Expected credit losses and managerial discretion. Current practices and future challenges

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Abstract

This paper examines the loan loss provisioning behavior during the transition from IAS 39 to IFRS 9 for a sample of 403 banks in 27 countries in European Union. The objective of the study is to investigate whether during the first years of adoption of the new expected credit loss (ECL) impairment model banks are more encouraged to smooth earnings and manage capital, compared to the previous incurred loss (ICL) model. Results show that under ECL, banks adopt a more aggressive opportunistic behavior in accordance with the income-smoothing and capital management approach. Management should be aware of this to imple-ment monitoring and control systems, increasing trustworthiness of financial information for investors' expectations.

Keywords: Incurred credit loss, Expected credit loss, Banks, Income smoothing, Capital management.

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1. Introduction

The incurred credit loss (ICL) model of IAS 39 was criticized to not recognize timely losses during the Global Financial crisis (GFC, 2007-2008) when, particularly for financial institutions, the abnormally low levels of pre-crises accumulated into loan loss reserves were not sufficient to absorb the incurred losses (i.e. Furlong and Knight, 2010; Gomaa *et al.*, 2019; Hashim and O'Hanlon, 2019). This circumstance brought several authorities to invite accounting standard setters to introduce new accounting rules for impairment in order to recognize more timely losses (e.g. Financial Stability Forum [FSF], 2009; G20, 2009).

Under this pressure, in 2014 the IASB published the accounting standard IFRS 9, *Financial Instruments* (which has substituted definitively the old IAS 39 since January 2018) by introducing a new model for the recognition of impairment, i.e. the Expected Credit Loss (ECL) model.

During the transition from IAS 39 to IFRS 9, entities switched their impairment approach from the previous ICL to the ECL model. Although the new ECL model overpassed some limits of the ICL model, some scholars are now questioning how the level of managerial discretion over the timing and measurement of expected losses could affect financial statements (e.g. Dong and Oberson, 2020; Krüger *et al.*, 2018; Novotny-Farkas, 2016). Considering that this issue deserves further investigation, the banking context is an appropriate field of investigation due to the relevance of financial instruments in annual reports of entities.

Generally speaking, accounting discretion is used to manage reported earnings. Literature proposes several incentives to explain whether firms recur to earnings management, such as capital market incentives (e.g. management buyouts and mergers plan) and contracts motivation (e.g. compensation plans, debt agreement) (Chang *et al.*, 2008; Huizinga and Laeven, 2012). Particularly in the banking context, previous studies confirm that banks adjust earnings to achieve capital, tax, and profit goals (e.g. Collins *et al.*, 1995; Chang *et al.*, 2008).

According to literature (e.g. Beatty and Liao, 2014; Curcio and Hasan, 2015), accounting for loan loss provisions (*LLP*) is a common tool to manage both earnings and capital. In particular, previous studies suggest the strategic role of *LLP* to achieve income smoothing and capital management goals. Income smoothing is a practice of earnings management whose aim is to reduce the variability of earnings across time (Shrieves and Dahl, 2003). To achieve this aim, bank managers increase *LLPs*, when earnings (before *LLPs*) are expected to be high and decrease *LLPs* when earnings are

expected to be low (Greenawalt and Sinkey, 1988). Since banks are subject to a stricter regulatory capital requirement, managers may be also encouraged to manage accounting capital (Ahmed *et al.,* 1999; Beaver and Engel, 1996; Bushman and Williams, 2012; Moyer, 1990). Generally, banks tend to increase *LLPs,* when capital levels are low, to keep adequately their capital ratios (Ahmed *et al.*, 1999; Anandarajan *et al.*, 2007; Bouvatier *et al.*, 2014; Curcio and Hasan, 2015).

To date, there is an increasing attention by scholars and standard setter on the effect of IFRS 9 by following different issues, such as the market reactions and earnings outcome. However, there is not consistently evidence on the relationship between *LLP* and ECL model, specifically whether the switch from the ICL to the ECL has changed the accounting practices of banks.

To address the above research question, based on a full sample of 403 European Union (EU) listed banks, we cluster the observations into two sub-samples: the ECL pre-implementation period (2015-2017) and the ECL implementation period (2018-2019). Using an OLS regression, we compare coefficient estimates for the two sub-samples to test the hypotheses of income smoothing and capital management.

The contribute of this study is, at least, threefold.

First, it contributes to the ongoing debate on IFRS 9, by covering the lack of studies on the effects of the new impairment model on income smoothing and capital management practices. Second, this study is consistent with previous studies (e.g. Tran *et al.*, 2020) concerning the strategic role of *LLP* to manage earnings and capital in the banking context (Curcio and Hasan, 2015; Danisman *et al.*, 2021). Third, we follow the IASB's request to investigate on the effect of the new standard on IFRS entities[1].

In our opinion, our study also offers some relevant practical implications. It contributes to clarify to users of financial statements, particularly investors, some concerns related to the accounting practices by bank preparers during the transition period from ICL to ECL. Specifically, it highlights the evidence of earnings and capital management which may mislead for an adequate understanding of bank performance and risk profiles (Huizinga and Laeven, 2012).

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[1] During the IASB Research Forum 2020, some members of Board explained the interest of IASB to know more about the effect of IFRS 9 on several outcomes related to IFRS entities such as financial ratios, market reactions and accounting practices. By doing so, members invited academic scholars to research more on these issues due to the lack of studies on such themes.

Thus, our study may be useful to the IASB's ongoing activities in order to the *Post Implementation Review* of IFRS 9*,* and for regulators and supervisory authorities interested in process of preparation of financial statements of banks.

Additionally, our findings emphasize the important role that an effective management control system (MCS) may play in order to monitor earnings manipulation practices. In particular, the enforcement of MCS in the banking context may have the potential to improve transparency within bank financial reporting, by constraining the opportunistic behaviour of managers.

The remainder of the paper proceeds as follows. Section II discusses the institutional background, the related literature review and the hypotheses development. Section III describes the research design. The empirical findings are discussed in Section IV, and Section V provides conclusions of our study.

2. Institutional background, literature review and hypotheses development

2.1. Institutional background

The impairment recognition under the ICL model has been widely criticized by regulators and scholars to have provided "too little, too late" losses during the GFC (2007-2008) (Barnoussi *et al.*, 2020; Barth and Landsman, 2010; Cohen and Edwards, 2017; European Central Bank [ECB], 2017; FSF, 2009; IASB, 2008; Kim *et al.*, 2020). Since losses were recognized only at the occurrence of triggering events under ICL, the huge losses due to the GFC were not absorbed by the lowest levels of reserves (Cummings and Durrani, 2016; Furlong and Knight, 2010; Hashim *et al.*, 2016; O'Hanlon, 2013).

Hence, the endorsement of new accounting requirement for the impairment recognition was driven by the need to overpass these limits and to establish a new approach able to anticipate the recognition of losses. The endorsement of IFRS 9 should achieve these goals through the introduction of the ECL model.

This model has stimulated an increasing scientific debate in order to investigate on its effects on financial institutions, which are expected to be enormously affected by the standard (e.g. Barnoussi *et al.*, 2020; European Banking Authority, 2017; García Osma *et al.*, 2019; Giner and Mora, 2019; Hashim *et al.,* 2019; Mechelli *et al.*, 2020). Scholars have developed sever-

al researches on this issue by investigating the related impacts on market reactions, financial ratios and earnings outcomes. However, to the best of our knowledge, there is not consistently evidence on the relationship between loan loss provisioning to manage earnings (or capital) and ECL model.

2.2. Literature review

Provisioning for loan losses refers to the accounting mechanism used in the recognition of credit losses, thus reducing an institution's reported net income in the period in which the provision is recognized and decreases the carrying value of the loans held by the institution (e.g. Di Martino *et al.*, 2020; Maffei, 2016). The subjective nature of provisioning for loan losses necessarily requires judgment of preparers. Accordingly, for a given loan portfolio, there will likely be a range of loan loss estimates that are considered reasonable.

The level of management discretion, however, depends also by the strengthen of the MCS. The existing literature has shown empirically that good MCS can inhibit opportunistic management behaviour (e.g., Allini *et al.*, 2018; Battista and Lucianetti, 2015; Chen *et al.*, 2017; Davidson *et al.*, 2005; Evans and Sridhar, 1996; García Osma *et al.*, 2019; Li *et al.*, 2020; Marra *et al.*, 2011; Wali and Masmoudi, 2020). MCS may be considered as the whole mix of elements which drives the strategy from its formulation to its implementation (Otley, 1999). In the banking context, there is a positive view which explains the existing of a bidirectional relationship between financial accounting and MCS, especially when financial accounting standards are more *principles-based* (Nilsson and Stockenstrand, 2015). In this case, in fact, since the standards leave a major room for judgements, MCS is expected to have a much stronger effect on the outcome of financial accounting numbers (Nilsson and Stockenstrand, 2015). Specifically, acting as controlling and enabling devices on management (e.g. Marchi, 2015, 2018; Simons, 1995), an effectiveness MCS suggests that differences in financial accounting numbers are much more complex and may not simply associated to the individual opportunistic behaviour of single managers. In other words, the more or less aggressive approach to the practices of earnings management has to be read also in light of the coexistence of deeply rooted components of the management control system (Nilsson and Stockenstrand, 2015). Based on these arguments, MCS are expected to claim an adequate level of transparency in the financial statement preparation pro-

cess (Nilsson and Stockenstrand, 2015) by acting as controlling devices (Simons, 1995) to reduce managers' opportunistic behaviour.

Literature suggests the strategic role played by *LLP* to smooth income (e.g. Anandarajan *et al.*, 2007; Azzali *et al.*, 2014; Beatty *et al.*, 2002; Cummings and Durrani, 2016; Curcio and Hasan, 2015) and manage capital (e.g. Ahmed *et al.*, 1999; Beaver and Engel, 1996; Bushman and Williams, 2012).

Specifically, income smoothing is a form of earnings management concerning in the practice of increasing *LLPs*, when earnings (before *LLPs*) are expected to be high and of decreasing *LLPs* when earnings (before *LLPs*) are expected to be low (Shrieves and Dahl, 2003). Thus, a positive and significant association between *LLPs* and earnings before these provisions suggests that entities smooth incomes (Curcio and Hasan, 2015; Greenawalt and Sinkey, 1988).

Considering the bank-level and country-level governance mechanisms, some studies find that the income smoothing behaviour is higher when banks are small and in poor financial conditions (Anandarajan *et al.*, 2007; Bhat, 1996) and when financial systems are more developed and market-oriented (Curcio and Hasan, 2015; Fonseca and Gonzàlez, 2008).

In addition, since banks are subject to a stricter capital regulatory requirement, banks may be also encouraged to manage capital (e.g. Beaver and Engel, 1996; Bushman and Williams, 2012). Capital management approach explains that banks tend to increase *LLPs*, when capital levels are low, to keep adequately their capital ratios (Ahmed *et al*., 1999; Anandarajan *et al*., 2007; Bouvatier *et al*., 2014; Curcio and Hasan, 2015).

The studies on capital management have been widely investigated under different accounting standards. For instance, Curcio and Hasan (2015) shows empirically that IAS/IFRS entities recur to capital management during the period 1996-2006 in the EU banking context. Considering a very huge observations period (from 1986 quarters to 2013 quarters), Tran *et al.* (2020) find that US banks are motivated to manage opportunistically *LLPs* to achieve capital goals.

2.3. Hypotheses development

IFRS 9 significantly expands the role of judgment on a process that is inherently discretionary in nature (e.g. Restoy and Zamil, 2017; Giner and Mora, 2019). At this point, ECB (2017, p. 5) explains that ECL requires the need of an "*expert judgment for accounting purposes, for which strong*

governance and clear internal processes have to be in place". The European Systemic Risk Board (2017, p. 73) adds that ECL requires *"a managerial discretion during the period in which the model is initially implemented"*.

Based on these arguments, there are several reasons to consider the ECL model as a more discretional impairment recognition approach than the ICL model.

First, the previous ICL required the recognition of impairment at the occurrence of a trigger event such as bankruptcy, financial reorganization, a breach of contract (defaulting on interest or principal payment) or adverse changes in the payment status, national or local economic conditions (Kim *et al.*, 2020). Thus, the concept of trigger event represented an important driver and guidance into the recognition processes under the ICL.

In place of the trigger event, the new ECL requires to recognize into accounting numbers also future events.

Consequently, the switch from ICL to ECL enhances the opportunity for managers to use higher discretion in recognizing loan losses.

Second, IFRS 9 states the definition of ECL on the basis of a qualitative approach (i.e. Giner and Mora, 2019). In particular, the impairment requirements establish a "three-stage algorithm" in which banks have to reserve one-year expected loss for normally non-performing loans (stage 1), to reserve lifetime expected loss for loans with substantially deteriorated credit quality (stage 2) and to build a specific *LLP* for defaulted loans (stage 3). This approach concerns a *principle-based* guidance which inevitability involves the discretionary of preparers. For instance, the standard differentiates ECL estimates in function of the significant increase in the credit risk, whose there is the lack of a precise conceptual definition.

In doing the impairment, managers are required to include historical information that is adjusted to reflect the impacts of current conditions, information of impairment in relation to incurred losses, and reasonable and supportable information obtainable with undue cost or effort at the reporting date, about forecasts of expected economic conditions, including macroeconomic factors.

Third, there is the lack of an explicit formula to estimate ECL (Chawla *et al.*, 2016). Hence, in the choice of a specific estimation process, preparers could select a formula which is more consistent with target objectives of income and capital.

Based on these arguments, we argue that the ability of the preparers to manage earnings and capital depends on the level of discretion allowed by the accounting requirements, as well as on the role played by control mech-

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anisms (e.g. Liu *et al.*, 2014; Van Tendeloo and Vanstraelen, 2005). Under IFRS 9, it should appear clearer that if, on one hand, the increased discretion may facilitate incorporation of more information about future expected losses, on the other one, it also increases the risk of an opportunistic behaviour of preparers. Coherently with the above reasoning, we expect that managers may be more encouraged to adopt an opportunistic behaviour in accordance with income smoothing and capital management approach, during the switch from ICL to ECL. Thus, we formulate the following hypotheses:

    H1 Banks smooth income after the adoption of ECL.
    H2 Banks manage capital after the adoption of ECL.

3. Research Design

3.1. Sample Selection

The sample consists of European Union listed banks which prepare consolidated financial statements under IFRS. We select all IFRS banks from *Orbis Bureau van Dijk Bank (BvD) BankFocus* by obtaining an initial sample of 1,059 banks. To cover the transition from IAS 39 to IFRS 9, data observations concern the period from 2015 to 2019. To date, we have only the availability of 2018 and 2019 observations to capture data related to ECL implementation. Thus, in order to create two sub-samples, which are not enormously different in terms of numerosity of observation data, we cover the period 2015-2019. Specifically, we cluster the data into two periods. The first period covers observations from 2015 to 2017 (ECL pre-implementation period), whereas the second period covers observations from the years 2018 and 2019 (ECL implementation period). After having removed all the missing data, we obtain a final sample of 403 banks from 27 European countries. Thus, we observe 2,015 firm-year observations.

Table 1 shows the sample distribution by countries. Most sample observations are from four countries: France, Italy, Austria and Germany.

Table 1. Sample selection and sample composition by country

Panel A: Sample Selection		
	Banks-years	**Banks**
Firms Initial sample Listed banks having IFRS information available in the *Orbis Bureau van Dijk Bank (BvD) BankFocus*	5,295	1,059
Missing data	3,280	656
Final study sample	2,015	403

Panel B: Bank observations by country					
Country	**Banks**	**Percentage**	**Country**	**Banks**	**Percentage**
Austria	26	6.45%	Italy	43	45.94%
Belgium	12	2.98%	Latvia	4	0.75%
Bulgaria	11	2.73%	Lithuania	4	0.37%
Croatia	7	1.74%	Luxembourg	7	1.12%
Cyprus	9	2.23%	Malta	5	0.62%
Czech Rep.	9	2.23%	Netherlands	16	1.87%
Denmark	11	2.73%	Poland	15	2.25%
Estonia	8	1.99%	Portugal	15	10.36%
Finland	6	1.49%	Romania	8	1.62%
France	103	25.56%	Slovakia	4	0.75%
Germany	22	5.46%	Slovenia	6	1.50%
Greece	5	1.24%	Spain	25	3.37%
Hungary	11	2.73%	Sweden	5	1.25%
Ireland	6	1.49%	TOTAL	403	100%

Notes: Panel A of Table 1 presents the sample selection process taken to derive the final study sample.
Panel B reports the distribution of the sample by country.

3.2. Regression Model

To examine the hypotheses of income smoothing and capital management, we first employ a *LLP* discretion model. We employ a modified version of the cross-sectional model already used by scholars (e.g. Danisman *et al.*, 2021; Soedarmono *et al.*, 2017) in order to provide an explanatory model, as follows:

$$LLP_{i,t} = \alpha_0 + \alpha_1 PREMANAGEDEARNINGS_{i,t} + \alpha_2 CR_{i,t} + \alpha_3 \Delta LOAN_{i,t} + \alpha_4 \Delta NPL_{i,t} + \alpha_5 LOAN_{i,t-1} +$$

$$\alpha_6 NPL_{i,t-1} + \alpha_7 SIZE_{i,t-1} + \alpha_8 \Delta GDP_{i,j,t} + \alpha_9 \Delta UNEMPL_{i,j,t} + \varepsilon_{i,t} \qquad (1)$$

where i is the bank, j is the country and t is the year of reporting. *LLP* refers to loan loss provisions scaled by lagged net loans, measured as gross loans less loan loss reserves (Bushman and Williams, 2012; Danisman *et al.*, 2021). The model at the Equation (1) assumes that the *LLP* is affected by both firm characteristics and country-level indicators. In other words, the dependent variable is assumed to capture the adjustments reflecting banks' performance fundamentals. This model accounts for the possibility that managers use discretionary *LLP* to smooth income or manage capital. In particular, to test the hypothesis of income smoothing behaviour and capital management behaviour, we estimate the coefficients of interest variables: *PREMANEGEDEARNINGS* (income smoothing) and *CR* (capital management).

PREMANAGEDEARNINGS measures earnings before taxes and *LLP*s of the bank i for the year t. This is the variable of interest to test income smoothing. According to previous literature (Beatty and Liao, 2014), preparers increase (decrease) *LLP*s when earnings (before *LLP*s) are expected to be high (low). Hence, the predicted sign of the income smoothing coefficient (α_1) is positive.

CR measures the equity capital lagged by total assets. The capital management approach assumes that when managers increase *LLP*, when capital levels are low (Ahmed *et al.*, 1999; Anandarajan *et al.*, 2007; Bouvatier *et al.*, 2014; Curcio and Hasan, 2015). Thus, we expect a negative coefficient (α_2) for *CR*.

To control for non-discretionary components of *LLP*, the model also includes a number of control variables, which the literature has identified as relevant for banks' provisioning, thus considering both bank-level and country-level indicators. We have lagged al the continuous variables to control the hedioscricity.

ΔLOAN measures the change in the total net loans, lagged loans at the beginning of the year t. Net loans are measured as gross loans less loss loan reserves. Intuitively, a positive change for *LOAN* during the year has the potential to affect positively the recognition of *LLP* at the end of the period (Beatty and Liao, 2014; Bushman and Williams, 2012).

ΔNPL measures the change in non-performing loans, scaled by lagged total assets. This explanatory variable is included to measure the changes of the quality of loan portfolios (Beatty *et al.*, 2002). Since the changes in *NPL* are indicators of potential future loan losses, they are likely to be seri-

ally correlated. Accordingly, Wahlen (1994) asserts that the change in non-performing loans, as a bank-specific indicator of potential future loan losses, should precede or coincide with provisions. Thus, *LLP* is expected to be positively related to the change in non-performing loans.

LOAN measures the ratio of the beginning balance of loans, lagged total assets at the year *t-1*. We expect that the level of *LLP* depends from the extant of loan portfolio at the beginning of the year (Curcio and Hasan, 2015; Lobo and Yang, 2001).

NPL measures the beginning balance of non-performing. By affecting the level of future net charge-offs, *NPLs* are also expected to influence the collectability of current loans. In this regard, we expect a positive sign for the coefficient of *NPL* (Collins *et al.*, 1995; Kanagaretnam *et al.*, 2005; Wahlen, 1994).

SIZE is the natural logarithm of the total asset of the bank at the beginning of the year *t*. Previous literature provides inconsistent argumentations on the relation between *LLP* and *SIZE* (e.g., Dechow and Dichev, 2002; Doyle *et al.*, 2007).

Additionally, we include some macro-variable indicators which are the growth rate of Gross Domestic Product (*ΔGDP*) and the change in unemployment rate (*ΔUNEMPL*) to control for the effects of the macroeconomic environment on the quality of loan portfolios, even though the change in non-performing loans and loan charge-offs takes into account the macroeconomic effects (Kanagaretnam *et al.*, 2004; Tran *et al.*, 2020). We obtain these data by using *Eurostat Database.*

3.3. Descriptive Statistics and Correlation

Table 2 presents the descriptive statistics of the regression variables at the Equation (1).
Panel A bases on data observations for the period 2015-2017 (ECL pre-implementation period), whereas Panel B on that for the period 2018-2019 (ECL implementation period). These variables include the ratio of loan loss provisions to loans (*LLP*), the profit before taxes and loan loss provisions (*PREMANAGEDEARNINGS*), the ratio equity on total assets (*CR*), the change of loans (*ΔLOAN*) and non-performing loans (*ΔNPL*) for the year lagged to loans at the beginning of the year, net loan lagged total assets (*LOAN*) and non-performing loans lagged net loans (*NPL*), the growth of gross domestic product (*ΔGDP*), the growth of unemployment rate (*ΔUNEMPL*) and natural logarithm of total assets (*SIZE*). To mitigate the effect

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of outliers, we winsorize all the continuous variables at the top and bottom 1%.

Table 2 shows that mean *LLP* is higher for ECL period than for ICL period: 8.7% versus 0.7%, thus confirming that provisions are relatively important accruals for ECL model more than for ICL ones. On average, banks during the whole period (2015-2019) have similar *PREMANAGEDEARNINGS* (0.013 vs 0.011), CR (0.190 vs 0.197) and *SIZE* (16.556 vs 16.678). On average, *ΔLOAN* is positive in the period 2015-2017 and equal to 0.074, thus meaning an increase in the lending activities of the sample banks. The positive trend is also confirmed in the period 2018-2019 where, on average, *ΔLOAN* is equal to 0.004. Additionally, on average, *ΔNPL* is positive (0.467) in the first period, thus suggesting a deterioration of the quality of the portfolio. This result is also consistent with the average increasing of the loan for the same period. The change in *NPLs* for the period 2018-2019 has been positive (0.003). Thus, there has been a deterioration of loan portfolio for the overall time of observations, since, on average, *ΔNPL* is positive for both the periods, i.e. 2015-2017 and 2018-2019. However, it should be noticed that the positive change in *NPLs* for the period 2015-2017 has been major than that for the period 2018-2019. Partly, this evidence could also be associated to the fact that, at the basis, the lending capacity (*ΔLOAN*) has increased more before the ECL endorsement (0.074) compared to the implementation period (0.004). On average, the quantity and the quality composition of loans portfolio are different in the two periods. About the quantity composition, based on the ratio of loans on total assets (*LOAN*), the related value is equal to 0.558 in the first period and to 0.521 in the second period. Following the quality composition, based on the ratio of non-performing loans on loans, the related value is equal to 0.18 (2015-2017) and to 0.216 (2018-2019), thus suggesting a deterioration of the quality of loan portfolio from the ECL pre-implementation period to ECL implementation period. Finally, we also observe a similarity of macroeconomic scenario considering both the growth for *GDP* (0.026 vs 0.023) and the growth of unemployment rate (0.015 vs 0.012).

Table 2. Descriptive statistics of the regression variables

Panel A: ECL pre-implementation period (2015-2017)						
Variables	Mean	STD	p5	Median	p95	N
LLP	0.007	0.028	0.002	0.003	0.035	1,209
PREMANEGEDEARNINGS	0.013	0.024	− 0.000	0.010	0.032	1,209
CR	0.190	0.069	0.121	0.176	0.318	1,209
ΔLOAN	0.074	0.486	− 0.191	0.020	0.353	1,209
ΔNPL	0.467	0.178	− 0.078	0.452	0.638	1,209
LOAN	0.558	0.183	0.044	0.622	0.943	1,209
NPL	0.180	0.187	0.003	0.048	0.472	1,209
SIZE	16.556	0.186	13.466	16.538	19.983	1,209
ΔGDP	0.026	0.022	0.011	0.023	0.052	1,209
ΔUNEMPL	0.015	0.010	0.002	0.012	0.033	1,209
Panel B: ECL implementation period (2018-2019)						
Variables	Mean	STD	p5	Median	p95	N
LLP	0.087	0.234	0.004	0.071	0.123	806
PREMANEGEDEARNINGS	0.011	0.017	0.000	0.008	0.027	806
CR	0.197	0.065	0.131	0.184	0.316	806
ΔLOAN	0.004	0.043	− 0.037	0.003	0.012	806
ΔNPL	0.003	0.041	0.000	0.002	0.010	806
LOAN	0.521	0.116	0.171	0.640	0.853	806
NPL	0.216	0.581	0.003	0.035	0.359	806
SIZE	16.678	0.181	13.657	16.665	20.060	806
ΔGDP	0.023	0.014	0.003	0.018	0.052	806
ΔUNEMPL	0.012	0.008	0.004	0.010	0.029	806

Notes: The table presents the descriptive statistics of the regression variables at the Equation (1). Panel A reports the descriptive statistics for the variable observations for the period 2015-2017. Panel B reports the descriptive statistics for the variable observations for the period 2018-2019. PREMANAGEDEARNINGS measures the profit before taxes and loan loss provisions. CR is the ratio of capital equity on total assets. ΔLOAN is the change of loans lagged loans. ΔNPL is the change of and non-performing loans lagged loans. LOAN measures net loan lagged total assets. NPL measures non-performing loans lagged loans (NPL). ΔGDP measures the growth of gross domestic product. SIZE is the natural logarithm of total assets. ΔUNEMPL measures the growth of unemployment rate.

Table 3 presents sample Pearson correlations between the variables at the Equation (1) for the two periods: 2015-2017 (Panel A) and 2018-2019 (Panel B). Panel A shows that the correlations between the Equation (1) dependent variable, *LLP*, and the interest variables are significant at the 5% level. Specifically, *LLP* is negatively correlated with *PREM-ANAGEDEARNINGS* and equal to – 0.011, thus suggesting that banks does not smooth income under ICL. Further, *LLP* is negatively correlated with CR and equal to – 0.043, thus suggesting that banks manage capital ratio

under ICL. Panel B shows that the correlations between the Equation (1) dependent variable, *LLP*, and the interest variable are significant at the 5% level. Specifically, *LLP* is positively correlated with *PREM-ANAGEDEARNINGS* and equal to 0.027, thus suggesting that banks smooth income under ECL. Further, *LLP* is negatively correlated with CR and equal to – 0.076, thus suggesting that banks manage capital ratio under ICL. Thus, the correlation results confirm the expected sign, i.e. banks increase opportunistic behaviour during the transition from ICL to ECL. In addition, results also evidence that during the transition banks enforce their capital management behaviour (the correlated coefficient increases in absolute value). Thus, correlation matrix supports our research hypothesis: H1 (income smoothing) and H2 (capital management). Table 3 Panel A shows that the correlations between the Equation (1) dependent variable, *LLP*, and all the other independent variables are significant at the 5% level (except for *SIZE* and *ΔUNEMPL*). These correlations have the expected sign. *ΔLOAN*, *ΔNPL* and NPL are correlated positively with the dependent variable *LLP*. The values are respectively equal to 0.018, 0.005 and to 0.178. Accordingly, the level of *LLP* is assumed to be affected by the increase of lending activities by the entities, the deterioration of the quality of loan portfolio and the beginning balance of non-performing loans. These results are partly confirmed also for the ECL implementation period (Panel B); only for *ΔLOAN* (0.099) and *ΔNPL* (0.099).

4. Results and discussion

4.1. OLS Estimations

To test the hypotheses, we estimate the coefficients at the Equation (1) by running an Ordinary Least Square regression in accordance with previous studies (Beatty and Liao, 2014; Tran *et al.*, 2020). Table 4 shows the coefficients estimations for the two sub-samples: ECL pre-implementation period (2015-2017) and ECL implementation period (2018-2019).
For the purpose of this paper, we want to investigate whether banks have enforced the income smoothing behaviour during the transition from ECL to ICL. To do that, we compare coefficients between the two sub-samples (see the last column of Table 4).

Table 3. Matrix of correlations

Panel A: ECL pre-implementation period										
LLP	PREMAN.	CR	ΔLOAN	ΔNPL	LOAN	NPL	SIZE	ΔGDP	ΔUNEMPL	
1.000	−0.011***	−0.043***	0.018***	0.005***	−0.004***	0.178***	−0.123	−0.012***	0.102	LLP
	1.000	0.042***	0.014***	0.014***	−0.017***	0.039***	−0.148	0.009***	0.053***	PREMAN.
		1.000	0.019***	−0.003***	−0.018***	−0.019***	−0.089	0.045***	−0.019***	CR
			1.000	0.007***	−0.008***	−0.040***	−0.091	0.032***	0.061	ΔLOAN
				1.000	−0.002***	−0.071***	−0.109	0.049***	0.018***	ΔNPL
					1.000	−0.004***	0.131	−0.023***	−0.023***	LOAN
						1.000	−0.140	0.019***	0.000***	NPL
							1.000	−0.127	−0.217	SIZE
								1.000	0.360	ΔGDP
									1.000	ΔUNEMPL
Panel B: ECL implementation period										
LLP	PREMAN.	CR	ΔLOAN	ΔNPL	LOAN	NPL	SIZE	ΔGDP	ΔUNEMPL	
1.000	0.027***	−0.076***	0.099	0.099	−0.004***	−0.001***	−0.011***	0.015***	−0.014***	LLP
	1.000	0.017***	−0.029***	−0.029***	0.099***	0.063***	−0.180	0.164***	0.130	PREMAN.
		1.000	0.077	0.079	0.014***	0.089***	−0.033***	−0.038***	−0.087***	CR
			1.000	0.099	−0.004***	−0.002***	−0.011***	0.014***	−0.015***	ΔLOAN
				1.000	−0.003***	−0.004***	−0.011***	0.014***	−0.021***	ΔNPL
					1.000	−0.004***	−0.134	0.069***	0.133***	LOAN
						1.000	−0.027***	−0.005***	−0.003***	NPL
							1.000	−0.256***	−0.223	SIZE
								1.000	0.420	ΔGDP
									1.000	ΔUNEMPL

Notes: The table presents the matrix correlations of the regression variables at the Equation (1). Panel A reports the matrix correlation for the variable observations for the period 2015-2017. Panel B reports the matrix correlation for the variable observations for the period 2018-2019. LLP is the ratio of loan loss provisions to loans. PREMANAGEDEARNINGS measures the profit before taxes and loan loss provisions. CR is the ratio of capital equity on total assets. ΔLOAN is the change

of loans lagged loans. ΔNPL is the change of and non-performing loans lagged loans. LOAN measures net loan lagged total assets. NPL measures non-performing loans lagged loans (NPL). ΔGDP measures the growth of gross domestic product. SIZE is the natural logarithm of total assets. ΔUNEMPL measures the growth of unemployment rate. *** denotes significance at 5%.

Results show that the coefficient for *PREMANAGEDEARNINGS* is significantly negative under ICL ($\alpha_1 = -0.184$) and positive under ECL ($\alpha_1 = 0.358$). Thus, due to the increasing and significant trend of the coefficient ($\alpha_1[ICL] < \alpha_1[ECL]$), finding suggests that bank managers enhance the opportunistic behaviour *via* income smoothing practices during the switch between the two opposite impairment models. Thus, results provide support for Hypothesis 1.

This finding is consistent with previous studies for two main reasons. First, we find that IFRS entities smooth income to reduce variability of earnings across time (e.g. Curcio and Hasan, 2015; Leventis *et al.*, 2011; Ozili and Outa, 2019; Tran *et al.*, 2020). Second, results also show that accounting for *LLP* is strategic to manage earnings (Shrieves and Dahl, 2003).

To test H2, we analyse whether capital management behaviour increases during the switch from ICL to ECL. Table 4 shows that under ICL the coefficient for *CR* is negative and statistically significant ($\alpha_2 = -0.015$) by suggesting the recurring of capital management practices via *LLPs* under ICL. Under ECL, we also observe that the coefficient for *CR* is significantly negative ($\alpha_2 = -0.032$) by suggesting that banks continue to manage capital *via LLPs*, however in a more aggressive manner. Similarly, to the income smoothing hypothesis, to test capital management issue, we compare the coefficients (see last column of Table 4). By doing so, we observe that switching from ICL to ECL model, the opportunistic behaviour of managers becomes more aggressive ($|\alpha_2[ICL]| < |\alpha_2[ECL]|$), meaning that preparers enforce the managing of capital via *LLPs* during this transition. Thus, results provide support for Hypothesis 2.
More specifically, due to the increase (in absolute value) of the significant coefficient α_2, the relationship between *LLPs* and *CR* becomes higher by confirming a more aggressive approach to the capital management. This finding suggests that ECL lends itself to a more opportunistic behaviour in accordance with the capital management approach (e.g. Ahmed *et al.*, 1999; Bouvatier *et al.*, 2014).

More importantly, both results confirm our expectations concerning the cruciality of the transition period from ICL to ECL. The main issue relates to the fact that the standard provides a new set of accounting requirements for impairment in which a high level of management discretionary is involved. This is because IFRS 9 provides a *principle-based* guidance of the recognising and measurement of ECL. Thus, findings confirm some concerns expressed in the ongoing debate (e.g. Giner and Mora, 2019; Gomaa *et al.*, 2019; Restoy and Zamil, 2017;).

In addition, OLS estimates also confirm the expected sign for some control variables. The coefficient of *ΔLOAN* is positive for both the periods, i.e. 0.003 (2015-2017) and 0.001 (2018-2019), and also significative for the ECL implementation period. Thus, partly, we find that the change in the total net loans has an overall positive impact on the bank management's choice of *LLP* in accordance with previous studies (Beatty and Liao, 2014; Bushman and Williams, 2012). Intuitively, when lending activities extend, the probability to account *LLP* increases due to the larger loans portfolio. About *ΔNPL*, we find a positive (but not significant) sign for the coefficient ($\alpha_4 = 3.169$) for the first period, and a positive and significant coefficient ($\alpha_4 = 0.001$) for the second period. Results also show that *LLP* is positively (but not significantly) associated with *LOAN* for the period 2015-2017 and negatively (and significantly) associated with *LOAN* for the period 2018-2019. Thus, results are in contrast with previous studies which find that *LLP* largely depends by the beginning balance of *LOAN* (Curcio and Hasan, 2015; Lobo and Yang, 2001). In addition, *LLP* is positively (and significantly) associated with *NPL* ($\alpha_6 = 0.003$) for the first period and positively (but not significantly) associated with *NPL* ($\alpha_6 = 1.105$). Overall, results are consistently with previous studies (Curcio and Hasan, 2015; Tran *et al.*, 2020). Further, for both of subsamples we find that the coefficient for *SIZE* is significantly negative, i.e. $\alpha_7 = -0.01$ (2015-2017) and $\alpha_7 = -0.001$ (2018-2019). Thus, results are in accordance with Dechow and Dichev (2002), i.e. large banks tend to have more stable operations and a greater ability to diversify risks, by expecting large banks to report small amounts of *DLLP*. About macro-variables indicators, we find that *LLP* for the overall period 2015-2019 increases when the growth of *GDP* reduces ($\alpha_8 = -0.086$ for the first period and $\alpha_8 = -0.044$ for the second period) and when the rate of unemployment reduces ($\alpha_9 = 0.288$ for the 2015-2017 period and $\alpha_9 = 0.129$ for the 2018-2019 period).

Table 4. OLS regression estimation

Variables	Expected sign	ICL		ECL		ICL vs ECL difference in means
		Coeff	p-value	Coeff	p-value	
const		0.035	<0.0001***	0.014	0.0007***	−0.021
PREMANEGEDEARNINGS	+	−0.184	<0.0001***	0.358	<0.0001***	0.542
CR	−	−0.015	0.1770	−0.032	<0.0001***	−0.017
ΔLOAN	+	0.003	0.1091	0.001	<0.0001***	−0.002
ΔNPL	+	3.169	0.6684	0.001	0.0021***	−3.168
LOAN	+	2.457	0.6999	−6.826	0.0234***	−9.283
NPL	+	0.003	<0.0001***	1.105	0.8528	1.102
SIZE	+/−	−0.01	0.0005***	−0.001	0.0198***	0.009
ΔGDP	+	−0.086	0.0223***	−0.044	0.1361	0.042
ΔUNEMPL	+	0.288	0.0004***	0.129	0.0071***	−0.159
Period		2015-2017		2018-2019		
N° Obs. (tot 2,015)		1,209		806		
R^2		0.15		0.99		
F		11.759***		5.193***		

Notes: The table presents the results of the OLS estimation of the regression of LLP on explanatory variables at the Equation 1. LLP is the ratio of loan loss provisions to loans. PREMANAGEDEARNINGS measures the profit before taxes and loan loss provisions. CR is the ratio of capital equity on total assets. ΔLOAN is the change of loans lagged loans. ΔNPL is the change of and non-performing loans lagged loans. LOAN measures net loan lagged total assets. NPL measures non-performing loans lagged loans (NPL). ΔGDP measures the growth of gross domestic product. SIZE is the natural logarithm of total assets. ΔUNEMPL measures the growth of unemployment rate. *** denotes significance at 5%.

4.2. Robustness test

In the OLS pooled regression model all coefficients are constant across time and entities, thus to check the robustness of our results, we also esti-

mate coefficients with panel data models including the (GLS) random effects model. Estimated coefficients confirm that banks increase income smoothing and capital management behaviour during the transition from ICL to ECL. Specifically, the absolute value of difference in coefficients means between α_1(ECL) and α_1(ICL) increases of 0.358, by suggesting banks become more income smoother, thus H1 is accepted. Further, the absolute value of difference in coefficients means between α_2(ECL) and α_2(ICL) increases of 0.015, by suggesting banks manage more capital through the accountability of *LLP* under ECL, thus H2 is accepted.

Table 5. (GLS) random effects regression estimation

Variables	Expected sign	ICL		ECL		ICL vs ECL difference in means
		Coeff	p-value	Coeff	p-value	
const		0.031	0.0046***	0.022	<0.0001***	−0.009
PREMANEGEDEARNINGS	+	−0.114	<0.0001***	0.244	<0.0001***	0.358
CR	−	−0.021	0.0760	−0.036	0.0002***	−0.015
ΔLOAN	+	0.002	0.9650	0.001	<0.0001***	−0.001
ΔNPL	+	0.031	0.0564	−0.002	0.022***	−0.033
LOAN	+	0.832	0.9140	−0.001	<0.0001***	−0.833
NPL	+	0.003	<0.0001***	0.323	0.092	0.320
SIZE	+/−	−0.02	0.0068***	−0.002	0.0048***	0.018
ΔGDP	+	−0.059	0.0013***	−0.044	0.178	0.015
ΔUNEMPL	+	0.067	<0.0001***	0.029	<0.0001***	−0.038
Period		2015-2017		2018-2019		
N° Obs. (tot 2,015)		1,209		806		

The table presents the results of the GLS estimation of the regression of LLP on explanatory variables at the Equation 1. LLP is the ratio of loan loss provisions to loans. PREMANAGEDEARNINGS measures the profit before taxes and loan loss provisions. CR is the ratio of capital equity on total assets. ΔLOAN is the change of loans lagged loans. ΔNPL is the change of and non-performing loans lagged loans. LOAN measures net loan lagged total assets. NPL measures non-performing loans lagged loans (NPL). ΔGDP measures the growth of gross domestic product.

SIZE is the natural logarithm of total assets. ΔUNEMPL measures the growth of unemployment *rate. *** denotes significance at 5%.*

5. Conclusions

Under ICL model the negative experience of "too little, too late" during the GFC (2007-2009) showed the need to endorse a new approach of loss recognition, particularly capable to capture also forward looking information. This issue has been considered by the IASB in 2014 with the publishment of IFRS 9 *Financial Instruments*

The standard has established a new impairment model based on the recognising of expected credit losses. By doing so, it has overpassed the limit of untimely impairment under ICL. However, it has also introduced a new process of loss estimation, which involves a major accounting discretion in order to the preparation of financial statements.

Based on this argument, the present study aims to research whether the transition from the ICL to ECL is accompanied by changes in accounting practices by banks, consistently with the theory of income smoothing and capital management.

Using a sample of 403 EU banks, results suggest that during the first years of adoption of ECL preparers adopt a more opportunistic behaviour in line with income smoothing and capital management approach.

This study contributes to previous literature on the discretionary accounting behaviour in the banking setting (Beatty and Liao, 2014; Curcio and Hasan, 2015; Danisman *et al.*, 2021; Ozili and Outa, 2019; Tran *et al.*, 2020), and extends the ongoing ECL-focused debate (Giner and Mora, 2019; Novotny-Farkas, 2016).

This study provides also some relevant implications.

First, it offers a better understanding of accounting practices adopted by EU banks managers during the switch from ICL to ECL. This concern may be useful for users, particularly for investors. This is because the occurrence of forms of earnings and capital management may mislead users in order to an adequate assessment of banks' future performance and risks.

This study is also beneficial to regulators, in order to ensure high quality of reported accounting outcomes.

Thus, answering to the last 2020 IASB Research Forum in November 2020, our findings could be helpful for standard setter in supporting the nearest activity of IASB related to the *Post-implementation Review of IFRS 9* concerning ECL requirements.

Lastly, our study could be beneficial in supporting the effectiveness of the management control system (Caldarelli and Marchi, 2018). Based on the relationship between financial accounting and the possible control devices (Simons, 1995), the enforcement of MCS in banking context may have the potential to benefit the level of transparency within the preparation of financial statements by constraining the opportunistic behaviour of managers. In this regard, for instance, consistently with several studies (e.g. Marra *et al.*, 2011; Battista and Lucianetti, 2015), the strong presence of independent directors in the board that can more efficiently monitor the management and the enforcement of the audit committee that effectively carries out its duties may be some examples of mechanisms to enforce the monitoring function to avoid opportunistic behaviour of the bank managers, including earnings management. However, how MCS in the banking context may reduce ECL manipulation is not investigated in this study, although it concerns an issue that deserves further investigation. In addition, scholars may also extend the issues of our study to other IFRS not EU entities to consider the possible implications of different regulatory and supervisory environments.

Lastly, it must be noticed that the ongoing Covid-19 pandemic creates a new scenario under which the opportunistic behaviour of preparers may be investigated. Further researches should inevitably consider the combined effect of the new accounting requirements and the current global financial crisis as further drivers of earnings and capital management.

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