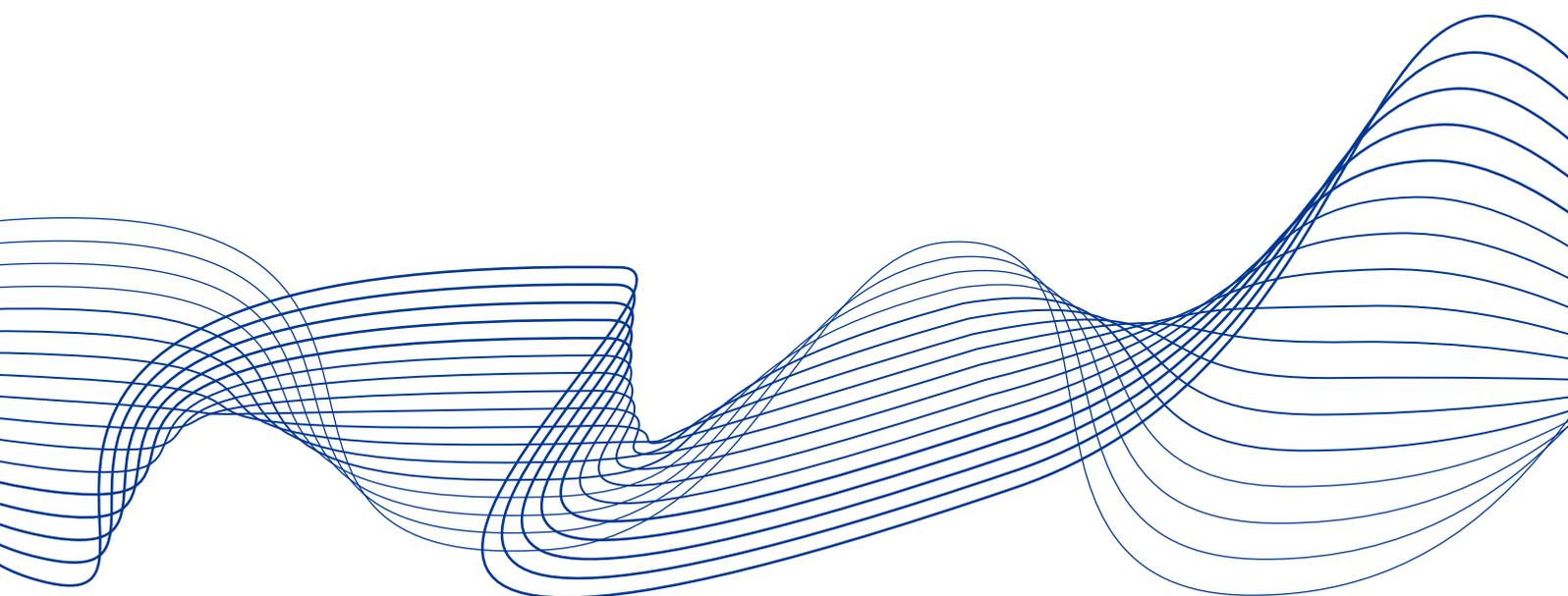


The cyclical behaviour of the ECL model in IFRS 9

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Executive summary

In the aftermath of the global financial crisis, as a response to the “too little, too late” criticism of the incurred loss approach in impairment models, leaders of the G20 urged accounting standard setters to consider alternative approaches which would take into account more credit and macroeconomic information and which would have a more forward-looking nature. Consequently, in 2014, the International Accounting Standards Board (IASB) issued International Financial Reporting Standard (IFRS) 9, which includes an expected credit loss (ECL) model for the impairment of financial assets. IFRS 9 came into force on 1 January 2018.

In July 2017, the ESRB published a report on the financial stability implications of IFRS 9 in response to a request from the European Parliament.¹ The report argued that, while IFRS 9 is expected to be beneficial for financial stability (in particular when compared with the former incurred loss model in IAS 39), it “could have certain procyclical effects derived from the cyclical sensitivity of the credit risk parameters used for the estimation of ECLs and from the shifts of exposures between stages”. Recognising that it was still too early to gauge the extent of such effects, the ESRB report nevertheless referenced potential policy actions which could be adopted to mitigate possible undesired effects of the ECL model in IFRS 9. This report continues the work initiated in 2017 and further discusses concerns about procyclicality from the ECL model in IFRS 9, including the possible sources of procyclicality and its relevance from a financial stability perspective. The report also incorporates information recently available on the implementation of IFRS 9 by EU banks.

This report should by no means be interpreted as opening a debate about the adoption of IFRS 9 in the EU, the amendment of IFRS 9 or the counteraction of its effects. Banks have been applying IFRS 9 only since the beginning of 2018, and a full assessment of its functioning and potential effects on banks' behaviour and, in turn, on financial stability requires time, evidence and reliable data. As banks gain experience of provisioning according to IFRS 9, further work needs to be done. In this regard, given the limited experience with IFRS 9 to date, this report focuses on describing those aspects of the ECL model under IFRS 9 that could potentially contribute to procyclical bank behaviour, and the conditions under which such behaviour would be more likely to arise. We focus on the impact at the onset of a downturn because it is a crucial time for the exacerbation of the depth and duration of a financial crisis.

This descriptive work has been complemented with a review of recent academic literature on this topic, bearing in mind, however, that the existing academic literature is still in its infancy and is also affected by a lack of historical data and the difficulties of considering many interactive dimensions in a comprehensive model. Nonetheless, academic and industry studies have attempted to quantify the impact of ECL models on the regulatory capital of banks at the onset of a downturn or a financial crisis and have concluded that this impact may be significant under certain assumptions, especially those related to the degree of foresight embedded in ECL models.² In addition, initial

¹ See European Systemic Risk Board (2017).

² It should be noted that none of the existing simulations attempt to model how banks may alter their capital management practices or lending behaviours under IFRS 9. These behavioural effects will need to be closely monitored going forward to help in determining the need for, and types of, policy measures.



data on IFRS 9 and insights from market participants have been considered in the report, although this information is still preliminary and may change as banks improve the way they implement the requirements of IFRS 9.

A certain degree of cyclicality in the area of banks' credit losses is unavoidable, owing to fundamental difficulties in accurately predicting economic fluctuations. In addition, banks' balance sheet management practices are inherently cyclical (see, for example, Anthanosoglou et al., 2014) and linked with financial stability more broadly. Whether IFRS 9 makes such practices more or less procyclical and the links to procyclicality more pronounced is still open to question. Actually, the cyclical behaviour of the forward-looking ECL model is meant not only to reflect the evolution of the real economy, as happened under incurred loss accounting, but to anticipate a significant proportion of the losses in advance, contributing to a smoothing of the business cycle. Once the expected credit losses have been anticipated, it will not be necessary to recognise them anew when default events occur, as was the case under the incurred loss approach in IAS 39. Data from the European Banking Authority (EBA) stress test tend to confirm the earlier recognition of credit losses under the ECL approach in IFRS 9.³ However, a number of caveats and limitations need to be borne in mind when using this dataset, since it is designed according to particular specifications to serve the purpose of a specific exercise.

Nonetheless, the descriptive analysis suggests that the following three factors are important in shaping the cyclical behaviour of the ECL approach in IFRS 9 and, as such, may warrant closer consideration going forward: (i) the principles-based nature of IFRS 9, with particular reference to the conditions and criteria that trigger the transfer of exposures from stage 1 (12 month expectation) to stage 2 (lifetime expectation) and further into stage 3, which, in turn, could facilitate a delay in loss recognition;⁴ (ii) the ability of and incentives for banks to promptly incorporate into their ECL models all new information available on the expected trend of the economic cycle and to recognise losses in a timely manner under IFRS 9 (if recognition of credit losses is delayed because of inadequate modelling or improper incentives); and (iii) that the use of point-in-time (PIT) estimates for expected credit losses should generate more volatile outcomes than through-the-cycle (TTC) estimates, although that volatility should not be judged as negative per se and becomes less relevant if a bank has anticipated the downturn.

The transfer of exposures from stage 1 to stage 2 is of particular importance since it entails a shift in the time horizon covered by the ECL models (from 12 months in stage 1 to lifetime in stage 2). That transfer could lead to a "cliff effect"⁵ in loan loss provisions, whose amplitude would largely depend on the degree of anticipation of the downturn by ECL models. An absence of obstacles that inhibit an adequate incorporation of forward-looking information and an effective implementation of the trigger for a significant increase in credit risk would help to mitigate such a cliff effect and risk of procyclicality. Other factors which influence this cliff effect include the remaining maturity of the

³ The analysis carried out using stress test data has the sole purpose of illustrating the behaviour of ECL models in a stressed environment and should not be seen as re-interpreting or calling into question the whole EBA exercise or its conclusions.

⁴ The previous incurred loss model and academic research demonstrate that a delayed recognition of credit losses has implications for procyclical behaviour and financial stability.

⁵ The cliff effect would be generated in the transfer of exposures from stage 1 to stage 2, as the time horizon to be taken into account in the computation of expected credit losses changes from 12 months to the full lifetime of the exposure.



exposures, the degree of exposure to borrowers sensitive to the cycle, and possible management incentives to smooth earnings. In theory, obstacles such as management incentives, a lack of sufficient loss data on the cyclical sensitivity of certain asset classes, and management biases that overweight more recent economic conditions in ECL models, could contribute to a delayed transfer of exposures from stage 1 to stage 2 (or even stage 3) and certain procyclical effects. This report highlights these obstacles and what they imply for procyclicality.

Such implications are most readily understood in situations where banks do not anticipate a downturn sufficiently far in advance, coupled with “high” (i.e. less conservative) thresholds for a significant increase in credit risk. These situations are expected to produce more pronounced cliff effects under already deteriorated economic conditions, which raises concerns about procyclical effects. In this situation, a substantial increase in expected credit losses would occur when already entering the downturn, which, in turn, could exacerbate the negative evolution of the business cycle and become a concern from a financial stability point of view. The implications for financial stability will depend on (i) the extent to which IFRS 9 banks, as a collective group, anticipate downturns sufficiently far in advance to allow them to adapt without cutting the supply of lending and other critical services to the economy; (ii) the incentives for banks to already recognise increased credit losses in good times; and (iii) the availability of other credit suppliers to readily step in and fill a potential gap in credit supply.

While the intended consequence of ECL models is a more timely recognition of credit losses, understanding any unintended consequences⁶ of the ECL framework, and discussing possible policy actions, remains of interest for financial stability reasons. In this respect the following conclusions can be drawn:

1. A substantial degree of uncertainty exists regarding the cyclical behaviour of the ECL model in IFRS 9 and its impact on banks' behaviour. This implies that further analysis is necessary before it can be concluded that a policy intervention is needed to avoid unintended consequences from IFRS 9.
2. Stress tests and targeted and harmonised disclosures are effective tools to improve the understanding of the cyclical behaviour of the ECL model in IFRS 9 and its impact on banks' behaviour.
3. The implementation of IFRS 9 by banks may raise concerns from a financial stability perspective should it lead to suboptimal outcomes. Suboptimal outcomes might result if, for example, excessive weight is attributed to the baseline macroeconomic scenario or there is excessive homogenisation of these outcomes.

Since it is acknowledged that IFRS 9 will be applied in a world of imperfect foresight, it will be important that regulatory and supervisory authorities evaluate whether banks have applied the new accounting standards appropriately and whether there are issues that may delay loss recognition or make it less timely over the cycle. Possible areas of analysis include the extent to which factors like data, incentives, technology, and management and modelling biases influence the efficacy of

⁶ Any reference made in the report to “unintended consequences” is to be interpreted in the context of the prudential realm and does not refer to considerations by accounting standard setters.



banks' criteria for determining a significant increase in credit risk and the timeliness of loss provisioning. The aim would be to avoid undesirable consequences, especially where such factors are prevalent across the banking system.

Keywords: expected credit losses, IFRS 9, financial stability, procyclicality.

JEL codes: G21, M41, G28.



1 Introduction

In the aftermath of the global financial crisis, leaders of the G20 urged accounting standard setters to reconsider impairment models with alternative approaches which would take into account more credit and macroeconomic information and which would have a more forward-looking nature. In 2014, following the mandate given by the G20, the International Accounting Standards Board (IASB) issued IFRS 9, which includes an expected credit loss (ECL) model for the impairment of financial assets. IFRS 9 is mandatory and applicable in the EU for the financial statements of EU listed reporting entities at consolidated level starting from 1 January 2018.⁷

In July 2017, the ESRB published a report on the financial stability implications of IFRS 9 in response to a request from the European Parliament. The report described the ECL model in IFRS 9 and provided a mostly qualitative assessment of its potential impact on financial stability. The report argued that, while IFRS 9 is expected to be beneficial for financial stability through “the enhancement of transparency and the earlier and fuller recognition of impairment losses” (in particular when compared with the former incurred loss model in IAS 39), it “could have certain procyclical effects derived from the cyclical sensitivity of the credit risk parameters used for the estimation of ECLs and from the shifts of exposures between stages”. Recognising that it was still too early to gauge the extent of such effects, the report nevertheless referenced several potential policy actions which could be adopted to mitigate possible undesired effects of the ECL model in IFRS 9. It also acknowledged that work to understand and establish evidence on these effects – and, therefore, the benefits of the proposed policy responses – will be an ongoing process as IFRS 9 becomes more fully embedded over the next several years.

This report continues the discussion on the potential cyclical behaviour of the ECL model in IFRS 9 in the context of the available existing evidence as a further step towards assessing possible threats to financial stability and the need for policy intervention. Starting from the ESRB report of July 2017, Section 2 contains a qualitative discussion on the cyclical behaviour of the ECL model in IFRS 9, with particular emphasis on the transfer of exposures across stages, the use of PIT estimates and the forecasting power and modelling risk of ECL models. Section 3 summarises insights from EBA stress test data and from market participants, putting them in the context of the qualitative discussion in Section 2. Possible policy actions by regulators and supervisors on the implementation of IFRS 9 are considered in Section 4, while the conclusions of the report are set out in Section 5. The annex provides an overview of the process for issuing and endorsing IFRS in the EU.

Banks have only just started applying IFRS 9, and an assessment of its functioning and potential effects on banks’ behaviour and, in turn, on financial stability will require time, evidence and reliable data. As stated in the ESRB report of July 2017, if the downturn and/or its implications can be anticipated sufficiently far in advance, ECL models imply less procyclicality and a less severe credit contraction in a downturn than under an incurred loss model. Therefore, the

⁷ Qualified insurance corporations and insurance entities belonging to financial conglomerates can defer application of IFRS 9 until 2021 to align it with the expected entry into force of IFRS 17.



benefits of policy proposals discussed in that report⁸ ultimately depend on the existence of sound evidence on whether banks can behave procyclically in some circumstances, which will only be established over time as further experience of IFRS 9 is gained and data become available over a complete credit cycle.

This report should by no means be interpreted as opening a debate about the adoption of IFRS 9 in the EU, the amendment of IFRS 9 or the counteraction of its effects. As in the July 2017 report, the ESRB does not intend to reopen discussions on the implementation of IFRS 9 in the EU or deny its expected benefits for the EU financial system. On the contrary, with IFRS already implemented as of January 2018, the report aims to contribute to the ongoing discussion on those aspects of the ECL model that may warrant attention from macroprudential authorities to avoid unintended outcomes. Macro- and microprudential authorities have several tools at their disposal to address situations in which they perceive that IFRS 9 is not in line with their prudential objectives, without needing to interact with accounting standard setters or to intervene in the endorsement process in the EU (which spans several years, as can be seen in Annex 1). Finally, the report can be used as a basis upon which the post-implementation review of IFRS 9 could be developed, as called for in 2016 by the European Parliament.⁹

⁸ Mainly, sound, well-communicated and consistently applied financial reporting; reliance on the existing regulatory buffers – the capital conservation buffer and the countercyclical capital buffer – with the possibility to proactively use the latter (after a suitable revision of its guidance, if adequate); the use of stress testing as a means to gauge the importance of the variation in impairment allowances associated with adverse scenarios; and prudential adjustments (via the definition of regulatory provisions or regulatory capital). For further details, see European Systemic Risk Board (2017).

⁹ See [European Parliament resolution of 6 October 2016 on International Financial Reporting Standards: IFRS 9 \(2016/2898\(RSP\)\)](#).



2 Qualitative discussion on procyclicality and the ECL model in IFRS 9

2.1 Introductory remarks

The adoption of the ECL model for the early recognition of credit losses came as a response to the “too little, too late” criticism of the incurred loss approach. During the global financial crisis, there was an overall perception that the incurred loss approach delayed the recognition of losses. This approach resulted in provisions coming too late and being too low, as it did not consider credit losses until a default event had occurred. Despite these limitations, accountants and the market more broadly favoured the incurred loss approach because it was considered more transparent than the ECL approach, which gives banks more discretion in how they recognise losses and establish loss provisions.¹⁰

It can be assumed that, when endorsing the move towards earlier recognition of expected credit losses, global policymakers considered its derived cyclical consequences; thus, cyclical implications, to a certain extent, should not be considered as unintended. Drawing on the existing literature on the benefits to financial stability of the early recognition of credit losses (Beatty and Liao, 2014; Bushman and Williams, 2015; Novotny-Farkas, 2015), policymakers asked accounting standard setters to implement ECL approaches to overcome the shortcomings of the incurred loss approaches. In addition, amongst the key drivers was the idea of avoiding a situation similar to the one experienced during the global financial crisis, in which banks were reporting profits and distributing dividends and bonuses even though embedded credit losses, not recognised under incurred loss models, were considerable and eventually, when recognised, threatened their viability as going concerns. In this regard, it can be argued that one of the lessons of the global financial crisis is that the cyclical behaviour of ECL models may be more appropriate, from a financial stability point of view, than the (pro)cyclical behaviour of incurred loss models over a long-term horizon.

Academic and industry studies have attempted to quantify the impact of the ECL models on the regulatory capital of banks at the onset of a downturn or a financial crisis, and have concluded that it may be significant under certain assumptions. The existing literature on the cyclical behaviour of ECL models is still in its infancy, and is affected by the lack of historical data and by the difficulties of considering many interactive dimensions in a comprehensive model. Abad and Suarez (2017), Krüger et al. (2018), Plata et al. (2017) and Barclays (2017) simulate hypothetical scenarios (owing to the lack of real data under IFRS 9) to illustrate the possible cyclical behaviour of ECL models under IFRS 9. In all cases, the early recognition of losses leads to a significant deterioration in the banks' profit or loss account, which is subsequently reflected in the

¹⁰ There is ample evidence that banks have used such discretion to smooth earnings, compromising both transparency and market discipline (Ryan, 2012; Bushman and Williams, 2012; Beatty and Liao, 2014; Domikowsky et al., 2015).



regulatory capital ratios.¹¹ The size of these losses depends on several factors, such as the degree of exposure to borrowers sensitive to the cycle (and credit risk mitigation), the (remaining) maturity of the exposures, the degree to which the ECL models have anticipated the downturn or crisis sufficiently far in advance, and the adequacy of the thresholds for a significant increase in credit risk. Krüger et al. (2018) pay particular attention to the latter point, which, in their opinion, can have a sizable impact on whether the ECL models under IFRS 9 behave in a procyclical manner during downturns.¹²

Important caveats must be mentioned regarding evidence arising from current literature, as it does not rely on IFRS 9 data, does not take into account possible changes in banks' behaviour, and does not consider the availability and cost of capital through the cycle. Given the recent entry into force of IFRS 9, any analytical attempts to quantify the impact of ECL models cannot use historical data derived from IFRS 9, but must instead remain largely theoretical, be structured as case studies, or rely on indirect sources of data.¹³ It is not clear whether and to what extent these studies have considered that anticipating the downturn sufficiently far in advance could make a difference, as the impact on regulatory capital would occur before the downturn. Besides, these analyses are focused on the dynamics of credit losses under the ECL model in IFRS 9 and their impact on capital requirements, with no attempt to model how banks might alter their capital management practices or lending behaviour under IFRS 9, which, in turn, could play a key role in determining the possible effects of IFRS 9. For example, it is possible that banks would have stronger incentives to hold voluntary capital buffers in order not to breach the capital conservation buffer (CCoB). These behavioural effects will therefore need to be closely monitored going forward to help determine the need for any type of policy measure. Another important caveat in relation to such studies is that the impact on capital ratios considers neither the cost nor the availability of capital through the different phases of the economic cycle, as empirically observed during the last financial crisis.

2.2 General considerations

Before discussing concerns about sources of procyclicality in the ECL model in IFRS 9, it is necessary to clarify what is meant by procyclicality and its relationship with financial stability. There are two main approaches to looking at cyclical behaviour of economic variables. The first defines procyclicality mainly in terms of financial variables moving together with and in the same direction as the financial cycle, as opposed to countercyclicality (which implies that the variables move in the opposite direction). For example, Landau (2009) states that “strictly speaking, procyclicality refers to the tendency of financial variables to fluctuate around a trend during the economic cycle”. The second approach sees procyclicality as embedding the idea of amplifying the

¹¹ However, an advantage over incurred loss models is that sufficiently forward-looking reflection of losses may allow banks to act while capital is still available and more affordable than during the downturn or financial crisis, when the availability of capital could be limited.

¹² However, such conclusions need to be treated with caution, given the significant caveats described in the paragraph below.

¹³ An appropriate framework to analyse the potential impact of the cyclical behaviour of the ECL model in IFRS 9 should consider, among other things, the capacity of the model to anticipate losses compared with the incurred loss model, the severity of the crisis, the composition of the loan portfolio of the bank, the business model of the bank, the macroeconomic environment, and the bank's risk appetite.



financial cycle, i.e. not merely going in the same direction, but reinforcing it. This approach is exemplified by the Financial Stability Forum (2008) definition: “the mutually reinforcing (‘positive feedback’) mechanisms through which the financial system can amplify business fluctuations and possibly cause or exacerbate financial instability”. The second approach has been widely adopted when discussing procyclicality in macroprudential contexts, as it is associated with behaviours that can affect the depth and duration of financial crises.

A certain degree of cyclicality in the area of bank credit losses is unavoidable, owing to some unpredictability of economic fluctuations and the cyclicality of banks’ balance sheet management practices, but should not be perceived as necessarily harmful to financial stability. Landau (2009) argues that procyclicality becomes a concern from a financial stability point of view if it stems from within the financial system and does not reflect the dynamics of the real economy. In this sense, credit losses from lending/funding to the real economy (in contrast e.g. to credit losses from exposures to speculative positions not linked to the real economy) basically reflect the evolution of the real economy, since they measure missed payments from borrowers (households and non-financial corporations). Indeed, gross domestic product is typically identified as the leading factor in explaining the behaviour of non-performing loans (NPLs) in a banking system (see Beck et al., 2013, and Homar et al., 2015, for two recent analyses on the topic).

In a hypothetical scenario in which the ECL model would amplify the effects of financial cycle fluctuations, particularly in a downturn, procyclicality may emerge, raising potential concerns from a financial stability point of view. Under the second approach to procyclicality, undesired procyclical effects may appear during a downturn if the evolution of some key banking variables (regulatory capital, profit or loss, impairment losses) exacerbated the dynamics of the financial cycle, for example if the downturn is not anticipated early enough to allow banks to take timely action (e.g. re-build their capital and lending capacity) to dampen such effects. This possible shortcoming could facilitate a negative feedback loop by, for example, further restricting the provision of credit to the real economy, as documented by, among others, Bernanke and Lown (1991), Berger and Udell (1994), Mésonnier and Monks (2015) and Gropp et al. (2016). The implications for financial stability will depend on (i) the extent to which banks implementing IFRS 9, as a collective group, anticipate downturns sufficiently far in advance to allow them to act without reducing excessively the supply of lending or other critical economic services; (ii) the degree of discretion and the incentives for banks to already recognise increased credit losses in good times; and (iii) the availability of other lenders who can readily step in to fill a potential gap in credit supply.

Conceptually, the increase in impairments derived from forward-looking assessment of the financial cycle would not be the main concern in terms of procyclical behaviour of the ECL model in IFRS 9. The cyclical behaviour of the forward-looking ECL model would not only reflect the most severe state of the real economy, as happened under incurred loss accounting, but would, theoretically, already anticipate a significant proportion of the losses in advance, as the ECL model is expected to anticipate the evolution of the real economy, contributing to smoothing the financial cycle. As a consequence, the additional increase in provisions once exposures become impaired (i.e. are allocated to stage 3) following the actual deterioration in the real economy should be significantly lower under the ECL model in IFRS 9 than under incurred loss accounting, given that part of the provisions would have been anticipated in preceding periods under the ECL model.



In comparison with the incurred loss model in IAS 39, the ECL model in IFRS 9 is expected to lead to the recognition of smaller amounts of new provisions during and after the downturn. Once the expected credit losses have been anticipated, it will not be necessary to recognise them anew when default events occur, as was the case under the incurred loss approach in IAS 39. As a significant amount of credit losses would already have been recognised at the onset of the downturn, subsequent periods should only see relatively moderate adjustments (of smaller size than those required under IAS 39) in order to match expected credit losses to actual credit losses. This is a significant improvement in terms of cyclical behaviour, as credit losses will be partially anticipated and not recognised only during downturns. Early recognition of credit losses and the gradual adjustment of provisions also have the advantage that this is designed to take place in economic phases in which banks are still in a position to raise new capital if needed.¹⁴

The potential procyclical effects of ECL models will largely depend on how banks implement IFRS 9, and regulators, supervisors and auditors therefore have an important role in ensuring a sound implementation that minimises concerns about unintended procyclical behaviours of banks. ECL models which can anticipate a downturn sufficiently far in advance, supplemented by thresholds for the significant increase in credit risk which are set on the basis of appropriate criteria, would lead to a smoother recognition of impairment losses over time and reduce procyclicality risk at the onset of the crisis.¹⁵ Appropriate criteria for a significant increase in credit risk should avoid, on the one hand, a delayed reflection of credit losses when they have already materially increased and, on the other hand, excessive restrictions to lending under still benign conditions. Situations where the downturn is not anticipated far enough in advance, coupled with “high” thresholds for the significant increase in credit risk are expected to produce more pronounced cliff effects under already deteriorated economic conditions, which raises concerns regarding procyclical effects. Less pronounced effects would result from the two intermediate cases (Table 1). Thus, regulators, supervisors and auditors will have an important role in assessing and monitoring both whether the criteria for the significant increase in credit risk are appropriate and whether the ECL models anticipate the downturn far enough in advance, while promoting future policy intervention where needed.

Table 1

Threshold for significant increase in credit risk and ECL models

| | ECL model anticipates downturn sufficiently far in advance | ECL model does not anticipate downturn sufficiently far in advance |
|-----------------------|--|---|
| Low threshold | Low expected cliff effect, but excessive restriction of lending under still benign conditions if set too low | Less pronounced outcome |
| High threshold | Less pronounced outcome | High expected cliff effect |

¹⁴ In addition, a transfer between stages, which entails a real economic impact on the profit and loss account, gives banks a strong signal and incentive to raise their levels of engagement, also from a risk management perspective, to ensure the mitigation of a potential default.

¹⁵ On the other hand, setting excessively low thresholds for a significant increase in credit risk could lead to undesired volatility in the recognition of expected credit losses should this give rise to frequent reclassifications from stage 1 to stage 2 and vice versa.



2.3 Transfers across stages

When delayed, the transfer of exposures from stage 1 to stage 2 (cliff effect) could result in certain procyclical effects.¹⁶ The transfer of exposures from stage 1 to stage 2 entails a shift in the time horizon covered by the ECL models: from 12 months in stage 1 to lifetime in stage 2.¹⁷

Therefore, expected credit losses would increase as risks build up. However, in a situation where there is a delayed transfer of exposures from stage 1 to stage 2 (or even stage 3) due to a weak application of the ECL model in IFRS 9 or a late anticipation of the downturn,¹⁸ there could be a substantial increase in expected credit losses when already entering the downturn, which, in turn, may exacerbate the negative evolution of the business cycle and become a concern from a financial stability point of view.

The amplitude of the cliff effect and, therefore, the possible procyclical effects, would largely depend on the degree of anticipation of the downturn by ECL models, which would be driven primarily by the adequate incorporation of forward-looking information and the proper implementation of the trigger for a significant increase in credit risk. The amplitude of the cliff effect would primarily depend on how banks have applied the ECL model and how banks' capital management practices evolve and consider the model risk in their ECL framework. Indeed, it could be argued that the higher the threshold for the significant increase in credit risk is set, the more pronounced the cliff effect at the onset of the downturn and the behavioural responses by banks could be, which is of particular concern if a bank's ECL model is also not sufficiently forward-looking. On the other hand, "too low" a threshold could also raise procyclicality concerns to the extent that an excessive anticipation of the transfer of exposures to stage 2 could constrain lending excessively and hamper the provision of credit to the real economy.

Other factors that may influence the amplitude of the cliff effect are the remaining maturity of the exposures and the exposure to borrowers that are sensitive to the cycle. In addition to the effect that a significant increase in credit risk would have on loss given default (LGD) and probability of default (PD), as the cliff effect entails a move from the recognition of 12-month to full lifetime expected credit losses of an exposure, its size would also be positively correlated with the remaining maturity of the exposures. All other conditions being equal, exposures with longer remaining maturities would generate larger cliff effects than exposures with shorter remaining maturities (for example, exposures with a remaining maturity equal to or below one year should not generate any cliff effect).¹⁹ Second, it has been empirically documented (see, for example, Berman and Pfleeger, 1997) that some sectors (e.g. real estate) are more severely affected than others during downturns. The cliff effect (and, indeed, the economic losses) could be larger for banks for

¹⁶ The cliff effect was mentioned by both the IASB and the FASB when discussing how to define the ECL model in their respective frameworks (Financial Accounting Standards Board, 2012; International Accounting Standards Board, 2014).

¹⁷ Theoretically, such a cliff effect would be amplified by a substantial increase in the coverage ratios (i.e. the size of the expected credit losses as a percentage of the total gross exposure).

¹⁸ Underlying factors and issues that could lead to a weak application of the ECL model include, for example, management incentives and possible signalling effects in financial markets. However, further analysis is necessary to better understand such factors and issues.

¹⁹ This could raise concerns that banks might modify their lending policies to reduce the average maturity of their portfolios.



which a significant part of their credit exposures is to borrowers (or is secured by credit risk mitigation instruments) that are particularly sensitive to the cycle.²⁰

2.4 Use of PIT estimates

Another possible source of positive correlation with cyclical movements stems from the use of ECL estimates that are closer to point-in-time (PIT) methodologies.²¹ According to the specification of the ECL model in IFRS 9, banks must use unbiased (i.e., neutral) estimations of PDs and LGDs, taking into account forward-looking information and macroeconomic factors.²² For exposures classified in stage 1, PD estimates over the next 12 months result in estimations of expected credit losses that are mostly influenced by PIT conditions. This could also be the case for stages 2 and 3 where the remaining maturity of assets is relatively short, whereas longer remaining maturities require more forward-looking assessments (potentially beyond a full economic cycle). While a positive correlation between the computation of expected credit losses and the business cycle does not necessarily raise concerns, in certain circumstances (for example, where there is a sizable recalibration of PDs and LGDs as a result of unexpected negative macroeconomic information), such a computation may affect the recognition of provisions under the ECL model in IFRS 9 through the cycle and potentially result in a concentration of loan loss provisions close to the downturn. Whether this effect may prompt banks to respond in a procyclical manner, for example by cutting lending, is still to be determined.

The use of PIT estimates for expected credit losses could also generate more volatile outcomes than TTC estimates, although volatility should not be judged as negative per se. In a theoretical comparison of the development through the cycle of PIT and TTC estimates (with TTC being defined as the average over a full cycle), the amount of provisions to be generated using PIT estimates in boom times would be lower than under TTC estimates. Similarly, the PIT estimates for recessions would be expected to be higher than the TTC estimates (Figure 1). While such a result is logical, considering the definition of both methodologies and the way the PIT estimate is expected to reflect the cyclical evolution of the real economy, it could lead to higher volatility in the final outcome. However, this should not be understood to be necessarily negative, but rather the natural consequence of the choice of accounting standard setters to use PIT parameters to better reflect current market conditions and the changes in credit risk over time (in line with the overall accounting objective of providing a fair view of the situation of the reporting entity at a given point in time).

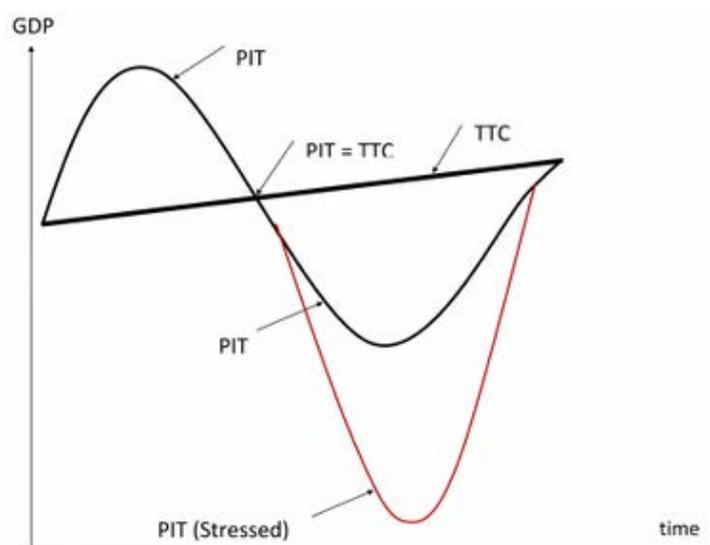
²⁰ The sensitivity of borrowers to the cycle should already be considered at loan origination when pricing the loan.

²¹ The concerns presented in this paragraph also apply to the ECL model which has been introduced in the United States.

²² In the regulatory domain, internal ratings-based models for the computation of capital requirements for credit risk do not specify whether PDs should be calculated using through-the-cycle (TTC) methodology or point-in-time (PIT) or as a hybrid of both approaches, but they require downturn LGDs to be subject to a floor based on the historical average of realised LGDs.



Figure 1
Stylised view of PIT and TTC estimates through the cycle



Source: Buncic and Melecky (2013).

Furthermore, this volatility would be less pronounced once a larger part of a credit portfolio with long remaining maturity has been moved to stage 2. A shift to stage 2 implies that PD estimates cover the full remaining lifetime of the exposure, bringing them closer to the concept of TTC if the remaining lifetime extends over several years. Therefore, volatility derived from the use of PIT estimates is expected to be less relevant once a bank has anticipated the downturn. After the exposure has been transferred to stage 2, volatility in PIT estimates may occur due to an additional but unanticipated worsening of macroeconomic conditions. However, this should not occur frequently and, in any case, the related volatility should not be as pronounced as that associated with the transfer from stage 1 to 2.

2.5 Economic implications of ECL models

Reaping the benefits derived from the earlier recognition of credit losses depends on the degree to which individual banks' models can anticipate the downturn. Applying the ECL approach in IFRS 9 entails a significant modelling effort by banks. The forecasting power of these models and, in particular, their ability to anticipate downturns would determine the distribution of credit losses over the cycle. Table 1 shows how the cliff effect in the transfer of exposures from stage 1 to stage 2 can be larger if the ECL models are not able to anticipate a downturn far enough in advance.

However, historical evidence suggests that forecasting economic conditions, especially downturns, is generally a challenging task, raising questions about whether banks will face similar problems when applying IFRS 9. Looking beyond the recent financial crisis, downturns have historically not been predicted very far in advance by a majority of professional forecasters



and international organisations and, when they have been predicted, their severity has proven to be greater than originally foreseen.²³ However, IFRS 9 requires ECL models to predict whether a downturn could occur within the remaining lifetime of an exposure, which is slightly different from the usual focus of professional forecasters.

The use of models to compute expected credit losses could introduce a certain degree of modelling risk, complexity and herding behaviour. Modelling risk can be defined as the risk arising from the use of insufficiently accurate models or from uncertainty about outcomes under certain extreme conditions. In this regard, the number of variables and data points involved in banks' ECL models, coupled with the requirement to consider several macroeconomic scenarios, is likely to make the modelling process complex and prone to modelling risk. In addition, the consideration of similar macroeconomic scenarios, the use of similar proxies to address the lack of certain credit loss data, and the use of models developed by vendors (all of them derived from IFRS 9), combined with the desire of banks not to be perceived as an outlier (which occurs regardless of the prevailing accounting standards), may lead to herd behaviour across the banking system in the recognition of credit losses.

In addition, the introduction of new modelling requirements and related complexity, coupled with the greater degree of discretion allowed by IFRS 9, may lead to a perception of reduced transparency, inhibit the comparability of disclosures and interfere with market discipline in risk-taking. The ECL model in IFRS 9 requires certain modelling efforts by banks, which are likely to lead to different approaches, designs and variables used by each bank, given that banks will be afforded greater flexibility in how to measure losses under IFRS 9. Therefore, disclosures based on the outcome of these models would not only reflect differences in the core credit risk of the underlying banks, but also different modelling assumptions and approaches (Chae et al, 2018). Notwithstanding the enhanced disclosure requirements of IFRS 7, in the absence of any initiatives in this area, users of financial statements may find an increase in the complexity and a decrease of the comparability of existing disclosures. A recent exercise on a hypothetical portfolio across 19 banks provides some early clues about the extent to which comparability of disclosures could be impaired (Thakkar, 2018), which could have implications for financial stability if the lack of comparability also interferes with market discipline and the efficient allocation of economic resources across banks. Addressing these concerns will require banks to be as transparent as possible about their modelling approaches, and comparable disclosures to be made available to financial market participants and users of financial statements.

²³ For example, the International Monetary Fund (2018) recently analysed the forecast from its World Economic Outlook and the private sector over the period 1991-2016. The analysis revealed that the World Economic Outlook forecasts predicted only 4.2% of recessions (9 out of 212 switches from positive to negative growth rates), while Consensus Economics predicted only 2.7% of recessions (2 out of 75) over the same period.



3 Initial insights from the implementation of IFRS 9

Existing evidence from the initial implementation of IFRS 9 can provide preliminary insights into the impact of the IFRS 9 and contribute to the discussion on its cyclical behaviour.

IFRS 9 came into force on 1 January 2018 and, at the moment of finalising this report (last quarter of 2018), initial information based on IFRS 9 is already available. Of particular relevance is the 2018 EBA stress test exercise, which required the computation of a starting balance sheet according to IFRS 9 as well as scenario projections using a methodology reflecting the new accounting standard, subject to certain harmonising and simplifying assumptions.²⁴ Data recently published by the EBA allow some initial observations on the cyclical impact of IFRS 9 on EU banks.²⁵ At the same time, market participants who have been closely involved in the implementation of IFRS 9 can now provide interesting insights from their work with banks using IFRS 9 for the first time. This section discusses initial findings from these two sources of information and put them in the context of the qualitative discussion in the previous section.

3.1 Preliminary evidence on the impact of the ECL approach under stress scenarios

Partly as a result of the benign macroeconomic environment, the proportion of exposures in stages 2 and 3 is relatively low relative to periods of financial crisis, although it reflects differences across EU countries in levels of NPLs. IFRS 9 came into force on 1 January 2018, during a period of benign economic conditions. Consequently, in general, the proportion of exposures classified in stages 2 and 3 is relatively low (Chart 1). As reported by the European Banking Authority (2018b), there are significant cross-country differences in the proportion of exposures classified in stages 2 and 3, reflecting, in the majority of cases, the overall situation of the banking system regarding asset quality and, in particular, the levels of NPLs. For example, the proportion of stage 1 exposures in total exposures exceeds 95% in the case of Luxembourg, Czech and Swedish banks, but is less than 80% in the case of Bulgarian, Romanian, Italian, Portuguese, Cypriot and Greek banks. Such cross-country heterogeneity is indirectly revealed by the differences between the yellow bars in Chart 1 (EBA data) and the blue bars (data from Autonomous Research), since the underlying sample of banks is different.

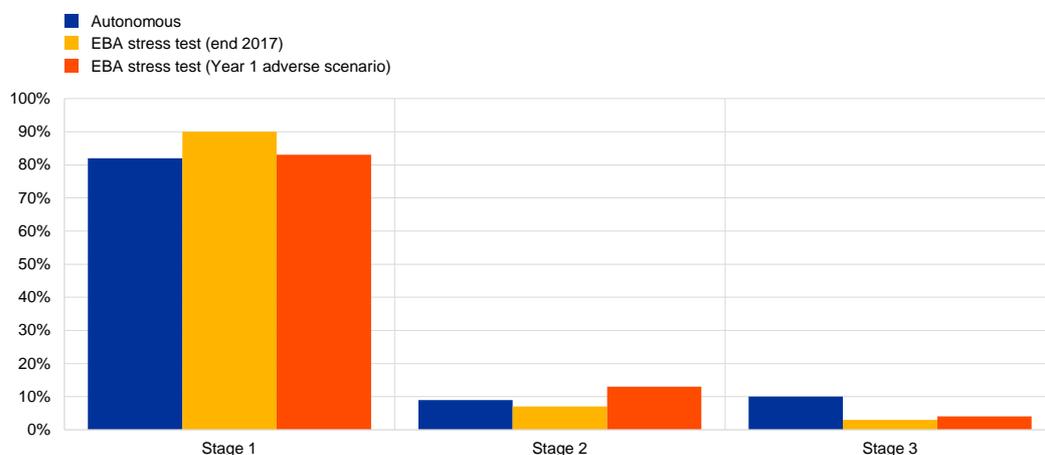
²⁴ For further information, see European Banking Authority (2018a).

²⁵ However, it will only be possible to derive a proper metric of procyclicality after the ECL model has been applied for several years (ideally covering a full business cycle).



Chart 1
Distribution of gross exposures across stages

(percentages)



Sources: Autonomous Research (2018) and EBA stress test data.

Note: Data from Autonomous Research refer to the first quarter of 2018 and show the simple average of a sample of 26 European banks.

In terms of the coverage ratio²⁶, stage 3 exposures, albeit less numerous, have higher coverage and explain the majority of impairment losses. Chart 2 shows that the coverage ratio of stage 3 exposures is significantly higher than those of stages 1 and 2 at the end of 2017 and that it decreases over the three years covered by the adverse scenario.²⁷ Over the same period, the coverage ratio of stage 1 and 2 exposures tends to increase.

²⁶ The coverage ratio is defined as the ratio between specific provisions for exposures in a stage and the total exposures allocated to that stage.

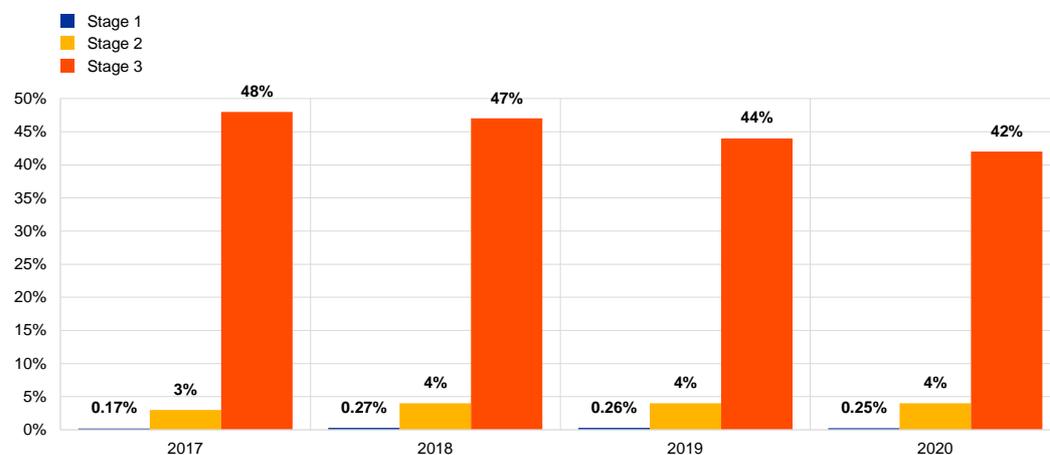
²⁷ The EBA stress test exercise is run under baseline and adverse scenarios which take data as at end of 2017 as starting point and extend over three full years (2018, 2019 and 2020).



Chart 2

Coverage ratio by stages

(accumulated impairments / total exposures; percentages)



Sources: EBA stress test data and ESRB Secretariat calculations.

In terms of the temporal pattern of recognition of new impairment losses, the 2018 stress test exercise reveals a larger recognition of credit losses in the first year of the adverse scenario (Chart 3). In previous stress test exercises, performed under an incurred loss approach in accounting, impairment losses were recognised in the profit and loss account of participating banks equally over the three years covered by the adverse scenario. This trend in the temporal distribution of impairment losses changed in the 2018 stress test exercise in which half of the total impairment losses generated by the adverse scenario are recognised in the first year. If we consider that the adverse scenario for the 2018 stress test exercise envisaged a greater contraction in its second year (-0.9% in the first year and -2.0% in the second year for the euro area)²⁸, the new temporal distribution of impairment losses would point towards a significant recognition of impairment losses in the first year of the exercise.²⁹ The increase in impairment losses recognised in the first year of the adverse scenario occurs under an assumption of perfect foresight in terms of credit losses generated by the adverse scenario.³⁰

²⁸ For further details on the adverse scenarios developed for the EBA stress test exercises of 2014, 2016 and 2018, see European Systemic Risk Board (2014), European Systemic Risk Board (2016), and European Systemic Risk Board (2018). While the three scenarios slightly differ, they all consider the materialisation of similar risks and the channels through which they could impact the EU banking system.

²⁹ See also Box 1 in Bank of England (2018), which shows the temporal distribution of impairment losses under IFRS 9 and IAS 39 under the same scenario.

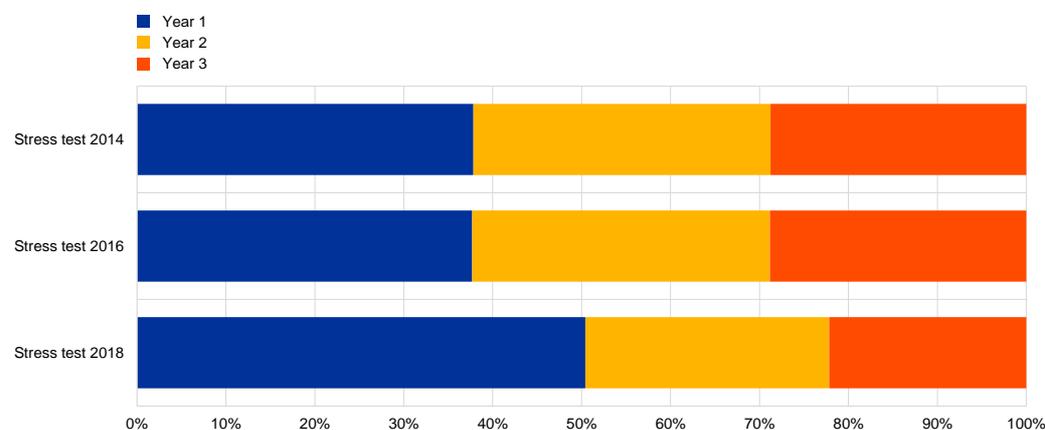
³⁰ The assumption of perfect foresight implies that banks know from the very beginning how much their credit losses will amount to under the adverse scenario over the remaining lifetime and possible work-out period of the exposure. This means that the outcome of the stress test exercise can be understood as an "upper bound" to the size of the cliff effects and other cyclical implications of the sudden arrival of a contraction and does not consider situations in which there is a gradual recognition of the severity of the adverse scenario.



Chart 3

Temporal distribution of new impairment losses in the three years covered by the adverse scenario

(percentages)



Sources: EBA stress test data and ESRB Secretariat calculations.

The increase in impairment losses in the first year under the adverse scenario is significantly higher than in previous stress test exercises, but the subsequent return to pre-stress conditions seems to be faster. Stress test scenarios are in general designed in a way that there is perfect foresight regarding the severity of the adverse scenario and there is a rapid transition from normal times to an adverse scenario, without contemplating intermediate states in which banks could anticipate future credit losses generated in the adverse scenario. This implies that, in the 2018 stress test exercise, banks under a benign macroeconomic environment at the end of 2017 had to confront the sudden downturn designed in the adverse scenario. This abrupt change led to a substantial increase in the impairment losses recognised in the profit and loss account compared with those under benign conditions. In the 2018 stress test exercise, the median bank recognised impairment losses in the first year under the adverse scenario six times larger than the actual figures for impairment losses recognised immediately before the first year of the adverse scenario (Chart 4). In subsequent years, the size of these impairment losses decreased substantially, in contrast to the previous stress test exercise in 2016, which displayed a more stable pattern of impairment loss recognition.³¹

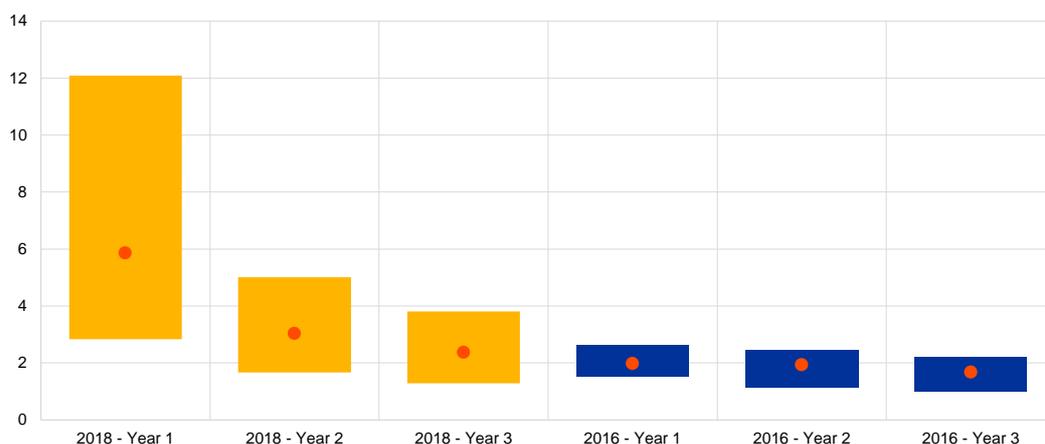
³¹ A direct comparison between the two exercises is, however, not possible owing to differences in the starting points (impairment losses at the end of 2015 and 2017, respectively) and in the prevailing macroeconomic environment and asset quality of banks' portfolios.



Chart 4

Interquartile range of the increase in impairments in the three years covered by the adverse scenario

(impairment losses adverse scenario / impairment losses; ratio)



Sources: EBA stress test data and ESRB Secretariat calculations.

Notes: The yellow and dark blue bars show the interquartile range, while the orange circles show the median. Banks with a reversal of impairments in the actual figures are excluded.

A hypothetical increase in exposures allocated to stage 2 could have substantial impact on the profit and loss account of banks.

Taking the coverage ratios for each stage at the end of 2017 as a starting point, it is possible to calculate the impact, in terms of the increase in impairment losses recognised in the profit and loss account, of a transfer of exposures to stage 2 owing to a hypothetical deterioration in macroeconomic conditions and a significant increase in credit risk identified by banks (Chart 5).³² On the basis of this sensitivity analysis, it is found that, while an increase of 1% in the proportion of exposures allocated to stage 2 should not put at risk the overall position of the bank (increase of 11.31% in impairment losses for the median bank over year-end figures under IFRS 9), its impact on the profit and loss account could be significant and could absorb the profit generated by the bank during the year. An increase of 5% in stage 2 exposures, like that observed in the 2018 stress test exercise, would mean an increase in impairment losses of 56.55% for the median bank. Similarly, the benchmark exercise carried out by Thakkar (2018) found that, on average, lifetime expected credit losses on a five-year corporate loan would be about ten times higher than the corresponding 12-month expected credit losses.

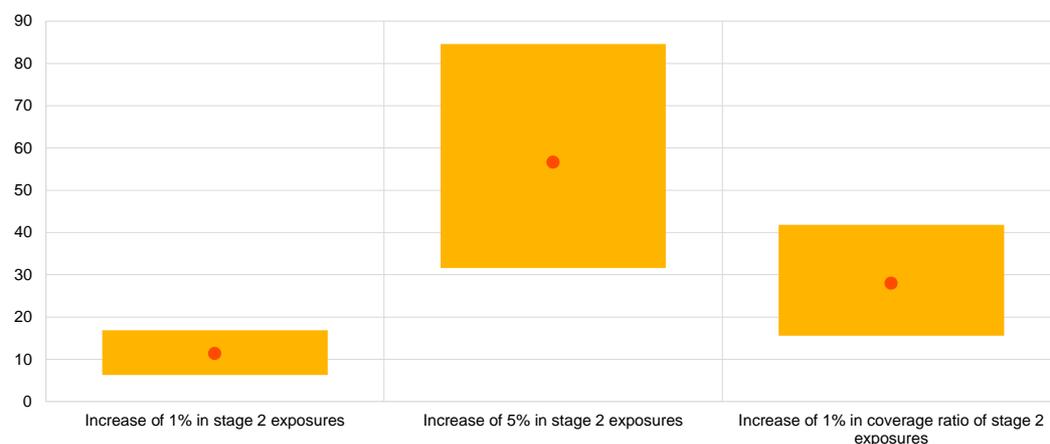
³² From the proportion of exposures allocated to each stage (Chart 1) and the related coverage ratio (Chart 2) it is possible to obtain the different compositions of accumulated impairment across stages. Working in percentages, the calculation is: accumulated impairment (stage X) = coverage ratio (stage X) * exposures (stage X). An increase in stage 2 exposures (and the related decrease in stage 1 exposures) will result in a change in the total accumulated impairment, depending on the coverage ratios allocated to each stage. Based on the previous formulation, the calculation is: new accumulated impairment (stage X) = coverage ratio (stage X) * new exposures (stage X). The difference between the two provides the additional accumulated impairment under the new allocation of exposures across stages (1.57% in the case of a 1% increase in stage 2 exposures). The total accumulated impairment is disclosed in the EBA stress test exercise, and from that the additional amount of impairment losses to be recognised in the profit and loss account is derived for each bank.



Chart 5

Interquartile range of the increase in impairment losses assuming increases in stage 2 exposures

(percentages)



Source: EBA stress test data and ESRB Secretariat calculations.

Notes: The yellow bars show the interquartile range, while the orange circles show the median. Banks with a reversal of impairments in the actual figures are excluded.

In a hypothetical scenario in which banks were able, at least partially, to foresee the downturn, the amount of impairment losses to be recognised in the first year of the adverse scenario would be significantly reduced. The methodology behind the stress test exercises assumes that banks have perfect foresight of credit losses incurred in the adverse scenario, but, at the start, are not able to anticipate the worsening of economic conditions. On the basis of the previous calculations and departing from the stress test methodology, it would be possible to introduce, purely for illustrative purposes, an amended scenario in which banks are subject to the adverse scenario but are able to partially anticipate it at the start and, based on their assessment of a significant increase in credit risk, already transfer part of the exposures to stage 2 during the good times. Chart 6 shows the evolution of impairment losses (compared with the impairment losses at the end of the previous year) for the scenario actually contemplated in the stress test exercise (blue bar) and in an amended scenario in which banks were able to recognise in advance half of the increase in stage 2 exposures and the full increase in the coverage ratio of stage 2 exposures.³³ Overall, this leads to a 15% reduction in the total impairment losses to be recognised in the first year under the adverse scenario.³⁴ The increase in impairment losses for the median bank is halved (from 6 times to 3), as a consequence of the significant recognition of impairment losses in the year immediately before the start of the adverse scenario.

³³ In the actual EBA stress test scenario, the proportion of stage 2 exposures and the coverage ratio are 7% and 3%, respectively, at the starting point (end of 2017), and 12% and 4%, respectively, at the end of the first year under the adverse scenario. In our amended scenario, we introduce an additional exercise, in which stage 2 exposures represent 9.5% of the total exposures and the coverage ratio is already increased to 4%.

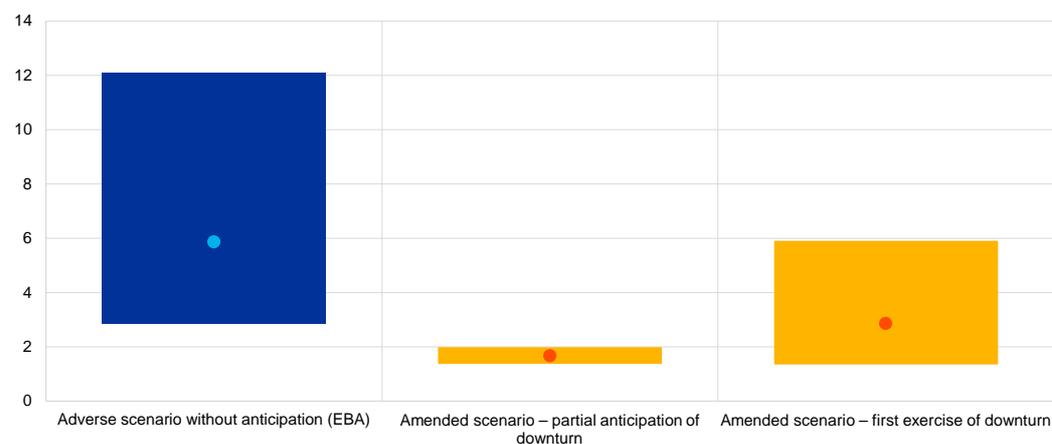
³⁴ It is worth noting that the total amount of impairment losses under the two scenarios remains unchanged.



Chart 6

Interquartile range of the increase in impairment losses in the first year under the adverse scenario and under an amended scenario

(impairment losses / impairment losses previous exercise; ratio)



Sources: EBA stress test data and ESRB Secretariat calculations.

Notes: The yellow and dark blue bars show the interquartile range, while the orange and light blue circles show the median. Banks with a reversal of impairments in the actual figures are excluded.

3.2 Insights from market participants

The entry into force of IFRS 9 has been a catalyst for banks to be aware of and improve data quality and processes internally. To comply with the new data requirements stemming from the ECL approach in IFRS 9, data has started to be more widely and intensively used within banks. This has raised issues about the whole data process, including collection, quality checks and internal dissemination. Smaller banks have been particularly exposed to larger difficulties in this area. In some cases, the necessary data were simply not available (the most typical examples being data on PDs at loan origination and the determination of PIT matrices to be used in the computation of lifetime PDs) and estimates had to be used instead.

In terms of the threshold criteria for triggering a significant increase in credit risk, limited differences have been observed across banks. IFRS 9 allows a certain degree of discretion when determining the threshold for a significant increase in credit risk. However, given the strong connections with the approach taken in internal ratings-based (IRB) models for the computation of capital requirements, differences across IRB banks tend to be rather limited (with criteria based on days past due playing a dominant role). Massive use of the 30-day backstop trigger for the transfer from stage 1 to stage 2 and large transfers of exposures from stage 1 to stage 3 over short periods of time are still occurring, which could imply that banks are still fine-tuning the criteria for triggering a significant increase in credit risk. Given the importance of these criteria for the cyclical behaviour of IFRS 9, it would be important to monitor developments in this area.

In benign macroeconomic conditions, ECL estimates are heavily influenced by macroeconomic forecasts, which are found to vary substantially across banks. So far,



modelling under IFRS 9 has taken place in a benign macroeconomic environment, which has also influenced the baseline macroeconomic forecasts. In some cases, these forecasts have been found to be extremely positive, even in tail scenarios (for example, assuming an increase in house prices even in stressed economic conditions). Management judgement plays a strong role in deciding how macroeconomic forecasts are input into ECL models (for example, to determine the impact of a specific event or crisis in a given sector or industry), leading to different parameters in a cross-sectoral comparison, even when the macroeconomic drivers and the underlying assumptions are similar. Other factors contributing to heterogeneity across banks include differences in (i) the expected life of credit card exposures, (ii) the treatment of prepayments in estimating exposures at default, (iii) the value of LGDs for exposures in stage 3, and (iv) the consideration of cure periods and modifications.

Although certain variability in the weights attributed to tail scenarios has been observed, baseline scenarios³⁵ notably determine the largest part of final amount of expected credit losses. Some heterogeneity has been observed in banks' approaches to the different scenarios taken into consideration, in particular regarding issues such as the length of the forecast period, the severity of stress, the use of different modelling techniques, like Monte Carlo models, and the weights attributed to each scenario. For example, weights are based on judgement and differ across banks, adding further heterogeneity to banks' ECL estimates. However, in general terms, it is the baseline scenario that generally determines the largest part of the final outcome in terms of expected credit losses. For example, in a configuration with a positive, a baseline and a negative scenario, if the first and the third are assigned similar weights, they would partly compensate each other.³⁶ Moreover, disclosures by one bank indicated that the addition of a tail scenario accounts for only 7% of the total expected credit losses.

There is large heterogeneity in the outcomes of ECL models across banks, even when using hypothetical portfolios with comparable borrowers. As noted earlier in the report, the different outcomes of ECL models may be a reflection of the quality of the underlying portfolios, the banks' modelling choices or a combination of both factors. A study of 19 banks by Global Credit Data found high variability in expected credit losses computed for similar hypothetical borrowers (Thakkar, 2018).³⁷ This analysis shows that ECL models used by banks generate substantially different results for the same hypothetical portfolio of borrowers sufficiently diversified in terms of credit worthiness, geographical area and sector of activity. That variability seems to be higher for stage 1 exposures, suggesting that larger differences in the approach taken by banks to compute expected credit losses are found in cases where there is no evident deterioration of credit risk, and for exposures to borrowers with higher PDs.

When comparing outcomes of ECL models with peers, banks may want to avoid being seen as outliers. Over the course of 2018, initial results of the implementation of IFRS 9 have been published, revealing substantial heterogeneity across banks on issues like the increase in provisions, the impact on capital requirements, the proportion of exposures in stage 2, and

³⁵ In this context, baseline scenarios can be defined as those which are most likely to materialise according to the current conditions and to the expectations of management.

³⁶ See KPMG (2018).

³⁷ In the Global Credit Data study, banks were asked to base their estimates on a common macroeconomic forecast and were provided with a detailed specification for each hypothetical borrower (maturity, loan-to-value, sector of activity, PD).



coverage ratios across stages (see, among others, European Banking Authority, 2018; Ernst & Young, 2018; KPMG, 2018). In view of the perceived heterogeneity, market intelligence suggests that banks want to avoid being perceived as far from the cross-sectoral average, which, in the long-term, would lead to less heterogeneity across banks in their ECL estimates.

3.3 Discussion of main findings

Data from the EBA stress test tend to confirm the earlier recognition of credit losses under the ECL approach in IFRS 9. Accordingly, half of the impairment losses generated under an adverse scenario (which is designed to resemble a severe downturn) should be recognised in the first exercise, in line with the expected timelier recognition of credit losses under IFRS 9 (Chart 3). This is different to previous stress test exercises (performed under incurred loss approaches), where impairment losses were almost equally distributed over the three exercises under consideration. Similarly, the return to levels of impairment seen in pre-crisis periods seems to occur quicker than with incurred loss approaches.

Due to the stress test methodology, the substantial increase in impairment losses in the first year of the adverse scenario could overestimate the actual pattern of banks' provisions at the beginning of a downturn under IFRS 9 (Chart 4). The stress test methodology does not allow the possibility of banks anticipating the downturn defined in the adverse scenario. Therefore, the results of the stress test exercise in this regard may represent an upper bound of the impact at the onset of a downturn, which can be attenuated if banks are able, at least partially, to anticipate the downturn. As shown in Chart 6, having in place ECL models which are able to anticipate the downturn would allow banks to already transfer some exposures to stage 2 in good times, thus smoothing significantly the increase in impairment losses once the downturn materialises.

However, banks may lack adequate incentives to recognise additional impairments in normal times and may give excessive weight to the baseline scenario. The recognition of additional impairments in good times may absorb a significant part of the profit generated in that period and could lead banks to recognise a loss for that period. The first bank to move to recognise additional impairments could be put at a disadvantage against its peers as it would have negative consequences for its capital position and dividend distribution. Banks may wish to avoid being perceived as outliers and may instead choose to follow the behaviour of peers, potentially giving rise to herd behaviour and leading to a "race-to-the-bottom" in terms of the forecasting power of ECL models. In this regard, it is important to consider the way macroeconomic forecasts are translated into tail scenarios and into the final amount of expected credit losses through the weights attributed to those scenarios. Excessive reliance on baseline scenarios could hamper the forecasting power of ECL models and the financial stability benefits of ECL approaches.

Finally, the degree of variability in the outcomes of ECL models when applied to a hypothetical portfolio needs to be further assessed over the coming years as experience of the application of IFRS 9 is gained. With the entry into force of IFRS 9, banks have embarked on a steep learning curve, entailing the consideration of a wider set of information in their computations and increased scrutiny of data-related processes. There are also differences in the way macroeconomic forecasts are incorporated into ECL models and in the weights attributed to



tail scenarios. The significant degree of variability currently observed across ECL models may, therefore, be the result of this collective learning process or the discretion exercised by the management of the banks, or a combination of both. However, if this variability persists beyond the initial periods of application of IFRS 9, regulatory and supervisory authorities may consider taking measures to address concerns which may arise.



4 Macprudential policy discussion

4.1 General policy considerations

While the intended consequence of ECL models is the more timely recognition of credit losses, understanding any unintended consequence of the ECL framework remains of interest to macroprudential policymakers. One of the founding ideas of macroprudential policy is the fallacy of composition, according to which what is valid for each individual component of a system may not be valid for the system as a whole (Brunnermeier et al., 2009). Following this argument, one could design a hypothetical scenario entailing a simultaneous deterioration in regulatory capital ratios within the banking system as a result of an unexpected event which leads to a massive recognition of credit losses immediately before and at the onset of a resulting downturn (second definition of procyclicality from Section 2). For example, a scenario in which the deterioration in regulatory capital ratios leads to either (i) a credit contraction, because banks do not wish to let their regulatory capital ratios fall below the maximum distributable amount (MDA) trigger³⁸ (mainly in order not to show weakness to the markets and to keep shareholders and managers satisfied with their dividends and bonuses) and instead reduce lending to the real economy, or (ii) a simultaneous breach of the MDA by a significant number of banks, with uncertain consequences for the smooth functioning of the financial system in its core role of providing credit to the real economy, would negatively affect financial stability.³⁹ These possible unintended consequences may be a concern, on which macroprudential authorities need to carefully reflect. As a result, considerations for possible policy analysis could therefore include, for example, the incentives and drivers of a bank's choice of voluntary capital buffers and the existence of possible coordination failures in the sense that banks prefer to restrict lending when confronted with significant decreases in their regulatory capital ratios.

Stress testing, both supervisory and internal, can be a very useful tool to better understand the behaviour of ECL models over the cycle and their impact on capital levels. Given the degree of uncertainty regarding the cyclical behaviour of the ECL model in IFRS 9 and how banks may react to a sudden deterioration in their regulatory capital ratios, supervisory and internal stress testing could serve to gather important insights in this regard. As noted in the ESRB report of July 2017, stressed scenarios in supervisory stress testing would resemble a recession for the purposes of understanding the cyclical behaviour of the ECL models under IFRS 9 and its impact on capital adequacy and buffers. On the other hand, the reaction of banks when confronted with a real downturn could be different to the foreseen reaction in supervisory stress testing. This refers to a wider discussion, which goes beyond ECL models, regarding the fact that market pressure to maintain a high level of capital and not to release cyclical capital buffers could be a determining factor in asset shrinkage in the case of a real downturn (a factor which is hard to capture in

³⁸ For banks not subject to other buffers (such as the O-SII buffer or the countercyclical capital buffer), the MDA trigger can be assumed to coincide with the CCoB threshold.

³⁹ In general terms, under IFRS 9, and unlike in incurred loss approaches, the possible breach of the MDA would already occur before the downturn, and thus in an economic stage in which banks should be still able to close the gap by raising fresh capital.



supervisory stress testing exercises, even when second round effects are considered). Internal stress testing could also be used to foresee and proactively react to a potential, additional impact of IFRS 9 under stressed conditions. In comparison with supervisory stress tests, they can be performed more frequently and can be more tailored to the specificities of an individual bank, but they can also be less effective, owing to the lack of market discipline. In both cases, if effectively incorporated into the risk management framework, stress testing can raise senior management awareness of the expected impact of the rise of impairment charges if a downturn arrives.

Theoretically, concerns that ECL models could result in procyclical behaviour by banks may be addressed by using previously accumulated capital buffers or by focusing on the effects of higher ECL provisions on regulatory capital (European Systemic Risk Board, 2017). An increase in resilience during the upward phase of the cycle would be aimed at ensuring that banks support their balance sheet with sufficient capital to absorb the impact of an increase in impairment losses at the onset of a downturn, even when they are materially large, if voluntary buffers are not large enough to compensate for that. Alternatively, prudential regulators could consider amending the existing regulatory treatment of provisions, focusing their attention on anticipating the impact on regulatory capital of the impairment losses arising from the ECL models in IFRS 9. Any sound policy proposal in this field would need to be considered against the risk of introducing additional unintended consequences when applied in the context of the ECL approach in IFRS 9 and thus of creating other distortions, negatively affecting financial stability.

The range of possible policy responses to undesired cyclical effects of the ECL model in IFRS 9 could also include the consideration of dynamic provisioning. A countercyclical complementary provisioning mechanism for prudential purposes, inspired by the dynamic provisions used in Spain until 2016, may attract policy discussion should the cyclical behaviour of the ECL model in IFRS 9 not fully match its prudential objectives. However, at this stage, it cannot be recommended without an analysis of its advantages and disadvantages in the current framework. Among other things, it would be necessary to understand how such an initiative could fit into the current regulatory framework in the EU, how it would interact with the existing ECL model in IFRS 9 and whether it would lead to unintended side effects.⁴⁰

At this stage, there are actions that supervisory authorities could take to contribute to avoid unintended procyclical behaviours of the ECL approach in IFRS 9.⁴¹ In its first years of application, it is possible to collect data on and compare how requirements of IFRS 9 are applied in practice by banks. Supervisory actions could help identify best practices and expectations of regulators and supervisors. They could also help document problems with implementation that can directly influence the efficacy of ECL models and, in turn, procyclical bank behaviour. Such actions are described in the next section.

⁴⁰ Analysing the Spanish case, Jiménez et al. (2017) find that dynamic provisioning smooths credit supply cycles and, in bad times, supports firm performance, while Carbo-Valverde and Rodríguez-Fernández (2018) find evidence suggesting that banks gamed dynamic provisions by adopting riskier ex ante behaviour.

⁴¹ Some of these actions may be understood to be beyond the macroprudential remit, but are relevant in the sense that they try to align IFRS 9 with its expected macroprudential objectives.



4.2 Actions related to the application of the ECL model by banks

Whereas it is acknowledged that IFRS 9 will be applied in a world of imperfect foresight, actions by regulatory and supervisory authorities to understand the drivers and features of ECL models can help spot problems that may promote procyclical behaviours of banks using ECL models. Assuming perfect foresight, ECL models should be perfectly countercyclical, as credit losses arising in a downturn would be fully anticipated. At the other end of the spectrum, from a financial stability perspective, a scenario in which, as a consequence of ineffective ECL models, there is no anticipation of credit losses at all⁴² would not be a significant improvement on the cyclical behaviour of the incurred loss approach in IAS 39.⁴³ Considering the degree to which the global financial crisis was anticipated by economic models, one could easily envisage a situation in which the degree of anticipation in ECL models used by banks would be imperfect. In that case, the financial stability benefits from the early recognition of credit losses would not fully materialise. Nonetheless, there are certain actions which regulatory and supervisory authorities can take to increase the quality of the ECL models and, consequently, their predictive power. Such actions could be implemented by means of supervisory guidelines, with the ultimate objective of improving the implementation of ECL models by banks under their jurisdiction.⁴⁴ That would help make the resulting recognition of credit losses more countercyclical than under the past incurred loss approach in IAS 39.

First, the definition of “significant increase in credit risk” entails trade-offs and incentives which must be taken into account when seeking a sound implementation of IFRS 9.

According to the text of IFRS 9, there is ample discretion and room for judgement by banks to define the thresholds and triggers of a “significant increase in credit risk”. This concept is of the utmost importance in the ECL model under IFRS 9, as it determines the amount of credit losses that is going to be anticipated. Banks may be driven by short-termism and give undue consideration to incentives in favour of a “high” threshold for a “significant increase in credit risk”, as that would have the smallest impact on their lending capacity in good times, even if the overall impact over the cycle, including the downturn, would be higher. On the other hand, a threshold that is set too “low” could over-burden banks in normal times, with the ultimate impact depending on, amongst other factors, the composition, quality and average maturity of their portfolio. It is therefore important that supervisory authorities ensure the concept of “significant increase in credit risk” is implemented in a way that covers the full cycle and which effectively reflects the risks in the credit portfolios of banks, excluding other considerations not directly related to IFRS 9. A useful first step would be for supervisors to collect and compare criteria for triggering a significant increase in credit risk and to

⁴² Alternatively, ECL models could be ineffective in their foresight, leading to impairment charges that are partially decoupled from the evolution of the real economy. This scenario could arise if ECL models lack sufficient loss data on certain asset classes or overweight more recent conditions (i.e. display recency bias).

⁴³ On a more quantitative basis, the analysis by Chae et al. (2018), based on the US accounting standard for credit losses, highlights the impact of modelling assumptions on the final outcome of ECL models and, more importantly, on the cyclical behaviour of those models. Perfect forecasts would lead to less procyclical results, while other possible approaches (e.g. autoregressive models, optimistic models) would be more closely related to the cyclical evolution of the economy.

⁴⁴ Both the Basel Committee on Banking Supervision (2015) and the European Banking Authority (2017) have already issued relevant guidance. This guidance includes some fundamental principles that, inter alia, aim to ensure timely accounting of significant increases in credit risk.



document what factors banks consider when establishing the criteria for moving exposures from stage 1 to stage 2.

Second, in order to be able to anticipate future downturns, ECL models should not put excessive emphasis on a baseline scenario and should adequately contemplate other scenarios. Financial stability, in general, and macroprudential policy, in particular, are typically focused on tail events, which are, by definition, not covered in baseline scenarios. Baseline scenarios have typically performed poorly at anticipating future downturns, as these are situations which emerge out of the expected path of the economy (Keller, 2010; Kenny and Morgan, 2011). Therefore, if the ECL models are expected to be relevant in their degree of anticipation of future downturns, it is necessary that they do not rely mostly on the baseline scenario and that other (non-baseline) scenarios are considered and objectively weighted in the final outcome, even if they have small probabilities of materialisation based on past experience (Berge, 2015). In this regard, documenting and comparing the factors on which banks condition their ECL models, including a systematic analysis of the design and weighting of forward-looking economic scenarios and their impact on the amount of expected credit losses, can contribute to understanding the extent to which banks' modelling practices contain inherent biases that may warrant further policy analysis.

Third, it is important that ECL models are not overly complex and that auditors have appropriate resources to review and challenge the models. Typically, complex models do not outperform models of a simpler configuration and may lead to undesired results (Armstrong et al., 1984; Estrella and Mishkin, 1998; Makridakis and Hibon, 2000; Crotty, 2009; Trichet, 2009; Haldane and Madouros, 2012; Aikman et al., 2014). Therefore, there should be a general call to avoid unnecessary complexity in ECL models, as such complexity would not materially improve their predictive power and would hinder comparability among banks. The ECL approach is also expected to generate modelling risk, which seems, unavoidable if the mandate given by the G20 is to be met. In this regard, back-testing of models, even if not explicitly required in the standards, can be a powerful tool to assess and improve their predictive power. At the same time, auditors need to be able to review and challenge the new ECL models, a task for which they may require an additional set of skills and resources. Furthermore, dialogue between auditors and supervisory authorities would be beneficial for both in their task of assessing ECL models.



5 Conclusions

A substantial degree of uncertainty exists regarding the cyclical behaviour of the ECL model in IFRS 9 and its impact on banks' behaviour. IFRS 9 became mandatory in the EU only on 1 January 2018, accompanied by a set of transitional arrangements that banks may follow to mitigate the impact of the new standard on regulatory capital. Therefore, information on the cyclical behaviour of the ECL model in IFRS 9 and on how banks may adjust their behaviour in response to the new accounting standard for credit losses is still scarce, a fact which is also reflected in the limited academic literature. This implies that further analysis is necessary before any conclusion on the need for regulatory intervention can be drawn. While such analysis can be conducted only when sufficient post-implementation information becomes available, there are already a number of issues which would merit a discussion from a financial stability point of view. This report is an attempt to increase awareness and provide a starting point for discussion of these issues, and is open to fresh consideration as more evidence becomes available.

Stress tests and targeted and harmonised disclosures are effective tools to improve the understanding of the cyclical behaviour of the ECL model in IFRS 9 and its impact on banks' behaviour. As already outlined in the ESRB report of July 2017, stress tests can provide significant insights regarding the impact of the new accounting paradigm for credit losses over the cycle. Supervisory stress tests would bring added benefits in terms of market discipline and disclosure of information, while internal stress tests can be run on a more frequent basis and may serve to raise awareness within banks of the expected impact of a rise in impairment charges in the event of a downturn. In the area of disclosures, targeted and harmonised disclosures on the ECL model in IFRS 9 could enable financial market participants to better understand the different modelling choices of each individual bank and facilitate comparisons across banks. Where appropriate, supervisory authorities could examine the convenience of defining ad hoc harmonised disclosures of relevant IFRS 9 information. This would not only ensure market discipline, but also expand the availability of data for further work on evaluating the effects of IFRS 9 by accounting standard setters, macroprudential authorities and academics.

Experience of IFRS 9 so far is limited but points to some areas that may warrant closer monitoring and review going forwards. These areas of concern could undermine the expected and desired impact of the ECL approach in IFRS 9 on financial stability. For example, giving excessive weight to the baseline macroeconomic scenario could hamper the ability of ECL models to anticipate downturns and delay recognition of credit losses over the cycle. Similarly, excessive variability in the outcomes of ECL models for comparable portfolios of borrowers (beyond idiosyncratic factors which could explain such variability), or excessive uniformity of such outcomes, would also raise concerns from a financial stability point of view. Such excessive variability or uniformity could compromise bank transparency, market discipline (in risk-taking) and the efficient allocation of economic resources across banks.

There is a need at present for policy analysis to focus on how the requirements of IFRS 9 are being applied and whether banks have appropriate incentives to recognise credit losses in a timely manner. As IFRS 9 has only been applied since 1 January 2018 and in a period of benign macroeconomic conditions, it is still too early to say whether IFRS 9 poses a real risk to



financial stability and therefore requires prompt regulatory intervention. However, early evidence points to issues that regulators and supervisors may want to monitor closely going forward. These issues, which relate to the quality of foresight in banks' ECL models, concern a lack of information (e.g. due to insufficient data or inherent behavioural biases to overweight more recent conditions or not consider tail events) and perverse incentives (i.e. management incentives to avoid excessive volatility or adverse market perceptions rather than to build sufficient foresight into ECL estimates). The development of best practices or enhanced guidelines could make a positive contribution to ensuring that the financial stability benefits of IFRS 9 are reaped.



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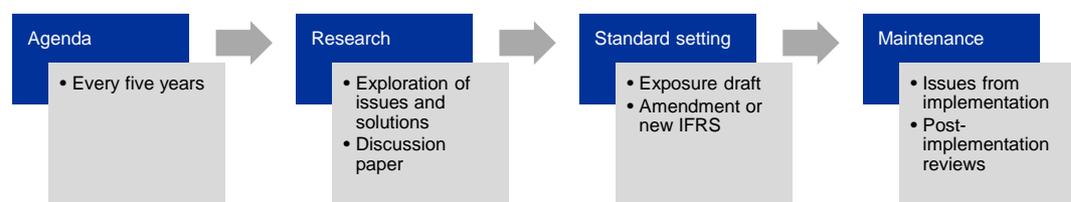


Annex 1: Overview of the process of issuance and endorsement of IFRS in the EU

IFRS accounting standards are developed by the International Accounting Standards Board (IASB), an independent body based in London. The IASB is part of the IFRS Foundation, the main goals of which are to develop a single set of high-quality, understandable, enforceable and globally accepted accounting standards and to promote and facilitate adoption of the standards. Just over half of the funding (52%) of the IFRS Foundation comes from jurisdictions applying IFRS. The rest of the funding is divided between self-generated income (21%) and contributions from accounting firms (27%).

The process of issuance of IFRS can be divided in four stages: (i) agenda setting, (ii) research, (iii) standard setting, and (iv) maintenance (Figure A.1). Every five years, the IASB conducts a comprehensive review and consultation to define international standard-setting priorities and develop its project work plan. In the second stage, the IASB explores the issues identified in the work plan, identifies possible solutions and decides whether a move to the next stage is necessary. Usually, the IASB issues a discussion paper on the ideas around a given project to seek public feedback before taking the final decision. The third stage, standard setting, is launched when the IASB finds sufficient evidence that an accounting problem exists and the problem is sufficiently important. The IASB generally reviews the research (i.e. comments received on the discussion paper) and proposes either an amendment to an already existing IFRS or a new IFRS. These proposals are first published in the form of an exposure draft for public consultation. To gather additional evidence, members of the IASB and IFRS Foundation technical staff consult with a range of stakeholders from all over the world. On the basis of the feedback received, the IASB then issues an amendment to an existing IFRS or a new IFRS. The work does not stop there, however. In the fourth stage, maintenance, the IASB monitors how the amended or new IFRS is implemented in order to identify potential problems which may need to be addressed. If that is the case, the IFRS Interpretations Committee may decide to create an IFRIC Interpretation or recommend a narrow-scope amendment (which follows the process described above). In addition, after several years of use of an IFRS, the IASB carries out a post-implementation review to assess whether the objectives of the IFRS have been achieved and to propose amendments, if necessary.

Figure A.1
Stages in the issuance of IFRS



Source: Based on information on the IASB website.



The time needed to take a project through the four stages varies, but it is typically not less than three years. The length of the process is determined by the content of the project and the degree to which it departs from the existing IFRS or accounting principle. Highly targeted IFRS, such as IFRS 6 on exploration for and evaluation of mineral resources, can go through the whole process in three or four years, while projects with a larger scope may require more time. For example, the first exposure draft of IFRS 9 was issued in 2009 and the standard was issued in 2014. In the case of IFRS 13 on fair value measurement, the project was added to the agenda in 2005 and the standard was issued in 2011.

Figure A.2

Stages in the EU IFRS endorsement process



Source: Based on information on the European Commission website.

When a new IFRS is issued by the IASB, it must be endorsed in accordance with the process set out in Regulation (EC) No 1606/2002⁴⁵ (Figure A.2) before coming into force in the EU. In this process, the European Commission takes the lead, with the involvement of two consultative and advisory organisations: (i) the European Financial Reporting Advisory Group (EFRAG), an independent organisation providing expert advice to the Commission; and (ii) the Accounting Regulatory Committee (ARC), which is composed of representatives of EU countries and chaired by the European Commission. Following the issuance of a new IFRS or the amendment of an existing IFRS (or an interpretation of an IFRS), EFRAG provides its advice to the European Commission on the related endorsement. In its advice, EFRAG should be aware of the consequences of accounting standards in areas beyond accounting, such as financial stability (European Financial Reporting Advisory Group, 2012). If the Commission decides to endorse the new or amended IFRS, it prepares a draft regulation and submits it to the ARC. If the opinion of the ARC is positive, the draft regulation is submitted to the European Parliament and the Council for a three-month scrutiny period. In the absence of objections during this period, the European Commission adopts the endorsing regulation. Each time a new IFRS is endorsed at EU level, the European Commission publishes an amending regulation to Regulation (EC) No 1126/2008⁴⁶, which codifies the IFRS as adopted by the EU.⁴⁷

⁴⁵ Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards (OJ L 243, 11.9.2002, p. 1).

⁴⁶ Commission Regulation (EC) No 1126/2008 of 3 November 2008 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council (Text with EEA relevance) (OJ L 320, 29.11.2008, p. 1).

⁴⁷ For further information on the endorsement process, see **"Financial reporting – EU rules on financial information disclosed by companies"**.



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