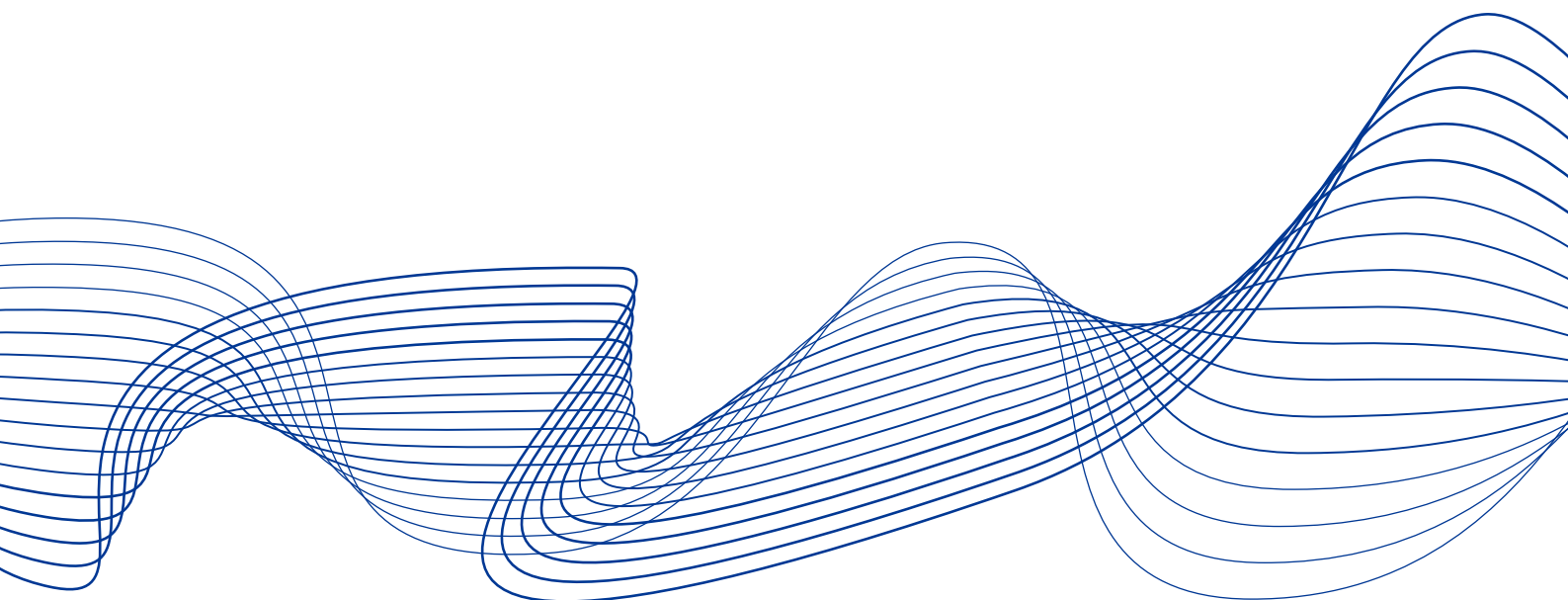


Financial stability implications of IFRS 9

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Contents

Executive summary	3
Section 1 Introduction	7
Section 2 IFRS 9 and fair value accounting for the measurement of financial assets	9
2.1 The debate on the use of fair values for the measurement of bank assets	9
2.2 Changes to the measurement of financial assets under IFRS 9	12
2.3 A snapshot of the use of fair value by European banks	14
Section 3 The new expected credit loss paradigm	18
3.1 Description of the expected credit loss approach in IFRS 9	18
3.2 Implementation benefits and challenges	20
3.3 Interaction of IFRS 9 with bank regulation	24
3.4 Day-one effects and transitional arrangements	27
3.5 Cyclical implications of IFRS 9	29
3.6 Effects on loan pricing and loan maturities	37
Section 4 Assessment and policy considerations	39
4.1 Assessment	41
4.2 Policy considerations	43
4.2.1 Usage of fair value accounting	44
4.2.2 Modelling risk	44
4.2.3 Lending behaviour	46
4.2.4 Procyclicality	46
4.2.5 SA and less sophisticated banks	50
References	52
Annex 1 Description of IFRS 9	59
A. Recognition and measurement of financial instruments	59
A.1. Recognition and derecognition of financial instruments	59
A.2. Classification and measurement of financial assets	60



A.3. Classification and measurement of financial liabilities	62
B. Impairment of financial assets	62
C. Hedge accounting	65
D. Brief comparison between IFRS 9 and the relevant new US GAAP requirements	66
Annex 2 Literature review	69
A. Impact of accounting rules on financial stability	69
B. Importance of transparency for market discipline	72
C. Managerial discretion and the implications of delayed loss recognition	73
Annex 3 Supervisory data on the use of fair value by EU banks	75
Acknowledgments	81
Imprint	82



Executive summary

IFRS 9 is the new accounting standard for the classification and measurement of financial instruments, issued in response to the mandate received from the G20 in the light of the performance of accounting standards during the global financial crisis. The European Union endorsed IFRS 9 in November 2016 for mandatory application from 1 January 2018 onwards.

This ESRB report has been prepared following a request by the European Parliament to consider the financial stability implications of IFRS 9. It analyses two main aspects of IFRS 9 from a macroprudential angle and with a focus on banks: the new approach to the classification and measurement of financial assets and the new expected credit loss (ECL) approach for measuring impairment allowances.

IFRS 9 replaces the rules-based classification system under IAS 39 with a clearer principles-based approach. Measurement at fair value generally applies, except for instruments qualifying for amortised cost measurement according to two criteria. First, instruments must have cash flow rights consisting solely of payments of principal and interest (SPPI). Second, they must belong to a hold-to-collect business model.

The report reflects a long debate on the use of fair value or historical cost for the measurement of financial assets and the suitability of these methods for different bank assets. It concludes that the classification of financial assets under IFRS 9 will, in principle, be clearer and sounder than under its predecessor and should not generally lead to a significant increase in the use of fair value by EU banks, at least at the aggregate level.

The report identifies three areas in which there are significant changes relative to IAS 39 and which, for specific banks or periods of time, could entail relevant differences. First, debt instruments including embedded derivatives will no longer qualify to have their pure debt component separated and thus measured at amortised cost. Second, except for dividend income, none of the gains or losses from equity instruments measured at fair value through other comprehensive income will be reported in profit or loss. Third, highly liquid assets eligible for inclusion in the regulatory liquidity buffer but which, on the basis of their management during normal times, belong to a hold-to-collect business model may be measured at amortised cost, raising concerns about the emergence of unrealised fair value gains or losses if they need to be sold in times of acute stress. According to the assessment in the report, the aggregate quantitative importance of the assets affected by the first two changes is very small, while the importance of the third will depend on business model choices that are hard to anticipate on an ex ante basis.

The shift from an incurred loss approach to an ECL approach for measuring impairment allowances is the most important change introduced by IFRS 9. The ECL approach will apply to all instruments held at amortised cost as well as to all instruments held at fair value through other comprehensive income. The approach is based on three stages. Stage 1 refers to financial instruments whose credit risk has not significantly increased since initial recognition and implies recognising ECLs from default events possible within the next twelve months. Stage 2 refers to non-impaired assets whose credit risk has significantly increased since initial recognition and implies recognising ECLs over the entire residual lifetime of the instrument. Stage 3 refers to assets which are already impaired (in broad terms, the only ones for which IAS 39 considered impairment allowances) and also involves (as was already the case under IAS 39) recognising credit losses on a lifetime basis.



The new approach pursues a fuller and more timely recognition of credit losses, thus enhancing both the size of loss-absorbing allowances and their responsiveness to information pointing to a deterioration or improvement in credit risk. Reporting entities must base their unbiased, point-in-time estimates of ECLs on a broad range of credit-relevant information, including forward-looking macroeconomic variables. This is in contrast to the recognition of credit losses in the past, which was primarily based on realised events.

While the transition to the ECL approach requires a significant investment in new models, the adaptation to IFRS 9 could benefit banks by improving their internal credit risk monitoring systems. While banks currently using the internal ratings-based approach (IRB) to establish their capital requirements can adjust their models, banks solely using the standardised approach (SA) to determining their capital requirements may need to develop models from scratch.

IFRS 9 establishes broad principles on how to model ECLs, leaving many important details to the judgement of the reporting entities and their interaction with auditors and regulators. For instance, the shift of exposures from stage 1 to stage 2 (or vice versa) is critically dependent on the practical implementation of the concept of “significant deterioration in credit risk”. Regulatory guidance could help to ensure a sound and harmonised implementation of the ECL approach. Disclosures will be crucial in guaranteeing an adequate level of transparency regarding the computation of impairment allowances. Consequently, the scope and depth of the external verification of ECL model implementation by auditors as well as banking and market regulators could have a significant influence on the quality and consistency of the application of the new accounting standard.

Variations in credit impairment allowances obtained under given accounting standards have a direct impact on the profit or loss of the reporting entity and, through it, on accounting capital. The report elaborates on the interaction between impairment allowances and capital regulation, outlining the current relationship between accounting and regulatory provisions. It also reflects on the so-called day-one effects of IFRS 9 and the transitional arrangements which aim to mitigate or prevent the implications of a contraction in banks’ regulatory capital following the initial implementation of IFRS 9.

The report also analyses the cyclical implications of the ECL approach. A more timely and forward-looking recognition of credit losses addresses the criticism of the “too little, too late” provisioning resulting from the incurred loss approach. By expediting loss recognition, IFRS 9 may improve financial stability. If the downturn or its implications can be identified sufficiently early on, procyclicality may be reduced and the credit contraction in a downturn may be less severe. Early loss recognition may also reduce market concerns regarding capital adequacy in a crisis, and is typically regarded as positive in terms of enhancing transparency and the effectiveness of market discipline. However, the ECL approach also implies reacting to new and forward-looking information as it is received, so impairment allowances may increase suddenly and significantly if aggregate economic indicators deteriorate. As a result, IFRS 9 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.

Complementing this report, the analysis of Abad and Suarez (2017) provides a model-based assessment of the cyclical implications of IFRS 9 for a portfolio of European corporate loans. The results suggest that IFRS 9 impairment allowances will react sooner and more strongly to changes in the cyclical state of the economy, thus causing capital resources to be consumed more suddenly when the economy weakens.



The report also discusses implications of the ECL approach in IFRS 9 for other aspects which are potentially relevant to financial stability, including loan pricing and the creation of incentives for shortening loan maturities or modifying other aspects of lending behaviour.

Apart from the greater clarity and certainty associated with its principles-based approach to the classification of financial assets, the most important innovation of IFRS 9 is its ECL approach to impairment allowances. Following a sound and strict implementation, such an approach will increase transparency and facilitate the earlier and more comprehensive recognition of impairment losses, which has been found to have positive effects on financial stability. However, it is prudent to be aware of potential developments whereby the interaction of the new standard with the reaction of the various actors involved, regulation, and the evolution of the aggregate economy may have detrimental effects on financial stability. The last section of the report focuses on the five primary areas identified as deserving attention from the perspective of financial stability, offering an assessment and some policy considerations on each of them.

1. Usage of fair value accounting. The new framework governing whether assets are measured at fair value or at amortised cost is not expected to significantly increase the use of fair value among EU financial institutions relative to IAS 39. IFRS 9 may alter the treatment of specific assets but, from a system-wide perspective, supervisory data suggests that the cumulative impact of such differences will be quite limited. The introduction of IFRS 9 does not itself justify a reconsideration of prior decisions regarding the regulatory treatment of some fair value changes. Particular attention may need to be devoted during the post-implementation period to assets that under the new standard may meet the conditions for measurement at amortised cost while being eligible for the liquidity coverage ratio and, therefore, presumably sellable during periods of liquidity stress.
2. Modelling risk. The ECL approach to impairment allowances under IFRS 9 entails a large degree of sophistication and poses challenges related to the lack of data or experience relevant to the required modelling. These challenges, together with the role of managerial judgement and discretion in the modelling process, leave room for users of financial statements to receive richer but also noisier and potentially easier-to-manipulate pieces of information. The report elaborates on the importance of avoiding models with unnecessary complexity, providing regulatory guidance on key discretionary choices (such as the concept of “significant deterioration credit risk” crucial for the transfer from stage 1 to stage 2), guaranteeing the quality and effectiveness of the information provided through disclosures, and making sure that the external auditing and enforcement of IFRS 9 meets the ambitious goals of the new standard.
3. Lending behaviour. Banks may adjust the interest rates charged on loans in anticipation of the new impairment allowances (and their capital cost). While such re-pricing may well improve efficiency through a more adequate pricing of risk, it could also alter the composition of credit portfolios and its evolution throughout the business cycle. Depending on the degree of competition in certain loan markets, such a response has the potential to shift credit risk to entities not subject to IFRS 9, including some beyond the regulatory perimeter. Furthermore, banks worried about the cliff effects associated with loans that move from stage 1 to stage 2 may reduce the maturity of their loans or prefer borrowers with activities less sensitive to the business cycle. The fact that some contracts, including embedded derivatives, will no longer qualify to have the non-derivative component measured at amortised cost may result in a decline in the prevalence of certain forms of optionality. The combined impact of these changes on financial stability is difficult to determine in advance, meaning that it would be prudent to include these issues among those to be analysed in the post-implementation



review of IFRS 9, preferably with the involvement of market intelligence and academic researchers.

4. Procyclicality. If soundly implemented, the expected credit loss approach of IFRS 9 is expected to contribute to financial stability by introducing greater levels of transparency and a more timely and decisive recognition of credit losses. However, economic fluctuations are difficult to predict and switches from expansion to contraction often occur unexpectedly. In a scenario where many banks face a simultaneous increase in ECLs, the sum of the individual measures adopted by banks to maintain their levels of capital may result in a system-wide reduction in bank lending and de-leveraging pressures. While banks might be expected to adopt their own precautions, existing evidence points to potential real effects from the sudden tightening of banks' capital constraints, especially if they occur during stressful periods. Policies to address procyclicality can be grouped into four categories: (i) sound, well-communicated and consistently applied financial reporting that adequately prepares market participants for the outcome of the expected loss approach in IFRS 9; (ii) 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) to offset undesirable credit supply effects; (iii) the use of stress testing as a means to gauge the importance of the variation in impairment allowances associated with adverse scenarios in order to guarantee the presence of sufficient buffers and allow for remedial policy action if required; and (iv) prudential adjustments (via the definition of regulatory provisions or regulatory capital) that could help to smooth out the impact of sudden undesirable increases in accounting provisions on regulatory capital.
5. SA and less sophisticated banks. Banks using the SA approach for capital requirements on all or a large portion of their loan portfolios may need to undertake significant efforts to adopt and maintain the ECL approach. Taking advantage of modelling synergies, some of these banks may decide to adopt the IRB approach for capital requirements. From a long-term structural perspective, the fact that SA banks must become more sophisticated might help improve product pricing and risk management. Considering the financial stability ramifications of competition policy, however, the implied fixed cost of sophistication might increase the minimum scale needed for a bank to be profitable and act as a barrier to entry for small institutions. The adoption of the ECL approach by SA banks implies the need for further investigation of their regulatory capital regime, especially in terms of the treatment of provisions and its consistency with the calibration of the capital requirements. On the issue of modeling, regulators should be aware that imposing unnecessary levels of complexity on small banks may be detrimental to their long-term viability.



Section 1

Introduction

IFRS 9 is the new accounting standard for the classification and measurement of financial assets and liabilities prepared by the International Accounting Standards Board (IASB) in response to the mandate received from the G20 in the light of the performance of the previous accounting standards during the global financial crisis. Fair value and impairment losses during the crisis were recognised using the accounting standards prevailing at that time (e.g. IAS 39), and the significant increases in these losses observed at that time were perceived to have procyclical features. In 2009, the G20 called for improved standards for the valuation of financial instruments and welcomed recommendations by the Financial Stability Forum regarding, amongst other things, the interaction between accounting issues and procyclicality.¹ These included calling upon the primary bodies responsible for establishing accounting standards (the IASB and the Financial Accounting Standards Board (FASB)) to “reconsider the incurred loss model by analysing alternative approaches for recognising and measuring loan losses that incorporate a broader range of available credit information”.² This advice was based on the argument that recognising loan losses at an earlier stage in the credit cycle could have potentially reduced procyclicality.

On 24 July 2014 the IASB published the final version of IFRS 9 Financial Instruments, the new standard for the accounting of financial assets and liabilities, scheduled to replace IAS 39 on 1 January 2018. On 27 June 2016, the Accounting Regulatory Committee (ARC) of the European Union (EU) voted in favour of endorsing IFRS 9. The final adoption by the EU took place via a Regulation of the European Commission in November 2016.³ The IASB’s amendments to IFRS 4, which provides insurers with the option not to apply IFRS 9 and to align the implementation of IFRS 9 with the implementation of IFRS 17 Insurance Contracts (expected to be mandatorily applicable from 2021), have not yet been endorsed by the European Union.

IFRS 9 introduces innovations on three main fronts. The new standard introduces a more principle-based classification and measurement of financial instruments (mixed attribute model), a new impairment model for basic lending instruments based on the recognition of expected credit losses (ECLs), and a principle-based general hedge accounting model that is more closely aligned with common internal risk management procedures.

Following a request by the European Parliament, this report assesses the financial stability implications of IFRS 9. On 8 January 2016, the Chair of the Committee on Economic and Monetary Affairs (ECON) of the European Parliament submitted a letter to the ESRB Chair, requesting an analysis by the ESRB of the financial stability implications of IFRS 9. The analysis was to focus on two issues: first, whether the introduction of IFRS 9 implies that the fair value measurement of financial assets is being extended and that, as a result, it may have macroprudential implications; and, second, whether the new approach to impairment allowances might have procyclical effects and be detrimental to financial stability. The report was also to

¹ Cf. G20 Declaration on strengthening the financial system, London, 2 April 2009.

² Cf. Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System, 2 April 2009 (FSB, 2009).

³ Commission Regulation (EU) 2016/2067 of 22 November 2016 amending Regulation (EC) No 1126/2008 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council as regards International Financial Reporting Standard 9 (Text with EEA Relevance) (OJ L 323, 29.11.2016, p. 1).



identify challenges and problems relating to the implementation of IFRS 9 and assesses whether authorities have the instruments needed to address these issues. In other words, the report was to consider any issues that may be raised by IFRS 9, particularly in times of stress, and to provide macroprudential authorities with the information needed to prepare themselves to address these issues.

The purpose of this report is to provide a holistic and high-level analysis of the financial stability implications of IFRS 9, relying on quantitative analysis and evidence when possible.

In order to respond to the request by the European Parliament, this report has considered the financial stability implications of IFRS 9 for the financial system of the EU, with a particular focus on banks. In those areas where it was deemed necessary and feasible, this report provides empirical evidence and quantitative analysis to substantiate its conclusions, while taking into consideration caveats relating to the lack of appropriate data and the assumptions underlying any particular methodology. In other areas, the analysis is generally qualitative and based primarily on internal and external expert judgement.

The report is structured as follows. Section 2 discusses the new principles introduced by IFRS 9 regarding the classification and measurement of financial assets and the extent to which they may be expected to increase the reliance on fair value measurement among EU banks. Section 3 discusses the new ECL approach to impairment allowances in detail. Section 4 assesses the financial stability implications of IFRS 9, especially with regard to the potential procyclicality of its approach to credit impairment, and discusses the potential policy implications and options. The report contains several annexes. Annex 1 describes IFRS 9, including a brief comparison with the equivalent amendment to accounting standards in the United States. Annex 2 reviews the existing academic literature on the relation between accounting standards and banks, putting particular emphasis on issues associated with financial stability. Annex 3 complements the analysis in Section 2, offering some additional aggregated supervisory data on the use of fair value by EU banks.



Section 2

IFRS 9 and fair value accounting for the measurement of financial assets

This section begins by briefly presenting the discussion on the use of fair value for the measurement of financial instruments. There is an ongoing debate on which is the most appropriate method for measuring the value of financial instruments, with historical cost and fair value as the classically opposed alternatives.⁴

This is followed by a description of the changes in classification and measurement introduced by IFRS 9, which examines the extent to which these changes may imply an increase in the reliance of EU banks on fair value. Fair value accounting has already been applied by EU banks for many years, as it is mandated by IAS 39 for a wide variety of financial assets. In essence, IFRS 9 introduces clearer criteria for classifying assets for measurement at fair value through profit or loss, at fair value through other comprehensive income or at amortised cost. The new criteria are based on experience with the discretionary application of previous criteria as well as the perceived weak criteria that permitted dubious reclassifications in the past, sometimes in an attempt to alleviate the pressure on banks' capital positions (e.g. during the financial crisis by allowing transfers from the available-for-sale category to IAS 39 categories where the financial instruments are measured at amortised cost). Based on aggregate supervisory data from the European Banking Authority (EBA), the report provides a snapshot of the use of fair value by EU banks and a brief assessment of the importance of the assets that will fall under each valuation category under IFRS 9.

2.1 The debate on the use of fair values for the measurement of bank assets

There is a long-running debate on the choice between historical cost accounting (HCA) and fair value accounting (FVA) for financial assets. There are several arguments both against and in favour of each alternative (see Laux and Leuz (2009) for a detailed discussion). Table 1 below provides a crude overview of the key arguments made on each side of the debate. At the risk of oversimplification, the table presents the items on which the two sides hold fundamentally opposing views.⁵ The bottom line is that the opposing claims that FVA compromises financial stability or that HCA is the key to greater stability are not unquestioned. In fact, as documented in Annex 2, a growing body of empirical work points to the opposite conclusion.

There is hardly any disagreement that fair value accounting is appropriate for trading assets (which should generally be liquid) as well as liquid derivatives. On the other hand, there is hardly any dispute regarding the applicability of amortised cost (an example of historical cost) for basic lending instruments expected to be held until maturity so long as appropriate valuation bases are used for liabilities that support these assets. For liquid securities traded in

⁴ Annex 2 explores the main findings of the theoretical and empirical literatures regarding (i) the impact of accounting rules on financial stability and procyclicality, (ii) the importance of transparency for market discipline and (iii) managerial discretion and the implications of delayed loss recognition.

⁵ Another complementary aspect refers to the risks relating to fair value gains and impairment losses. Fair value gains are assumed to reflect changes in all the underlying risks of a financial asset whereas impairment losses are related only to changes in the credit risk of the underlying asset and not to other risks, such as interest rate risk.



active markets that banks hold for trading purposes, FVA reflects the gains and losses of the underlying business model in a timelier manner, enhancing transparency and facilitating market discipline. In addition, FVA removes the incentives for “gains trading”, that is for selling (or abstaining from selling) assets with the purpose of inflating or deflating (or abstaining from inflating or deflating) reported profits, a common practice under HCA (see the literature review in Annex 2 for references).

Table 1
Arguments in favour of or against fair value accounting and implications for financial stability

Arguments against fair value (for historical cost)	Arguments for fair value (against historical cost)
Temporary changes in market value are not relevant for assets held for the collection of future cash flows. In particular, for longer term investments.	Temporary market value changes are relevant when determining whether assets can be held for the collection of their cash flows, especially if they are funded in the short term.
FVA produces increased volatility of equity and, if fair value changes go through profit or loss, in net income. The part of such volatility due to interest rate changes is “not relevant” if assets are held until maturity. There is a mismatch between assets measured at fair value and liabilities measured at historical cost.	Volatility under historical cost is artificially low as it does not reflect current market prices. Interest rate changes are relevant for banks, especially when facing refinancing needs. The mismatch between the measurement of financial assets and financial liabilities can be addressed by increasing the role of FVA on the liability side rather than reducing it on the asset side.
Investors are misled by high volatility (and tend to overreact to negative news in a crisis and positive news in booms, feeding volatility). Fair value reveals critical information to competitors and other investors (e.g. proprietary trading strategies followed by the reporting entity).	Investors are misled by artificially low volatility. Market discipline suffers. Lack of information contributes to adverse selection in a crisis. Fair value increases transparency which is generally beneficial.
To reduce the impact of interest rate volatility, banks shift to securities with shorter maturities and reduce holdings of interest-sensitive available-for-sale securities, which might reduce market liquidity.	FVA reduces reluctance to sell holdings of risky, illiquid securities, in particular at the start of a crisis.
FVA contributes to procyclicality and results in fire sales in a crisis when assets become illiquid and decrease in value	FVA encourages banks to take early corrective action at the onset of a crisis (e.g. sell assets or raise capital).

Source: ESRB.

The main areas of disagreement regarding the appropriateness of one approach or the other relate to i) assets mainly held for the collection of cash flows, but which banks may occasionally sell to manage liquidity or interest rate risk, and ii) illiquid assets other than loans for which deriving a fair value involves substantial managerial discretion. In these cases the balance of advantages and disadvantages does not tilt clearly in favour of one alternative or another. In the case of liquid assets held not for trading but in order to manage liquidity or interest rate risk, market prices would be readily available and the concern is that using FVA may induce excessive volatility and potential procyclicality in net income and in regulatory capital if not “matched” by corresponding movements in values placed on liabilities. For illiquid assets, the concern is the degree of discretion involved in determining fair values (a problem akin to having to compute an expected impairment loss for assets measured at amortised cost). Critics of FVA fear that reporting entities could use modelling discretion to inflate fair values, although the scope for this could be attenuated, via market discipline, using extensive disclosures of modelling assumptions.

At this stage, to better understand the debate it is necessary to take a closer look at some of the key arguments involved.

- **Relevance of market prices.** Opponents of FVA argue that market prices are not relevant for assets that banks hold for the collection of cash flows (until maturity) as long as the corresponding liabilities are valued appropriately. They argue that unrealised gains and losses



due to changes in market values (e.g. following variations in interest rates) lead to variations in net income and equity capital. This effect might mislead investors, producing signals that are irrelevant given the underlying business model. They further doubt the reliability of imputed fair values when the reporting entities base them on models. On the other side, arguments in favour of FVA stress the timeliness of information and the prevention of “gains trading” as well as the lack of relevance of historical costs for certain types of financial instruments (such as derivatives that often do not require any upfront investment, resulting in a historical cost of nil).

- **Unrealised versus realised gains or losses.** One important argument relates to the distinction between unrealised and realised gains or losses. However, for liquid securities, it is unclear whether this distinction is material or simply offers room for income manipulation. For example, under HCA, a bank can sell and repurchase a liquid security simply to realise a gain. However, at a fundamental level and ignoring transaction costs (which are arguably minor in a liquid market), the argument for FVA is that there should be no difference between (a) the bank holding the security and recognising an unrealised gain and (b) the bank selling the security, taking the proceeds from the sale to purchase the same security again and recognising a realised gain.⁶ Likewise, if markets are liquid, a bank could attempt to replicate a derivative with a long maturity through a bundle of derivatives with staggered maturities. In the former case, however, interim gains and losses would be unrealised, while in the latter the bank would realise interim gains and losses, so again FVA (as opposed to HCA) would have the virtue of treating two comparable positions equally.
- **Volatility of fair values.** Another important argument is that FVA may induce greater volatility in net income than would normally correspond to an entity's business model. For example, interest rates are very volatile and such volatility may affect both assets and liabilities. Recognising the market value effect on assets but not on liabilities could be misleading. However, it is unclear whether the right approach here would be to dismiss FVA for assets or to also use FVA for liabilities. At the other end of the spectrum, measurement at amortised cost may respond too little, too slowly or not at all to a deterioration in market conditions (e.g. at the beginning of a downturn or in response to interest rate risk), potentially contributing to the delay or neglect of necessary adjustments. In fact, this was the key concern that led to the replacement of the incurred loss approach to impairment allowances under IAS 39 with the expected loss approach under IFRS 9.
- **Measurement of fair values.** Fair value is easy to measure when assets have readily available market prices (Level 1 assets). Otherwise, measurement requires reliance on valuation models supplied with observable market variables (Level 2 assets) or judgement based on unobservable inputs (Level 3 assets).⁷ For debt securities without liquid secondary markets, the measurement of fair value requires estimating credit risk, a challenge similar to measuring credit impairment allowances on an ECL basis.⁸

⁶ This argument ignores tax implications, which may be important.

⁷ IFRS 13 defines the criteria for the allocation of financial assets and liabilities to these three levels.

⁸ In general terms, an expected loss is the value of a possible loss multiplied by the probability of that loss occurring. Models of expected losses use mathematical techniques to calculate the expected loss, taking the amount of the exposure, the probability of default and the amount possibly recovered at default as main variables.



- **Transparency.** Both the preparers and users of financial statements generally view the measurement of liquid financial assets at fair value as good for transparency and, as a result, for market discipline. Nevertheless, even in these cases, transparency and market discipline can be further enhanced via additional disclosures. For example, the disclosure of a minimum and maximum fair value (or of the volatility of fair value) over the reporting period may be complementary to the point estimate of fair value at a specific reporting date. For less liquid assets, some fear that modelling discretion might allow for a certain degree of manipulation, which, as noted above, could be constrained by the scrutiny of market participants if the modelling details are disclosed.

2.2 Changes to the measurement of financial assets under IFRS 9

The measurement approach applicable to financial assets under IFRS 9 depends on a principles-based classification into several categories. Straightforward measurement at amortised cost applies to assets that satisfy a dual criterion: (a) their contractual cash flows are solely payments of principal and interest (SPPI) and (b) they are related to a hold-to-collect business model. If a SPPI instrument is related to a hold-to-collect-and-sell business model, its measurement is at fair value with changes in such value presented in other comprehensive income.⁹ Any other assets are measured at fair value, with changes in such value presented in the profit or loss statement as a general rule, albeit with certain exceptions.¹⁰

Surveys on the potential impact of IFRS 9 indicate that the application of the tests above will not lead to a systematic increase in the use of fair value for financial assets among EU banks.¹¹ Several surveys (European Banking Authority (2016b); Deloitte (2016) and Ernst & Young (2016)) have been carried out to try to anticipate the impact of IFRS 9 on banks. The results of these surveys show that the entry into force of IFRS 9 should, theoretically, not lead to an extension in the use of fair value as the quantitatively most important categories of assets in IAS 39 are quite clearly the same as the equivalently measured categories in IFRS 9. However, the two criteria for measurement at amortised cost need to be assessed for each individual financial asset, and there may be particular cases in which the valuation method changes. For example, the business model criterion may allow banks to apply amortised cost for SPPI instruments held to manage liquidity only in periods of crisis (e.g. with the idea of selling them only if necessary), whereas under IAS 39 those instruments would have belonged to the available-for-sale category and, therefore, been measured at fair value through other comprehensive income. A case like this would thus reduce the use of FVA by banks. Conversely, while most loans in practice satisfy the SPPI criterion (including loans that involve certain types of prepayment or extension options), there may be loans with specific features that do not meet the SPPI criterion and, therefore, have to be

⁹ For financial assets meeting the SPPI criterion but related to a hold-to-collect-and-sell business model, impairment allowances are measured the same as loans measured at amortised cost, with their variations affecting profit or loss, and therefore have the same impact on profit or loss as loans measured at amortised cost. The difference, however, is that the discrepancy between the fair value with which they are measured in the statement of financial position and the amortised cost is presented in other comprehensive income.

¹⁰ One such exception is provided by not-held-for-trading equity instruments, which are designated for measurement at fair value through other comprehensive income at initial recognition.

¹¹ In Europe, the normal practice for banks is to originate loans and then to hold them until maturity to collect interest payments and their principal ("originate and collect"). In the US, on the contrary, banks often originate loans and subsequently sell them to another party, with a model closer to "originate and distribute". In the latter case, loans would not meet the criteria to be measured at amortised cost.



measured at fair value through profit or loss. Cases like these are expected to remain marginal in terms of their importance for the entire banking sector, but they could imply greater or lesser reliance on FVA for specific individual banks.

Some debt instruments with optionality, including hybrid debt instruments, are expected not to satisfy the SPPI criterion and their separation into several instruments subject to different measurement criteria will not be permitted. A subset of those debt instruments which include an optionality clause, like hybrid debt instruments, would not meet the SPPI criterion and, as such, would need to be measured in full at fair value through profit or loss.¹² IAS 39 allows the separation of these instruments into a host contract and the embedded derivative, and the use of amortised cost measurement for the former. This separation under IAS 39 has been widely criticised as fictitious. Therefore, for hybrid debt instruments, IFRS 9 extends fair value measurement to the standard loan component of the hybrid debt instrument. It is hard to predict at this stage whether the change would imply an increase in the use of FVA or a shift towards standard debt contracts that pass the SPPI test. The outcome would very much depend on specific decisions by banks and on the strength of the economic rationale for the use of the specific hybrid debt instruments under consideration.

There is also a difference in terms of the measurement of equity securities at fair value through other comprehensive income, in comparison with those held as available-for-sale under IAS 39. Under IFRS 9, equity instruments not held for trading can be designated for measurement at fair value through other comprehensive income at initial recognition.¹³ When this happens, however, gains or losses realised when selling the asset will remain reflected in other comprehensive income, without affecting profit or loss. This is different from the treatment of assets within the available-for-sale category of IAS 39, under which unrealised gains or losses had no impact on profit or loss while realised ones did. Under IFRS 9, if the equity instrument is instead measured at fair value through profit or loss from its initial recognition, all gains or losses, realised or unrealised, will contribute to profit or loss.¹⁴

A further area of potential concern regarding the measurement criteria in IFRS 9 relates to highly liquid assets that are eligible for inclusion within regulatory liquidity buffers and held to be used in times of acute stress. Banks are required to hold additional eligible liquid assets over and above what is necessary to meet everyday liquidity needs. These assets can be readily accessed in an acute stress scenario. As such events are expected to be rare, banks may sell assets in this part of the portfolio only infrequently and so manage these assets to maximise interest income (e.g. by holding longer-term assets). Under IFRS 9, those financial assets used to manage everyday liquidity needs (provided that they successfully pass the SPPI test) will be measured at fair value through other comprehensive income. This accounting has greater potential for volatility during normal times but avoids causing additional variation in regulatory capital if and when the assets are sold to raise liquidity. However, it is possible that, unless the fair value option is applied, some assets passing the SPPI test will be measured at amortised cost on the basis of

¹² The assessment must be carried out for individual products, which may have different characteristics. Consequently, some financial instruments with optionality may not fail the SPPI test and, if they fit into a hold-to-collect business model, will be measured at amortised cost.

¹³ Equity instruments do not meet the SPPI criterion, so they cannot be measured at amortised cost.

¹⁴ The existence of two alternatives for the measurement of these assets under IAS 39 was thought to create unnecessary complexity and to have the potential to mislead those investors who focus solely on the evolution of profit or loss, as gains or losses from equity instruments at fair value through other comprehensive income would not be reflected in the profit or loss statement.



their business model.¹⁵ This could also occur in the case of financial assets used to meet liquidity needs in a stress case scenario.¹⁶ Valuing eligible liquid assets at amortised cost implies reducing the volatility of value changes in normal times, but may lead to the realisation of gains or losses with an impact on regulatory capital if and when such assets must be sold to raise liquidity. This has the potential to make market risk losses crystallise unexpectedly in a liquidity stress scenario.¹⁷

In the current regulatory framework, Basel III removed prudential filters intended to shield banks' regulatory capital from unrealised fair value changes of financial assets measured at fair value through other comprehensive income. Regulators can and often do make adjustments to the accounting financial statements for the purposes of defining available and required regulatory capital.¹⁸ These adjustments may include (i) prudential filters that limit the effect of unrealised gains and/or losses on securities on available regulatory capital (which may increase or decrease available regulatory capital), (ii) prudent valuation adjustments to the value of individual assets (which may increase or decrease available regulatory capital), (iii) deductions of certain individual assets from available regulatory capital, and (iv) asset risk weights (which determine required regulatory capital). The Basel III framework, implemented in the EU through the Capital Requirements Directive (CRD) 2013/36/EU and the Capital Requirements Regulation (CRR) 575/2013, removed the prudential filters for available-for-sale securities.¹⁹

2.3 A snapshot of the use of fair value by European banks

Using supervisory data provided by the EBA, it is possible to quantify the use of fair value by European banks and to provide some limits to the importance of the items whose measurement might change as a result of the entry into force of IFRS 9. EBA regularly collects supervisory data for a sample of approximately 190 EU banks with total assets of almost €30 trillion, or around 90% of all assets held by EU banks. Table 2 describes the assets of the banks in the EBA sample at the end of December 2016 and their classification according to measurement categories and measurement methods, singling out some items whose measurement might change under IFRS 9, as discussed in the previous paragraphs (equity instruments held as available-for-sale, and the host contract part of hybrid financial instruments).

Assets measured at amortised cost constitute the bulk of total assets (57.6%) for the EBA sample of EU banks (Table 2), followed by assets measured at fair value (36.5%) and other assets (5.9%). Since IFRS 9 does not change the measurement of derivatives (measured at fair value through profit or loss under both IAS 39 and IFRS 9) and to avoid distorting the assessment because of the fact that derivative positions measured on the liability side of the balance sheet largely match those on the asset side, Table 2 distinguishes between assets measured at fair value other than derivatives (24.8% of total assets) and derivatives (11.7%). The former essentially consists of four major components: cash and cash balances at central banks (6.7% of total assets),

¹⁵ Importantly, for the purposes of the liquidity coverage ratio (LCR), HQLA are measured at market value, regardless of their measurement for accounting purposes.

¹⁶ See Example 4 of IFRS 9.

¹⁷ However, banks can avoid realising unrealised gains or losses on assets measured at amortised cost by obtaining liquidity through repo transactions instead of engaging in straight sales of these assets.

¹⁸ On a case-by-case basis, regulators can also impose such adjustments on individual banks via Pillar 2.

¹⁹ See footnote 10 of Basel Committee on Banking Supervision (2011). European Banking Agency (2013b) discusses in detail the convenience of having or not having prudential filters for fair value gains in the European regulatory framework.



assets held for trading (6.8%), assets designated at fair value through profit or loss (3.0%) and available-for-sale financial assets (8.4%).

At an aggregate level, the items whose measurement might be altered the most by the introduction of IFRS 9 represent a very small fraction of the total assets of EU banks.

Previous paragraphs have identified equity instruments classified as available-for-sale and hybrid instruments as those financial assets whose measurement would change with the introduction of IFRS 9. Equity instruments classified as available-for-sale are those which will only continue to qualify for measurement at fair value through other comprehensive income if designated as such at initial recognition, but will then no longer see their realised gains or losses, except for dividend income, reflected as profit or loss. In overall terms, equity instruments classified as available-for-sale amounted to just €108.6 billion (0.4% of total assets) as at the end of December 2016. Similarly, the carrying amount of the host-contract part of hybrid instruments (i.e. the part that in some cases might no longer qualify for measurement at amortised cost) represents barely €39 billion as at December 2016 (or 0.1% of the total assets of the EBA sample). When looking at more granular data, with banks classified according to their size, business model or country, the importance of equity instruments within available-for-sale financial assets or of hybrid instruments whose host contract might no longer be measured at amortised cost may increase in some cases (see Annex 3 for further information) but, in general, the impact of changes on these assets seems rather limited.

Table 2
Stylised asset-side of the EU banks balance sheet according to measurement of financial assets

	EUR billions	% total assets
Assets at amortised cost	17,225.0	57.6%
Loans and receivables	16,886.3	56.5%
of which, hybrid instruments (host contracts)	38.5	0.1%
Held-to-maturity investments	338.7	1.1%
Assets at fair value other than derivatives	7,411.4	24.8%
Cash and cash balances at central banks	1,999.9	6.7%
Financial assets held for trading other than derivatives	2,024.8	6.8%
Financial assets designated at fair value through profit or loss	885.7	3.0%
Available-for-sale financial assets	2,501.1	8.4%
of which equity instruments	108.6	0.4%
Derivatives	3,492.2	11.7%
Other assets	1,773.8	5.9%
TOTAL ASSETS	29,902.4	100.0%
Memorandum items		
Level 1 assets excluding derivatives	2,917.5	9.8%
Level 2 assets excluding derivatives	2,331.0	7.8%
Level 3 assets excluding derivatives	163.0	0.5%
Derivatives - liabilities side	3,440.9	11.5%

Source: EBA supervisory reporting data for Q4 2016.

Note: For clarity, cash and cash balances at central banks have been included in the category of assets at fair value although the consideration of these items as measured at fair value or at amortised cost is contentious in the accounting community. Adjusting the reported figures to an alternative classification would be trivial.



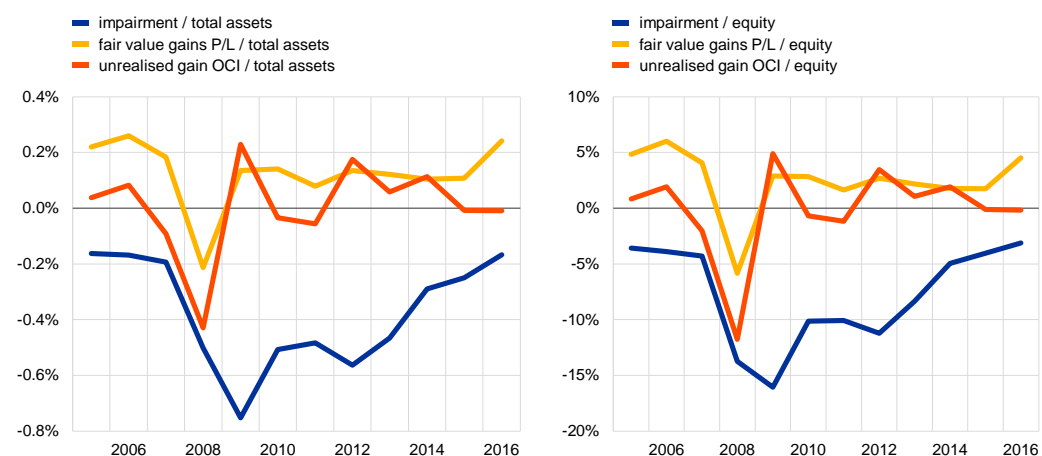
Table 2 also shows the relative importance of Level 1, Level 2, and Level 3 assets among the assets measured at fair value, based on the banks and instruments for which the breakdown is available. Excluding derivatives, which are typically defined as Level 2 or Level 3, financial assets would mostly be categorised as Level 1. Indeed, out of the €5.5 trillion in assets for which the breakdown is available, 54% are Level 1 assets, 43% are Level 2 assets and 3% are Level 3 assets. This means marked-to-model valuations are almost as prevalent as marked-to-market valuations.

Charts 1 and 2 below summarise the contribution of fair value changes to banks' income between 2005 and 2016, and compare it to the contribution of variations in impairment allowances. EBA supervisory reporting data only covers the period since 2014, which is insufficient to summarise the contribution of fair value changes and impairments to the evolution of European banks' income in the recent past. Charts 1 and 2 have therefore been constructed using data covering a sample of approximately 300 European banks of all sizes, countries and types for the period from 2005 to 2016 (12 annual observations). The time series shows ratios resulting from dividing items previously aggregated across all the banks in the sample. Chart 1 uses the relevant aggregated total assets as the denominator of the ratios, while Chart 2 uses the aggregated total equity. If scale is ignored, both charts feature a similar time path.

Charts 1 and 2

Fair value gains and losses and impairment losses to total assets and total equity

(% of total assets (left) and % of total equity (right))



Source: SNL and ESRB Secretariat calculations.

Fair value gains or losses (via profit or loss or via other comprehensive income) made significantly negative aggregate contributions to banks' income in 2007-2008 and much smaller negative contributions in 2010-2011. In the remaining years the aggregate contribution was positive and volatile, ranging from 0% to 0.25% of assets and from 0% to 5% of equity. Fair value gains and losses through profit or loss are visibly more positive and less volatile; in fact this only made a negative aggregate contribution to banks' income in 2008. By comparison, impairments provide a negative contribution throughout the period, which is natural since impairments only collect the negative contribution to income of assets measured at amortised cost (the positive contribution, in the form of interest income, is counted separately). More interestingly, such negative contributions go from "normal levels" of about -0.20% of assets or -4% of equity in



2006-2007 to a trough of approximately -0.75% of assets or -16% of equity in 2009, with a slow subsequent return to normal, followed by a second dip in 2012 and improvement after that.

The impact of impairment losses and fair value losses on total equity in times of financial stress is not negligible. In 2008 both made quite similar contributions to the reduction of banks' equity in spite of the fact that assets measured at fair value represent a lower proportion of the total assets of European banks than the assets measured at amortised cost. However, insofar as fair value changes reflect market prices, which tend to be forward-looking, new information may reverse previously recognised fair value losses. As seen in Charts 2 and 3, this was the case in 2009, when a fair value gain was recorded for the EU banking system as a whole. In contrast, under the prevailing incurred loss approach to impairment allowances under IAS 39 (see Section 3 for further details), impairment allowances exhibit a more protracted evolution, with the incurred losses showing up slowly over time and with abnormally elevated absolute levels up to six years after the beginning of the crisis.



Section 3

The new expected credit loss paradigm

The shift from an incurred loss approach to an expected loss approach in the accounting of impairment losses is the most important change introduced by IFRS 9. Following the global financial crisis, the G20 urged the bodies responsible for establishing accounting standards around the world to move the approach for the recognition of impairment losses away from the incurred loss approach to one that includes “fully recognising existing credit losses earlier in the credit cycle”.²⁰ The shift towards an expected credit loss (ECL) approach in IFRS 9 is the IASB’s response to this mandate.²¹

The new treatment of credit impairment in IFRS 9 applies to all SPPI instruments which are measured at either amortised cost or at fair value through other comprehensive income. It involves assigning each asset to one of three stages, depending on the relative change in its credit risk. The stage determines the way in which the impairment loss is calculated and whether the accrual of interest income is made on the basis of the gross or net carrying amount of the financial asset.

3.1 Description of the expected credit loss approach in IFRS 9

The main difference concerning impairments is that IFRS 9 is based on “expected” rather than “incurred” credit losses. This change was designed to address concerns raised during the financial crisis that IAS 39 led to the late and incomplete recognition of impairment losses on financial instruments. The new standard eliminates the “trigger event” requirement of IAS 39 for the recognition of credit losses (Novotny-Farkas (2015)). Specifically, it establishes the recognition of ECLs before having objective evidence of impairment (“a loss event”) and envisages the updating of the ECLs recognised at each reporting date to reflect changes in credit risk as estimated using available information, including forward-looking macroeconomic variables.

The approach established by IFRS 9 is based on the distinction between three stages into which financial assets are classified according to their relative credit risk at the reporting date:

- Stage 1 – If credit risk for a financial instrument has not increased significantly since initial recognition, an entity shall measure the loss allowance for the instrument at an amount equal to 12-month ECLs. This amount represents estimated lifetime losses from default events that are possible within 12 months of the reporting date. In this stage, interest revenues are recognised based on the gross carrying amount of the financial asset.
- Stage 2 – For non-impaired/non-defaulted assets whose credit risk has significantly increased since initial recognition, lifetime ECLs shall be recognised, i.e. estimated lifetime losses from default events that are possible over the entire residual life of the asset. Although the criterion to belong to this stage is relative to the credit risk at initial recognition, as a practical expedient

²⁰ Cf. Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System, 2 April 2009 (FSB, 2009).

²¹ In the US, FASB has planned a change in its standards whereby impairments will be recognised according to the so-called current expected credit loss (CECL) model; see Annex 1 Section D for details.



entities may assume that credit risk has not increased significantly if the credit risk of the instrument is determined to be low at the reporting date. In this stage, interest revenues are recognised based on the gross carrying amount of the financial asset.

- Stage 3 – A financial asset reaches stage 3 if it is specifically identified as credit-impaired. Equivalent to the treatment of impaired assets under IAS 39, the loss allowance must equal full lifetime ECLs. In this stage, recognition of interest revenue is based on the net carrying amount (i.e. the difference between the gross carrying amount and the loss allowance).

Therefore, the calculation of impairment allowances and the accrual of interest revenue depend on the stage to which an instrument is allocated. Figure A3 in Annex 1 summarises the differences that have just been described. Accordingly, shifts from stage 1 to stage 2 or 3 (and vice versa) affect the horizon over which ECLs are computed. Shifts from stage 2 to stage 3 affect the accrual of interest on either the gross or the net carrying amount. Finally, shifts from stage 1 to stage 3 (and vice versa) affect both the horizon and the accrual of interest.

The new approach pursues a fuller and timelier recognition of credit losses, thus enhancing both the size of loss-absorbing buffers and their responsiveness to information pointing to a deterioration or improvement in credit risk. Experience suggests that the determinants of credit losses (including macroeconomic variables) begin to deteriorate a considerable time before they result in cumulative delinquency. Existing empirical work finds evidence pointing to the fact that the delayed recognition of expected losses has adverse effects on financial stability (Beatty and Liao (2011); Bushman and Williams (2015); Novotny-Farkas (2015)).

The new approach expands the information which banks must use in the calculation of the allowances. The G20 explicitly asked accounting standard setters to “strengthen accounting recognition of loan-loss provisioning by incorporating a broader range of available credit information” in the models to be developed for the computation of impairment losses.²² Under IFRS 9, banks must base their estimates of ECLs on a broad range of credit-relevant information, including forward-looking macroeconomic variables. This responds to the need to calculate expected losses over a horizon of at least 12 months for all exposures measured under the new impairment model. The explicit reference to macroeconomic variables and the need to project them into the future to take account of their impact on future credit losses is one novelty of the new approach and implies a major modelling challenge (Basel Committee on Banking Supervision (2015b), European Banking Authority (2017b)).

The use of macroeconomic variables is expected to improve the timeliness of the recognition of credit losses, as information about arrears is generally understood to be a lagging indicator of credit risk. The recognition of credit losses in the past was mostly based on past events (e.g. missed payments or unemployment). In many cases this information signals the effective materialisation of a credit loss rather than a timely anticipation of the potential credit losses. Often deteriorating macroeconomic conditions can anticipate future increases missed payments for a loan or set of loans. Therefore, considering these conditions in the ECL models can improve the timeliness of the recognition of credit losses as mandated by the G20.

Finally, the new approach offers the possibility of assessing a significant increase in credit risk on both an individual and a collective basis. IFRS 9 states that when some factors or

²² Cf. Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System, 2 April 2009 (FSB, 2009).



indicators are not identifiable for an individual financial instrument, the assessment of the significant increase in credit risk should be performed on a collective basis and, if a significant increase in credit risk is identified, an institution must recognise lifetime ECLs on a group or subgroup of financial instruments. IFRS 9 explicitly refers to retail loans as examples of these situations, since there is typically little or no updated credit risk information that is routinely obtained and monitored for an individual instrument until a customer breaches the contractual terms. Financial instruments can then be grouped together on the basis of shared credit risk characteristics, such as ratings at inception, collateral type, remaining time until maturity or the borrower's location or sector.

3.2 Implementation benefits and challenges

The transition from the current incurred loss approach to the expected loss approach requires banks to make a significant investment in new models, IT infrastructures, data collection and human resources. Attributing ECLs to all SPPI instruments subject to measurement at amortised cost or fair value through other comprehensive income will involve a considerable effort. Even banks familiar with the internal-ratings based (IRB) approach to regulatory capital requirements (which already involves using an expected loss approach to regulatory provisions) face several challenges when implementing IFRS 9. The IFRS 9 approach also requires ECLs to be measured for instruments outside the IRB portfolios and to extend the loss projection horizon from 12 months to the lifetime of the instrument in case it moves into stage 2, as well as to accommodate several methodological differences with respect to the existing regulatory notion of expected losses. All banks must therefore make a significant effort in terms of modelling, IT infrastructure, data gathering and dedicated human resources before the first application of IFRS 9.

A growing number of exercises are being carried out by microprudential authorities at the global (Basel Committee on Banking Supervision (BCBS)), European (EBA and Single Supervisory Mechanism (SSM)) and national levels, as well as the banking industry. These exercises are aimed, amongst other things, at (i) exploring the level of preparedness at several stages until the introduction of the new accounting standards, (ii) analysing the potential impact on banks' regulatory requirements and behaviour, (iii) identifying the key challenges of the implementation of IFRS 9, and (iv) promoting a consistent application of this new accounting standard. Microprudential authorities in those jurisdictions where IFRS 9 is applied have been monitoring the implementation of the new standard by banks under their supervision. Box 1 provides an example of the work undertaken by the SSM in this regard with those euro area banks under its direct supervision. Surveys carried out by consulting firms (e.g. Deloitte (2016); Ernst & Young (2016)) highlight that, as at early 2016: (i) almost half of banks in their samples thought they did not have enough internal technical resources to deliver their IFRS 9 project; (ii) a majority of the banks in their samples foresaw a profound change in their existing systems; and (iii) surveyed banks' main concerns included data requirements, data quality and the development of statistical ECL models. On the latter point, it is interesting to note that most banks using internal models for the purposes of regulatory capital are building on such models, adapting them to the requirements of the new expected credit loss approach. Only some of the larger banks plan to create entirely new models for the purposes of IFRS 9.



SSM Thematic Review: An example of current work by European microprudential authorities

ECB Banking Supervision is carrying out a two-year thematic review, covering 2016 and 2017, to scrutinise how banks implement IFRS 9 with a focus on the new impairment model. The review also assesses whether banks take into account the supervisory principles established by the Basel Committee Guidance on credit risk and accounting for expected credit losses, incorporated by the EBA into its Guidelines on credit institutions' credit risk management practices and accounting for expected credit losses. The scope of the thematic review corresponds to all significant institutions applying IFRS. The objectives of the review are to: (i) evaluate how prepared institutions are for the introduction of IFRS 9, (ii) assess the potential impact on institutions' provisioning practices and (iii) foster the high-quality implementation of IFRS 9.

In 2016 ECB Banking Supervision developed an internal supervisory assessment methodology that takes into account the regulatory developments, emerging best practices and implementation issues on the basis of discussions with practitioners (institutions, auditors and consultants).

This thematic review was launched in December 2016 and the Joint Supervisory Teams, on the basis of the internal assessment methodology, have evaluated the level of preparedness of banks and their implementation practices. The results of the thematic review are expected to contribute to the proper and consistent implementation of IFRS 9 and its provisioning policies by 1 January 2018, the date on which IFRS 9 is to take effect.

The effort of adapting to the requirements of IFRS 9 will benefit banks through the improvement of the internal systems for credit risk monitoring. Some of the results from the existing surveys can be taken to mean that some banks' internal systems to monitor credit risk are outdated or not extensive enough. In this sense, the necessary investment to apply the new expected loss approach may improve the quality of internal information and decision-making regarding credit risk. Therefore, the full and successful implementation of IFRS 9 can have positive effects on the management and governance of banks.

Meanwhile, this significant investment in IT and human capital must be undertaken during a period in which banks are still struggling with legacy problems from the recent global financial crisis and low levels of profitability. At the current juncture, banks are facing a challenging environment of protracted low growth, low interest rates and intense competition, which has adversely affected their profitability. In these circumstances of increased uncertainty in both macroeconomic and financial environments, banks seem to focus on short-term planning, making the investment to introduce IFRS 9 a major challenge to address.²³

In the longer term, the maintenance costs of the models and databases needed for a reliable implementation of the expected loss approach will not be negligible, although the gains in terms of quality of information and decision-making regarding credit risk will also be significant. Even if not comparable to the one-off costs associated with developing the models, the

²³ In Deloitte (2016), more than one third of the larger banks (defined by Deloitte as those with gross lending exceeding €100 billion) reported a total budget for the implementation of IFRS 9 of between €25 million and €100 million.



maintenance costs of these models will become additional costs to add to the operating costs of banks. On the other hand, as when Basel II introduced a more sophisticated approach to capital requirements, the investment in new models and the resulting information are expected to have positive spill-over effects on banks' internal pricing and risk management capabilities.

While banks currently using the internal ratings-based approach (IRB) to their capital requirements can adjust their models, banks solely using the standardised approach (SA) to their capital requirements may need to develop models from scratch. Due to the significant similarities with the internal models for the computation of capital requirements for credit risk, banks using such internal models may decide to adapt them to compute ECLs as demanded by IFRS 9. However, banks that solely use the standardised approach to capital requirements (which are usually those of smaller size and reduced complexity) do not necessarily possess such models (although many use similar models for pricing, risk management and supervisory stress-testing). Most of them will have to update their existing models or will have to develop new models, which may involve higher costs. The costs are mitigated as IFRS 9 will allow for simplified approaches, e.g. those banks might also use “loss rate models” or “loss matrix” approaches instead of a model based on probabilities of default (PD) and loss given defaults (LGD). Even if counting on external advice for their development, these banks will face a learning curve regarding data collection, maintenance, usage and governance of the respective approach.

IFRS 9 establishes broad principles for the modelling of ECLs, leaving many important details to the judgement of the reporting entities and their interaction with auditors and regulators. By its very nature, the application of the ECL approach implies substantial judgement on the part of reporting entities. Beyond this inherent discretion the text of IFRS 9 in some instances only offers broad guidelines and principles. Important decisions in the implementation process (such as defining the triggers for the movement of exposures from stage 1 to stage 2) may have sizeable implications for the reported variation in impairment allowances and, through it, for profit or loss and capital. Heterogeneous implementation choices may produce noise (heterogeneity) in reports even if they refer to fundamentally similar positions. Additionally, some banks might be tempted to make modelling or data choices that minimise the resulting impairment allowance or attenuate its responsiveness to macroeconomic variables. This raises concerns similar to those posed by the internal modelling associated with capital requirements under the IRB approach (Haldane (2013); Plosser and Santos (2014); Behn et al. (2016)). When applied to accounting, the concerns are essentially about preserving the accuracy and, therefore, the informational value of the reported losses. As discussed in greater detail below, the concerns may be addressed via enhanced disclosure of the underlying model assumptions, regulatory guidance, and the gradual definition of best practices and convergence in ECL measurement.²⁴

For small and non-complex banks, modelling ECL may become a significant challenge. In several EU Member States, IFRS 9 will be applied by all banks, not only the larger institutions. Therefore, the modelling effort required to implement the ECL approach may be relatively larger for smaller institutions which do not have complex business models. To address this issue, the BCBS Guidelines (Basel Committee on Banking Supervision (2015b)) and the EBA Guideline (European

²⁴ The EBA Guidelines on credit institutions' credit risk management practices and accounting for expected credit losses (European Banking Authority (2017b)) address some of the concerns expressed in this paragraph.



Banking Authority (2017b)) already include a reference to proportionality.²⁵ Guidance issued by the FASB in regards to the new ECL approach to be applied in the United States (Financial Accounting Standards Board (2016)) also includes specific simplifications for certain banks. On top of modelling, IT infrastructures and the knowledge needed to appropriately manage and use forward-looking information may pose a challenge for smaller banks.

The shift of exposures from stage 1 to stage 2 (or vice versa) is critically dependent on how the concept of “significant deterioration in credit risk” is interpreted in practice. Such a shift involves changing the horizon over which ECLs must be measured from a 12-month to a lifetime horizon (or vice versa). IFRS 9 does not establish a quantitative threshold for or precise rules defining a “significant deterioration in credit risk”. However, it provides examples of situations which can be considered to reflect a deterioration in credit risk: increases in credit spreads, changes in rates applicable if the asset were originated at this time, external credit downgrades, variations in the attributed PD, etc.²⁶ Furthermore, IFRS 9 establishes the rebuttable presumption that an asset has suffered a significant deterioration in credit risk if that asset is 30 days past due. There is therefore ample room for varying interpretations of “deterioration in credit risk”, both between banks and even within individual banks (across portfolios). This implies that disclosures regarding the details of their modelling choices will be key to interpreting (and comparing) accounting statements from a cross-section of banks.

On a related note, further guidance on the shift from stage 2 to stage 3 and to stage 1 may be necessary. When a deterioration in credit risk leads to some exposures being moved from stage 1 to stage 2, the expectation is that some of them will eventually move on to stage 3 if the anticipated credit risk materialises, i.e. the exposures default or become credit-impaired. The remaining exposures may, however, instead survive the adverse circumstances that led them into stage 2, in which case the question arises regarding the conditions under which and at what speed they should be moved back to stage 1, if appropriate and in line with the relevant principles in IFRS 9 dealing with a decrease in credit risk. This is an area in which further guidance by regulatory authorities could be required to ensure a sound and comparable implementation of IFRS 9 across different banks.²⁷

Surveys carried out by consultancy firms (Deloitte (2016); Ernst & Young (2016)) reveal a particular reliance on changes in PDs and missed payments for the determination of a significant increase in credit risk and the subsequent shift of exposures to stage 2. In combination with a move to an internal “watch list” or the granting of forbearance measures, it seems that banks would mostly rely on relative increases in the estimated PDs and missed payments to determine when a significant increase in credit risk occurs. Specifically, reflecting the prevalent use of internal ratings-based approaches by the banks responding to these surveys, variations in external ratings and fair values of similar products will not be widely used. The surveys also signal a limited and case-by-case use of the rebuttable presumption of 30 days past due as a sole criterion. Lastly, these surveys confirm the increasing role of the internal committees managing

²⁵ “For less complex banks, consistent with the Basel Core Principles, the Committee recognises that supervisors may adopt a proportionate approach with regard to the standards that supervisors impose on banks and the conduct of supervisors in the discharge of their own responsibilities. This allows less complex banks to adopt approaches commensurate with the size, nature and complexity of their lending exposures.”

²⁶ See Paragraph B5.5.17 of IFRS 9.

²⁷ This might mirror the definition of non-performing exposures for regulatory purposes (EBA (2014)), which describes in detail the cases where an exposure would move from being non-performing to performing.



credit risk since their decisions (e.g., to move a borrower to an internal “watch list”) will likely count when determining whether a significant increase in credit risk has occurred. The findings of these surveys highlight the issue of heterogeneity and point to a role for policy in ensuring harmonisation, comparability and a level playing field across banks while maintaining the flexibility envisaged by the accounting standard setters.

For banks, it is also important that financial instruments are grouped adequately for the purposes of the collective assessment of significant increases in credit risk. Based on the guidance provided by IFRS 9, banks should be able to group those financial instruments for which an individual assessment of significant credit risk is not available into groups in a consistent and efficient manner. Otherwise, incorrect and poor groupings of financial instruments with significantly different risk characteristics could lead to an inappropriate estimation of a significant increase in credit risk, obscuring the ultimate estimate of the expected credit losses for a given period.

IFRS 9 is expected to increase the transparency of the models and data used for the computation of ECLs by means of the information provided through detailed disclosures. In comparison with IAS 39 the application of IFRS 9 expands the scope of information which banks must disclose in relation to their impairment losses. Together with the more appropriate and timelier recognition of losses taking into account a broader range of information, this increase in transparency is one of the main benefits derived from the introduction of IFRS 9 and, as such, has been identified by other European authorities (European Financial Reporting Advisory Group (2015); European Securities and Markets Authority (2015)). Information on the primary assumptions and variables in the ECL models as well as the dynamics between the three stages should enable users of financial statements to gain a sound understanding of the application of the ECL approach by an individual bank. At the same time, disclosures would be challenging as they must provide useful, comprehensive and comparable information to users, avoiding an information overload with little added value.

3.3 Interaction of IFRS 9 with bank regulation

Variations in credit impairment allowances caused by accounting standards have a direct impact on the profit or loss of the reporting entity and, through it, on accounting capital. In the absence of regulatory adjustments, variations in accounting capital due to credit loss allowances are relevant to the capacity of the reporting entity to comply with minimum capital requirements, leverage requirements, total loss absorbency requirements and any other requirements with a total or partial focus on capital.²⁸ The discussion in this report will focus on the interaction with capital requirements.

Understanding the interaction between the impairment allowances associated with IFRS 9 and banks' capital requirements requires an examination of the current relationship between accounting and regulatory provisions. Current capital regulation deals differently with provisions depending on whether banks (or portfolios) determine their minimal capital requirements using the IRB approach or the SA approach. Under the IRB approach current regulatory provisions are

²⁸ In the presence of leverage ratio regulation, the type of interactions with capital requirements described in the next sections may also happen with the leverage ratio requirement, which might be binding first for the most heavily leveraged banks. This could make some of the policies discussed below less relevant. The introduction of leverage ratio regulation in the EU might provide an occasion to revisit these interactions and to address possible concerns.



already based on the ECL paradigm, although with slight differences from IFRS 9: the horizon over which ECLs are estimated is always one year and the inputs of the estimation are through-the-cycle (rather than point-in-time) PDs and stressed (rather than unbiased) LGDs. These and other differences are highlighted in Table 3. For IRB banks, when there is a provisioning shortfall, i.e., when regulatory expected losses exceed accounting provisions, said shortfall is deducted from Common Equity Tier 1 capital. In contrast, when accounting provisions exceed regulatory expected losses, banks are permitted to add back the excess provisioning as Tier 2 capital, subject to an overall limit of 0.6% of their credit risk-weighted assets.

Table 3
Comparison between the regulatory framework for internal ratings-based approaches and the impairment model in IFRS 9

	Internal Ratings-Based Approach (BCBS)	IFRS 9 (IASB)
Definition of default	Specific definition based on a combination of days past due and unlikely to pay.	Consistent with credit risk management practice + rebuttable presumption that default does not occur later than 90 days past due.
Lifetime vs. 12-month	Rating system and associated PDs are based on a 12-month horizon.	Stage 1 allowances are based on a 12-month horizon. Stage 2 and stage 3 allowances are based on lifetime expected losses.
Point-in-time (PIT) vs. Through-the-cycle (TTC)	Models are generally developed using a hybrid approach (considering cyclical and non-cyclical variables) which determines the ratings, which are then calibrated to a PD which may be somewhere between PIT and TTC.	Expected losses should reflect current conditions: it requires a PIT adjustment.
Floor	The regulatory PD has a floor at 0.03% for all exposures except sovereign counterparties.	No floor on the PD.
LGDs	Conservative estimate (downturn LGD).	Unbiased, PIT estimate.
Frequency of estimates	Annual.	Continuous basis (at least, every time financial statements are prepared).
Auditing of figures	Bank supervisors.	Auditors and market supervisors.

Source: ESRB, based on Deutsche Bank (2015).

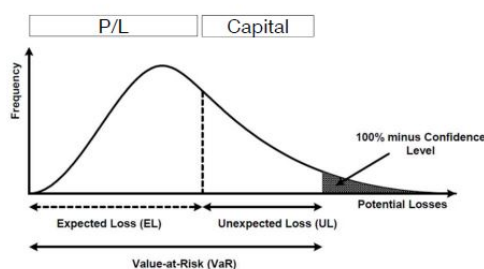
Under the SA approach regulatory provision regimes vary more widely across jurisdictions, typically building on a distinction between specific and general provisions. The former are based on a notion of loss allowance closer to the accounting concept of incurred loss while the latter resemble the notion of a general reserve against unidentified losses and, therefore, share some of the loss-absorbing characteristics of capital (Basel Committee on Banking Supervision (2016b)). Banks using the SA approach to capital requirements determine their capital needs by applying the standardised risk weights to their exposures net of specific provisions but, importantly, gross of general provisions. However, in acknowledgement of the capital-like features of general provisions, these banks can add back their general provisions as Tier 2 capital up to a limit of 1.25% of their credit risk-weighted assets.



The move from an incurred loss model to an expected loss model in the accounting realm may trigger an adjustment of the regulatory treatment of loan loss provisions for IRB banks.²⁹

The current regulatory treatment for loan loss provisions was based on the assumption that accounting impairment losses among IFRS reporters would be calculated using an incurred loss approach. The alternative notion of one-year expected loss introduced for IRB banks was consistent with the idea that, out of the potential losses experienced during the upcoming year, provisions (and, therefore, the profit or loss account) should absorb the expected loss component, while capital should absorb a sufficiently large proportion of the unexpected loss component (Chart 3). The IRB capital requirements (or risk weights) were calibrated to make the minimum capital requirement of each exposure commensurate with the need to absorb its unexpected losses over one year up to target confidence level. For IRB banks, if the capital requirements are intended to preserve their foundational risk-management logic, prescriptions regarding the requirement to deduct provision shortfalls from CET1 capital and the permission to add back excess provisions in the form of Tier 2 capital up to specific limits may need to be revisited following the change in accounting provisions.

Chart 3
Expected and unexpected losses in capital requirements for banks



Sources: Banco de España.

Similarly, for SA banks, regulators will need to, at the very least, clarify the extent to which the new accounting provisions qualify as specific or general and whether the current prescriptions affecting each of these categories remain valid. Although in this case it is harder to establish a connection between the risk weights applied to different exposures and their risk-management foundations, it is obvious that if the switch to IFRS 9 extends the part of the potential future losses covered by provisions it may make sense to revise the capital necessary to cover the remainder of the losses (or otherwise accept a de facto rise in

the level of prudence associated with the capital requirements).³⁰ In this area, the recently issued EBA Opinion (European Banking Authority (2017a)) states that all impairment charges derived from IFRS 9 should be considered as specific credit risk adjustments.

In view of the forthcoming use of expected credit loss models in accounting standards, the BCBS has issued a discussion paper on the long-term regulatory treatment of accounting provisions (Basel Committee on Banking Supervision (2016b)). With this discussion paper, the BCBS aims to achieve clarity regarding the regulatory treatment of provisions once accounting standards have shifted to the expected credit loss paradigm. As a result of the ongoing discussions at different levels and within various groups at the BCBS, the proposal in the recent discussion paper foresees that the treatment of accounting provisions for IRB banks (or portfolios) will continue

²⁹ The G20 Report of the Financial Stability Forum on Addressing Procyclicality in the Financial System of 2009 (FSB (2009)) states that “[...] Moreover, the BCBS should assess how higher provisions would be reflected in regulatory frameworks, financial reporting (both balance sheet and profit and loss), and firms’ risk management and incentive mechanisms. Such an analysis provides the context for determining whether higher provisions should primarily be achieved within financial reporting, through adjustments to the prudential framework or a combination of the two.[...]”.

³⁰ Here, the assumption is made that the original calibration of the requirements of the SA approach was the correct one; an assumption which the global financial crisis may have put into question, at least for some exposures.



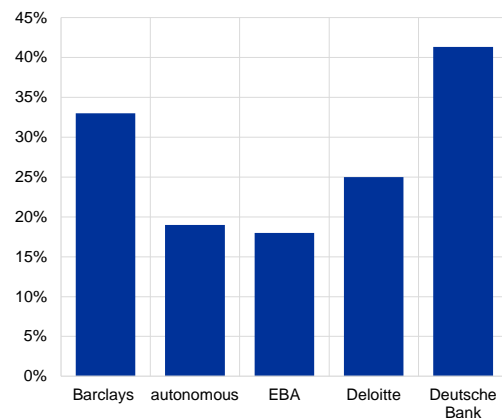
unchanged and submits for discussion three (not necessarily incompatible) options regarding the adaptations needed for SA banks (or portfolios): (i) retain the current regulatory treatment of provisions, including the distinction between general and specific provisions in the standardised approach, as a permanent approach; (ii) introduce a universally applicable and binding definition of general and specific provisions; or (iii) remove the distinction between general and specific provisions and introduce a regulatory notion of expected losses under the standardised approach as well (so that the treatment of provisions by IRB and SA banks becomes more similar).

3.4 Day-one effects and transitional arrangements

The first implementation of IFRS 9 is likely to produce a significant increase in the impairment allowances compared with the situation under IAS 39. As mentioned earlier, the current impairment losses under IAS 39 will approximately match the impairment allowances of assets under stage 3 in IFRS 9.³¹ Therefore, leaving aside the current provisions on Incurred But Not Reported (IBNR) losses, the relevant ECLs associated with assets in stages 1 and 2 will determine the increase in impairment charges between IAS 39 and IFRS 9. The latest estimates (Chart 4) place this increase between 20% and 30%, with significant heterogeneity across individual banks.³²

Chart 4
Estimates of the increase in impairments after entry into force of IFRS 9

(percentage of impairment allowances under IAS 39)



Sources: Barclays (2017); Autonomous (2016); European Banking Authority (2016b); Deloitte (2016); Deutsche Bank (2015) and ESRB Secretariat calculations.

The increase in impairment allowances following the introduction of IFRS 9 will affect the capital position of banks. Under the current regulatory treatment of impairment allowances and in the absence of transitional arrangements, the effect on accounting capital would imply the full and immediate deduction of the day-one provisioning shortfalls from banks' CET1, which banks may try to offset with earnings retention or external capital increases. Under the current regulatory treatment and without transitional arrangements, EBA (2016b) estimates an average impact on the CET1 ratio of European banks of about 59 basis points. Studies by Barclays (2017) and Autonomous (2016) estimate an impact of 50 and 49 basis points, respectively, in the same ratio. Again, as was the case with the increase in total credit impairment allowances, there is significant heterogeneity across banks in terms of the size of this impact.

³¹ Potential differences between impairments under IAS 39 and stage 3 impairments in IFRS 9 may arise from the probability-weighted calculation under IFRS 9, from the use of forward-looking information in IFRS 9 (against a predominantly backward-looking approach in IAS 39), or from the possibility of using a different definition of default.

³² These estimates should be read carefully as even the banks answering these surveys admit that their estimates of the impact of IFRS 9 may differ significantly from the actual figure when they apply IFRS 9 for the first time.



Under these circumstances, transitional arrangements pursuing the smoothing of the day-one effect of IFRS 9 could provide some relief. In the absence of transitional arrangements, the impact of the increase in the level of the allowances on bank capital would occur all at once. To avoid this impact, some banks might try to implement the standard in an inconsistent way so as to intentionally attenuate the day-one consequences of the expected loss approach (e.g. by keeping loans that should belong to stage 2 in stage 1 instead). Alternatively, banks might faithfully implement IFRS 9 but try to accommodate the impact on CET1 by either cutting new lending or through asset sales.³³ This reaction could stem from the difficulties banks face raising new equity from investors and from the goal of keeping a safe capital buffer on top of the regulatory minima.

The BCBS has provided a framework for transitional adjustments. Concerned with the uncertainties relating to the first application of the expected loss model and its potential consequences on the capital position of banks, the BCBS issued a consultation paper in October 2016 (Basel Committee on Banking Supervision (2016a)) in which it presented three possible approaches for the transitional phase: (i) spread the day-one impact on CET1 capital over a specified number of years; (ii) introduce a CET1 capital adjustment linked to the day-one proportional increase in provisions; and (iii) introduce a phased-in prudential recognition of provisions in stages 1 and 2. Marking an important change from the current regulatory regime, the (temporary) add-back would be on CET1 capital and not on Tier 2 capital. The final proposal (Basel Committee on Banking Supervision (2017)) has opted for a transitional phasing-in period of no more than five years, with a linear spread of the impact on CET1 capital, and leaving considerable discretion to the authorities in each jurisdiction to fix details such as the static or dynamic calculation of the impact. The proposal has also confirmed the maintenance of the current regulatory treatment of provisions (including the distinction between specific and general provision for SA banks) until a decision on the permanent regulatory treatment of the new accounting provisions is adopted.

Similarly, in the review of CRD IV the European Commission is proposing transitional adjustments on the application of IFRS 9 by European banks. The Commission has expressed a preference for a dynamic approach, i.e. the potential add-back would be linked to the sum of the stage 1 and stage 2 provisions at the respective reporting date. According to the proposal by the European Commission (2016),³⁴ banks would add-back to CET1 capital part of the capital impact derived from the application of IFRS 9 over a period of five years. According to a proposal by the EU Presidency, dated May 2017 the add-back would be calculated applying a factor of 0.95 during the first year, and this factor would decline to 0.85, 0.7, 0.5 and 0.25 during the second, third, fourth and fifth years, respectively, and be zero thereafter, as detailed in Presidency compromise Interinstitutional file 2016/0360 (COD).³⁵

Finally, the EBA (2015, 2017a) has also broadly defined its preference on how the transitional arrangements for the first implementation of IFRS 9 should be structured.

According to the EBA, these transitional arrangements should: (i) be as simple as possible, showing a preference for a static approach; (ii) include a four-year transitional period, starting in 2018; (iii) not result in a complete neutralisation of the impact from the move to an expected loss

³³ It is not possible to isolate the impact of individual factors on the process of reduction of size currently observed for EU banks. According to ECB Consolidated Banking Data, the total assets of EU banks shrank by €2.52 trillion (or 6.7%) between 2010 and 2016. The decrease in RWA for the same period was €1.74 trillion (12%).

³⁴ See Article 473a of the proposal by the European Commission (2016).

³⁵ For further details, see [proposal by the EU Presidency](#).



model; and (iv) give the institutions discretion to decide at the outset whether to use the transitional arrangement. Furthermore, the EBA is sceptical of any proposal of a complete prudential neutralisation of stage 1 provisions over a certain period of time, as the supervisory community has welcomed the introduction of IFRS 9 to the EU and expects that institutions will be sufficiently prepared for the initial application of IFRS 9, given that this change has been expected for some time.

3.5 Cyclical implications of IFRS 9

The expected loss approach of IFRS 9 aims to make impairment recognition more timely and forward-looking than that of the incurred loss approach of IAS 39, responding to the “too little, too late” criticism. When banks were hit by a negative shock or a downward phase of the economic cycle under IAS 39, their impairment losses tended to be recognised in a slow, gradual and protracted manner over the course of the subsequent crisis. Even if, objectively, it was possible to foresee that incurred losses would be greater than normal for a number of years, the approach implied waiting for their realisation before recognising them. This tended to erode investors' trust in the image offered by the bank's accounting statements at any given point in time. There were paradoxical effects such as still-positive profits allowing banks to distribute dividends in spite of the circumstances or capital positions offering a false impression of financial robustness. In this sense, the incurred loss approach favoured a belated recognition of problems, led to an absence of prompt corrective action and forbearance, and, in the worst cases, helped to sustain “gambling for resurrection” strategies such as “zombie lending”.

By expediting loss recognition, IFRS 9 may improve financial stability. Part of the impairment losses which typically occur in a downturn can be recognised when the first signs of such a downturn arise, i.e. in a phase during which banks are better able to shoulder losses. If the downturn or its implications can be sufficiently anticipated (Cohen and Edwards (2017)), procyclicality may be reduced and the credit contraction in a downturn may be less severe. In addition, early loss recognition may also reduce market concerns about capital adequacy and equity market frictions, both of which can drive the contraction of banks' balance-sheets during downturns. Delayed loss recognition reduces transparency regarding asset quality and its interaction with debt overhang problems and may also lead to capital inadequacy during downturns. A lack of transparency can increase the cost of raising new equity during downturns, with negative implications for financial stability. Furthermore, an earlier and more decisive recognition of credit losses may contribute to market discipline, leading bank managers to adopt more prudent and less cyclical lending strategies in the first place.

The expected loss approach envisaged by IFRS 9 also implies reacting to new and forward-looking information, including macroeconomic information, as it is received. In this sense, IFRS 9 prescribes a point in time (PIT) methodology for the estimation of expected credit losses. The main virtue of this methodology, if properly implemented, is making loss recognition timely and unbiased. For a reporting entity considered in isolation, the timely recognition of losses carries the main advantage of calling upon all parties (management, investors, and supervisors) to adopt the relevant prompt corrective actions. Moreover, anticipating the cyclical sensitivity associated with the new impairment regime and its impact on capital, banks may first adopt additional precautions such as carrying additional capital buffers with which to withstand potential rises in impairment allowances. Stronger initial caution and earlier corrective action have the potential to contribute to financial stability and make banks' lending activity less cyclically sensitive.



The PIT nature of the new expected loss approach may imply that impairment allowances increase suddenly and significantly if aggregate economic indicators deteriorate significantly. PIT methodologies, like the one postulated by IFRS 9, assess the borrower's ability to discharge his obligations at a certain moment as best estimated using the available information and can therefore vary considerably over the cycle. Specifically, negative news about the current and future evolution of the economy will affect the estimates of the inputs used for the calculations of ECLs (PDs and LGDs). This is in contrast with the through-the-cycle (TTC) methodologies promoted in the implementation of the IRB approach to regulatory capital requirements, which are based on longer term averages, abstracting in principle from current cyclical conditions (Chart 5). Each of these methodologies has advantages and disadvantages. Arguably, PIT methodologies provide a better reflection of reality at a given point in time, are more consistent with the information managed by banks when originating and pricing new loans, and have a more precise statistical meaning, which makes them easier to understand and implement.³⁶ In contrast, TTC methodologies have the feature of producing estimates that vary more smoothly over time, exhibiting lower volatility and lower sensitivity to the business or credit cycles. On the other hand, their lower reactivity to new information may make them unsuitable to guaranteeing the timeliness of impairment allowances that IFRS 9 seeks.³⁷

Chart 5
Stylised comparison of TTC and PIT methodologies

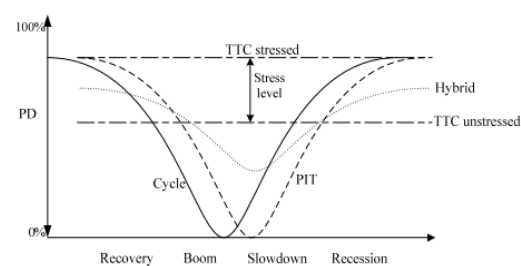
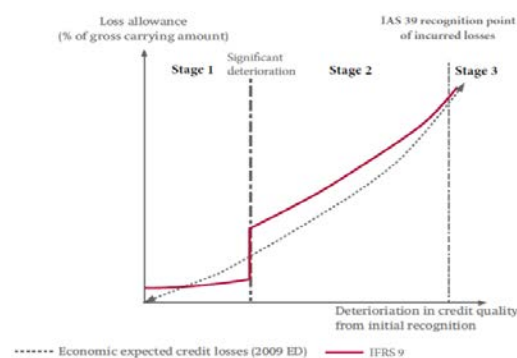


figure 3.1. The influence of the cycle on the ratings

Source: Rikkers and Thibeault (2008).

Chart 6
Expected loss model in IFRS 9 and economic expected losses



Sources: Novotny-Farkas (2015), based on International Accounting Standards Board (2013).

The shift of exposures from stage 1 (in which allowances measure credit losses over one year) to stage 2 (in which allowances measure credit losses over the whole remaining life of the loan) can produce cliff effects. Under IFRS 9, if a loan (or any other financial instrument subject to impairment) suffers a significant increase in credit risk relative to that at first recognition, it must be shifted from stage 1 to stage 2. This shift means that the related impairment losses must be measured on the basis of the whole remaining life of the loan rather than the subsequent 12 months. For loans with residual maturities longer than 12 months, this may imply a substantial

³⁶ So in practice, although regulation encourages IRB banks to use TTC PDs, they often feed the IRB formulas with inputs closer to PIT PDs.

³⁷ Anecdotal evidence gathered from banks suggests that some banks may adjust their current TTC PDs rather than estimate pure PIT PDs for IFRS 9 purposes.



increase (a “cliff effect”) in the impairment losses associated with that loan (Chart 6).³⁸ This effect on one individual loan would multiply in times of stress, when it is likely that a significant proportion of the loan portfolio of a bank would deteriorate at the same time. The quantitative significance of this reclassification would depend on: (i) how the threshold for the significant increase in credit risk is set (and, in particular, how far it is from the definition of default or stage 3), (ii) the maturity profile of the loans (all things being equal, the longer the maturities, the larger the increase of impairments in stage 2), and (iii) the (sectoral, geographical) diversification of the loan portfolio (the less diversified, the more likely that a large proportion of loans simultaneously moves to stage 2). Each of these aspects can be affected by managerial decisions regarding the composition of the loan portfolios in the first place as well as the details of the models and data used to estimate the ECLs.

IFRS 9 could have certain procyclical³⁹ 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. The procyclicality of the ECL model of IFRS 9 will derive primarily from two issues: i) the cyclical variation in the inputs used to calculate ECLs (PDs and LGDs) and ii) the likely systematic shift of exposures from stage 1 to stage 2 (or vice versa) over the business cycle (with cliff effects due to jumping from a one-year to a lifetime horizon or vice versa). Consistent with the idea of responding to relevant information earlier and in a more forward-looking manner, IFRS 9 impairment allowances will require the recognition of incremental foreseeable credit losses implied by a negative phase of the business or credit cycle as soon as it is apparent that such phase has begun. The resulting increase in impairment allowances will decrease banks' capital, which, in interaction with market reactions and capital regulation, may in extreme cases give rise to deleveraging pressures.⁴⁰ The potential procyclical effects may take the form of asset sales, a contraction of new lending or the spreading of distrust regarding banks' financial health and their capacity to serve their lending function. If this effect is systemic and many banks are affected at the same time, the aggregate implications might be a credit crunch and a deeper contraction of the economy, which in turn may affect the system in the form of even higher default rates and LGDs among bank borrowers.

In comparison with the incurred loss approach in IAS 39, the expected loss approach in IFRS 9 implies an earlier recognition of foreseen impairment losses in the event of a crisis.

One of the main criticisms of the incurred loss approach in IAS 39 is that it recognises impairment losses too late in the event of a crisis. When advocating a move to an expected loss approach, the G20 sought to recognise “*known credit losses*” that are inherent in asset portfolios prior to a crisis. Such earlier recognition is therefore an intended feature of the impairment measurement approach established by IFRS 9. The specific quantitative implications of this approach regarding the cyclical pattern of impairment allowances are very difficult to assess on an ex ante basis, and there are

³⁸ IAS 39 implied a larger cliff effect as a loan moved from unimpaired to impaired. IFRS 9 divides such cliff effect into two segments: from stage 1 to stage 2 and from stage 2 to stage 3, making each of the jumps in required allowances smaller. Nonetheless, as further explained below, when aggregating at the level of a portfolio of loans, the existence of many loans moving from stage 1 to stage 2 and fewer moving from stages 1 and 2 to stage 3 might imply the manifestation of aggregate cliff effects larger than under IAS 39, especially when macroeconomic conditions start to deteriorate. Furthermore, as described in Annex 1, the US accounting standard equivalent to IFRS 9 considers impairment allowances from the date of initial recognition based on lifetime ECLs. Under this approach the cliff effect associated with shifts from stage 1 to stage 2 does not exist, potentially making the approach less procyclical than the one under IFRS 9.

³⁹ For the purposes of this report and following the FSF (2008), procyclicality is defined as “[...] the mutually reinforcing (“positive feedback”) mechanisms through which the financial system can amplify business fluctuations and possibly cause or exacerbate financial instability”.

⁴⁰ Deleveraging effects are more likely to occur if capital resources prove insufficient and buffers prove insufficient or cannot be used.



essentially no studies providing a quantitative assessment of the cyclical implications of IFRS 9 using granular information on banks' loan portfolios and systematic evidence on the cyclical behaviour of the inputs required by ECL models.⁴¹ The quantitative analysis by Abad and Suarez (2017), developed as part of the work of the task force that produced this report and which is summarised in Box 2, partly fills this gap. The analysis combines the insights of a theoretical model with a top-down calibration based on broad features of a typical portfolio of European corporate loans and available information on the evolution of credit risk throughout the business cycle. With all the caveats relevant to the working assumptions on which the analysis is based and its exclusive focus on corporate loans, the results confirm the quantitative importance of the differences between the impairment allowances measured by IFRS 9 and those measured under previously existing regimes, such as the incurred loss approach of IAS 39 or the one-year expected loss approach featured by the regulatory provisions of IRB banks. In a nutshell, apart from the possible prior adjustment of credit practices by banks (that the analysis does not model) the results suggest that, at least in the case of corporate loans, IFRS 9 will imply impairment allowances that are on average larger and, as expected, will react sooner and more strongly to changes in the cyclical state of the economy.⁴²

Box 2

Assessing the cyclical implications of IFRS 9 (Abad and Suarez (2017))

Abad and Suarez (2017), complementing the mandate of the IFRS 9 task force, developed a recursive model to assess how different approaches to the measurement of credit impairment losses impact the average levels and dynamics of the impairment allowances associated with a bank's loan portfolio. Its application to a portfolio of European corporate loans suggests that IFRS 9 will tend to concentrate the impact of credit losses on profit and loss (P/L) and CET1 right at the beginning of deteriorating phases of the economic cycle, which raises concerns about its procyclical effects.

The recursive model developed by Abad and Suarez (2017) contains the minimum ingredients needed to assess impairment allowances under IFRS 9 (EL(IFRS9)) and alternative methods – incurred losses (IL), one-year expected losses (EL(1Y)), and lifetime expected losses (EL(LT)) – in a context in which the differences between them have implications for both the average levels and the dynamics of the allowances associated with a given loan portfolio. The model is calibrated to analyse the behaviour of a typical portfolio of European loans over the business cycle.

The model builds on a simplified representation of a typical ratings-migration model (see, for example, Trueck and Rachev (2009) and Gruenberger (2012), which is augmented to incorporate the impact of aggregate risk (in the form of a state variable representing the expansion vs. contraction phase of the business cycle). The model also considers the replacement of loans that mature with newly originated loans, endogenous loan rates, and the impact of impairment

⁴¹ Indeed, the EBA report on the cyclicity of capital requirements (European Banking Authority (2016c)) does not find evidence of the cyclicity of those inputs, although it acknowledges the limitations in the data used, which only cover recent years.

⁴² In Abad and Suarez (2017), these effects imply that profit and loss and capital are more volatile under IFRS 9 than under the less forward-looking methods, which is consistent with the results in Gruenberger (2012). In contrast, Cohen and Edwards (2017), assuming that banks were able to foresee the default losses observed in the historical data two years in advance, argue that IFRS 9 would lead banks to recognise larger credit losses and slow down credit growth while still in boom periods, thereby reducing the cyclicity of credit supply.



allowances on P/L and the bank's capital position (summarised by its CET1 ratio). To capture the impact of business fluctuations, the analysis relies on evidence on the sensitivity of migration matrices and credit loss parameters to business cycles as in Bangia et al. (2002). It opts for a rather conservative view of the effects of the cycle on the relevant parameters (e.g. by abstracting from cyclical variation in LGDs and loan maturities) and considers only the impact of average expansions and average contractions (see Table B1). As a result of the cyclical variation of rating migration rates and PDs, the state of the business cycle causes a significant variation in the composition of the bank's loan portfolio. In contractions, stage 2 loans (significantly deteriorated loans) and stage 3 loans (NPLs) represent a larger share of the portfolio, and the realised yearly default rate (of performing loans) is more than twice that in expansions.

Table B1
Variation of model parameters and loan composition across expansions and contractions

	Expansions	Contractions
Yearly persistence of the aggregate state (%)	85.2	50
Yearly probability of migration from stage 1 to stage 2 (%)	6.16	11.44
Yearly probability of migration from stage 2 to stage 1 (%)	6.82	4.47
Yearly probability of default in stage 1 (%)	0.54	1.91
Yearly probability of default in stage 2 (%)	6.05	11.5
Loss given default (%)	36	36
Average loan maturity (years)	5	5
Yearly probability of resolution of NPLs (%)	44.6	44.6
Share of stage 1 loans (not significantly deteriorated, %)	82.68	76.85
Share of stage 2 loans (significantly deteriorated, %)	14.59	18.42
Share of stage 3 loans (NPLs, %)	2.73	4.73
Realised default rate (% of performing loans)	1.36	3.43

Source: Tables 3 and 4 in Abad and Suarez (2017).

The results of the analysis point to relevant quantitative differences between the impairment allowances implied by IFRS 9 and those implied by the alternative measurement methods, as well as in their variation across aggregate states. As shown in Table B2, these differences are transmitted to the model-implied dynamics of P/L, CET1, dividends, and the average yearly frequency with which the bank needs to be recapitalised to comply with its minimum capital requirement.

Impairment allowances under IFRS 9 are on average about 152 basis points (of mean loan exposures) larger than under the incurred loss approach, and about 88 basis points larger than under the one-year expected loss approach. They also vary more widely across aggregate states. In absolute terms, allowances associated with stage 3 loans, followed by those associated with stage 2 loans, are the ones that contribute the most to cross-state variation in impairment allowances. However, stage 3 loans are treated the same way by all measures. Therefore, the different cyclicity of the various measures must come from the treatment of stage 1 loans (not



significantly deteriorated loans) and stage 2 loans, or from the cyclical shift of loans across stages 1 and 2.

Table B2.

Key model outcomes for an IRB bank

	IL	EL(1Y)	EL(LT)	EL(IFRS9)
Impairment allowances (% of mean loan exposures)				
Unconditional mean	1.15	1.79	4.65	2.67
Expansions mean	0.98	1.55	4.36	2.38
Contractions mean	1.7	2.6	5.63	3.66
Standard deviation	0.38	0.5	0.59	0.62
P/L (% of mean loan exposures)				
Expansions mean	0.35	0.41	0.49	0.46
Contractions mean	-0.46	-0.61	-0.66	-0.71
Standard deviation	0.34	0.43	0.51	0.5
CET1 (% of mean loan exposures)				
Expansions mean	10.38	10.43	10.53	10.46
Contractions mean	9.55	9.32	9.28	9.16
Standard deviation	0.76	0.76	0.71	0.77
Yearly probability of paying dividends (%)				
In expansions	64.2	67.11	73.07	69.89
In contractions	0	0	0	0
Yearly probability of having to recapitalise the bank (%)				
In expansions	0	0	0	0
In contractions	10.26	12.5	10.22	14.94

Source: Tables 4 and 5 in Abad and Suarez (2017).

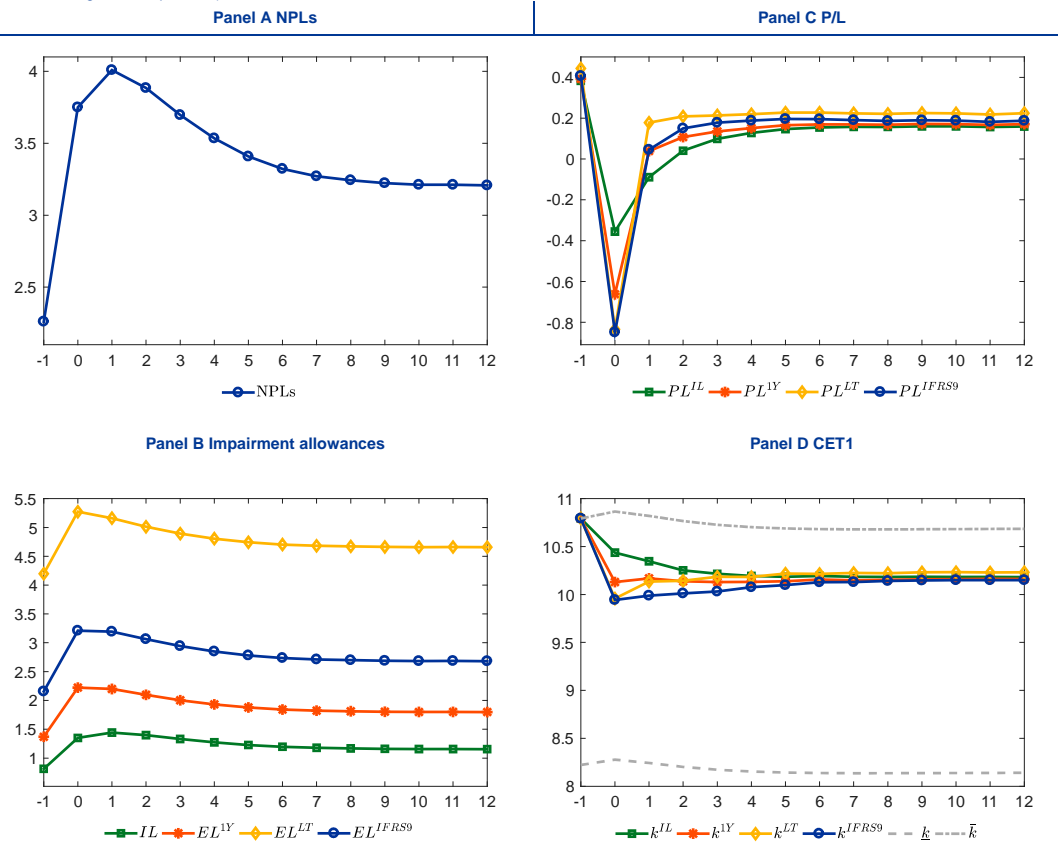
The most forward looking impairment measures (EL(IFRS9), EL(LT)) are the ones that make the bank on average more profitable and better CET1-capitalised during expansions and less profitable and less capitalised during contractions. This means EL(IFRS9) and EL(LT) are the approaches with higher responsiveness to changes in economic conditions. Relative to IL (EL(1Y)), the usage of EL(IFRS9) implies an increase from 10.3% (12.5%) to 14.9% in the probability that the bank will



need to be recapitalised during contractions.⁴³ These differences are mirrored by a more modest increase from 64.2% (67.1%) to 69.9% in the probability of paying dividends during expansions.

Figure B1
Effects of the arrival of a contraction on an IRB bank

(average responses to the arrival of a contraction in year 0 after having spent a long time in the expansion state (horizontal axis: years; vertical axis: % of average loan exposures)



Source: Figure 4 in Abad and Suarez (2017).

Consistent with this, Abad and Suarez (2017) show that more forward-looking methods, such as IFRS 9 (or the lifetime expected loss method envisaged by the FASB for the United States) imply sharper on-impact responses to changes in the aggregate state of the economy (see Figure B1).⁴⁴ Using the current calibration, the arrival of a typical recession implies an on-impact increase in impairment allowances whose unfiltered effect on CET1 for an IRB bank would be equivalent to about one-third of the bank's fully loaded capital conservation buffer (and about twice as large as under the incurred loss approach). This means that the impact is sizeable (and larger than with

⁴³ However, the expected recapitalisation needs during contractions are slightly lower under EL (IFRS9) (0.38% of mean exposures) than under EL(1Y) (0.40%). See Abad and Suarez (2017) for further details.

⁴⁴ The sharper on-impact responses reflect greater recognition of the losses due to default events happening subsequently to the change in aggregate conditions and are therefore mirrored by higher P/L and lower consumption of CET1 in the years after the initial change in these conditions.



other impairment measures) but also suitably absorbable if the capital conservation buffer is available and effectively usable when the shock hits.

Several extensions of the model, also discussed in the paper, show that the results are qualitatively and (in relative terms) quantitatively very similar for a bank following the standardised approach to capital requirements and that the arrival of contractions with an anticipated severity or duration exceeding the average will tend to produce sharper responses, while having earlier notice of the arrival of a future contraction will tend to smooth out its impact.

Overall, and subject to the caveats and limitations relating to the simplifying modelling assumptions (e.g. ignoring differences in lending behaviour or prior precautions induced by each of the approaches to impairment measurement) and the reliance on historical data, the results from Abad and Suarez (2017) do not allow the risk to be ruled out that, contrary to its intent, IFRS 9 may, in certain circumstances, amplify rather than dampen the variability of capital pressures over the business cycle, with the potential well-known implications for the cyclicity of credit supply.

In order to fully benefit from the positive effects on financial stability of the early recognition of credit losses, a sound capacity for ECL models to take account of emerging and forward-looking information is fundamental.

Indeed, the extent to which the ECL models of banks are able to anticipate downturns well in advance would determine the positive effects of the ECL approach on financial stability. If banks are good at forecasting future macroeconomic conditions, the recognition of expected credit losses would begin earlier, still at the top of upswings, and would be less sizable when in the downturn phase of the cycle. As Cohen and Edwards (2017) suggest, this could moderate the cycle. However, at the other extreme, if banks are unable to anticipate future economic conditions well in advance or with accuracy, the recognition of expected credit losses would largely occur simultaneously with the cycle, in which case the availability of loss-absorbing buffers would be key to avoiding potential negative effects on credit supply. Banks do not currently have a track record of the predictive power of their ECL measurements on a PIT basis that could give regulators an indication of the banks' forecasting capacity.⁴⁵

The recognition of impairment losses under IFRS 9 may result in larger capital buffers in “normal” times and greater use of capital buffers in periods of stress.

In some jurisdictions, stress tests are regularly used to ensure that banks have sufficient capital buffers in place to be able to absorb losses during periods of stress. Other things being equal, the earlier recognition of impairment losses under IFRS 9 is likely to increase the erosion of banks' capital ratios under stress and, as a result, the implementation of IFRS 9 is likely to increase the size of banks' voluntary and/or stress-test-related capital buffers in normal times. If and when a period of stress materialises, any greater increases in impairment allowances may lead to greater use (or release) of those buffers. The extent to which the building-up of these buffers and their subsequent release contributes to smooth cyclical capital pressures associated with impairment losses will depend on

⁴⁵ Although a large number of banks already perform forecasting measurements for ECL via the IRB models, these forecasts are not comparable to what IFRS 9 requires because IRB model forecasting should not be responsive to business cycles. Recently, Barclays (2017) published a study providing some empirical evidence on this issue, by comparing the expected default rates at a one-year horizon implied by market valuations with the default rates observed over the past 16 years (2000-2016). The study shows that, market-implied default rates at a one-year horizon have coincided with the cycle. The outcomes also show that these measurements can accentuate the cycle due to forecasting errors: default rates tend to be underestimated in good times and overestimated in bad times.



the accuracy of banks' forward-looking projections, the quality of the stress tests, and the market and supervisory forces which determine whether buffers are effectively usable in times of stress.

3.6 Effects on loan pricing and loan maturities

Under ideal conditions, accounting standards should have no impact on loan pricing; however, higher provisioning may lead to higher loan rates for certain kind of loans.

Under ideal conditions, loan rates should reflect potential credit losses over the lifetime of the contract and the price of unexpected losses that cannot be diversified, irrespective of the accounting standard in place. One of the most sensitive and difficult tasks of a bank is to determine the right price for a given loan, considering factors such as the creditworthiness of the borrower or the macroeconomic environment and forecasts. However, these imperfections may lead banks to charge higher rates on some of their loans (e.g. long-term loans). In this sense, a majority of respondents to the surveys of Deloitte (2016), European Banking Authority (2016b) and Ernst & Young (2016) foresee one consequence of the entry into force of IFRS 9 to be an increase in interest rates on new loans.⁴⁶ This may simply reflect the expected effect on equilibrium loan rates of the costs derived from the expected loss model in IFRS 9 (higher impairment allowances as well as higher operating costs due to modelling, IT infrastructures and data gathering).⁴⁷ Additionally, part of the expected increase in loan pricing may reflect a correction of past behaviours, when certain loans were under-priced due to managerial myopia regarding the relevant credit risk, excessive competitive pressure or just following mainstream thinking. Respondents to the surveys by Deloitte (2016), European Banking Authority (2016b) and Ernst & Young (2016) offer slightly different pictures regarding whether loans will have a higher interest rate at inception as a consequence of the introduction of IFRS 9. In the case of Deloitte (2016), the rise in interest rates at inception is less expected by institutions that consider themselves to be "price takers" rather than "price makers". In both cases, the increase is considered less likely to occur for mortgages (probably due to the collateralised nature of these loans) than for other retail loans, loans to SMEs and loans to corporates. Overall, however, the extent to which the increase happens will depend on the nature of competition in these markets, especially from entities not subject to IFRS 9 that have the capacity to offer close substitutes.

At the same time, the new expected loss model makes a broader set of data available for internal price-setting processes. The data on lifetime expected losses collected for the purposes of the "expected loss" approach in IFRS 9 are expected to be used by banks to help in the pricing of loans. This would result, in theory, in more accurate and more efficient pricing of loans.

In order to mitigate the cliff effect of the shift to stage 2, banks may also modify the maturity of the loans they offer. On the basis of the substantial cliff effect mentioned in previous paragraphs, banks may decide to shorten the maturity of their loans (possibly in combination with a semi-automatic roll-over policy for loans), with the objective of minimising the increase in

⁴⁶ For example, the EBA Impact Assessment (EBA (2016b)) finds that "[...] 60% of the banks anticipate that IFRS 9 impairment requirements will have an impact on lending practices of banks in terms of the pricing of products, the maturity of the products and underwriting practices [...]". This would be in line with the findings of Lim et al. (2014), according to which banks which recognise impairment losses in a more timely fashion charge higher spreads. Pérez (2014) discusses the relationship between loan loss provisioning and loan pricing in detail.

⁴⁷ Button et al. (2010) find that an increase in the operational costs of UK banks in the aftermath of the global financial crisis partially explained the increase in lending rates to households. Maudos and Fernández-de-Guevara (2004) document the impact of operational costs, among other factors, on the interest margins of EU banks.



impairment losses derived from a potential shift from stage 1 to stage 2.⁴⁸ Of course, from an operational point of view the continuous renewal of short-term loans would impose an additional administrative burden, thus weighing against the decision to shorten the maturity of loan contracts. If such shortening, for which there cannot be evidence beforehand, occurs it would have mixed effects from a financial stability perspective. On the one hand, offering loans with shorter maturities would reduce the apparent maturity of banks' assets and therefore banks' apparent overall maturity mismatch.⁴⁹ On the other hand, it could increase the refinancing risk suffered by borrowers (if their short-term funding were not renewed by the bank when the situation deteriorates) and, from the lender's perspective, the risk that if a loan reaches maturity in bad times and cannot be repaid it must undergo costly restructuring.

As in the case of the likely effects on loan-pricing, some of the likely changes in loan maturity may reflect an increase in awareness of the long-term implications of lending decisions. By forcing banks to develop models that explicitly consider the lifetime credit risk of the loans, IFRS 9 may contribute to rationalising the price and non-price features of bank loans and the way in which banks and borrowers share the (better-assessed) risks involved in the lending relationship.

Banks may also consider other measures to mitigate the cliff effect of the shift to stage 2 on provisions. These measures could include more active management of underperforming loans (e.g. restructuring), selling loans as a downturn approaches, or a structural shift to a business model in which banks originate loans but then securitise and sell them to investors. More active management of loans by banks may be beneficial for both the borrower and lender if the outcome is a more affordable loan for the borrower and a higher recovery rate for the lender. There is, however, also a risk that banks will foreclose more quickly on loans when there are options available for the borrower to continue making repayments. Loan sales, whether made cyclically or structurally, would redistribute risk within the financial system, which could improve the resilience of the financial system if investors understand the risks they are taking. This is most likely to be achieved if such sales are simple, transparent and comparable (Basel Committee on Banking Supervision (2016e)).⁵⁰

⁴⁸ While the objective of this report is not to systematically compare the implications of IFRS 9 with those of the CECL approach adopted by FASB for the United States (see Section D in Annex 1), it is worth noting that the incentive of possibly shortening loan maturities may be even more intense under the CECL approach. If impairment allowances were based on lifetime expected credit losses from origination (i.e. treating stage 1 loans the same as stage 2 loans), the reduction in allowances associated with a systematic shortening of loan maturities would be higher.

⁴⁹ A bank's business model is based on the management of a certain maturity mismatch between assets and liabilities. When said mismatch is deemed to be excessive, a reduction in the maturities of assets may have positive effects in terms of financial stability.

⁵⁰ By changing banks' risk and capital positions, loan sales at different points in the cycle could also impact policymakers' use of macroprudential tools such as the countercyclical capital buffer (CCyB).



Section 4

Assessment and policy considerations

This section will assess the main features of IFRS 9 from a financial stability perspective and propose policies for mitigating or preventing any resulting negative implications.

Previous sections have outlined important features of IFRS 9 which may have consequences for financial stability. If successfully implemented, the new ECL approach will considerably broaden the informational value of the reported variation in credit loss allowances and the potential for users to react to such information at an early stage. However, measurement of ECLs will involve complex modelling and data, and a great deal of assumptions and judgement, which may obscure the informational content (and reliability) of the reported allowances. The new approach has been endorsed on the basis that an earlier recognition of losses as credit or business cycles deteriorate will enhance investors' confidence in financial reporting (European Financial Reporting Advisory Group (2015)) overall. Box 3 presents a summary qualitative assessment of IFRS 9 using the criteria established by the European System of Central Banks (ESCB) in 2006 (ECB (2006)).

Box 3

Framework for the qualitative assessment of IFRS 9 from a financial stability perspective

In December 2006, the ESCB published a report (ECB (2006))⁵¹ providing a framework for assessing IFRS Standards from a financial stability perspective. This box draws on the ten high-level principles introduced in this report to propose a framework for qualitatively assessing IFRS 9 from a financial stability perspective. Accounting standards can influence the behaviour of economic agents and thus have an impact on the financial system. Among other functions, accounting figures (i) provide signals on which financial and economic decisions are based and (ii) are used by financial analysts and investors/shareholders to assess the quality of management. Thus, the impact of accounting standards on financial stability derives mainly from the influence of accounting figures on decision-making. This box first describes each criterion (in italics) and then provides a summary qualitative assessment of how IFRS 9 stands relative to the criterion.

Criterion 1 – Reliance on principles-based accounting standards: Accounting standards should be such that they result in financial statements that reflect the economic substance of the operations. A principles-based approach is more robust to change and thus more likely in the long term to yield accounts that reflect the economic reality.

Unlike IAS 39, IFRS 9 is on the whole based on a set of clear and understandable principles. For example, the recognition of financial assets follows a dual-stage assessment based on (i) the characteristics of the financial asset and (ii) the entity's business model. The "relative credit risk assessment" underlying the stages in the IFRS 9 impairment model aims to reflect the economic substance of lending and loan losses, with the recognition of 12-month ECLs in stage 1 as a reasonable compromise between conceptual merit and operability.⁵²

Criterion 2 – Use of reliable and relevant values: Accounting figures should provide correct signals to economic agents and authorities. Hence, accounting figures should be both reliable (i.e. reflect the effective value at which an arm's-length transaction could be settled) and relevant (i.e. provide the information that is valuable and useful to all users of financial statements).

IFRS 9 aims to provide relevant information. Its main innovation, the new ECL model, responds to the G20's request to strengthen accounting of loan loss provisions by incorporating a broader range of credit information. Whether this does result in more reliable information will largely depend on the quality of the implementation of the ECL model and the emergence of "best practices" regarding the various issues where the implementation is open to discretion.

⁵¹ The ESCB report was prepared in the context of the adoption of the IFRSs in Europe. The report first presents benchmark criteria and then evaluates the IFRSs in terms of the criteria that are considered to be relevant from a financial stability perspective. The report aims to identify issues and areas where the IFRSs may, or may not, be beneficial to financial stability and, wherever necessary, to propose possible directions for improvement from a macro-financial and macroeconomic point of view.

⁵² According to the IASB, selecting a period of longer than 12 months in stage 1 would increase the overstatement of ECLs at initial recognition; cf. IFRS 9, para. BC5.195–BC5.199.



Criterion 3 – Recognition of the allocation and magnitude of risks: The allocation of risks between agents is a central role of the financial system. Accounting information which adequately reflects the allocation and magnitude of the exposure to risks helps the system to play this role efficiently and with sufficient resilience to shocks.	By opting for fair value measurement for all trading assets and derivatives, IFRS 9 aims to fully reflect the risks incurred. In terms of reflecting the credit risk of assets measured at amortised cost in a more comprehensive and timely manner, the ECL model constitutes an improvement over the incurred loss model of IAS 39.
Criterion 4 – Provision of comparable financial statements: A harmonised accounting framework enhances the efficiency of capital allocation via the increased cross-border comparability of firms' financial statements and fosters the rational utilisation of resources, thus contributing to economic efficiency. Moreover, comparability across firms is widely seen as essential for market discipline.	By definition, principles-based accounting frameworks involve a certain degree of judgement ("subjectivity"), which may impede the comparability of the resulting accounting information. Examples include, but are not limited to, various classification options (fair value option, certain equity investments) and credit loss estimates. That said, certain limitations to comparability need to be balanced against the relevance of the resulting information (for example, the fair value option of IFRS 9 for assets otherwise measurable at amortised cost is considered necessary for avoiding accounting mismatches). The ultimate assessment of whether IFRS 9 will increase the comparability of financial statements will largely depend on how successful the relevant stakeholders are in ensuring a consistent implementation. ⁵³
Criterion 5 – Provision of clear and understandable financial statements: A sound accounting framework should foster market discipline by enhancing transparency via the presentation of self-evident and understandable financial statements.	Overall, the ECL model in IFRS 9 is expected to increase the complexity of accounting, requiring highly sophisticated methods and advanced skills (e.g. to estimate forward-looking ECLs). Adequate disclosures will be vital to ensure that markets receive the information required to adequately judge the performance of an entity and make informed investment decisions.
Criterion 6 – Portrayal of the financial situation of banks: From a financial stability perspective, the solvency, profitability and liquidity of banks are particularly relevant both in the short and in the long run.	IFRS 9 retains the "mixed attribute model" (amortised cost and fair value), and there is no indication at the current juncture that IFRS 9 will compromise financial stability as a result of greater fluctuations in profit or loss arising from an inappropriate use of fair value. That being said, the ECL model of IFRS 9 has the potential to prevent the understatement of credit risk in good times and will tend to reflect the deterioration of credit risk in bad times in a timelier manner.
Criterion 7 – Alignment of accounting rules and sound risk management practices: Financial statements should be aligned with sound risk management practices, thus producing financial information that is economically meaningful and recognises the risks incurred by the reporting institution.	The ECL model of IFRS 9 better reflects credit risks that are inherent in asset portfolios before these risks actually materialise, especially when compared with the incurred loss model of IAS 39. However, the concept of lifetime ECL introduced by IFRS 9 may not be fully aligned with certain current risk management practices which use shorter horizons. The new general hedge accounting model of IFRS 9 reflects more accurately how an entity manages its risks and the extent to which hedging mitigates those risks.
Criterion 8 – Promotion of a forward-looking recognition of risks: An adequate assessment of risks must incorporate not only information from the past, but also projections for the future.	One of the key features of IFRS 9 is the introduction of a forward-looking ECL model. Hence, it can be supported that IFRS 9 meets this criterion better than its incurred loss predecessor, simultaneously responding to the G20's request for a timelier recognition of credit risks.
Criterion 9 – Avoidance of negative and promotion of positive externalities: Accounting standards directly or indirectly create incentives for economic agents, which may have long-term microeconomic and macroeconomic implications.	This issue is actually at the core of recent discussions on the potential benefits and challenges brought by IFRS 9, especially with regard to its ECL model for impairment allowances. There is a vast body of literature – with mixed results reported – assessing the interaction with regulatory requirements, the potential effect on credit supply, and the presence or not of cyclical effects, mainly in times of acute stress. As for the latter, recent studies in accounting research (Beatty and Liao (2011); Bushman and Williams (2012); Bushman (2015); Bushman and Williams (2015)) find that delayed expected loss recognition is detrimental to financial stability, while the ultimate cyclical effects of the ECL model of IFRS 9 depend on the extent to which tail events can be anticipated and incorporated into the model.
Criterion 10 – Enhancement of market confidence and corporate governance: Accounting standards should discourage and, to the extent possible, prevent the manipulation of accounts ("creative" accounting).	By its very nature, a principles-based accounting framework involves a certain degree of judgement. The benefits of ECL models largely depend on how the models are applied in practice as well as on the quality of data input into the models. In this context, the extent to which this criterion will be met will largely depend on banking supervisors, market regulators and auditors, who are expected to play a prominent role in ensuring the sound and consistent application of IFRS 9 in the EU.

To conclude, it can be supported that IFRS 9 broadly complies with the aforementioned criteria. The efficiency and the benefits of the new accounting standard for financial instruments will largely depend on how it is implemented in practice. Hence it is crucial to ensure a "high-quality" implementation of IFRS 9. Likewise, it will be essential to closely monitor its application in the years to come in order to ensure that there are no unintended consequences resulting from its application (e.g. with regard to cyclicalities).

⁵³ For example, a lack of clear rules and definitions for the ECL models and in particular for triggers for the transfer from stage 1 to stage 2 may weaken the comparability of the financial statements and result in different impairments for the same risk levels.



4.1 Assessment

IFRS 9 does not contribute to financial stability in isolation. Its contribution is the result of how it interacts with the reaction of investors and managers, with market forces, and, last but not least, with regulation. The purpose of this section is to identify issues of potential macroprudential concern and to reflect on policy actions that could help to deal with these issues, if necessary. As in the rest of the report, the analysis focuses on banks and an important part of the assessment discusses the interaction between accounting standards and bank capital requirements.

On this basis, five issues merit attention from a financial stability perspective:

1. **Usage of fair value accounting.** In line with the EBA Impact Assessment (European Banking Authority (2016b)), the new principles-based framework in IFRS 9 governing whether assets are measured at fair value or at amortised cost is not expected to significantly increase the use of FVA among EU financial institutions relative to the current standard, IAS 39. The new standard may alter the treatment of specific assets and, hence, affect the extent of the usage of FVA for specific institutions or functions for which such assets are important. Notwithstanding this, from a system-wide perspective the cumulative impact of such differences is expected to be quite limited. Particular attention may be paid to some assets that may meet the conditions for being measured at amortised cost under the new standard and, at the same time, be eligible for the liquidity coverage ratio and, hence, presumably freely available for sale at times of liquidity stress. If sold during a period of market stress, amortised cost may imply, depending on specific circumstances, the realisation of losses not previously recognised as impairment losses, which could be destabilising for banks or distort the incentives of the reporting entities to use such liquidity buffers.
2. **Modelling risk.** The expected loss approach to impairment allowances under IFRS 9 requires a substantial modelling effort by the reporting entities and a corresponding effort by users, auditors and regulators to assess the quality of the models and interpret their outcomes (their comparability across entities, their volatility over time, etc.).⁵⁴ IFRS 9 entails a large degree of sophistication (e.g. when requesting expected losses to be computed as an average across several macroeconomic scenarios). This need poses challenges related to the lack of data or experience relevant to the required modelling as well as the role of managerial judgement and discretion in the modelling process. Complexity, lack of experience, and managerial discretion in the modelling process leave room for investors and other users of the financial statements to receive richer, but at the same time noisier and potentially easier-to-manipulate, pieces of information. Undesirable consequences of this from a financial stability perspective may include investors' reactions in the form of distrust in the accounting figures, gaining distorted images of the relative strength of banks in the system, and having a false sense of security similar to the one witnessed in the pre-crisis days, when banks fed their IRB formulas with over-optimistic internal estimates of PDs and LGDs (Behn et al. (2016); Firestone and Rezende (2015); Mariathan and Merrouche (2014)).
3. **Lending behaviour.** The lending behaviour of banks may be affected by the entry into force of the ECL approach to impairment allowances in IFRS 9. In anticipation of the new

⁵⁴ The modelling requirements in IFRS 9 come at a time when the BCBS is introducing constraints in the use of internal models for the computation of capital requirements (Basel Committee on Banking Supervision (2016c)), following the regulatory reform agenda set by the G20.



impairment allowances (and their capital cost), banks may adjust the interest rates charged on loans. As the new allowances are expected to be higher, loans rates can be expected to be higher, on average, with a cross-sectional incidence that will vary depending on the characteristics of the contracts (e.g. their maturity), the borrowers (e.g. the sensitivity of their performance to the business cycle), and the banks (e.g. their cost of equity). While such re-pricing may well improve efficiency (through a more adequate pricing of risk) and on average provide additional interest income buffers to banks, it may also alter the composition of credit and its evolution along the business cycle. For example, banks which are worried about the cliff effects associated with loans that move from stage 1 to stage 2 may reduce the maturity of their loans or prefer borrowers with activities less sensitive to the business cycle. Maturity shortening, in particular, may occur in the expectation that the bank will renew the loans as they mature. However, in the absence of a contractual obligation to do so, borrowers may face higher roll-over risk. Whether the transfer of roll-over risk from banks to borrowers is on the whole beneficial or detrimental to financial stability is hard to assess at this stage. Another aspect of IFRS 9 potentially affecting lending behaviour is the fact that some contracts embedding options will no longer qualify to have the non-option component measured at amortised cost. Again, whether this will result in declines in the prevalence of certain forms of optionality (to avoid having the loan measured at fair value) and whether this will be beneficial or detrimental to financial stability at the margin is hard to establish ex-ante. Finally, the nature of competition in certain loan markets will dictate the extent to which higher rates may occur and credit risks may be shifted to entities, both inside and outside the regulatory perimeter, not subject to IFRS 9. The impact of these changes on financial stability is difficult to assess ex-ante, so it would be prudent to include these issues among those to be analysed in the post-implementation review of IFRS 9.

4. **Procyclicality.** If soundly implemented, the ECL model of IFRS 9 is expected to contribute to financial stability by introducing greater levels of transparency and a more timely and decisive recognition of credit losses when available microeconomic and macroeconomic information allow banks to anticipate such losses. However, business cycle fluctuations (as well as financial crises) are hard to predict and switches from expansion to contraction (or from normal to crisis situations) often occur suddenly and unexpectedly. In this context, ECLs may change very quickly. While it is inherent to the spirit of the ECL approach to acknowledge losses as soon as they are expected, instead of waiting for them to come, the macroprudential implications of this should not be disregarded. In a scenario where many banks face a simultaneous increase in expected losses, and hence a reduction in their profit or loss and capital, the sum of the individual measures adopted by banks to maintain their levels of capital (e.g. in an attempt to reduce their risk weighted assets and be able to cope with the situation without having to cut dividends or raise new capital) may result in a reduction in bank lending and in de-leveraging pressures throughout the system. Bank reactions to capital pressures via reductions in assets and new lending are empirically well-documented (classic references include Bernanke and Lown (1991), Berger and Udell (1994), and Peek and Rosengren (1997); more recent references include Fraise et al. (2015), Mésonnier and Monks (2015), Gropp et al. (2016), and Jiménez et al. (2017)). Dealing with the negative feedback effects that such reactions may provoke is a key rationale behind the establishment of macroprudential policies (Hanson et al. (2011)). Similarly to discussions about the procyclical effects of capital requirements (Kashyap and Stein (2004); Repullo and Suarez (2013)), one may expect banks to take measures in reaction to their own precautions, for instance in the form of larger voluntary buffers. It may also be the case that the decline in lending capacity is accompanied, at the aggregate level, by a decline in loan demand, or that some borrowers find alternative sources of funds among unconstrained banks or from non-bank lenders.



Finally, it may even be the case that the reduction of credit supply helps to correct prior excesses in lending and leverage throughout the system. Despite these caveats, the aforementioned evidence points to potential relevant real effects from the tightening of banks' capital constraints, especially in bad times (Jiménez et al. (2017)). Reiterated regulatory efforts undertaken so far to mitigate procyclicality, either with the introduction of buffers such as capital conservation and countercyclical capital buffers (Basel Committee on Banking Supervision (2011)) or the insistence on encouraging IRB banks to use TTC or cycle-insensitive inputs in their capital models (Basel Committee on Banking Supervision (2016c)), suggest a revealed policy preference for addressing the issue.⁵⁵

5. **SA and less sophisticated banks.** Banks using the standardised approach for capital requirements on all or a large fraction of their loan portfolios may need to undertake significant efforts with regard to data collection and modelling, and adapt their human and IT capital resources accordingly. As a result of the synergies associated with their investment in modelling capability, some of these banks may also decide to adopt an IRB approach for capital requirements. Simultaneously, smaller and less sophisticated banks may rely partly on external resources and expertise for the development of their ECL models. A potential risk associated with this process is that it could reinforce herding behaviour among banks. For instance, if many banks relevant for a particular economy or market niche end up using a very similar (if not identical) model, they may react even more strongly in parallel than otherwise to a particular macroeconomic forecast incorporated into such a model. This could exacerbate the banks' tendency to commove in reaction to specific aggregate, regional or sectoral developments, amplifying boom-bust dynamics. From a structural long-run perspective, IFRS 9 will force some SA banks to be more sophisticated, which may have positive side effects on product pricing and risk management. However, the implied fixed cost of sophistication may increase the minimum scale needed for a bank to be profitable, pushing some small banks to merge or exit the market over time, and acting as a barrier to entry for small institutions. In the long run these developments are not necessarily negative for financial stability since the rents enjoyed by the incumbents may render them safer (Hellmann et al. (2000)). That being said, side effects such as reducing the potentially innovative impulse of new entry, reducing the diversity of the banking system, and making too-big-to-fail banks even more prevalent could be negative from a financial stability perspective.

4.2 Policy considerations

IFRS 9 will bring substantial benefits from a financial stability perspective. In addition to the greater clarity and certainty associated with its principles-based approach to the classification of financial assets, the most important innovation of IFRS 9 relative to IAS 39 is its ECL approach to impairment allowances. If soundly implemented, such an approach will enhance transparency and facilitate an earlier and fuller recognition of impairment losses, which has been found to have positive effects on financial stability through various channels explained elsewhere in the report

⁵⁵ The Basel Committee on Banking Supervision (2016c, p. 7) refers to internal ratings in these terms: "Rating systems should be designed in such a way that assignments to rating categories generally remain stable over time and throughout business cycles. Migration from one category to another should generally be due to idiosyncratic or industry-specific changes rather than due to business cycles." Regarding the use of PDs, it establishes that: "Modelled PD should be based on the observed historical average one-year default rate, which must include a representative mix of good and bad years, with a minimum weighting of data from downturn years of one in ten."



(see Beatty and Liao (2011), Bushman and Williams (2015), Novotny-Farkas (2015) and other references in Annex 2). However, it is prudent to be aware of potential developments and channels through which the interaction of the new standard with the reaction of the various players involved, with regulation, and with the evolution of the aggregate economy may have detrimental effects on financial stability. Organised around the five issues identified above, this subsection considers policies that could help to prevent or mitigate any negative implications for financial stability.

The policy considerations below should not be understood as formal ESRB Warnings or Recommendations, as defined by Article 16 of Regulation (EU) No 1092/2010.

4.2.1 Usage of fair value accounting

Fair value filters. The introduction of IFRS 9 does not substantially change the usage of fair value accounting across asset categories and business models, so it does not justify per se a reconsideration of prior decisions regarding the regulatory treatment of some fair value changes. Pre-existing filters regarding fair value changes for available-for-sale assets were eliminated by Basel III. Even if their convenience or lack thereof may still be contentious (European Banking Authority (2013b)), recent experience without them in place does not suggest the existence of destabilising effects (Argimón et al. (2015)). In sum, this issue does not appear to call for a change in policy.

Assets held as liquid reserves. For some assets held as liquidity reserves for times of acute stress, it may be necessary to investigate the degree to which their potential measurement at amortised cost may affect a bank's willingness to use them in times of stress or may be destabilising.⁵⁶ It may be adequate to examine this issue in the post-implementation review of IFRS 9 mandated by the European Parliament.⁵⁷

4.2.2 Modelling risk

The introduction of IFRS 9 will trigger a collective learning process regarding the modelling of ECLs, particularly over horizons of more than one year and with consideration of macroeconomic information, including forward-looking information. Developing models with sound forecasting capacity would enable banks to anticipate downturns well in advance, leading to the early recognition of credit losses. Nonetheless, the complexity, the high degree of judgement involved in designing models and choosing parameters, behavioural aspects such as the intention to smooth profits and the inherent model risk may undermine the intended benefits of IFRS 9.

Preference for simplicity. The challenges of the process, while experience and data are scarce, may speak in favour of prudence regarding the degree of sophistication of the ECL models. In the absence of good reasons to opt for approaches that are more complex than necessary to comply with IFRS 9 and to meet regulatory expectations, encouraging the use of relatively simple, parsimonious models may have advantages on various fronts. Technically, simpler models bear a lower risk of over-fitting and may have better out-of-sample predictive performance (Estrella and

⁵⁶ Importantly, IFRS 9 does not permit amortised cost measurement when an entity holds financial assets to meet its everyday liquidity needs (involving frequent sales).

⁵⁷ The materialisation of this risk should be analysed taking into account both its cumulative impact and the possibility that specific institutions or markets are more affected than others.



Mishkin (1998)). Additionally, they are internally and externally easier to understand and back-test, which facilitates their governance, transparency, and external control by auditors as well as banking and market supervisors.

Regulatory guidance. Prudential supervisors and the banks they supervise have a shared interest in ensuring that the inconsistent application of IFRS 9 among firms does not undermine the regulatory capital regime or investors' confidence in statutory financial statements. Regulatory guidance regarding key modelling choices such as the criteria for moving exposures across stages (e.g. the practical implementation of the notion of "significant increase in credit risk"), the consideration of multiple scenarios for the calculation of expected losses (how many, how extreme relative to a central scenario, based on which range of macroeconomic variables, etc.), and the governance of the process can be quite useful for guaranteeing a number of minimal good standards of practice and facilitating the comparability of impairment allowances across banks.⁵⁸ Guidance has already been provided by bodies such as the Accounting Expert Group of the Basel Committee on Banking Supervision (2015b) and the European Banking Authority (2017b). The continuity of these initiatives is welcome, possibly taking into account other considerations made in this report (e.g. on simplicity) among their guiding principles.

Disclosure. Extensive and high-quality disclosures will play an essential role in allowing users, auditors and supervisors to understand the modelling assumptions behind the reported impairment allowances and to introduce the corrections needed, for instance, to enable their comparability across banks. Adequate disclosures are crucial to ensuring that IFRS 9 is adequately implemented. Initiatives along the lines of the former Enhanced Disclosure Task Force (EDTF), sponsored by the Financial Stability Board (FSB), may provide a forum in which banks and regulators can interact in the search for best practices in this relevant area.

External verification of IFRS 9. The introduction of IFRS 9 and notably the ECL approach, with its high modelling intensity, implies a change for auditors, market regulators (including accounting enforcement authorities of exchange-listed banks) and banking supervisors.

- In the area of auditing, ECL requires an adjustment of the standards and practices related to auditing accounting estimates and complex models. While general guidance regarding auditing of accounting estimates has already been developed,⁵⁹ additional specific guidance may be required for the financial sector. Furthermore, it may be worth considering whether extending and/or harmonising the work of the bank auditor at EU level could facilitate the consistent implementation and application of IFRS 9 (e.g. by a mandatory specific report from the auditor to the supervisor on specific elements of the ECL calculation and effectiveness of internal controls). The Committee of European Auditory Oversight Bodies (CEAOB), the European Banking Authority and the European Securities and Markets Authority (ESMA) may be asked to advise further on these matters.
- The introduction of ECL requires the examination methods used by the accounting enforcers to be adjusted and developed further. The complexity of the ECL models may necessitate changes in the scope of work of the enforcement agencies when assessing whether the

⁵⁸ Discretion available to banks regarding key elements of their ECL models could result in models that behave very differently and that give rise to different outputs across banks even under essentially equivalent circumstances.

⁵⁹ The International Accounting and Assurance Standards Board (IAASB) is currently proposing an adaptation of International Standards on Auditing (ISA) 540 related to the auditing of accounting estimates.



financial statements have been prepared in accordance with IFRS 9. The use of specialised resources and ongoing wide cooperation with banking supervisors may be necessary.

- The complexity of the ECL models may require further enhancement and formalisation of communication between audit supervisors, market regulators/accounting enforcers and banking supervisors both at the national and at the European levels.⁶⁰ In particular, enhanced cooperation, communication and timely exchange of information between accounting enforcers/market regulators and banking supervisors (and between auditors and supervisors) may be desirable for ensuring the high-quality, consistent implementation of IFRS 9 and a high level of transparency for investors.

4.2.3 Lending behaviour

The impact of IFRS 9 on financial stability via its effects on lending conditions is difficult to determine ex-ante. As argued in the assessment above, one may expect some impact on loan pricing (heterogeneous across types of borrowers, contracts and banks), as well as an impact on loan maturities. Additionally, some contract types with embedded options that no longer qualify for partial measurement at amortised cost may be replaced by more straightforward contracts passing the SPPI test.

While there are no strong reasons to believe that these developments pose additional threats to financial stability (the opposite may well be true), it would be prudent to include these issues among those to be analysed in the post-implementation review of IFRS 9 mandated by the European Parliament. At the same time, it must be acknowledged that properly identifying the impact of IFRS 9 (relative to confounding factors) on the changes in lending behaviour detected over the forthcoming years will not be an easy empirical task. The joint involvement of market intelligence and academic researchers in the task would increase the likelihood of reaching valid conclusions.

4.2.4 Procyclicality

The main aspect for which IFRS 9 raises concerns on procyclicality is connected to the potentially contractive reaction of banks when facing a sudden early recognition of ECLs upon receiving information (including macroeconomic forecasts) pointing to the weakening of aggregate economic conditions. As argued above, part of such a reaction may be due to fundamental reasons, such as the decline in credit demand or the deterioration in the prospective credit quality of new loans, which would be in operation irrespective of the accounting standard in place. Another part may be due to market or regulatory pressure associated with the impact of the impairment allowances on banks' profit or loss accounts and, through them, on their capital positions. IFRS 9 alters such an impact by requiring the losses to be recognised at an earlier point in time (upon the deterioration in aggregate circumstances) rather than on a gradual basis immediately afterwards (as the losses are incurred). Despite its many advantages, there is still a risk that the early impact will worsen economic developments, via sudden deleveraging throughout the system and its feedback effects. The elements that could ameliorate such risk include the

⁶⁰ In this respect, it is worth noting that the framework introduced by European Banking Authority (2016d) for the communication between auditors and banking supervisors is applicable since 31 March 2017.



voluntary or regulatory-driven adoption of larger capital buffers and other precautionary measures by banks as well as measures that could contribute to alleviating the cyclicity of the underlying market or regulatory pressure.

Sound, well-communicated and consistently applied financial reporting. The early recognition of losses will be smoother if banks can anticipate downturns and crises well in advance, hence the importance of developing models with sound forecasting capacity. Additionally, procyclicality may be less pronounced if the outcomes of the new paradigm are effectively communicated to market participants, so that they do not misinterpret or overreact to the losses when they arise, adding deleveraging pressure on banks.

Regulatory buffers. On the regulatory front, buffers such as the capital conservation buffer (CCB), and the countercyclical capital buffer (CCyB), together with firm-specific capital buffers established under Pillar 2, constitute the first lines of defence against cyclical shocks that impair banks' capital positions.⁶¹ Each of them has different features and functions:

- The CCB works in a semi-automatic manner. Banks should ensure it is fully loaded after a sufficient number of periods with positive profits and they should be able to draw it down without requiring supervisory intervention (although “in normal times” supervisors can impose additional limits on this on a case-by-case basis). Breaching the CCB leads to restrictions on the distribution of earnings and the payment of discretionary bonuses to employees, with an intensity which grows as the distance from the target size of 2.5% of RWAs increases. This buffer is still being phased in across the EU and experience of its use and effectiveness is still limited. One concern about the capacity of the CCB to deal with procyclicality stems from the degree to which supervisory pressure, market pressure or the mere intention of bank managers to show strength relative to competing banks converts the target size of 2.5% of RWAs into a barrier not to be crossed even in adverse circumstances. This could provoke a preference for cutting new lending and reducing RWAs rather than using the available CCB.
- The CCyB is a macroprudential tool and works in a more discretionary and system-wide manner, with the authorities in charge establishing the level that the banks under their jurisdiction must target at each point in time and with breaches leading to restrictions on distributions similar to those associated with breaches of the CCB. The CCyB is a buffer intended to increase the resilience of the banking sector in times of excessive credit growth.⁶² However, its potential contribution to stabilising credit supply in bad times is also recognised.⁶³ Under its current regulatory guidance, the CCyB is not intended to cover standard business cycle fluctuations. It is thus only able to counteract the increase in impairment allowances under IFRS 9 when a phase of excessive credit growth has been observed before (and the CCyB has been activated). Nevertheless, some macroprudential authorities are introducing a more flexible use of the CCyB, under which the CCyB might help

⁶¹ In many jurisdictions, national accounting frameworks will continue to apply to a subgroup of banks, so careful consideration should be given to the appropriate balance between system-wide and firm-specific buffers.

⁶² The Basel Committee on Banking Supervision (2011) establishes that “it will be deployed by national jurisdictions when excess aggregate credit growth is judged to be associated with a build-up of system-wide risk to ensure the banking system has a buffer of capital to protect it against future potential losses.”

⁶³ For instance, the [website](#) dedicated by the Basel Committee on Banking Supervision to monitor the implementation of the CCyB around the globe states (as of 15 March 2017) that “in downturns, the regime should help to reduce the risk that the supply of credit will be constrained by regulatory capital requirements that could undermine the performance of the real economy and result in additional credit losses in the banking system”.



accommodate the effects of sudden rises in impairment allowances even if not preceded by a phase of excessive credit growth.⁶⁴

Stress testing. Another line of defence against shocks that may impair banks' capitalisation and, through it, banks' critical functions, including lending, is stress testing. External (also often referred to as supervisory) and internal stress tests have become part of regulators' and institutions' standard toolboxes. External stress tests are now run in many jurisdictions on a quasi-regular basis, although often limited to a subset of banks. In particular, external stress tests are required by Article 100 of the Directive 2013/36/EU to facilitate the Supervisory Review and Evaluation Process (SREP). In bottom-up external stress tests, supervisors request that all participating institutions calculate the capital that they would need to withstand the universally applicable scenario(s) without breaching their minimum capital requirements (or an alternative regulatory hurdle). In contrast, internal stress testing is primarily a risk management tool that helps bank management to proactively prepare for adverse scenarios, although its use has been greatly pushed by supervisors in recent years (Basel Committee on Banking Supervision (2009); Committee of European Banking Supervisors (2010); European Banking Authority (2015)). Internal stress testing is now an integral part of an institution's internal capital adequacy assessment process (ICAAP) and is carried out using institutions' own models, data and scenarios, sometimes on certain portfolios only. It serves the purpose of identifying the internal capital needed to absorb certain kinds of shocks. Regulatory bodies have already sought to promote internal stress testing as a means to managing relevant risks.⁶⁵

There are several considerations here:

- Once IFRS 9 enters into force, banks undergoing a stress test exercise will have to compute their capital needs in adverse scenarios taking the estimated behaviour of impairment allowances into account. If adverse scenarios are defined which are at least as severe as some of the worse cyclical deteriorations that banks can face over the horizon of the exercise, having sufficient capital to withstand the adverse scenarios will also imply that the bank is capable of absorbing the early recognition of credit losses, required by IFRS 9 when a downturn occurs. So, in principle, external stress testing can be used to ensure that banks build sufficient capital buffers ahead of crises to absorb any increase in provisions during such crises. Ensuring that capital buffers are sufficient, at both system-wide and individual bank level, to absorb any earlier recognition of impairment losses could then help to counter any increased procyclicality in the supply of lending to the real economy that may otherwise arise.
- However, withstanding an adverse scenario in terms of solvency or capital adequacy does not guarantee that banks will not react by restricting lending if the economy enters a recession or a crisis starts.⁶⁶ As currently conceived, external stress tests typically place the focus on avoiding the breach of minimum capital requirements, while pressure for asset shrinkage may

⁶⁴ The UK's macroprudential authority, the Financial Policy Committee (FPC), has signalled that it expects the buffer to be around 1% in normal times (Financial Policy Committee (2016)), pointing out that "a CCyB rate in the region of 1%, combined with other elements of the capital framework, provides UK banks with sufficient capital to withstand a severe stress."

⁶⁵ For example, in its Standards on Interest rate risk in the banking book (IRRBB), the Basel Committee on Banking Supervision (2016d) sets out the principle that a firm's own measurement of IRRBB should include outcomes from internally defined interest rate shock and stress scenarios, as well as outcomes from regulator-specified stress tests.

⁶⁶ However, the adverse scenario in regulatory stress tests may well be more severe than the one faced in a typical recession, thus ensuring additional capability to cope with normal recessions.



occur well above the minimum requirements. For instance, having a fully loaded CCB, complying with the CCyB, and even having an extra buffer on top may be considered as signs of strength or market demand.

- External stress testing in general, and in particular under IFRS 9, will require a careful communication policy to avoid undesired reactions by market participants stemming from a misinterpretation of the results regarding e.g., the earlier recognition of credit losses under the new ECL approach. On the one hand, the circumstances defining adverse scenarios must be negative enough to allow supervisors to understand each bank's capacity to withstand shocks under the new ECL paradigm. On the other hand, if misinterpreted or causing undue concern, the stress test could result in a reduction in exposures and RWAs, not in response to actual deteriorations in the macroeconomic environment but simply in anticipation of the estimates of how much capital may be lost in a hypothetical adverse scenario.
- To foresee and proactively react to a potential, additional impact of IFRS 9 under stressed conditions, internal stress testing can serve as a prognostic tool. As an integral part of its ICAAP process, an institution can simulate multiple, individualised scenarios to prepare for the early recognition of credit losses that IFRS 9 would require when, for example, a downturn begins. Relative to external stress tests, internal stress tests can be performed more frequently and do not necessarily entail the disclosure of the results, eliminating concerns regarding undesired market reactions. However, they are weaker tools in terms of market discipline and their effectiveness depends on the interplay between institutions' internal motivation and the disciplinary role of the supervisors through the SREP.⁶⁷ With these considerations in mind, internal stress testing may also incentivise banks to build up capital buffers or take other precautions in preparation for hypothetical scenarios in which their IFRS 9 impairment allowances suddenly rise. Ensuring that capital buffers are sufficient at an individual bank level could then help to counter any increased procyclicality in the supply of lending at an aggregate level that may otherwise occur.

Prudential adjustments. Accounting capital is the basis of regulatory capital, but it can be temporarily or permanently adjusted to arrive at the definition of regulatory capital. Conceptually, these adjustments may accommodate differences between the objectives and goals pursued by financial reporting and prudential regulation. Examples of adjustments related to impairment allowances include the deductions from CET1 that apply when regulatory expected losses exceed accounting provisions under the IRB approach, the consideration of general provisions as Tier 2 capital under the SA approach, or the implications for CET1 of the transitional regimes agreed by the BCBS in order to smooth out the day-one impact of IFRS 9. So, in theory, it would be possible to try to ameliorate the potential procyclical impact of IFRS 9 impairment allowances on regulatory capital through these types of adjustments. The adjustment may consist of defining regulatory provisions on the basis of a regulatory notion of expected losses which is partly different from the notion used by IFRS 9 (e.g. based on the same horizon for all exposures) or introducing (temporary or permanent) adjustments aimed at smoothing out cyclical shifts in the accounting provisions (e.g. those stemming from sudden transfers from stage 1 to stage 2 or from the PIT nature of the ECLs).

In these regards, the following considerations can be made:

⁶⁷ External stress tests are also relevant for the purposes of the SREP. However, the publication of the results of external stress tests, which is not envisaged for internal stress tests, exerts strong market discipline on the participating banks.



- Adjustments that appear, from a regulatory perspective, to amend or compensate for the greater forward-looking nature of impairment allowances under IFRS 9 may seem to contradict the mandate of the G20 regarding the desirability of more forward-looking provisioning practices. Accounting standard-setters had to strike a difficult balance between making provisioning more forward-looking and, at the same time, maintaining the goals of financial reporting regarding accuracy and transparency, which are prerequisites for the proper functioning of market discipline. Depicting a fair image of the financial situation of the reporting entity at each reporting date and not delaying the recognition of foreseeable losses possibly made the choice of a PIT approach to ECLs unavoidable. From a prudential perspective, however, a PIT ECL is likely to introduce more volatility into the calculation of capital resources. Regulators could address this by using a smoother, more TTC measure of ECL as an input in their capital calculations, as in the current regulatory provisions for IRB banks.
- It may not be desirable to maintain permanent and sizeable adjustments between accounting capital and regulatory capital that are not well-articulated or justified in terms of the goals of prudential regulation. It could result in a confounding message to the users of the accounting statements regarding the relevance or reliability of accounting capital or of accounting figures in general. Alternatively, it could generate distrust in the quality of regulatory capital or the meaning of being well-capitalised from a regulatory perspective. It could perpetuate the view that a form of regulatory forbearance applies to banks permanently. From this perspective, only temporary adjustments, if any, may be preferable to permanent adjustments. However, reductions and add-backs from regulatory capital are already part of the regulatory framework, so their implementation in this area would be technically bearable. Of course, an important number of details would have to be fixed or properly calibrated, including how to define the part of the allowances that would qualify for the reduction or the add-back, the regulatory capital layers to which the reduction or the add-back will apply, and any particular limit to the amounts that could be reduced or added back.

4.2.5 SA and less sophisticated banks

The standardised approach to capital requirements was designed in an environment where, in the accounting realm, expected loss models were not widely used for the recognition of impairment losses. The introduction of IFRS 9 involves a larger shift of paradigms regarding provisioning practices for SA banks, as well as specific modelling and data challenges related to their missing or limited experience in internal models.

Adapting the SA approach. In the light of this situation, there are three possible regulatory responses regarding the SA approach:

1. Maintain the current regulatory approach, after clarifying the regulatory consideration of the new accounting provisions (or their components) as specific vs. general provisions.⁶⁸
2. Develop a new paradigm for SA banks, including the possibility of basing their regulatory expected losses on ECLs and recalibrating their capital requirements (CRs), if needed.

⁶⁸ According to the recent EBA Opinion (European Banking Authority (2017a)), all impairment charges derived from IFRS 9 should be considered as specific credit risk adjustment.



3. Introduce targeted amendments to the SA framework (possibly mirroring similar amendments in the IRB framework), including decisions on prudential adjustments such as the ones described above.

Although more geared towards a longer-time horizon, the second option seems to be the most appropriate option from a theoretical point of view, as it would update the necessary parts of the prudential requirements for SA portfolios in order to adapt them to expected loss approaches. Options 1 and 3 would be more limited in scope and could be thought of as a temporary solution until Option 2 is fully developed.

Keeping modelling requirements proportionate. An important dimension to consider in this area is the potential entry barriers which an extended use of internal models may impose in terms of modelling, IT and data costs. At the same time, the global financial crisis has cast doubt on the reliability of internal models; on these grounds, extending their use to smaller institutions would not be fully justified. In this regard, it may not be realistic or desirable to push smaller and less sophisticated banks towards excessive levels of sophistication. Allowing them to adopt simpler models may be more proportionate to the quantity and quality of the data and the modelling capacity that they can achieve at reasonable cost.



References

- Abad, J. and Suarez, J. (2017), "Assessing the cyclical implications of IFRS 9: A recursive model", *ESRB Occasional Paper*, No 12.
- Adrian, T. and Shin, H. (2008), "Liquidity and financial cycles", *BIS Working Paper*, No 256.
- Adrian, T. and Shin, H. (2010), "Liquidity and leverage", *Journal of Financial Intermediation*, Vol. 19, pp. 418-437.
- Afonso, G., Kovner, A. and Schoar, A. (2011), "Stressed, not frozen: The Federal Funds market in the financial crisis", *Journal of Finance*, Vol. 66, Issue 4, pp. 1109-39.
- Allen, F. and Carletti, E. (2008), "Mark-to-market accounting and cash-in-the-market pricing", *Journal of Accounting and Economics*, Vol. 45, pp. 358-378.
- Argimón, I., Dietsch, M. and Estrada, Á. (2015), "Prudential filters, portfolio composition and capital ratios in European Banks", *Banco de España*, Documento de Trabajo 1538.
- Autonomous (2016), *IFRS 9 looms larger*, October.
- Badertscher, B., Burks, J. and Easton, P. (2012), "A convenient scapegoat: Fair value accounting by commercial banks during the financial crisis", *Accounting Review*, Vol. 87, pp. 59-90.
- Bangia, A., Diebold, F., Kronimus, A., Schagen, C. and Schuermann, T. (2002), "Ratings migration and the business cycle, with application to credit portfolio stress testing", *Journal of Banking and Finance*, Vol. 26, pp. 445-474.
- Bank for International Settlements (2001), "Marrying the macro- and micro-prudential dimensions of financial stability", *BIS Papers*, No 1.
- Bank of Japan (2005), *Advancing credit risk management through internal rating systems*, August.
- Barclays (2017), *European Banks: IFRS9 – Bigger than Basel IV*, January.
- Barth, M. (1994), "Fair Value accounting: Evidence from investment securities and the market valuation of banks", *Accounting Review*, Vol. 69, pp. 1-25.
- Barth, M., Beaver, W. and Landsman, W. (1995), "Fair value accounting: Effects on banks' earnings volatility, regulatory capital, and value of contractual cash flows", *Journal of Banking and Finance*, Vol. 19, pp. 577-605.
- Barth, M., Beaver, W. and Landsman, W. (1996), "Value-relevance of banks' fair value disclosures under SFAS no. 107", *Accounting Review*, Vol. 71, pp. 513-537.
- Barth, M., and Landsman, W. (2010), "How did financial reporting contribute to the financial crisis?", *European Accounting Review*, Vol. 19, pp. 399-423.
- Basel Committee on Banking Supervision (2009), *Principles for sound stress testing practices and supervision*, May.
- Basel Committee on Banking Supervision (2011), *Basel III: A global regulatory framework for more resilient banks and banking systems*, June.
- Basel Committee on Banking Supervision (2015a), "The interplay of accounting and regulation and its impact on bank behaviour: Literature review", *Working Paper*, No. 28, January.



Basel Committee on Banking Supervision (2015b), *Guidance on credit risk and accounting for expected losses*, December.

Basel Committee on Banking Supervision (2016a), *Regulatory treatment of accounting provisions - interim approach and transitional arrangements*, Consultative document, October.

Basel Committee on Banking Supervision (2016b), *Regulatory treatment of accounting provisions*, Discussion document, October.

Basel Committee on Banking Supervision (2016c), *Reducing variation in credit risk-weighted assets – constraints on the use of internal model approaches*, Consultative document, March.

Basel Committee on Banking Supervision (2016d), *Interest rate risk in the banking book*, April.

Basel Committee on Banking Supervision (2016e), *Revisions to the securitisation framework*, July.

Basel Committee on Banking Supervision (2017), *Regulatory treatment of accounting provisions – interim approach and transitional arrangements*, March.

Beatty, A., Chamberlain, S. and Magliolo, J. (1996), "An empirical analysis of the economic implications of fair value accounting for investment securities", *Journal of Accounting and Economics*, Vol. 22, pp. 43-77.

Beatty, A. and Liao, S. (2011), "Do delays in expected loss recognition affect banks' willingness to lend?", *Journal of Accounting and Economics*, Vol. 52(1), pp. 1-20.

Beatty, A. and Liao, S. (2014), "Financial accounting in the banking industry: A review of the empirical literature", *Journal of Accounting and Economics*, Vol. 58, pp. 339-383.

Behn, M., Haselmann, R. and Vig, V. (2016), "The limits of model-based regulation", *ECB Working Paper*, No. 1928.

Berger, A.N. and Bouwman, C. (2013), "How does capital affect bank performance during financial crises?", *Journal of Financial Economics*, Vol. 109, pp. 146-176.

Berger, A. and Udell, G. (1994), "Did risk-based capital allocate bank credit and cause a 'credit crunch' in the United States?", *Journal of Money, Credit and Banking*, Vol. 26, pp. 585-628.

Bernanke, B. and Lown, C. (1991), "The credit crunch", *Brooking Papers on Economic Activity*, No 2, pp. 205-247.

Bernard, V., Merton, R. and Palepu, K. (1995), "Mark-to-market accounting for banks and thrifts - lessons from the Danish experience", *Journal of Accounting Research*, Vol. 33, pp. 1-32.

Bhat, G., Frankel, R. and Martin, X. (2011), "Panacea, Pandora's box, or placebo: Feedback in bank mortgage-backed security holdings and fair value accounting", *Journal of Accounting and Economics*, Vol. 52, pp. 153-173.

Bholat, D., Lastra, R., Markose, S., Miglionico, A. and Sen, K. (2016), "Non-performing loans: regulatory and accounting treatments of assets", *Bank of England Staff Working Paper*, No 594.

Blankespoor, E., Linsmeier, T.J., Petroni, K. and Shakespeare, C. (2012), "Fair value accounting for financial instruments: Does it improve the association between bank leverage and credit risk?", *Working Paper*, No 2107, Stanford University.

Blundell-Wignall, A., Atkinson, P. and Lee, S.H. (2008), "The current financial crisis: causes and policy issues", *OECD Financial Markets Trends*, No 10, pp. 1-21.



- Bushman, R. (2015), "Transparency, Accounting Discretion and Bank Stability", *Economic Policy Review*.
- Bushman, R. and Williams, C. (2012), "Accounting discretion, loan loss provisioning and discipline of banks' risk-taking", *Journal of Accounting and Economics*, Vol. 54, pp. 1-18.
- Bushman, R. and Williams, C. (2015), "Delayed expected loss recognition and the risk profile of banks", *Journal of Accounting Research*, Vol. 53, pp. 511-553.
- Button, R., Pezzini, S. and Rossiter, N. (2010), "Understanding the price of new lending to households", *Bank of England Quarterly Bulletin*, Vol. 50, pp. 172-82.
- Caprio, G. (2013), "Financial regulation after the crisis: How did we get here, and how do we get out?", *LSE FMG Special Paper*, No 226.
- Catarineu-Rabell, E., Jackson, P. and Tsomocos, D. (2005), "Procyclicality and the new Basel Accord - banks' choice of loan rating system", *Economic Theory*, Vol. 26, pp. 537-557.
- Cohen, B. and Edwards, G. (2017), "The new era of expected credit loss provisioning", *BIS Quarterly Review*, March, pp. 39-56.
- Committee of European Banking Supervisors (2010), *CEBS Guidelines on Stress Testing (GL32)*, August.
- Das, S. and Sy, A. (2015), "How risky are banks' risk weighted assets? Evidence from the financial crisis", *IMF Working Paper*, No 12/36, January.
- Deloitte (2016), "No time like the present", *Global IFRS banking survey*, No 6, May.
- Deutsche Bank (2015), *IFRS 9: Truth and advertising*, December.
- Dewatripont, M. and Tirole, J. (1994), *The Prudential Regulation of Banks*, Cambridge, MA: MIT Press.
- Dewatripont, M., Freixas, X. and Tirole, J. (2010), *Balancing the banks: Global lessons from the financial crisis*, Princeton, NJ: Princeton Press.
- Domikowsky, C., Foos, D. and Pramor, M. (2015), *Loan loss accounting rules and bank lending over the cycle: Evidence from a global sample*, Working Paper, Deutsche Bundesbank.
- Eccher, E., Ramesh, K. and Thiagarajan, S. (1996), "Fair value disclosures by bank holding companies", *Journal of Accounting and Economics*, Vol. 22, pp. 79-117.
- Ellul, A., Jotikasthira, C., Lundblad, C. and Wang, Y. (2014), "Mark-to-market accounting and systemic risk in the financial sector", *Economic Policy*, Vol. 29, pp. 299-341.
- Ellul, A., Jotikasthira, C., Lundblad, C. and Wang, Y. (2015), "Is historical cost accounting a panacea? Market stress, incentive distortions, and gains trading", *Journal of Finance*, Vol. 70, pp. 2489-2537.
- Ernst & Young Global Limited (2016), *IFRS 9 impairment banking survey*, September.
- Estrella, A. and Mishkin, F. (1998), "Predicting U.S. recessions: Financial variables as leading indicators", *Review of Economics and Statistics*, Vol. 80, pp. 45-61.
- European Banking Authority (2013a), *Report on the procyclicality of capital requirements under the internal ratings based approach*, December.
- European Banking Authority (2013b), *Technical advice to the Commission on possible treatments of unrealised gains measured at fair value (EBA/DP/2013/03)*, December.



European Banking Authority (2014), *EBA FINAL draft Implementing Technical Standards On Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013*, July.

European Banking Authority (2015), *Draft Guidelines on stress testing and supervisory stress testing*, Consultation Paper, December.

European Banking Authority (2016a), *Report on the Dynamics and Drivers of Nonperforming Exposures in the EU Banking Sector*, July.

European Banking Authority (2016b), *Report on results from the EBA impact assessment of IFRS 9*, December.

European Banking Authority (2016c), *Cyclicality of capital requirements. Report under Art. 502 CRR*, December.

European Banking Authority (2016d), *Guidelines on communication between competent authorities supervising credit institutions and the statutory auditor(s) and the audit firm(s) carrying out the statutory audit of credit institutions*, November.

European Banking Authority (2017a), *Opinion of the European Banking Authority on transitional arrangements and credit risk adjustments due to the introduction of IFRS 9*, March.

European Banking Authority (2017b), *Guidelines on credit institutions' credit risk management practices and accounting for expected credit losses*, May.

European Central Bank (2006), *Assessment of accounting standards from a financial stability perspective*, December.

European Commission (2016), *Proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements and amending Regulation (EU) No 648/2012*, November.

European Financial Reporting Advisory Group (2015), *Endorsement advice on IFRS 9 Financial Instruments*, September.

European Securities and Markets Authority (2015), *ESMA's response to EFRAG Draft Endorsement Advice on IFRS 9*, June.

Financial Policy Committee (2016), *The Financial Policy Committee's approach to setting the countercyclical capital buffer - A Policy Statement*, Bank of England, April.

Financial Stability Board (2009), *Report of the financial stability forum on addressing procyclicality in the financial system*, April.

Financial Stability Forum (2008), *Addressing financial system procyclicality: a possible framework. Note for the FSF Working Group on Market and Institutional Resilience*, September.

Financing Accounting Standards Board (2016), "Measurement of credit losses on financial instruments", *Financial Accounting Series*, No 2016-13, June.

Firestone, S. and Rezende, M. (2016), "Are banks' internal risk parameters consistent? Evidence from syndicated loans", *Journal of Financial Services Research*, Vol. 50, pp. 211-242.



- Fraisse, H., Lé, M. and Thesmar, D. (2015), "The real effects of bank capital requirements", *Débats Économiques et Financiers*, No 8.
- Georgescu, O.M. and Laux, C. (2013), "Financial reporting, financial regulation and financial stability: Evidence from German bank failures in 2007-2008", *Working Paper*, University of Vienna.
- Goldstein, I. and Sapra, H. (2013), "Should banks' stress test results be disclosed? An analysis of the costs and benefits", *Foundations and Trends® in Finance*, Vol. 8, pp. 1-54.
- Gordy, M. and Howells, B. (2006), "Procyclicality in Basel II: Can we treat the disease without killing the patient?", *Journal of Financial Intermediation*, Vol. 15, pp. 395-417.
- Gropp, R., Mosk, T., Ongena, S. and Wix, C. (2016), "Bank response to higher capital requirements: Evidence from a natural experiment", *SAFE Working Paper*, No 156.
- Gruenberger, D. (2012), "**Expected Loan Loss Provisions, Business- and Credit Cycles**".
- Haldane, A. (2013), "Constraining discretion in bank regulation", Speech on 9 April, Bank of England.
- Hamilton, D., Sun, Z. and Ding, M. (2011), "Through-the-Cycle EDF credit measures", Moody's Analytics, August.
- Hanson, S., Kashyap, A. and Stein, J. (2011), "A macroprudential approach to financial regulation", *Journal of Economic Perspectives*, Vol. 25, pp. 3-28.
- Heaton, J.C., Lucas, D. and McDonald, R.L. (2010), "Is mark-to-market accounting destabilizing? Analysis and implications for policy", *Journal of Monetary Economics*, Vol. 57, pp. 64-75.
- Hellmann, T., Murdock, K. and Stiglitz, J. (2000), "Liberalization, moral hazard in banking, and prudential regulation: Are capital requirements enough?", *American Economic Review*, Vol. 90, pp. 147-165.
- Huizinga, H. and Laeven, L. (2012), "Accounting discretion of banks during a financial crisis", *Journal of Financial Economics*, Vol. 106, pp. 614-634.
- International Accounting Standards Board (2013), "Snapshot: Financial Instruments: Expected Credit Losses", *Exposure Draft*, March.
- International Accounting Standards Board (2015), *IFRS 9 Expected losses – a paradigm shift*, October.
- International Monetary Fund (2008), "Fair value accounting and procyclicality", *Global Financial Stability Report*, Chapter 3, October.
- Jiménez, G., Ongena, S., Peydró, J.-L. and Saurina, J. (2017), "Macroprudential policy, countercyclical bank capital buffers and credit supply: Evidence from the Spanish dynamic provisioning experiments", *Journal of Political Economy*, forthcoming.
- Kashyap, A. and Stein, J. (1995), "The impact of monetary policy on bank balance sheets", *Carnegie-Rochester Conference Series on Public Policy*, Vol. 42, pp. 151-195.
- Kashyap, A., and Stein, J. (2000), "What do a million observations on banks say about the transmission of monetary policy?", *American Economic Review*, Vol. 90, pp. 407-428.
- Kashyap, A. and Stein, J. (2004), "Cyclical implications of the Basel II capital standards", *Federal Reserve Bank of Chicago Economic Perspectives*, 1st Quarter, pp. 18-31.
- KPMG (2014), *First impressions: IFRS 9 Financial Instruments*, September.



- Laeven, L. and Majnoni, G. (2003), "Loan loss provisioning and economic slowdowns: Too much, too late?", *Journal of Financial Intermediation*, Vol. 12, pp. 178-197.
- Landau, J.P. (2009), "Procyclicality – what it means and what could be done", Remarks at the *Bank of Spain's conference on Procyclicality and the Role of Financial Regulation*, 4 May.
- Lang, M. and Maffett, M. (2011), "Transparency and liquidity uncertainty in crisis periods", *Journal of Accounting and Economics*, Vol. 52, pp. 101-125.
- Laux, C. (2012), "Financial instruments, financial reporting and financial stability", *Accounting and Business Research*, Vol. 42, pp. 239-260.
- Laux, C. and Leuz, C. (2009), "The crisis of fair-value accounting: Making sense of the recent debate", *Accounting, Organizations and Society*, Vol. 34, pp. 826-834.
- Laux, C. and Leuz, C. (2010), "Did fair-value accounting contribute to the financial crisis?", *Journal of Economic Perspectives*, Vol. 24, pp. 93-118.
- Laux, C. and Rauter, T. (2017), "Procyclicality of US bank leverage", *Journal of Accounting Research*, forthcoming.
- Lim, C.Y., Lee, E., Kausar, A. and Walker, M. (2014), "Bank accounting conservatism and bank loan pricing", *Journal of Accounting and Public Policy*, Vol. 33, pp. 260-278.
- Mariathasan, M. and Merrouche, O. (2014), "The manipulation of Basel risk-weights", *Journal of Financial Intermediation*, Vol. 23, pp. 300-321.
- Maudos, J. and Fernández de Guevara, J. (2004), "Factors explaining the interest margin in the banking sectors of the European Union", *Journal of Banking and Finance*, Vol. 28, pp. 2259-2281.
- Mésonnier, J.-S. and Monks, A. (201), "Did the EBA Capital Exercise cause a credit crunch in the euro area?", *International Journal of Central Banking*, Vol. 11, June, pp. 75-117.
- Nelson, K. (1996), "Fair value accounting for commercial banks: An empirical analysis of SFAS no. 107", *Accounting Review*, Vol. 71, pp. 161-182.
- Ng, J. and Roychowdhury, S. (2014), "Do loan loss reserves behave like capital? Evidence from recent bank failures", *Review of Accounting Studies*, Vol. 19, pp. 1234-1279.
- Novotny-Farkas, Z. (2015), The significance of IFRS 9 for financial stability and supervisory rules. *Study for the ECON Committee of the European Parliament*, October.
- Peek, J. and Rosengren, E. (1997), "The international transmission of financial shocks: The case of Japan", *American Economic Review*, Vol. 87, pp. 495-505.
- Pérez, P. (2014), "Loan-loss recognition by banks: pumps in the rear-view, bumps ahead", *Banco de España – Revista de Estabilidad Financiera*, Vol. 27, pp. 132-158.
- Plantin, G., Saprà, H. and Shin, H. (2008), "Marking-to-market: Panacea or Pandora's box?", *Journal of Accounting Research*, Vol. 46, pp. 435-460.
- Plosser, M. and Santos, J. (2014), "Banks' incentives and the quality of internal risk models", *Federal Reserve Bank of New York Staff Report*, No 704, December.
- Rajan, R. (2010), *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press.
- Ratnovski, L. (2013), "Liquidity and transparency in bank risk management", *Journal of Financial Intermediation*, Vol. 22, pp. 422-439.



- Repullo, R., Saurina, J. and Trucharte, C. (2010), "Mitigating the procyclicality of Basel II", *Economic Policy*, Vol. 25, pp. 659-702.
- Repullo, R. and Suarez, J. (2013), "The procyclical effects of bank capital regulation", *Review of Financial Studies*, Vol. 26, pp. 452-490.
- Ridders, F. and Thibault, A. (2008), "The influence of rating philosophy on regulatory capital and procyclicality", *Working Paper*, Tilburg University.
- Rochet, J.C. (2005), "Prudential policy", *Monetary and Economic Studies*, Vol. 23, No 1, pp. 93-119.
- Ryan, S. (2012), "Risk reporting quality: Implications of academic research for financial reporting policy", *Accounting and Business Research*, Vol. 42, pp. 295-324.
- Sapra, H. (2008), "Do accounting measurement regimes matter? A discussion of mark-to-market accounting and liquidity pricing", *Journal of Accounting and Economics*, Vol. 45, pp. 379-387.
- Shaffer, S. (2010), "Fair value accounting: Villain or innocent victim — exploring the links between fair value accounting, bank regulatory capital and the recent financial crisis", FRB of Boston, *Working Paper*, No. QAU10-01, January.
- Standard & Poor's (2016), *Default, transition, and recovery: 2015 annual global corporate default study and rating transitions*, May.
- Trueck, S. and Rachev, S. (2009), "Rating Based Modelling of Credit Risk: Theory and Application of Migration Matrices", *Academic Press Advanced Finance*, Elsevier.
- US Treasury (2009), *Financial regulatory reform: A new foundation*, Final report.
- Vyas, D. (2011), "The timeliness of accounting write-downs by U.S. financial institutions during the financial crisis of 2007-2008", *Journal of Accounting Research*, Vol. 49, pp. 823-859.
- Wall, L. and Koch, T. (2000), "Bank loan-loss accounting: a review of theoretical and empirical evidence", *Economic Review*, Vol. 85, No 2, pp. 1-19.
- Yellen, J. (2011), "Assessing potential financial imbalances in an era of accommodative monetary policy", Remarks at the 2011 international conference: Real and financial linkage and monetary policy, Bank of Japan, 1 June.



Annex 1

Description of IFRS 9

IFRS 9 comprises the accounting for financial instruments, with recognition and measurement, impairment and hedging as main areas.

IFRS 9 replaces the current IAS 39, which regulates the accounting for financial assets and liabilities. IFRS 9 can be divided into three large blocks: (i) recognition and measurement of financial instruments; (ii) impairment; and (iii) hedge accounting. While this report pays particular attention to the financial stability implications of the new impairment and measurement principles, the description in this annex covers the entire IFRS 9 and finishes with a high-level comparison of the general requirements of IFRS 9 and the relevant guidance that will be followed in the US.

IFRS 9 applies to both financial and non-financial institutions, but is particularly relevant for banks. As banks are major issuers of loans, they are the group of regulated entities which are most affected by IFRS 9's ECL approach. Other financial institutions, such as insurance corporations or investment funds, may also to some extent be affected by the entry into force of IFRS 9. As it is expected that European insurers will make use of the option to delay the application of IFRS 9 until IFRS 17 becomes mandatory, assessing the impact of IFRS 9 would require a simultaneous and joint assessment of the impact of IFRS 17, which would exceed the scope and time frame of the task force in charge of preparing this report.

A. Recognition and measurement of financial instruments

A.1. Recognition and derecognition of financial instruments

IFRS 9 generally carries forward from IAS 39 the requirements on recognition and derecognition.⁶⁹

A financial asset or financial liability is to be recognised only when the entity becomes party to the contractual provisions of the instrument. Financial assets are derecognised when the contractual rights to the cash flows from the financial asset expire, or when the entity transfers the financial asset and the transfer qualifies for derecognition,⁷⁰ which is shown in Figure A1. Financial liabilities are derecognised when the obligation specified in the contract is discharged or is cancelled or expires.⁷¹

⁶⁹ The only difference relates to the requirement under IAS 39 to recycle any cumulative gain or loss that had been recognised in other comprehensive income for a (partly) derecognised financial asset to profit or loss, which is excluded under IFRS 9. (Cf. IAS 39, para. 26 (b) / 27 (b) and IFRS 9, para. 3.2.12 (b) / 3.2.13 (b)). Moreover, IFRS 9 includes new guidance on write-offs of financial assets; cf. IFRS 9, para. 5.4.4 and Application Guidance, para. B.3.2.16 (r). Furthermore, IFRS 9 provides guidance on the recognition of differences of present value between the original and the modified/exchanged financial liabilities which do not qualify for derecognition for accounting purposes.

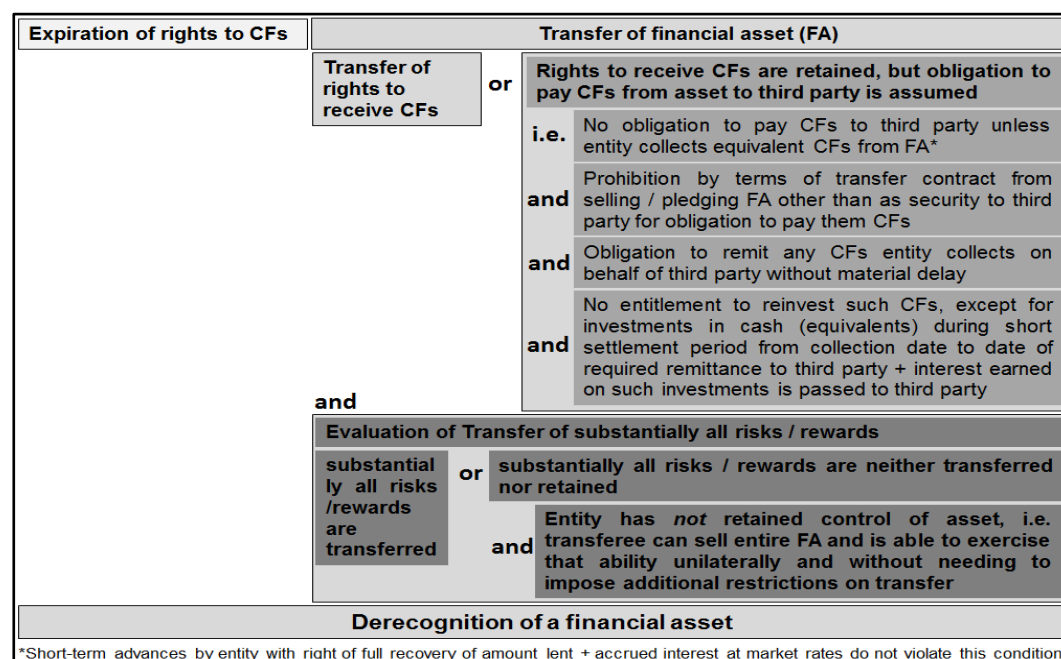
⁷⁰ Cf. IFRS 9, para. 3.2.3 – para. 3.2.9.

⁷¹ Cf. IFRS 9, para. 3.3.1



Figure A1

Conditions leading to the derecognition of financial assets in IFRS 9



Source: ECB.

A.2. Classification and measurement of financial assets

Relative to the rather rules-based classification of financial assets under IAS 39, the new standard introduces a rather principles-based approach. IAS 39 defined four categories of financial assets: (i) financial assets at fair value through profit or loss; (ii) held-to-maturity investments (measured at amortised cost using the effective interest rate method); (iii) loans and receivables (measured at amortised cost using the effective interest rate method); and (iv) available-for sale financial instruments (measured at fair value, with changes in the fair value to be presented in other comprehensive income, unless the instrument is impaired).⁷² As a general principle, all financial assets⁷³ within the scope of IFRS 9 must initially be measured at their fair value.⁷⁴ For those financial assets for which the change in fair value is not presented in the profit or loss, the fair value is required to be adjusted for transaction costs that are directly attributable to the acquisition of the financial asset.⁷⁵ The subsequent measurement of financial assets depends on their classification, as described in Figure A2.

The classification of financial assets under IFRS 9 is a function of (i) the contractual characteristics of the cash flows of the financial asset (that is, the assessment on whether

⁷² Cf. IAS 39, para. 9 and 45 – 46.

⁷³ Except for trade receivables that do not contain a significant financial component. These are measured at their transaction prices as defined in IFRS 15.

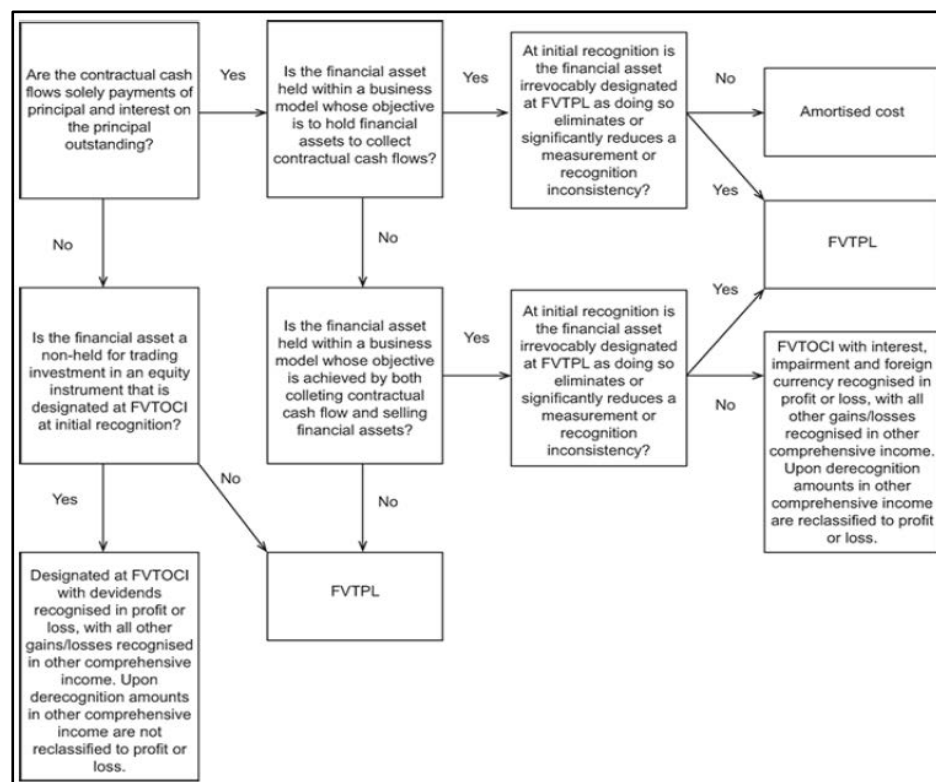
⁷⁴ This treatment is unchanged from IAS 39 Financial Instruments: Recognition and Measurement; cf. IAS 39, para. 43.

⁷⁵ Cf. IFRS 9, para. 5.1.1.



they pass the “solely payments of principal and interest (SPPI test”) and (ii) the related business model.⁷⁶ The entity’s business model is assessed for all financial assets that pass the SPPI test: Instruments managed within a hold-to-collect business model are measured at amortised cost. Those that are managed within a hold-to-collect-and-sell business model are presented at amortised cost in the statement of profit or loss, but are measured at their fair value in the statement of financial position (balance sheet). The difference is presented in other comprehensive income.⁷⁷ Additionally, at initial recognition, financial instruments that pass the SPPI test can be designated at fair value through profit or loss if such designation eliminates or significantly reduces an accounting mismatch.⁷⁸ If the business model changes, reclassification of financial assets is required.⁷⁹

Figure A2
Decision tree for the classification of financial assets in IFRS 9



Source: International Faculty of Finance (2015).

⁷⁶ Cf. IFRS 9, para. 4.1.2 (b) and para. 4.1.2A (b). To be determined as SPPI, the contractual cash flows must include returns consistent with a basic lending arrangement. In such an arrangement, consideration for the time value of money and credit risk are typically the most significant elements of interest, but interest can also include consideration for other basic lending risks (e.g. liquidity risk), costs (e.g. administrative costs) associated with holding the financial asset for a particular period of time and a profit margin.

⁷⁷ Cf. IFRS 9, para. 4.1.2A (a).

⁷⁸ Cf. IFRS 9, para. 4.1.5.

⁷⁹ Cf. IFRS 9, para. 4.4.1; Changes to IFRS 7 – Financial Instruments: Disclosures require detailed disclosures regarding such reclassifications.



All financial assets failing the SPPI test, including derivatives and equities, are measured at fair value, with changes in the fair value presented in the statement of profit or loss.

However, for equities which are not held for trading, it is possible to elect an irrevocable option at inception on an instrument-by-instrument basis that permits accounting at fair value through other comprehensive income, with no requirement for carrying out an impairment test, and no recycling to profit or loss upon derecognition.⁸⁰ Instruments that include a contractual obligation for the issuer to transfer cash or another financial asset (e.g. shares puttable to the issuer at fair value) cannot optionally be classified at fair value through other comprehensive income, because these instruments are not classified as equity instruments under IFRS 9.⁸¹

A.3. Classification and measurement of financial liabilities

IFRS 9 basically retains the existing requirements under IAS 39 for the classification and measurement of financial liabilities. Accordingly, financial liabilities, with the exception of non-derivative financial liabilities held for trading, derivatives or financial liabilities that an entity designates under the fair value option, will continue to be measured at amortised cost.⁸² However, under IFRS 9 a change in fair value due to the change in the credit risk of financial liabilities, for which the option to measure them at fair value was exercised at inception, is reported in other comprehensive income unless such presentation would lead to an accounting mismatch in the profit or loss. The accumulated amounts presented in other comprehensive income will not subsequently be transferred to profit or loss, i.e. “recycling” is not permitted.⁸³ In other words, realised gains or losses will not be recognised in profit or loss if the liability is derecognised before maturity. An entity will not reclassify any financial liability.⁸⁴

B. Impairment of financial assets

During the recent financial crisis, we observed a significant increase in impairment losses in the financial sector. Under IAS 39, such an increase follows the normal pattern of few impairment losses in a strong overall economy and rising impairment losses in an economic downturn. The impairment rules under IAS 39 were criticised for resulting in “too little, too late”, i.e. too few credit losses being recognised at too late a stage, thereby not reflecting the actual risks associated with the underlying assets. Under IAS 39, impairment losses are recognised only once a loss event has been identified after the initial recognition of the instrument.

The new impairment model follows the G20 request for a more forward-looking impairment approach that no longer requires objective evidence of impairment (a loss event) as a prerequisite for recognising credit losses.⁸⁵ It is also supported by the BCBS.⁸⁶ The new single

⁸⁰ Cf. IFRS 9, para. 4.1.4, para. 5.7.5 and para. 5.5.1.

⁸¹ IFRS 9 generally applies the definition of equity instruments in IAS 32, i.e. a contract that demonstrates a residual interest in the assets of an entity after deducting all of its liabilities. However, puttable shares are an exception within IAS 32 and therefore do not meet the definition of equity instruments under IFRS 9.

⁸² Cf. IFRS 9, para. 4.2.1 (a) and para. 4.2.2.

⁸³ Cf. IFRS 9, para. 5.7.7. and Application Guidance, para. B5.7.9. This treatment of own credit risk is different from IAS 39.

⁸⁴ Cf. IFRS 9, para. 4.4.2.

⁸⁵ Cf. G20, *Declaration on strengthening the financial system*, London, 2 April 2009.

⁸⁶ Cf. Basel Committee on Banking Supervision (2015), *Guidance on credit risk and accounting for expected credit losses*, December.



impairment model applies to all financial assets that meet the SPPI test and are either measured at amortised cost or at fair value through other comprehensive income, also including lease and trade receivables, loan commitments and financial guarantee contracts. The model is based on the recognition and yearly update of a provision for ECLs⁸⁷ to reflect changes in the credit risk of debt instruments and introduces a three-stage approach for the measurement of ECLs – differentiating between what may be called performing (stage 1), underperforming (stage 2) and non-performing (stage 3) financial assets.⁸⁸ The non-performing and the underperforming assets both carry a loss allowance of a lifetime ECL⁸⁹, while performing assets carry a loss allowance of a 12-month ECL⁹⁰ only.⁹¹ In addition, assets in the non-performing stage accrue interest income only on the gross carrying amount less the loss allowance, whereas in the other stages interest is calculated on the gross carrying amount.⁹²

Financial assets are considered to be “performing” as long as there has been no significant increase in the credit risk of the asset since the initial recognition. The term “significant increase” is not defined in IFRS 9.⁹³ As a general rule, no absolute assessment of the change in credit risk is allowed.⁹⁴ However, if an entity assumes that the instrument has a “low credit risk”, the criterion for recognising lifetime ECLs is not met even if the instrument’s credit risk has increased since its initial recognition.⁹⁵ Stage 3 is reached if the financial asset is specifically identified as credit-impaired⁹⁶. The greatest challenge for management is the assessment of significant increase in the credit risk of financial assets, which is the “trigger” for transferring financial assets from stage 1 to stage 2. A large degree of judgement is required, and the impact of the transfers on profit or loss and prudential capital (commonly referred to as “cliff effects”) can be significant. It is also important to note that the assessment of significant increase in the credit risk of financial instruments is “symmetric”, i.e. if an entity determines at the current reporting date that the credit risk on a financial instrument is no longer considered to have “increased significantly” since initial

⁸⁷ ECLs are defined as the difference between the contractual cash flows and the cash flows that the entity expects to receive discounted at the effective interest rate as of the time when the financial asset was acquired.

⁸⁸ It is a single impairment model in contrast to multiple impairment models under IAS 39. There is no impairment for equities under IFRS 9.

⁸⁹ Lifetime ECLs are all losses that result from possible default events over the expected life of the financial instrument. For a loan commitment, the maximum period over which ECLs should be measured is the maximum contractual period over which the entity is exposed to credit risk; cf. IFRS 9, appendix A (defined terms) and IFRS 9, Application Guidance, para. B5.5.38.

⁹⁰ 12-month ECLs are lifetime losses from default events that are possible within 12 months after the reporting date; they are estimated by multiplying the probability of a default occurring in the next 12 months by the lifetime ECLs that would result from that default; cf. IFRS 9, Appendix A (defined terms).

⁹¹ Cf. IFRS 9, para. 5.5.3 and para. 5.5.5.

⁹² Cf. IFRS 9, para. 5.4.1.

⁹³ However, IFRS 9 Application Guidance, para. 5.5.17 provides a non-exhaustive list of information that may be relevant for assessing changes in credit risk. It is important to note that the list is not confined to actual changes, but also includes expectations; for example, actual or expected significant changes in the financial instrument’s external credit rating.

⁹⁴ Cf. IFRS 9 Application Guidance, para. B5.5.11. This is because the risk of a default occurring over the expected life usually decreases over time if the credit risk is unchanged and the financial instrument is closer to maturity. This is not taken into account by merely comparing the absolute credit risk of the same financial instrument at two different points in time.

⁹⁵ Cf. IFRS 9, para. 5.5.10. For example, instruments with an external rating of “investment grade” can benefit from this simplification and thus the entity would assume that the criteria for lifetime ECL recognition are not met for those securities.

⁹⁶ A financial asset is “credit impaired” when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred; cf. IFRS 9, Appendix A.

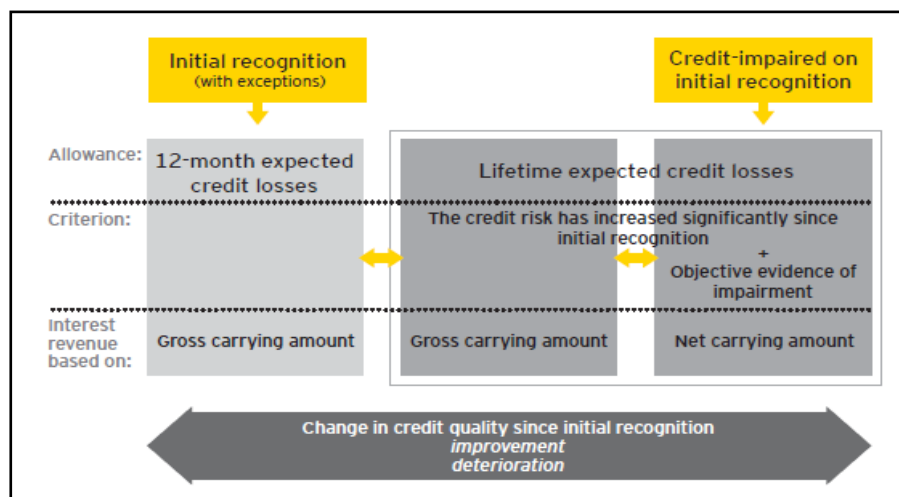


recognition, the financial instrument is “transferred back” to stage 1 (implying an allowance equal to a 12-month ECL).⁹⁷

The new ECL model further requires that the ECL estimate should reflect i) an unbiased – probability-weighted – outcome, ii) the time value of money,⁹⁸ and iii) reasonable and supportable information available without undue cost or effort.⁹⁹ In calculating ECLs, entities are required to take into account a number of external factors, such as forward-looking macroeconomic variables,¹⁰⁰ and can rely on sophisticated credit risk modelling techniques, such as stochastic modelling of exposure at default, probability of default and loss given default. Cash shortfalls will be based on a point-in-time credit risk, as opposed to the through-the-cycle credit risk of the exposure.¹⁰¹ Any adjustments to the ECL estimate since initial recognition are recognised in profit or loss as impairment gains or losses.¹⁰²

Finally, the amendments to IFRS 7 derived from IFRS 9 introduce enhanced disclosures about ECLs and credit risk¹⁰³.

Figure A3
Summary of new impairment requirements under IFRS 9



Source: Ernst & Young (2015).

⁹⁷ Cf. IFRS 9, para. 5.5.7. This is also emphasised in the Basel Committee’s guidance; cf. BCBS (2015), *Guidance on credit risk and accounting for expected credit losses*, p. 5.

⁹⁸ According to IFRS 9 Application Guidance, para. B.5.5.44, ECLs will be discounted to the reporting date, not to the expected default or another date, using the effective interest rate determined at initial recognition or an approximation thereof, unless the financial instrument has a variable interest rate, in which case the current effective interest rate will be used.

⁹⁹ Cf. IFRS 9, para. 5.5.17.

¹⁰⁰ Cf. IFRS 9 Application Guidance, para. B.5.5.4.

¹⁰¹ Cf. Application Guidance, para. B.5.5.52.

¹⁰² Cf. IFRS 9, para. 5.5.8.

¹⁰³ Cf. IFRS 7 para. 35A-38.

C. Hedge accounting

IFRS 9 mostly retains the accounting mechanics of the three hedge accounting models from IAS 39.¹⁰⁴ IFRS 9 defines the objective of hedge accounting as reflecting in the financial statements the effect of an entity's risk management activities based on the usage of financial instruments to manage exposures arising from certain risks that could affect profit or loss (or other comprehensive income when an entity has decided to present changes of certain equities in other comprehensive income).¹⁰⁵

The hedge accounting requirements under IFRS 9 better reflect factual risk management practices and are less rules-based. Although under IFRS 9 not all hedging strategies meet the qualifying criteria for hedge accounting, e.g. hedge accounting still cannot be applied to open portfolios of hedged items (macro hedging),¹⁰⁶ IFRS 9 expands the range of hedged items¹⁰⁷ and hedging instruments¹⁰⁸. These need to be connected through an economic relationship that results in an offset of the value changes that arise from the hedged risk. Given that under IFRS 9 the fluctuation of the time value of an option is presented through other comprehensive income rather than profit or loss, there is a greater incentive to designate options as hedging instruments.¹⁰⁹

Furthermore, under IFRS 9 the hedge ratio, i.e. the quantity of hedging instruments per quantity of hedged item, must be the same as that which the entity actually uses in its economic hedges,¹¹⁰ so that reporting entities cannot designate hedge relationships in an inappropriate way to achieve a particular accounting outcome. IFRS 9 changes the hedge effectiveness requirements needed to qualify for hedge accounting¹¹¹ and requires the entity to document the hedge in advance, to identify how hedge effectiveness will be assessed and to specify the sources of hedge ineffectiveness¹¹². A designated hedging relationship can only be discontinued when the risk management objective for that relationship changes.¹¹³ For any other situation in which a hedging relationship no longer meets the hedge effectiveness requirement, IFRS 9 introduces the adjustment of the hedge ratio (rebalancing) so that the relationship continues to meet the qualifying criteria.¹¹⁴ As an alternative to hedge accounting, IFRS 9 extends the use of

¹⁰⁴ The three models under IAS 39 are: fair value hedge, cash flow hedge and hedge of a net investment in a foreign operation. A fair value hedge is a hedge of the exposure to changes in fair value of a recognised asset or liability or an unrecognised firm commitment, or an identified portion of such an asset, liability or firm commitment that is attributable to a particular risk and could affect profit or loss. A cash flow hedge is a hedge of the exposure to variability in cash flows that (i) is attributable to a particular risk associated with a recognised asset or liability (such as all or some future interest payments on variable rate debt) or a highly probable forecast transaction and (ii) could affect profit or loss. Hedges of a net investment in a foreign operation will be accounted for similarly to cash flow hedges; cf. IAS 39, para. 86 and 102.

¹⁰⁵ Cf. IFRS 9, para. 6.1.1.

¹⁰⁶ Macro hedging is dealt with in a separate IASB project and is therefore not included in IFRS 9.

¹⁰⁷ E.g. IFRS 9 allows entities to designate aggregated exposures as hedged items.

¹⁰⁸ E.g. IFRS 9 allows non-derivative financial instruments measured at fair value through profit or loss to be used to hedge risks other than foreign exchange risk.

¹⁰⁹ Cf. IFRS 9, para. 6.5.15(b).

¹¹⁰ Cf. IFRS 9, para. 6.4.1 (c).

¹¹¹ For example, IFRS 9 removes the "bright lines" of 80%-125% when assessing "hedge effectiveness". Under IAS 39, the breakthrough of such "bright lines" leads to discontinuation of a hedge.

¹¹² Any hedge ineffectiveness is recognised in the profit or loss.

¹¹³ Cf. IFRS 9, para. 6.5.6.

¹¹⁴ Cf. IFRS 9, para. 6.5.5.



the fair value option for own-use contracts with non-financial items (such as a commodity, motor vehicles or aircraft).¹¹⁵

D. Brief comparison between IFRS 9 and the relevant new US GAAP requirements

Whereas IAS 39 was substantially converged with the US Generally Accepted Accounting Principles (US GAAP) relevant for financial instruments¹¹⁶, more deviations will emerge under IFRS 9 and the new US GAAP requirements.¹¹⁷ In January 2016 the Financial Accounting Standards Board (FASB) issued an Accounting Standards Update (ASU)¹¹⁸ to introduce the new guidance on the recognition and measurement of financial instruments¹¹⁹. The new guidance will be effective in fiscal years beginning after 15 December 2018 and interim periods within fiscal years beginning after 15 December 2019. However, early adoption in fiscal years beginning after 15 December 2017 is possible.¹²⁰ The new requirements of US GAAP for the classification of financial assets are to a significant extent consistent with the requirements of IAS 39, i.e. the accounting for debt instruments, such as debt securities, loans and financial liabilities not under the fair value option, remains largely unchanged. Like IFRS 9, the new US GAAP rules require changes in fair value due to credit risk related to a financial liability for which the fair value option has been elected to be recognised separately in other comprehensive income. The main differences from the classification and measurement section of IFRS 9 can be summarised as follows: According to the new US GAAP guidance all equities are to be measured at fair value through "net income" (which is the counterpart of "profit or loss" under IFRS 9),¹²¹ i.e. the corresponding US rules do not permit reporting entities to present fair value changes in other comprehensive income. Hence, it is likely that entities reporting under US GAAP will have significantly higher volatility in net income. Furthermore, for some US GAAP requirements, the legal form rather than the economic substance influences classification and measurement, e.g. whether the financial instrument meets the definition of a debt security.¹²²

Conceptually, the main differences between the respective new accounting requirements for financial instruments can be identified in the new rules for impairment. The FASB issued an

¹¹⁵ Cf. IFRS 9, para. 2.5.

¹¹⁶ The current US GAAP guidance for financial instruments can be found in numerous Accounting Standards Codification (ASC) Topics, including ASC 310, Receivables; ASC 320, Investments — Debt and Equity Securities; ASC 470, Debt; ASC 480, Distinguishing Liabilities from Equity; ASC 815, Derivatives and Hedging; ASC 820, Fair Value Measurement; ASC 825, Financial Instruments; ASC 860, Transfers and Servicing; and ASC 948, Financial Services — Mortgage Banking (Cf. Ernst & Young (2015): US GAAP versus IFRS – The Basics).

¹¹⁷ These differences may stem from the widespread use of the "originate and distribute" model, which US banks apply to large portions of their long-term loan portfolios.

¹¹⁸ The ASU amends ASC 320: Investments – Debt and Equity Securities (which includes most of the guidance on recognition and measurement) for new guidance on debt securities, creates the new subtopic ASC 321, Equity Securities and also amends some other subtopics, including ASC 825, Financial Instruments.

¹¹⁹ Update 2016-01 – **Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities.**

¹²⁰ This is also the effective date for public business entities (PBEs).

¹²¹ For some investments without a readily determinable fair value, preparers can elect to measure them based on cost minus impairment plus / minus observable price changes of identical or similar investment of the same issuer.

¹²² Cf. Update 2016-01, para. 320-10-25-1, para. 320-10-55-2.



ASU¹²³ on the new impairment model for financial assets measured at amortised cost and available-for-sale securities of financial assets in June 2016. The ASU will be effective in fiscal years beginning after 15 December 2020¹²⁴, with early application permitted for fiscal years beginning after 15 December 2018. Both the impairment model of the IASB and the FASB impairment model require the recognition of loss allowances based on ECLs of financial instruments.¹²⁵ However, the US GAAP current expected credit loss (CECL) model requires recognising a day-one loss allowance for lifetime ECLs of financial instruments on a regular basis.¹²⁶ The IFRS model, on the other hand, only recognises a day-one loss allowance equivalent to the portion of lifetime ECLs as a result of default events in the 12 months after the reporting date.¹²⁷ Given that ECLs are generally understood to already be compensated for through the interest charged to borrowers, some argue that the recognition of a significantly lower allowance for 12-month ECLs for high quality financial assets¹²⁸ more appropriately depicts the economic reality, i.e. the effect of double-counting of ECLs at inception is significantly weaker under IFRS 9 and accounting is therefore more closely aligned with reality.¹²⁹ Furthermore, it seems fair to say that the more differentiated IFRS model¹³⁰ provides more information on changes in credit quality to users.

The FASB impairment model, however, generally applies to all financial assets measured at amortised cost¹³¹, but does not apply to debt securities classified as available for sale^{132, 133}.

Instead, credit losses on available-for-sale debt securities are measured in a manner similar to the current US GAAP,¹³⁴ i.e. it is an "incurred loss" model which uses a threshold for when impairment is to be recognised.¹³⁵ IFRS 9 requires that its impairment model be applied to all debt instruments that are measured at amortised cost or at fair value through other comprehensive income. This means that IFRS 9 can be expected to lead to a more timely recognition of ECLs in the profit or loss for debt instruments at fair value through other comprehensive income. Finally, under US

¹²³ Update 2016-13 – **Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments**.

¹²⁴ For public business entities that are SEC filers the amendments become effective in fiscal years beginning after 15 December 2019.

¹²⁵ Cf. Update 2016-13, para. 326-20-30-1 ff.

¹²⁶ Cf. Update 2016-13, para 326-20-30-6.

¹²⁷ Lifetime ECLs are only recognised under the new IFRS impairment model when there is a significant deterioration in the credit quality of former performing financial assets or when financial assets are classified as underperforming or non-performing.

¹²⁸ With no evidence of credit deterioration.

¹²⁹ For example, cf. ECON, **Impairment of Greek Government Bonds under IAS 39 and IFRS 9**, p. 14.

¹³⁰ See chapter 2 for a detailed overview.

¹³¹ And certain off-balance sheet exposures. (Cf. Update 2016-13, page 2; para. 326-20-05-1; and para. 326-20-30-11).

¹³² According to US GAAP, all financial assets that meet the definition of "debt securities" need to be classified as available for sale unless they are held for trading or designated as held to maturity.

¹³³ Cf. Update 2016-13, para. 326-30-35-1.

¹³⁴ However, the amendments require that credit losses be presented as an allowance rather than as a write-down, so that an entity will be able to record reversals of credit losses (in situations in which the estimate of credit losses declines) in current period net income, which in turn should align the income statement recognition of credit losses with the reporting period in which changes occur. Furthermore, the allowance is to be limited by the amount by which the fair value is less than the amortised cost basis. (Cf. Update 2016-13, para. 326-30-35-2).

¹³⁵ Cf. Update 2016-13, para. 326-30-35-1.



GAAP, ECLs need to be disclosed according to the vintage of origination.¹³⁶ Under IFRS 9 such disclosures are not required.

Regarding hedge accounting, in September 2016 the FASB issued an Exposure Draft (ED)¹³⁷ for public consultation. The ED makes proposals on targeted improvements to hedge accounting for both financial and non-financial hedging relationships¹³⁸ in order to better portray the economic results of an institution's risk management activities.¹³⁹

¹³⁶ Cf. Update 2016-13, para. 326-20-50-6.

¹³⁷ Cf. Exposure Draft: **Proposed Accounting Standards Update: Derivatives and Hedging (Topic 815)** (Discussion of public comments is outstanding).

¹³⁸ The current guidance on derivatives and hedging is primarily included in ASC 815, Derivatives and Hedging.

¹³⁹ Given that the re-deliberations of the suggestions are still ongoing, we consider it too early for a final summary of the most important differences in the hedge accounting models under IFRS and US GAAP.



Annex 2

Literature review

This annex reviews existing academic literature on the broad topic of accounting standards and their implications for financial stability. While many references build on evidence for US banks, which work under standards somewhat different from those prevailing in Europe, and the novel nature of the impairment measurement method envisaged by IFRS 9 prevents the existence of evidence directly related to it, this review will help to identify discussions and trade-offs that, by analogy, may shed light on discussions and trade-offs at the heart of these reports.

The financial crisis, which started in 2008, led regulators to believe that accounting standards contributed to financial stability or instability.¹⁴⁰ However, the primary goal of accounting standards and the financial statements produced under them is not to contribute to financial stability, but to provide information for investors to make a wide range of decisions and contractual arrangements. In contrast, banking regulation consists of rules that aim to make banks internalise the (potentially negative) externalities of their actions on the rest of the financial system and the wider economy, including those that engender systemic risk (e.g. Wall and Koch (2000); Rochet (2005)). The information that accounting standard-setters consider relevant for investors may not be the same as that considered relevant by prudential regulators. To accommodate potential discrepancies between these views, regulators often apply “prudential filters” to figures arising from the application of accounting rules, such as capital, resulting in the definition of regulatory-relevant objects such as “regulatory capital”. In some of the references reviewed below, this distinction is not clear-cut, hence attributing to accounting rule effects which may instead be due to the accompanying filters or the interaction between the two.

The rest of the annex is organised into three broad themes: (A) impact of accounting rules on financial stability, (B) importance of transparency for market discipline, and (C) evidence regarding managerial discretion and the implications of delayed loss recognition.

A. Impact of accounting rules on financial stability

The global financial crisis has provided a very important impetus for the debate on the role of accounting rules (besides that of capital regulation) in the amplification of any “natural” procyclicality of leverage that may exist in the first place and the consequent impact on financial stability. More specifically, the debate has largely pointed to FVA as one of the culprits of the fire sales seen during the financial crisis and which contributed to financial instability. Some observers perceive historical cost accounting (HCA) as the alternative to Fair Value Accounting (FVA). This section reviews first the theories and then the evidence of how these two accounting rules may impact procyclicality and financial stability.

Most of the existing theoretical work in this area contains a stylised representation of FVA and/or HCA and investigates their interaction with capital regulation and risk management rules. In a first set of models (Allen and Carletti (2008); Plantin, Sapra and Shin (2008); Sapra (2008)), systemic risk can arise, in part, as a result of fire sale externalities. Specifically, one

¹⁴⁰ Both the FSB (2009) and the US Treasury (2009) recommend that FASB and IASB re-consider accounting standards in light of the experience of the crisis.



financial institution's sale of (potentially illiquid) downgraded assets for reasons of risk management or capital adequacy rules may dampen prices further, creating significant spillover effects onto the rest of the financial system. These papers argue that FVA, in particular, may amplify systemic risk during a financial crisis because the reflection of price declines in the accounting numbers pushes institutions to make further sales, resulting in a downward spiral of illiquidity and prices, or "liquidity black holes" (Morris and Shin (2008)), with potential contagion effects. The same papers contend that HCA, in contrast, may limit systemic risk by avoiding the feedback effects of initial price declines. This claim has been confronted with empirical evidence, reviewed below.

Dewatripont and Tirole (1994) were among the first to theoretically address the broader issue of how accounting rules influence financial institutions' behaviour in general (i.e. not restricting themselves to episodes of market illiquidity). Their analysis shows that although FVA can introduce noise that ends up influencing the allocation of resources, the less noisy HCA is not free of its own problems, mainly in the form of high risk-shifting incentives. They show that banks using HCA will have incentives to take on excessive risk when asset (fair) values decline, even in the case where the fall does not lead to the violation of capital requirements.

The evidence shows a nuanced picture in terms of documenting any advantages of historical cost over fair value accounting; the empirical literature has found no evidence that FVA caused fire sales among banks. To argue that FVA contributes to amplifying the magnitude of a financial crisis, one needs to provide evidence that dimensions of banks' behaviour are triggered by FVA during such a period (Laux and Leuz (2010)). During the financial crisis financial institutions followed a "mixed-attribute" model, rather than either a pure FVA or pure HCA model (Laux (2012)). IAS 39, IFRS 9, US GAAP, and many other local GAAPs follow "mixed attribute" models, with significant assets excluded from FVA. Many of the assets experiencing fire sales during the crisis were not measured at fair value at the time banks entered the crisis and thus attributing the fire sales – at least exclusively – to FVA is farfetched. For example, Laux and Leuz (2010) show that in the pre-crisis period (2004-06) about 50% of US bank assets were loans and leases, which are not subject to FVA.¹⁴¹ The same could be said of European banks (Georgescu and Laux (2013)): loans and held-to-maturity assets accounted for more than 50% in the case of large banks (75% in the case of small banks).¹⁴² In fact, credit impairments contributed more than fair value losses to the reduction of US banks' regulatory capital during the crisis (Badertscher et al. (2012); Shaffer (2010)).

There is no clear evidence supporting the hypothesis that fair value accounting led to high leverage before the 2007-09 financial crisis. Adrian and Shin (2009) find a positive correlation between leverage and total assets: the main driver of such procyclicality is argued to have been collateralised borrowing, not accounting rules. The link between fair value accounting and procyclicality in the banking industry is further challenged by some recent evidence. Laux and Rauter (2017), using US commercial and savings banks, find no evidence consistent with the notion that fair value accounting – through the recognition of unrealised gains and losses on financial assets – contributes to procyclical leverage. These results point towards other important structural dimensions of the financial system, unrelated to accounting, such as the business model

¹⁴¹ To be more precise, US accounting standards require disclosure of the fair values of all financial assets in the footnotes but only a fraction of the assets are recognised at fair value in the banks' balance sheets. As of 31 December 2012, such a fraction only represented around 20% of banks' total assets (Beatty and Liao (2014)).

¹⁴² Georgescu and Laux (2013) also provide evidence that several German banks that either failed or were rescued during the financial crisis did not apply FVA to the portfolios causing their losses.



of banks, the level of the regulatory capital ratios and book leverage, as more relevant and plausible reasons explaining procyclical leverage.

The way in which regulation builds on accounting information is important for any argument regarding the impact of accounting rules on financial stability. The interaction between accounting and regulatory rules may make the comparison between FVA and HCA even more nuanced in terms of their impact on procyclicality and financial stability. Regulators use prudential filters to pass from accounting capital to regulatory capital concepts such as Tier 1. These filters aim to neutralise potential destabilising effects linked to excessively volatile gains or losses arising from FVA (Barth and Landsman (2010); Laux (2012)). However, this type of filter does not necessarily reduce procyclicality.¹⁴³

One way to illustrate the nature of the interaction between accounting rules and regulation is to compare the effects of FVA and HCA on banks' incentives to sell assets following their downgrading. Under pure FVA, changes in the market value of assets directly affect net income and regulatory capital, while, under HCA, the changes only affect net income and regulatory capital if the asset is sold or recognised as impaired. The comparison is shown in Table A1 below.

Table A1
Impacts of accounting rules on financial institutions' risk-based capital ratios and optimal responses following downgrades

Issue compared across regimes	Full fair value accounting regime	Historical cost accounting regime
Price decline of downgraded instrument reflected in the balance sheet?	Yes	No
Impact on risk weighted assets (required regulatory capital)	Increase	Increase
Impact on accounting capital	Immediate decrease	No impact*
Impact on risk-based capital ratio	Decrease	Smaller decrease
Response 1: Accounting view	No difference between selling the downgraded instrument and keeping it on the balance sheet	Selling downgraded instrument (when accompanied by price declines) will lead to recognition of trading losses with an immediate negative impact on the statutory capital.
Response 2: Regulatory view	Selling downgraded asset leads to lower required regulatory capital.	Selling downgraded asset at heavy price discount lowers accounting capital. Keeping the risk-based capital ratio close to its original value may require an increase in new capital.
Financial institution engaging in fire sales	Likely	Unlikely
Financial institution engaging in gains trading	No	Likely: Institution will engage in gains trading if capital has to be raised to improve the risk-based capital ratio and avoid regulatory actions. Institution will selectively sell unrelated assets held at HCA with unrealised gains.
Pre-crisis portfolio choice and trading incentives	More conservative	Less conservative

Source: Adapted from Ellul et al. (2014).

* Unless there is an impairment or sale of the security. If the institution recognises an impairment, assets and income will decrease by the amount of the impairment.

¹⁴³ Indeed, filters with the aim of neutralising the effects of fair value gains and losses on liabilities arising from changes in a bank's own credit risk may actually amplify procyclicality. If a bank's credit risk increases (decreases), it will have an impact on the value of its liabilities, which should decrease (increase), resulting in gains (losses) and a subsequent increase (decrease) in equity. Neutralising this effect during a stress period (growth period) will result in decreases (increases) in equity and Tier 1 capital, amplifying rather than reducing procyclicality.



By creating incentives to engage in “gains trading” during a crisis, HCA is not a panacea for financial institutions. While fair value losses may in theory lead to fire sales, HCA may induce a different type of fire sale arising from the “gains trading” behaviour of financial institutions: an institution under stress and close to its regulatory threshold may sell its best assets to shore up its capital ratio. The evidence from US insurers shows that, during the financial crisis, those insurers facing a lesser degree of market value recognition were less likely to sell downgraded asset-backed securities. However, precisely because of the interaction mentioned above and to improve their capital positions, these insurers disproportionately resorted to “gains trading” behaviour, contributing to transmission of shocks across markets (Ellul et al. (2015)).

Understanding how different accounting rules may prompt financial institutions to invest and manage risk in the years leading up to the crisis is especially relevant in the current low interest rate environment. Many have argued that the pre-2007 crisis period was characterised by “reaching-for-yield” investment behaviour (Rajan (2010) and Yellen (2011), among many others). One study found that US insurers applying HCA took on more risks in the pre-crisis period than US insurers using FVA, a result that runs counter to the idea that FVA induces procyclicality while HCA does not (Ellul et al. (2014)). This evidence indicates that financial institutions using FVA internalised the potential fire sale risks and adopted a more conservative approach than their HCA counterparts towards risks that became especially severe during the crisis.

B. Importance of transparency for market discipline

Transparency, understood as making relevant information available to market participants, allows investors to assess the value and riskiness of banks’ assets and liabilities and, hence, is key to market discipline. Under normal circumstances, more and higher-quality information allows agents to make decisions better suited to the prevailing circumstances and enhances efficiency in the allocation of resources. On paper, FVA relies on richer and more up-to-date information than HCA and, hence, has the potential to better contribute to transparency and efficiency. The counter argument, made by some, is that if financial prices systematically depart from fundamentals or represent signals of such fundamentals which are too noisy and imperfect, FVA may not necessarily bring the aforementioned advantages.

The most important criticism of the quality of information delivered by FVA is predicated on the notion that counting unrealised gains and losses will make profit or loss “excessively volatile”. It is important to understand which mechanisms produce “excessive volatility” (Barth (2004)). One source may be the sort of signal-jamming mechanism stemming from the use of a “mixed-attribute accounting” model (e.g. because assets and liabilities are not treated symmetrically or because for some assets there is a discretionary choice on whether to measure at fair value or at amortised cost). This source of volatility should disappear under pure FVA. A different source of volatility is the one due to measurement error in the estimation of fair value. This error is connected to the availability and reliability of the prices used as inputs in the estimation and is under the spotlight during market freezes.

Studies that focus on the value relevance of fair values for banks tend to conclude that both recognised and disclosed fair values are relevant to the extent that they get impounded in



share prices (Heaton et al. (2010)).¹⁴⁴ The evidence in Blankespoor et al. (2013) indicates that, if US banks had determined their leverage ratios on the basis of fair value information, these ratios would have made it easier for observers to gauge credit risk and the risk of bank failures.¹⁴⁵

The reliability and relevance of FVA depends on the information used by management to generate the fair values. Fair value accounting uses either mark-to-market or mark-to-model to obtain values. Mark-to-model involves a greater degree of managerial judgement. Managerial judgement becomes essential to both approaches in periods of stressed market liquidity in which the prices used as inputs become unavailable or unreliable. However, managerial judgement is similarly relevant in determining impairment allowances under amortised cost measurement, as discussed in the next section.

C. Managerial discretion and the implications of delayed loss recognition

This section reviews the main findings of the literature on managerial discretion regarding loan loss provisioning. The literature has investigated accounting discretion in the banking industry (Beatty and Liao (2014); Ryan (2012)), showing that banks often use accounting discretion to (a) signal financial health and (b) manage earnings. Most banking activities involve a significant component of complex transactions and the accounting rules define the boundaries within which discretion can be applied. Impairment allowances by nature leave more room to exercise discretion in their measurement than other items in the financial statements.

There is emerging evidence that banks strategically exploited accounting discretion during the global financial crisis. Accounting write-downs in banks were generally less timely than they should have been on average and the lack of timeliness varied across banks (Vyas (2011)). Evidence suggests that the delay in recognition is linked to excessive risk-taking behaviour. For example, banks that had higher levels of mortgage backed securities (MBS) were less likely to make timely write-downs and to delay loan loss provisions (Huizinga and Laeven (2012)). This evidence implies that the same accounting rules were used differently by different reporting entities. This calls into question not so much the accounting rules themselves, but rather the extent of forbearance by auditors and regulators that permitted the opportunistic accounting choices being made by management.

The ample room for discretion in the recognition of loan losses may call into question the loss absorbing capacity that banks truly have, especially during a crisis. In the conceptual risk management framework behind current prudential capital requirements for credit risk, impairment allowances (loan loss provisions) provide the buffer against expected losses while bank capital is the buffer against unexpected losses (Laeven and Majnoni (2003)). Strategically delaying the recognition of expected losses, or making incorrect estimates of them, has an immediate effect on the bank's earnings (current expenses are lower than they should be) and a significant long-lasting implication for the bank's financial health.

The academic literature has identified a number of potential negative consequences of either capital inadequacy or expected capital inadequacies. These include increased incentives

¹⁴⁴ Classic studies on this topic include Barth (1994), Bernard, Merton, and Palepu (1995), Barth, Beaver, and Landsman (1996), Beatty, Chamberlain, and Magliolo (1996), Eccher, Ramesh, and Thiagarajan (1996), and Nelson (1996).

¹⁴⁵ Lang and Maffett (2011) empirically document that non-financial firms with lower levels of transparency suffer from greater illiquidity in crisis periods.



for risk-shifting behaviour (Bushman and Williams (2012)), lower bank lending that hurts the real economy (e.g. Bernanke and Lown (1991); Beatty and Liao (2011)), deleveraging via asset sales (e.g. Hanson, et al. (2011)), decreased probability of survival (e.g. Berger and Bouwman (2013)), and increased borrowing costs and decreased availability of credit (e.g. Afonso et al. (2011); Kashyap and Stein (1995) and (2000); Ratnovski (2013)).

These negative consequences of capital inadequacy combined with increased financing frictions and risk-shifting incentives suggest that delayed loss recognition is detrimental to banks' financial health and, through it, to financial stability. The amount of loan loss allowances included in Tier 2 regulatory capital is positively associated with the risk of bank failures during the 2007 financial crisis (Ng and Roychowdhury (2014)). Failing banks that recognise additional provisions may have to engage in excessively risky activities in a sort of “bid for resurrection”.

Finally, from an informational point of view, delaying loss recognition damages transparency, which may impair market confidence, especially under weak aggregate conditions. While the connection between transparency and market confidence in banking is contentious (Goldstein and Sapra (2013)), a consensus is emerging on the fact that a lack of transparency after a sufficiently adverse shock (in which many banks may be in trouble) is detrimental to financial stability, which provides a rationale for the use of stress testing as a tool to restore market confidence. In this sense, delaying loan loss recognition in a crisis increases investors' uncertainty about banks' fundamentals, leading to higher levels of bank illiquidity and illiquidity risk, especially during crisis periods (Bushman and Williams (2015)).



Annex 3

Supervisory data on the use of fair value by EU banks

Table A3.1

Stylised asset-side of EU banks' balance sheet according to measurement of financial assets: G-SIIs

	EUR billions	% total assets
Assets at amortised cost	13,320.6	55.3%
Loans and receivables	13,103.2	54.4%
of which, hybrid instruments (host contracts)	17.6	0.1%
Held-to-maturity investments	217.4	0.9%
Assets at fair value other than derivatives	6,348.9	26.3%
Cash and cash balances at central banks	1,722.7	7.1%
Financial assets held for trading except derivatives	1,890.1	7.8%
Financial assets designated at fair value through profit or loss	759.3	3.1%
Available-for-sale financial assets	1,976.8	8.2%
of which, equity instruments	69.0	0.3%
Derivatives	3,064.1	12.7%
Other assets	1,374.8	5.7%
TOTAL ASSETS	24,108.4	100%
Memorandum items		
Level 1 assets excluding derivatives	2,350.2	9.7%
Level 2 assets excluding derivatives	2,160.9	9.0%
Level 3 assets excluding derivatives	115.0	0.5%
Derivatives - liabilities side	2,996.8	12.4%

Source: EBA supervisory reporting data for Q4 2016. Classification is the same as Table 2 but limited to G-SIIs.



Table A3.2

Stylised asset-side of EU banks' balance sheet according to measurement of financial assets: by business model

	Retail deposits > 30% of total liabilities		Retail deposits <= 30% of total liabilities	
	EUR billions	% total assets	EUR billions	% total assets
Assets at amortised cost	9,363.8	66.8%	8,751.7	50.1%
Loans and receivables	9,098.5	64.9%	8,651.2	49.5%
of which, hybrid instruments (host contracts)	21.4	0.2%	17.8	0.1%
Held-to-maturity investments	265.3	1.9%	100.4	0.6%
Assets at fair value other than derivatives	2,895.4	20.6%	4,974.7	28.5%
Cash and cash balances at central banks	740.0	5.3%	1,391.2	8.0%
Financial assets held for trading except derivatives	624.1	4.5%	1,495.1	8.6%
Financial assets designated at fair value through profit or loss	73.4	0.5%	914.7	5.2%
Available-for-sale financial assets	1,457.8	10.4%	1,173.7	6.7%
of which, equity instruments	67.6	0.5%	44.3	0.3%
Derivatives	888.7	6.3%	2,751.9	15.8%
Other assets	873.8	6.2%	993.7	5.7%
TOTAL ASSETS	14,021.7	100.0%	17,472.0	100.0%
Memorandum items				
Level 1 assets excluding derivatives	1,488.2	10.6%	1,568.1	9.0%
Level 2 assets excluding derivatives	603.6	4.3%	1,912.3	10.9%
Level 3 assets excluding derivatives	63.6	0.5%	103.1	0.6%
Derivatives - liabilities side	872.4	6.2%	2,716.4	15.5%

Source: EBA supervisory reporting data for Q4 2016.

Note: Due to minor differences in the consolidation of the underlying banks, the amounts reported in this table do not exactly match those in Table 2.



Table A3.3

Stylised asset-side of EU banks' balance sheet according to measurement of financial assets (EUR billions): by country

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR
Assets at amortised cost	424.5	658.5	12.9	28.7	90.3	1,938.1	257.6	11.9	2,226.1	185.4	3,702.1	3,377.1	215.0	27.7
Loans and receivables	393.6	621.2	12.7	28.6	76.7	1,926.2	238.9	11.9	2,156.9	184.1	3,631.8	3,353.1	214.2	27.5
of which, hybrid instruments (host contracts)	0.0	7.7	.	0.1	0.0	15.5	0.0	.	0.6	4.2	0.4	0.4	6.2	.
Held-to-maturity investments	30.8	37.3	0.1	0.0	13.5	11.8	18.6	0.0	69.2	1.4	70.3	24.0	0.7	0.2
Assets at fair value other than derivatives	123.8	179.5	7.0	10.3	21.0	1,045.5	488.2	4.4	613.8	126.8	1,816.1	1,831.4	24.0	7.3
Cash and cash balances at central banks	52.1	66.0	4.5	8.3	13.2	317.5	37.9	3.9	157.8	47.0	502.3	522.6	9.7	4.0
Financial assets held for trading except derivatives	5.9	7.3	0.1	0.0	1.0	267.3	66.8	0.3	113.5	52.6	742.4	541.5	2.1	0.1
Financial assets designated at fair value through profit or loss	11.0	2.9	0.0	0.0	0.0	171.4	366.7	0.2	30.6	0.7	86.0	109.9	0.0	0.8
Available-for-sale financial assets	54.8	103.3	2.4	2.1	6.8	289.3	16.8	0.0	311.9	26.6	485.5	657.4	12.2	2.5
of which, equity instruments	2.9	3.5	0.0	0.1	0.1	4.3	0.3	0.0	19.2	0.2	40.2	8.7	0.7	0.1
Derivatives	18.8	77.7	0.1	0.0	3.0	677.4	55.5	0.0	170.8	80.0	879.0	1,253.6	7.6	0.3
Other assets	23.5	100.3	1.2	3.5	2.2	155.8	21.5	0.2	296.7	23.1	521.7	322.1	42.0	1.1
TOTAL ASSETS	590.6	1,016.0	21.1	42.5	116.5	3,816.7	822.8	16.5	3,307.3	415.4	6,918.8	6,784.2	288.6	36.5
Memorandum items														
Level 1 assets excluding derivatives	59.0	88.2	2.0	1.3	5.6	322.9	60.2	0.5	342.4	34.8	688.5	722.8	10.8	1.2
Level 2 assets excluding derivatives	8.3	17.2	0.6	0.7	1.7	376.2	388.5	0.0	107.9	44.6	585.5	548.5	3.2	2.1
Level 3 assets excluding derivatives	4.5	8.0	0.0	0.0	0.5	29.0	1.7	0.0	5.6	0.4	39.7	37.6	0.3	0.1
Derivatives - liabilities side	17.1	103.4	0.1	0.1	2.6	663.2	55.7	0.1	164.8	79.7	870.0	1,218.5	9.6	0.3

Source: EBA supervisory reporting data for Q4 2016.



Table A3.3 (Cont.)

Stylised asset-side of EU banks' balance sheet according to measurement of financial assets (EUR billions): by country

	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
Assets at amortised cost	42.8	209.6	1,581.1	13.6	128.8	8.0	15.7	1,505.0	99.6	196.1	23.4	854.2	13.8	34.5
Loans and receivables	36.5	203.1	1,548.5	13.6	127.8	7.0	12.2	1,496.2	98.9	190.3	20.4	843.4	13.1	29.6
of which, hybrid instruments (host contracts)	0.0	0.0	3.4	.	.	0.0	.	0.7	.	0.0	0.0	0.0	.	0.0
Held-to-maturity investments	6.4	6.5	32.7	.	1.0	1.1	3.5	8.8	0.8	5.9	3.1	10.8	0.7	4.9
Assets at fair value other than derivatives	14.7	61.6	410.2	4.8	102.2	4.4	3.0	415.3	31.4	51.0	13.1	348.8	7.9	4.7
Cash and cash balances at central banks	5.4	29.1	29.7	4.0	29.8	2.7	0.6	139.9	6.0	8.7	5.7	92.8	2.5	2.2
Financial assets held for trading except derivatives	1.2	1.1	70.7	0.2	1.1	0.4	0.0	81.3	0.5	5.3	0.3	111.8	0.1	0.1
Financial assets designated at fair value through profit or loss	0.0	0.5	30.6	0.6	45.3	0.3	0.4	11.4	2.7	0.8	0.0	95.5	0.0	0.1
Available-for-sale financial assets	8.1	30.8	279.1	0.0	26.0	1.0	2.0	182.7	22.2	36.2	7.1	48.8	5.3	2.4
of which, equity instruments	0.2	0.7	15.1	0.0	1.5	0.0	0.0	5.4	0.3	7.7	0.1	0.5	0.2	0.1
Derivatives	0.9	17.2	107.5	0.2	10.3	0.1	0.0	145.6	1.6	3.6	0.1	110.5	0.1	0.1
Other assets	2.6	12.8	178.5	0.3	6.4	0.2	0.6	48.4	5.0	33.1	1.1	52.0	0.7	0.8
TOTAL ASSETS	61.2	301.2	2,277.3	18.8	247.7	12.7	19.3	2,114.2	137.7	283.8	37.8	1,365.5	22.5	40.2
Memorandum items														
Level 1 assets excluding derivatives	7.5	28.4	317.4	0.8	13.9	1.6	2.1	187.8	15.2	30.4	7.4	86.5	3.7	1.8
Level 2 assets excluding derivatives	1.7	3.1	52.9	0.0	57.8	0.1	0.3	80.7	9.1	2.9	0.0	168.3	1.7	0.7
Level 3 assets excluding derivatives	0.0	0.9	10.1	0.0	0.7	0.0	0.0	6.8	1.1	9.1	0.1	1.2	0.0	0.0
Derivatives - liabilities side	0.8	16.1	118.2	0.1	11.4	0.1	0.0	132.2	2.7	3.7	0.0	102.8	0.1	0.2

Source: EBA supervisory reporting data for Q4 2016.



Table A3.4

Stylised asset-side of EU banks' balance sheet according to measurement of financial assets (% total assets): by country

	AT	BE	BG	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR
Assets at amortised cost	71.9%	64.8%	60.9%	67.4%	77.5%	50.8%	31.3%	72.0%	67.3%	44.6%	53.5%	49.8%	74.5%	76.0%
Loans and receivables	66.6%	61.1%	60.2%	67.3%	65.9%	50.5%	29.0%	72.0%	65.2%	44.3%	52.5%	49.4%	74.2%	75.3%
of which, hybrid instruments (host contracts)	0.0%	0.8%	.	0.2%	0.0%	0.4%	0.0%	.	0.0%	1.0%	0.0%	0.0%	2.1%	.
Held-to-maturity investments	5.2%	3.7%	0.7%	0.1%	11.6%	0.3%	2.3%	0.0%	2.1%	0.3%	1.0%	0.4%	0.3%	0.6%
Assets at fair value other than derivatives	21.0%	17.7%	33.3%	24.3%	18.0%	27.4%	59.3%	26.5%	18.6%	30.5%	26.2%	27.0%	8.3%	20.0%
Cash and cash balances at central banks	8.8%	6.5%	21.2%	19.4%	11.3%	8.3%	4.6%	23.5%	4.8%	11.3%	7.3%	7.7%	3.3%	10.9%
Financial assets held for trading except derivatives	1.0%	0.7%	0.5%	0.0%	0.8%	7.0%	8.1%	2.0%	3.4%	12.7%	10.7%	8.0%	0.7%	0.2%
Financial assets designated at fair value through profit or loss	1.9%	0.3%	0.0%	0.0%	0.0%	4.5%	44.6%	1.0%	0.9%	0.2%	1.2%	1.6%	0.0%	2.1%
Available-for-sale financial assets	9.3%	10.2%	11.6%	4.8%	5.8%	7.6%	2.0%	0.1%	9.4%	6.4%	7.0%	9.7%	4.2%	6.8%
of which, equity instruments	0.5%	0.3%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%	0.6%	0.1%	0.6%	0.1%	0.2%	0.2%
Derivatives	3.2%	7.6%	0.3%	0.1%	2.5%	17.7%	6.7%	0.3%	5.2%	19.3%	12.7%	18.5%	2.6%	0.9%
Other assets	4.0%	9.9%	5.5%	8.3%	1.9%	4.1%	2.6%	1.2%	9.0%	5.6%	7.5%	4.7%	14.6%	3.1%
TOTAL ASSETS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Memorandum items														
Level 1 assets excluding derivatives	10.0%	8.7%	9.3%	3.1%	4.8%	8.5%	7.3%	3.0%	10.4%	8.4%	10.0%	10.7%	3.8%	3.2%
Level 2 assets excluding derivatives	1.4%	1.7%	2.7%	1.7%	1.4%	9.9%	47.2%	0.0%	3.3%	10.7%	8.5%	8.1%	1.1%	5.7%
Level 3 assets excluding derivatives	0.8%	0.8%	0.1%	0.1%	0.4%	0.8%	0.2%	0.0%	0.2%	0.1%	0.6%	0.6%	0.1%	0.3%
Derivatives - liabilities side	2.9%	10.2%	0.4%	0.1%	2.2%	17.4%	6.8%	0.3%	5.0%	19.2%	12.6%	18.0%	3.3%	0.8%

Source: EBA supervisory reporting data for Q4 2016.



Table A3.3 (Cont.)

Stylised asset-side of EU banks' balance sheet according to measurement of financial assets (% total assets): by country

	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK
Assets at amortised cost	70.0%	69.6%	69.4%	72.3%	52.0%	63.0%	81.5%	71.2%	72.4%	69.1%	62.1%	62.6%	61.4%	85.8%
Loans and receivables	59.6%	67.4%	68.0%	72.3%	51.6%	54.7%	63.4%	70.8%	71.8%	67.0%	54.0%	61.8%	58.2%	73.6%
of which, hybrid instruments (host contracts)	0.0%	0.0%	0.2%	.	.	0.0%	.	0.0%	.	0.0%	0.0%	0.0%	.	0.0%
Held-to-maturity investments	10.4%	2.2%	1.4%	.	0.4%	8.3%	18.2%	0.4%	0.6%	2.1%	8.1%	0.8%	3.3%	12.2%
Assets at fair value other than derivatives	24.1%	20.4%	18.0%	25.5%	41.3%	34.3%	15.4%	19.6%	22.8%	18.0%	34.7%	25.5%	35.2%	11.8%
Cash and cash balances at central banks	8.9%	9.7%	1.3%	21.3%	12.0%	21.1%	3.0%	6.6%	4.4%	3.1%	15.0%	6.8%	11.1%	5.5%
Financial assets held for trading except derivatives	1.9%	0.4%	3.1%	1.0%	0.4%	3.1%	0.0%	3.8%	0.4%	1.9%	0.9%	8.2%	0.3%	0.2%
Financial assets designated at fair value through profit or loss	0.0%	0.2%	1.3%	3.1%	18.3%	2.0%	1.9%	0.5%	1.9%	0.3%	0.0%	7.0%	0.1%	0.1%
Available-for-sale financial assets	13.3%	10.2%	12.3%	0.1%	10.5%	8.2%	10.6%	8.6%	16.1%	12.8%	18.9%	3.6%	23.7%	5.9%
of which, equity instruments	0.3%	0.2%	0.7%	0.0%	0.6%	0.1%	0.0%	0.3%	0.2%	2.7%	0.2%	0.0%	0.7%	0.1%
Derivatives	1.6%	5.7%	4.7%	0.8%	4.1%	1.0%	0.1%	6.9%	1.2%	1.3%	0.2%	8.1%	0.2%	0.4%
Other assets	4.3%	4.2%	7.8%	1.4%	2.6%	1.6%	2.9%	2.3%	3.6%	11.6%	3.0%	3.8%	3.1%	2.1%
TOTAL ASSETS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Memorandum items														
Level 1 assets excluding derivatives	12.3%	9.4%	13.9%	4.1%	5.6%	12.7%	10.9%	8.9%	11.0%	10.7%	19.5%	6.3%	16.3%	4.4%
Level 2 assets excluding derivatives	2.8%	1.0%	2.3%	0.0%	23.3%	0.6%	1.5%	3.8%	6.6%	1.0%	0.1%	12.3%	7.7%	1.7%
Level 3 assets excluding derivatives	0.1%	0.3%	0.4%	0.0%	0.3%	0.0%	0.0%	0.3%	0.8%	3.2%	0.2%	0.1%	0.1%	0.1%
Derivatives - liabilities side	1.3%	5.3%	5.2%	0.8%	4.6%	1.0%	0.2%	6.3%	2.0%	1.3%	0.1%	7.5%	0.6%	0.5%

Source: EBA supervisory reporting data for Q4 2016.



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