

# Provisioning policies for non-performing loans: How to best ensure a “clean balance sheet”?

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Banking Union Scrutiny

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### Abstract

New provisioning rules introduced by IFRS 9 are expected to reduce the procyclicality of provisioning. Heterogeneity among banks in the procyclicality of provisioning may not only reflect the formal accounting rules, but also variation in discretionary provisioning policies. This paper presents empirical evidence on the heterogeneity of provisioning procyclicality among significant banks that are directly supervised by the ECB. In particular, this paper finds that provisioning is relatively procyclical at banks that have i) high loans-to-assets ratios, ii) high shares of non-interest income in total operating income, iii) low capitalization rates, and iv) low total assets. Supervisory guidance provided to banks on how to implement IFRS 9 has mostly been of a qualitative nature, and may prove inadequate to prevent an undesirably wide future variation in provisioning among EU banks.

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## LIST OF ABBREVIATIONS

<b>CET1</b>	Common Equity Tier 1
<b>EBA</b>	European Banking Authority
<b>ECB</b>	European Central Bank
<b>ECL</b>	Expected Credit Loss
<b>GDP</b>	Gross Domestic Product
<b>G-SIB</b>	Global Systemically Important Bank
<b>IAS</b>	International Accounting Standard
<b>IFRS</b>	International Financial Reporting Standard
<b>IL</b>	Incurred Loss
<b>LGD</b>	Loss Given Default
<b>LLP</b>	Loan Loss Provision
<b>NPL</b>	Nonperforming Loan
<b>PD</b>	Probability of Default
<b>SPPI</b>	Solely Payment of Principle and Interest

## EXECUTIVE SUMMARY

The introduction of International Financial Reporting Standard (IFRS) 9 on Financial Instruments will require banks to apply an expected credit loss model of credit impairment allowances, replacing the current incurred loss model as of January 1, 2018. This will increase the average level of allowances, as banks will have to set allowances for all debt-like instruments, and not just for loans that have suffered a loss event as under the incurred loss model. This accounting rule change is likely to smooth provisioning for credit impairment over the business cycle, as banks will set credit impairment allowances in anticipation of future credit losses rather than only after a credit loss event has occurred. A less procyclical provisioning relieves capital pressures that banks otherwise face at the trough of the business cycle, and hence is beneficial for financial stability.

In practice, the procyclicality of a bank's provisioning is not only determined by the formal accounting rules, but also by how banks apply their discretion in setting provisions, and by bank supervision. This paper discusses the roles of the formal accounting rules, bank discretion, and some aspects of bank supervision in determining the procyclicality of provisioning for credit impairment, taking the perspective that a lower procyclicality is desirable from a financial stability point of view.

The introduction of IFRS 9 will affect the incentives as well as the opportunities for banks to apply discretion in the setting of credit impairment allowances. By mitigating the negative relationship between formal provisioning levels and GDP growth, the new accounting rules should also mitigate the desire of banks to manipulate provisioning levels as motivated by the income smoothing and regulatory capital management motives. Conversely, IFRS 9 extends the range of assets subject to provisioning to include assets for which no loss event has yet occurred, which increases the scope for the use of accounting discretion as applied to credit impairment provisions.

With a view to informing the supervision of eurozone banks, this paper shows evidence that there has been considerable heterogeneity in the procyclicality of loan loss provisions among significant eurozone banks that are directly supervised by the ECB based on data for the period 2003-2016. In particular, provisioning is relatively procyclical at banks that have i) high loans-to-assets ratios, ii) high shares of non-interest income in total operating income, iii) low capitalization rates, and iv) low total assets. This observed heterogeneity can reflect differences in banks' asset allocations, or alternatively variation in the discretionary implementation of the accounting rules by bank managers. Regardless of its exact origins, the observed heterogeneity is likely to persist after IFRS 9 has become effective on January 1, 2018. Hence, evidence of this kind is a useful input into future bank supervision with a view to reducing undue provisioning procyclicality.

To prepare banks for IFRS 9, the ECB and EBA have provided extensive guidance on how to implement the expected credit loss model of credit impairment allowances. This overall guidance no doubt has the objective of narrowing the discretion that banks have in setting credit impairment allowances. However, it is doubtful whether the provided guidance will be very effective in this regard, as it is mostly qualitative in nature and does not provide quantitative constraints on either the inputs or the outputs of expected credit loss calculations. Guidance without such quantitative restrictions may prove inadequate to prevent an undesirably wide future variation in credit impairment allowances among banks in the European Union.

## 1. INTRODUCTION

International Financial Reporting Standard (IFRS) 9 on Financial Instruments will require banks to determine their credit impairment allowances using an expected credit loss (ECL) model as of January 1, 2018. Under this model, credit impairment allowances are meant to be set in anticipation of future credit losses rather than only after a credit loss event has occurred. As a result, credit impairment allowances are expected to be set more evenly over the business cycle, rather than primarily at the trough of the business cycle. Thus, the accounting change should mitigate the negative relationship between loan loss provisions and Gross Domestic Product (GDP) growth that currently exists. This is desirable as such a negative relationship implies that bank capitalization rates are adjusted downward especially when market conditions for banks are very weak, and hence when banks face most difficulties raising new capital to ward off bank failure. An attenuation of the negative relationship between loan loss provisioning and economic growth (i.e., less procyclical provisioning) following the implementation of IFRS 9 thus should augment financial stability.

In practice, the procyclicality of a bank's provisioning is not only determined by the formal accounting rules, but also by how banks apply their discretion in setting provisions, and by bank supervision. This paper discusses the roles of the formal accounting rules, bank discretion, and some aspects of bank supervision in determining the procyclicality of provisioning for credit impairment, taking the perspective that a lower procyclicality is desirable from a financial stability point of view.

Section 2 summarizes the main features of the ECL model of determining credit impairment allowances under IFRS 9, and it discusses how the introduction of IFRS 9 can be expected to affect the procyclicality of provisioning compared to the current incurred loss (IL) model of setting provisions.

Section 3 discusses how management biases in provisioning policies can affect their procyclicality. Bank managers may face incentives to smooth a bank's income over time, which may cause them to take higher provisions when bank profitability is high, and vice versa. A tendency to set provisions to smooth bank income by itself should reduce their procyclicality. In addition, banks face incentives to postpone taking provisions when a bank already has a low rate of capitalization, for instance due to losses suffered during an economic downturn. A proclivity to postpone provisions during economic slowdowns should reduce the procyclicality of reported provisions. Bank-specific management biases in setting provisions - with repercussions for their procyclicality - are likely to persist after IFRS 9 has become effective.

With a view to informing the supervision of eurozone banks, section 4 presents the results of an empirical analysis of the procyclicality of loan loss provisions for the set of 125 significant banks that the European Central Bank (ECB) directly supervises as of January 1, 2017 using data for the 2003-2016 period. The results indicate that the procyclicality of provisions is relatively high for banks that have i) high loans-to-assets ratios, ii) high shares of non-interest income in total operating income, iii) low capitalization rates, and iv) low total assets.

Section 5 discusses the guidance that the ECB and the European Banking Authority (EBA) have recently provided to banks on how to implement IFRS 9. This guidance has primarily been of a qualitative nature, without quantitative restrictions on inputs into the calculations of credit impairment allowances or on the outputs of these calculations. This suggests that banks will continue to have considerable discretion in setting their credit impairment allowances under IFRS 9. Section 6 concludes.

## 2. CREDIT IMPAIRMENT ALLOWANCES UNDER IFRS 9

This section discusses the main changes in the accounting for credit impairment introduced by IFRS 9, and their implications for procyclicality.

### 2.1 A summary of the new provisioning rules

Under IFRS 9, banks are required to set credit impairment allowances for all loans and other fixed income assets using an expected loss model.<sup>1</sup> The definition of the expected loss that a bank needs to estimate generally depends on the stage of an asset's credit impairment. Specifically, IFRS 9 distinguishes three stages of credit impairment. The definitions of the three stages and the corresponding descriptions of the required credit impairment allowances are as follows:

- Stage 1: For assets at this stage, no significant increase in credit risk has occurred since origination. For these assets, credit impairment allowances should be set high enough to cover credit losses that are expected to materialize over a 12-months horizon.
- Stage 2: For assets in this category, a significant increase in credit risk has occurred since origination. For these assets, credit impairment allowances should cover credit losses that are expected to materialize over the lifetime of the asset.
- Stage 3: For assets at this stage, a loss event has occurred, which is an event that has a detrimental impact on the estimated future cash flow of the asset. For these assets, credit impairment allowances should cover credit losses that are thought to materialize over the lifetime of the asset.

The credit impairment provisions of IFRS 9 replace International Accounting Standard (IAS) 39 on Financial Instruments: Recognition and Measurement, which at present requires banks to calculate loan loss provisions for their loan portfolio using an incurred loss model. Under this model, banks need to take loan loss provisions only after the loan has become impaired, which is the case when a loss event has occurred. In that event, the loan loss provision is meant to cover the lifetime expected credit loss.

Comparing IAS 39 with IFRS 9, we see that the accounting for loan impairment of IAS 39 corresponds to the treatment of stage 3 assets under IFRS 9, as both require banks to set allowances equal to lifetime expected credit losses for assets that have suffered a loss event. Going beyond IAS 39, however, IFRS 9 introduces additional requirements to set credit impairment allowances for stage 1 and stage 2 assets. As an immediate implication, credit impairment allowances under IFRS 9 should turn out to be higher than they were before. In line with this, EBA (2017b) provides survey evidence indicating that the provisions of banks in the European Union will on average increase by 13% compared with current levels of provisions under IAS 39.<sup>2</sup>

A second major difference between IFRS 9 and IAS 39 concerns the timing of credit impairment provisions. Under IAS 39, provisions are taken only after a loss event has occurred. Under IFRS 9, banks instead are required to calculate provisions also for their stage 1 and stage 2 assets that have not suffered a loss event, and they need to continually update their provisions, as new information on the prospective impairment of their overall asset portfolio arrives.

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<sup>1</sup> Credit impairment allowances are set for all assets that meet the Solely Payment of Principle and Interest (SPPI) criterion. See European Systemic Risk Board (2017, pp. 59-68) for a description of IFRS 9.

<sup>2</sup> The European Systemic Risk Board (2017, p. 27) provides estimates of the increase in provisions from several private sources that are somewhat higher.



## 2.2 Implications for procyclicality

Under IAS 39, loan loss provisions are taken only when loss events have occurred, which is more likely during economic downturns. Therefore, loan loss provisions are expected to be strongly negatively related to the rate of economic growth under this standard. A bank that takes loan loss provisions reduces its current profitability, and also its capitalization. A negative relationship between loan loss provisioning and the rate of economic growth thus implies that banks see their capitalization rates decline especially during economic downturns. This has potentially negative ramifications for financial stability, as banks may find it difficult to raise additional capital at times of low profitability and negative economic growth.

Under IFRS 9, banks are required to take provisions also during economic expansions to reflect the probability of a business cycle turn, which could induce greater credit losses later. A more adequate provisioning in anticipation of the next economic downturn implies that banks have higher provisions once a downturn materializes, and that they need to take fewer provisions during the economic downturn. The move from IAS 39 to IFRS 9 thus should attenuate the negative relationship between provisioning and economic growth, with a potentially positive effect on financial stability.

Provisioning for a next economic downturn under the ECL model, however, may be rather abrupt, if an initial turning point in the business cycle is interpreted as a harbinger of a serious business cycle downturn, and hence triggers large loan loss provisions in anticipation of future credit losses. Thus, the introduction of the ECL model eliminates the concentration of loan loss provision at the trough of the economic cycle, but instead could concentrate provisioning at the beginning of the cycle, which could equally have a negative impact on financial stability. A recent simulation study by Abad and Suarez (2017) confirms that IFRS 9 will concentrate the impact of credit losses on profit and loss and on the Common Equity Tier 1 (CET1) ratio at the beginning phases of the economic cycle. As a result, these authors find that under the ECL model of IFRS 9 banks face a higher yearly probability of having to be recapitalized than under the current IL model of IAS 39.

### 3. ACCOUNTING DISCRETION AND PROCYCLICALITY

Beyond the accounting rules, provisioning for credit impairment also reflects bank discretion on how to implement the rules. In practice, banks can have varying motives in setting discretionary loan loss provisions, which could have implications for provisioning procyclicality. In particular, the literature review by Ozili and Outa (2017) identifies the following two main motives:<sup>3</sup>

- An income smoothing motive: Bank managers may aim to take provisions when profits are relatively high in order to smooth reported income after provisions. This type of bias could reduce the sensitivity of loan loss provisions to the business cycle, as bank profitability and GDP growth tend to be positively related. Evidence regarding this hypothesis, however, is mixed.<sup>4</sup>
- A capital management motive: Banks can time loan loss provisions to ensure that they meet minimum regulatory capital requirements. This would imply that banks attempt to reduce provisioning levels when regulatory capital levels are already low. Capital management of this kind could reduce the co-movement between reported provisioning levels and the growth rate of GDP, as bank capitalization rates are more likely to be stressed during economic downturns. Evidence in favour of this hypothesis is provided by Ahmed et al. (1999) for the case of US banks during 1986-1995.<sup>5</sup>

The introduction of IFRS 9 will affect the incentives as well as the opportunities for banks to apply discretion in setting credit impairment allowances. By mitigating the negative relationship between formal provisioning levels and GDP growth, the new accounting rules should also mitigate the desire of banks to manipulate provisioning levels as motivated by the income smoothing and capital management motives. Conversely, IFRS 9 extends the range of assets subject to provisioning to include stage 1 and stage 2 assets, which increases the scope for the use of accounting discretion as applied to credit impairment provisions. In particular, IFRS 9 introduces the new criterion of a ‘significant increase in credit risk’ for assets to migrate from stage 1 to stage 2 (and vice versa), which can be interpreted in various ways and hence gives rise to accounting discretion. In addition, banks in practice will need to use complex statistical models taking into account various probability-weighted scenarios as based on forward-looking macroeconomic information to calculate expected credit losses, which also implies considerable accounting discretion over credit impairment provisions. These complexities have caused the Global Public Policy Committee (2017, p. 12) representing the major accounting firms to state that ‘it is expected that for most banks, the estimates of ECL will present a risk of material misstatement that is not low’.

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<sup>3</sup> In addition, banks can be motivated to counteract the procyclicality of formal provisioning requirements, as this procyclicality puts banks at risk. This would imply that banks report higher LLPs during good times and report fewer LLPs during economic downturns compared to formal provisioning requirements.

<sup>4</sup> As an example of this literature, Laeven and Majnoni (2003) find that the loan loss provisioning rate is positively related to the ratio of a bank’s earnings before-tax and before loan loss provisioning for an international set of banks during 1988-1999.

<sup>5</sup> Consistent with a capital management motive, Huizinga and Laeven (2012) find that during the crisis in 2008 US banks with large exposures to mortgage backed securities that had declined in value displayed relatively low loan loss provisions.

## 4. EVIDENCE ON PROCYCLICALITY FOR SIGNIFICANT EUROZONE BANKS

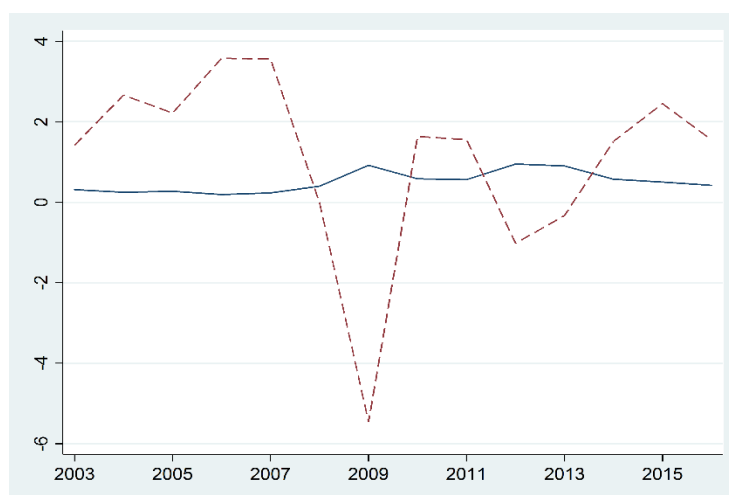
This section provides empirical evidence on the determinants of loan loss provisions (LLPs) procyclicality for 125 significant eurozone banks that were directly supervised by the ECB as of January 1, 2017. The main focus of the analysis is to examine how LLP procyclicality differs among groups of banks that vary in their business mix, capitalization, and size. Heterogeneity in LLP procyclicality among groups of banks can reflect differences in the procyclicality of actual credit loss events across banks, and alternatively variation in banks' discretionary loan loss provisioning over the business cycle. Regardless of the exact causes of any heterogeneity in procyclicality across banks, they to some extent are likely to persist after the introduction of IFRS 9. Hence, evidence of heterogeneity in LLP procyclicality in the recent past should be useful to guide future supervisory efforts to prevent undue LLP procyclicality the future.

### 4.1 The data

The bank-level data are from Bankscope compiled by Bureau Van Dijk for the years 2003-2015, and from Orbis Bank Focus from the same provider for the years 2015-2016.<sup>6</sup> Information on the growth rate of real per capita GDP of eurozone countries is obtained from the World Development Indicators of the World Bank.

In the analysis, the Provisions/assets variable is the loan loss provisioning rate, constructed as annual loan loss provisions as a percentage of the bank's total assets of the previous year. Figure 1 displays the average loan loss provisioning rate for significant banks and the analogous average GDP growth rate over the 2003-2016 period. The average loan loss provisioning is seen to have reached 0.92% in 2009 during the financial crisis, and a comparable 0.95% in 2012 during the eurozone sovereign debt crisis. Subsequently, the average loan loss provisioning rate declined to 0.42% in 2016. Overall, the figure shows a clear negative correlation between the loan loss provisioning rate and the GDP growth rate as evidence of LLP procyclicality.

**Figure 1:** Loans loss provisions and GDP growth, 2003-2016



The solid line represents the ratio of loan loss provisions over total assets lagged by one year in percent. The broken line represents the growth rate of real per capita GDP in percent. The data are yearly averages for banks that are directly supervised by the ECB.

<sup>6</sup> For 2015, data from Bankscope are supplemented with data from Orbis Bank Focus. In some instances, it is not possible to match the bank group name with Bankscope and Orbis Bank Focus data (or these sources include only a few observations for the group). In these cases, data for one of the supervised entities of that group matched by country of establishment and the size of the entity are used instead.

Following Laeven and Majnoni (2003), a simple regression model is estimated that relates the loan loss provisioning rate to three explanatory variables. First, the regression model includes the GDP growth rate to see to what extent loan loss provisions are procyclical. Second, it includes the Profits/assets variable, constructed as a bank's pre-tax earnings before loan loss provisions as a percentage of total assets lagged one year. The sensitivity of loan loss provisioning to bank profitability can, among other things, reflect an income smoothing motive on the part of bank managers. Finally, the third explanatory variable is Loan growth, which is the growth rate of total loans in percent.<sup>7</sup> A negative relationship between loan loss provisioning and loan growth suggests that banks tend to combine (risky) loan portfolio expansion with lower loan loss provisions. Table 1 provides mean values for variables in the regression model over the 2003-2016 period. The average loan loss provisioning rate is seen to be 0.53%, which is considerable in comparison to an average profitability rate of 1.05%.<sup>8</sup>

**Table 1:** Summary statistics of main variables

	Mean	Standard deviation
Provisions/assets	0.529	1.025
Profits/assets	1.048	0.997
Loan growth	4.714	13.387
GDP growth	0.970	3.250

#### 4.2 Evidence of the determinants of loan loss provisioning

Table 2 provides the results of a regression that relates the loan loss provisioning rate to the three explanatory variables.<sup>9</sup> The negative estimated coefficient for the GDP growth rate variable of -0.100 implies that loan loss provisioning is procyclical. In particular, a reduction in the GDP growth rate by 1 percent is estimated to increase the LLP rate by 0.1%. Negative estimated coefficients for the Profits/assets and Loan growth variables suggest that there is no strong tendency for banks to set their provisions to smooth their incomes, and that banks reduce their loan loss provisioning when they grow their loan portfolio.

**Table 2:** Estimation of the determinants of provisions relative to assets

GDP growth	-0.100
	(0.016)***
Profits/assets	-0.153
	(0.072)**
Loan growth	-0.013
	(0.003)***
R-sq	0.131
No. of bank-year observations	1237
No. of banks	120

<sup>7</sup> The included bank fixed effects also control for any time-invariant aspects of the regulatory and supervisory regime of the bank's country of location.

<sup>8</sup> The loan growth rate reflects new lending as well as business restructurings. Observations of loan growth rates greater than 50% or lower than -50% were discarded.

<sup>9</sup> The R-squared of 0.131 implies that the three explanatory variables together only explain a small part of the variation in the loan loss provisioning rate.

The dependent variable is loan loss provisions as a percentage of lagged assets. Regressions include bank and year fixed effects. Standard errors are clustered at the bank level and reported in parentheses. \*\*, and \*\*\* denote significance at 5%, and 1%.

The introduction of the ECL model of provisioning under IFRS 9 potentially reduces the tendency for the LLP rate to be negatively related to the current GDP growth rate, as banks will also take into account forward-looking information about, for instance, future GDP growth rates in determining their current provisions. However, a negative relationship between provisioning and the GDP growth rate is likely to persist, as the current GDP growth rate will continue to provide information about expected credit losses.

### 4.3 Heterogeneity among banks in procyclicality

In this section, we consider whether there has been heterogeneity in the LLP rate among subgroups of significant eurozone banks constructed on the basis of variables that reflect their business mix, capitalization, and size. To ascertain whether there is LLP heterogeneity, we consider the estimated coefficients for the GDP growth rate variable in regressions such as in Table 2 for the various subgroups.

To start, we consider the role of lending in a bank's overall activities, as reflected in the ratio of loans to total assets. In particular, we split the overall sample into two subsamples with observations of the loans-to-assets ratio below and above the median, and then we re-estimate the regression of Table 2 for these two subsamples. The resulting estimated coefficients for the GDP growth variable are presented in columns 1 and 2 of Panel A of Table 3. A comparison of these two coefficients, i.e. -0.076 and -0.122, shows that the LLP rate of banks with a relatively high loans-to-assets ratio is relatively procyclical w.r.t. GDP, which is to be expected given the different emphasis on lending for banks in the two subgroups.

As a second index of a bank's mix of activities, we consider the non-interest income share, which is constructed as the ratio of the bank's non-interest income to total operating income. Banks with a high non-interest income share tend to be more risky. Columns 3 and 4 of Panel A of Table 3 provide the estimation results for the subsamples of banks with relatively low and relatively high non-interest income shares. The estimated coefficients for the GDP growth variable of -0.070 and -0.161 in these two regressions show that the LLP rate varies more with the GDP growth rate for banks with a relatively high non-interest income share. This suggests that banks that are riskier on account of a higher non-interest income share also pursue relatively risky LLP strategies, as reflected by a higher procyclicality with respect to GDP.

Next, we consider whether LLP procyclicality among banks varies with the rate of bank capitalization proxied by the Tier 1 capital ratio. Banks that are better capitalized face lower incentives to take on additional risks, and hence could display more prudent LLP strategies as reflected in a lower LLP procyclicality. In line with this, the estimated coefficients of -0.128 and -0.095 in columns 5 and 6 of Panel A for the samples of lowly and highly capitalized banks suggest that highly capitalized banks tend to display relatively low LLP procyclicality.

Finally, we consider the role of bank size in determining heterogeneity in LLP procyclicality among significant eurozone banks. Larger banks may in practice be too big to fail, which provides them with incentives to take on additional risks, for instance through a less prudent, more procyclical LLP strategy. To investigate this, we need to split the overall sample into groups of relatively small and relatively large banks. We do this in three different ways with the resulting regressions presented in Panel B of Table 3. First, the regression results in columns 1 and 2 are based on splitting the overall sample into subsamples of banks with total assets below and above the sample median. Second,

columns 3 and 4 reflect observations of banks with assets in the bottom 90% of the asset distribution, and in the top 10% of this distribution, respectively. Third, in columns 5 and 6 we consider a sample split into banks that are and are not labelled a Global Systemically Important Bank (G-SIB) by the Financial Stability Board. More specifically, the regression in column 6 includes observations of the 8 eurozone banks labelled G-SIBs as of January 1, 2017.<sup>10</sup> In all three instances, a comparison of estimated coefficients across the relevant columns shows that LLP procyclicality is relatively lower at larger banks. Hence, there is no evidence that larger banks pursue more risky LLP strategies on account of their too-big-to-fail status. Instead, the observed lower LLP procyclicality of larger banks possibly reflects a better international asset diversification of larger banks. Overall, the results indicate that LLP procyclicality is relatively high for banks that have i) high loans-to-assets ratios, ii) high shares of non-interest income in total operating income, iii) low capitalization rates, and iv) low total assets.

**Table 3:** Estimation results on procyclicality for different subsamples of banks

<b>Panel A</b>	Low loans/assets	High loans/assets	Low non-interest income share	High non-interest income share	Low Tier 1 ratio	High Tier 1 ratio
	(1)	(2)	(3)	(4)	(5)	(6)
GDP growth	-0.076 (0.023)***	-0.122 (0.020)***	-0.070 (0.018)***	-0.161 (0.026)***	-0.128 (0.032)***	-0.095 (0.021)***
R-sq	0.053	0.247	0.147	0.174	0.311	0.074
No. of bank-year observations	598	639	599	638	523	714
No. of banks	86	81	104	105	97	118

<b>Panel B</b>	Low assets	High assets	Bottom 90% of assets	Top 10% of assets	No G-SIB	G-SIB
	(1)	(2)	(3)	(4)	(5)	(6)
GDP growth	-0.141 (0.017)***	-0.039 (0.022)*	-0.100 (0.016)***	-0.046 (0.013)***	-0.099 (0.016)***	-0.061 (0.026)*
R-sq	0.193	0.064	0.141	0.148	0.138	0.181
No. of bank-year observations	588	649	1106	131	1149	88
No. of banks	73	71	114	14	112	8

The dependent variable is loan loss provisions as a percentage of lagged assets. The regressions include the Profits/assets and Loan growth variables. Estimated coefficients for these variables are not reported in the table. Regressions 1 and 2 of Panel A include observations with the ratio of loans to assets below and above the median. Regressions 3 and 4 of Panel A include observations with the share of non-interest income in total operating income below and above the median. Regressions 5 and 6 of Panel A include observations with a Tier 1 capital ratio below and above the median. Regressions 1 and 2 of Panel B include observations with total assets below and above the median. Regressions 3 and 4 of Panel B include observations with total assets in the bottom 90% and in the top 10%. Regressions 5 and 6 of Panel B include observations for non-G-SIBs and G-SIBs. Regressions include bank and year fixed effects. Standard errors are clustered at the bank level and reported in parentheses. \*, and \*\*\* denote significance at 10%, and 1%.

<sup>10</sup> These banks are BNP Paribas, BPCE, Credit Agricole, Deutsche Bank, ING, Santander, Societe Generale, and Unicredit. See Financial Stability Board (2016).



## 5. THE SUPERVISORY APPROACH TO IMPLEMENTING IFRS 9

Eurozone banks have been provided with extensive supervisory and regulatory guidance on how to set their credit impairment allowances under IFRS 9. In March 2017, the ECB (2017a) provided guidance to banks on non-performing loans (NPLs), including a chapter on NPL measurement by way of credit impairment allowances and write-offs. In May 2017, the EBA (2017a) published a set of guidelines for credit institutions on their risk management practices and accounting for expected credit losses.<sup>11</sup>

This overall guidance no doubt has the objective of narrowing the discretion that banks have in setting credit impairment allowances. However, it is doubtful whether the provided guidance will be very effective in this regard, as it is mostly qualitative in nature and does not provide quantitative constraints on provisioning calculations. Specifically, official guidance so far does not contain any quantitative lower bounds on the calculations of risk parameters (such as the probability of default (PD), and the loss given default (LGD) that go into the calculations of expected losses), and also not on the resulting ECL numbers.<sup>12</sup>

In the absence of formal quantitative restrictions on ECL calculations, the ECB as the supervisor of significant eurozone banks can consider applying informal lower bounds for the inputs and outputs of ECL calculations, against which ECL calculations submitted by banks can be compared. Material differences between informal lower bounds and actual calculations submitted by banks should then lead to more intensive supervisory scrutiny. Along similar lines, the ECB could usefully deploy the quantitative '30 days past due' criterion as a quantitative dividing line between stage 1 and stage 2 assets, against which banks' actual implementations of the qualitative concept of a 'significant increase in credit risk' are compared.

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<sup>11</sup> Both of these documents build on the guidance on credit risk and accounting for credit losses provided by the Basel Committee on Banking Supervision (2015). Specific to the implementation of IFRS 9, the EBA (2017a) provides guidance on the calculation of the 12-months and lifetime ECLs, and the implementation of the concept of 'a significant increase in credit risk' on pp. 36-48.

<sup>12</sup> This *laissez-faire* approach regarding the quantitative aspects of calculating expected credit losses under IFRS 9 is in sharp contrast to the current discussion on imposing quantitative restrictions on risk parameters for the purpose of calculating regulatory capital requirements (see Basel Committee on Banking Supervision, 2016), which followed evidence of risk measurement manipulation by banks as they were aiming to reduce their capital requirements.

## 6. CONCLUSIONS

The introduction of IFRS 9 will require banks to apply an expected loss model of credit impairment allowances, replacing the current incurred loss model. This will increase the average level of allowances, as banks will have to set allowances for all debt-like instruments, and not just for loans that have suffered a loss event as under the incurred loss model. This accounting rule change is likely to smooth provisioning for credit impairment over the business cycle, as banks will set credit impairment allowances in anticipation of future credit losses rather than only after a credit loss event has occurred. A less procyclical provisioning relieves capital pressures that banks otherwise face at the trough of the business cycle, and hence should be beneficial for financial stability.

IFRS 9 will affect the incentives as well as the opportunities for banks to apply discretion in the setting of credit impairment allowances. By mitigating the negative relationship between formal provisioning levels and GDP growth, the new accounting rules should also attenuate the desire of banks to manipulate provisioning levels as motivated by the income smoothing and capital management motives. Conversely, IFRS 9 extends the range of assets subject to provisioning to include stage 1 and stage 2 assets, which increases the scope for the use of accounting discretion as applied to credit impairment provisions.

This paper shows evidence that there has been considerable heterogeneity in the procyclicality of loan loss provisions among significant eurozone banks that are directly supervised by the ECB based on data for the period 2003-2016. In particular, provisioning is relatively procyclical at banks that have i) high loans-to-assets ratios, ii) high shares of non-interest income in total operating income, iii) low capitalization rates, and iv) low total assets. This observed heterogeneity can reflect differences in banks' asset allocations, or alternatively variation in the discretionary implementation of the accounting rules by bank managers. Regardless of its exact origins, the observed heterogeneity is likely to persist after IFRS 9 has become effective on January 1, 2018. Hence, evidence of this kind is a useful input into future bank supervision with a view to reducing undue provisioning procyclicality.

To prepare banks for IFRS 9, the ECB and EBA have provided extensive guidance on how to implement the ECL model of credit impairment allowances. This guidance, however, has mostly been of a qualitative nature without imposing quantitative restrictions on credit impairment allowance calculations. Guidance without such quantitative restrictions may prove inadequate to prevent an undesirably wide future variation in credit impairment allowances among banks in the European Union.



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## ANNEX A: DIRECTLY SUPERVISED BANKS BY COUNTRY

**Table 4:** The number of directly supervised banks per country as of January 1, 2017

Country	Number of banks
Austria	8
Belgium	7
Cyprus	4
Estonia	2
Finland	4
France	13
Germany	21
Greece	4
Ireland	5
Italy	14
Latvia	3
Lithuania	3
Luxembourg	4
Malta	3
Netherlands	6
Portugal	4
Slovakia	3
Slovenia	3
Spain	14
Total	125

Source: ECB (2017b)



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