FINANCIAL STABILITY CONSEQUENCES OF THE EXPECTED CREDIT LOSS MODEL IN IFRS 9

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Abstract

Following the G20 mandate, there has been a move from incurred loss approaches for the recognition of credit losses to expected credit loss approaches. Since 1 January 2018, European banks follow the approach defined by IFRS 9, according to which, exposures are allocated to three stages depending on their relative credit risk. These stages require different time horizons for the computation of expected credit losses and different basis for interest accrual. Overall, the timelier and fuller recognition of credit losses is expected to bring substantial benefits to financial stability. However, IFRS 9 is not going to be applied with perfect foresight. On the contrary, expected credit loss models would be able to anticipate downturns only shortly before their occurrence. At the onset, a system-wide sizable increase in provisions associated with expected credit losses can be expected, which may have undesired procyclical effects via banks' profits and regulatory capital. The paradigm shift in accounting for credit losses may call for a policy reflection on: i) the importance of supervisory stress tests; ii) a call for simplicity in models; iii) the need for better and harmonised disclosures; iv) the expectations on the use of cyclical capital buffers, and v) the interaction with the current regulatory framework.

1 Introduction

The approach to the accounting treatment of credit losses is of utmost importance for banks, in particular in times of a crisis, given its sizable impact in the profit or loss account and, subsequently, in regulatory capital ratios. For long time, accounting standard setters have been struggling to find the most appropriate approach to the accounting of credit losses, in a way that accurately and faithfully reflects the dynamics of the cycle. The two main approaches are based on the concepts of incurred losses and of expected credit losses. Under the first one, only realised credit losses, on the basis of a realised (or highly likely) default event, are recognised. Expected credit loss approaches, on the contrary, aim at anticipating the credit losses to arise in the future and over which banks have a certain degree of certainty on their occurrence.

Prior to the global financial crisis, the incurred loss approach for the computation of credit losses was introduced, following some criticism made to the existing models at that time, in the sense that they were used by banks to smoothen their profits throughout the cycle [see, among others, Liu and Ryan (2006), and Fonseca and González (2008)]. Under this perspective, banks were arguably using their expected credit loss models in a countercyclical manner, by recognising higher credit losses in good times which they would then not need to recognise in downturns. Incurred loss approaches were introduced to bring these practices to an end, with the requirement to recognise credit losses only when an effective loss event occurred.

However, the global financial crisis brought to the light the limitations of the incurred loss approach, summarised in the sentence "too little, too late". Indeed, the recognition of credit losses was generally lower and less timely than it should have been, with additional evidence suggesting that delay in recognition was positively related to excessive risk-taking [see Vyas (2011), and Huizinga and Laeven (2012)]. In the first weeks of the global financial crisis, while banks should have been recognising significant losses from their credit exposures, they were actually generating profits, which were subsequently distributed to shareholders and managers in the form of dividends and bonuses, respectively.

In the aftermath of the global financial crisis, the G20 required accounting standard setters worldwide to define approaches to recognise credit losses which would be more forward-looking, incorporating more information about the macroeconomic environment, than the prevailing incurred loss approach [see G20 (2009)]. In other words, the G20 was calling for the adoption of expected credit loss approaches for the computation of credit losses.

Afterwards, the world two main accounting standard setters, the International Accounting Standard Board (IASB) and the Financial Accounting Standard Board (FASB), from the US, tried to design a unified approach to the recognition of credit losses. However, in 2014, they saw that they had significant differences and decided to separately meet the mandate given by the G20. These differences refer mainly to the weight traditionally given to prudential arguments in the definition of accounting standards and to the prevailing business models in Europe and in the US.[1] The final standards fulfilling the mandate from the G20 are the ASC 326, issued by the FASB in June 2016, and IFRS 9, issued by the IASB in July 2014.[2] IFRS 9 was incorporated into the EU regulatory framework in November 2016 and became mandatory from 1 January 2018 onwards.

IFRS 9 supersedes IAS 39 and amends it in two fundamental areas: the criteria for the classification and measurement of financial assets and liabilities (which are now more robust), and the introduction of an expected credit loss approach for the computation of credit losses.[3] The second of these amendments have gained particular attention in the last months, with several reports by European regulators [see European Banking Authority (2016a) and (2017b), and European Systemic Risk Board (2017)], banking industry [see Barclays (2017), and BBVA (2017)] and the academic community [see Abad and Suárez (2017), Cohen and Edwards (2017), and Krüger et al. (2018)] discussing the impact of IFRS 9 on European banks.

In the same line, this article discusses the financial stability implications of the expected credit loss approach in IFRS 9. It is organised as follows. The next section describes the approach in IFRS 9, while Section 3 considers its impact from a financial stability perspective, with a particular focus on its cyclical behaviour. Policy responses to that cyclical behaviour are discussed in Section 4. Section 5 concludes.

2 Description of the expected credit loss approach in IFRS 9

On a conceptual basis, the different approaches to accounting for credit losses do not change the total amount of credit losses to be recognised, but, rather on the contrary, affect how these credit losses are recognised over time. That leads to the decisive question on when credit losses should be recognised by banks: when they are expected to occur in the future or when they have effectively occurred. Under the first approach (expected credit losses), even at loan inception, banks can expect future credit losses. However, that enters into opposition with the view according to which, if a loan is priced correctly at inception (via, basically, the interest rate of the loan or the collateral requirements), it

1 The majority of US banks manage their credit exposures under an originate-to-distribute business model, which implies the subsequent sale of the credit exposure to a third party, meaning that the bank no longer holds the exposure. The global financial crisis exposed several weaknesses in this business model [see Purnanandam (2011), and Rosen (2010)], which US authorities tried to address with a number of measures, including the new accounting standard for credit losses.

2 See Pricewaterhouse Coopers (2017) for a description of the differences between IFRS 9 and ASC 326.

3 IFRS 9 also covers accounting for hedging transactions, but, in this case, the change with the previous standard (IAS 39) is deemed to be minor in comparison with those affecting fair value measurement and credit losses (impairment). IFRS 9 gives the option either to continue applying the IAS 39 hedge accounting requirements or to move to the IFRS 9 new requirements; this option does not have "sunset clause" as the discontinuation of IAS 39 accounting requirements is conditional to the finalization by the IASB of its standard setting project on dynamic hedging.

should already reflect the credit risk of the borrower at that moment in time [see Borio and Lowe (2001)].[4] Therefore, the introduction of compulsory loss allowances, based on expected credit losses, could lead to double-counting.

On the other hand, at the moment of granting a loan, there is a significant degree of uncertainty on the soundness of the borrower, which may lead to a mispricing (underestimation or, in principle also possible, overestimation) of credit risk at loan inception. Indeed when granting loans, banks are confronted with an adverse selection problem which has been extensively discussed in the academic literature [see Stiglitz and Weiss (1981), and Bester (1985)]. Typically, banks counteract the possible overstatement by borrowers on their financial soundness by using (credit scoring) models and their expertise, as well as by recurring to external (neutral) sources of information. Besides, competition among banks can also lead to a loan pricing policy which departs from the interest rate and collateral requirements which would be perfectly tailored to the credit risk of the borrower [see, among others, Greenbaum et al. (1989), Sharpe (1990), and Degryse and Ongena (2005)]. Thus, while it is conceptually true that there may be under- and overestimation of credit risk at loan origination, accounting standards for the recognition of credit losses put more emphasis, for prudential reasons, on the latter than on the former.

The definition of three buckets in the expected credit loss approach of IFRS 9 tries to find a balance between the two arguments, by trying not to have a sizable double-counting at initial recognition and, at the same time, acknowledging the limited information on the borrower which banks have at the moment of granting a loan and ensuring the full recognition of losses due to severe deteriorations in (perceived) credit quality relative to the time of origination.

Under IFRS 9, the allocation of credit exposures to the "three stages"[5] is based on the relative credit risk at the reporting date and is briefly described below and in Scheme 1:

- Stage 1. If credit risk has not increased significantly since origination, an entity shall recognise a loss allowance at an amount equal to 12-month expected credit losses. This amount should reflect the estimated lifetime losses derived from events which are possible to occur in the 12 months following the reporting date. Interest revenues are accrued over the gross carrying amount of the exposure.

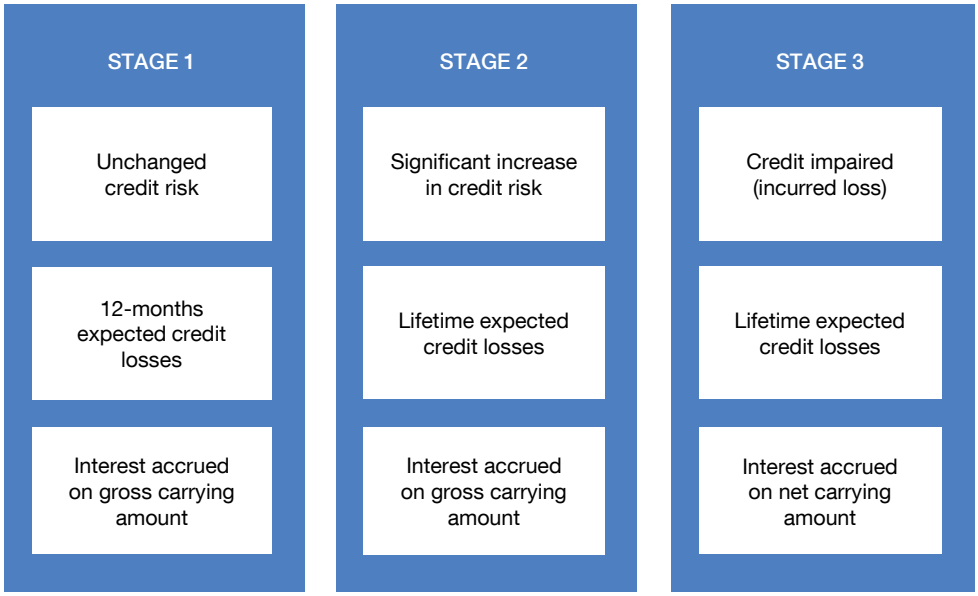
- Stage 2. If credit risk has significantly increased and the exposure is still not defaulted, an entity shall recognise a loss allowance at an amount equal to lifetime expected credit losses. This amount should consider losses from default events which are possible over the life of the exposure until its maturity. Interest revenues are accrued over the gross carrying amount of the exposure.

- Stage 3. If an exposure is identified as credit-impaired, because a default event has already occurred, an entity shall recognise a loss allowance for an amount equal to full lifetime expected credit losses. This stage is equivalent, in broad

4 In broad terms, the interest rate of an individual loan could be decomposed into the risk-free rate and a risk premia, to account for the risks identified in the borrower. Accordingly, credit risk should be incorporated into the risk premia.

5 Together with the general approach that allocates exposures in three credit risk categories (known as "stages", although this term is never used in the standard), IFRS 9 includes also a specific approach for exposures Purchased or Originated Credit-Impaired (so-called POCIs).

THREE-STAGE APPROACH IN THE EXPECTED CREDIT LOSS APPROACH OF IFRS 9 SCHEME 1



SOURCE: Own elaboration.

terms, to the impaired assets under the incurred loss model in IAS 39. Interest revenues are accrued over the (net) carrying amount (that is, the difference between the gross carrying amount and the loss allowance) of the exposure.

Thus, depending on the stage to which an exposure is allocated, credit losses and interest revenues will be calculated differently. A shift from stage 1 to stage 2 implies that the time horizon for the calculation of loss allowances changes from 12 months to full lifetime, while the basis for the accrual of interest revenues remains unchanged. If the exposure moves from stage 2 to stage 3, the time horizon for the calculation of loss allowances does not change, but the basis for the accrual of interest revenues changes from gross carrying amount to net carrying amount. In comparison with stage 2, the expected credit losses to be recognised when an exposure moves to stage 3 will most likely be larger, reflecting the default status of the exposure.[6] Therefore, in those cases where the maturity of a loan exceeds one year, there could be a significant "cliff effect" in the amounts recognised following a significant increase in credit risk. Stemming from the forward-looking nature of the approach, this "cliff effect" is steeper when the exposure is not expected yet to become defaulted but its credit risk has increased significantly since origination. It is important to note that the "cliff effect" from the move from stage 2 to stage 3 is expected to be smaller than the one which arises when applying incurred loss approaches (like that in IAS 39).

For the estimation of expected credit losses, IFRS 9 requires banks to use a broad range of relevant information, including forward-looking macroeconomic variables. To implement these requirements, banks are typically considering several macroeconomic scenarios, which are weighted in terms of their probabilities. The use of macroeconomic variables directly responds to the mandate from the G20 and is one of the main factors to address

6 In stage 3, the expected credit losses of the exposure should be calculated assuming a probability of default equal to 1 (as the exposure has effectively defaulted), while, when computing the expected credit losses in stage 2, it would be assumed that probabilities of default would be lower than 1.

the delayed recognition of credit losses under incurred loss approaches. Indeed, while the incurred loss approach was basically considering past information (for example, missed payments or unemployment of the borrower), the expected credit loss approach in IFRS 9 should lead to an earlier recognition of credit losses, as, typically, missed payments arise after a deterioration in the macroeconomic conditions (for example, an expected rise in the unemployment rate in the region where the borrower is employed).

In those cases where credit risk is not identifiable on individual exposures, IFRS 9 allows for the assessment of credit risk on a collective basis. Credit exposures can be then grouped together based on ratings at inception, collateral type, remaining time to maturity, location of the borrower, sector of the borrower or other relevant factors. Therefore, if a significant increase in credit risk is found, an entity must recognise lifetime expected credit losses on that group of exposures. For the collective estimations, banks typically use a PD/LGD approach in which the expected loss is the product of the exposure at default (EAD), the probability of default (PD) and the loss given default (LGD).

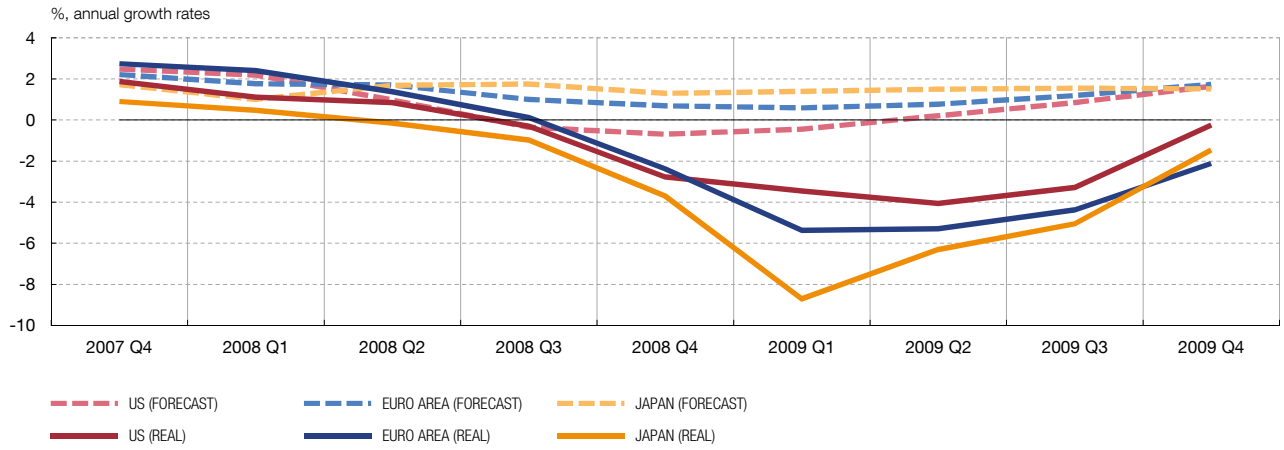
When calculating expected credit losses, IFRS 9 calls for the use of reasonable and supportable information that is available and relevant at the reporting date; including information about past events, current conditions, and forecast of future economic conditions. Historical information shall be adjusted to remove the effect of the conditions that are no longer relevant. These requirements generally result in point-in-time (PIT) estimates of PDs and LGDs. This methodology provides a more faithful representation of the credit risk at a given date, but, on the other hand, given the short-term fluctuations in the relevant aggregate conditions, can lead to some volatility in the final outcome and to excessive sensitivity of credit losses (impairment allowances) to the business cycle. Contrary to the requirement in IFRS 9, the internal-ratings based (IRB) approach for the calculation of the capital requirements for credit risk requires the use of through-the-cycle (TTC) methodologies and downturn LGDs, which are arguably generating a less volatile outcome. In this sense, IFRS 9 intends to produce an unbiased estimation of expected credit losses which can provide useful and faithful information to users of financial statements, while the regulatory requirements take an approach closer to prudential objectives.

3 Assessment of the expected credit loss approach in IFRS 9

In line with the mandate given by the G20 to global accounting standard setters in 2009, the implementation of the expected credit loss approach in IFRS 9 aims at achieving a fuller and timelier recognition of credit losses than under incurred loss approaches. Conceptually, an expected credit loss approach should not increase the total amount of credit losses to be recognised in a downturn, but should change how these losses are distributed over time, tending to recognise a large portion of them at the beginning of the downturn. A delayed recognition of expected credit losses has typically been associated with a negative effect on financial stability [see Laeven and Majnoni (2003), Beatty and Liao (2011), and Bushman and Williams (2015)]. Indeed, macroeconomic variables, which ultimately determine credit losses, start to deteriorate before payments are starting to become due. The period of time between the deterioration in the macroeconomic conditions and the effective missed payments could be used by banks to anticipate their credit losses, enhancing their loss-absorbing capacity in downturns and ensuring a smooth provision of credit to the real economy afterwards.

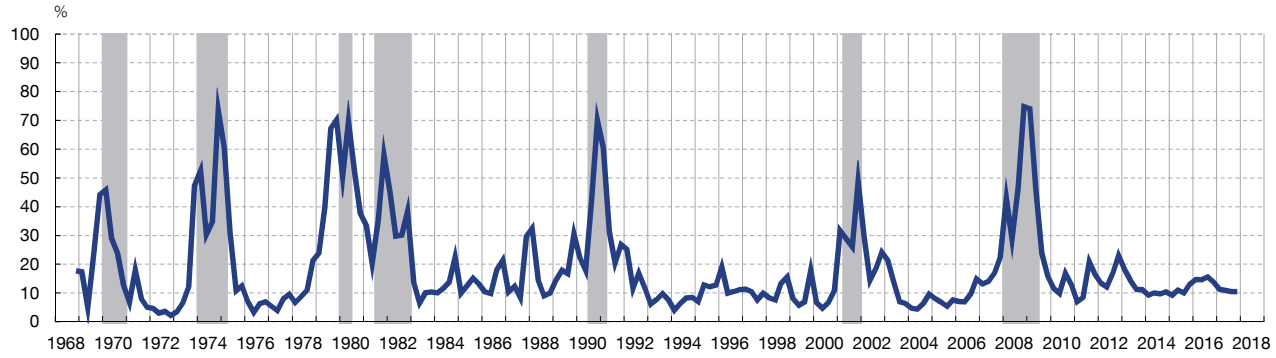
In general terms, the expected credit loss approach in IFRS 9 will likely and substantially improve the timeliness and size of credit loss recognition, bringing important benefits from a financial stability point of view [see European Systemic Risk Board (2017)]. There are,

REAL GDP AND FORECASTS AS OF APRIL 2008 CHART 1



SOURCES: IMF *World Economic Outlook,* European Central Bank and own calculations.

ANXIOUS INDEX CHART 2



SOURCE: Federal Reserve Bank of Philadelphia.
Note: Quarters on which there was a recession in the US are coloured in grey.

nonetheless, some aspects of it which deserve a more detailed discussion from a financial stability perspective. The following subsections are devoted to it.

3.1 ANTICIPATION OF DOWNTURNS AND MODELLING RISKS

One key aspect of the expected credit loss approach in IFRS 9 relates to the ability of banks to anticipate the downturn enough in advance. This will determine how credit losses are effectively distributed over time when the downturn arrives. Here, existing evidence from the recent global financial crisis invites us to be cautious. Indeed, as shown by Chart 1, the macroeconomic projections just at the onset of the global financial crisis (April 2008) of the IMF World Economic Outlook failed substantially to anticipate what was about to come. While a certain deceleration in GDP growth could be anticipated at that time, these projections missed the severity of the global financial crisis which was going to unravel in the following weeks. Forecasts issued by other public and private institutions around the same period also performed poorly. Similarly, Chart 2 shows the evolution of the "anxious index", developed by the Federal Reserve Bank of Philadelphia, which represents the probability attributed by a panel of professional forecasters to a decrease in real GDP in the US. It can be seen how professional forecasters typically start to consider

a recession in their forecasts when the economy is already in a recession, demonstrating a very limited capacity to anticipate downturns. With this in mind, it is necessary to be realistic in what the expected credit loss models can achieve in terms of anticipating downturns and any anticipation beyond 12 months should not be expected, in the most optimistic scenario.

At the same time, existing evidence points to the fact that, in jurisdictions where other expected credit loss approaches have been in place together with incurred loss approaches, banks tend to be already aware of their limited capabilities to anticipate future downturns and, consequently, usually take a very conservative approach in their credit loss estimates. Typically, it means that banks increase provisions in anticipation of future lending growth and maintain voluntary capital buffers to build resilience against future losses [see Cummings and Durrani (2016) for an analysis based on the regulatory and accounting regime for Australian banks]. However, the degree to which this behaviour can be replicated in a situation where both the regulatory and accounting regimes are under expected credit loss approaches remains unknown.

In addition to the limited predictive power of expected credit loss models, they also introduce a degree of modelling risk and complexity. The modelling requirements in IFRS 9 imply the use of several alternative macroeconomic scenarios, which must be weighted depending on the attributed probabilities of materialisation. When such models are implemented over the banking book of banks of a larger size, the number of variables and data points included in them introduces a sizable layer of complexity in the process. Indeed, modelling risk, understood to be the uncertainty about the outcomes of the models under certain extreme conditions, must be closely controlled and monitored by banks and supervisors, to avoid undesirable outcomes at times of financial stress, precisely when their accuracy is more necessary.

Disclosure seems a powerful available tool to mitigate modelling risk and complexity in expected credit loss models. It could be convenient to define a set of harmonised disclosures for the models used by banks for their expected credit loss estimations. This should allow cross-sectional comparisons of the different parameters of their models, disclosing important information to financial market participants. On that basis, some modelling practices could be used as benchmarks and outliers could be identified. In the past, the Enhanced Disclosure Task Force (EDTF) under the aegis of the Financial Stability Board was effective in promoting meaningful disclosures among banks. A similar initiative, either at global or European level, could be mandated with the task of defining disclosures related to expected credit loss models. Rather than adding more pages to (already lengthy and complex) financial statements, these new disclosures should take the form of predefined standardised templates or databases, which should ideally be published in a centralised way.[7]

Additionally and in relation to the complexity of the models used by banks to calculate their expected credit losses, it would be important that competent authorities make a call for simple models, against more complex approaches. That would be particularly relevant for smaller banks, which may not have the appropriate skills to engage in such an intense modelling activity. To support this call for simplicity, academic evidence points to the fact

7 For example, by a central warehouse, managed by either a global or European institution, or a banking association.

that complex approaches do not typically outperform simpler solutions [see, among others, Estrella and Mishkin (1998)].

3.2 THE CYCLICAL BEHAVIOUR OF THE EXPECTED CREDIT LOSS APPROACH IN IFRS 9

When assessing the expected credit loss approach in IFRS 9 from a financial stability perspective, a crucial aspect refers to its potential procyclical behaviour. The following paragraphs will discuss the possible procyclical behaviour of IFRS 9 derived from the increase in stage 3 exposures in a downturn, the transfer of exposures from stage 1 to stage 2, and the use of PDs and LGDs in expected credit loss models. However, before entering into further details, it is worth to take a step backwards and to reflect on the concept of procyclicality and its relation with credit losses.

In this regard, a first question to be answered relates to the definition of procyclicality. An initial attempt would refer to the fact that some variables move together with the cycle, standing in clear opposition to countercyclical variables, which move in the opposite direction. Therefore, the following could be a valid definition of procyclicality: "[…] strictly speaking, procyclicality refers to the tendency of financial variables to fluctuate around a trend during the economic cycle […]" [see Landau (2009)]. It is, nonetheless, possible to go a bit further and consider that the concept of procyclicality incorporates an amplification of the cyclical movements, in the sense that procyclical variables somehow exceed and reinforce the cycle. Defining procyclicality like "[…] the mutually reinforcing ("positive feedback") mechanisms through which the financial system can amplify business fluctuations and possibly cause or exacerbate financial instability […]" [see Financial Stability Forum (2008)] would then be more accurate.

Second, it is necessary to consider whether procyclicality per se is harmful for financial stability. Here, it can be argued that procyclicality becomes a concern from a financial stability point of view if it is created within the financial system and does not reflect the dynamics of the real economy [see Landau (2009)]. So, it can be taken from this statement that procyclicality *per se* is not always detrimental for financial stability. Indeed, looking beyond expected credit loss models, many variables in the real economy show a significant degree of procyclicality and that is assumed to be intrinsic to its nature (for example, sales of luxury cars).

Going back to credit losses, it has been well documented in the existing literature that there is a direct relation between the evolution of an economy over the cycle (measured typically through the gross domestic product) and credit losses (measured as non-performing loans) [see Beck et al. (2013) for a recent contribution to the topic]. Therefore, by its own nature, there will be always some procyclical behaviour of credit losses, as they would be higher in downturns and lower in upturns. The fact that the expected credit loss approach in IFRS 9 produces procyclical credit losses should not be regarded as a negative feature of the standard itself, insofar procyclicality follows the evolution of the real economy. A more serious concern arises if the recognition of credit losses emerging from the application of IFRS 9 contributes (in isolation or in combination with other factors) to increase the cyclicality of the real economy.

Conceptually, under the expected credit loss approach in IFRS 9, the increase in credit losses at the onset of a downturn would stem from two sources. The first one would be closely linked to the evolution of the cycle and would likely be reflected in a significant increase in stage 3 exposures during downturns and in the variations in expected credit losses in normal times. In this case, the accounting standard would just reflect the evolution of the real economy, so procyclicality should not be the fundamental source of concern for

policymakers. The second one would imply the transfer of exposures from stage 1 to stage 2 ("cliff effect"), when banks consider that there has been a significant increase in credit risk, and could generate some undesired procyclicality if that transfer, in broad terms, occurs immediately before the onset of the financial crisis (in other words, if expected credit losses are not sufficiently anticipated).[8] These two factors (anticipation of the downturn and trigger for significant increase in credit risk) would determine the size and likelihood of the "cliff effect". While it could be argued that the concept of "significant increase in credit risk" is closely related to the real economy, there are, at least, two reasons which would justify these concerns from a financial stability perspective:

- As stated above, the capabilities of expected credit loss models to anticipate downturns should not be overstated, given the evidence from the recent global financial crisis. So, banks will most likely recognise a significant increase in credit risk very close to the real onset of the downturn and the amount of credit losses which can be effectively anticipated would then be limited.

- Second, IFRS 9 provides banks with substantial discretion in the definition of triggers for a significant increase in credit risk and they may be confronted with misaligned incentives in this area. Given the negative consequences that the recognition of a significant increase in credit risk may have, in the short-term, for the profitability, capital position, share price and, ultimately, market value of a bank, management may be incentivised to define a high threshold in order to delay as much as possible this outcome (that would be similar to the evidence found by Laeven and Majnoni (2003) on the delayed recognition of impairment losses by banks).

Therefore, due to the lack of either forecasting capacity or incentives by banks, the majority of the exposures would be reclassified to stage 2 at the onset of the downturn. The "cliff effect" would also be affected by two important variables determining the credit portfolio of banks.

The first of these variables is the maturity of credit exposures. In the extreme case of credit exposures with a maturity of one year or below, there will not be any "cliff effect", since the lifetime expected credit losses will be the same as the 12-months expected credit losses. For longer maturities, the "cliff effect" is expected to be larger, reaching the extreme case of, for example, mortgages which typically have exposures over 20 years and which should go through several cycles in their lifetime. A substantial modification of the maturity of loans to avoid the potential costs of the "cliff effect" seems rather unlikely, as the long-term financing of investment projects is at the core of banking business models. However, it cannot be excluded that banks adjust marginally the maturity of the loans they grant (in particular, corporate loans) or the pricing of loans with longer maturities, with the potential to increase refinancing risks among non-financial corporations.

Secondly, some sectors are more closely affected than others during downturns, being real estate a landmark example in this area [see Berman and Pfleeger (1997) for a comprehensive discussion]. In this case, banks with borrowers in the sectors more sensitive to the cycle would be more affected than banks with borrowers in

8 Actually, estimates of the future evolution of the macroeconomic variables included in the expected credit loss models of banks will imply a certain degree of variability and procyclicality, even if there is not a transfer of exposures from stage 1 to stage 2 [see Abad and Suárez (2017) and Chae et al. (2018)].

other sectors, as the former group of banks would witness a widespread deterioration of credit quality in their portfolios as the cycle also deteriorates. On the other hand, one benefit of the introduction of the expected credit loss model in IFRS 9 is that, in principle, it will make banks more aware of credit risk in their portfolios, avoiding concentration of exposures on sectors which may perform unfavourably in a downturn.

Last but not least, procyclicality in the expected credit loss models according to IFRS 9 may also arise from the use of PIT PDs and neutral LGDs. The definition of these parameters in these terms ensures that they reflect as accurately as possible the evolution of the real economy, but they could also have undesired procyclical effects. That would be the case, for example, of a sizable recalibration of PDs as a result of an unexpected change in the macroeconomic environment, which would affect all credit exposures in the balance sheet of banks. In this particular case and following the practical implementation of expected credit loss models by European banks, it is important to first gather information on how relevant the use of PIT PDs and neutral LGDs is in terms of procyclical behaviour of expected credit loss models.

3.3 REACTION FUNCTION OF BANKS AT THE ONSET OF A DOWNTURN

In a situation where the expected credit loss model of an individual bank, in isolation, is not able to predict sufficiently in advance the downturn and that bank suffers a significant deterioration of its capital position derived from the credit losses it must recognise at the onset of a downturn, voluntary capital buffers would be the first line of defence against that deterioration. When they are not enough, the capital conservation buffer should, in principle, be able to absorb the amount of these losses, without hampering the provision of credit to the real economy. In these circumstances, there would be limitations to the distribution of dividends and bonuses, but the bank would continue to remain compliant with regulatory capital requirements and to function on a going concern basis. However, this does not automatically imply that, in these circumstances, the provision of credit to the real economy is not impaired.

In practice, the impact of the deterioration of the capital position of many banks can be more harmful for financial stability. First, banks may decide to contract credit to the real economy as a way to compensate the recognised credit losses, in an attempt to maintain stable their regulatory capital ratios. Indeed, it has been widely documented in the academic literature that typically banks react to capital pressures with a reduction on assets and new lending [see, among others, Berger and Udell (1994), Peek and Rosengren (1997), and Mésonnier and Monks (2015)]. Furthermore, at the onset of a downturn, this phenomenon is expected to affect not only an individual bank, but rather the majority of banks, with different degrees of severity, in an economy. Such scenario could create a feedback loop reinforcing the downturn, as the provision of credit to the real economy would be partially interrupted by banks ailing to maintain their capital positions, having thus a detrimental effect on financial stability.

Even a scenario where banks decide to consume their capital conservation buffer would also require some consideration from a financial stability point of view. The impact of a simultaneous absorption of the capital conservation buffer by a significant part of the banking system of an economy would, surely, negatively affect other parts of the financial system and financial stability, in general. In these circumstances, contagion to other parts of the financial system or to other countries should not be excluded.

The negative consequences of the widespread recognition of credit losses at the onset of a downturn would grant some reflection from a macroprudential angle. The next section will discuss possible policy measures to avoid such undesired outcome.

4 Discussion of policy responses to the procyclicality of the expected credit loss approach in IFRS 9

If not properly anticipated in pricing and previous reclassifications to stage 2, at the onset of a downturn, a material part of the credit portfolio of banks could be expected to shift from stage 1 to stage 2, increasing significantly the amount of credit losses to be recognised. These losses would add to those derived from the recognition of certain credit exposures as non-performing (or defaulted), under stage 3, which would just follow the evolution of the cycle in the real economy. Hence, at the beginning of a downturn, there would be a sizable increase of credit losses, with the possible effect of putting into question the capital position of banks.

Among the range of available alternatives, when considering a policy response to that scenario, policymakers can decide to approach the issue by either (i) attenuating the impact of the credit losses on the capital position of banks, or (ii) requiring banks to hold additional capital buffers during good times, which they can then use to compensate for the credit losses when the cycle goes downwards. This decision by policymakers will define the most appropriate measures to be put in place. The following paragraphs will discuss in further detail each alternative.

4.1 ATTENUATING THE IMPACT OF CREDIT LOSSES ON CAPITAL

Policymakers can consider that they would like to ensure the flow of credit to the real economy, even at the onset of a downturn. One way of achieving this is by attenuating the impact of the credit losses derived from the expected credit loss approaches in IFRS 9 on the regulatory capital, through prudential adjustments.

Typically, prudential regulators have defined prudential adjustments when they have considered that the treatment of certain items in the accounting realm was not fully compatible with the prudential objectives of prudential regulation. These are adjustments where the microprudential authorities introduce a conservative bias in terms of the impact of certain items on the regulatory capital position of banks. The most prominent example is provided by fair value gains and losses, which until recently were recognised in the profit and loss account of banks but were filtered out in the computation of the capital requirements [see European Banking Authority (2013)]. Cash flow hedging is an example of the items currently subject to prudential adjustments. At the conceptual level, nonetheless, a prudential adjustment to address the cyclical behaviour of the expected credit loss approach in IFRS 9 could be perceived as less conservative than existing prudential adjustments, since it would imply a "relaxation" of the capital requirements in a downturn. From a macroprudential perspective, though, such adjustment would be conservative as it would be aimed at avoiding a contraction of credit to the real economy (a typical objective in macroprudential policy).

In the current regulatory framework, prudential adjustments have been defined to address the differences between the accounting (calculated under IFRS 9 as of 1 January 2018) and the regulatory provisions (calculated according to the framework by the Basel Committee on Banking Supervision). Regarding regulatory provisions, for banks following Standardised Approaches, general provisions are not considered when computing the amount of the exposure to which standardised risk weights will be applied, but specific provisions are. General provisions can be later added back as Tier 2 capital, with a limit of 1.25% of the credit risk-weighted assets of the bank. In this case, the relevant question to answer is whether IFRS 9 impairments can qualify

COMPARISON OF EXPECTED CREDIT LOSS APPROACHES IN IFRS 9 AND IN PRUDENTIAL REGULATION TABLE 1

	Internal Ratings-Based Approach (BCBS)	IFRS 9 (IASB)
Lifetime vs 12 month	Rating system and associated PDs are based on a 12 month horizon	Stage 1 allowances are based on a 12 month horizon. Stage 2 and stage 3 allowances are based on lifetime expected losses
Point-in-time (PIT) vs Through-the-cycle (TTC)	Models are generally developed using an hybrid approach (considering cyclical and non-cyclical variables) which determines the rating. Ratings are then calibrated to a PD which may be somewhere between PIT and TTC	Expected losses should reflect current conditions: it requires a PIT adjustment
Floor	The regulatory PD has a floor at 0.03% for all exposures except sovereign counterparties	No floor on the PD
LGDs	Conservative estimate (downturn LGD)	Unbiased, PIT estimate
Frequency of estimates	Annual	Continuous basis (at least, every time financial statements are prepared)

SOURCE: European Systemic Risk Board (2017).

as generic provisions or are always considered as specific provisions [see European Banking Authority (2017a), stating that all IFRS 9 provisions shall be considered specific]. The Internal-Ratings Based (IRB) approach already envisages an expected credit loss model for the computation of credit losses, although different to that defined in IFRS 9 (see Table 1 for a summarised description of the main differences). In the case of the regulatory regime, credit losses are computed always over a 12 month horizon, PDs are partially computed TTC and LGDs are defined with a negative bias (downturn LGDs). Differences between the accounting and the regulatory provisions are treated asymmetrically, in the sense that, when the regulatory provisions are larger than the accounting provisions, the shortfall is deducted from CET 1 capital, while, when regulatory provisions are lower than accounting provisions, banks can add back the excess accounting provisions as Tier 2 capital, with a limit of 0.6% of credit risk-weighted assets.

In the case of IRB approaches, a theoretical comparison between the accounting and the regulatory regime may provide interesting insights. In normal times, when most of exposures should be allocated to stage 1 in the expected credit loss model of IFRS 9, regulatory provisions are expected to be larger than accounting provisions, on the basis of the higher regulatory LGDs (downturn in opposition to unbiased) and higher PDs (TTC PDs should be higher than PIT PDs in that phase of the cycle). Therefore, banks would recognise a deduction in their CET1 capital on this basis. On the contrary, when the cycle turns downwards and many exposures are allocated to stages 2 and 3 in expected credit loss models, accounting provisions would exceed regulatory provisions (expected credit losses would be calculated over a full lifetime horizon and PIT PDs should, in this phase of the cycle, be larger than TTC PDs). Consequently, at this stage, the difference between accounting and regulatory provisions would be added back to Tier 2 capital.

Against this background, policymakers could consider the amendment of the existing prudential adjustments to adjust to the paradigm shift in the accounting realm. Indeed, the current prudential regime was defined at a time when accounting standards were mainly using incurred loss models for the recognition of credit losses. That would be particularly the case of the regime for the Standardised Approach, which may require a considerable

revision [see Basel Committee on Banking Supervision (2016) and European Systemic Risk Board (2017)].

Nonetheless, while, in principle, the amendment of the existing prudential adjustments to attenuate the impact of credit losses on regulatory capital at the onset of a downturn may seem an adequate policy response, there are two important reasons which would advise against it.

First and foremost, the filtering of credit losses in the capital position of banks could be perceived as a weakening of the mandate given by the G20 in the aftermath of the global financial crisis, leading ultimately to the recognition of credit losses "too little, too late", as in the past. Indeed, such prudential adjustments could, at the extreme, insulate the capital position of banks from credit losses, sending a misleading signal to financial market participants and to the public opinion at large.

Even if this strong argument did not deter policymakers for pursuing this avenue of work, a second reason calling for not implementing prudential adjustments would be complexity. There are already many voices stating that there is too much complexity in the banking system and, in particular, in banking regulation [see, among others, Haldane and Madouros (2012)]. In that context, defining a prudential adjustment which is not perceived as circumventing the mandate given by the G20 and which takes into account the particularities of the credit portfolio of banks is likely to lead to a solution of increased complexity. On a related topic, the recently approved transitory arrangements for IFRS 9 provide an illustrative example in this regard [see Council of the EU (2017)]. Despite the call for simplicity by, among others, the European Banking Authority [see European Banking Authority (2017a)], the final text of the amendment in the Capital Requirement Regulation (CRR) is really complex and many market participants predict that, in practice, banks will ignore them in favour of a direct absorption of the expected credit losses in IFRS 9 (similarly to what happened with the transitory arrangements of Basel III). To sum up, the definition of permanent prudential adjustments needed to reduce the procyclical effects of the expected credit loss approach in IFRS 9 might be particularly difficult and cumbersome, increasing the complexity already inherent in the expected credit loss approach of IFRS 9.

4.2 INCREASING RESILIENCE OF BANKS

As an alternative to the attenuation of the procyclical capital impact of the impairment losses stemming from the expected credit loss approach, policymakers can decide to strengthen the capital of banks in good times, in order to prepare them for the substantial hit they will get at the onset of the next downturn. In this case, policymakers know that they cannot avoid the impact on the capital position of banks and simply prepare banks in advance, so that they can absorb that impact when it occurs. The nature of this policy would be countercyclical: calling for a strengthening of the capital ratios of banks in good times and accepting a decrease in capital ratios in periods of crisis.

In this sense, supervisory stress tests become important tools for micro and macroprudential authorities, as they allow them to assess the level of capitalisation of the banking sector and how it could absorb the related credit losses created in a hypothetical downturn. On the basis of the results of the supervisory stress tests, prudential authorities could consider individual or system-wide increases of the regulatory capital requirements of banks. To that end, ensuring a faithful and rigorous implementation of supervisory stress tests, including the definition of adverse scenarios, is of the utmost importance.

Among the new capital buffers introduced in Basel III, two of them are particularly relevant for these purposes: the countercyclical capital buffer (CCyB) and the capital conservation buffer (CCB) [see European Banking Authority (2016b) for a detailed discussion on them].

Indeed, policymakers (macroprudential authorities in this case) could decide to actively use the CCyB, ensuring that banks build enough buffers to help them absorb losses without impairing the provision of credit to the real economy, when the downturn arises and the regulatory buffer is released. While the primary objective of the CCyB is to protect the banking sector against the consequences of excessive credit growth, it is acknowledged that, in downturns, the release of the CCyB should help to reduce the risk that the supply of credit is negatively affected by regulatory capital requirements, a fact which could ultimately hamper the real economy.

The current framework for the CCyB gives a prominent role to the credit-to-GDP gap for the activation and release of this tool [see Basel Committee on Banking Supervision (2010)], but, at least, in the EU, allows for the consideration of other variables [see European Systemic Risk Board, 2014]. In this respect, recent decisions by macroprudential authorities in the United Kingdom, Lithuania and Denmark to build up the buffer above 0%, even when the credit-to-GDP gap remains negative, may hint at a certain shift in the approach by macroprudential authorities towards the CCyB [see Financial Policy Committee (2016), Lietuvos Bankas (2017) and Danmarks Nationalbank (2017)]. In addition to some statistical undesired properties of the credit-to-GDP gap [see, among others, Lang and Welz (2016)], some macroprudential authorities want to have the possibility to release a capital buffer in case a downturn comes unexpectedly and, consequently, have started to require the build-up of the CCyB before getting a signal from the credit-to-GDP gap in that direction.

In what regards the CCB, this is a capital buffer which is fixed at 2.5% of Common Equity Tier 1 capital and which breach introduces limitations to the distribution of dividends and bonuses, while keeping the bank as a going concern. Differently to the CCyB (which applies to all banks in a country and is under the control of the macroprudential authority in that country), the CCB works as an "automatic stabiliser" in the sense that it does not need a formal decision by any prudential authority for its release. It should then act as a first line of defence in case of significant erosion of the capital position of banks. In the context of the expected credit loss approach in IFRS 9, at the onset of a downturn, it is expected that several banks would simultaneously see a material deterioration of their CCB [see, for example, the results of the model by Abad and Suárez (2017)]. To avoid that banks cut lending rather than to breach their CCB (an action for which the management of a bank does not have any incentive), it is of the essence that microprudential supervisors make clear their expectation in what concerns the nature of the CCB and how it should evolve along the cycle. At the present moment, there is a widespread view in the financial markets that capital buffers constitute hard capital, putting pressure on banks not to release them (in line with the so-called "regulatory paradox").[9] That goes against the very nature of the CCB, which is precisely defined with the primary objective of being released in downturns, when banks realise substantial losses, allowing them to continue as a going concern and ensuring the provision of credit to the real economy.

9 The paradox has often been attributed to British economist Charles Goodhart: "The weary traveller who arrives at the railway station late at night, and, to his delight, sees a taxi there who could take him to his distant destination. He hails the taxi, but the taxi driver replies that he cannot take him, since local bylaws require that there must always be one taxi standing ready at the station".

5 Conclusions

The global financial crisis unveiled the limitations of incurred loss approaches for the recognition of bank credit losses. Following the mandate from the G20, there has been a move, on a global scale, to expected credit loss approaches, which are likely going to lead to an earlier recognition of credit losses in downturns. Since 1 January 2018, IFRS 9 defines the expected credit loss model which European banks must follow in the recognition of credit losses.

While the move from incurred loss approaches to expected credit loss approaches brings substantial benefits from a financial stability point of view (derived from the timelier and fuller recognition of credit losses), several aspects of the expected credit loss approaches could have a sizable effect on financial stability and, thus, would call for the consideration of policy options in the prudential area. The paradigm shift in the accounting domain should ideally lead to a reflection on the regulatory and prudential domain.

Under perfect foresight of future macroeconomic conditions, it is clear that the recognition of credit losses under IFRS 9 would occur in a less cyclical manner than in the past. However, the capability of any model to forecast future macroeconomic developments was severely put into question in the global financial crisis. This may explain, at least partially, for example, the reconsideration of the use of models for regulatory capital requirements (with the introduction of output floors or the compulsory treatment of certain exposures under the standardised approach).

Therefore, policymakers should consider that IFRS 9 is not going to be applied in a world of perfect foresight, but, rather on the contrary, that expected credit loss models will be able to anticipate downturns only shortly before their occurrence. At the onset, there would be a significant increase in credit losses, which is expected to have negative effects on the profit and loss account of banks and, subsequently, on their regulatory capital position. In turn, banks may react, on a collective way, to this negative impact on their regulatory capital by reducing lending, since they may not be able to raise fresh capital at that moment, when they are in a downturn, and they may not be willing to release their CCB. This situation would justify the attention of macroprudential authorities, if macroprudential policy is conceptualised as "an effort to control the social costs associated with excessive balance sheet shrinkage on the part of multiple financial institutions hit with a common shock" [see Hanson et al. (2011)].

This undesired procyclicality may be attenuated by a robust implementation of the expected credit loss model in IFRS 9. In particular, high thresholds for a significant increase in credit risk, which would enlarge the "cliff effect" when exposures move from stage 1 to stage 2 should be avoided.[10]

In this regard, supervisory stress tests, if rigorously implemented, should provide important insights to micro and macroprudential authorities in their assessment of the level of capitalisation of the banking system and how banks would be able to absorb the credit losses emerging in a downturn, accounted for under the expected credit loss approach in IFRS 9. Moreover, it may seem necessary from a financial stability point of view to implement policies oriented towards increasing resilience of banks, via, for example, setting a CCyB above 0% in normal times, and clarifying that cyclical capital buffers (CCyB but also CCB) are expected to be released when the cyclical evolution of the economy

10 In extreme circumstances, this would entail a direct transfer from stage 1 to stage 3, since stage 2 exposures would be very near to stage 3 exposures.

requires so and the CCB is expected to be consumed, at least partly, in response to potentially negative profits. At the same time, there should be a call for simplicity in the models and the enhancement and harmonisation of the information disclosed by banks to the public, as a mean to promote market discipline and benchmarking of modelling practices across the EU banking system.

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