POLICY BRIEF

What Explains Provisioning Behaviour in the Banking Industry? Evidence from an Emerging Economy

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Abstract

Existing literature shows that several factors drive loan loss provisioning among banks. However, little is known on this topic in the African banking context and specifically Kenya's banking industry. Using hand-collected annual bank-level data for the period 2002 to 2018, this paper investigates whether provisioning behaviour depends on banks' idiosyncratic or systematic factors. The study also investigates whether provisioning is pro or counter-cyclical through business and credit cycles and whether provisioning behaviour is heterogeneous for different bank groups. Estimation results reveal that provisions are used for capital and

earnings management, but the findings are sensitive to bank size and ownership status. Further, the evidence suggests that provisioning reflects changes in asset quality and is counter-cyclical to the business cycle.

Introduction

Banks play a significant role in financial intermediation. They mobilize savings and channel funds to finance consumption and investment. In the process, they bear the burden of credit risk when borrowers default. To address this risk, banks keep aside provisions that act as a revenue buffer against anticipated loan losses, also known as loan loss provisions (Laeven and Majnoni, 2003). On the downside, loan loss provisions (LLPs) affect bank's profitability and capital negatively as they are treated as cost items that reduce a bank's asset position (Quagliariello, 2007).

Provisioning may be exacerbated by business cycles, thereby generating negative macroeconomic shocks. This may lead to increased systemic risk since credit risk tends to rise in economic downturns (Berger and Udell, 2004). During economic expansion, banks' profit tends to rise, which triggers demand for loanable funds. Banks tend to underestimate their exposures to credit risk as they often relax screening and monitoring of borrowers. As a result, LLPs tend to be lower. As the economy cools, borrower's profitability declines and the effect is two-fold. First, asset quality deteriorates and, second, the bank's equity position declines (Murcia and Kohlscheen, 2016). To address asset deterioration, banks increase provisions but may also cut lending, which amplifies economic downturn (Betancourt and Baril, 2009).

This paper sought to achieve three objectives. First, we investigated whether provisioning behaviour depends on idiosyncratic or systematic factors. Second, we investigated whether provisioning is pro or counter-cyclical through business and credit cycles. Third, we investigated whether provisioning behaviour is sensitive to bank type (i.e., foreign vs domestic) and size (large vs small).

The 2007-2009 global financial crisis demonstrates the importance of countercyclical regulation since the financial shocks witnessed in banks and financial markets was very destabilizing. Thus, keeping aside sufficient reserves to cover for potential impairment of loans should be countercyclical to enable banks with less access to liquidity facilities stay solvent during bursts (Drehmann et al., 2010). The impact of the crisis has, however, brought to the fore concerns regarding International Financial Reporting Standards (IFRS). The LLPs can be forward-looking, contingent on expected losses also known as dynamic provisioning or backward looking, contingent on losses incurred during operations (Bouvatier and Lepetit, 2012). Forward-looking provisioning is countercyclical and hence earnings' management is

significantly reduced (Leventis et al., 2011). Despite the Basel Committee advocating for adoption of forward-looking framework, several countries including Kenya still use the backward-looking framework, hence underestimating loan losses during economic expansions.

Despite provisioning being important in mitigating credit risk, LLPs are not necessarily driven by credit risk (Murcia and Kohlscheen, 2016). First, banks have a discretion in the determination of the amount of LLPs, which can lead to opportunistic financial reporting. Second, banks may influence or manipulate LLPs to signal loan quality, manage capital and reduce variability of income. Third, banks' high leverage implies that their assets are vulnerable to volatility, prompting sufficient LLPs, which becomes banks' main accrual. The expectation is that high leverage and provisions should insulate the industry from contagion in the event of a bank collapse. But very high LLPs reduce the reported earnings. On the contrary, low provisions boost profit but banks must deplete capital to ameliorate losses (Laeven and Majnoni, 2003). This translates to a trade-off where LLPs simultaneously influence both profitability and risk.

There are two studies that are closely related to this paper. Murcia and Kohlscheen (2016) and Hessou et al. (2019) found that provisions are procyclical among banks and microfinance institutions, respectively. We extend these studies several ways. First, using a country-specific investigation, we explicitly model how differences in bank characteristics and ownership structure affect LLPs. We extend the foreign and domestic-oriented bank dichotomy of LLPs by examining the differences between pan-African and non-pan-African banks. Thus, the empirical strategy exploits the heterogeneity in LLPs arising from the divergent operations and structure in the Kenyan banking industry.

There are several reasons that justify research on the Kenyan banking industry. First, provisioning policies have implications on banks' stability and overall financial stability. Kenya is the main financial hub for East and Central Africa. Further, the country is the source of cross-border banking within East and Central Africa, which exposes the entire region to possible systemic/contagion effects in the event of a bank collapse. Even though cross-border banking may boost access to finance in the host nation (Beck et al., 2014), enhance competition and financial stability (Léon, 2016; Bremus, 2015), the converse is also true. Provisions should therefore insulate the banking sector from contagion effect. Second, the financial system is more bank-oriented and deeply entrenched within the economy, so that developments within the banking industry may have severe macroeconomic effects (Mwega, 2014). Third, although a vast literature exists at the global level (see Ozili and Outa, 2017), less attention has been paid to the banking industry in developing countries, especially those in Africa.

Existing literature points to four drivers of managerial discretionary behaviour concerning LLPs: income smoothing, signaling, capital regulation and taxes (Ozili and Outa, 2017).Yet, with the exception of tax motivation, which has mainly focused on US banks, empirical evidence finds contrasting results (see for example Caporale et al., 2018; Ozili, 2017; Bryce et al., 2015; Lee and Hsieh, 2013; Guidara et al., 2013; Acar and IPCI 2015; Pérez et al., 2008). Motivated by these concerns, this paper sought to understand three fundamental questions on LLPs in the Kenyan banking industry: (i) does the provisioning behaviour depend on banks idiosyncratic factors in addition to systematic factors? (ii) Does provisioning run pro- or counter-cyclical through business and credit cycles? (iii) How sensitive is provisioning to bank size and ownership? These questions highlight an important but relatively under-examined research agenda in the context of a developing economy.

This study has established that banks in Kenya use provisions for earnings and capital management. Foreign shareholding is associated with higher provisions, provisioning is counter-cyclical and reflects variations in the quality of assets. More importantly, pan-African banks do not use LLPs for capital or earnings management.

This paper responds to an existing gap in the empirical literature linking systematic and banks idiosyncratic factors to provisioning behaviour three-fold. First, non-performing loans (NPLs) and LLPs are the main channels of transmission of macroeconomic shocks to bank's revenue. Therefore, uncovering the determinants and behaviour of LLPs is important for designing provisioning policies. Second, the study findings will shed more light on the policy debate regarding IFRS provisioning, whose drawback is the procyclical pattern and more so with the coming into force of IFRS 9. Third, we contribute to the policy debate on how to design appropriate macro-prudential regulation for the whole financial system. For example, should the study findings reveal that business cycle influence provisioning behaviour, bank supervision may need to be enhanced during economic downturn when banks become fragile. However, should the bank's reaction to macroeconomic shocks worsen the effects of the recession, the Central Bank of Kenya (CBK) may have to establish regulations that reduce the procyclicality of the bank's operations. Thus, this study translates the empirical findings into instruments for policy reform and decision-making.

Stylized facts

The banking industry in Kenya comprises of 41 institutions: 40 banks, one mortgage finance company, nine (9) foreign banks' representative offices and 14 deposit taking microfinance institutions. Table 1 shows ownership and asset structure. With a total asset base of US$ 36.5 million, the banking industry contributes 7% of the Gross Domestic Product (GDP).

Table 1: Asset base and ownership structure of banks (US$ '000)

Ownership	Number	% of Total	Total Net Assets	% of the Total
Domestic Public Commercial Banks	3	7.5%	1,379	3.5%
Domestic Private Commercial Banks	22	55.0%	25,593	64.8%
Foreign Banks	15	37.5%	12,545	31.7%
Total	**40**	**100%**	**36,489**	**100%**

Source: Central Bank of Kenya - CBK (2020), Annual Bank Supervision Report

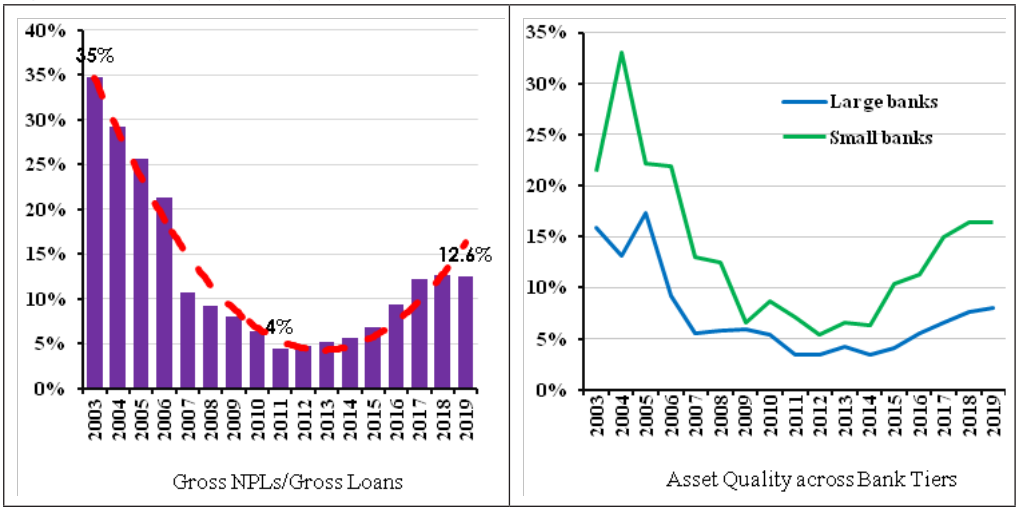
This Table shows bank size based on the ownership structure. Data is US$ denominated. Although asset growth has been on upward trajectory, the growth is not homogenous, with large banks recording the fastest growth (Figure 1).

Figure 1: Banking industry's assets as % of nominal GDP

Source: Central Bank of Kenya (Various years), Annual Bank Supervision Reports

Confronted by policy uncertainty, banks convey information to the investors about the loan portfolios (Ng et al., 2020). The trends in Figure 2 reflect differences in asset quality as banks adopt forward-looking provisioning standard under IFRS 9. Figure 2 shows a significant reduction in non-performing loans from 35% to 4% for the period 2003 to 2011. This may be attributed to policy reforms under strict regulatory regime, resulting in improved credit appraisal standards and reduction of information asymmetry between lenders and borrowers. These reforms include the introduction of credit information sharing in 2010. The gains were, however, short-lived since NPLs have been on an upward trajectory since 2012. Further, NPLs remain high at double-digits among small banks. It may be the case that poor economic growth, which has implications on the banks' risk attitude could have ignited the adjustments regarding loan portfolio growth, compliance to regulatory capital and shareholder expectations.

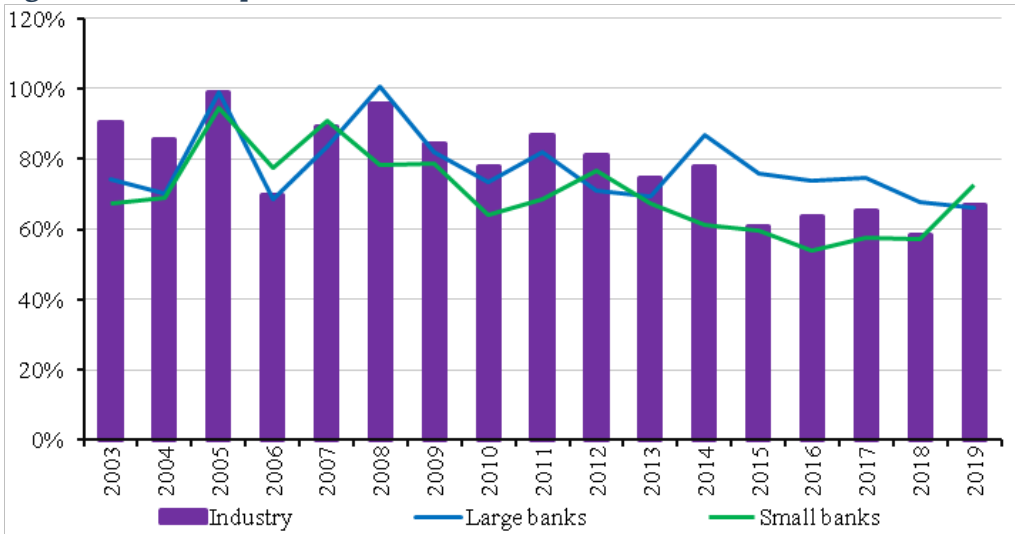
Figure 2: Asset quality



Source: Central Bank of Kenya (Various years)

Although large banks have, on average, recorded lower levels of NPLs, provisioning nevertheless remains high (Figure 3). This lends credence to Anandaraja, et al (2003), who documents that provisions are higher in large banks due to the scale of the intermediation.

Figure 3: Loan loss provisions

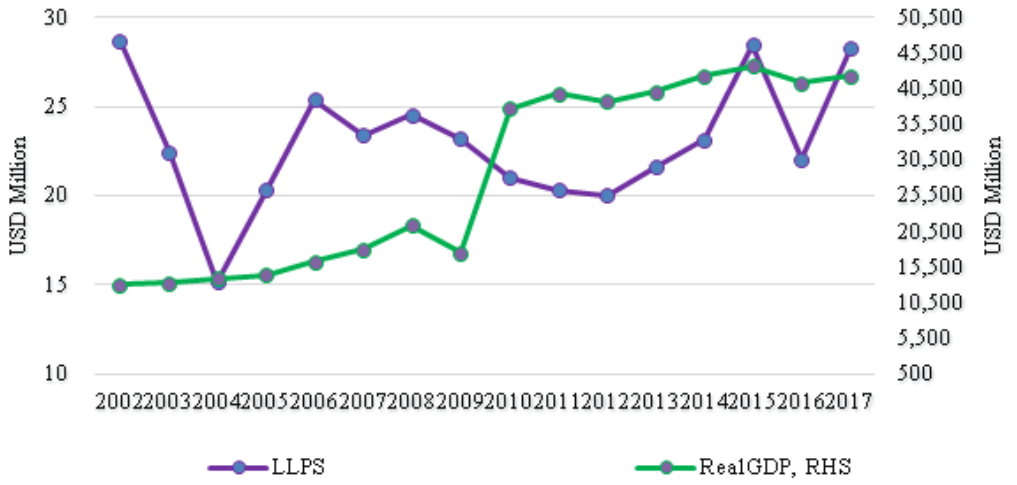


Source: Central Bank of Kenya (Various Years), Annual Bank Supervision reports

Regulatory and institutional monitoring of LLPs

The examination of provisioning is critical for monitoring the health of a financial system not only because it represents the most significant accounting expense but also because it erodes both the bank's ability to lend and reduces capital and profitability. More importantly and from a regulatory perspective, provisioning requires close monitoring to ensure adequacy, which guarantees a stable and sound financial system. Figure 4 shows that LLPs are cyclical to the business cycles. This implies that bank capitalization declines at the trough of the business cycle, which amplifies the procyclicality of LLPs (Murcia and Kohlscheen, 2016). The period 2013-2017 is characterized by a persistent rise in NPLs, necessitating more LLPs.

Figure 4: Loan loss provisioning and business cycles



Before the adoption of expected loan loss model for credit impairment as required under IFRS 9, banks in Kenya used the incurred loss model under the International Accounting Standard (IAS) 39. This framework, which is operationalized by CBK Prudential Guidelines, requires banks to regularly monitor their assets portfolio and ensure provisions for impaired credit is adequate. Under this framework, a bank's provision can take two forms: specific or general. A specific provision is set aside for a loss that has already materialized. However, if the loss is latent and cannot be ascribed to any individual loan, a bank can set aside a general provision.

The guideline mandates banks board of directors to develop an asset review system for the identification of risk, establishment of credit policies and ensuring that expected losses are adequately provisioned. Whereas institutional policies guiding credit and losses are based on internal risk rating systems, the guidelines are aligned to the Prudential Guidelines. Based on the borrower's repayment capacity, loans are classified under five categories for provisioning purposes: normal, watch, sub-standard, doubtful and loss.

Under these categories, different rules apply. For instance, provision for loans falling under normal category is set at 1% of the portfolio, watchful loans at 3%, substandard loans at 20% while loans under the doubtful and loss category require full provisioning. However, if reliable information exists, then higher provisions are set aside based on the information available. More importantly, the minimum provisions are guided by multiple factors, among them an institution's past loan loss record, prevailing economic environment, non-performing asset trends and remedial policies.

Despite the loan classification for provisioning purposes being aligned with the prudential guidelines, CBK also plays an oversight role through on-site inspections. On instances where the bank's classification differs with that of CBK, tripartite meetings are held between the bank, CBK and external auditors to harmonize the mismatch and consequently allow banks to reclassify their accounts appropriately. To ensure compliance with the guidelines, institutions submit detailed monthly returns of the provisions to CBK.

Basel regulations

Atellu, Muriu and Sule (2021) show that prudential regulations are significant drivers of banking stability in Kenya. Basel I standards, first introduced in 1998, focused on capital adequacy and credit risk and required banks to maintain a minimum capital risk-weighted capital adequacy ratio of 8%. While this compliance was set to 1992, its adoption was staggered by two years with the implementation year being 1994 through the amendment of sector four of the Banking Amendment Act of 1989. Further, a wave of bank failures in 1998 triggered an increase in the minimum capital risk weighted to US$ 2.7 million, which was to be achieved by December 1999. In the year 2000, the minimum capital was further raised to US$ 3.2 million. In 2004, Basel II was introduced; however, its adoption, especially among emerging and frontier economies, was voluntary (Mwega, 2014). Despite selective adoption, prudential guidelines were amended in 2006 to strengthen banking regulations (Upadhyaya, 2017). In 2007, a supervisory infrastructure roadmap for the adoption of Basel II was issued by the CBK.

With the onset of global financial crisis, new requirements for core capital were imposed. The adoption of the amendments was to be progressively adjusted. By 2009, the CBK required banks to have a minimum capital of US$ 1.3 million, a minimum capital of US$ 1.9 million by 2010, US$ 2.3 million by 2011 and US$ 3.0 million by 2012. The Banking Act that was amended in 2012 introduced a provision allowing for the prescription of the minimum capital adequacy ratio and aligned the bank's financial reporting to the IFRS.

The prudential guidelines were further amended in 2013, where the new guidelines combined Basel II and III capital adequacy standards. In 2013, the Banking Act was amended to ensure the independence of the CBK, thus strengthening the supervisory framework by allowing it to develop and implement additional regulations. Further, risk management guidelines were introduced in 2013 but were yet to consider the adoption of counter-cyclical macro-prudential regulations.

With Basel I and II standards not fully implemented, Basel III standards on contingency capital ratios, net stable funding ratio and guidelines on systemically important banks are yet to be adopted, but banks have nevertheless implemented a capital buffer of 2.5%. Banks that met the minimum capital adequacy ratio but with low conservation buffers should have put in place prudent retention policies on earnings and minimum conservation buffer ratios by 2016.

Data source

The analysis is based on hand-collected annual audited data of 38 banks (out of 43 banks) that spans from 2002 to 2018. The data is obtained from the published balance sheet and income statement while macroeconomic data was obtained from the CBK. The choice of the study period was informed by data availability at the bank level. Table 2 presents definition and measurement of the variables, the predicted effects a priori based on theory and empirical literature, and sources of data.

Table 2: Variable description and hypothesis

Variable Name	Notation	Description and Measurement	Hypothesis Tested	Apriori Sign
Loan loss provision	$LLP_{i,t}$	Ratio of loan loss provision to lagged total assets	-	
Capital ratio	$CAP_{i,t}$	Ratio of capital to risk-weighted assets	Capital management	+/-
Earnings before Interest and Taxes	$EBIT_{i,t}$	Ratio of earnings before interest and taxes to total assets	Income smoothing	+
Bank size	$SIZE_{i,t}$	Natural logarithm of total assets	-	+
Liquidity ratio	$LIQ_{i,t}$	The ratio of liquid assets to total assets	-	+
Loan growth	$LG_{i,t}$	Growth in the total loans of a bank	-	+
Asset quality	$AQ_{i,t}$	The ratio of non-performing loans to lagged total loans	-	+

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Table 2 Continued

Variable Name	Notation	Description and Measurement	Hypothesis Tested	Apriori Sign
Bank ownership	$Ownership_{i,t}$	Foreign shareholding of a bank as a share of the total outstanding shares	-	-/+
Real GDP annual growth rate	GDP_t	Real Gross Domestic Product annual growth rate	Cyclicality of LLPs	-/+
Output gap	$OUTGAP_t$	Deviation of GDP from its long-term trend	Cyclicality of LLPs	-/+
Credit-to-GDP growth gap	$Credit_t$	Deviation of credit to the private sector as a % of GDP from its long-term trend	Cyclicality of LLPs	-/+
Business freedom	BF	Ranges from 0 to 100 with 100 indicating the freest business climate.	Cyclicality of LLPs	-/+

Conclusions

Existing literature shows that excessive credit growth is particularly prevalent in developing countries. At the onset, this study sought to uncover the determinants of LLPs in Kenya for the period 2002–2018. To achieve this objective, the study used the system GMM estimator. Overall, we find evidence that; (i) banks use provisions for capital management purposes, but this finding is sensitive to bank size and ownership status; (ii) earnings management influences provisioning decisions but this is also sensitive to bank size. Unlike small banks, large banks use provisions to smoothen income; (iii) higher foreign shareholding of banks is positively associated with higher provisions; (iv) provisions reflect variations in the quality of assets; (v) provisioning is counter-cyclical, but this is more pronounced among small and domestic banks; (vi) more importantly, pan-African banks do not use LLPs for capital or earnings' management.

These study findings have important policy implications for banks supervision in Kenya. First, considerable heterogeneity in the discretionary use of provisions by banks in the application of the incurred loss model of IAS 39 implies that even post-transition to the expected loan loss model as envisaged by IFRS 9, a significant deal of discretion exists. This calls for considerable efforts to ensure uniformity in the application of the provisioning frameworks. Further, these findings ignite new directions for future research on income smoothing and capital management. For instance, the policy debate is about whether the benefits of income smoothing outweigh costs (Goel and Thakor, 2003). That notwithstanding, income smoothing lowers the quality of accounting data. The empirical evidence uncovered in this paper points to the need for a sound accounting framework.

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Mission

To strengthen local capacity for conducting independent,
rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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