that do not apply IFRS 9 will have to allocate more general provisions than the ex-Regulation. Thus, since the Regulation allows to be an applicant or non-applicant of IFRS 9 in terms of provisioning, it will create significant discrepancies in provision levels between banks and thus will impair comparability. Related to the special provision rates, no changes were made in the new Regulation.

iii. Collaterals

The collaterals are taken into account at their net realizable value when calculating the amount of impairment to be incurred. In IFRS 9, the collateral has limited role in the credit risk assessment but it directly affects the measurement of ECLs and mitigates the increase in provisions for loss given default under IFRS 9 especially the case of move from Stage 1 to Stage 2. Therefore, the banks are allowed to consider the expected proceeds from the collateral while calculating both general and special provisions. However, before the new Regulation, they were only allowed to use the collaterals while calculating special provisions, not for general provisions. In other words, the banks were directly calculating general provisions based on the specified rates required by the BRSA without considering the collaterals. Thus, the use of collaterals in the calculation of ECLs will be accepted as a significant positive impact for the banks and especially the consideration of collaterals in the calculation of ECLs for general provisions may lead to significant decreases in general provision values of Turkish Banks.

In the Regulation, collaterals are ranked by five groups which is done from the most liquid to least liquid and least risk to most risk. The following rates are multiplied with the net realizable value of collaterals while calculating special provisions:

- Rate of consideration for Group One guarantees: One hundred percent (100 %)
- Rate of consideration for Group Two guarantees: Eighty percent (80 %)
- Rate of consideration for Group Three guarantees: Fifty percent (60 %)
- Rate of consideration for Group Four guarantees: Forty percent (40 %)
- Rate of consideration for Group Five guarantees: Twenty five percent (20 %)

4.2.2. Expected Financial Impacts on Turkish Banks

Similar survey studies conducted by EBA in Europe were also carried out by the BRSA two times including 49 banks' September 2016 and June 2017 data to assess the possible impacts of implementing ECL in terms of specifically the levels of provisions and the capital adequacy. There was no such a detailed report like EBA's, only a press release was made in December 2017 by the BRSA. In both studies, it is envisaged that 36 banks will be able to calculate the expected loss provisions under IFRS 9, 6 banks will apply IFRS 9 late and 7 banks will never apply. In the second study, a quantitative impact analysis of the application of IFRS 9 was conducted by 20 banks with 78.1% of the sector loan portfolio. The expected quantitative implications for Turkish Banking Industry are expected to be the opposite of EBA surveys:

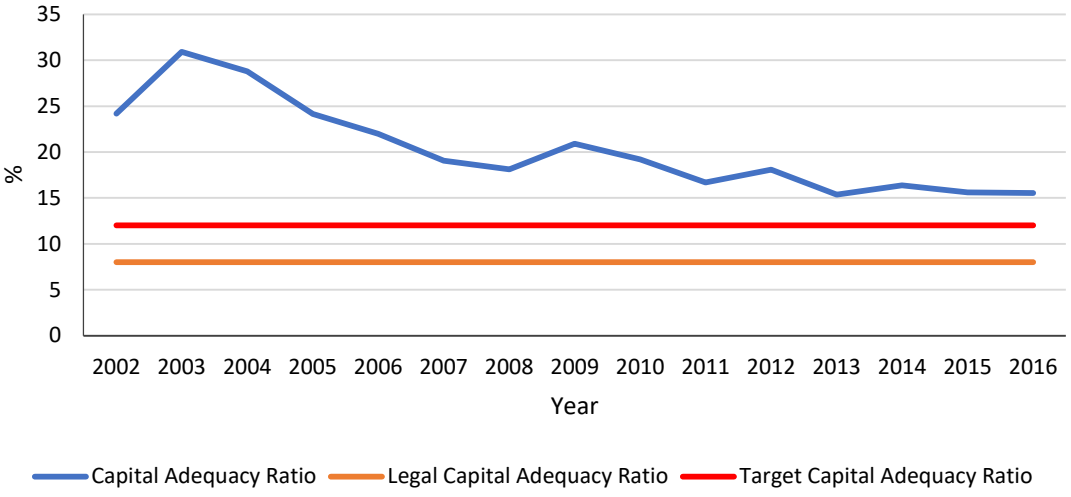
- 4,1% (2,565 million TL) decrease in the total amount of provisions
- 33 basis points positive impact on CET1 ratios on average and
- 21 basis points positive impact on total capital adequacy ratios on average

There are mainly three reasons why the Turkish Banking Industry will encounter reverse impacts upon transition to IFRS 9. One is the BRSA's more prudent and rule-based approach. Compared to IAS 39, banks were required to apply the specified rates in the ex-Regulation for calculating general and special provisions which were explained before and those rates were kept as more cautious by the BRSA to maintain a strong Turkish Banking System by putting aside reserves during benign times to take precautions during bad times. Since the banks have kept more prudent provisions till now, the quantitative impact of the transition to IFRS 9 in Turkey is expected to be very limited or reverse as verified with BRSA survey. Second reason for BRSA's survey results, is the consideration of collaterals in measuring ECLs under IFRS 9. The collaterals were not being taken into account in the calculation of General Provisions in the previous Regulation. For instance, for Group 1, before IFRS 9, 1% is directly provided as general provision without considering the collaterals, however now, due to the low levels of PD and LGD and the possibility of using collaterals for calculating 12-month ECLs, there is an expected material decrease in the General Provisions. The third reason is a series of structural reforms that were made in advance by the BRSA during both domestic and global financial crisis periods and Basel compliance. In late 2000, Turkey has entered into a severe domestic financial crisis (DFC) due to the significant depreciation of Turkish Lira (TL) against major currencies and the sharp rise in interest rates. This was also labeled as a banking crisis since

these led to a collapse in the banking sector due to their exposure to direct interest rate and indirect exchange rate risks (Comert and Colak 2014). In the year 2000, Turkish Government decided to remove the fragmented structure in banking regulation and supervision, and to establish an independent body which will be the sole authority in banking sector[3]. As a result, Banking Regulation and Supervision Agency (BRSA) was established in 1999 and began to operate in 2000 as the sole authority to regulate the Turkish Banking Sector. In order to take preventive actions against DFC, the BRSA quickly put into practice the first versions of a series of laws and regulations that are currently in force in the sector. The implementation of the Banking Sector Restructuring Program in 2001 with the issuance of "Implementation Principles and Procedures of the Banking Sector Restructuring Program" Regulation was also a very important measure taken in those times with the aim of transitioning to a banking sector that is resistant to internal and external shocks[4].

During the period starting with fluctuations in 2006 and ending with 2007-2008 crisis, Turkish Banking Industry managed to stay robust with the measures undertaken in DFC period. Following the fluctuations in 2006, especially against the adverse developments that may occur in international financial markets and Turkey's ongoing compliance with Basel II practices in the same period, the BRSA strictly continued to take several proactive actions for sustaining the regulation and supervision of the banking industry. First, the BRSA increased the level of provisions requirement for loans (i.e. general provision ratios foreseen as 0.5% for cash loans and 0.1% for non-cash loans were amended as 1% for cash loans and 0.2% for non-cash loans). Second, the BRSA introduced the target rationing for capital adequacy to be applied to all banks. Thus, although the legal ratio was stated to be 8% in the "Measuring and Assessing Capital Adequacy of Banks" Regulation (2006) to meet the Basel II criteria, the BRSA set a target ratio of 12% and it was decided to notify the banks that the ones that were not able to achieve the target were not allowed to open new branches. Currently, in Turkey, no bank has a capital adequacy ratio below 12% (Graph 1). Third, the BRSA took another important measure for the profit distribution such that when the banks decided to distribute profits, they must have got the approval from the BRSA (Erdoğan 2014).

[3] https://www.bddk.org.tr/websitesi/english/About_Us/About_BRSA/5804brsa_booklet_nov2015.pdf
[4] www.bddk.org.tr



Graph 1. Capital Adequacy Ratio of Turkish Banking Industry

Source: BRSA

One of the most important lessons learned from those crises was the sustainability of strong capital structure of Turkish banks through the aforementioned actions taken by the BRSA. Therefore, Turkish banks currently maintain high capital adequacy ratios. Especially, restricting profit distribution and encouraging the profits to be kept in the equity by BRSA made it possible to generate reserves of about twice as much as the total paid-in capital of the banks, thus protecting the sector's strong equity structure.

As a result, the changes implemented in the Regulation that lead to favorable calculations for ECLs, the use of collaterals and the constructive, strong measures taken in advance can be considered as explanatory for the initial results of the BRSA surveys.

5. CONCLUSION

IASB replaced IAS 39's old rule – Incurred Loss Model with the new rule – Expected Credit Loss Model by IFRS 9 effective on January 1, 2018. The introduction of ECL requires the banks to proactively estimate an 'expected loss' through the use of three-stage approach and recognize provisions accordingly before the occurrence of a default. With this, the banks are expected to provide more accurate information about allowances which was lacking during IAS 39 but on the other hand, it will lead to higher levels of provisions tied with lower levels of

CET1 and at the same time volatile profit or loss due to moves between stages. Furthermore, as the new ECL approach requires not only past, current conditions but also future economic forecasts, it will result in considerable level of judgments.

The expected early quantitative implications on European and Turkish Banking Industry based on surveys seem to be contradictory. European survey results indicate the emergence of higher levels of provisions and lower levels of CET1. However, the results expected for Turkish banks are opposing. This is mainly because of three reasons. First, 12-month or lifetime ECL provisions more than fixed rate of general and special provisions, second the use collaterals not only for special but also for general provisions and lastly very cautious banking structure based on the experiences during crises periods.

The introduction of the expected credit loss application will have its full effects in 2018. In this regard, preparers, regulatory authorities and auditors share a very significant role in promoting sound implementation processes for banks.

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