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"IFRS 9 – THE INTERACTION BETWEEN ACCOUNTING AND PRUDENTIAL FRAMEWORKS IN THE BANKING SYSTEM. AN ANALYSIS OF THE FIRST TIME ADOPTION."

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Firma dello studente

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Introduction

The present paper deals with the new accounting framework for financial instruments introduced by International Financial Reporting Standard 9 (IFRS 9). Its final version was issued in July 2014 by the International Accounting Standard Board (IASB) and officially came into force on January 1, 2018 by replacing the previous International Accounting Standard 39 (IAS 39, 2000), which was amended and criticized several times. The new accounting standard sets out requirements for classification and measurement of financial assets and liabilities, impairment methodology and hedge accounting. The present analysis mostly focuses on the regulations concerning the new impairment model for financial instruments considering the implications for the banking industry. Banks and other financial institutions are significantly affected from the accounting standard implementation due to the massive presence of financial instruments in their financial statements and their credit activity as a core business. In addition to adapting to new principles laid down in the field of financial instruments, banks should also meet the requirements imposed on them by the banking prudential regulations, the so-called Basel accords. In this context, there are points of convergence between the new requirements of IFRS 9 for impairment and the prudential rules aimed at regulating credit risk and own funds. Therefore, on one hand, the analysis will highlight how banks can take advantage from the interaction between regulations and, on the other hand, how it is possible to detect inconsistencies, which instead lead to a difficult interpretation. The supervisory bodies have recently undertaken a review process of the prudential policy framework with the aim of improving consistency with the accounting system. However, at first time adoption of IFRS 9 there are more than a doubts and controversial results expected by banks. In particular, the main expected impacts mainly concern prudential capitals and the possibility of jeopardizing the banks' compliance with minimum regulatory capital requirements, an issue that will be investigated in the analytical part of the present paper.

Therefore, the objective of the analysis is to explain from a theoretical point of view the possible points of interaction between the new IFRS 9 accounting framework concerning the impairment model features, and the Basel prudential framework regarding the credit classification and regulatory capitals. Such issues are then resumed from an empirical point of view through an analysis aimed at investigating the quantitative impacts of IFRS 9 first time adoption on credit impairment provisions and on regulatory capital ratios of Italian listed banking groups.

The reason why the present paper examines these issues originates on the significant change that the introduction of new accounting standard has made particularly in the banking system.

The latter has faced a hard business challenge both for the adjustment of internal systems and for ensuring coherence with the process dictated by banking supervision.

The discussion of the topics just mentioned is divided into four chapters.

The first chapter briefly describes replacement process of the previous accounting standard IAS 39. The purpose of the new standard is to overcome defects and complexities of its predecessor by introducing simpler and more intuitive rules that allow a timely recognition of expected losses on credits. Thereafter, the content of the accounting standard IFRS 9 on financial instruments is presented in detail. It could be ideally divided into three specific working issues: classification and measurement of financial instruments; impairment model; and hedge accounting. The most important issue that will then be resumed in subsequent chapters concerns the impairment methodology. It provides an impairment based on the expected loss approach, which allows a timely recognition of expected losses on credits considering also the forward-looking components. In addition to effectively overcoming the often criticised previous discipline based on the incurred loss approach, these new principles require a significant reconfiguration and adaptation of the systems used by banks. These considerations are the starting point of the critical discussion reported in following chapter.

The second chapter assumes that banks considered as special entities are also subject to a prudential regulation and supervision. Although the two regulations pursue different objectives, it is possible to recognise a form of interaction between the two. On one hand, the interaction could involve some advantages for the IFRS 9 implementation thanks to the exploitation of models and data already developed by bank for regulatory purposes. In particular, the Basel III internal ratings-based approach could be leveraged for IFRS 9 ECL model. Also, the data used for regulatory ICAAP could be used for the generation process of forward-looking scenarios. On the other hand, the interaction could reveal some critical inconsistencies, such as the treatment of new accounting provisions on ECL, leading to differences on the interpretation on the effects on capital ratios.

The third chapter presents the perspective of the prudential supervision, which in light of changes to the accounting discipline has launched a series of reform proposals, whose topic is the prudential treatment of ECL accounting provisions. Therefore, the analysis describes in detail motivations and proposals that the Basel Committee intends to introduce in the short term pending the definition of the final decision on the long term. In particular, they concern the introduction of transitional arrangements that allow to mitigate the impact of IFRS 9 on own funds. The second part of the chapter reports two important studies performed by supervisory

authorities (EBA 2017 and BCE 2017), which objectives are to understand the degree of banks preparation and to estimate the magnitude of the effects of IFRS 9 implementation.

The fourth and last chapter of the present paper develops on the model of the studies just mentioned. It carries out an empirical analysis on the effects of the first application of the accounting standard considering a sample of fifteen Italian banking groups listed on the Borsa Italiana. In particular, the analysis will focus on the quantitative impacts of IFRS 9 on credit provisions and capital ratios focusing on the critical issues risen from the concurrence of accounting and prudential effects.

CHAPTER 1: International Financial Reporting Standard 9 - Financial Instruments

1.1 Replacement process of IAS 39 and endorsement of IFRS 9

The International Accounting Standard 39 - *Financial instruments: recognition and measurement* (IAS 39) was issued in 1999 by the International Accounting Standard Board (IASB) and enforced in 2001. Since the issuing, the principle has been amended several times during following years until 2008. IAS 39 was generally acknowledged as very complex, particularly during the Global Financial Crisis. Some of the standard's principles were accused to have fostered the financial crisis and to have heavily hit banks' and entities' financial statements, which were drafted in accordance with international accounting standards (IAS). The same opinion was expressed by the G20 leaders during the 2009 summit: in the *Declaration on strengthening the financial system - London summit* (2009) leaders recommended that regulators and supervisors took action to restore confidence in financial markets. In particular, requests toward accounting regulators concerned actions to reduce complexity of accounting standards for financial instruments, to strengthen accounting recognition of loan loss provisioning and to improve reporting transparency and disclosure for financial institutions. On the other hand, recommendations to the supervisory authorities were related to increase the strength of international frameworks for prudential regulations and to mitigate procyclicality as well. An example is the inclusion of a requirement for banks to build resource buffers in good times, so that they can draw them down when conditions deteriorate.

One major concern raised about IAS 39 by the critics, was about the valuation methods used to recognize and measure financial instruments. The accounting principle set the fair value as the basis valuation method. This criterion has the advantage to provide current values and therefore improving reporting transparency and facilitating a fair investor assessment on entities' business, if the price is available in active markets. However, the instability of financial markets during financial crisis made emerge the weaknesses of this evaluation method. The market illiquidity and the high volatility of prices made market value not representative and far from fundamental value of the asset, entailing also a certain degree of subjectivity in the financial instrument value assessment. The standard also permitted high discretionality in the determination of the initial recognition and classification of financial instruments. The classification criteria were strict and of complex interpretation. This affected the comparability among financial statements and made investors ineffective to take fair economic decisions.

Other weakness recognized to IAS 39 concerned the impairment test of financial instruments. IAS 39 adopted an incurred loss approach for the loan loss provisions. This method was defined "too little too late" by the general opinion. The reason was that banks, even when recognized losses as coming, were not able to record them until they happened, and after the recognition the provisioning level was not appropriate. Moreover, questions were raised about whether provisioning models, including the effect of provisioning on regulatory capital levels, contributed to procyclicality by increasing excessive lending during the economic expansion and forcing a sharp reduction in the subsequent recession phase[1].

The dynamics just described are the reasons why shortly after the Global Financial Crisis, IASB supported by the Financial Crisis Advisory Group (FCAG)[2], started the project to replace IAS 39 with the main objectives:

- reduce the number of classification categories and provide a more clear rationale for measuring financial assets;

- the application of a single impairment method to all financial assets not measured at fair value and the exploration of alternatives to the incurred loss model for loan loss provisioning that used more forward looking information;

- improve the quality of reporting standard in order to provide consistent, unbiased and transparent information, especially in relation to estimate, assumptions and methodology used in evaluation process.

The International Financial Reporting Standard 9 - *Financial instruments* (IFRS 9) was developed by IASB and sets out requirements for recognition and measurement of financial assets and liabilities, impairment, derecognition and general hedge accounting. The standard replaces IAS 39 entirely.

Since 2005, the Board and the US Financial Accounting Standard Board (FASB) have had a long-term objective to improve and simplify the reporting for financial instruments. In March 2008, the boards published a Discussion Paper *Reducing Complexity in Reporting the Financial Instruments*. Its purpose was to assist IASB and FASB in deciding how to proceed in developing new standards that are principle-based and less complex than the existing IAS 39. The paper discussed the main causes of complexity in reporting financial instruments (i.e. the diverse

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[1]Cohen, B., Edwards, G., The new era of expected credit loss provisioning. March 2017. Pag 1
[2]The FCAG is a high level advisory group set up by the IASB and FASB to consider financial reporting issues arising from the global financial crisis.

methods to measure financial instruments) and possible intermediate and long-term approaches to improving financial reporting[3]. EFRAG's final comment letter on the Discussion Paper was published at the end of September 2008. Afterwards, the replacement project performed by IASB was developed in three phases, in part jointly with the FASB, and has been subjected to multiple public consultations. The decision to develop the replacement in phases was dictated to save time and to respect the recommendation of the G20 leaders to revise the accounting policy on financial instruments in order to apply it by the end of 2009. This method was enforced even if it was criticised because of its fragmented evolution did not allow a homogeneous comparison between entities financial data[4]. Indeed, entities that have adopted a previously released version of IFRS 9 (i.e. 2009, 2010 and 2013) could continue to use it until January 1, 2018 that is the mandatory effective date of the new standard.

The three replacement phases are connected to the three specific working issues of the accounting principle, which are classification and measurement of financial instruments, impairment of financial assets and hedge accounting. The general intention was that as the Board completed each phase it deleted the relevant portions of IAS 39 and created an IFRS that has replaced IAS 39.

The objectives of the first phase were the classification and measurement of financial instruments. In July 2009, IASB published the *Exposure Draft Financial Instruments: Classification and measurement (ED)*. The Board decided to address those aspects first because they form the foundation of the standard on reporting financial instruments. Moreover, many of the concerns that were expressed during the financial crisis arose from the classification and measurements requirements of IAS 39[5]. In particular, amendments focused on the reduction of accounting categories and setting up new drivers for the classification of these categories. The exposure draft proposed two primary measurement categories for financial instruments. Financial assets or financial liabilities would be measured at amortised cost or at fair value as residual category. The amendments reported in the ED concerning financial assets were adopted without significant changes in the first version of IFRS 9 issued by IASB in November 2009. The following version, issued in October 2010, added the classification and measurement requirements for financial liabilities to IFRS 9. The first phase terminated with the issuing of the final version IFRS 9 on 24 July 2014.

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[3]ED Financial instruments: Classification and Measurement. ED/2009/7. Par IN3
[4]Parisotto, R., IAS 39: Un principio contabile tormentato. Fiscalità internazionale. 2010. Pag. 12
[5]ED, Financial Instruments: classification and measurements. ED/2009/7. Par. IN7

The second phase deals with the impairment test of financial assets. For this purpose, IASB published in November 2009 the *Exposure Draft Financial Instruments: Amortised Cost and Impairment (ED)* and shortly after the *Supplementary Document Financial Instruments: Impairment (SD)* which proposed an impairment model based on expected losses for all financial assets recorded at amortised cost rather than the incurred losses model used in IAS 39. The second phase ended with the issuing of the *Exposure Draft Financial Instruments: Expected Credit Losses (ED)*, which introduced the recognition of 12-month expected credit losses or lifetime expected credit losses, according the credit risk level of the financial instrument. Provisions of the last exposure draft were almost all included in a specific section of IFRS 9 final version published in July 2014.

The third and last phase concerned the accounting for hedging activities. In November 2013 IASB issued the standard related to general hedge accounting requirements and included it in IFRS 9 (2014 final version). Instead, IASB decided to dedicate a separate project for macro hedge accounting not yet completed, so that IAS 39 requirements related to this issue are still applicable.

After the execution of the three phases, the replacement process of IAS 39 was accomplished. IASB issued the final version IFRS 9 on July 24, 2014 together with the Basis for Conclusion and the Application Guidance. This version supersedes all previous versions and is compulsorily effective for periods beginning on or after January 1, 2018.

Thereafter, EFRAG (European Financial Reporting Advisory Group[6]) performed its due process regarding the IFRS 9 Financial Instrument and issued the final endorsement advice on the standard on September 15, 2015 with a positive opinion. IFRS 9 was endorsed for use in the EU though the regulation (EU) 2016/2067 and was published in the Official Journal on November 29, 2016.

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[6]Is a private association established in 2001 whose purpose is to serve the European public interest in the field of financial reporting

Table 1.1: Summary of IFRS 9 versions

Version	Summary of content
IFRS 9 (2009)	Includes guidance on the classification and measurement of financial assets.
IFRS 9 (2010)	Incorporates IFRS 9 (2009), and adds requirements for the classification and measurement of financial liabilities.
IFRS 9 (2013)	Incorporates IFRS 9 (2010), with amendments to its transition requirements, and adds guidance on general hedge accounting.
IFRS 9 (2014)	Incorporates IFRS 9 (2013), with amendments to the requirements for the classification and measurement of financial assets, and adds requirements for the new expected credit loss model for impairment.

(Source: KPMG First impressions: IFRS 9 financial instruments. September 2014. Page 3)

1.2 Classification and measurement of financial instruments

International accounting standards that regulate the accounting treatment of financial instruments are *IAS 32 - Financial Instruments: Presentation*, *IAS 39 - Financial Instruments: Recognition and Measurement* (hedge accounting section), and *IFRS 7 - Financial Instruments: Disclosure* and *IFRS 9 - Financial Instruments*.

The objective of IFRS 9 is to "establish principles for financial reporting of financial assets and financial liabilities that will present relevant and useful information to users of financial statements for their assessment of amount, timing and uncertainty entity's future cash flows"[7]. The standard shall be applied by all entities[8] to all types of financial instruments, with some exceptions, such as the macro areas of interest in subsidiaries, associates and joint ventures, rights and obligations arising from leasing contracts and right and obligation arising from contracts defined in IFRS 4 Insurance Contracts.

The definition of financial instruments is provided by IAS 32 at paragraph 11, in which a financial instrument is "any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity". In particular, financial assets consist of:

- cash;

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[7]International Accounting Standard Board, IFRS 9, par. 1.1
[8]All entities that, mandatory or voluntary, implement the international accounting standards.

- an equity instrument of another entity;

- a contractual right to receive cash or another financial asset from another entity or to exchange financial assets or liabilities with another entity under conditions that are potentially favourable to the entity;

- a contract that is settled in the entity's own equity instruments and is a non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments, or a derivative that may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments.

While financial liabilities are defined as:

- a contractual obligation to deliver cash or another financial asset to another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity;

- a contract that is settled in the entity's own equity instruments and is a non-derivative for which the entity is or may be obliged to deliver a variable number of the entity's own equity instruments or a derivative that may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments[9].

Equity instruments consist of contracts that show a residual interest in the assets of an entity after deducting all of its liabilities. Therefore, these are contracts that give evidence of the ownership in an entity.

Under IFRS 9, banks or entities recognize a financial asset or liability in its financial statements when the bank or entity becomes part of the contractual provision of the instrument[10]. In accordance with the standard, the classification of financial assets is based on the joint assessment of two significant conditions[11]:

- the entity's *business model* for managing the financial assets;

- the *contractual cash flow characteristics* of the financial asset.

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[9]International Accounting Standard Board, IAS 32, par. 11
[10]International Accounting Standard Board, IFRS 9, par. 3.1.1
[11]International Accounting Standard Board, IFRS 9, par. 4.1.1

It is important to notice that the business model is determined at a level that reflects how groups of financial assets are managed together to achieve a particular business objective. Consequently, an entity's or bank's business model refers to how they manage its financial assets in order to generate cash flows. That is, the entity's or bank's business model determines whether cash flows will result from collecting contractual cash flows (HTC), selling financial assets or both (HTCS)[12].

Moreover, the standard requires an entity or bank to classify a financial asset on the basis of its contractual cash flow characteristics in relation to the selected business model. To do so the entity should determine whether the asset's contractual cash flow is *solely payments of principal and interests* (SPPI) on the principal amount outstanding.

Therefore, on the basis of the combination of these two conditions, the business model and the asset's contractual cash flow, financial activities could be classified within one of the following three measurement categories:

1) *Amortised cost* (AC), if the financial asset is held within business model whose objective is to hold financial assets in order to collect cash flows (HTC) and it meets the SPPI criterion;

2) *Fair value through other comprehensive income* (FVTOCI), if the financial asset is held within a business model in which assets are managed both in order to collect contractual cash flows and for sale (HTCS) and it meets the SPPI criterion;

3) *Fair value through profit or loss* (FVTPL), if the financial asset does not meet previous criteria for classification as subsequently measured at both AC and FVTOCI. In addition, this category includes financial activities measured at *Fair Value Option*. As mentioned in IFRS 9, "an entity has the option at initial recognition to irrevocably designate a financial asset as measured at FVTPL if doing so eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as an "accounting mismatch") that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases"[13].

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[12]International Accounting Standard Board, IFRS 9, par. B4.1.2.A
[13]International Accounting Standard Board, IFRS 9, par. 4.1.5

Figure 1.1: Summary of the classification and measurement of financial assets under IFRS 9

		BUSINESS MODEL		
		Business model HOLD TO COLLECT	Business model HOLD TO COLLECT AND SALE	Other business model
F.I. CONTRACTUAL CASH FLOWS CHARACTERISTICS	SPPI	AC	FVTOCI	FVTPL
	NO SPPI	FVTPL	FVTPL	FVTPL

(Source: Intesa SanPaolo, Il trattamento contabile degli strumenti finanziari in base agli IAS/IFRS. April 2018. Pag. 7)

Financial liabilities are generally measured at amortized cost, with some exceptions[14]:

- financial liabilities at FVTPL (in case of accounting mismatch or if their management and performance are evaluated on fair value basis in accordance with a documented risk management or investment strategy);

- financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition;

- financial guarantee contracts;

- commitments to provide a loan at lower interest rate than the market's rate;

- financial liabilities including embedded derivatives.

Of particular concern in IFRS 9 is the accounting treatment of the own credit risk for banks. Indeed, in the case of Fair Value Option for financial liability, the standard provides that profit or loss arising from fair value changes due to own credit risk variation are designated to OCI while the remaining fair value changes, not due to own credit risk variation, are designated to P&L. This requirement allows removing a significant volatility factor.

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[14]International Accounting Standard Board, IFRS 9, par. 4.2.1

1.2.1 The business model analysis

IFRS 9 requires a business model analysis in order to determine the destination measurement category of financial assets. The standard provides some general preconditions to the business model analysis. The first precondition specifies that this analysis should not be used if management's intention is only for an individual instrument but rather consider a larger view on a higher level of aggregation. An entity's or bank's business model is determined at a level that reflects how groups of financial assets are managed together to achieve a particular business objective[15]. The second precondition states that the assessment is not performed on the basis of scenarios that the entity does not reasonably expected to occur. Therefore, if an event occurs only under a "worst case" or "stress case" it does not affect the relevance of the financial asset to its established business model. Also cash flows realized in a way that is different from expectations (if more or fewer financial assets are sold than what was expected when assets were classified) do not give rise to a prior period error nor cause a change in the classification[16]. The last precondition requires considering as variables amount, timing and uncertainty of the bank's or entity's future cash flows and more generally all relevant evidence available at the date of the assessment in order to determine the type of business model analysis.

Given the general preconditions, the bank or entity should determine if financial assets are held in order to collect contractual cash flow or to collect contractual cash flow and sell financial activities or for different purposes.

1) Held To Collect (HTC) Business Model

The objective of HTC business model is to collect contractual cash flows and its corresponding measurement category is the amortized cost. The assessment of frequency, timing and amount of expected sales is significant to qualify a business model as HTC. Actually, collecting contractual cash flows is considered integral to achieve the objective of the business model while sales are incidental. However, incidental sales are admitted in some circumstances[17], for example if the sale is due to an increase in credit risk of a financial asset, or the sales are infrequent (even if significant) or insignificant (even if frequent), or lastly, the sale is close to the maturity of financial activity. Bank or entity have to justify the reason of the selling. Considering the first circumstance, the underlying reason of the sale admission is that the credit quality affects the probability to collect future cash flows, so the possibility to sell it in order to

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[15]International Accounting Standard Board, IFRS 9, par. B4.1.2
[16]International Accounting Standard Board, IFRS 9, par. B4.1.2A
[17]International Accounting Standard Board, IFRS 9, par B4.1.3A-B

guarantee a certain payment at a fixed date is consistent with the objective of HTC business model. Normally, HTC business model involves loans and receivables, and held to maturity investments.

2) Both Held to Collect and for Sale (HTCS) Business Model

The objective of HTCS business model is to collect contractual cash flows and to sell financial assets and its corresponding measurement category is FVTOCI. Under HTCS business model collecting cash flows and selling assets are both integral. Consequently sales frequency and volume increase. Examples of portfolios relevant to HTCS are portfolios that manage daily liquidity needs or portfolios that maintain a particular interest yield profile. In addition, this category includes equity instruments to which the option granted by the standard of valuing them at FVTOCI are applied.

3) Other Business Models

Financial assets belonging to any other business models, which are not consistent with HTC or HTCS business models, are collected in the residual measurement category FVTPL. In this case, sales are integral to the objective of the business model while collecting cash flows is incidental. Therefore, financial activities measured at FVTPL are held for trading[18] purpose or managed within a program of active buying or selling in order to realize fair values and maximizing cash flows. In addition, this category normally includes derivatives and embedded derivatives[19], equity instruments and financial instruments at Fair Value Options.

1.2.2 The SPPI test

IFRS 9 requires the SPPI test, other than the Business Model test, on the contractual cash flows characteristics of financial assets. The SPPI test has the purpose to verify if the asset's contractual cash flows are solely payments of principal and interest on the principal amount outstanding. In particular, the principal is the fair value of the financial asset at initial recognition while the interest is the payment for the time value of money, for the credit risk, for other basic lending risks and costs and for a profit margin[20]. Therefore, if a financial activity meets the condition imposed by the SPPI test, it could be collected in amortized cost or FVTOCI

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[18]A financial asset is classified as held for trading if it is: acquired for the purpose of selling in the short term; part of portfolio which strategy is to realize short term profits; derivative contract not designed under hedge accounting.

[19]An embedded derivative is a component of a hybrid instrument that also includes a non derivative host. The effect is that some of the cash flows of the combined instrument vary in a way similar to a stand alone derivative. IFRS 9 does not require anymore the separation of the host, the embedded derive is evaluate at fair value as a whole.

[20]International Accounting Standard Board, IFRS 9, par. 4.1.3

measurement categories. Otherwise, if the SPPI condition is not met, the asset is collected in FVTPL measurement category independently from its business model type. The IASB, in Basis for Conclusion par. BC4.172, explains the reason for limiting the use of AC and FVTOCI to financial assets that respect the SPPI condition. The Board believes that this condition is suitable only for "simple" cash flows accounting consistent with a basic lending arrangement. Instead, financial instruments with more complex cash flows accounting require a valuation at fair value to ensure that the reported financial information provides useful information.

The following is an example of an instrument for which the SPPI criterion is met. Instrument A is a bond with a stated maturity and payments of principal and interest linked to an unleveraged inflation index of the currency in which the instrument is issued. Such instrument meets the SPPI criterion. Linking payments of principal and interest on the principal amount outstanding to an unleveraged inflation index resets the time value of money to a current level. The interest rate on the instrument reflects real interest. Thus, the interest amounts are consideration for the time value of money on the principal amount outstanding.

An example of an instrument for which the SPPI criterion is not met considers a bond that is convertible into a fixed number of equity instruments of the issuer. The SPPI test is not met because the return on the bond is not just the consideration for the time value of money and credit risk, but also reflects the value of the issuer's equity (inconsistent with basic lending arrangement).

The SPPI condition is verified for every individual financial asset at its initial recognition in the financial statement and there is no need to test it again during asset's lifetime. However, the standard recognizes particular cases of contractual cash flows, due to changes of initial financial asset contractual terms or due to specific contractual terms contained in the financial activity. In these circumstances the bank or entity may be able to verify the SPPI condition by performing a qualitative assessment, or it may be necessary to perform a quantitative assessment.

The change of initial contractual terms for parties' will requires to verify again the SPPI condition only if the change determines a derecognition of the asset. Otherwise, it is not needed.

Moreover, IFRS 9 provides two cases of particular contractual terms: *contractual terms with a modified time value of money* and *contractual terms that change the timing and amount of contractual cash flows*. The first consideration concerns the time value of money. It is defined as the element of interest that provides consideration only for the passage of time. Normally, it

does not include other risks or costs associated with holding the financial assets and its assessment should consider all relevant factors such as the currency in which the financial asset is denominated and the period for which the interest rate is set[21]. However, in some cases the time value of money element may be modified. That means that the relationship between the passage of time and the interest rate reset period is imperfect. For example, the interest rate resets every month to a one-year rate or to an average of a particular short and long-term rates rather than the one-month rate. In these cases the bank or entity apply the *"benchmark test"*. It consists in comparing the contractual undiscounted cash flows with modified time value with the undiscounted cash flow (the benchmark cash flows) with no modified time value. If the difference is significant, in single or cumulative reporting periods, the SPPI test is not met anymore. The second consideration refers to other types of contractual terms that change the timing and the amount of contractual cash flows. For example, if the asset can be prepaid before maturity or its term can be extended. Also in these cases, the bank or entity verify if the contractual cash flows that could arise over the life of the instrument has already met the SPPI criterion. In particular, the test consists in a comparison between the contractual cash flows arising before and after the change. Moreover, if the change is caused by a contingent event, the test verifies also the nature of the contingent event.

Finally, the standard underlines some circumstances under which the SPPI condition is never verified[22]:

- contractual terms that introduce exposure to risks or volatility, such as exposure to changes in equity prices or commodity prices;

- financial activities denominated in a different currency between principal and interest and the remaining principal;

- financial assets including leverage, such as stand-alone option, forward and swaps contracts.

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[21]International Accounting Standard Board, IFRS 9, par. B4.1.9A

[22]International Accounting Standard Board, IFRS 9, par. B4.1.7A-B4.1.9

1.3 Initial recognition, derecognition and reclassification of financial instruments

Under IFRS 9, banks or entities recognize a financial asset or liability in its financial statements when the bank or entity becomes party of the contractual provision of the instrument[23]. At the time of initial recognition, financial instruments are measured at its fair value, which is normally the transaction price, gross of transaction costs and revenues that are directly attributable. In the case of financial instruments measured at FVTPL the fair value is net of transaction costs and revenues, which are recognized in Profit and Loss. If the fair value differs from the transaction price it should be estimated through other evaluation methods (i.e. level 1 input, the fair value is evidenced by a quoted price in an active market for an identical asset or liability)[24]. After the initial recognition, financial instruments are measured in accordance of their classification categories: at amortized cost, at fair value with changes recognized in Statement of Comprehensive Income or at fair value with changes in Profit or Loss. In particular, financial assets at AC or at FVTOCI are tested for impairment[25].

Derecognition of financial instruments is the removal of a previously recognized financial asset or financial liability from a bank or entity financial statement. Therefore, the financial instrument is considered extinguished. The standard proposes different derecognition processes for financial assets and liabilities. The elimination of a financial asset can be partial if it is transferred from an entity to another one for a partial amount, or entirely if it is transferred from an entity to another one for the whole amount. In addition, IFRS 9 introduces two other possibilities for derecognizing financial assets: the *write-off* of the gross exposure if there are no reasonable expectations to recover a financial asset entirely or partially; the renegotiation or modification of the contractual cash flows of financial asset. In the last case, the modified asset is considered a new financial asset, which implies the application of financial instrument requirements for initial recognition, classification and measurement[26]. Instead, the elimination of a financial liability from the financial statement is used for fulfilment of debt, legally released or expired.

The standard provides rare cases of reclassification after the initial recognition of financial instruments among accounting categories: financial assets reclassification is required only if

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[23]International Accounting Standard Board, IFRS 9, par. 3.1.1

[24]International Accounting Standard Board, IFRS 9, par. B5.1.2A

[25]See paragraph 1.4

[26]International Accounting Standard Board, IFRS 9, par. B5.5.25

the entity or bank changes the objective of its business model while financial liabilities could not be reclassified in any case. Moreover, such change is expected to be infrequent and significant, that means it is determined by the entity's senior management as a result of external or internal changes and must be relevant to entity's operations and demonstrable to external parties[27]. An example of a business model change, as reported in the standard, considers a financial service that decides to shut down its retail mortgage business. That business no longer accepts new business and the financial services firm is actively marketing its mortgage loan portfolio for sale. In this example the business model change is determined by a management decision to shut the business down. Therefore, the retail mortgage business probably initially measured at amortized cost, after the change has been reclassified at FVTOCI. In addition, the standard specifies what are not changes in the business model, such as a change in intention related to particular financial assets, or the temporary disappearance of a particular market for financial assets, or finally, a transfer of financial assets between parts of the entity with different business model[28]. The reclassification is possible from and to any of the three measurement categories since it is mandatory if the previous conditions of business model change are met.

1.4 The impairment model

IFRS 9 introduces a new impairment model for financial assets based on the expected loss approach. IFRS 9 impairment regulations have a retrospective application in accordance with IAS 8[29]. However, at the first time adoption the bank is required to disclose explanatory notes on the reconciliation between previous IAS 39 and current IFRS 9 impairment requirements.

IFRS 9 has a single impairment model that applies to all financial assets in its scope that are not accounted for at FVTPL.

Summarizing, financial assets that are within the perimeter of impairment calculation are[30]:

- Financial assets that are debt instruments measured at amortised cost or at FVTOCI (i.e. loans, trade receivables and debt securities);

- Loan commitments issued that are not measured at FVTPL;

- Financial guarantee contracts;

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[27]International Accounting Standard Board, IFRS 9, par. B4.4.1

[28]International Accounting Standard Board, IFRS 9, par. B4.4.3

[29]Retrospective application means that new requirements are applied as if those requirements had always been applied.

[30]International Accounting Standard Board, IFRS 9, Basis for Conclusion par. BC5.118

- Lease receivables in the scope of IAS 17;

- Contract assets in the scope of IFRS 15.

Financial instruments outside the perimeter of impairment calculation are[31]:

- Financial instruments measured at FVTPL (including loan commitments issued that are measured at FVTPL);

- Equity investments (if measured at FVTOCI option, there is no reclassification of any fair value gain or losses to profit or loss);

- Purchased or originated credit-impaired financial assets (POCI) (only recognition of cumulative changes in lifetime expected credit losses).

The first important feature to underline is that the standard provides a single impairment model for all activities. As the IABS underlines, applying a single impairment model to both financial assets at amortized cost and at FVTOCI will facilitate comparability of the amounts that are recognized in profit or loss for assets with similar economic characteristics. Moreover, having a single impairment model reduces a significant source of complexity for both users and preparers of financial statements compared with applying the previous IAS 39[32]. For example, according to the new IFRS 9 requirements for financial assets evaluated at FVTOCI, the classification and measurement procedure is different from the impairment procedure: fair value changes, related or not related to the credit risk (e.g. changes in market interest rate), are recognized in OCI valuation reserves while impairment gains or losses are recognized in P&L without the need of passing through OCI valuation reserve.

The main purpose of the impairment model proposed in IFRS 9 is a timely recognition of expected losses on credits together with a more useful disclosure on them. In particular, the standard requires accounting for the loss allowance for expected credit loss on a financial asset since its initial recognition.

The expected credit loss (ECL) is defined as the weighted-average of the credit losses that the bank recognizes on the financial activity in case of default. The credit loss is calculated as the present value of cash shortfalls, which correspond to the difference between the cash flows that are due in accordance with the contract and the cash flows expected to receive discounted at the

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[31]KPMG, First impression: IFRS 9 financial instruments. 2014. Pag. 58

[32]International Accounting Standard Board, IFRS 9, Basis for Conclusions, par. BC5.124

original *effective interest rate* (EIR)[33]. In particular, IFRS 9 requires the bank to account for credit losses over a time horizon of 12 months for financial assets that have not increased significantly the credit risk since the initial recognition (*Stage 1*). The loss allowance corresponds to an amount equal to cash shortfalls that will result if a default event occurs within 12 months weighted by probability of that default occurring. The time horizon is extended to the lifetime of the financial asset if it has experienced a significant increase in credit risk since initial recognition (*Stage 2*) or if it results impaired (*Stage 3*). The loss allowance amount is equal to the sum of the cash shortfalls resulting from all possible default events over the expected life of a financial activity weighted by the default events probabilities. Changes to the ECL are recognized at a subsequent date of reporting as impairment gain or loss in the profit and loss offsetting the loss allowances account.

The standard, since has principle-based structure, does not contain any definitions of default, but specifies that the default definition has to be consistent with that one used for internal credit risk management purposes and suggests considering qualitative indicators when appropriate. The standard indicates the 90 days past due as a rebuttable presumption of default event unless the bank has reasonable and supportable information to demonstrate that a more lagging default criterion is more appropriate. In this context, the IASB notes that the main indicator to consider is the *probability of default* and banks can use their own definition of default including a regulatory definition. This opinion is also largely supported by supervisory authority like BCBS or EBA[34].

When on initial recognition of an asset is non-performing it is qualified as *purchased or originated credit-impaired* (POCI) and it is not recognized for any impairment. Indeed, expected losses generated by these activities are calculated by considering, in the estimate of future cash flows, the expected credit losses over the entire residual life of the asset. At each reporting date, the bank shall recognise in profit or loss the amount of change in lifetime ECL as an impairment gain or loss[35].

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[33]IASB, IFRS 9, Appendix A: "The rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset or financial liability to the gross carrying amount of a financial asset or the amortized cost of a financial liability. When calculating the EIR, an entity shall estimate the expected cash flows by considering all the contractual terms of the financial instruments but shall not consider the expected credit losses".

[34]In BCBS, Guidance on credit risk and accounting for expected credit losses. 2015. Appendix A4, reports: "The Committee recommends that the definition of default adopted for accounting purposes is guided by the definition used for regulatory purposes. The default definition provided in par. 452 of the Basel capital framework includes both: (a) a qualitative criterion; (B) a objective criterion.
EBA, Guidelines on the application of the definition of default under art. 178 of regulation (EU) 575/2013. September 2016.

[35]International Accounting Standard Board, IFRS 9, par. 5.5.14

The new impairment model significantly affects banks and other financial institutions due to their credit activity as a core business. The entities belonging to other sectors adopting international accounting standards are less involved but interested anyway for what concerns commercial loans. Consequently, implementation efforts of new requirements are mainly addressed toward the banking sector in which a significant impact can also be recognized[36]. Banking supervisory entities, both before and after the endorsement of IFRS 9, have been issuing guidelines and provisions with the purpose of a coherent and correct introduction of the standard. For instance, guidelines and reports have been issued by BCBS, EBA and AIFIRM as recalled many times in the current analysis.

Initially, IASB and FASB together began the project aimed to define on the new impairment rules. Such initiative was later abandoned leaving place, starting from 2012, a separated writing of the accounting rules. Currently FASB proposes the current expected credit losses (CECL) model. Likewise IFRS 9, it moves from an incurred loss to an expected credit loss model. However, the CECL introduces two important differences: it will be in force since 2020 and it will provide a single model for calculating lifetime losses according to which all credit losses will be measured over the lifetime of the financial instrument. Therefore, on the FASB side we can observe the abandonment of the double method of measurement of the expected losses, 12-month time horizon for stage 1 exposures or lifetime for stage 2. However, this approach requires higher provisioning than under IFRS 9.

1.4.1 The staging allocation

The impairment model provides the classification of the financial assets into three stages reflecting the pattern of their credit quality deterioration:

- Stage 1: includes newly issued or acquired financial activities without a significant increase in credit risk since origination date or with *low credit risk* at reporting date;

- Stage 2: includes financial activities with a significant increase in credit risk since initial recognition but with no objective evidences of impairment;

- Stage 3: includes financial activities with objective impairment evidences at reporting date.

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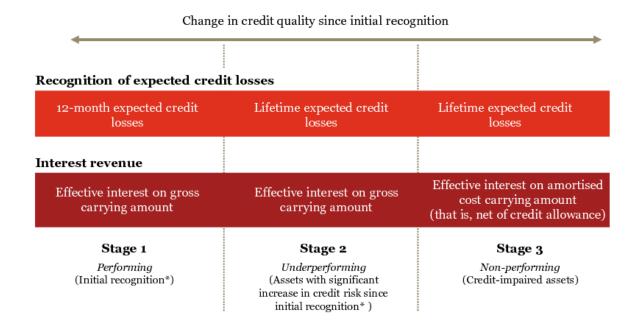
[36]See EBA Reports on results from first and second impact assessments of IFRS 9, chapter 3 par. 3.2.1.

After the staging allocation, the bank calculates the ECL and the interest revenues for each exposure:

- for stage 1 exposures the 12-month ECL are recognized and the effective interest rate is calculated on the gross carrying amount of the asset (gross of impairment deductions);

- for stage 2 exposures the lifetime ECL is recognised and the effective interest rate is calculated on the gross carrying amount of the asset;

- for stage 3 exposures the lifetime ECL is recognised and effective interest rate is calculate on the net carrying amount (net of impairment deductions, i.e. amortised cost).

POCI activities are conventionally classified in stage 3 since initial recognition. If as a result of an improvement in the creditworthiness of the counterpart and the assets become performing, they are classified under stage 2. These assets are never classified under stage 1 because the expected credit loss is always calculated considering a time horizon equal to their residual duration[37]. Interest revenues are calculated applying the adjusted-effective interest rate on the amortised cost since initial recognition.

Figure 1.2: The Expected Credit Loss model

(Source: PricewaterhouseCoopers, In depth, IFRS 9: expected credit losses. 2014. Page 2)

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[37]UniCredit, Report on transition to IFRS 9 financial instruments of UniCredit Group. May 2018. Pag. 20

The rationale of the staging allocation procedure is to allow higher provisions level and timely recognition of losses in bank's financial statement. In particular, the introduction of the stage 2 concept forces to identify at once credit exposures with deteriorating evidence, although still performing, and to recognize appropriate loss allowances toward expected loss over the credit lifetime.

It is important to notice that the allocation of exposures in stages 1 and 2 is not intended in absolute terms but corresponds to the change of the credit risk (i.e. change of default occurring). In case of negative change the exposure is transferred from stage 1 to 2. Otherwise, if the change is positive, exposures are transferred from stage 2 to 1. A first intuitive consequence is that a financial asset allocated in stage 1 could have a higher probability of default than an asset classified in stage 2 since only the latter has experienced a significant deterioration in credit quality. The second consequence, due to the symmetrical approach of impairment, concerns the increase of profit and loss volatility caused by the allocation and release of provisions on loans entering and exiting from stage 2 on a recurring base[38].

1.4.2 The determination of significant increase in credit risk

The objective of impairment requirements is to recognise lifetime expected credit losses for all financial instruments for which there have been significant increases in credit risk since initial recognition, whether assessed on an individual or collective basis[39], considering all reasonable and supportable information including the *forward looking information[40]*. In particular, at each reporting date the bank assesses if the credit risk on a financial instrument has increased significantly since initial recognition[41].

As general rule, to make the assessment the bank should consider:

- the change in the risk of default occurring since initial recognition;

- the expected life of financial instruments (the asset lifetime, unless 12 month is a reasonable proxy);

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[38]McKinsey & Company, IFRS 9: A silent revolution in banks' business models. April 2017. Pag. 2

[39]The assessment on a collective basis, that means considering information on a group or subgroup of financial instruments on the basis of shared credit risk characteristics, is required to ensure the recognising lifetime ECL for significant increase in credit risk when such evidence at individual level is not yet available.

[40]International Accounting Standard Board, IFRS 9, par. 5.5.4

[41]International Accounting Standard Board, IFRS 9, par. 5.5.9

- reasonable and supportable information that is available without undue cost or effort that may affect credit risk.

As mentioned before the standard does not provide any definition of default nor its measurement methodology nor indicates the significant increase threshold. At par B5.5.17 the standard reports a non-exhaustive list of sixteen classes of indicators which may be relevant in assessing changes in credit risk and specifies that qualitative and non-statistical quantitative information may be sufficient to determine that a financial instrument has experienced significant change in risk of default. In other cases, it is useful to include information from statistical models or credit ratings processes.

Consequently, it is possible to individuate one main indicator and three backstop indicators to determine a significant increase in the credit risk and consequently the transfer of exposure to stage 2:

- change in *default probability* in relation to default probability upon initial recognition. This consists of an evaluation done through a relative criterion, which is the main driver;

- *more than 30-day past due rebuttable presumption*. The significant increase in credit risk probability is automatically met for payments 30 days past due unless there is reasonable and supportable evidence of the contrary;

- *forbearance measures*. The forbearance situation causes the automatic exposure transfer to stage 2. The forbearance condition provides a *probation period* during which the exposure is considered forborne although payments have become regular;

- transfer of exposure to a *watchlist.*

Focusing on the main indicator and from a practical point of view, the deterioration of default probability corresponds to a shift on a lower credit rating class (downgrading) since the default probability is the output of the internal credit rating system. As suggested in the AIFIRM analysis[42], migration matrix is an example of a statistical model that uses a rating system in order to determine what exposures should be allocated to stage 2. The migration matrices model considers the transition probability among rating classes. The model assumes that an exposure classified in stage 1 is transferred to stage 2 if its cumulated transition probability exceed a fixed threshold, called quantile. Banks establish the quantile on the basis of portfolio features (for

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[42] AIFIRM, Position Paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. 2016. Pag. 17

example default rate, overdraft rate, watchlist entrance rate) and their risk appetite. From a practical point of view, the analysis considers a matrix that contains the cumulated migration probability at *i* years, which could be obtained from a one-year rating transition matrix, as reported in table 1.2. It displays seven classes letter rating scale (Aaa-Caa) and one default class. Each row indicate the rating class at the beginning of the time period and each column indicates the rating class at the end of the time period. Elements contained within the matrix indicate the exposure's probability to remain in the rating class of the initial period, or to transfer in a different rating class, or to default. For this reason, the diagonal presents higher values.

Table 1.2: One-year rating transition matrix

					Rating to				
	i	**Aaa**	**Aa**	**A**	**Baa**	**Ba**	**B**	**Caa**	**Default**
Rating from	**Aaa**	91.56%	7.73%	0.69%	0.00%	0.02%	0.00%	0.00%	0.00%
	Aa	0.86%	91.43%	7.33%	0.29%	0.06%	0.02%	0.00%	0.01%
	A	0.06%	2.64%	91.48%	5.14%	0.54%	0.10%	0.02%	0.02%
	Baa	0.05%	0.22%	5.16%	88.70%	4.60%	0.83%	0.25%	0.19%
	Ba	0.01%	0.07%	0.52%	6.17%	83.10%	8.25%	0.62%	1.26%
	B	0.01%	0.05%	0.19%	0.41%	6.27%	81.65%	5.92%	5.50%
	Caa	0.00%	0.04%	0.04%	0.25%	0.79%	10.49%	69.92%	18.47%
	Default	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%

(Source: Moody's Analytics. April 2018.)

The two-year cumulated transition probabilities matrix reported in table 1.3 is given by the product between the row vector of the initial rating class and the column vector of the destination rating class.

Table 1.3: Two-year cumulated transition probabilities matrix.

					Rating to				
	i	**Aaa**	**Aa**	**A**	**Baa**	**Ba**	**B**	**Caa**	**Default**
Rating from	**Aaa**	83.90%	14.16%	1.83%	0.06%	0.04%	0.00%	0.00%	0.00%
	Aa	1.58%	83.86%	13.43%	0.90%	0.16%	0.05%	0.00%	0.02%
	A	0.14%	4.85%	84.15%	9.30%	1.19%	0.26%	0.05%	0.06%
	Baa	0.10%	0.54%	9.34%	79.23%	7.98%	1.82%	0.48%	0.51%
	Ba	0.02%	0.15%	1.25%	10.66%	69.86%	13.71%	1.45%	2.89%
	B	0.02%	0.10%	0.39%	1.11%	10.40%	67.81%	9.01%	11.16%
	Caa	0.00%	0.07%	0.10%	0.49%	1.88%	15.97%	49.51%	31.97%
	Default	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%

(Source: Personal elaboration on previous table data)

Thereafter, the procedure for determining the allocation of an exposure to stage 2 through the migration matrix method is structured in three steps.

The first step requires the calculation of the matrix with migration probabilities given no default (conditional probability), as reported in the following matrix:

					Rating to			
		i	**Aaa**	**Aa**	**A**	**Baa**	**Ba**	**B**	**Caa**
Rating from	**Aaa**	83.90%	14.16%	1.83%	0.06%	0.04%	0.00%	0.00%
	Aa	1.58%	83.87%	13.43%	0.90%	0.16%	0.05%	0.00%
	A	0.14%	4.85%	84.20%	9.31%	1.19%	0.26%	0.05%
	Baa	0.10%	0.54%	9.39%	79.64%	8.03%	1.83%	0.48%
	Ba	0.02%	0.16%	1.28%	10.98%	71.94%	14.12%	1.50%
	B	0.02%	0.11%	0.44%	1.25%	11.70%	76.33%	10.15%
	Caa	0.00%	0.11%	0.15%	0.72%	2.76%	23.47%	72.79%

(Source: Personal elaboration on previous table data)

Values of the migration probability conditioned to the absence of default are given by the ratio between the probability of unconditional migration and the complement to one of the default probability, for example:

$$P(M_{Aa,Aa} \mid \text{no default}) = P(M_{Aa,Aa}) / (1 - P(M_{Aa,D}) = 83.86\% / (1 - 0.02\%) = 83.87\%$$

The second step provides for calculating the conditional probability of remaining in the starting class, or moving to rating class k or better than k. This value is given by the sum of migration probabilities conditioned to the absence of default, for example:

$$P(M_{Aaa,Aa} \mid \text{no default}) = P(M_{Aaa,Aaa} \mid \text{no default}) + P(M_{Aa,Aa} \mid \text{no default}) =$$
$$= 83.90\% + 14.16\% = 98.06\%$$

After applying the same procedure to all values, the final matrix is the following:

					Rating to			
		i	**Aaa**	**Aa**	**A**	**Baa**	**Ba**	**B**	**Caa**
Rating from	**Aaa**	83.90%	98.06%	99.89%	99.95%	100.00%	100.00%	100.00%
	Aa	1.58%	85.45%	98.88%	99.79%	99.95%	100.00%	100.00%
	A	0.14%	4.98%	89.19%	98.49%	99.68%	99.95%	100.00%
	Baa	0.10%	0.64%	10.03%	89.66%	97.69%	99.52%	100.00%
	Ba	0.02%	0.18%	1.47%	12.45%	84.39%	98.50%	100.00%
	B	0.02%	0.13%	0.57%	1.82%	13.52%	89.85%	100.00%
	Caa	0.00%	0.11%	0.26%	0.98%	3.74%	27.21%	100.00%

(Source: Personal elaboration on previous table data)

The last step consists in setting the quantile-threshold (for example, if the quantile is equal to 10% the correspondent threshold is 90%) and identifying the destination rating classes that determine the allocation to stage 2. Therefore, considering the above reported matrix, an exposure that transfers from Aaa rating class to Aa rating class after i years from origination will be allocated to stage 2 since its value exceed the threshold (98.06% > 90%). An exposure A that remains in the same initial class will not be allocated to stage 2 (89.19% < 90%). On the contrary, if the threshold corresponds to 85% also the just mentioned exposure should be allocated to stage 2 (89.19% > 85%). On this issue, it is possible to observe a problem of the model since an exposure that remains in the same initial class could be equally allocated to stage 2. A solution to this controversial result could be found by assigning different quantiles to the different initial rating classes. For example, the 0% quantile (100% threshold) could be assigned to the best Aaa, Aa and A classes on the basis of *low risk exemption* criterion, the 10% quantile to the lower Baa class, and so on for all classes.

As alternatives to this model based on the rating system, there are statistical analyses performed directly on the probability of default, such as logistic regression, ordinary least square regression and quantile regression. Of course, statistical approaches involve higher complexity for their implementation and especially for the selection and setting of target variables. In this context, IFRS 9 proposes two practical expedients, in order to simplify the staging process and avoid undue costs and efforts for adopters:

- the application of the *low credit risk exemption*. The bank may assume that the credit risk is not significantly increased since initial recognition if the instrument has a low risk of default. Exposures with *investment grade* external rating are an example of low credit risk instrument. Therefore, for exposure with low credit risk, the bank has the option of not assessing if the credit risk has a significant increase since initial recognition.

- the already mentioned *more than 30 days rebuttable presumption.*

The Basel Committee recommended a moderate use of such simplified expedients, in particular for internationally active banks because given their business, the cost of obtaining relevant information is not considered by the Committee to be likely to involve undue costs or efforts[43]. Moreover, practical expedients are considered not suitable for a high quality implementation process of the standard and their application requires clearly documented justifications.

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[43]BCBS, Guidance on credit risk and accounting for expected credit losses. 2015. Par. A45

The financial activities that have experienced, individually or in aggregate, objective evidence indicators of impairment should be classified inside stage 3. Appendix A of IFRS 9 reports such indicators:

    (a) significant financial difficulty of the issuer or the borrower;

    (b) a breach of contract, such as default or past due event;

    (c) the lenders of the borrower, for economic or contractual reasons relating to the borrower's financial difficulty, having granted to the borrower concession that the lender would not otherwise consider;

    (d) it is probable that the borrower will enter bankruptcy or other financial reorganisation;

    (e) the disappearance of an active market for that financial asset because of financial difficulties;

    (f) purchased or originated of financial asset at a deep discount that reflects the incurred credit losses (POCI).

Also, according to EBA definition[44] NPL are collected under stage 3.

The following is an example on the assessment of the significant increase of credit risk and the staging allocation[45].

Bank W uses an internal credit rating system of 1 to 10 (1 denotes the lowest credit risk and 10 denotes the highest credit risk). Bank W considers an increase of two rating grades to represent a significant increase in credit risk. It also considers Grades 3 and lower to be a "low credit risk". At the reporting date Bank W has two loans to Company X outstanding, as follows:

- Loan A: grade at initial recognition equal to 2 (stage 1) and grade at reporting date equal to 4;
- Loan B: grade at initial recognition equal to 3 (stage 1) and grade at reporting date equal to 4.

Bank W assesses if there has been a significant increase in credit risk in respect of the loans and it reaches the following conclusions:

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[44]EBA, Final draft Implementing Technical Standards, 2013/03. Reports: "Non-Performing Exposure are: 90 days past-due (material exposure) or unlikely to be repaid in full without collateral realisation (irrespective of any past-due amount or of the number of days past-due)"

[45]KPMG, First impressions: IFRS 9 financial instruments. 2014. Pag. 67

- Loan A has significant increase the credit risk, since the difference between grades is 2 (transfer to stage 2). Therefore, Bank W recognises allowance equal to lifetime ECL.
- Loan B has not significant increase the credit risk, since the difference between grades is lower than 2 (still stage 1). Bank W recognises allowance equal to 12-months.

It is important to notice that the loans each attract a loss allowance measured on a different basis because only the credit risk of Loan A has increased significantly since initial recognition. The measurement basis for the loss allowance is different irrespective of the fact that both loans have the same grade at the reporting date.

1.4.3 The Expected Credit Loss measurement

The measurement of expected credit loss should reflect[46]:

- an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes;

- the time value of money;

- reasonable and supportable information that is available without undue costs or efforts at the reporting date about past events, current conditions and forecasts of future economic conditions.

The first condition requires considering multiple information and possible estimated scenarios. The standard specifies that it is not needed to identify every possible scenario. It is important to consider at least two scenarios reflecting the possibility that a credit loss occurs (default), even if very low, and the possibility that no credit loss occurs (no default). Moreover, relatively simple modelling may be sufficient without the need for a large number of detailed simulations of scenarios. Indeed, the purpose of IFRS 9 is not to promote estimation practices, rather to consider significant *forward looking information* that could affect the probability of default and include them in the expected credit loss model.

With regard to the time value of money, the standard explains that the discount rate that reflects the expected credit losses is the *effective interest rate* determined at initial recognition or an approximation thereof.

The last requirement refers to the reasonable and supportable information to use in the ECL model. Such information should reflect past events, current conditions and forecasts of future

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[46]International Accounting Standard Board, IFRS 9, par. 5.5.17

economic conditions. Therefore, information used shall include factors that are specific to the borrower, general economic conditions and an assessment of both current and forecast direction of conditions at the reporting date[47]. In this context, IFRS 9 at par. B5.5.50 explains that it to include forecasts of future conditions over the entire expected life of financial instruments is not required. The underlying reason is that the degree of judgement needed to estimate cash shortfalls depends on the availability of detailed information. As the forecast horizon increases, the availability of detailed information decreases and consequently the judgement required to estimate cash shortfalls increases. In this case, the reasonable and supportable information condition is not met and the estimate will be biased.

IFRS 9 defines expected credit losses as the weighted average of credit losses and the respective risks of a default occurring as the weights[48]. Credit losses are the present value of expected cash shortfalls.

Therefore, the ECL model is based on three parameters of risk:

- PD, the probability of default;

- LGD, the loss given default;

- EAD, the exposure at default;

Such parameters result close to the EL model used under the regulatory framework of Basel II:

$$EL = PD \cdot LGD \cdot EAD$$

Adjusting the time horizon of the EL to a multi-year perspective as requested in the IFRS 9 impairment model, the lifetime expected loss calculation corresponds to:

$$LECL_t = \sum_{t=1}^{T} MPD_t \cdot LGD_t \cdot EAD_t/(1 + R)^t$$

- MPD (marginal probability of default), probability of occurrence of a default event of the credit exposure at time t;

- LGD (loss given default), the percentage of estimated loss at time t;

- EAD (exposure at default), the measure of the exposure at the time of the default event of the credit exposure at time t;

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[47]International Accounting Standard Board, IFRS 9, par. B5.5.51
[48]International Accounting Standard Board, IFRS 9, Appendix A.

- (1+R), discount rate that expresses the time value of money (EIR);

- T, maturity of exposure.

In addition, such parameters should be adjusted to include forward looking information and macroeconomic scenarios[49].

For 12-month ECL, the standard specifies that they are a portion of the lifetime ECL and they represent the lifetime cash shortfalls that will result if a default occurs in the 12 months after the reporting date, weighted by the probability of that default occurring[50]. Therefore, adjusting the LECL for T=1, the 12-month ECL calculation corresponds to:

$$ECL_1 = MPD_1 \cdot LGD_1 \cdot EAD_1/(1 + R)^1$$

The standard reports an example of a simple method of calculating 12-months ECL allowance[51]: Company A originates a single 10 years loan for CU 1,000,000. The interest is paid annually. The loan's coupon and EIR are 5%. The amount of cash flows receivable corresponds to CU 1,050,000 and it includes the amount of principal and interest receivable within 12 months.

Company A should make the following estimates: it estimates that the loan at initial recognition has PD of 0.5% over next 12 months (the company takes into consideration the expectations for instruments with similar credit risk, the credit risk of the borrower and the economic outlook for the next 12 months). Company A also determines that changes in the 12-months PD are reasonable approximation of the changes in the lifetime PD for determining if there has been a significant increase in credit risk since initial recognition. At the reporting date, there has been no change in the 12-months PD and Company A determines that there was no significant increase in credit risk since initial recognition. Company A estimates that 25 per cent of the gross carrying amount will be lost if the loan default, that is the LGD is equal to 25%.

The 12-month ECL allowance is equal to CU 1.250, which is calculated by multiplying the amount of the EAD (1,050,000) by the PD (0.5%) and by the LGD (25%), and discounting the resulting amount using EIR for one year (5%).

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[49]See Chapter 2.
[50]International Accounting Standard Board, IFRS 9, par. B5.5.43
[51]International Accounting Standard Board, IFRS 9, Implementation Guidance, par. IE49

Another practical example[52] of 12-month and lifetime ECLs calculation assumes a 3 year loan with CU 1000 and 10% interest rate, paid annually. The table 1.4 summarizes the data for the expected credit loss calculation.

Table 1.4: Calculation of 12-month and lifetime ECLs

Year	1	2	3
PD	0.10%	0.15%	0.20%
PD cumulative	0.10%	0.25%	0.45%
PD marginal	0.10%	0.1499%	0.1995%
LGD	50%	50%	50%
EIR	10%	10%	10%
EAD	1100	1100	1100
Discount	91%	83%	75%
ECL	0.50	0.68	0.82

(Source: PricewaterhouseCooper, IFRS 9 – Credit Modelling and Implementation. Pag. 13)

The marginal probability of default (MPD) corresponds to the unconditional probability of a default to occur exactly in period t:

$$MDP_t = PD_t \cdot (1 - CPD_{t-1})$$

Therefore, 12-month ECL is calculated as:

$$ECL_1 = MPD_1 \cdot LGD_1 \cdot EAD_1 \cdot D_1 = 0.1\% \cdot 50\% \cdot 1100 \cdot 91\% = CU0.50$$

Lifetime ECL corresponds to:

$$ECL_t = \sum MPD_t \cdot LGD_t \cdot EAD_t \cdot D_t = CU0.50 + CU0.68 + CU0.82 = CU2.01$$

1.4.4 Forward Looking Information

The implementation of the forward looking approach in accordance with IFRS 9 requirements, represents a further business challenge for risk management area under the methodological and the general coherence perspectives.

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[52] PricewaterhouseCoopers, IFRS 9 – Credit Modelling and Implementation. December 2015. Pag. 13

Under the methodological point of view, IFRS 9 framework is not aligned with the well-established practices in banking system taken from stress test procedure or strategic planning. Indeed, the accounting principle requires including forward looking information in either expected losses estimate or credit risk estimate.

With regards to the forward looking information included within the ECL model, the standard reiterates to consider all the factors relevant to the estimate, such as factors specific to the borrower, general economic conditions and an assessment of both current and forecast direction of conditions. The bank may use various sources of data, which may be both internal and external[53]. Historical information is an important starting point but it should be adjusted on the basis of current observable data to reflect the effects of current and forecasted conditions that did not affect the period on which the historical data is based. Therefore, the expected credit losses, which include forward looking factors, will be based on (i) future forecasts obtained through current observable data adjustments[54] and (ii) the evaluation of a range of possible outcomes weighted by the probability that those outcomes occur[55].

IFRS 9 requires forward looking indicators to be included in staging allocation as well, in order to determine the significant increase in credit risk. Also for this purpose, the standard requires to consider all reasonable and supportable information, including forward looking information, without undue costs or efforts. However, such forward looking concept results are contradictory to the one used for ECL estimate. For the latter, the standard provides to consider at least a downgrade scenario (default) and an upgrade scenario (no default). The application of such scenarios to the significant increase in credit risk analysis will result in two divergent triggers so not relevant for credit risk assessment. The coherence with deterioration indicators for credit quality is not automatically met for models that use a weighted range of outcomes[56].

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[53]International Accounting Standard Board, IFRS 9, par B5.5.51

[54]International Accounting Standard Board, IFRS 9, par. B5.5.52

[55]International Accounting Standard Board, IFRS 9, par. B5.5.42

[56]AIFIRM, Position Paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. 2016. Pag. 60

1.5 Hedge accounting

IFRS 9 hedge accounting applies to all hedge relationships with the exception of fair value macro hedges[57]. This exception arises because IASB dedicates a separate project for the accounting for macro hedges. In the meantime, until this project has been completed, banks and entities using IFRS 9 for hedge accounting can continue to apply IAS 39 requirements for fair value macro hedges. The standard gives the further accounting policy a choice to continue to apply all the hedging requirements under IAS 39 rather than applying the new requirements for general hedge accounting and the old requirements for macro hedge accounting. In general, hedge accounting is the result of risk management strategies to eliminate or reduce risk exposures that could affect profit or loss or other comprehensive income. Therefore, hedge accounting is a technique that modify the normal basis for recognising gains and losses (or income and expenses) on associated hedging instruments and hedge items so that either are recognised in P&L (or OCI) in the same accounting period by reducing the volatility in the OCI that otherwise would arise[58].

IFRS 9 main purposes on hedge accounting issue concern the better alignment between hedge accounting policy and risk management objective and strategy, and in the same time the reduction of its complexity and the improvement of disclosure to obtain more useful information for financial statements' users. The hedge accounting requirements are optional and follow a principle-based approach.

IFRS 9 retains almost unchanged the requirements of the previous accounting principle IAS 39 concerning the three hedge types (i.e. cash flow edge, fair value hedge, hedge of a net investment in a foreign operation), the instruments designated to hedge accounting and the formal designation and documentation to be in place at the inception of the hedge relationship. Main changes on the hedge accounting issue concern:

- simplification of requirements for hedge effectiveness removing the 80-125% bright line introduced by IAS 39. This has been replaced with an objective test that verifies the existence of an economic relationship between the hedged item and the hedging instrument. In particular, such test permits the rebalancing of hedging relationship

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[57]The fair value macro hedge consists in the fair value hedges of the interest rate exposure of a portfolio of financial assets or financial liabilities.

[58]PricewaterhouseCooper, In depth: achieving hedge accounting in practice under IFRS 9. December 2017. Pag. 3

without resulting in the re-designation of the hedge, but instead appearing as the continuation of the hedging relationship.

- extension of hedge accounting application perimeter. Not only financial activity and liability are designated as hedging instruments, but also all items for which the risk is accounted for separately.

- extension of the disclosure requirements, which involve the reporting of information about: how risks are managed through hedging; how hedging activities might affect the amount, the timing and uncertainty of future cash flows; the effect that hedge accounting has on the entity's financial statements; and if the entity is applying the option to designate a credit exposure as measured at FVTPL. Moreover, the standard no longer prescribes the risk categories to use so that removes some ambiguous accounting terminology for investors.

1.6 Disclosure

Because of its principle-based approach, IFRS 9 grants broad managerial judgements and discretion. The introduction of an appropriate disclosure on management choices, inputs and model adopted has a key role on shareholder confidence maintenance toward financial statements and the new accounting standard. Therefore, IFRS 9 amends IFRS 7 and introduces extensive new and amended disclosures. Policy disclosure amendments concern each of three pillars of IFRS 9: the classification and measurement of financial instruments, the impairment model and hedge accounting.

As regards to the classification and measurement of financial instruments, banks are required to disclose the carrying amount of each measurement category of financial instruments distinguishing among AC, FVTOCI and FVTPL.

The second pillar, the impairment methodology, requires more assumptions and estimates to the risk management, as reported in the previous analysis. In this context, IFRS 7 indicates that the disclosure about ECL model should specify the following information[59]:

- credit risk management practices and how they are relate to the recognition and measurement of expected credit losses. The bank should explain the inputs, assumptions and estimation techniques used to implement the ECL model. Moreover, in order to

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[59] International Accounting Standard Board, IFRS 7, par. 35F, 35H and 35M.

meet this objective, the bank should report about how the significant increase in credit risk is determined, the definition of default, how instruments were grouped, how credit-impaired is determined, how the write-off policy is implemented and if the modification of contractual cash flows has been applied.

- quantitative and qualitative information about amounts arising from expected credit losses. In particular, the bank should report the explanation for changes in the loss allowance and the reasons for those changes providing a reconciliation from opening balance to the closing balance of loss allowance.

- credit risk exposure and significant credit risk concentrations. The bank should disclose with credit risk rating grades, the gross carrying amount of financial assets and the exposure to credit risk on loan commitments and financial guarantee contracts.

Finally, as already mentioned, the main innovation in the scope of hedge accounting disclosure consists in the disclosure of each category of risk that the entity decides to hedge. IFRS 9 no longer prescribes anymore the risk categories to be used leaving the choice to risk management.

With regard to the disclosure for the first time adoption, IFRS 7 indicates some specific provisions in order to clearly explain the effects due to the IFRS 9 adoption. The bank should report information about[60]:

- the original measurement category and its carrying amount determined in accordance with IAS 39 and the new measurement category and its carrying amount determined in accordance with IFRS 9;

- changes in the carrying amounts arising from a change in measurements attributable to the transition to IFRS 9;

- the interest revenue or expense recognised and the effective interest rate for financial instruments measured at amortised cost;

- the amount of the opening impairment allowance with the annexed reconciliation statement that discloses changes between ending and opening values, the reasons for those changes and a further partitioning of impairment allowance according the three exposure allocation stages;

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[60] International Accounting Standard Board, IFRS 7, par. 42L-42O.

- the opt-in or opt-out of accounting policy choices provided by the standard that could be summarized in: the restatement of comparative figures of previous years; the evaluation of equity instruments at FVTOCI; the low credit risk exemption; the presumption of 30 days past due; the application of all hedge requirements under IAS 39; and the application of transitional approach on own funds.

1.7 Conclusions

The implementation of the international accounting principle IFRS 9 on financial instruments represents a hard business challenge for banks and financial institutions that are more involved due to their credit activity as core business. The replacement of the previous IAS 39 was a proper choice for regulatory bodies to give a solution to the financial crisis of 2008.

One of the major concerns raised about IAS 39 by the critics was about the valuation method for recognizing and measuring financial instruments. IASB, with the issuing of IFRS 9, decided to go beyond the limits of the previous accounting principle setting completely different classification rules. The aim pursued by the Board was to establish a simple classification methodology with a limited number of categories and to base the measurement on rational and intuitive criteria. Therefore, the accounting principle presents two classification drivers, which are the bank's business model and the contractual cash flow characteristics of the asset, and three measurement categories: amortised cost and FVTOCI as leading categories, and FVTPL as minor one. The proposal to define the FVTPL as a residual category has the ambition to face the concern that has risen on the excessive use of the fair value during the previous accounting principle since such valuation method could have both positive and negative aspects. The implementation of the fair value rule has introduced the considerable advantage of clearly highlighting the presence of financial risks. For example, the fair value made the market aware of the destination of business resources and their profit or loss expectations. Indeed, the fair value valuation reports the charges due to the fluctuation of prices relating to bank's exposures in derivative instruments which otherwise would not have been reported. However, the financial crisis has highlighted the need to take into consideration its amplification effect - negative or positive - toward the economic cycle fluctuations (i.e. procyclical effect) and therefore its influence on the fair representation of such results in the financial statements[61].

As already mentioned, banks suffered the most for the negative effect of the fair value due to the financial assets prevalence on their balance sheet. In particular, during the recession period, banks were forced to massively sell financial assets in order to comply with the minimum capital requirements requested by supervisory bodies, especially Basel II. The massive sales caused the prices to fall further, starting a vicious circle of ever-increasing losses[62]. Therefore, in the configuration of the measurement categories IASB has kept in mind these issues aiming

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[61]Cardia, L., Crisi dei mercati: regole contabili e trasparenza dei bilanci. December 2008. Page 6
[62]Ariante, P., De Rosa, C., Sica, C., IFRS 9: cosa cambia e quali sono gli impatti del nuovo standard contabile internazionale per le banche. 2016. Pag. 4

to develop a technique that permits a moderate and justified use of the fair value valuation by banks and entities. The literature expresses opposing opinions on this point. One side judges it negatively supporting that the accounting principle will lead to a greater use of the fair value rather than reducing it. Some financial assets measured at amortised cost in accordance with the previous IAS 39 may not comply with the tests imposed by the new standard and therefore be measured at FVTPL and, in addition, the Fair Value Option rule will still be effective.

The weaknesses recognized to the IAS 39 on impairment issue concerned the implementation of different impairment methodologies according to the financial instruments classification and the application of the incurred loss approach. Regarding the latter issue, it yielded to a late recognition of the loan losses and related provisioning only after the trigger event occurred[63]. Consequently, the standard was accused of not having provided a timely recognition of credit losses, not having required an appropriate level of loan loss provisions and of being excessively related to the economic cycle widening its movements in both positive and negative circumstances. Moreover, the multiple impairment methodologies related to the different classification categories of financial instrument caused a different treatment for credit losses under the risk management and accounting perspectives. IFRS 9, instead, sets as an objective the timely recognition of losses that allows mitigating the procyclical effect as well, and avoiding significant writedowns during recession periods through the allocation of provisioning for expected events. In particular, the accounting principle provides a single impairment model for all financial activities not evaluated at FVTPL. The main innovation consists in an impairment method based on an expected loss approach that permits to account for the loss allowances for expected credit loss since the initial recognition of the financial asset. Furthermore, the amount of the loss allowances depends on the credit quality of the exposure: 12-month ECL for performing exposures and lifetime ECL for performing but with significant increase in credit risk or impaired exposures. The literature supports the opinion that the new impairment approach leads to an increase in the credit risk adjustments and consequently to higher provisioning levels. Reporting a survey on some major Italian banks performed by the Moody's agency the provisioning level on non-performing exposure post-IFRS 9 implementation corresponds on average to 55% compared to the 49% pre-IFRS 9

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[63]IASB, IAS 39, par. 59 "A financial asset or a group of financial assets is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or group of financial assets that can be reliably estimated."

implementation. This is judged as a positive factor since the level of provisions is an indicator of asset quality[64].

A critical factor is the establishment of parameters for determining the significant increase in credit risk for the correct allocation of performing exposures to stage 1 or 2. Choices fall within the use of the change of the probability of default as the main driver for the credit risk assessment. However, the default probability setting at exposure inception has high relevance and it is hard to define as well. Indeed, if the default probability is very low at the initial time of the lending, even a slight deterioration could be weighed as a sign of significant deterioration and vice versa. Secondly, the credit risk analysis has to consider the relationship between the residual exposure life to maturity and the default probability, since the risk reflects the time passing as well. The observations are addressed to the medium and long term exposures such as longer-duration retail mortgages, medium and long-term loans and leases which determine a significant increase in provisions due to the their extended time horizon. A direct consequence is a review of credit, client selection and pricing policies by the bank so that the desired credit risk is selected ex-ante in consideration of the expected remuneration[65].

The expected credit loss and the credit risk analysis take into consideration forward looking information in addition to the historical information and the general economic conditions. Regarding this issue, the literature expresses an uncertain opinion. The accounting principle requires to integrate the forward looking information in the ECL model through a well-structured procedure that includes a range of outcomes related to expected economic conditions and the weighting of the expected loss by the probability of the outcome occurrence. Therefore, implicitly, the new forward perspective awards higher volatility to the losses estimate attributable to the innate variability of economic forecasting models and to the implicit existence of discretionary elements in the valuation. Moreover, the lack of long time series upon which the relationship between the credit risk and the economic cycle is based, generates further instability on estimates[66].

In conclusion, IFRS 9 enforcement has led to clear improvements in financial reporting certainly appreciated by users of the financial statements. On the other hand, some provisions that require a fair level of management discretion remain uncertain and therefore they should

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[64]Ninfole, F., Banche, più coperture con IFRS 9. Milano Finanza. Marzo 2018. The survey involves the following banks: Unicredit, Intesa Sanpaolo, Banco Bpm, Montepaschi, Ubi Banca, Bper.

[65]Metelli, F., La classificazione dei crediti nel regime IFRS 9: impatto sulle valutazioni creditizie. Amministrazione & Finanza n. 12/2016. Page 66.

[66]Caprara, C., Squadrani, M., L'impatto delle valutazioni forward looking previste dal principio contabile IFRS 9 sulle stime delle rischiosità dei portafogli creditizi. Minerva Bancaria n.6/2017. Pag. 2

be supported by an appropriate disclosure. However, what remains certain is that the adoption of the new accounting standard has started a significant revolution in banks' business model.

CHAPTER 2: Interaction between prudential framework and IFRS 9 accounting framework

2.1 The banking supervision

This analysis deals with the financial statements assessments performed on financial instruments in the banking system. On this issue, it is also necessary to take into consideration the banking supervision.

Considered as public interest entities, banks conduct a fundamental role within an economy. In particular, the need to protect savings and to preserve the integrity and trust toward the banking system require that the banking activity should not be carried out in complete autonomy, but instead it should consider as a specific regulatory system. Consequently, banks are recognised as "special" entities and therefore they need appropriate supervision[67].

Banking supervision is performed by the supervisory authorities and currently, from 2014, within the Euro area this role is undertaken by the European Central Bank (ECB), which together with the National Competent Authorities (NCAs) forms the Single Supervisory Mechanism (SSM).

The purpose of European banking supervision is to help rebuild trust in the European banking sector and increase the resilience of banks. In practical terms, the supervisory activity aims to guarantee that single market operators practise in conditions of solvency and liquidity, and that they do not assume excessive risks in relation to their own capital reserves. Own funds represent the first safeguard against the risks associated with banking in general, as well as the main tool of prudential supervision to determine the bank stability. Own funds are composed of the capital instruments eligible for supervisory purpose. In particular, they corresponds to the sum of three aggregates: the Common Equity Tier 1 (CET1), Additional Tier 1 (AT1) and Tier 2 (T2) capital.

In order to fulfil its supervisory duties, the ECB works to maintain the highest standards and to guarantee a coherent supervision using international standards and the best practices as references. In this context, the Basel Committee[68] principles and European Bank Authority (EBA) rules represent a strong basis for regulation, supervision, governance and risk

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[67] Resti, A., Sironi, A., Rischio e valore nelle banche. Milano. 2008. Egea. Pag. 737

[68] The Basel Committee on Banking Supervision was established in 1974 by the governors of the central banks of G10 countries. The Committee has not legislative power. Its task is to define guidelines and recommendations that can then be implemented by individual national political and supervisory authorities (i.e. from the EU Parliament).

management of the banking sector[69]. Such principles are usually defined as Basel accords and they were enforced for the first time in 1988 with the publication of Basel I.

Basel I

The first Basel accord provided the adoption of a mandatory system of capital requirements. It required banks to respect a minimum ratio of 8% between regulatory capital and risk-weighted assets (RWAs) establishing a relationship between these two aggregates. The regulatory capital aggregate included all equity items available to hedge corporate risks and losses. It was divided into two categories: the Tier 1 capital made up of the most valuable items (equity capital, disclosed reserves, etc.), and the supplementary capital, Tier 2 capital, composed by undisclosed reserves, revaluation reserves, general provisions on credits, hybrid instruments and subordinated term debt[70]. Such supervisory capital definition was also confirmed in the following Basel version while the RWAs definition was replaced with a more precise one.

Basel II

The second Basel accord of 2004 was established in order to overcome the limits of the previous version. The main objective of the reform concerned the setting of a capital requirements system more sensitive to the actual risk level of banking portfolios. To this purpose, the new accord presented a well-structured framework based on three pillars respectively related to: the minimum capital requirements (pillar I), the authorities supervision (pillar II) and the market discipline (pillar III).

Pillar I received a lot of attention due to the significance of its contents and the efforts required for its implementation. The regulatory capital was set as coverage of a range of risks: credit risk, market risk and operational risk. Moreover, the agreement introduced two methods for the capital requirement calculation: the standardized approach and the internal rating-based (IRB) approach.

The objective of the second pillar is the supervisory review process (SRP) of the quantitative methodologies provided in pillar I. Such process is still performed by the supervisory authority with the purpose to verify the specific risk profile of single institutions. It is structured in phases. At first the bank is required to carry out a self-assessment process. In particular, banks should implement a system of processes and techniques (Internal Capital Adequacy Assessment

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[69] ECB, Guide to banking supervision. November 2014. Pag. 5

[70] Resti, A., Sironi, A., Rischio e valore nelle banche. Milano. 2008. Egea. Pag. 665-667

Process) to determine the capital adequacy in relation to their risk profile. In the second phase, called SREP, the supervisory authority analyses the ICAAP. It verifies the consistency of the results, formulates an overall opinion on the bank and applies corrective measures if necessary. In Italy this procedure is carried out by the Bank of Italy.

The third pillar introduced a market discipline by imposing disclosure requirements for the banks about their risk exposure. This was designed to allow the market to have a better picture of the overall risk position of the bank and to allow the counterparties of the bank to price and deal appropriately.

Basel III

Basel III was developed by the Committee in response both to the financial crisis of 2007-2008 and to the limits of the Basel II that have fostered the crisis. The concerns raised about the previous accord focused on four main aspects: the quality and the level of regulatory capital, the tendency to emphasize the economic cycle, the freedom to use leverage and the lack of explicit requirements for liquidity risk[71].

Therefore, the Committee started a broad reform process that ended with the issuance of reform proposals known as Basel III currently in force. Reforms were introduced in the European Union by the CRD (Capital Requirements Directive) 2013/36/EU and applied with the CRR (Capital Requirements Regulation) 575/2013.

The accord proposes a new definition of regulatory capital that provides a narrowing of the eligibility criteria for the instruments included in the common equity tier (CET1). The aim is to determine a higher quality capital, composed mainly of common shares and retained earnings, in order to improve its loss absorbing capacity. Indeed, under the new system, adjustments and deductions are directly applied to the CET1 as, for example, the deduction of the shortfalls between provisions and expected loss.

The total regulatory capital is composed of two main aggregates: the Tier 1 capital and the Tier 2 capital. Tier 1 capital, in turn, consists of the sum of Common Equity Tier 1 capital and Additional Tier 1 capital. As just mentioned, CET1 capital involves instruments that respect peculiar characteristics as prescribed by Art. 28 of the CRR. For instance, these instruments are perpetual and their principal amount can not be reduced or repaid, except in case of liquidation of the bank. Additional Tier 1 capital consists of capital instruments (i.e. preferred shares) and

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[71] Resti, A., Sironi, A., Rischio e valore nelle banche. Milano. 2008. Egea. Aggiornamento. Pag 6

the share premium accounts related to such capital instruments. Also the AT1 instruments have to respect some conditions reported in Art. 52 of the CRR, for instance, the instruments are issued and paid up. Finally, Tier 2 capital involves capital instruments, subordinated loans and general loan-loss reserves. Indeed, it involves the general provisions up to a limit of 1.25% of RWAs in accordance to the SA of credit risk measurement and the excess provisions up to a limit of 0.6% of RWAs according to the IRB approach.

The minimum capital requirements correspond to[72]:

- CET1 ratio equal to 4.5% of RWAs;

- T1 ratio equal to 6% of RWAs;

- Total capital ratio equal to 8% of RWAs.

To mitigate procyclicality, Basel III introduces two new capital requirements. The first measure is the capital conservation buffer. It is an additional capital buffer equal to the 2.5% of the CET1. The second measure is the countercyclical buffer. It is requested on discretionary basis by national authorities when they consider it appropriate. The countercyclical buffer corresponds to the 2.5% of RWAs. The aim of this provision is that during the expansion phases banks set aside additional capital to the minimum required while, during recession phases, these buffers could be depleted by losses without entailing limitations to the normal operation of the bank.

As regard to the high leverage problem, the accord provides a leverage constraint by setting a minimum limit of 3% on the ratio between Tier 1 capital and on-balance sheet and off-balance sheet exposures.

In relation to the liquidity issue, the Committee developed a short-term indicator, the liquidity coverage ratio (LCR) that promotes short-term resilience of a bank's liquidity risk profile by ensuring that it has sufficient highly liquid assets of high quality to survive a significant stress scenario lasting for one month. Moreover, the net stable funding ratio (NSFR) establishes an acceptable minimum amount of medium-long term funding in order to promote resilience over a longer time horizon by creating incentives for banks to fund their activities with more stable sources of funding on an ongoing basis.

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[72] Art. 92, Regulation CRR 575/2013/EU

2.2 The credit classification for supervisory purposes

Banks hold a minimum amount of capital toward the credit risk as required by the regulatory framework. Credit risk is the possibility that an unexpected change of the counterparty creditworthiness causes a corresponding unexpected change in the current value of the related credit exposure[73]. The definition implies that the credit risk does not refer only to the default of the counterparty but also it includes the deterioration of its credit rating (downgrading). Therefore, the credit risk considers a range of cases that could occur between the two extreme events of default and not default. Consequently, the two main components of the credit risk are the expected loss and the unexpected loss.

The expected loss corresponds to the weighted average of expected losses composing the bank's portfolio. Since it is expected, it does not represent a risk. The lender estimates the EL ex-ante and includes both the initial credit worthiness of the borrower and the initial expectations of credit losses in the pricing of the financial instrument.

The unexpected loss corresponds to the variability of losses around the mean value, which is the variability of EL. It is the pure risk component, which is the probability that losses will be higher than expected. The difference between the expected and unexpected loss is particularly significant from an accounting point of view. Indeed, on this issue the regulatory framework is connected to the accounting one.

As already mentioned, banks could implement two different approaches for credit measurement: the standardized approach and the internal rating system.

Under the standard method, the risk-weighted assets are measured by multiplying the credit exposure value by a weighting factor. The latter value derives from the rating opinion expressed by external rating agencies, such as the export credit agencies (ECAs), or specialized external credit assessment institutions (ECAIs), authorized for this purpose by the supervisory authorities. Rating agencies generally follow a through-the-cycle (TTC) system, where they evaluate the repayment probability considering a recession situation even when the current economic condition is favourable. The capital amount is related to the risk weight that changes according to the counterparty rating: a higher rating corresponds to a lower risk-weight. Then the minimum capital amount is calculated as the product between the RWAs and the capital requirement of 8%. Therefore, banks using the standardized approach cover the expected loss

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[73] Resti, A., Sironi, A., Rischio e valore nelle banche. Milano. 2008. Egea. Pag 351

through provisions, and unexpected loss through the capital calculated according to the simplified method just described. With regards to the provisions, the prudential framework identifies two types of provisions on credits: general provisions (GP) defined in Basel III at par. 60[74] as "provisions or loan-loss reserves held against future, presently unidentified losses are freely available to meet losses within Tier 2 capital", and specific provisions (SP), which are defined at the same paragraph and they include "provisions ascribed to identified deterioration of particular assets or known liabilities, whether individual or grouped, should be excluded from capital". Therefore, under the standardized approach banks are allowed to include GP in Tier 2 up to a limit of 1,25% of credit RWA while SP are excluded.

According to IRB system, the RWAs are estimated on the basis of assessments that banks perform on borrowers. In this regard, the Basel III accord recognises some parameters that could determine the extent of possible future losses against which banks held the supervisory capital. In analytical terms, the expected loss of a credit exposure is calculated as:

$$EL = PD \cdot LGD \cdot EAD \cdot M$$

The EL formula requires the estimation of the following independent parameters:

- PD (Probability of Default). It is the probability that the counterparty will default within a period of a year. The estimation process provides that a specific PD corresponds to each debtor's rating. Basel II does not contain provisions about the PD rating system but it established a default definition to take into account for the PD estimation. The bank considers that a default has occurred if the debtor is unlikely to pay its credit obligation in full without collateral realisation, or the debt is past due over 90 days[75].

- LGD (Loss Given Default). It is the percentage of estimated loss if borrower defaults. It corresponds to 1 minus the expected recovery rate (RR) on the defaulted exposure. From an economic point of view, the LGD includes both direct and indirect costs associated with collection of the exposure. It is measured considering an adverse economic scenario (downturn LGD) therefore using a through-the-cycle approach.

- EAD (Exposure At Default). It corresponds to the current exposure and possible changes in its amount that could occur until the default event. It includes both on-balance sheet and off-balance sheet exposures. The EAD variability depends on some

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[74] BCBS, Basel III: a global regulatory framework for more resilient banks and banking systems. 2010.
[75] Art. 178, Regulation CRR EU 575/2013

factors. The first one concerns the types of loan: the EAD is almost certain for bank loans while for derivative contracts it is uncertain and depends on the change of one or more market factors. Then the variability depends on the exposure risk, which is the risk that the exposure at default will be greater than the amount originally expected. Finally, the EAD estimation requires knowing the contractual conditions that regulate the use of the credit line.

- M (Maturity). It is the credit residual life. It corresponds to the average of the residual contract maturities of payments due, each weighted by its amount. The maturity is directly proportional to the credit risk: the higher is the maturity of the loan the higher is the risk of the downgrading of the borrower.

IRB methods are divided into foundation or advanced approaches according to the risk parameters estimated by banks. Under foundation approach, banks use their own PD estimates and supervisory values for the other risk parameters. Under advanced approach, banks use their own estimates of PD, LGD, EAD and M.

As already discussed, capital requirements are determined through the expected loss estimation and, consequently, the related unexpected loss value. The expected loss is covered by the loss provisions recognised in the profit and loss statement. Basel II at par. 380[76] defines the total eligible provision as "the sum of all provisions (e.g. specific provisions, partial write-offs, portfolio-specific general provisions such as country risk or general provisions) that are attributed to exposure treated under the IRB approach". The unexpected loss is covered by supervisory capital in order to avoid the default if the actual losses should exceed the expected value in a given year. Indeed, the expected loss is then compared with the total eligible provisions: if provisions are lower than EL, a shortfall is recognised and it is deducted from the CET1 (Basel III, par. 73); if provisions are higher than EL, an excess is recognised and it is added to the Tier 2 capital up to a limit of 0,6% of RWAs (Basel III, par. 61).

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[76] BCBS, International convergence of capital measurement and capital standards. 2004.

2.3 Interaction between IFRS 9 accounting framework and regulatory framework

Banks are subject to a double regulation: the accounting regulation relevant to all entities that prepare financial statements in accordance to international accounting standards, and the prudential regulation that monitors and regulates the financial stability and the public interest of banks.

The two regulations of accounting and supervision often evolve in a contiguous way but not without disclosing points of misalignment or difficult interpretation. This mainly depends on the fact that financial reports and bank supervision pursue different objectives. The primary aim of accounting reports is to provide useful information to a wide range of subjects including investors, creditors and regulators themselves. On the other hand, the main goal of supervision is to reduce the level of risk to which depositors are exposed maintaining financial stability[77].

The interaction between the new accounting principle IFRS 9 and the prudential framework concerns three main issues: the key parameters used in the expected credit loss model, the macroeconomic scenarios and the forward looking information and the impairment provisions.

2.3.1 The parameters of ECL model

As already said, the Basel framework provides two approaches for the credit risk measurement for the purpose of minimum capital requirements calculation. Under the standardized approach, banks calculate the risk-weighted assets with the support of external credit assessment institutions. Under the IRB approach, banks use internal rating systems for risk-weighted assets calculation. This includes measures for PD, LGD, EAD and effective maturity. Therefore, depending on the kind of Basel approach being used, standardized or advanced, the bank will be able to leverage some of the data used by the Basel frameworks to IFRS 9 ECL model and to provide easier reconciliation of inputs for capital requirements and impairment calculations[78]. This perspective is also supported by a Moody's Analytics survey made on a sample of 28 banks of all sizes, which confirms that more than 40% of respondents planned to integrate IFRS

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[77] AIFIRM, Position paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. Dicembre 2016. Pag. 82

[78] Temim, J., The IFRS 9 impairment model and its interaction with the Basel framework. 2016. Pag 3

9 requirements into their Basel infrastructure and, in particular, more than 63% are planning to leverage existing IRB models for credit loss impairment calculation[79].

It is therefore reasonable to start from IRB model to comply with the new accounting framework in order to get some possible synergies and to increase the degree of consistency among information used in banks. Indeed, another feature recognised to IFRS 9 is the incorporation of credit risk data into accounting and therefore financial reporting process. In this way the standard provides a new kind of interaction between finance and risk functions, requiring a cross-functional approach. The risk management function runs the impairment calculation providing objective, independent and more challenging views to the business assumptions. Finance supports the process by providing data and qualitative overlay[80].

The new accounting principle does not define the calculation procedure of ECL but it reports a set of necessary requirements that the ECL model should comply with[81]. Such requirements are the basis of the existing differences between regulatory EL and accounting ECL.

Table 2.1: key model parameter differences of Basel and IFRS 9 models.

	Key risk parameter	Basel III	IFRS 9
Probability of Default (PD)	Measurement standard	Average of default within the next 12 months	Depending on the asset, the PD measures either for the next 12 months (stage 1) or for the remaining life of the financial instrument (stages 2 and 3)
	Period of measurement (look-back period)	Estimates based on long-run average default rate, ranging from "point-in-time" (PIT) to "through-the-cycle" (TTC)	Estimates based on PIT measures, at the reporting date, of current and expected future conditions reflecting future economic cycles
Loss Given Default (LGD)	Intention of estimate	"Downturn" LGD to reflect adverse economic scenarios	"Current" or "forward-looking" LGD to reflect impact of economic scenarios
	Collection cost	Considers both direct and indirect cost associated with collection of the exposure	Only considers cost directly attributable to the collection of recoveries
	Discount rate	Based on weighted average cost of capital or risk-free rate	Depends on the type of financial instrument but is broadly based on effective interest rate
	Period of observation	Minimum five years for retail exposures, seven years for sovereign, corporate, and bank exposures	No specific requirements about observation period or collection of historical data used
Exposure at Default (EAD)	Intention of estimate	"Downturn" EAD to reflect what would be expected during a period of economic downturn	Considers all the contractual terms over the lifetime of the instrument
	Period of observation	Minimum five years for retail exposures, seven years for sovereign, corporate, and bank exposures	No specific requirements about observation period or collection of historical data used
Expected Loss/ Expected Credit Loss (ECL)	Calculation	PD × LGD (loss rate) is applied to EAD	PD × PV of cash shortfalls represents a probability-weighted estimate of credit losses
	Economic assumptions	Reflects downturn LGD and EAD (factoring in macroeconomic stress conditions)	Reflects an unbiased probability-weighted amount, determined by evaluating a range of possible outcome

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[79] Gea-Carrasco, C., IFRS 9 will significantly impact banks' provisions and financial statements. Moody's Analytics. 2015. Pag. 4

[80] Temim, J., The IFRS 9 impairment model and its interaction with the Basel framework. Moody's Analytics. 2016. Pag. 2

[81] See chapter 1, paragraph 1.4.3

(Source: Temim, J., The IFRS 9 impairment model and its interaction with the Basel framework. Moody's Analytics. 2016. Pag 3)

The Basel III models can be used for IFRS 9 under the condition that significant adjustments are made:

- removal of conservatism required for regulatory purposes toward a neutral approach that considers an unbiased probability-weighted view of future losses;

- introduction of point-in-time (PIT) adjustments to replace through-the-cycle (TTC) approach required for regulatory purposes;

- adjustments of the Basel model to a multi-year perspective;

- inclusion of forward looking information.

The adjustments of Basel IRB model toward the impairment model of IFRS 9 are certainly beneficial to medium-large banks, which have implemented internal models for regulatory purposes and therefore banks could use them as starting point. Smaller banks, which use a standard approach, find the application of the new accounting principle difficult and they will have to choose between implementing their own model internally, which it needs great efforts, or relying on external solutions, such as models provided by specialized companies, which is costly.

PD

The IRB approach requires the adoption of TTC PD, which is estimated over a 12-month time horizon. The TTC approach removes the cyclical factors to the PD estimation in order to determine more stable and less volatile credit risk estimates. It considers the medium-long term averages of borrowers' credit rating and therefore it ignores the short-run changes of credit risk.

IFRS 9 provides the use of PIT PD. A PIT rating system produces a default probability sensitive to short-term macroeconomic changes. The PIT PD increases during recession phases and decreases during the boom, and therefore it reacts promptly to changes in creditworthiness of the counterpart. Therefore, even though the use of a PIT rating system increases the procyclicality of the market, it is more suitable to meet IFRS 9 perspective, which is more oriented to take into account present and future economic conditions.

From a practical point of view, banks usually follow a hybrid approach, intermediate between TTC and PIT. Thus, the PIT PD could be leveraged from a TTC rating system, but the difference between them will never be clear[82].

Furthermore, IFRS 9 requires extending the default probability estimate from a 12-month time horizon to a multi-year perspective. The three main approaches to obtain a lifetime PD are the following[83]:

- the Markov chains: it is the most used method because it is simple and it does not require long time series. It is a stochastic process according which the conditional probability of distribution of future states depends only upon the present state. This Markov' condition assumes that migration matrices are homogeneous that is the conditional transition probability among classes of rating is independent of the initial state. In particular, the model requires a three-stage migration matrix corresponding to the three stages of exposures classification under IFRS 9. The matrix is estimated on the migrations observed during the previous year or as an average of several years. However, the absence of memory of the process implies that long-term PDs tend to an average and higher classes PDs increase in time. This characteristic could significantly affect medium-long term products. Generally, this method is more suitable for corporate loans.

- the vintage analysis: it allows to estimate more exactly the medium-long term exposures for which the Markov absence of memory assumption is too restrictive. According to this analysis, the conditional default probability curve maintains the typical bell-shaped form for all rating classes, overcoming in this way the limit of Markov chains. However, since the vintage model implements a retrospective analysis on default rate, it requires long time series. This method results more suitable for mortgages and retail exposures.

- the Hazard function: it is used when the time series are not sufficiently long. This method performs a data fitting that allows modelling the probability density of the underlying observations. However, the Hazard function requires the application of advanced statistical models and it is therefore difficult to implement.

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[82] AIFIRM, Position paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. Dicembre 2016. Pag. 30
[83] AIFIRM, Position paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. Dicembre 2016. Pag. 75

LGD

The LGD parameter has already been estimated and used by banks. In particular, banks using an IRB system could leverage their regulatory LGD estimate to derive LGD IFRS 9. Banks using the standardized approach could set the LGD used to calculate collective allowances[84] as foundation of the estimation process in accordance with the previous IAS 39. Instead, the LGD model for defaulted assets could be used as the basis to derive the LGD lifetime, on which forward looking information should be included.

The regulatory framework aims to provide a LGD estimation considering stressed scenario, so the parameter results intentionally deteriorate compared to a normal economic condition. Therefore, the recovery rate incorporated into TTC LGD should be adjusted in order to remove conservatism and to reflect the most updated trend of recovery rates as well as forward looking information. These adjustments result coherent with the PIT logic supported by IFRS 9, which emphasizes short-term economic changes.

Moreover, the LGD IFRS 9 removes some regulatory-driven components as the observation period and the regulator floor. The LGD amount calculation takes into consideration only costs directly applicable to the collection of recoveries. Finally, the accounting principle requires the effective interest rate (EIR) as discount rate or, if it is not available, the contractual rate as a proxy.

EAD

The EAD IFRS 9 is defined as the maximum contractual period over which the entity is exposed to credit risk[85]. The exception is made for revolving credit facilities (i.e. credit cards, overdraft facilities) for which the expected life can be greater than the contractual life, thus their EAD includes the period over which a bank is exposed to credit risk.

The Basel's EAD includes both drawn and undrawn commitments. The undrawn commitments are considered using the credit conversion factors (CCF)[86] that is estimated over a time period of 1 year. Moreover, for on-balance sheet items, banks should estimate Basel's EAD at no less than the current drawn amount. The CCF can only increase the EAD and no amortization is

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[84] IAS 39 required collective allowances for those exposures which losses were defined as "incurred but not reported" because even though their credit quality were deteriorated the credit system recognized them still in bonis.

[85] International Accounting Standard Board, IFRS 9, par. 5.5.19

[86] The CCF represents the relationship between the undrawn credit facility amount estimated to be used in case of default and the current undrawn credit facility amount.

taken into account. Instead, from IFRS 9 perspective, the CCF should be extended to maturity for exposures within stages 2 and 3 and the EAD can be lower than the current amount if the default is expected to occur after an anticipated or contractual amortization period[87].

2.3.2 Macroeconomic scenarios and forward looking information

The new accounting principle requires the inclusion of forward looking information in the ECL estimation process just described. The ECL includes macroeconomics forecasts to the forward looking components through the application of multiple scenarios, in order to compensate the partial non-linearity that is naturally present in the correlation between macroeconomic changes and credit risk.

The generating process of multiple scenarios should be consistent with the macroeconomic forecast process used for risk management objectives. In its guidelines the same Basel Committee suggests that banks ensure consistency in macroeconomic forecasts that are used across the organization, adapting ICAAP scenario analysis[88], Stress Testing and strategic planning to IFRS 9 models. This will ensure that economic forecasts are disclosed transparently and consistently among ICAAP reports and IFRS 9 disclosures[89]. Therefore, the starting point of the scenario generating process of IFRS 9 is aligned with those used for regulatory and planning purposes while the application is different due to the different requirements of the standard. Indeed, as already said in chapter 1, the accounting principle prescribes to consider a range of outcomes related to expected economic conditions, and not just a baseline or a downturn scenario. The procedure pursued by banks considers three scenarios usually estimated over a period of three years: the baseline scenario that is the main scenario and it is expected to be the most likely to occur; the positive scenario that represents a better and positive evolution of the economic growth compared to the baseline scenario; the adverse scenario that represents a worse and slowed down evolution of the economic growth compared to the baseline scenario. Often the latter reflects one of the scenarios used in the evaluation process of capital adequacy.

As mentioned before, under the regulatory framework the risk parameters are normally regulated over a horizon that considers the entire economic cycle (TTC). It is therefore necessary to perform PIT and forward looking adjustments that allow reflecting the current

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[87] EY, Implications of changes in IFRS 9 on the financial industry. 2014.

[88] The ICAAP scenario analysis requires that the capital planning includes a baseline and adverse scenarios over a time horizon of three years.

[89] BCBS, Guidance on credit risk and accounting for expected credit losses. 2015. Pag. 11.

situations and the expectations about the future evolution of the economic cycle in these risk parameters[90].

In this regard, the PD parameter is regulated through the use of a multivariate econometric model that explains the linear or non-linear relationship between the variables significant for credit risk changes and the default rate. Then the average between the previous year default rates and the expected insolvency rate, taken from the Stress Test function, is included in the PD during the calibration phase.

The difficulties in the estimation of the LGD forward looking are connected to the lack of a clear empirical evidence of the relationship between recovery rates and macroeconomic factors. Also, for the downturn LGD estimation already used in the IRB approach, it is complex to determine the sensibility of the parameter to the economic cycle. However, a way to include forecasts within the LGD could be performed by adjusting the annual recovery rate to consider the expectations of changes of recovery rates provided by the Stress Test function.

Likewise other parameters of the ECL model, also EAD should incorporate forward looking factors taking into consideration those elements potentially related to economic and financial cycles. A first variable useful to the analysis is the credit conversion factor. On the basis of its time series it is possible to analyse the relationship with a set of economic-financial variables, which allows to simulate the EAD evolution in the different supposed macroeconomic scenarios. Another variable that should be considered is the prepayment rate. Indeed, it is reasonable to suppose that the probability of advanced payment could be influenced by macroeconomic variables[91].

The generation of scenarios and the fine tuning of forecasts implicitly require the use of discretionary elements resulting discontinuous in relation to Basel risk models, which normally involve strictly quantitative factors, variables directly observable on portfolios and also scenarios imposed by the supervisory authorities and therefore equal to the whole baking system[92]. On this matter, IFRS 9 specifies that the models should be subject to a periodic back testing in order to guarantee an always better alignment between expected loss data and actual loss data.

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[90] UniCredit, Report on transition to IFRS 9 financial instruments of UniCredit Group. 2018. Pag. 17

[91] AIFIRM, Position Paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. 2016. Pag. 62-63

[92] Caprara, C., Squadrani, M., L'impatto delle valutazioni forward looking previste dal principio contabile IFRS 9 sulle stime di rischiosità dei portafogli creditizi. Minerva Bancaria n. 6/2017.

2.3.3 Impairment provisions

Impairment on credits is a key element on banks financial statements since it has a significant impact both on the P&L and on the regulatory capital.

As already explained in chapter 1, IFRS 9 introduces a new impairment model for financial assets based on the expected loss approach. The impairment accounting expresses a financial instrument's expected credit loss as the projected value of the estimated cash shortfalls over the expected life of the asset. The loss allowances on the expected loss are then recognised in the profit and loss statement that in turn will be reflected in the calculation for impairment provisions for regulatory capital[93].

Most of the banks subject to IFRS 9 are also subject to Basel III accord capital requirements and to calculate risk-weighted assets they use either standardized or internal rating-based approaches.

The prudential treatment of loan loss provisions for banks that follow a standardized approach distinguishes between general provisions (GP) and specific provisions (SP).

General provisions are held against future and currently unidentified losses, and they are eligible for inclusion in capital. The calculation of general provisions includes[94]:

a) losses recognised to cover higher average portfolio loss experienced over the last years although there is currently no evidence of loss events supporting the loss level observed in the past;

b) losses for which the institution is not aware of credit deterioration for a group of exposures but where some degree of non-payment is statistically probable based on past experience.

Specific provisions are assigned to identify deterioration of particular assets and therefore they are not eligible for the inclusion in the capital. The CRR at art.111 provides that SP are deducted from the exposure (EAD) to determine the RWA value that results net of such provisions. The calculation of specific provisions includes:

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[93] Temim, J., The IFRS 9 impairment model and its interaction with the Basel framework. 2016.
[94] EBA Guidelines final draft Regulatory Technical Standards, EBA/RTS/2013/04 included in Regulation EU 183/2014, supplementing Regulation EU 575/2013

c) losses recognised in the profit or loss account for instruments measured at fair value that represent credit risk impairment under the applicable accounting framework;

d) losses as a result of current or past events affecting a significant individual exposure or exposures that are not individually significant which are individually or collectively assessed;

e) losses for which historical experience, adjusted to the basis of current observable data, indicates that the loss has occurred but the institution is not yet aware which individual exposure has suffered these losses.

In IFRS 9 impairment model there is not such a clear distinction. Provisions on stage 3 impaired assets can be recognised as specific provisions. Provisions on performing activities of stage 1 and 2 correspond to both b) and e) conditions, thus they have not a direct and unique correspondence. It is possible that stage 2 impairment provisions will be considered to contain a mixture of GP and SP. Robust processes being required to ensure an accurate split. If stages 1 and 2 provisions are recognised as GP, the consequence is that they are not deducted from the exposure value but they are included in the Tier 2 capital. In the presence of greater general provisions, there is the possibility that a part of them is not attributable to regulatory capital because they do not meet the definition of the regulatory expected loss and because they exceed 1.25% of the RWAs[95].

With regard to the IRB approach, as already mentioned, the Basel framework recognises two types of credit losses: the expected losses (EL), which are the probable financial losses over the next 12 months, and the unexpected losses (UL), which represent potential peak losses exceeding the expected levels. The EL are covered by provisions and managed upstream through pricing. The UL are covered by capital within a certain confidence level. The risk measure adopted is the Value-at-risk that indicates potential losses within a certain confidence level (99.9%) and time horizon (12-month). The expected loss is then compared with the total eligible provisions. If provisions are lower than EL, a shortfall is recognised and it is deducted from the CET1 capital. If provisions are higher than EL, an excess is recognised and it is added to the Tier 2 capital up to a limit of 0.6% of RWAs. The 0.6% cap results no longer consistent with IFRS 9 perspective since it was calibrated in a situation in which accounting provisions were limited to incurred losses.

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[95] AIFIRM, Position Paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. 2016. Pag 86

Table 2.2: Summary of accounting provisions treatment under IFRS 9 and Basel frameworks

IFRS 9	BASEL III	
	SA	IRB
Loss provisions = ECL amount (12 months or lifetime, considering Forward-Looking perspective and macroeconomic factors)	SP → Deducted from RWAs value GP → Added back to T2 capital up to 1.25% of RWAs	Provisions compared to Reg. EL: Provisions < Reg. EL → SHORTFALL deducted from CET1 Provisions > Reg. EL → EXCESS added back to T2 capital up to 0.6% of RWAs

(Source: Personal elaboration)

The IFRS 9 application changes the interaction between capital and provisions since currently loss allowances are calculated following an expected losses approach and a forward looking perspective, and in addition, for stage 2 and 3 assets, the accounting standard requires loss allowances for lifetime expected losses. Prudential rules, instead, are calibrated on accounting incurred loss model and such new requirements (forward looking and lifetime) are not included in the regulatory EL resulting in a double counting of loss absorbing resources. Conceptually, given the same level of underlying losses and putting aside any difference in calculation between prudential 12-month EL and accounting 12-month ECL, there is a duplication for stage 2 assets, given that the expected loss provision under IFRS 9 goes beyond the 12-month' time horizon of the prudential framework. Therefore, the impact on capital ratios resulting from IFRS 9 should be taken into account in the overall calibration of the capital framework to avoid double counting and ensuring a level playing field, regardless the underlying accounting regime. Without such adjustments, CET1 ratio is expected to decrease without corresponding change in the level of portfolio risk[96].

In October 2016, BCBS published a discussion paper[97] that proposes changes to the standardized approach. The committee is not considering to change the IRB approach, for which, and also for the SA, it is provided a transitional approach to mitigate capital impacts.

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[96] European Banking Federation, Interaction between the prudential and accounting framework: expected losses. June 2016.
[97] BCBS, Regulatory treatment of accounting provisions: discussion paper. October 2016.

The new impairment model does not only affect negatively the regulatory capital with the increase in provisioning but also with another effect: the accounting standard requires banks to update loss allowance to reflect changes in credit quality at each reporting date, which can increase earnings volatility that flows into the supply of capital. In this way, IFRS 9 could make regulatory capital requirements more stringent and can increase the uncertainty of capital adequacy in the future. These implicit costs - the increase of provisions and earnings volatility - should be accounted for capital allocation. An approach proposed by a Moody's Analytics study[98] takes into consideration the change in capital surplus. In the context of Basel III and IFRS 9, the change in capital surplus (i.e. the gap between capital supply and demand) is driven by the change in regulatory capital required by the regulatory framework and the change in earnings that are affected by interest income, default losses and provisions according the accounting framework. Therefore, since the change in capital surplus captures the dynamics of both required regulatory capital and earnings, it could be set as a foundation for measuring how much capital must be set aside.

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[98] Levy, A., Protsyk, A., Xu, P., Zhang, J., Managing earnings volatility and uncertainty in the supply and demand for regulatory capital: the impact of IFRS 9. Moody's Analytics 2016

2.4 Conclusions

The accounting and the prudential frameworks present some points of convergence but not a perfect match due to the fact that they follow different purposes. The main objectives of the accounting principle consist in providing users of financial statements with a representation of bank performances and disclose information useful for decision-making. On the other hand, the purpose followed by the prudential framework is to maintain the financial stability of the banking system and thus it supports a sound and conservative bank management and accounting.

In any case, the search for a form of interaction should involve some advantages for the IFRS 9 implementation thanks to the exploitation of models and data already developed by the banks for regulatory and risk management purposes.

A first common issue between regulations concerns the new impairment model for financial assets based on the expected loss approach. The ECL IFRS 9 is closer to prudential requirements for what concerns the logic and the inputs of the model compared to the incurred loss approach provided under the previous IAS 39. Indeed, banks following the internal rating-based approach according to Basel III use several standard credit risk parameters such as PD, LGD and EAD. Such parameters, through the application of appropriate adjustments, could be leveraged for IFRS 9 ECL measurement.

Moreover, the new impairment of financial instruments requires forward looking information to be integrate in the ECL model considering a range of outcomes related to expected economic conditions. Also, the generating process of multiple scenarios could be derived from models and data used for regulatory (i.e. ICAAP and Stress Test) and planning purposes, as the analysis reports.

The literature expresses a positive opinion on the integration of the accounting requirements in the prudential infrastructure. IFRS 9 presents an opportunity for an alignment between risk, accounting and regulatory functions. There are a series of transformations banks should undergo in pursuit of this alignment, which begins with underlying data. Indeed risk, accounting and regulatory functions currently use similar but not the same datasets in their analysis of credit exposure[99]. For example, financial institutions are asked to calculate probability of default in several ways: TTC PD is needed for RWAs calculation under Basel framework, forward

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[99] Bloomberg, How IFRS 9 can unite risk and accounting. November 2017

looking lifetime PD is required by IFRS 9 and stressed PIT PD is needed for stress testing purpose (Stress Test, ICAAP), and even for IFRS 9. Therefore, establishing a comprehensive source of credit risk data including PDs over multiple time horizons, as well as secondary information, could be the foundation for the desired type of alignment that helps banks when accomplishing different requirements[100].

A common, but contrasting, point concerns the impairment provisions. The overall amount of provisions under IFRS 9 includes losses for impaired exposures and expectation of future losses. The provision balance will increase on the adoption of the accounting standard due to the incorporation of such future expected losses. Indeed, features of lifetime expected credit loss and forward looking factors are innovative respect to the previous system of IAS 39, which was based on an incurred loss approach and backward looking perspective. Impairment provisions are also object of the prudential discipline. The latter provides a different treatment of accounting provisions: banks that follow a standardised approach distinguishes between specific provisions and general provisions while IRB banks compare provisions to regulatory expected loss. Thereafter, on the basis of these rules, banks calculate regulatory capitals. Some of these prudential requirements no longer match with new accounting rules, and some others result to be calibrated under an incurred loss perspective, which is unsuitable for IFRS 9. Therefore, inconsistencies raise different interpretations of requirements and consequently differences among institutions. Possible unclear impacts could be observed on prudential capital ratios as well, an issue that affects the opinion of operators and investors. Indeed, some of them are not positively accepting the accounting standard because even though banks are increasing the provision level in order to cover losses this is not reflected in their capital ratios. Indeed, a controversial aspect of IFRS 9 application regards the fact that if provisions exceed the expected losses banks will be rewarded by strengthening of their Tier 2 instead of CET1. Although this requirement increases the total capital of financial institutions, banks do not believe that they can obtain significant benefits since investors are much more careful to CET1, which currently is widely used to compare banks among themselves in terms of solvency[101].

A possible solution to this problem consists in a review of the principles by the Committee, which aim is not to significantly increase the overall capital requirements but, rather, to focus

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[100] Maurri, L., Nisi, F., Toffano, C., IFRS 9, Stress Testing, ICAAP: a comprehensive framework for PD calculation. Prometeia. 2017.

[101] Ciccaglione, A., Basilea III e l'implementazione dell'IFRS 9: vera dicotomia? Marzo 2017.

on the recalibration of the prudential rules toward a system that considers the effects of the modified accounting regime and ensures a level playing field among regulations[102].

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[102] EBF, Interaction between the prudential and accounting framework: expected losses. 2016

CHAPTER 3: Possible evolution of prudential regulation and assessments of IFRS 9 implementation

3.1 Committee proposals in light of the changes to accounting regulation

With the introduction of the accounting standard IFRS 9 on financial instruments, the most significant changes and impacts in the banking system are connected to the transition from a backward-looking framework based on incurred loss model to a forward-looking framework based on expected loss. As explained in chapter 1, the need of such changes arose during the Global Financial Crisis in 2007-09. Indeed, one of the major shortcoming identified in IAS 39 was to require inadequate levels of provisions, which often resulted "too little too late". The advices of G20 leaders and supervisory bodies were designed to take into consideration a change of the provisioning procedure in order to involve forward looking assessments in the estimation of credit losses. Consequently, the new accounting standard was shaped following such recommendations by replacing the provisioning on incurred loss model with provisioning on expected credit loss model.

Indeed, the timely recognition of provision for credit losses serves to promote financial stability in the banking system and plays an important role in bank regulations and supervision. Therefore, the new IFRS 9 model requires that expected credit losses will be estimated not only on the basis of past events and present conditions, but also reasonable and supportable forecasts about the future including future economic conditions[103].

The Committee agrees with the new impairment method, but it also needs to consider the implications for regulatory capital of such approach. Indeed, IFRS 9 provisioning model directly impacts the regulatory capital since accounting provisions affect regulatory capital through P&L statements. So, the accounting provisioning methods introduce fundamental changes to banks' provisioning practices in quantitative and qualitative ways, and it also reveals some inconsistencies with the regulatory treatment of accounting provisions provided by prudential requirements, as reported in chapter 2.

Therefore, in light of the changes to the accounting provisioning model, supervisory authorities have decided to implement a reform project of the prudential framework in order to ensure

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[103] BCBS, Regulatory treatment of accounting provisions: discussion paper. 2016. Pag. 1

consistency between regulations. For these reasons, in 2016 the Basel Committee has established a task force with the following objectives[104]:

- to analyse the application of the new ECL accounting model;

- to perform and investigate impact analyses on regulatory capital (such as the first and second EBA impact assessments);

- to review the modalities for the current regulatory treatment of provisions (such as the inclusion of limited amounts in Tier 2 capital and the distinction between GP and SP);

- to consider possible regulatory capital policy options as a response to the changes in accounting standards.

In general, principles that lead to the reforms, on the one hand, aim to reduce the excessive complexity of regulation requirements, on the other hand, to improve the comparability of results produced by the rules. The objectives of the regulatory review stated an important direction: the revision will not lead to significant increases in capital requirements. The proposals of the supervisory bodies mainly concern the calibration of reforms of the prudential regime in order to include the effects of the modified accounting regime and to ensure a level play field among regulations and jurisdictions[105].

The recent reform project started in October 2016 with the publication of *Discussion paper: Regulatory treatment of accounting provisions* by the Committee. It discusses considerations related to the regulatory treatment of accounting provisions under the Basel III regulatory capital framework mainly concerning the standardized approach. The purpose of the paper is to introduce a review of the policy options for the longer-term treatment of regulatory provisions. However, due to the limited time until the effective date of IFRS 9 application and in order to allow an accurate assessment of the long-term options, the Committee issued at the same time the *Consultative document: Regulatory treatment of accounting provisions - interim approach and transitional arrangements.* This paper reports the proposal to retain the current regulatory treatment of provisions or an interim period. In addition, it introduces transitional regulations to mitigate the impact of ECL accounting model on regulatory capital. Finally, in March 2017 the Committee published *Standards: Regulatory treatment of accounting provisions - interim*

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[104] BCBS, Regulatory treatment of accounting provisions: discussion paper. 2016. Pag. 1

[105] Angelini, P., Le modifiche del quadro regolamentare e le sfide per le banche italiane. ABI 2016. Pag. 3

approach and transitional arrangements that reports the final decisions about the issues outlined in the previous consultative document.

Therefore, in light of the changes to the accounting provisioning model due to IFRS 9 introduction, the reforms of the prudential framework performed by the Committee could be summarized as follows:

- definition of a new *longer-term* regulatory treatment of ECL accounting provisions within the capital framework;

- retention of the current regulatory treatment of provisions for the *interim period*;

- introduction of *transitional arrangements* to mitigate the impact on regulatory capital.

3.1.1 Definition of a new longer-term regulatory treatment of ECL accounting provisions

With respect to the longer-term view, the Committee has discussed and is considering several possible approaches to determine a harmonized prudential treatment of ECL. The reason that led to the postponement of the final decision lies in the fact that the permanent interaction between the ECL accounting and the prudential regime is still not clear. Moreover, the Committee intends to take into consideration the feedbacks obtained from the analyses implemented by the task force set up for this purpose. Finally, the Current Expected Credit Loss (CECL) model provided by the FASB will become effective from 2020, entailing a two-year application gap between standards.

Consequently, the Committee has decided to retain the current regulatory treatment of provisions for the interim period and to introduce a transition arrangement for the impact of ECL accounting on regulatory capital, pending the final decision.

The *Discussion Paper* reports the proposed approaches for the longer-term regulatory treatment of accounting provisions in relation to the standardized approach. It identifies three possible options.

The first option considers keeping the current regulatory treatment of accounting provisions as a permanent approach. This method has the advantages to give continuity with the one currently in place, and to respect differences in national accounting practices. However, it does not resolve inconsistencies between prudential and regulatory frameworks, for instance the differences that depend on whether the bank applies the SA or IRB approach.

The second proposal maintains the current framework but establishes a new universally applicable and binding definition of general provisions and specific provisions. Indeed, the present problem concerns the provisions' partitioning recognised under the SA. The GP and SP distinction does not match IFRS 9 requirements and its processing is left to national practices. The replacing approach proposed could be pursued either by clarifying or by replacing the current definitions under Basel III par. 60[106]. This scenario has the advantage to overcome the limits of the current approach and to ensure a level playing field across jurisdictions with different regulatory practices. In contrast, the definition of a mandatory rule universally recognised is not easy to identify.

The third and last option presents a fundamental change by removing the GP and SP distinction and introducing a regulatory EL also for the SA. This approach treats all accounting provisions in the same way under the SA as it is done under IRB approaches. Any excess of ECL over the regulatory EL is added back to the Tier 2 capital. Any shortfall is deducted from the CET1 capital. This solution removes the need to distinguish between GP and SP. Moreover, it improves uniformity between the SA and IRB approaches. To this purpose it is essential that the Committee defines standardized regulatory EL parameters since in the SA are not required the PD and LGD. However, this approach aims to align the SA with the IRB approach and thus it retains the same limitations, which are also found in the IRB approach.

Regarding the method on internal rating, the Committee is not considering to revise the limits of the current regulation. However, it specifies the intention to consider a review of the treatment of excess provisions after the interim period. The reason lies in the fact that the implementation of IFRS 9 is still not totally performed and the magnitude of the possible increase in accounting provisions is still unknown[107].

The limits to the IRB approach concern the excess provisions. Indeed, the regulatory cap at 0.6% is calibrated on the basis of an accounting incurred loss model and it results inappropriate for the current expected loss model. Moreover, part of the excess is due to a double counting arising from a possible overlap among the unexpected losses defined by the regulatory framework and the lifetime ECL defined by accounting framework.

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[106] Basel III, par. 60: "General provisions are provision or loan loss reserves held against future, presently unidentified losses are freely available to meet losses which subsequently materialised and therefore qualify for inclusion within Tier 2" (...) "Provisions ascribed to identified deterioration of particular assets or known liabilities, whether individual or grouped, should be excluded".

[107] BCBS, Regulatory treatment of accounting provisions: discussion paper. 2016. Pag. 8

On this issue, an option proposed by the AIFIRM[108] and EBF[109] is a symmetrical treatment of excess/shortfall of accounting provisions compared to prudential EL. The excess or shortfall should be respectively added to or deducted from the CET1 and the current cap at 0.6% should be reviewed or eliminate. This method could essentially neutralize the IFRS 9 capital impact.

3.1.2 Retention of the current regulatory treatment of provisions for the interim period

The *Standard* issued in March 2017 presents the Committee's decision to maintain the existing regulatory treatment of accounting provisions under both the SA and IRB frameworks for an interim period.

As already mentioned in chapter 2, for banks applying the SA, the transition from IAS 39 incurred loss model to IFRS 9 expected loss model entails different interpretations of whether provisions classified under IFRS 9 in stages 1 and 2 should be considered SP or GP. The recognition of a uniform interpretation results critical. Both types of provisions impact on CET1, the difference is that GPs do not reduce the exposure value and are included in Tier 2 capital up to 1.25% of the bank's RWAs, while SPs reduce the exposure value and are not added back to regulatory capital.

On this issue, the supervisory authorities' opinion is to classify IFRS 9 provisions as SP. This definition results in accordance with the accounting principle requirements. It requires that provisions should be allocated to individuals or groups of particular exposures and therefore they are not freely and fully usable to meet losses that currently are not expected (as for GP)[110]. Therefore, following this definition, banks using standardized approach do not recognise any GP and they do not exploit the advantage to add them back to Tier 2 capital. In contrast, banks applying the IRB approach are able to recognise some IFRS 9 provisions in Tier 2 capital since an increase in provisions exceeding regulatory EL is more likely. In this context, the transitional arrangement would be useful since it could smooth some differences.

The main reasons supporting the decision to maintain the current regulation consider the diversity of accounting and supervisory policies in respect to provisioning and capital across jurisdictions, and the uncertainty about the capital effects due to the change toward an ECL

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[108] AIFIRM, Position paper n.8, Il principio contabile IFRS 9 in banca: la prospettiva del Risk Manager. Dicembre 2016. Pag. 92

[109] EBF, Interaction between the prudential and accounting framework: expected losses. 2016. Pag. 7

[110] EBA, Opinion on transitional arrangements and credit risk adjustments due to the introduction of IFRS 9. 2017. Par. 38

accounting model. However, the interim proposal is not expected to soften the existing diverse practices across jurisdictions and banks. The justification expressed by the Committee confirms that it retains more significant to focus its efforts on considering alternative approaches for the longer-term regulatory capital treatment of accounting provisions. This has the aim to take a more aware decision that finally will replace the interim approach[111].

3.1.3 Introduction of transitional arrangements to mitigate the impact on regulatory capital

In addition to specify the regulatory treatment of accounting provisions in the interim period, the *Standard* introduces a new transitional regulation to mitigate the impact of IFRS 9 on own funds. This proposal was subject to a fast-track process in order to be available at the effective date of IFRS 9 application on January 1, 2018. Therefore, on December 27, 2017 the transitional arrangements were adopted by the European Parliament through the issuing of the Art. 473(a) within the CRR 2017/2395, which amends the CRR 575/2015 on prudential requirements for credit institutions and investment firms.

The first reason why regulatory authorities have decided to introduce a temporary measure is to avoid a capital shock and give time to banks for restoring their capital resources. Indeed, the initial impact of IFRS could significantly result in a more than expected decline in capital ratios.

On the same issue, a second reason concerns the level playing field between SA and IRB banks. As already mentioned, banks following SA to measure credit risk would experience a negative impact on CET1 due to the increase in provisions under IFRS 9. Moreover, these banks are not able to add provisions back to Tier 2 capital since they are considered as specific. On the other hand, IRB approach does not require the distinction among the types of provisions but just the comparison of accounting provisions with the regulatory EL. Under this method banks are therefore able to recognise excess or shortfall accounting provisions in regulatory capitals.

Another important motivation is related to the interaction with the regulatory framework. Regulatory entities are working on the interaction of accounting with regulatory provisions and they have not yet reached a conclusion on what should be the permanent interaction between ECL model and the prudential regime[112].

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[111] BCBS, Regulatory treatment of accounting provisions - interim approach and transitional arrangements: standard. 2017. Pag. 3

[112] EBA, Opinion on transitional arrangements and credit risk adjustments due to the introduction of IFRS 9. 2017. Par. 3

In the *Standard*, the Committee proposed two possible approaches to phase in the impairment impact on bank's own funds: a *static approach* that calculates the transitional adjustments just once, at the point of transition to ECL accounting, and a *dynamic approach* that takes into account the ongoing evolution of expected credit loss provisions during the transition period[113]. Finally, the approach adopted in the art. 473(a) within the CRR 2017/2395 follows a dynamic approach. However, some banks partially implement this rule, thus obtaining a simplification that basically corresponds to the static approach.

The rule provides that banks have the option to choose to apply the transitional arrangements over a period of up to five years, and the duty to give adequate disclosure on it. In particular, they should report capital and leverage ratios with and without (i.e. "*fully loaded*") the application of the transitional arrangements according to the EBA guidelines on uniform disclosure[114].

From a practical point of view, if a bank experiences a decrease in Core Tier 1 due to the increase of the expected credit loss provisions at first time adoption of IFRS 9, the bank is allowed to include a portion of the increased expected credit loss provisions in its CET1 for a transitional period. At first time adoption, IFRS 9 provisions are compared to provisions based on the closing balance sheet in accordance with IAS 39. The difference net of tax effect is then added back to CET1 capital over the transitional period by applying a scaling factor of 95% in 2018, 85% in 2019, 70% in 2020, 50% in 2021, and 25% in 2022. This dynamic approach takes into consideration the probability that the amount of total provisions originating from the new ECL accounting will change over time. Therefore, at the end of each subsequent reporting period, the amount of IFRS 9 stages 1 and 2 provisions will be compared to the amount of IFRS 9 stages 1 and 2 provisions of the initial reporting period[115]. The resulting difference will be added back again on proportional basis. Such procedure allows limiting the volatility of regulatory capital arising from the exposure transfers among stages. In addition, it permits to consider the evolution of banks' balance sheet. For example, if there were an increase in provisions due to a deterioration of economic conditions, the dynamic approach would reflect

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[113]   BCBS, Regulatory treatment of accounting provisions - interim approach and transitional arrangements: standard. 2017. Pag. 6

[114] EBA, Final report on guidelines on uniform disclosure of IFRS 9 transitional arrangements. January 2018. Pag. 3

[115] The additional provisions created by ECL are in general those in stages 1 and 2, considering the assumption that stage 3 ECL provisions are equivalent to IAS 39 incurred loss provisions.

this increase by adjusting the amount within the scope of application of transitional arrangements[116].

The calculation also changes according to if the exposure is risk-weighted under the SA or IRB approach[117].

Standardised approach: $AB_{SA} = (A_{1,SA} + A_{2,SA} - t)*f$

Where:

- AB_{SA} is the capital added back to CET1;

- $A_{1,SA}$ is the difference between IFRS 9 provisions at Day 1 and IAS 39 provisions at the end of the previous reporting period;

- $A_{2,SA}$ is the difference between IFRS stage 1 and 2 provisions calculated at each reporting date and those calculated at Day 1;

- f is the multiplying factor (95%, 85%, 70%, 50%, 25%);

- t is the increase of CET1 capital due to tax deductibility of the amounts $A_{1,SA}$, $A_{2,SA}$.

IRB approach: $AB_{IRB} = (A_{1,IRB} + A_{2,IRB} - t)*f$

Where:

- AB_{IRB} is the capital added back to CET1;

- $A_{1,IRB}$ is the difference between IFRS 9 provisions at Day 1 and IAS 39 provisions at the end of previous reporting period, both adjusted for the regulatory EL amount;

- $A_{2,IRB}$ is the difference between IFRS stage 1 and 2 provisions calculated at each reporting date, and those calculated at Day 1, both adjusted for the regulatory EL amount;

- f and t, same as before.

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[116] EBA, Opinion on transitional arrangements and credit risk adjustments due to the introduction of IFRS 9. 2017. Par. 8
[117] Regulation EU 2017/2395 Art.1

3.2 Supervisory authorities analyses

Given the complexity of the new accounting principle and the challenges that its application entails for banks, supervisory authorities have undertaken some analyses in order to gain more awareness on the state of IFRS 9 implementation and estimate its possible impacts. The Basel Committee itself promotes the need to conduct studies on IFRS 9 implementation in order to obtain some feedback. Indeed, the lack of awareness and results has raised uncertainties about what the possible effects of the implementation. An unsolved issue concerns the interaction between accounting and regulatory practices. Prudential requirements are still calibrated on an incurred loss approach, leading inconsistency in the accounting treatment of provisions that then, in turn, will have an impact on the bank's own funds.

Therefore, in order to obtain awareness on the effects of IFRS 9 implementation and establish a permanent relationship between the accounting and prudential discipline, it is necessary to investigate and collect data to be used in support of the final long-term decision.

A first project study on the implementation of the new accounting principle IFRS 9 was performed by the European Bank Authority, which led to the development of two impact assessments: the first *Report on results from EBA impact assessment of IFRS 9* issued in November 2016, and the following *Report on results from the second EBA impact assessment of IFRS 9* issued in July 2017. Later, supervisory bodies conduct another analysis, the *Single Supervisory Mechanism thematic review on IFRS 9* issued in November 2017.

3.2.1 European Bank Authority and Single Supervisory Mechanism impact assessments

The first EBA impact assessment on the forthcoming introduction of the IFRS 9 accounting principle was conducted in April 2016, with data reference up to December 31, 2015. The sample involved 58 institutions across the European Economic Area. The supervisory authority recognised that institutions were at an early stage of preparation in the implementation of the accounting standard and it was aware that data collected reflected this trend[118]. For this reason, at the same time of the first analysis issuance, EBA has immediately undertaken a second impact assessment with the aim to collect updated and more significant results.

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[118] EBA, Report on results from impact assessment of IFRS 9. 2016. Pag. 4

The second EBA impact assessment was conducted in February 2017 with data reference up to December 31, 2016 and published in July 2017. Since the second analysis is the update and the continuation of the first one, the main reference is to the last report.

The second analysis' banks sample involves approximately 54 institutions across European Economic Area. In particular, 63% are globally systemically important institutions (G-SIIs), 31% are other systemically important institutions (O-SIIs), and 6% neither G-SIIs nor O-SIIs.

The analysis aims to better understand the extent of banks preparation for the IFRS implementation, to estimate the impact on regulatory own funds and to investigate the interaction between IFRS 9 and prudential requirements[119]. Thus, the goals and results pursued by the analysis are various. Among these, the objective to clarify prudential and accounting practices also clearly emerges.

The analysis is performed considering the possible qualitative and quantitative aspects of the accounting principle introduction.

Qualitative sections highlight that the impact due to the change in classification and measurement requirements is not very significant. On this issue, the main challenge results from the application of the SPPI test especially for financial instruments different from "plain vanilla".

Instead, the implementation of IFRS 9 impairment requirements is more challenging. The most critical issues concern the availability of historical data, the data quality, and the assessment of significant increase in credit risk. In general, banks state that they will try to leverage off existing definitions, processes, systems, models, and data used for regulatory and credit risk management purposes in order to implement IFRS 9 impairment requirements. In particular, they are considering adjusting models already in place. For example, the PD, LGD and EAD parameters used under IRB approach should be adjusted to eliminate conservatism of the regulatory model or to generate multiperiod parameters. Moreover, considering the forward looking information and different scenarios, banks are planning to use their information and models already in place for ICAAP, Stress Test and capital planning[120].

In regard to the quantitative aspects and estimations of the second impact assessments, they can be summarized in the following table.

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[119] EBA, Report on results from the second impact assessment of IFRS 9. 2017. Par. 5
[120] EBA, Report on results from the second impact assessment of IFRS 9. 2017. Par. 48

Table 3.1: Summary of IFRS 9 quantitative estimations.

Second impact assessment 2016		
Estimated increase of provisions IFRS 9		
in %		
Median[5]	8%	
Average[5]		
All banks in sample	13%	
Small banks	5%	
Large banks	15%	
SA banks	6%	
IRB banks	16%	
Weighted average[5]		
	15%	
75th percentile[5]	**18%**	
data point corresponding to 86% of respondents [7]	*22%*	

Estimated impact on CET1 ratio IFRS 9		
In bps	**Total impact of IFRS 9**	**Classification and measurement** **Impairment**
Median[1]	**-50**	0 -50
Average[6]		
Midpoint of estimated range[2]	**-45**	-4 -43
Small banks	-78	
Large banks	-33	
SA banks	-77	
IRB banks	-32	
Weighted average[3]		
Conservative estimation in range[4]	**-42**	-13 -40
Midpoint of estimated range	-29	-5 -28
75th percentile[1]	**-75**	**-25** **-50**
% of respondents below or at the data point of the 75th percentile	*86%*	*92%* *78%*

Estimated impact on total capital ratio IFRS 9		
In bps	**Total impact of IFRS 9**	**Classification and measurement** **Impairment**
Median[1]	**-25**	0 -25
Average[6]		
Midpoint of estimated range[2]	**-35**	-5 -33
Small banks	-78	
Large banks	-20	
SA banks	-77	
IRB banks	-17	
Weighted average[3]		
Conservative estimation in range[4]	**-30**	-13 -29
Midpoint of estimated range	-18	-5 -17
75th percentile[1]	**-50**	**-25** **-50**
% of respondents below or at the data point of the 75th percentile	*76%*	*90%* *82%*

(Source: EBA, Results from the second impact assessment of IFRS 9. July 2017. Page 44.)

It can be noticed that the results of the second analysis are in line with the results of the first one, and in many cases they are lower. This is due to the progress made on implementation that led to more precise estimates and the general improvements of the economic conditions[121].

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[121] EBA, Report on results from the second impact assessment of IFRS 9. 2017. Pag. 8

Taking into consideration the impacts on financial statements, the estimated increase of IFRS 9 provisions for on-balance sheet and off-balance sheet exposures corresponds to 13% compared to the amount of provisions under IAS 39. The increase is mainly connected with the result of stage 2 provisions for loans and advances to households, and non-financial corporations.

As regards to the impacts on capital requirements, they mainly arise from the new impairment requirements and to a lesser extent from the classification and measurement requirements. In particular, it is estimated that the CET1 ratio will decrease on average by 45 bps (59 bps decrease in the first analysis). It is then estimated that the total capital ratio will decrease on average by 35 bps (45 bps decrease in the first analysis). The reason why the impact on total capital ratio is lower than the impact on CET1 ratio is ascribed to the excess in accounting provisions for IRB bank over regulatory EL. Indeed, the excess is added back to Tier 2 capital according to a regulatory cap[122].

The difference becomes even more evident considering the estimates divided by SA and IRB approach. For IRB portfolios the estimated decrease in CET1 ratio and total capital ratio corresponds respectively to 32 bps and 17 bps. For SA portfolios, the estimated decrease in CET1 ratio and total capital ratio are both equal to 77 bps. As explained in previous paragraphs, the discrepancy is due to the different regulatory treatment of accounting provisions. Banks using SA are subjected to a higher negative impact on CET1 ratio. In contrast to IRB approach, these banks are not able to recognise a minimum impact on CET1 through the regulatory EL nor the excess in accounting provisions over regulatory EL in Tier 2 capital since provisions are considered as specific provisions and, therefore, they are deducted from the exposure value. So, SA banks could not obtain any capital relief.

For these reasons, in the *Standard* document, the Committed proposed a transitional arrangement. This is a measure that aims to smooth out such existing differences between approaches and limit the impact on capital ratios. The transitional arrangement provides that banks could include a portion of the increase provision in CET1 capital within a maximum of five years at the first time adoption of IFRS 9. The portion added back follows decreasing percentages, from 95% in the first year until neutralising itself in the sixth year.

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[122] EBA, Report on results from the second impact assessment of IFRS 9. 2017. Par. 92

Summarizing, IRB banks (mainly large banks) have estimated higher provisions than SA banks (mainly small banks[123]). The reason concerns the fact that large banks have a lower coverage of exposures than smaller banks with provisions under IAS 39. This, at the first time adoption, could be an advantage since such banks recognise a shortfall from the difference between provisions under IAS 39 and regulatory EL. Such shortfall absorbs part of the increase in provisions under IFRS 9 that would otherwise impact CET1[124]. In contrast, SA banks have estimated a low increase in provisions but a high impact on own funds. The reason is that small banks generally have lower level of capital than large banks. Moreover, small banks could not exploit the excess/shortfall rule to achieve a capital relief.

The last section of the report focuses on the issue of the interaction between accounting and prudential requirements. IFRS 9 has introduced a number of changes for banks and also has highlighted the need to review some aspects of the prudential regulation that banks are subject to. The interactions mainly concern the new accounting requirements on the impairment issue, which also interest the regulatory treatment of provisions. In this context, the Committee proposes some reforms in order to achieve an agreement between accounting practices and prudential policies. EBA impact assessment turns out to be useful to regulators and supervisors to understand the state of preparation of banks and to define the most appropriate course of action. EBA states that guidelines and recommendations issued by supervisors, such as EBA Guidelines on ECL or EBA Regulatory Technical Standard, provide a robust implementation of IFRS 9 and ensure a degree of consistency for the first time adoption[125]. For longer-term decisions, EBA acknowledges that it is important to obtain a better understand of the various implementation practices through a further investigation, especially for those that need more observations over time.

In addition to EBA impact assessments, another analysis on the forthcoming introduction of IFRS 9 was performed by the Single Supervisory Mechanism (SSM). This supervisory body performed a thematic review on IFRS 9 during 2017 on the information available at the first quarter of 2017. The objectives of the analysis stated in the report concern the assessment of the extent institutions are prepared for the introduction of IFRS 9, the valuation of the potential impact on provisioning and capital ratios, and the promotion of a consistent application of the new standard[126].

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[123] Banks with total financial assets below EUR 100 billion.

[124] EBA, Report on results from the second impact assessment of IFRS 9. 2017. Par. 89

[125] EBA, Report on results from the second impact assessment of IFRS 9. 2017. Pag. 48

[126] BCE, SSM thematic review on IFRS 9. 2017. Pag. 2

The sample of the analysis involves 106 significant institutions and 77 less significant institutions. The review on significant institutions was performed by the Joint Supervisory Teams, while the review on the less significant institutions was performed in close collaboration with the National Competent Authorities.

The quantitative section reports the estimate impact on regulatory capital ratios on the first time adoption of IFRS 9. Considering only the better prepared institutions among the significant institutions sample, the average fully loaded negative estimated impact of IFRS 9 on the CET1 ratio is 40 bps. On the other hand, in the case of less significant institutions the estimated negative impact on CET1 ratio corresponds to 59 bps. Therefore, also in the analysis performed by SSM the estimated impact is higher for less significant institutions since they mainly use a SA. As already explained for EBA analysis, under this approach provisions have a bigger impact on CET1 because they are not able to achieve a capital relief through the regulatory capital requirements as provided for IRB approach.

The results are in line with those reported in the EBA impact assessments for what concerns the significant institutions (45 decrease on average in EBA analysis). It is not possible to state a fair consideration on the result about the less significant institutions in relation to the EBA analysis because this last one considers a sample that includes for the 94% banks identified as G-SIIs or O-SIIs, therefore, it involves a very low portion of less significant institutions.

3.3 Conclusions

The introduction of IFRS 9 accounting principle has brought a significant change for banks. In consideration of this change, not only the accounting practices had to be adjusted, but it also created the need for more attention on the subject by the prudential discipline.

The new accounting standard requires accounting for provisions on expected credit losses. This procedure leads to earlier recognition and higher impairment allowances and possible procyclical consequences. Therefore, the Committee took into consideration the possible implications for regulatory capital of such an approach. Consequently, it started a reform project of the current prudential treatment of accounting provisions.

The current course of action followed by the Committee consists in establishing a longer-term regulatory treatment of ECL accounting provisions once the permanent interaction between the prudential and accounting frameworks is defined. Indeed, there are many uncertainties about the possible transitional effects arising from the IFRS 9 application. Therefore, in the short-term the Committee proposes a transitional arrangement in order to mitigate the impacts on own funds and smooth out the differences between approaches for the credit risk measurement, pending a long-term decision. The temporary measure provides for lessening the capital reduction through decreasing weightings over a period of five years. The first-time-adoption clause is considered an opportunity by banks since it allows recognising provisions on expected credit loss without affecting dividends and without jeopardizing capital levels[127].

Two important studies carried out by the European Banking Authority have estimated the magnitude of the effects of IFRS 9 on provisions and own funds. Following the results of the analyses it is possible to state some general considerations. The major impacts arise from the new impairment requirements, while the impact due to the change in classification and measurement is not very significant.

The quantitative impact of IFRS 9 implementation has different results according to the size and the approach used to measure the credit risk. Small banks mainly using a standardized approach recognise a lower increase in provisions compared to large banks mainly using an IRB approach (respectively 6% increase for the first ones, 16% increase for the second ones)[128]. However, the impact on own funds is lower for IRB banks than for SA banks. The reason is that for IRB banks the effect on CET1 capital of higher provisions could be compensated by

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[127]Ninfole, F., Banche, più coperture con IFRS 9. Milano Finanza. Marzo 2018. Pag. 7

[128] EBA, Report in results from the second impact assessment of IFRS 9. 2017. Pag. 44

fewer deductions and by some benefits according to current regulatory capital rules, which does not apply to SA banks.

Therefore, the supervisors' attention is directed to ensure a level playing field between approaches and homogeneity among practices across jurisdictions, aiming to give consistency between the prudential and accounting frameworks.

CHAPTER 4: Analysis of IFRS 9 first time adoption

4.1 Sample of banks

This chapter introduces an analysis on the effects of IFRS 9 first time adoption, since came into force on January 1, 2018. It follows the model of supervisory authorities' studies mentioned in chapter 3. After a brief introduction on the changes performed on financial statements, the objective of the analysis is to investigate the quantitative impacts of IFRS 9 first time application on provisions and on the regulatory capital ratios of banks taken as samples. The reason why the analysis focuses on these aspects is that they are the critical connecting points where accounting framework links with the regulatory ones. As already explained in previous chapters, the accounting principle introduces a new impairment model for financial instruments based on the expected loss approach. The accounting impairment expresses a financial instrument's expected credit loss as the projected value of the estimated cash shortfalls over the expected life of the asset, and requires accounting for loss allowances equal to the amount of ECL measured. Impairment provisions are also objective of the prudential regulation on bank's own funds issue. Therefore, loss allowances on the expected credit loss affect the profit and loss statement at first, and ultimately impact the calculation for regulatory capital.

The sample of the analysis consists of 15 Italian banking groups currently listed on the Borsa Italiana within the Banks Super Sector. The choice of this sample is due to a better availability of information since listed banks have disclosure obligations. Moreover, from 2005[129] credit institutions should mandatorily apply the International Accounting Standards. Finally, the sample is an adequate selection of the major banking groups in Italy where the banking industry is mainly composed by medium-small institutions, which are submitted to few big banking groups.

The total assets of banks in the sample range from about €300 million to €800 billion. On average, the banks in the sample have total assets of approximately €156 billion at 2017 ending reporting period. Ten out of fifteen banks are significant institutions subject to European Central Bank supervision, and five out of fifteen are less significant institutions subject to Bank of Italy supervision[130].

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[129] The National Legislative Decree n.38 of 2005 provides the mandatory adoption of IAS/IFRS for all credit institutions.
[130] ECB, List of supervised entities, December 2018.

The approach used for measuring the risk weighted assets (RWAs) differs among banks. In particular, half of them use a standardized approach only while the others use a mixed approach. The analysis assumes that:

- banks, whose credit RWAs calculated according standardized approach are more than 50% of the total weighted assets, are defined as "banks mainly using SA";
- banks, whose credit RWAs calculated according IRB are more than 50% of the total weighted assets, are defined "banks mainly using IRB";
- banks whose credit RWAs are calculated at precisely 50% between SA and IRB are defined as "banks with same use".

Such sample partitioning allows understanding in a meaningful way the analysis' results explained later.

Table 4.1: Details of approaches to RWAs

RWAs MEASUREMENT APPROACH	No. of banks
Banks mainly using SA	9
of which only SA	*7*
Banks mainly using IRB approach	2
Banks with same use	4
Total	**15**

(Source: Personal elaboration of banks' financial statements data)

Regarding the reference data used for the quantitative assessment, the analysis takes into consideration the interim financial statements at consolidated level of banking groups. In particular, sources of data focus on the collection of information about the previous IAS 39 accounting principle and about the first time adoption of IFRS 9 on January 1, 2018. Banks expose such information in the ending annual report as at 31.12.17, in the interim financial report as at 31.03.18 or, otherwise, within the half financial report as at 30.06.18. Since the half-year financial report is a shortened version of the annual financial report, it often results more complete than the quarterly financial report, which discloses limited information contents.

Banks' financial reports are available at the online platform *eMarket Storage[131]*, or else they are published in the bank's website within the investor relations section.

The new accounting principle implementation involves a reconfiguration of financial statements frameworks in order to adapt their layout to the new accounting portfolios: IFRS 9 introduces simple and intuitive classification methodology with a limited number of classification categories. The balance sheet assets side currently presents the following items: *20.Financial assets at fair value through profit and loss*, *30.Financial assets at fair value through comprehensive income*, *40.Financial assets at amortised cost*. Such items entirely substitute the previous ones: 20.Financial assets held for trading, 30.Financial assets at fair value through profit and loss, 40.Available for sale financial assets, 50.Held to maturity investments, 60.L&R with banks and 70.L&R with customers. Consequently, the balance sheet liabilities side puts together items of 10.Deposits from banks, 20.Deposits from customers and 30.Debt securities in the new item *10.Financial liabilities at amortised cost*. The new provisions about financial statements layout and disclosure duties are stated in the Bank of Italy Circular 262/2017 5th update[132], as shown in the table below.

Table 4.2: Summary of new balance sheet items and financial assets measurement categories

Bank of Italy Balance sheet item pursuant to Circ. 262/2005	Category	Subjective/objective characteristics	Type of financial instrument
20. Financial assets at fair value through profit or loss a) financial assets held for trading b) financial assets designated at fair value c) other financial assets mandatorily at fair value	Financial assets at "FVTPL"	This criterion classifies and measures financial assets: • held for trading; • where designation as at FVTPL eliminates or significantly reduces an accounting mismatch; • that, even though they are associated with HTC and HTC&S Business Models, envisage cash flows that do not solely consist of payments of principal and interest; • managed on a fair value basis.	All types of financial instrument may be recognised within this category.
30. Financial assets at fair value through other comprehensive income	Financial assets at "FVTOCI"	This category classifies: a) debt instruments and loans: - associated with the HTC&S Business Model; and - whose contractual cash flows consist solely of payments of principal and interest. b) equity instruments for which the "OCI election" is adopted.	Debt instruments (securities and loans) and equity instruments may be recognised within this category.
40. Financial assets at amortised cost a) loans to banks b) loans to customers	Financial assets at "Amortised Cost"	This criterion classifies and evaluates financial assets: - associated with the HTC Business model; and - whose contractual cash flows solely consist of payments of principal and interest and that are held for the purpose of collecting contractual cash flows.	Only debt instruments (securities and loans) may be recognised within this category.

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[131] eMarket Storage belongs to a technology platform, which aims are to store and sent regulated information (www.emarketstorage.com).

[132] Bank of Italy, Banks' financial statements: layout and preparation. Circular 262, 5th update on December 22, 2017.

All banks in the sample decided not to perform the restatement of previous reporting periods in accordance with the IFRS 9 paragraph 7.2.15[133]. However, according to the requirements of Circular 262/2017, banks implementing such exemption have the duty to include a reconciliation statement between the 2017 ending financial report data and the 2018 beginning financial report data, which are drawn up in compliance with IFRS 9 accounting requirements. Therefore, information and references about IFRS 9 first time adoption are collected within the explanatory notes to the consolidated financial report precisely in Part A - *Accounting policies,* Section 2 - *General preparation criteria,* and paragraph *"transition to IFRS 9 financial instruments".*

4.2 Quantitative impact analysis and results

From a quantitative point of view, IFRS 9 implementation directly affect the bank's consolidated shareholders' equity through the change of the item *150.Retained earnings reserves (i.e. FTA reserve)* or other components of equity (for example *140.Valuation reserves*). Indeed, such items hold the differences between the previous carrying amount and the carrying amount of the annual reporting period that includes the date of the initial application. The FTA reserves result to be negative mostly for the higher provisions because of the application of new impairment model on financial instruments. The new principles require to perform the impairment test on those financial assets measured at amortised cost or at fair value to other comprehensive income since their initial recognition by considering both expected credit losses on the exposures' lifetime and forward looking scenarios.

Table 4.3 displays overall data about banks in the sample. Transitional, pre and post IFRS 9 introduction capital ratios are disclosed for each bank. Then, the table shows the higher provisions on credits and the impact on capital ratios recognised by banks at FTA of the accounting principle. Finally, it is reported the SREP minimum capital requirements imposed by supervisory authorities (ECB or Bank of Italy) to each bank. Details of results explained in the subsequent part of the analysis are calculated on the basis of these overall data.

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[133] International Accounting Standard Board, IFRS 9, in par. 7.2.15 provides that an entity that adopts the classification and measurement requirements of this standard shall provide the disclosures set out in par. 42L-42O of IFRS 7 (reported in chapter 1) but need not to restate prior periods.

Table 4.3: Overall data of banks in the sample

BANK	PROVISIONS	CET 1 RATIO				TC RATIO				TRANSITIONAL ARRANGEMENTS			SREP 2018	
	Increase of provisions IFRS 9 (%)	31.12.2017 ex IAS 39 (%)	IFRS 9 fully loaded (%)	Impact FTA (bps)		31.12.2017 ex IAS 39 (%)	IFRS 9 fully loaded (%)	Impact FTA (bps)		CET1 ratio phased-in (%)	Impact FTA (bps)	TC ratio phased-in (%)	CET1 SREP (%)	TC SREP (%)
Banco BPM	8.88%	12.36%	11.10%	-126		15.21%	14.00%	-121		13.10%	74	16.50%	8.88%	12.37%
Banco Desio Brianza	11.02%	11.52%	10.75%	-77		13.58%	12.64%	-94		11.64%	12	13.50%	6.63%	10.38%
BPER	21.25%	13.68%	11.71%	-197		16.47%	14.61%	-186		14.61%	93	17.50%	8.13%	11.63%
Carige	11.88%	11.75%	10.00%	-175		11.93%	10.20%	-173		12.00%	25	12.30%	9.63%	13.13%
Credem	7.91%	14.60%	14.50%	-10		16.90%	17.10%	20		-	-	-	7.38%	10.88%
Creval	16.36%	10.62%	10.20%	-42		12.54%	12.12%	-42		14.00%	338	15.50%	7.10%	11.13%
DoBank	0.00%	26.43%	26.83%	40		26.43%	26.83%	40		-	-	-	6.52%	10.13%
Finnat	25.87%	32.60%	31.00%	-160		32.60%	31.00%	-160		31.32%	-128	31.32%	7.22%	11.43%
Intesa Sanpaolo	13.89%	12.93%	11.91%	-102		17.70%	16.95%	-75		12.95%	2	17.66%	8.15%	9.33%
Mediobanca	7.83%	12.89%	12.69%	-20		16.24%	16.04%	-20		n.a.	-	n.a.	7.60%	11.10%
Monte Paschi Siena	9.21%	14.78%	11.70%	-308		14.97%	13.09%	-188		14.37%	-41	15.75%	9.44%	12.94%
Popolare Sondrio	3.00%	11.60%	11.57%	-3		13.66%	13.47%	-19		11.72%	12	13.63%	8.38%	11.87%
Profilo	16.99%	25.96%	25.50%	-46		26.19%	25.73%	-46		25.60%	-36	25.83%	n.a.	n.a.
UBI	15.27%	11.56%	11.64%	8		14.13%	14.13%	0		12.00%	44	14.47%	8.63%	10.25%
Unicredit	1.64%	13.73%	12.80%	-93		18.10%	17.19%	-91		-	-	-	9.20%	12.70%
Average	11%			-87				-77			36			

(Source: Personal elaboration of banks' financial statements data)

The analysis performed on the banks sample points out a total average increase of 11% of impairment provisions on exposures. The data is obtained through a comparison between provisions on credits disclosed in Part E - *Information on risks*, Section 1 - *Credit quality* (table A.1.6) of explanatory notes up to December 31, 2017 financial statements and the provisions disclosed in the specific section established for the transition to IFRS 9 within year 2018 interim financial statements.

According to the previous IAS 39, specific adjustments were carried out on non-performing exposures while collective adjustments were carried out on performing exposures. IFRS 9 requires that the new impairment model based on expected credit losses to be performed on all financial assets not measured at FVTPL, which are debt securities, loans and off-balance sheet exposures as commitments and guarantees. These requirements increased provisions levels recognized by banks in the sample. In particular, additional value adjustments to performing exposures are mainly the result of stage 2 provisions on expected credit loss (lifetime and forward-looking) while additional value adjustments to non-performing exposures are mainly the result of the inclusion of forward-looking information and sale scenarios for NPL. Increased provisions of the sample are allocated on average as 2% to stage 1, 18% to stage 2, and 80% to stage 3.

As said before, the initial application of IFRS 9 requires banks to restate the equity in order to include the additional provisions. The higher provisions negatively affect the shareholders' equity, which in turn reduce the regulatory capital level. Therefore, such new accounting rules and effects also produce consequences for regulatory capital and prudential ratios. The calculation of prudential ratios consists in the relationship among aggregates that constitute bank's own funds (CET1 capital, Tier 1 capital, and Total capital) and total risk-weighted assets, which are an assessment of risk that determines the minimum level of own funds a bank should maintain.

The following table 4.4 summarizes the total average impact on capital ratios recognised at first time adoption of IFRS 9 accounting standard by banks in the sample. Information on the composition and amount of 2017 prudential ratios are reported in the annual report explanatory notes Part F - *Consolidated shareholder equity*, Section 2 - *Own funds and banking regulatory ratios.* Prudential ratios in accordance with IFRS 9 application are disclosed within the specific section established for the transition in the 2018 interim financial statements.

Table 4.4: Detail of quantitative impacts on capital ratios

IFRS 9 FTA IMPACTS ON BANKS' CAPITAL RATIOS

(In bps)	Average CET 1 ratio *fully loaded*	Average TC ratio *fully loaded*
Total sample	-87	-77
Mainly IRB banks	-56	-27
Mainly SA banks	-76	-78

(Source: Personal elaboration of banks' financial statements data)

As general considerations, it is possible to notice that: the total average impact on CET 1 ratio is higher than the total average impact on TC ratio, and mainly SA banks suffer from a higher impact respect to mainly IRB banks. The reasons of such impacts are due to the occurrence at the same time of the accounting effects for the FTA of new accounting standard and the application of prudential rules concerning own funds.

Focusing on detailed results, the analysis points out that CET1 ratio *fully loaded*[134] decreases on total average by 87 bps while the total capital ratio *fully loaded* decreases on total average by 77 bps. It is important to underline that these average results involve all banks in the sample, also those defined as "same use" according initial assumptions. Instead, these latter banks will not be considered in the average of results later reported because their portfolios composition is halfway between SA and IRB, thus it does not allow understanding in a meaningful way the potential impacts. On the opposite, differences clearly emerge considering the results distinguished by the credit risk measurement approach (IRB or SA).

Banks mainly using IRB approach realize a *fully loaded* capital ratios reduction on average of 56 bps for CET1 and of 27 bps for total capital. From an accounting point of view, the increased provisions impact directly on equity reserves and consequently capital amounts decrease. However, in the case of IRB portfolios, the prudential treatment of accounting provisions and capital could affect the results. The two IRB banks in the sample realized a shortfall in 2017

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[134] Fully loaded means that the capital ratio is calculated without the application of transitional arrangements.

financial statements, which were still drafted in compliance with IAS 39 requirements. Indeed, according to the prudential rule, if the provisions amount is lower than the regulatory expected loss it is recognised a negative difference called shortfall, which is deducted from CET1 capital. However, at the first time adoption of IFRS 9, banks account for higher provisions levels and consequently recognise an excess of provisions over regulatory EL. Such excess entails the elimination of the previous shortfall from CET1 capital calculation, which results no longer negative for the shortfall amount. In addition, the residual amount of the excess is added back to Tier 2 capital up to 0.6% of RWAs by smoothing out the impact on total capital as well. Therefore, in other words, the previous shortfall permits absorbing part of the impact of IFRS 9 FTA on own funds.

Banks mainly using standardized approach suffer from a quantitative impact on regulatory capitals due to the increased provisions, as for internal rating banks. However, SA institutions can not exploit the excess/shortfall prudential rule to absorb part of the impact of IFRS 9 on own funds. Thus, banks in the sample recognise an IFRS 9 impact on prudential ratios *fully loaded* almost of the same size: CET1 ratio decreases on average by 76 bps and the total capital ratio reduction is about 78 bps on average. Differently to IRB approach according to which all accounting provisions are treated in the same way, SA institutions distinguish between general provisions and specific provisions. As explained in chapter 3, the recent recommendation of supervisors is to consider all provisions as specific provisions. This decision entails, on one hand, the reductions of the exposure value and therefore the decrease of RWAs, and, on the other hand, the impossibility to add the general provisions back to Tier 2 capital. For these reasons, the impact on CET1 amount is slightly lessen and also it is entirely reflected in total own funds.

In general, it is possible to deduce that the potential factors that have influenced the quantitative impacts of IFRS 9 on banks' own funds concern: the provision level realize under the previous IAS 39; the new provisions raised for IFRS 9 implementation; and the use of SA or IRB method for measuring credit risk for prudential purposes. On this last issue, mainly SA banks in the sample are disadvantaged since they could not exploit the prudential additional-deduction systems just explained for IRB portfolios.

Analysis' results clearly highlight the negative impact and discrepancies among banks that apply different regulatory approaches to measure the risk. Just before the enforcement of IFRS

9, the Basel Committee introduced a transitional arrangement in order to temporary mitigate the shock on own funds and smooth out differences between approaches.

The major part of banks of the sample (12 over 15) opt in the transitional arrangement and take advantage of its implementation. This temporary measure allows banks to include in CET1 capital a portion of the increased expected credit loss provisions recognised as a result of the first time adoption of IFRS 9. The amount is added back on proportional basis for a period of maximum 5 years (from 2018 to 2022). The resulting capital ratios of banks in the sample are broadly positive, and CET1 ratio *phased-in*[135] experiences an increase of +38 bps on total average. Information about transitional arrangements are disclosed in Pillar 3 Public Disclosure documents[136] as required by the EBA guidelines on uniform disclosure. Banks in the sample that do not draft the Pillar 3 interim report disclose transitional regulatory capital ratios in the specific section established for the transition to IFRS 9 within the interim financial statements.

A further consideration concerns the minimum capital requirements imposed to banks by banking supervision. Indeed, the negative impact would not be so noteworthy if it was not considered also in relation to the minimum regulatory limits. Own funds are considered as the main tool of prudential supervision to determine the banks financial stability against the level of risk recognised. Also, investors pay more attention to prudential ratios level when they compared banks among themselves, especially to CET1 ratio since it is composed of the highest quality items. To this purpose, through the annual Supervisory Review Process (SRP), the supervisory authority judges the capital adequacy and transmits the minimum capital requirements. The previous table 4.3 reports the 2018 SREP capital ratios for each bank. Although capital ratios *fully loaded* suffer for a substantial negative impact, almost all banks in the sample satisfy the minimum thresholds required by SREP. Just Carige bank total capital ratio results to be below these requirements, but in any case it is over Basel Pillar I regulatory limits[137] (Carige "TC fully loaded" 10.20% vs "SREP" 13.13%). The application on the transitional arrangements permits to positively relief total capital ratio even if it is not yet in compliance with regulatory limits (Carige "TC phased-in" 12.30% vs "SREP" 13.13%).

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[135] Phased-in means that the capital ratio is calculated with the application of transitional arrangements.

[136] The Pillar 3 Public Disclosure document aims to improve disclosure transparency for market participants on fundamental information as own funds, risk exposures and assessment, and capital adequacy.

[137] Art. 92 CRR 575/2015 provides mandatory minimum capital ratio requirements that banks should always satisfy: CET1 4.5%, T1 6%, TC 8%.

Transitional capital ratios of other banks in the sample results broadly positive and fully in compliance with regulatory limits.

Finally, the current analysis results turn out in line with those reported in EBA impact assessment of 2017, as explained in chapter 3. Briefly summarizing, EBA analysis evaluates the quantitative impact on prudential ratios due to IFRS 9 introduction on a sample of European banks divided by the credit risk measurement approach. The impact assessment found out a lower deterioration of own funds for IRB banks respect to SA banks. The same result is pointed out in the current analysis. In particular, capital ratios reduction for mainly SA banks correspond to that foreseen by EBA (-76 bps CET1 and -78 bps TC vs -77 bps for both CET1 and TC ratios). Instead, capital ratios reduction for mainly IRB banks calculated in the current analysis follow the same trend but it is not identical to that foreseen by EBA (-56 bps CET1 and -27 bps TC vs -32 bps CET and -17 bps TC).

Conclusions

The introduction of the new accounting standard IFRS 9 led to a significant change in the accounting system and required a great deal of implementation by banks and financial institutions. However, the replacement of the previous IAS 39 was a proper choice for regulatory bodies to give a solution to the several weaknesses recognised and to the financial crisis of 2008.

After explaining the new accounting regulation on financial instruments and some possible useful models for its implementation, the present paper focused on the main issue of this study. IFRS 9 accounting framework and Basel regulatory framework present some points of convergence, which on one side could be exploited for banks' benefit and, on the other side raise some critical issues that involve impairment provisions for ECL and prudential capitals. Exactly these last elements cause major concerns for both banks and supervisory bodies. Indeed, not accidentally, in literature it is possible to find out two recurrent questions concerning the first application of the principle: how much will the provisions increase? What will be the effects on regulatory capital ratios?

Supervisory authorities, such as the Basel Committee on Banking Supervision and the European Banking Authority, are the first concerned in finding the answer given the relevance they ascribe to the supervisory capital system as a tool for banks' financial stability. To this end, they performed some analyses in order to estimate the possible impacts of the accounting principle application on a sample of European banks (EBA July 2017 and ECB November 2017), which are reported in chapter 3.

On the model of these studies, the present paper has carried out an empirical analysis with the purpose to investigate the quantitative impacts of IFRS 9 first time adoption on provisions and on capital ratios (CET1 ratio and TC ratio). In the scope of this paper, the specific reason for focusing on this topic was both because these were factors on which the greater impact was expected and also because these aspects represented critical connecting points where the accounting framework links with the regulatory ones.

In order to achieve the purpose, the analysis was performed on a sample of fifteen Italian listed banking groups and carried out a comparative study on banks' financial statements data pre and post IFRS 9 implementation with regard to provisions and prudential capital ratios information. Banks in the sample complied with requirements in terms of disclosure for the application of

accounting principle by adapting interim financial statements for year 2018 to the new accounting rules and by adding some reconciliation statements with 2017 annual report.

A starting consideration concerned the fact that the initial application of accounting standard required banks to restate their equity in order to include the additional provisions risen from the new impairment model on financial instruments. A further assumption involved the partitioning of banks sample according to the approach used for measuring credit risk for prudential purposes in order to obtain a significant interpretation of results. However, the analysis found a limitation on this because it could not consider the sample in a homogeneous way since the results of some specific subgroups were privileged (i.e. banks mainly using standardized approach and banks mainly using IRB approach).

Therefore, from a quantitative point of view, the observed impacts on the sample for the IFRS 9 first time adoption could be summarized as follows:

- increase of provisions (on average 11%) for ECL impairment application on on-balance sheet and off-balance sheet exposures and consequent reduction of equity reserves;

- decrease of capital ratios *fully loaded* (CET1 ratio -87 bps, TC ratio -77 bps on average) due to the reduction of shareholders' equity;

- different effects on banks that mainly use SA or IRB approach (greater impact on prudential ratios for mainly SA banks respect to mainly IRB banks).

The analysis verified that the accounting principle implementation led to an increase in the levels of accounting provisions, which directly affected the equity reserves. Therefore, such new accounting rules and effects also produced consequences for regulatory capital and capital ratios. In this context, the current prudential capital regulation affected these final results leading to a diversity of outcomes and therefore discrepancy among institutions. In particular, on average, banks mainly using IRB approach were advantaged by prudential mechanisms, but it was not the same for SA banks.

In view of the expected decrease of capital ratios and the uncertainty of the effects, the Basel Committee introduced optional transitional arrangements in order to mitigate the impact of IFRS 9 on own funds and to allow banks to comply with the supervisory minimum capital requirements. Most of the banks in the sample benefited from the transitional arrangements' adoption, and therefore they respected the regulatory limits.

In conclusions, even though the enforcement of IFRS 9 is now fully performed, many points remain open on the changes that it introduced and on the adjustments that banks should implement. The present analysis on the first time adoption of the accounting standard tried to emphasize from an empirical and quantitative point of view the interaction between accounting and prudential frameworks, highlighting some ambiguities originated from inconsistencies between specific prudential capital requirements and the modified accounting regime. In general, on this issue, the supervisory authorities' intentions are moving toward the objective of ensuring a greater consistency with the accounting system and, in this way, contributing to the improvement of the reliability of equity among institutions.

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2. Banca Finnat Euramerica Banking Group "Consolidated Interim Reports 2018".

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