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Abstract

We review several observations in the bank loan loss provisioning literature to identify and discuss several advances in the literature and to suggest possible directions for future research in the literature. We address several issues including the ethical dimensions of income smoothing, motivations and constraints to income smoothing, methodological issues in the bank loan loss provisions literature and the dynamic loan loss provisioning experiment. We identify some challenges in the literature and proffer directions for future research.

JEL Code: G21; G28.

Keywords: banks, dynamic provisioning, loan loss provisions, income smoothing, procyclicality, capital management, signalling, accounting discretion, Islamic banking.

1. Introduction

Banks are financial institutions that primarily collect deposit and issue loan to individuals, firms and governments to finance consumption, investment and capital expenditure, thereby contributing to economic growth. Bank lending to borrowers gives rise to credit risk where borrowers are unable repay the principal and/or interest on loan due to unfavourable economic conditions and related factors. To mitigate credit risk, in principle, banks will set aside a specific amount as a cushion to absorb expected loss on banks' loan portfolio and this amount is referred to as loan loss provisions (LLPs) or provisions for bad debts; therefore, loan loss provisions estimate is a credit risk management tool used by banks to mitigate expected losses on bank loan portfolio. To date, there are growing concerns that bank LLPs are not solely driven by credit risk considerations but rather are influenced by other opportunistic financial reporting objectives. In this paper, we review the loan loss

provisioning literature that address these concerns and we attempt to proffer some solutions to ensure that bank loan loss provisions reflect its underlying economic reality.

The banking sector is vital to national and global economies and banks play a key role as depository institutions and lender to firms, individuals and governments (Lobo, 2016). Given the importance of banks, loan loss provision estimates play a key role for bank stability and soundness while fulfilling their lending functions to society. In financial regulation, loan loss provisions continue to receive much attention from bank supervisors for the following reasons. One, banks' large amount of loan on their balance sheet makes them vulnerable to loan defaults arising from deteriorating economic conditions which affects borrowers' ability to repay, requiring banks to keep sufficient loan loss provisions in anticipation of expected losses (Laeven and Majnoni, 2003). Two, bank provisioning is often procyclical and tend to worsen an existing recession if unanticipated, and this was evident at the peak of the 2008 global financial crisis as many US and European banks significantly increased their loan loss provisions estimates which further eroded bank earnings and led to losses that depleted bank capital, requiring Central Bank intervention through bailouts. Three, loan loss provisions estimate is a significant bank accrual and bank managers continue to retain significant discretion in the determination of loan loss provisions estimates and such discretion can be exploited to meet opportunistic financial reporting objectives rather than for credit risk purposes (Whalen, 1994). Four, bank loan loss provisions estimate is a crucial micro-prudential surveillance tool that bank supervisors use to assess the quality of banks' loan portfolio apart from non-performing loans ratio, and LLP is also a crucial indicator of the informativeness of bank accruals from an accounting standard-setting perspective. Five, bank loan loss provisions have become the most debated accounting number in bank financial reporting after bank profitability and derivatives since the 2008 global financial crisis.

We commend Wall and Koch (2000)'s early review that present a broad overview on bank loan loss provisions for over a decade now. In contrast, we identify the need to bring together in one article the recent developments in loan loss provisions research that has progressed beyond Wall and Koch (2000) in order to provide a comprehensive understanding of the role of bank loan loss provisions for accounting information quality and macro-financial stability. We explore several strand of literature in

LLP research to identify recent advances in the literature, highlight some challenges in LLP research and suggest possible directions for future research with some concluding remarks.

Our analysis in the paper contribute to the literature in the following way. One, our review contribute to the prudential regulation banking literature by demonstrating that bank provisions is linked to capital regulation and countercyclical policy designs aimed at ensuring banking soundness and solvency during stressed periods. Two, by relating LLPs to income smoothing, our study make a contribution to the broad earnings management literature by demonstrating that loan loss provisions estimates can be manipulated by bank managers to influence the level of reported earnings. Finally, we deliberately did not elaborated on some issues, the most important ones being the following two. First, we did not elaborate extensively on bank loan loss provisioning among Islamic banks because the distinction between Islamic and conventional banks is often unclear and the provisioning rules for both Islamic and convention banks are the same. Second, we did not elaborate extensively on dynamic provisioning because research on dynamic provisioning to date appears to be biased towards a single country analysis - Spain. Likewise, we did not elaborate on the relationship between discretionary provisions and stock returns because changes in stock prices may be driven strongly by other unobservable factors rather than discretionary loan loss provisions. Additionally, our remarks on the challenges in the LLP literature are not intended to be comprehensive but instead are limited to issues in the literature that we find to be particularly significant. Finally, while we note that the value of a research review is measured by its success in inspiring researchers to produce new ideas to this line of research, our aim in this review is to elicit comments and stimulate debates that can potentially advance LLP research in the broader banking literature.

The remainder of the study is organised as follows. Section 2 discuss several advances in the LLP literature and the ethical dimensions of income smoothing. Section 3 address the methodological advances and issues in literature. Section 4 present some challenges in LLP research. Section 5 suggest some directions for future research. Section 6 provides some comments and concluding remarks.

2. Loan Loss Provisions Research: Advances

2.1. Importance of LLP research

LLP research remain a fruitful area of banking research for four main reasons. One, LLP is the most significant discretionary accrual at the disposal of bank managers; two, because LLP has a direct impact on bank interest margin and overall earnings; three, because LLP is linked to bank regulators' micro-prudential surveillance and is linked to the informativeness of accounting disclosures in financial reports required by accounting standard-setters and; four, because of the availability of bank-year data on LLP estimates.

While LLP research can be complicated by: (i) the process that determine LLP estimates, that is, the assumptions, methodology and other unobservable managerial choices taken into consideration; and (ii) the cross-country differences in the accounting for loan loss provisions across countries; the LLP literature continue to exploit these variation in LLP practices to deepen our understanding of various manifestations of managerial discretion in provisioning among banks across countries and regions.

2.2. Research Areas and Future Direction

Broadly, there are four strand of literature in LLP research. The first strand of literature relate to studies that test the capital management hypothesis commonly referred to as the LLP-capital management literature that examine whether banks increase LLPs when they have insufficient equity capital in order to compensate for their low equity capital levels (Kilic et al, 2012; Bonin and Kosak, 2013) or whether banks influence the size of LLP estimates to meet minimum regulatory capital requirements (Moyer, 1990; Ahmed et al., 1999). Notably, the work of Ahmed et al. (1999) is core to this strand of literature. Ahmed et al. (1999) examine 113 US banks during the 1986 to 1995 period and find that banks use LLPs to manage minimum regulatory capital levels. Nonetheless, evidence to support the capital management hypothesis is rather inconclusive in the literature (Collins et al, 1995; Leventis et al, 2011; Curcio and Hasan, 2015). Moreover, and with respect to equity capital, it is not clear whether the change in LLPs (in response to change in equity capital) is driven by incremental changes in 'specific' or 'general' provisions. In other words, while banks can overstate (understate)

LLPs when they are undercapitalised (overcapitalised), it is not clear whether the incremental increase (decrease) in LLPs is targeted at specific provisions or general provisions or both. Future research is needed to shed more light on whether abnormal changes in loan loss provisions in response to changes in bank equity level is significantly associated specific or general provisions.

The second strand of literature relate to studies that test the signalling hypothesis commonly referred to as the LLP-signalling literature that examine whether banks use abnormal changes in LLPs to signal information about firms' future prospects, implying that bank managers possibly report abnormal LLP estimates in anticipation of high future earnings or in anticipation of high non-performing loans (Liu and Ryan, 1995; Liu et al, 1997; Kanagaretnam et al., 2005). To extend the signalling debate, bank practitioners can also report abnormal loan loss provisions to mitigate potential losses arising from the loss of customer loyalty and business deals following the departure of a CEO whose influence is tied to greater customer loyalty and larger business deals for the bank. Future research investigating the LLP-signalling hypothesis should provide insights on whether abnormal loan loss provisions are used by bank managers to signal the consequence of the removal of a bad CEO or the sudden exit of a good CEO. The future researcher can empirically examine the association between abnormal LLP in the quarter(s) before the announcement of CEO exit compared to abnormal LLP in the immediate quarter after CEO exit.

The third strand of literature is the cyclical literature that investigate the behaviour of bank LLPs during changing macroeconomic conditions. The literature argue that bank provisioning behaviour is procyclical with business cycle developments and reinforce the current state of the economy (Bikker and Hu, 2002; Bikker and Metzmakers, 2005; Beatty and Liao, 2009). By procyclical, they mean that when banks enter recessionary periods the rational response of bank managers is to decrease lending and increase LLPs. Increased bank provisioning during recessionary periods will further reduce bank net interest margin and decrease bank overall profit and worsen the state of banks during the recession. If the recession is sustained, bank capital may be completely wiped out which further worsen the state of banks and financial system.

The fourth strand of literature investigate the possibility of adopting a dynamic provisioning system. Policy makers advocate the need for a counter-cyclical or dynamic provisioning system. A dynamic loan loss provisioning system is a loan loss provisioning system where banks report higher LLPs during good times and report fewer LLPs during economic downturns so that the surplus LLPs accumulated during good economic times is used to mitigate bank losses during economic downturns (Saurina, 2009). Spain adopted the dynamic provisioning system in the year 2000 and has remained the laboratory for policy (and academic) researchers to test the effectiveness of dynamic provisioning as a solution to eliminate LLPs' procyclical behaviour since its adoption (Fillat and Montoriol-Garriga, 2010; Jiménez et al., 2012). One weakness is that studies that focus on Spanish banks have been criticised for producing results that are biased towards Spanish banks only. Another major weakness of any dynamic provisioning system is that it is only workable if the transition from an economic recession into an economic boom and vice versa, is easy for policy makers to detect; in practice, such transition is difficult to detect because 'business cycle developments are hard to foresee, given their erratic duration and amplitude' (Bikker and Metzmakers, 2005: 144). Another weakness is that the ability of a dynamic provisioning system to generate sufficient loan loss provision buffers in anticipation of stressed periods will depend on the severity of a crisis and the time lag of the existing crisis (Fillat and Montoriol-Garriga, 2010), therefore, a dynamic provisioning system may not be sustainable if it is stress-tested against prolonged recessionary periods because loan loss reserves (provisions) would be exhausted if the recession is prolonged.

The fifth strand of literature relate to studies that test the income smoothing hypothesis commonly referred to as the LLP-income smoothing literature that examine whether banks overstate (or understate) LLPs when earnings are high (or low) in order to report smooth earnings so that reported earnings never seem to be too high or too low (Laeven and Majnoni, 2003; Kanagaretnam et al., 2004; Bikker and Metzmakers, 2005; Liu and Ryan, 2006; Anandarajan et al., 2007; Fonseca and Gonzalez, 2008; Leventis et al., 2011; El Sood, 2012; Curcio and Hasan, 2015; Ozili, 2015; Skala, 2015; Ozili, 2017). The literature documents mixed conclusions to support the income smoothing hypothesis (Ahmed et al, 1999; Collins et al, 1995), nonetheless, the LLP-income smoothing literature

remain the most extensively debated topic in LLP research, thus, Section 2.3 focuses on the LLP-income smoothing debate in the literature.

Another emerging theme in the LLP literature is the conflict between prudential regulatory objectives and accounting standard setting objectives (Gaston and Song, 2014). After the 2008 financial crisis, bank regulators require banks to take pro-active or forward-looking measures towards provisioning which includes keeping sufficient LLPs even when expected credit risk is apparently low, so that banks can have enough loan loss reserves/provisions to act as buffers to absorb loan losses that materialise during bad times (FSF, 2009; Adrian and Shin, 2010; Balla et al, 2012). The practice of keeping provisions estimate at an amount above the level that is commensurate with banks' expected credit risk is considered to be consistent with the bank safety and stability objective of bank supervisors from a prudential regulation perspective but is highly criticised by accounting standard setters because such practice constitute manipulation of accounting numbers (i.e. LLP) which reduces the reliability of bank loan loss provisions estimates reported in financial reports and can mislead bank stakeholder and analysts. International accounting standards (IFRS and FASB) oppose the provisioning for loan losses that are unlikely to occur and only approve of bank provisioning for loan losses that are highly probable if the amount of the loss can be reasonably estimated. The rationale is to prevent banks from using loan loss provisions (or reserves) as a tool to manipulate/manage reported earnings - a common practice where bank managers could shift income from good quarters to bad quarters by taking large loan loss provisions when earnings are high and small provisions when income are low (Balla et al, 2012), and accounting standard-setters maintain that this kind of manipulation of provisions (and reserves) reduces the reliability and informativeness of loan loss provision estimates and the transparency of bank financial report.

Finally, another strand of LLP research focus on country-specific studies and regional studies. Such studies examine the loan loss provisioning practices of banks in several contexts such as US [(El Sood, 2012; Balbao et al, 2013; Kilic et al, 2012; Balla and Rose, 2015)], European [(Leventis et al., 2011; Bouvatier et al., 2014; Curcio and Hasan, 2015; Skala, 2015; Ozili, 2017)], cross-country [(Cavallo and Majnoni, 2002; Fonseca and Gonzalez, 2008; Bushman and William, 2012; Kar,

2015)], Australian and Asian context [(Anandarajan et al, 2007; Packer and Zhu, 2012; Wu et al, 2015; Curcio et al, 2014; Bryce et al, 2015; Acar and Ipci, 2015; Abdul Adzis et al, 2016)]. The loan loss provisioning practices of banks in certain regional contexts remain unexplored in the literature such as the Sub-Saharan African (SSA) region and the Latin American and Caribbean (LAC) region. Future research can shed some insight about whether unique regional differences influence the provisioning behaviour of banks across several regions.

2.3. Factors influencing bank income smoothing

The LLP-income smoothing literature is the most debated issue in the LLP literature, therefore, this section focus on income smoothing via LLP. Bank income smoothing is the process by which banks make reported earnings appear stable (or smooth) over time so that reported earnings never seem to be too high or too low. While it is impossible to provide an exhaustive list of all factors that influence bank income smoothing behaviour, we identify some notable factors in the literature that influence this behaviour.

2.3.1. Motivation to Smooth Income: Evidence

One, capital markets create incentives for banks to smooth their reported earnings. There is the argument that if smoothed earnings reduces earnings variability then lower earnings variability would translate to lower stock price fluctuations which reduces the volatility of stock return and investors prefer lower stock return volatility. Anandarajan et al (2007) and Leventis et al (2011) find evidence to support this claim. Two, the need to avoid excessive scrutiny of firm profit by regulators and political commentators also create incentive for firms to smooth their profit particularly for larger firms that report excessive profits (Burgstahler and Dichev, 1997). Similarly, banks can smooth reported earnings to avoid excessive scrutiny of banks' profit by bank regulators/supervisors. Three, regulatory arbitrage can create incentives to smooth income as banks can take advantage of existing weaknesses or loophole in regulation as an opportunity to smooth reported earnings, given their opportunity. For instance, Kilic et al. (2012) investigate whether the strict recognition and classification requirements of SFAS 133 that reduced US banks' ability to use derivatives to smooth

earnings encouraged the affected US banks to rely more on LLPs to smooth reported earnings rather than relying on derivatives. They find evidence that US banks use LLPs to smooth earnings when accounting disclosure regulation made it difficult to use derivatives to smooth bank earnings. Four, the trade-off between rule-based vs principles-based accounting standards can also create incentives for banks to smooth income. Ashraf et al (2014) investigate whether changes in accounting standards and prudential regulatory regimes influence the use of LLPs to smooth earnings among 7343 banks from 118 countries during the 1999 to 2010 period. They find that banks under a rule-based accounting regime exhibit higher levels of earnings smoothing compared to banks under a principles-based accounting regime. Five, corruption can increase the extent of bank income smoothing because corruption in banks manifest through non-transparent reporting, and increased earnings smoothing decreases the transparency of bank financial reporting (Bhattacharya et al, 2003; Riahi-Belkaoui, 2003). Six, competition also influence firms (including banks) to smooth income because earnings management in competitive environments may help firms prosper in the short-run but at the same time can reduce firms' ability to compete in the long-run (Marciukaityte and Park, 2009). Francis et al (2004) observe that earnings smoothing help firms to reduce the cost of capital by reducing information asymmetry between managers and investors and increase the firms' ability to compete while Marciukaityte and Park (2009) find that firms report higher earnings smoothing ratios and conclude that firms in competitive environments are more likely to engage in earnings smoothing practices. Seven, transient economic events can create additional incentives for banks to smooth income. Liu and Ryan (2006) find that US banks use LLPs to smooth income during the 1990 economic boom. El Sood (2012) finds that US banks accelerate LLPs to smooth earnings when they are more profitable and during non-recessionary periods while Balbao et al (2013) find that US banks use LLPs to smooth earnings when earnings are more profitable. Eight, national culture can encourage income smoothing behaviour among banks because banks in societies that encourage high risk-taking, implicitly as a culture, may record relatively lower LLPs in good times and higher LLPs in bad times which allow banks to smooth income. Kanagaretnam et al (2011) in a cross-country study examine the relationship between four dimensions of national culture and earnings quality during the pre-financial crisis period and find that banks in high individualism, high power distance and low

uncertainty-avoidance societies report smoother earnings. They also observe that cultures that encourage higher risk-taking experience more bank troubles in the form of larger losses or larger provisions during the global financial crisis.

2.3.2. Constraint to Smooth Income: Evidence

One, strict accounting disclosure regulation can reduce bank managers' opportunity to manipulate LLP estimates to smooth reported earnings. Leventis et al. (2011) investigate bank income smoothing during mandatory IFRS adoption among some listed EU banks and find that the use of LLPs to smooth earnings is reduced after IFRS adoption. Balla and Rose (2015) examine whether accounting constraints introduced by the US SEC in 1998 limit LLP-based income smoothing among US banks and find that shortly after the SEC enforced the accounting constraint the relationship between LLPs and earnings weakened for publicly-held banks but not for privately-held banks. Abdul Adzis et al. (2016) investigate the impact of IAS 39 among banks in Hong Kong and find that bank income smoothing via LLP is reduced after adoption and compliance with IAS 39. Two, strong religiosity can discourage the use of LLP estimates to manipulate reported earnings. Kanagaretnam et al. (2015) investigate the impact of religiosity on bank earning quality and find that religiosity is negatively related to earnings smoothing. Taktak et al. (2010) did not find evidence for bank income smoothing via LLPs for Islamic banks. Farook et al (2014) observe that Islamic banks consistently record lower loan loss provisions relative to conventional banks. Three, higher audit quality can constrain the extent of income smoothing because the presence of Big-4 auditor in firms is often considered to reflect superior audit quality and their presence should discourage opportunistic earnings manipulation (DeAngelo, 1981). Consistently, Kanagaretnam et al. (2010) find less aggressive income smoothing behaviour among banks that have a Big-4 auditor. Four, strong investor protection should discourage bank income smoothing. Foncesa and Gonzalez (2008) in a cross country study find that bank earnings smoothing behaviour decreases with stronger investor protection while Shen and Chih (2005) find that strong protection of minority shareholders rights discourage bank earnings management behaviour but legal enforcement quality had no impact on bank earnings management. Five, certain bank ownership structure can provide additional monitoring to discourage bank income

smoothing. Fan and Wong (2002) investigate the relationship between earnings informativeness and ownership structure for 977 companies in seven East Asian economies and find that concentrated ownership is associated with low earnings informativeness. Leuz et al. (2003) find that industrial firms with dispersed ownership structure engage in less earnings management. Gebhardt and Novotny-Farkas (2011) investigate the implication of mandatory IFRS adoption for the accounting quality of EU banks and find that income smoothing is pronounced among listed European banks that are widely held (disperse ownership). Bouvatier et al. (2014) examine the impact of ownership concentration on the earnings smoothing practices of EU banks and find that income smoothing is reduced among banks with disperse ownership. Six, strict banking supervision can reduce the extent of bank income smoothing. Cavallo and Majnoni (2002) and Bouvatier et al. (2014) show that bank income smoothing is reduced among banks in countries with strong banking supervision.

2.3.3. Is Income Smoothing Ethical?

Finally, in this section we address the issue of ethics and income smoothing. The question above seem easy but is difficult to answer and whatever answer we postulate depends on what we mean by 'ethical' while noting that the meaning of the term 'ethics' depend on the context and circumstance of the social agent(s) facing an ethical dilemma. Income smoothing behaviour itself does not constitute an outright violation of bank regulatory/supervisory rules and does not constitute an outright violation of accounting standards whether rule-based or principles-based because income smoothing practices arise from exercising managerial discretion in financial reporting and in meeting prudential regulatory requirements and both regulatory frameworks permit managerial discretion in bank financial reporting. This, therefore, leave academics, policy researchers, regulators and accounting standard-setters with the question: is it ethical for firms or banks to smooth reported earnings? Whether income smoothing is ethical or unethical should depend on the motive for doing so. Income smoothing by bank managers may be considered ethical if they do so to: save for a rainy day (Greenawalt and Sinkey, 1988), to protect their jobs (DeFond and Park, 1997, Fudenberg and Tirole, 1995), to reduce information asymmetry between owners and managers (Tucker and Zarowin, 2006), to improve bank stability by smoothing out abnormal fluctuations in reported earnings (Wall and Koch, 2000), and to

improve the risk perception of banks to bank bondholders and regulators/supervisors (El Sood, 2012). On the other hand, bank income smoothing may be considered to be unethical if they do so to: opportunistically receive bonuses (Healy, 1985), reduce the informativeness of reported earnings (Leventis et al, 2011), increase the opacity of bank financial reporting (Bhattacharya et al, 2003), to lower the quality of reported earnings (Ahmed et al, 2013), and to avoid shareholder interference or to avoid tax and improve terms of trade and pursue a fixed dividend pay-out ratio (Vander Bauwhede, 1998).

3. Methodological: Advances and Issues

In the literature (Wahlen, 1994; Ahmed et al, 1999; Laeven and Majnoni, 2003), the baseline model to investigate the determinants of bank provisioning is expressed as:

Discretionary Provisions = f (non-discretionary provisions, relevant bank-specific factors, institutional factors, country and/or regional factors)

Depending on the objective of the researcher, the empirical researcher would specify the regression model to obtain the functional form of the relationship he or she is investigating. For this reason, it is difficult to criticise the LLP regression model employed by a researcher without understanding the research objective and the underlying assumptions taken into consideration by the researcher. In addition to specifying a good LLP model, the researcher will make specific econometric adjustments to the LLP model involving either pooled/panel adjustments, static/dynamic panel adjustments, system/difference GMM model adjustments and other variations including fixed or random effects (see. Laeven and Majnoni, 2003; Cavallo and Majnoni, 2002; Packer and Zhu, 2012; Floro, 2010; Leventis et al, 2011; El Sood, 2012; Bouvatier et al, 2014; Curcio and Hasan, 2015). Some studies combine regression models with other methods in their analyses while only few studies employ a non-regression methodology while examining bank LLPs (see. Balasubramanyan et al., 2013).

One major progress in LLP modelling has been the reduction in construct validity problems. Unlike the construct validity issues commonly associated with using accruals to measure earnings quality

among industrial firms in the earnings quality literature (DeFond, 2010)¹, the measures (or proxies) used to capture discretionary LLPs and its non-discretionary determinants in many LLP models have low construct validity problems because there have been strong commitment among banking researchers to ensure that each LLP constructs and the explanatory variables measure what it intends to measure.

Also, the empirical literature have identified several factors that explain changes in the level of bank provisions in an attempt to reduce the size of the error term, and such variables include commission and fee income which reflects bank income diversity, that is, banks' willingness to engage in non-depository activities; and when this is the case, banks will keep more LLPs to remain safe while it offer multiple services that are not related to its core deposit-taking activities (Anandarajan et al, 2007; Leventis et al, 2011).

Also, the pooling together of large banks with small banks raise serious concern that the LLP estimate and total asset value for large and small banks might be skewed due to substantial bank size differences. One way to address this issue is to normalise the LLP and total asset variables by taking the natural logarithm of LLP and total asset.

One major research design issue in the empirical literature is the choice of a deflator for the LLP variable and the earnings explanatory variable. Commonly used deflators are: total assets (Cavallo and Majnoni, 2002; El Sood, 2012; Bouvatier et al, 2014; Curcio and Hasan, 2015, Ozili, 2015), beginning total assets (Kanagaretnam et al, 2010; Kilic et al, 2012), beginning total loans (Bushman and William, 2012), gross or average loan (Anandarajan et al, 2007; Leventis et al, 2011). For instance, the use of average loan as a deflator for the earnings variable takes into account the business model of the bank while beginning total asset deflator takes into account banks' actual size without reference to future investments in bank assets while the total asset deflator takes into account future investments in bank assets. To date, the literature show no consensus on the choice of deflator.

Overall, while a common trend in social science research involves creating proxies for phenomena

¹ Dechow et al (2010) presents an extensive literature review on earnings quality.

that cannot be directly observed, there appear to be a high degree of confidence that the proxies used in LLP research (published in peer-reviewed journal) actually measure the underlying theoretical constructs they are intended to measure.

4. Challenges in LLP Research

4.1. Comparability of LLP estimates - A Critique

LLP research can be complicated by the process, assumptions, methods and other unobservable factors that bank managers take into consideration to determine loan loss provision estimates. This means that LLP estimate is a function of the accounting system that generates the estimate, the assumptions made and the decisions of the bank manager and other considerations that remain unknown or unobservable to the empirical researcher. Because researchers are not privy to full information regarding the determination of LLP estimates, the comparability of LLP estimates from one bank to another bank can be difficult and even more difficult when comparing LLP estimates among banks across countries, making it difficult to compare the findings of several empirical studies.

4.2. Two Conflicting LLP Estimates.

International accounting standards (IFRS) propose the incurred loss provisioning model while the Basel Committee for Banking Supervision (BCBS) propose the expected credit loss provisioning model.² The expected credit loss model generates higher LLP estimates while the incurred loss model generates a lower LLP estimates. These two models yield two different LLP estimates and therefore pose a challenge for LLP research. For instance, if banks are not required to strictly adopt one of the two models, bank managers can choose to adopt the expected credit loss provisioning model when

² There are two provisioning models: the incurred loss model and the expected credit loss model introduced by accounting standard setters and Basel regulation, respectively. Basel II regulation employs the 'expected credit loss provisioning' model which emphasize the recognition of credit risk based on the borrower's economic and financial conditions even if the loss has not been incurred (see. Gaston and Song, 2014; BCBS, 2015). The objective of this model is to build sufficient provisions, in addition to bank capital, to cover the risk bank takes. The incurred loss provisioning model, on the other hand, require banks to increase loan loss reserves (provisions) only when it becomes highly probable that a loss is imminent, and if the amount of that loss can be reasonably estimated.

they want to reduce high profit because expected credit loss model generates high LLPs, alternatively, bank managers can choose to adopt the incurred loss provisioning model in order to increase low earnings since the incurred loss model generates lower LLP estimate. While there is no definitive solution to reconcile the conflict between these two LLPs estimates (Bushman and Landsman, 2010; Balla et al, 2012), one possible attempt to reconcile this conflict would be to persuade accounting standard-setters to replace the incurred loss model with a forward-looking provisioning model that is in line with the expected credit loss provisioning model (Gaston and Song, 2014). Nevertheless, any attempt to reconcile these conflicts should take into account (i) the role of the complex interaction between the accounting, macroeconomic and prudential framework of a country; (ii) the fact that the level of loan loss provisions (in the income statement) and the adequacy of loan loss reserve (in the balance sheet) is only as good as the methodology employed to estimate losses in the loan portfolio (Angklomkiew et al, 2009), and that forward-looking provisioning gives bank managers a licence to engage in speculative provisioning practices (Bushman and William, 2012).

4.3. Paucity of Critical Studies

A fourth concern is the paucity of critical studies in the LLP literature. By critical studies, we do mean critical research that invalidates prior findings, rather, we mean studies that challenge the proxies used and assumptions underlying current LLP models in order to increase the commitment of researchers to ensure that existing and new proxies continue to measure what they are intended to measure, therefore, the need for such critical studies is paramount. The lack of critical studies in LLP research can be attributed to the fact that policy makers, financial economists and academic researchers are more interested in LLP research that is result-driven, that is, the need to see results. As long as academic researchers interested in LLP research continue to take a positivist (quantitative) approach to LLP research, it could take a long time for a considerable number of critical LLP studies to emerge. Also, the fewer the number of academics interested in LLP research, the more difficult it is for critical studies to emerge.

4.4. Qualitative Studies

The final concern is that LLP research is dominated by quantitative methods while there are little or no qualitative studies on LLP research. A look at the first forty peer-reviewed LLP articles chosen at random in Google scholar search from 2012 to 2016 confirm that LLP studies that use qualitative or non-regression models are unpopular among empirical LLP studies at least for now. There is at least one study that use qualitative research methods (see. Balasubramanyan et al, 2013). One reason for this in our view is that LLP research appears to be of little of interest to the qualitative or non-empirical researcher. We need to find a way to attract non-empirical researchers to LLP research because there are interesting research questions that regression models cannot provide answer to. Also, we need qualitative studies to verify/check whether the findings of qualitative LLP research are consistent with the theory underlying the findings of most empirical LLP studies.

5. Additional Future Direction

One, continuous revision to Basel capital accord continue to provide opportunities for future LLP research. Basel II and III have implemented some changes to bank capital regulation which also require a change in the way banks use loan loss provisions. These changes will take years for its full effect to be felt. While prior studies investigate the impact of Basel I on bank provisioning decisions, studies that examine the impact of Basel II and III on discretionary bank provisioning are yet to emerge. Future studies could investigate the impact of Basel III regulation on banks' provisioning discretion to shed some insight on how changes in capital regulation rules affects banks' provisioning discretion in financial reporting.

Two, the literature do not provide insight on the provisioning practices of banks that are classified as 'systemic important financial institutions' (SIFIs) compared to bank that are classified as 'non-systemic important financial institutions' (non-SIFIs). This classification of banks and other financial institutions as 'systemic' is recent and there is little knowledge in the literature about the financial reporting characteristics of systemic firms. Therefore, it is interesting to investigate whether systemic important financial institutions use loan loss provisions differently than non-systemic important

financial institutions and whether systemic important financial institutions collectively use provisions to report competitive earnings and to manage capital levels.

Three, with regard to income smoothing, capital management and the signalling hypotheses, prior studies pay little attention to whether there are overlapping motivations to distort LLP estimates and the factors that lead to the choice of one motivation over the other. By overlapping motivations, we mean that bank managers may feel the pressure to signal information to investors and to smooth income at the same time but they can only achieve one at a time not both. Future research can provide insights to improve our understanding of banks' decision regarding the use of LLPs when they face conflicting motivations.

Four, in dynamic loan loss provisioning, there is the argument that increased scrutiny and supervision should guide the implementation of dynamic provisioning process (Bikker and Metzmakers, 2005). Future research is needed to demonstrate how monitoring and supervisory models would guide regulators in a dynamic loan loss provisioning system while bearing in mind that the willingness of bank regulators/supervisors to supervise bank provisioning decisions may also depend on (i) whether regulators believe they should supervise banks' accounting practices; (ii) the extent to which regulators believe auditors should perform the supervisory role; (iii) whether an independent supervisory body should be created to perform this role even if doing this further complicates the already complex accounting, fiscal and prudential bank regulatory network. Future research could clarify how supervision will guide the dynamic provisioning process and not interfere with the accounting and audit role.

6. Comments and Concluding Remark

Counter-cyclical or dynamic loan loss provisioning is a policy experiment and just like every experiment caution must be taken. Bank supervisors in many countries are reluctant to enforce a dynamic loan loss provisioning system for banks because it is a policy experiment and, of course, experiments can go wrong. However, many countries may finally adopt this system of provisioning in

the near future as more country-specific success stories emerge, for example, in Spain. The usual caveat apply that the best solution is not always implemented if the perceived cost outweighs its benefits. If the perceived cost of implementing and monitoring a dynamic loan loss provisioning system is greater than its intended benefit, then dynamic provisioning may not be implemented in some countries at least for now even if it solves the problem of LLP procyclicality. While the ongoing debate seem to converge towards the need for national bank supervisors to adopt a dynamic loan loss provisioning system, the process of determining the exact time to trigger dynamic provisions during business cycle developments remain an inexact science and cannot be predicted by a static model.

Another issue worth noting is that accounting standard-setters face political pressure to replace the incurred loss provisioning model with the expected credit loss provisioning model. From legitimacy theory, we know that accounting is socially constructed and exists within a context (Guthrie and Parker; 1989; Deegan, 2006). Because the IASB and IASC's provisioning models are permitted to guide the provisioning practices of banks in the banking sector, to retain its legitimacy, accounting standard setters will bow to the pressure of bank regulators in order to maintain their legitimacy within the banking industry. Accordingly, the expected credit loss provisioning model in IFRS 9 (to be implemented in 2018) will eventually replace the incurred-loss model.³ The new IFRS 9 provisioning model does not specify a particular measurement methodology to estimate LLPs but permit significant managerial discretion in determining what LLP estimates should be. Such discretion is permitted to allow banks meet the needs of bank regulators/supervisors although it remain critical that banks can exploit such discretion to smooth or manipulate reported earnings.

Conclusions drawn from this review is that LLP research have made a significant transition from country-specific and regional studies towards studies that examine how LLP interacts with the larger

³ The new IFRS provisioning model known as the 'expected credit loss model' will replace the incurred loss model in 2018. The model require that credit loss recognition should be forward-looking rather than when an actual loss event occurs. Under this model, "credit losses are measured at different stages, marked by 12-month and life-time expected credit loss recognitions. In the so called first stage, 12-months' expected credit losses are recognized. When assets experience significant increase of credit risk, they enter the second stage and life-time expected losses are to be assessed and measured." (Gaston and Song, 2014: p.11). ,

macroeconomic, accounting, cultural, prudential and institutional factors in an economy. Also, several provisioning models have been designed to ensure that bank provisions are adequate and such models are only as good as the assumptions underlying the model and the inputs included in the model. Regardless of the novelty of any provisioning system imposed on banks by regulators, there is still the need to actively limit bank managers' discretion in determining the level of loan loss provisions estimates. If bank managers continue to retain significant control on what inputs to include in, or exclude from, their LLP models, then such models may not yield the intended level of provisioning bank supervisors expect. If standard setters, bank supervisors and policy makers do not pay attention to specific accounting judgements made by bank managers in relation to LLPs, the issue of opportunistic income smoothing behaviour is likely to remain. From a standard setting perspective, there should be a limit to managerial discretion because it is illogical for standard-setters to have evidence that bank managers manipulate LLPs to smooth income, to receive bonus⁴, to manage regulatory capital and to signal future prospects, and then blame a methodology for such practice without putting the blame on managers who make provisioning decisions themselves.

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