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Capital requirement, bank competition and stability in Africa[☆]

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Abstract

Monetary authorities around the world are implementing enhanced banking capital adequacy requirements under Basel III meant to improve financial stability. Critics however argue that increased capital requirements concentrate the banking industry reducing competition while not guaranteeing financial sector stability. Using data from 167 banks in 37 African countries, we find that increased capital beef-up significantly increases financial instability in Africa (except in big banks) implying that higher capital requirements did not make African banks safer. We also find that increased regulatory capital improves competitive pricing for foreign banks while it makes domestic banks less competitive mainly attributed to the high cost of sourcing and holding extra capital for domestic banks compared to foreign banks who can source cheaper capital from parent companies. The results put to question the effectiveness of enhanced regulatory capital on stability and competitiveness of the African financial system.

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1. Introduction

Following the global financial crisis of 2007–2009, stringent regulatory measures such as higher capital adequacy requirements have become more prominent as a move towards having a more stable banking sector. Most African countries have hastened their capital build up towards the levels outlined by the BASEL III. For example in 2007, commercial banks in Zambia were required to raise the minimum capital requirement from \$ 358,240 to \$2.2 million. In Algeria, amendments introduced in 2008 boosted minimum capital for banks from USD 39 million to USD 155 million. In Kenya commercial banks were required to build up their capital base from \$3.3 million in 2008 to \$12.5 million by end of 2012. The push for capital build-up emanates from the view that better capitalized banks are likely to with-

stand financial turbulences and therefore will increase banking sector stability (see for instance Santos, 1999; Van Roy 2003).

However, there are two main counter arguments to the push for capital build-up. First, emerging evidence show that bigger banks perceive themselves to be “too big to fail” and therefore engage in more risky investments and are more vulnerable to shocks that smaller banks (Berger and Mester, 1997). The argument is that bigger is not necessarily safer. This view finds credence in the case of Nigeria for instance where, despite raising the minimum regulatory capital requirement, 8 out of 24 banks were declared insolvent in 2009, and it became clear that consolidating the sector was not enough (Sanusi, 2012).

The second counter argument is that capital build-up and concentration reduces competition in the banking sector and has the potential to drive up banking costs and stifle financial inclusion. The high initial capital stringency requirements can impose entry barriers for new entries and this would restrict competition and allow existing banks to accumulate market power (Berger et al., 1993). Opponents of consolidation have argued that the push for capital build-up is a ploy by the big banks to lock out new entrants to avoid competition.

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On the basis of the preceding discussions, the precise impact of regulatory capital beef-up on banking competition and stability is at best contentious (Hakenes and Schnabel, 2010; Van Roy, 2003). In this paper we explore two main questions with reference to Africa; first, whether regulatory capital beef-up improves financial sector stability and whether regulatory capital beef-up concentrates the banking industry reducing competition.

The importance of these two questions for the African banking sector cannot be overemphasized. World Bank (2015) shows that penetration of financial services in sub-Saharan Africa is still low and stands at 24% (measured by private sector credit to the private sector as a percentage of GDP) compared to 48.1% for North Africa, 45.2% for the Latin America & Caribbean and 134.3% for the OECD countries. Yet, sub-Saharan Africa has the lowest level of financial inclusion with only about 21% of adult population having a bank account compared to 34% in Latin American and the Caribbean and 90% in the OECD. Increased competition in the banking sector is known to drive down banking costs improving financial inclusion.

Using annual bank level data for the period 2000–2011 from 162 commercial banks in 37 countries in Africa, the study makes several findings; first, increased regulatory capital increases financial instability in Africa except for big banks. Secondly, regulatory capital has no impact on competition in the banking industry as a whole but improves competitive pricing among the foreign banks while making domestic banks less competitive.

The rest of the paper is organized as follows; in section two, we review related literature, section three presents the methodology while sections four and five present the results and policy issues respectively.

2. Review of related literature

There is wide support of the role of capital regulation on financial sector soundness and stability in the literature. Van Roy (2003) finds that stringent capital requirements in the early 1990's promoted financial stability and reduced credit risk in the G10 countries. Furlong and Keeley (1989) and Keeley (1990) show that higher capital requirements reduce the incentives for risk taking by a value-maximizing bank and this helps increase bank stability. Bolt and Tieman (2004) argue that more stringent capital adequacy requirements lead banks to set stricter acceptance criteria for granting new loans thereby reducing their exposure to default risk. Other studies have found that higher capital reduces banks' exposure to systemic risk (De Jonghe, 2010; Martinez-Miera and Suarez, 2014) and reduces the chance of banking crises (Miles et al., 2012).

We are not aware of any empirical study on the effects of increased capital requirement on stability that specifically focuses on Africa. A few studies though, have looked at the issue for developing and transitional countries in general. Hussain and Hassan (2005) in a study of 11 commercial banks in developing countries, shows that capital regulations reduced portfolio risk in those countries. Agoraki et al. (2009) on the other hand finds that capital requirements are effective in monitoring risk-taking as they increase equity to capital ratios and decrease credit risk but this effect weakens for banks with sufficient market power.

There are also other studies that have found destabilizing effects of increased capital requirements. Besanko and Kanatas (1993) and Boot and Greenbaum (1993) for instance find that capital requirements reduce monitoring incentives, which reduces the quality of banks' portfolios increasing the risk of instability. Berger and Mester (1997) finds that beyond certain thresholds, banks become inefficient and unstable. Hakenes and Schnabel (2010) on the other hand show that tighter capital requirements increase the risk of individual loans and may also increase a bank's probability of default because they relax the competition for loans and thus destabilizing the banking sector. According to these studies, increased capital requirement does not necessarily lead to stability.

On capital requirement and competition, Amel et al. (2004) finds that commercial banks operating beyond a certain size (measured by total assets) have higher operating costs and operating beyond lowest average cost introduce inefficiencies and instability that reduce competition in the market. Tying the findings of Berger and Mester (1997) and Amel et al. (2004) that too big banks (beyond a certain threshold) are more inefficient and unstable and the findings of Berger et al. (1993) that most efficient banks have substantial cost and competitive advantages over those with average or below average efficiency, it can be inferred that too big banks may not only be unstable but also uncompetitive. Bikker and Groeneveld (1998) assessed competitive structure in the banking industry in the EU and finds that concentration impairs competitiveness. Similar findings were obtained by (Salas and Saurina, 2003; Claessens and Laeven, 2004).

3. Methodology

3.1. Model specification and theoretical priors

This study estimates two equations to capture the effects of capital requirements on bank competition and secondly to capture the impacts of capital requirements on stability. Formally the model is given as;

$$comp_{it} = \alpha + \beta cap_{it} + \eta X_{it} + \lambda(cap * X)_{it} + \varepsilon_{it} \quad (3.1)$$

The conditioning variables X include both country-specific macroeconomic variables and bank-specific variables including inflation, money supply among other variables. $comp_{it}$ is the measure of competition while cap_{it} is the regulatory capital requirement ratio for bank i in time t . We estimate this equation for different segments of the banking industry including among the foreign banks, domestic, listed and non-listed, efficient and inefficient and banks in economies with a small (and big) banking sector relative to the size of the economy. The impact of capital requirement on financial stability is analyzed using a similar model given as:

$$stab_{it} = \delta + \varphi cap_{it} + \rho Z_{it} + \xi(cap * Z)_{it} + \mu_{it} \quad (3.2)$$

where $stab_{it}$ is the stability indicator for bank i in time t . Z is a vector of control variables (both macro and bank-specific) that are expected to affect financial sector stability and includes

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