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Accounting and auditing of credit loss estimates: The *hard* and the *soft*

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ABSTRACT

A key goal of financial reporting is to address information asymmetries, which are amplified in the case of banks given their credit, maturity and liquidity transformation and complex, judgmental accounting standards dealing with expected credit losses (ECL).

The paper explores the role of bank management in estimating and recognizing ECL, and how external auditors challenge the resulting figures. Based on analysis of G-SIB disclosures, it concludes that management and auditors tend to prioritize observable and verifiable, *hard information* to reduce challenge to their reported estimates and protect against the threat of legal liability. Emphasis on such information facilitates loss deferral, damaging the reliability of banks' financial reporting, obscuring their safety and soundness picture and jeopardizing financial stability.

Based on these conclusions, the paper seeks to open a new path to the research and policy analysis of credit loss recognition, introducing proposals to address the procyclicality of credit loss accounting by tackling inappropriate incentives that decouple risk taking from its translation onto banks' financial statements.

1. Background: limited liability, financial reporting and banks' credit losses

In a limited liability context, the interests and risk preferences of management and shareholders seldom align with those of creditors. Given their unlimited upside potential, shareholders tend to evaluate and reward managers on the basis of share price appreciation, bending management's goal toward short-term value maximization.

Strategies to achieve that goal – such as sustained dividend pay-outs or share buybacks – require a recurrent stream of profits, often pursued through asset growth that comes alongside higher risk and leverage. Management could be tempted to understate both, and *financial reporting* aims at preventing such *misstatement* and mitigating the information asymmetries that stem from the clash of interests and competing attitudes toward risks.[2]

The effectiveness of financial reporting rests on its relevance and reliability to the resource allocation decisions of the "primary users" – existing and potential *investors, lenders* and other *creditors* lacking the ability or resources to gather the specific information or draft the contracts necessary to protect their interests. *Financial statements* represent the end product of financial reporting and thus the common, standardized means of delivering public information about a company's financial position and performance.

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[2] The role of financial information as a critical element of the financial infrastructure is widely acknowledged. Examples include Crockett (2002), Turner (2015), or Bailey (2016).

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That end product is the responsibility of those charged with a company's governance. However, its overall usefulness depends on high-quality *accounting standards* developed with input from all relevant stakeholders, as well as on management's *interpretation* of the criteria in those standards to determine the estimates and recognition patterns in the financial statements.

Because *managerial discretion* in applying the standards can lead to accidental or conscious misrepresentation of financial statement figures, challenging and consistent *verification* by independent auditors is also key to effective financial reporting. Discretion increases in lockstep with the judgmental nature of a standard, making the verification more cumbersome and increasing the quality threshold for the *auditing standards* and audit firms' methodologies, both of which should aim at ensuring rigorous assurance supported by appropriate evidence.[3]

This paper addresses the interpretive choices of management and auditors and how those choices can affect the effectiveness of financial reporting. More specifically, it deals with the financial reporting of *banks*, where information asymmetries are reinforced given the inherent characteristics of the business and the highly judgmental accounting standards.

The paper focuses on banks' main estimate, *credit losses*, exploring the importance of their appropriate estimation, recognition and verification. It posits that, even though the numerous factors affecting credit risk should result in earlier loss recognition when a bank's lending strategy is more aggressive, losses tend to be deferred as a result of a combination of limited liability, leverage and principles-based accounting standards. This tendency seems to operate irrespective of the applicable accounting standard and the bank's risk appetite and thus decouples loss data from the actual evolution of credit risk.

Relevant research supports that conclusion, describing a cyclical pattern whereby the ratio of credit losses to loan volume or GDP systematically falls during periods of economic growth and conversely rises during downturns.[4] However, the literature fails to explain the rationale for decisions that result in loss deferral. This paper offers a new perspective into such rationale based on analysis of the notes to the financial statements and audit reports of global systemically important banks (G-SIBs). The analysis shows how bank management and auditors tend to prioritize information that is observable and verifiable by third parties when determining and evaluating the credit loss estimates. It also explains the incentives behind that choice.

Calls had already been raised to monitor application of the relevant credit loss accounting standards and the timeliness of loss recognition.[5] This paper takes a step back to expose the shortcomings in the existing financial reporting process of banks, as well as how they can reinforce the *procyclical* nature of bank lending. In doing so, it opens a potential new path to the research and policy analysis of credit loss recognition and its effects on *financial stability*.

The paper is structured as follows: Section 2 presents the rationale that supports the destabilizing role of untimely credit loss recognition, outlining the features of existing accounting frameworks; Section 3 describes the incentives that characterize audit and the structure of the "*big audit*" market; Section 4 explains how the choices of bank management and auditors determine the actual impact of credit loss estimates, dissecting their incentives to prioritize certain types of information when making those choices; Section 5 introduces proposals to shape the research and policy analysis of credit loss recognition and its effects on financial stability going forward; and Section 6 concludes.

2. Credit loss accounting: complexity and procyclicality

The information asymmetries inherent to limited liability structures are amplified in the case of banks and other financial institutions engaged in credit, maturity and liquidity transformation. These asymmetries compound when judgmental accounting standards are introduced in a context of increasingly complex constructs supporting the *leverage* and *maturity mismatch* associated with such transformation.

The immediate implication is on the reporting of credit losses, which represent the main estimate in banks' financial statements and are therefore fundamental to explaining their capital adequacy. The judgmental nature of this estimate recurrently raises concerns around the reliability of banks' financial information. Indeed, prominent cases of favorable (so-called *clean*) audit reports issued shortly before enforcement or resolution action evidence a problem in the estimation and recognition of credit losses. Given the features associated with these institutions, such problem can represent a threat to the sector's safety and soundness and overall financial stability.

The global financial crisis (GFC) and previous episodes show how latent overvaluations of financial assets can exacerbate procyclical lending contractions through abrupt, generalized recognition of losses concurrent with a surge in delinquencies, defaults and bankruptcies. This pattern is well known, with banks pursuing leveraged growth during upswings, favored by profit-linked pay-outs and a disregard of the risks. As credit spreads surge and liquidity contracts, numerous experiences have shown the difficulties in unwinding overvalued positions, which usually culminate in downward price spirals and restricted access to funding, exposing the previously deferred losses and restraining the flow of credit to the economy when most needed.[6]

[3] The importance of appropriate interpretation and application of accounting standards and consistent auditing of the resulting financial statements is stressed by the Financial Stability Board (https://www.fsb.org/work-of-the-fsb/policy-development/additional-policy-areas/accounting-and-auditing/), as well as the 2009 Report of the Financial Crisis Advisory Group to the G20 on the standard-setting implications of the global financial crisis (https://www.fasb.org/jsp/FASB/Page/SectionPage?cid=1176156365656).

[4] Berger and Udell (2004), Dugan (2009), or Huizinga and Laeven (2019). See also the 2009 Report of the Financial Stability Forum's Working Group on Provisioning (https://www.fsb.org/wp-content/uploads/r_0904g.pdf).

[5] See the 2019 Report of the European Systemic Risk Board on "*The cyclical behaviour of the ECL model in IFRS 9*" (https://www.esrb.europa.eu/pub/pdf/reports/esrb.report190318_reportonthecyclicalbehaviouroftheECLmodel~2347c3b8da.en.pdf).

[6] Brunnermeier et al. (2009).

In assessing the causes of these procyclical spirals, it would seem reasonable to explore patterns and trends extracted from available quantitative information. Historical loss data result from application of the existing accounting standards dealing with credit loss recognition, which over time have evolved toward *principles-based* paradigms. This has given management increased discretion, and decisions regarding how to estimate and when to recognize the loss can take numerous factors into consideration, including those of a *general* nature, such as economic conditions or competitive trends, or *idiosyncratic* factors, which include a bank's risk profile or underwriting practices.[7]

With all those factors in permanent change, assessing the time series of loss data that result from applying the accounting standards can provide no meaningful conclusion about the underlying credit risk or its evolution over time.[8] Impact of the general factors should naturally correlate with the cycle, and therefore the aim should be to reflect losses resulting from idiosyncratic determinants in a timely fashion, irrespective of the point in the cycle. As a consequence, effective financial reporting would imply more aggressive banks recognizing losses earlier on, whereas more prudent banks applying sounder underwriting would not be incurring substantial loss until the cycle turned.

However, as already mentioned, relevant research points to a cyclical pattern whereby credit losses are negatively correlated to growth in loan volume or GDP during booms and conversely rise during downturns. That pattern suggests recurrent deferral of losses irrespective of the impact of idiosyncratic factors or the specific accounting standard in place. In light of this, a new approach would seem warranted to foster sound application of the accounting standards that prevents loss deferral and the resulting procyclicality.

The experience of the GFC provided the background to pursue such an approach. In response to a G20 call to address the late and insufficient recognition of the risk build-up in the years preceding the crisis,[9] the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) developed *expected credit loss* (ECL) standards aimed at anticipating loss recognition and more faithfully representing credit risk and deterioration of initial default expectations. However, these standards require a broader set of credit information, making the estimate even more complex and subjective and thus perpetuating incentives for managerial discretion.

ECL is defined in both the IASB and FASB frameworks as a weighted average of discounted *shortfalls* to contractual cash flows, with the original effective interest rate used as the discounting factor and risks (probabilities) of default as the weighting factor. Timing of loss recognition differs: the FASB *current expected credit loss* (CECL) model requires recognizing losses expected as a result of all possible defaults foreseen through the life of an exposure or a group of exposures ("*lifetime*" ECL); in turn, the IASB standard (IFRS 9) only requires recognition of lifetime ECL upon a *significant increase in credit risk*, but otherwise financial statements must simply reflect losses resulting from defaults likely to occur in the following 12 months.[10]

Accordingly, loan-loss provisions under ECL accounting frameworks can be expressed through the following equation:

$$LLP_t = BV_t - \left[\frac{\sum_{s=1}^{n} PD_s \times ECF_s^{t+1}}{(1+ie)} + \frac{\sum_{s=1}^{n} PD_s \times ECF_s^{t+2}}{(1+ie)^2} + \ldots + \frac{\sum_{s=1}^{n} PD_s \times ECF_s^{t+z}}{(1+ie)^z} \right]$$

Source: Pérez Rodríguez (2018)

In the formula:

$\boldsymbol{LLP_t}$ stands for the loan-loss estimate at time $\boldsymbol{t}$;
$\boldsymbol{BV_t}$ is the instrument's book value at time t;
$\boldsymbol{PD_s}$ is the probability of default for each of the $\boldsymbol{n}$ possible scenarios identified, as estimated at $\boldsymbol{t}$. For reporting entities applying IFRS, it represents the probability of a default taking place within the 12 months following t, except if *PD* has significantly increased, in which case it represents *lifetime ECL*;
$\boldsymbol{ECF_s^{t+z}}$ represents the expected cash flows at time $\boldsymbol{z}$ corresponding to scenario $\boldsymbol{s}$, as estimated at $\boldsymbol{t}$.
$\boldsymbol{ie}$ is the original effective interest rate.

The expression exposes ECL's complexities. Loss recognition no longer requires default or the occurrence of a similar *loss event*, which under the previous accounting framework rendered a much simpler formula derived from the general expression, with no need to model different scenarios and thus $\boldsymbol{n} = 1$ (and, as a result, $\boldsymbol{PD_s} = 1$).

In marked contrast to that simplicity, ECL now depends on the mere possibility of a default taking place. As an example, expectation of an increase in the unemployment rate could trigger loss recognition, with no need to wait for released figures showing such increase. This requires a forward-looking perspective into the conditions and events that might affect credit risk, their probability distribution based on default scenarios that may play out, the most relevant loss drivers for each of those scenarios and their resulting weights (the $\boldsymbol{PD_s}$), and their likely impact on the recoverability of cash flows ($\boldsymbol{ECF_s^{t+z}}$) given the bank's exposures.

[7] As explained by Wray (2011), *underwriting* is understood as the process of determining borrower creditworthiness and putting in place incentives to ensure payments as they come due.

[8] As described by Solow (1985), discrimination among competing hypotheses through stochastic processes requires long time series observed under *stationary* conditions.

[9] See the April 2009 G20 Leaders Statement on "*Strengthening the Financial System*" (http://www.g20.utoronto.ca/2009/2009ifi.html).

[10] IFRS 9 classifies banks' lending portfolios into three *stages*: stage 1 includes the *performing* loans, which attract 12-month ECL; *underperforming* loans in stage 2 are those that have experienced a significant increase in credit risk and are thus subject to lifetime ECL; and stage 3 loans are *non-performing* loans for which incurred losses are recognized.

While it is clear that such a prospective view must be informed by a broad range of credit-related factors, neither IFRS 9 nor CECL prescribe specific estimation methodologies or the use of information that flows from statistical models or credit rating processes, which means bank management is effectively left with ample latitude. As a result, the standards are highly susceptible to divergent interpretation, with the risk of leading into a mixed landscape of assumptions and application choices.

Management discretion is of particular relevance to the determination of the PD_s parameter in the expression. IFRS 9 refers to "*a multifactor and holistic analysis*" of credit risk, but as long as the resulting ECL estimates reflect the underlying, causal relationships and eventual nonlinearities,[11] modeling choices are left to managers' experienced credit judgment.[12]

In the case of IFRS 9, estimating ECL also involves a decision regarding the timing of lifetime loss recognition.[13] The standard hints at the type of information that may be relevant in assessing the significance of changes in credit risk,[14] but the decision on the specific threshold is left to management, turning the standard into an even more powerful tool for discretion.

ECL standards were developed reflecting varied views and a vast amount of input, which resulted in a satisfactory outcome in terms of mitigating the procyclical implications of a *too little, too late* credit-loss recognition.[15] However, high-quality standards do not ensure effective financial reporting. Divergent interpretation can introduce artificial noise in the assessment of otherwise equivalent exposures subject to similar risk factors. More worryingly, the assumptions and accounting policies driving the estimates and recognition patterns in financial statements could respond to biased implementation or outright manipulation. This would perpetuate the mistrust in credit loss estimates that had resulted from the previous framework's operation in the run-up to the GFC, and it could fuel procyclical contractions.

It is for that reason that challenging and consistent verification by independent auditors becomes even more important in the ECL context. As explained in Section 1, the role of auditors is key to constraining managerial discretion. They are appointed by those charged with the governance of companies to provide an opinion on whether the financial statements fairly represent the company's financial position and performance in accordance with the accounting standards. In developing their opinion, they must gather sufficient evidence to provide a reasonably high level of *assurance* that the financial statements are free from material misstatement.[16] The following section describes audit's inherent incentives and market structure, as well as the features that characterize assurance work related to multinational corporations (so-called *big audit*) and, more specifically, how those features and incentives affect G-SIBs' ECL estimates.

3. Assurance, challenge and the current state of *big audit*

Laws and regulations delegate independent financial statement verification to specialized private agents, requiring companies that access capital markets to have their financial statements audited. This gives audit firms a unique privilege, which should be accompanied by a clear focus of the assurance activity on the needs of primary users. However, as the audited company pays the fees and sustains the audit firm's business model, there is always a risk that the short-term interests of company managers are prioritized to protect the revenue stream associated with the assurance franchise.

That inherent feature of audit is balanced in most jurisdictions by means of regulatory bodies that seek to ensure consistent, high-quality audits, mainly through the enforcement of assurance and independence standards. Nevertheless, audit quality remains an elusive concept,[17] which contrasts with evidence showing a constant decrease in the dissolution of audit firms and penalties imposed on their partners.[18]

Furthermore, the frameworks for audit regulation coexist with auditing standards that ring-fence the required format and wording of the audit report, limiting its scope to a binary, "*pass-or-fail*" opinion. This seeks to counter the effects of a so-called "*expectations gap*" whereby users of financial statements generally presume that clean audits guarantee financial statements completely free from material misstatement. Various sources have pointed to the concerted efforts of the audit profession to reinforce the gap in order to cap the auditor's exposure to potential liability.[19]

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[11] *Nonlinear relationships* reflect the disparate impact of expected conditions on credit risk or the ultimate loss estimate depending on the specific risk factors affected. For example, expectations of severe unemployment conditions will tend to inflict considerable losses on portfolios of high loan-to-value mortgages, which may not be as affected as other portfolios under milder expectations. The IASB clarified that the use of multiple scenarios would be relevant in such cases, in order to translate the diverging impacts (https://www.ifrs.org/news-and-events/2016/07/25-webcast-on-ifrs-9/).

[12] Even when underlying risk factors and causal relationships remain, modeling choices might require adaptation to reflect the impact of unforeseen shocks. As an example, COVID-19 has prompted reconsideration of scenarios and weights to capture the shift in payment prospects.

[13] See footnote 10 on the *staging* of IFRS 9.

[14] IFRS 9, B5.5.17.

[15] Cohen and Edwards (2017) or DeRitis and Zandi (2018). In its 2017 Report on the "*Financial stability implications of IFRS 9*", the European Systemic Risk Board stressed that IFRS 9 could contribute to mitigating procyclicality (https://www.esrb.europa.eu/pub/pdf/reports/20170717_fin_stab_imp_IFRS_9.en.pdf).

[16] International Standard on Auditing 200, on the *Overall Objectives of the Independent Auditor and the Conduct of an Audit*.

[17] A reasonably comprehensive definition is provided by Arruñada (1999).

[18] See the 2018 Survey of Enforcement Regimes, by the International Forum of Independent Audit Regulators (https://www.ifiar.org/download/ifiar-2018-report-on-survey-of-enforcement-regimes/?wpdmdl=9068&ind=1544749404692&#zoom=100).

[19] According to Young (2000) or Golden et al. (2011), since the publication of the Report of the National Commission on Fraudulent Financial Reporting (*Treadway Commission*) in 1987 (https://www.coso.org/Documents/NCFFR.pdf), these efforts have substantially contributed to narrowing the scope of certain auditing standards.

In the case of banks, the expectations gap amplifies the *negative externalities* of information shocks that follow irrational balance sheet expansions and asset overvaluation. Debates around the drivers of that gap and the desired scope and purpose of an audit tend to follow episodes of unanticipated corporate failure, which usually result in higher costs of capital being imposed on reliable and unreliable companies alike. Widely publicized corporate events have recently revived that debate, with a number of local audit firms under heightened scrutiny, and eroded confidence in the value of their product. As indicated by Coffee (2001), recurrent scandals in a very concentrated profession could be a signal of dysfunction, and indeed concerns have been rising around audit firms' business model and the structure of the audit market.

Today, that market revolves around a handful of global networks composed of legally separate local member firms. To coordinate and provide shared resources the networks use central entities, fully controlled and funded by their members, which exercise influence on local firms through harmonized interpretations of accounting standards, common audit methodologies and quality control requirements, advocacy vis-à-vis public authorities, branding and reputation. Even though members commit to the network's policies in those fields, services are provided by member firms and not the central entity, and partners are only liable with regard to their firm's obligations.

Concurrently, audit regulation and enforcement remain local and focused on the individual firm and their partners, despite the increasingly global and intertwined nature of the activity overseen. Although the International Forum of Independent Audit Regulators (IFIAR)[20] maintains a regular dialogue with networks' leadership, there are currently only tentative arrangements for effective global monitoring, with some regional frameworks starting to gain traction.[21] Local oversight bodies seldom address system-wide or structural issues affecting the audit market, and oversight is itself quite recent[22] and still uneven across jurisdictions despite IFIAR efforts to promote consistency.

Contrasting with that institutional framework, *big audit* requires reputation, specialization and resources to deploy teams of professionals throughout several jurisdictions. In practice, only the so-called "Big Four" – Deloitte, EY, KPMG and PwC – have these capabilities, and their member firms profit by securing considerable revenue streams and non-assurance business.[23] This reduces choice and incentives for challenger firms, leading to a highly concentrated market with strong barriers to entry.[24]

Such pattern is reinforced where the business of the audited company makes its financial reporting more complex and judgmental. Only the Big Four provide assurance services related to G-SIB financial statements, which are further concentrated: KPMG and PwC dominate this market with a combined 62% of the overall G-SIB universe,[25] an even greater share in North America and the UK, and audits of the most relevant G-SIBs.

Big audit could therefore be described as a complex process, conducted by a limited, irreplaceable range of agents, and resulting in a standardized, largely undifferentiated product – the audit opinion – whose availability is usually taken for granted. These features resemble those of *utility goods*, the regulation of which tends to focus on ensuring sufficient investment and innovation that result in high-quality supply at reasonable prices, which might not be guaranteed by the sheer operation of market forces. Audit's revenue model discourages Big Four firms from innovating or otherwise investing in the quality of the product, conversely encouraging profit maximization.[26]

In addition, the existing legal framework imposes further incentives for auditors to limit their liability. Firms are owned exclusively by their partners, who are subject to *unlimited* liability with regard to claims that might be enforced in court by users of financial information. This exposes auditors to losses that may result from a corporate event, particularly in the US and UK where the legal systems are most favorable to allowing class action against auditors.

This is a reason for concern as US and UK firms are those with a greater impact on the overall reputation of the networks. As demonstrated in the case of Arthur Andersen, difficulties in one of these jurisdictions can result in a run-like situation where both

[20] IFIAR was created in September 2006 (https://www.bis.org/press/p060906.htm), following a series of Roundtables of Audit Regulators initially hosted by the Financial Stability Forum. It enhances and brings global consistency to audit oversight, and is currently composed of independent audit regulators from 55 jurisdictions.

[21] See https://www.ifiar.org/?wpdmdl=11468.

[22] Principle 19 of Securities Regulation, establishing that "*auditors should be subject to adequate levels of oversight*", was only introduced in the June 2010 update of IOSCO's Objectives and Principles of Securities Regulation (https://www.iosco.org/library/pubdocs/pdf/IOSCOPD561.pdf).

[23] In 2019, the global, combined revenue of the Big Four reached $154.9 billion (up 4.5% from 2018). $56.71 billion of the total revenue came from the assurance business (around 37%, slightly down from a 38% share in 2018). The breakdown was as follows: Deloitte earned $46.3 billion revenue (7.2% increase from 2018); EY $36.4 billion (4.6% increase); KPMG $29.75 billion (2.7% increase); and PwC $42.45 billion (2.8% increase). While the share of assurance revenue increased from 2018 at KPMG and particularly EY, the downward trend observed in previous years persisted at Deloitte and PwC, with around 74% of PwC's revenues now earned from non-assurance services (https://www.statista.com/statistics/250935/big-four-accounting-firms-breakdown-of-revenues/).

[24] According to the Financial Times (August 9, 2018), 98% of the FTSE 350 companies, and 99% of the S&P 500, were at the time audited by a member firm of one of the Big Four.

[25] Conclusions and figures relate to the 2018 list of G-SIBs (https://www.fsb.org/wp-content/uploads/P161118-1.pdf) and their respective statutory auditors.

[26] See the November 2018 report by the Dutch Authority for the Financial Markets on "*Vulnerabilities in the structure of the audit sector*" (https://www.afm.nl/en/nieuws/2018/nov/kwetsbaarheden-structuur-accountancysector) or Sikka et al. (2009).

clients and partners defect other network firms to protect their own interests, despite the absence of legally binding commitment to the problem firm. The likelihood of contagion becomes greater in a globalized environment, and its potential disruption to the functioning of markets looms larger given the Big Four's dominance of big audit.[27]

Furthermore, firms' financial buffers to cover litigation exposure are thin, as a result of exclusive partner ownership – which prevents firms from raising external capital – and full profit distribution – aimed at lowering corporate taxes (cash-based in most jurisdictions) and minimizing idle cash to avoid whetting the litigation appetite.

In light of these structural features and corporate and legal configuration, the risk of one of the Big Four major member firms collapsing or being forced to exit the market is not negligible. A disruption in the availability of the related assurance services could seriously impact financial stability, as it would affect confidence in the effectiveness of markets to price risks. This would likely result in adverse resource allocation and failure to assess the safety and soundness of financial institutions and to prevent inappropriate growth in leverage and risk exposures. In the absence of a clear alternative to the current model, the Big Four may indeed be considered systemic or at least "*too few to fail*".[28]

In a context defined by audit's revenue model, expectations gap, fragmented audit regulation, unlimited auditor liability and reputational threats to the global audit networks, partners could be tempted to prioritize their own utility functions at the expense of public interest. Where does this leave auditors in terms of skeptically challenging the assumptions and forward-looking statements of management, such as those that result in ECL estimates? Could the firm's and partners' incentives compromise appropriate verification?

The next section explains the incentives that drive both management's application of the ECL standards and auditors' choices when developing the related assurance work. Understanding the respective behaviors and utility functions is necessary to extract valuable conclusions on the way credit risk is currently being reported, as well as possible alternatives going forward.

4. From *the book* to *the books*: accounting and auditing choices

Given the ECL standards' judgmental nature and the importance of credit-loss estimates, the related accounting policy choices are among the main weapons in the bank management arsenal. The standards require a broad range of credit information, and multiple credit risk factors can be identified, potentially affecting the modeling and expected cash flows. The resulting complexity of the estimation process would make it reasonable to expect user-relevant disclosures capable of sketching the main risk factors, their sensitivities to conditions resulting from different scenarios and their impact on credit risk and ECL.

As explained previously, those factors can be grouped in two broad categories. *General* factors related to the economic conditions or industry trends tend to affect demand and competition in the bank's products and activities. However, there are also supply-side factors, generally *idiosyncratic* to the bank and related to its risk propensity.

These latter factors translate into the financial conditions and non-financial incentives that characterize the bank's underwriting, and the regulatory community and relevant academic literature have acknowledged their importance to lending decisions.[29] However, the notes to the financial statements and audit reports of G-SIBs contain little narrative information regarding key idiosyncratic drivers of possible defaults. Neither is the sensitivity of those drivers to potential conditions disclosed, preventing an appropriate evaluation of the risks of downward rating migration associated with particular borrowers and portfolios.

Instead, the spotlight is placed on the parameters of statistical models that weight the likelihood of various economic scenarios and their potential impact on future cash flows.[30] Concurrently, audit reports portray ECL audits focusing on the testing of related internal controls, with negligible reference to the challenging of management assumptions, collection of contradictory evidence, or substantive procedures based on the auditor's own views regarding the bank's exposures and envisaged context.

These disclosures reveal marked behavioral patterns. Bank managers seem to use the discretion afforded by IFRS 9 to maximize the importance of macroeconomic forecasts that fit easily into the scenario modeling and stress testing commonly used for other purposes. By focusing on such *hard information* – which is observable, subject to easier quantification and thus verifiable by third parties – *management* faces diminished challenge of the resulting figures while allegedly meeting the standard's request for forward-looking information.

[27] A study by London Economics (2006) concluded that, in the case of an average profit reduction of 15–20% that extended over three to four years, the number of UK partners that would leave their Big Four firms would compromise any of the firms' survival. Exporting the report's assumptions to the US audit market, some commentators estimate each network firm's breakup point in a range of around $1 to $3 billion (https://www.jamesrpeterson.com/home/2017/01/a-fresh-year-brings-fresh-problems-a-fresh-look-at-the-big-fours-tipping-points.html). Claims of this size have already been brought to the courthouses: in March 2019, PwC US announced a $335 million settlement of Federal Deposit Insurance Corporation (FDIC) claims for a total $5.5 billion in respect of Colonial Bank (https://www.fdic.gov/news/news/press/2019/pr19019.html). In October 2013, Deloitte US settled a similar $7.5 billion claim by the FDIC as the bankruptcy trustee of mortgage lender Taylor Bean & Whitaker.

[28] In the case of Arthur Andersen, the reputational contagion of problems at the US firm drove clients and partners away from member firms worldwide, vaporizing the franchise before claims were even settled or final verdicts pronounced. While the provision of assurance services by surviving firms was not threatened at the time, it may nowadays prove challenging to secure the interests of clients and partners under a *four-to-three* scenario.

[29] Rajan (1994), Borio et al. (2001), Dugan (2009), or Curry (2015).

[30] According to Moody's (2019), even disclosures regarding ECL models remain opaque, with most banks providing a generic list of model inputs but no related quantitative information or models' sensitivities to changes thereof.

At the same time, with the sources of confirmatory evidence more at hand, the role of *auditors* is eased. Moreover, given concerns about their ability to produce reliable opinions on the increased risk of material misstatement of ECL estimates,[31] the availability of easily verifiable information provides audit firms and their partners better protection against the threat of legal liability. Skeptically challenging management's assumptions and forward-looking statements could be perceived as damaging to the firm's revenue stream and partners' personal wealth.[32] In turn, limiting the scope of assurance and relying heavily on hard data allows the auditor to accommodate the estimates by sticking to the standard's formalities.

This compounds with the scope limitations in the audit report, which can have the effect of furthering the short-term interests of company managers to the detriment of quality assurance and the information needs of primary users. Substantially influenced by the profession, auditing standards also contribute in capping the responsibility of auditors.[33]

With the resulting safe harbor at hand, the greater the complexity and judgmental nature of the accounting standard, the lower the incentive for professional skepticism and challenge. ECL frameworks are the perfect breeding ground for such *defensive auditing*, which substantially increases the risk of material misstatement. Auditors focus on compliance with the applicable standards of audit practice and the letter and formalities of the accounting standards.[34] Procedures aimed at substantive verification of value and accruals are replaced by increasing reliance on the company's assumptions, internal controls and measurement models.

The consideration of idiosyncratic credit risk drivers when determining the amount and timing of ECL and verifying the figures seems at odds with the described incentives of management and auditors. Qualitative, *soft information* does not lend itself easily to external verification. However, it is observable and falls clearly within the boundaries of the broader range of credit information required by the standard. Furthermore, the dynamic nature of idiosyncratic determinants such as underwriting makes this type of information ideal to attest to management's approach in anticipating the impact of the bank's credit practices. Its omission may be depriving primary users from key insights into how losses are estimated and whether they are recognized in a timely manner.

Analysis of G-SIB disclosures thus points to seemingly conscious policy choices by management and auditors. These choices carve relevant information off bank financial statements, obscuring the impact of risks and raising concerns around the reliability of disclosed capital positions.[35] More importantly, they could amplify procyclical contractions, with overvalued assets feeding leveraged balance sheet expansions that inevitably lead to abrupt corrections as asset quality expectations change.[36]

In sum, assessing credit loss accounting through the lens of disclosures exposes a flaw in bank's current financial reporting. Misguided choices by managers and auditors can indeed have procyclical implications.[37] Undue application of IFRS 9 and CECL, coupled with inappropriate verification of the resulting financial statements, can lead to loss deferral and its potentially damaging consequences. Regardless of the underlying standard's quality, the unwelcome effects of misconceived incentive structures seem to find their way through to the financial statements in the form of distorted accrual and valuation – in this case, deferred credit loss recognition.

5. A suggested way forward

Reliable information about banks' risk exposures and capital adequacy facilitates market discipline and enables appropriate supervisory discretion,[38] also discouraging the development of unsustainable equity positions. Particularly in the case of complex and judgmental estimates such as ECL, it is critical to constrain managerial discretion, which can result in damaging externalities through misrepresentation of the related value and accruals.

As explained above, when determining ECL and the timing of its recognition, managers tend to disregard soft information about the bank's risk profile or underwriting. This seems to occur regardless of the evolving features of accounting standards, pointing to a recurrent deferral of losses. That trend furthers the defensive approach embraced by auditors to protect the firm's franchise and their own interests.

In order to counter the impact of such a deferral, some authorities are exploring the structural features of audit, their connection with recurring audit failures and potential remedies,[39] following the lead of past studies.[40] Similarly, standard setters and regulators

[31] Inspection findings rates related to systemic banks' audits of loan-loss allowances – as reflected in the annual survey of the International Forum of Independent Audit Regulators – are recurrently high in this area, justifying such concerns (see https://www.ifiar.org/?wpdmdl=10453). Root causes of such findings include failure to assess the reasonableness of management assumptions or insufficient consideration of contradictory evidence.

[32] According to Nicoletti (2018), auditors may not be in a position to influence loan-loss provision timeliness due to client retention concerns.

[33] See footnote 19.

[34] European Commission (2010).

[35] This is evidenced by banks' decreasing price-to-book ratios, the deteriorating trend of which is not recent, as shown by Huizinga and Laeven (2009), or Hoenig (2013).

[36] Beatty and Liao (2011) or Bushman and Williams (2015).

[37] In the case of CECL, DeRitis (2018) concludes that lifetime loss and origination aspects should result in a more countercyclical system, but points out that final results crucially depend on the assumptions of lenders.

[38] Haldane (2011).

[39] See the *Statutory Audit Market Study* by the UK Competition and Markets Authority (https://www.gov.uk/cma-cases/statutory-audit-market-study), or the December 2019 *Brydon Review* on "The quality and effectiveness of audit" (https://www.gov.uk/government/publications/the-quality-and-effectiveness-of-audit-independent-review).

[40] Oxera (2006), London Economics (2006), Ascher and Foer (2010), European Commission (2010), or UK Competition Authority (2013).

have issued guidance aimed at providing further consistency to the practice of ECL accounting.[41] There have also been attempts to promote the independence and technical competence of audit committees,[42] and market authorities oversee the compliance of audited financial statements with the applicable financial reporting framework.[43] However, so far no initiative has addressed the flaws in banks' financial reporting, which pervert decision-making and drive it away from the longer-term goals of shareholders and creditors. Moreover, standard setters and regulators have not yet addressed the strong correlation between underwriting and the timing of loss recognition.[44]

To come to terms with this link and the challenge of recurrent loss deferral, primary users could be provided with relevant information that is currently omitted from the financial statements on key aspects such as the following:

- the main parameters of the bank's credit policy;
- the risk factors used in tracking credit risk for each portfolio;
- whether the contractual clauses and lending terms – both financial and non-financial – are considered when developing the ECL estimate;
- whether underwriting affects the timing of loss recognition and, more specifically, whether losses are recognized earlier in the case of transactions designed to facilitate or postpone payments;
- the criteria to group assets for collective credit risk assessment; or
- in the case of IFRS 9, how significant increase in credit risk is identified, and whether interest income is recognized at a pace consistent with cash collections once such increase is considered to take place.

That type of information would enable primary users to determine the range in which the ECL estimate should fall and whether the actual management's estimate is closer to the upper or lower bound of that range. In other words, it would allow users to discipline management by distinguishing prudent from aggressive behaviors.

In addition, a better understanding of how loss estimates are developed could lay the foundations for future research and policy analysis of credit loss recognition and its effects on financial stability.

A *hard* option for helping primary users determine the ECL's range and point estimate would be to introduce interpretive guidance that anchors ECL recognition to underwriting. This would be consistent with research conclusions that, in the context of large pools of borrowers, banks will not discriminate based on creditworthiness, and credit practices will deteriorate in search for market share, with credit expanding beyond the demand.[45] Clear, harmonized and openly communicated regulatory expectations could prevent discretional translation of the impact of such practices, potentially encouraging sounder underwriting and decision-relevant disclosures.

At the same time, auditors may see their litigation fears wane, as any unpleasant surprises would be fully attributable to management's leniency or unwillingness to apply the standard in accordance with the prescribed interpretation in the guidance. This could pave the way for an enhanced assurance product that provides users with a nuanced view around the most relevant aspects of a bank's ECL estimates, validating their value and recognition patterns based on authoritative guidance and the auditor's own views about the company's business and strategies, risk appetite, underwriting and the estimated impact of existing conditions and prospects. The quality of such a product would be supported by knowledge and experience gained from an extensive client portfolio.[46]

As a downside to this option, the potential opposition of accounting standard setters could make enforcement of the resulting financial statements challenging. Such opposition might be grounded in arguments that prescriptive guidance departs from the principles-based nature of the standards and constrains the optionality embedded in the ECL framework.

If a solution cannot be found through guided interpretation, a *softer* option might focus on incentives. Reorienting management's behavior toward closer consideration of the longer-term needs of primary users, including creditors, could require changes to corporate codes that modify the limited liability framework. Alternatively, a significant revision of audit's corporate and liability structure and the usefulness of its end product could offer an indirect but possibly more attainable way of addressing the broader issue of recurrent loss deferral.

This would be in line with current debate around ways to recover audit's public interest focus and to prevent undue limitation of the assurance scope.[47] It would also build on research suggesting that liability and reputational threats are the main motivations behind auditors' performance.[48] Relieved from those threats and equipped with thicker capital buffers, auditors might be more willing

[41] For example, the IASB created a Transition Resource Group to discuss IFRS 9 implementation issues related to ECL (http://www.ifrs.org/groups/transition-resource-group-for-impairment-of-financial-instruments/), and the Basel Committee on Banking Supervision published Guidance on credit risk and accounting for ECL (http://www.bis.org/bcbs/publ/d350.pdf).

[42] See the 2019 report of the International Organization of Securities Commissions (https://www.iosco.org/library/pubdocs/pdf/IOSCOPD618.pdf) or the 2020 Guidelines by the Basel Committee on Banking Supervision (https://www.bis.org/bcbs/publ/d513.pdf).

[43] See the 2020 European Securities and Markets Authority enforcement guidelines (https://www.esma.europa.eu/press-news/esma-news/esma-amends-guidelines-further-harmonise-enforcement-financial-information).

[44] This correlation has been recurrently stressed in the literature – among others, O'Keefe's (2009) findings based on FDIC examiner surveys on underwriting standards; or Weinberg (1995), who points that unusually strong loan growth tends to herald increases in loan losses.

[45] Dell'Ariccia and Márquez (2006).

[46] Shuetze (2003) presented a similar proposal in which the reasonableness of management estimates relied on the work of valuation experts instead of regulatory interpretation.

[47] See US Senate committee hearing on *The Role of the Accounting Profession in Preventing another Financial Crisis* (https://www.banking.senate.gov/hearings/the-role-of-the-accounting-profession-in-preventing-another-financial-crisis).

[48] Coffee (2001).

to orient their utility functions toward public interest, enhancing the relevance of audit reports to the decisions of primary users, turning auditing less opaque and mitigating the effects of the expectations gap.

However, reduced litigation prospects might inadvertently lead to auditors auctioning their reputation as a wasting asset, thus becoming more closely entangled with management of the audited companies. To address that shortcoming, changes in the corporate and liability configuration of the audit industry should be accompanied by a more intrusive, internationally harmonized regulation, consistent with the global nature of audit networks and their main clients. Regulatory tools should focus on key indicators of independence, fostering alignment of audit's revenue model with quality assurance.[49]

Either option – hard or soft – could contribute to allaying concerns about the reliability of banks' financial statements. Evidence suggests that managerial bias will perpetuate the misstatement of ECL estimates in the absence of aggressive regulatory interventions. However, absent the liability constraints and with more consistent and internationally harmonized regulation of independence and quality, an enhanced assurance product could represent the incentive required for bank managers to disclose relevant information on key idiosyncratic aspects.

6. Conclusions

Financial crises tend to expose fault lines resulting from undue excesses in leverage and risk. These tectonic forces can manifest through surges in defaults, non-performing loans and collateral repossessions, hitting bank income statements with particular strength in cases where the effect of those forces had been previously deferred.

The GFC represented another episode in the long series of *boom-bust* cycles induced by excessive leverage and speculative finance.[50] Accounting standards existing at the time were criticized for forcing loss deferral and fueling procyclicality, but no paragraph in those standards actually suggested disregarding the evident risks resulting from lenient credit practices aimed at balance sheet growth and sustained by evergreen collateral valuations.

ECL standards, designed to address the concerns and developed after extensive and inclusive due-process,[51] have also been accused of being unable to predict turning points in the cycle, thus leading to significant amounts of losses recognized at the onset of a downturn.[52] However, these arguments blur the dividing line between accounting and prudential regulation: accounting standards should facilitate the disclosure of financial information that reliably reflects a bank's real strength and loss absorbency capacity; they are also flexible enough to accommodate different judgments and perspectives regarding the economic outlook and cash-flow prospects; but they cannot compensate for misguided managerial judgment and inappropriate incentives,[53] which bias the standard's interpretation toward loss deferral.

A review of banks' narrative disclosures and audit reports confirms the recurrent deferral of losses irrespective of the applicable accounting standards. Banks tend to dismiss information related to the quality of underwriting, borrower incentives to pay, other key idiosyncratic drivers of possible defaults, or the sensitivity of those drivers to potential conditions. Instead, bank managers use the discretion built into ECL frameworks to maximize the relevance of macroeconomic forecasting and hard data, which is directly observable, subject to easier quantification and thus verifiable by third parties. This finding exposes the shortcomings in the existing financial reporting ecosystem, which is unable to mitigate the inappropriate incentive structures and externalities that develop from a combination of limited liability, leverage and principles-based accounting standards.

The paper explores a different approach to research and policy analysis on the link between risk, underwriting, credit loss recognition and procyclicality, defining two possible avenues for currently omitted information to find its way into the decision-making processes of primary users: more explicit interpretive guidance from prudential authorities; or a revised business, corporate and liability model for the audit industry.

Without disregarding other possible mechanisms, either of the two proposed in this paper could catalyze the provision of relevant disclosures that offer the insight required by users to discipline management. This might discourage the adoption of decisions that harm the company's longer-term prospects and possibly lead to timelier loss recognition as risks build up and estimates that capture the impact of underwriting and expected trends more accurately.

In this way, more useful and reliable financial reporting by banks would contribute to sounder resource allocation and overall safety and soundness, enabling market discipline and prompt corrective action and potentially unleashing prudential regulation's preventive benefits. It would also discourage the unsustainable structural positions that facilitate damaging procyclical contractions.

The importance of credit risk and its systemic implications have been a constant over the centuries. As explained in this paper, bank managers' disregard for key information in estimating the impact of credit risk leads to a recurrent deferral of losses that can carry significant negative externalities. Addressing the inappropriate incentives that foster such behavior should result in more effective financial reporting, improving the efficiency of capital markets and financial stability. Breaking the traditional connection between

[49] A possible research path connected to this paper would explore how the ratio of audit fees to auditor liability has evolved for G-SIB audits. Although fees have kept an upward pace in that segment of the audit market, defensive auditing and the effect of standards might have led to a reduction in the ratio's denominator.

[50] Minsky (1992).

[51] See https://www.ifrs.org/projects/completed-projects/2014/financial-instruments-impairment/#consultation-feedback.

[52] Not surprisingly, those accusations mainly come from banks, auditors and their respective advocacy groups, as well as scattered academic literature. Examples include Deloitte (2016), European Banking Federation (2016), Barclays (2017), Abad and Suárez (2017), Institute of International Finance (2017, 2020), or Covas and Nelson (2018).

[53] Herz (2009) or Hoogervorst (2012).

lenient underwriting and loss deferral through internal (regulatory) or external (audit) gatekeeping might help to align the goals of managers and auditors with the public interest. Furthermore, it would contribute to reducing the likelihood of seismic events, the resulting demand for public support and the attached moral hazard.

Annex. A textual analysis of the notes to G-SIB financial statements

To support the conclusion that banks' narrative disclosures are biased toward *hard*, verifiable data, the notes to the 2018 and 2019 consolidated financial statements of a sample of G-SIBs that apply IFRS 9 were reviewed, as were the related audit reports. The sample comprises the following banks: HSBC, Barclays, BNP Paribas, Deutsche Bank, Groupe BPCE, Groupe Crédit Agricole, ING Bank, Santander, Société Générale, Standard Chartered, Toronto Dominion, UBS and UniCredit.

Key terms in the text of those notes and reports have been identified as representing the two categories of credit risk factors: general and idiosyncratic.

General factors relate to terms such as "models", "calculation", "economic", "data", "input" or "adjustment", as well as others more specific to IFRS 9, such as "significant" or "stage", or those reflecting the type of validation role performed by auditors, such as "controls", "testing" or "specialists".

Terms responsive to idiosyncratic factors include "default", "tenor", "amortization", "collateral", "documentation", "loan-to-value" (LTV), "loan-to-income" (LTI), "teaser", "adjustable rate mortgages" (ARMs) or "affordability".

As depicted in the word cloud below, which represents the sample's disclosures, the review shows the relatively low density of the second group of terms compared to those representing the general factors.[54]

This indicates that banks' financial reporting might fail to identify key determinants to eventual problems, such as stretched payment terms, relaxed documentation requirements, or higher LTVs or LTIs.

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[54] A control test – with similar results – assessed the density of those same terms in the 2016 and 2017 GPPC reports on "*Implementation of IFRS 9 impairment requirements by banks*" (https://www.iasplus.com/en/publications/global/other/ifrs-9-impairment-banks) and "*The auditor's response to the risks of material misstatement posed by estimates of expected credit losses under IFRS 9*" (https://www.iasplus.com/en/publications/global/other/ifrs-9-impairment-banks-2). The Global Public Policy Committee (GPPC) of the six largest international audit networks comprises representatives of BDO, Deloitte, EY, Grant Thornton, KPMG and PwC. It advocates on public policy issues for the profession.

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