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The Latin American bank capital buffers and business cycle: Are they pro-cyclical?

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ABSTRACT

This paper examines capital buffer fluctuations over the business cycle and provides empirical evidence on determinants of capital buffers for the banking sectors of 13 Latin American and Caribbean countries for the period 2001–2012. Results indicate that there is a negative and significant relationship between regulatory capital buffers and GDP growth for five countries, while positive and significant for six. Banks' adjustment costs, size, profitability and risk are significant determinants of buffers holdings. We present evidence that capital buffers are more likely to fluctuate pro-cyclically in those countries where costs of adjustment are lower and capital regulation is less stringent.

1. Introduction

The aftermath of the recent global financial meltdown underlined the importance of macro-financial linkages and the role played by the banking sector in financial markets. When the first Basel Accord was established in 1988 (Basel I), the aim was to build a safety net for banks against business cycle fluctuations and market risks by assuring that banks would hold adequate levels of capital. The banking sectors of countries incorporated into the Basel I Accord were required to hold at least 8% of their risk-weighted assets (RWA) in capital. Basel I was replaced by Basel II in 2004 to ensure that minimum capital requirements were more closely linked to banks' risk profiles and supervisory interventions were implied in case of bank failures.

Capital buffers are capital holdings of banks that exceed the regulatory minimum. The incentives for banks to hold capital in excess of the required minimum are many: to avoid costly intervention, to signal financial soundness to the market, to take advantage of profitable market opportunities and to create a cushion against recessions. When banks fail to accumulate capital buffers in times of economic booms, they could be trapped with insufficient level of capital during an economic downturn. Under these circumstances banks are forced to deleverage assets and reduce their lending to the market in order to meet the regulatory minimum capital requirements in busts since it is costlier to raise capital through new equities. Hence, the cyclical behavior of capital buffers amplifies the impact of shocks on economic stability through reduced lending (Repullo and Suarez, 2009; Borio and Zhu, 2008). Aiming to prevent these destabilizing cyclical impacts of capital buffers fluctuations,

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Basel III requires banks to increase capital buffers during economic booms through a "mandatory capital conservation buffer" of 2.5% and through a "discretionary counter-cyclical buffer" of up to another 2.5% in times of credit booms. Repullo et al. (2010) further show that capital requirements should be varying over the cycle by deriving the capital requirements of Basel II for each unit of loan for Spanish Banks over the period 1987–2007 to estimate probabilities of default. Hence, considering the impact of Basel Accords on economic stability through capital requirements, it is crucial to assess the cyclical behavior of capital buffers for a successful implementation of Basel III.

Regarding the cyclical behavior of capital buffers, the empirical evidence is inconclusive. Ayuso et al. (2004), Lindquist (2004), Bikker and Metzemakers (2004), Stoltz and Wedow (2005), and Shim (2012) find evidence in favor of counter-cyclical fluctuation of capital buffers in advanced economies. On the other hand, Jokipii and Milne (2009) study commercial, savings, and co-operative banks separately, as well as small and large banks, and find that the capital buffers of different banks exhibit different cyclical behaviors. Their results show that the capital buffers of commercial, savings, and large banks fluctuate counter-cyclically, while those of co-operative and smaller banks fluctuate pro-cyclically. Fonseca and Gonzalez (2010) find differentiated patterns in the levels of capital buffer holdings across and within developed and developing countries.

By the beginning of the 2000s, when most of the banking systems in the region had adopted Basel I standards, the impact of these standards on the cyclical behavior of capital buffer became the center of attention in the literature. Questions were raised regarding the cyclical effects of Basel Accord. Barajas et al. (2005) examine the economic effects of Basel I in the banking systems of the region. Although they find evidence of increased lending activity and capitalization after its implementation, they also find that growth in lending is more sensitive to changes in banks' capital ratios. Consequently, the authors expected lending growth to become more pro-cyclical after Basel II implementation as capital ratios under the Accord were expected to reflect risk factors that vary with the cycle.

Numerous countries were expected to adapt Basel II progressively after the agreed date for implementing the second Accord in 2007. Many policy analysts and economists declared their concerns over the effects of Basel II on the competitive landscape of the region before the initial date of adaption. Majnoni and Powell (2005), claim that the multiple options for regulatory capital determination contained in the proposal would create regulatory divergence in the region due to the different levels of market penetration, standardized approaches adopted by credit rating institutions and internal risk systems. However, the eruption of the global financial crisis in 2008 postponed the adaption of the second Accord in the region. According to a Financial Stability Institute questionnaire sent to the region's supervisory authorities in 2004, eleven out of the 15 major economies in the region had plans to adapt Basel II over the period 2007–2009 (FSI and BIS, 2004). However, according to the World Bank global Survey Banking Regulation in 2012, only Brazil, Mexico, Peru, Uruguay, Costa Rica and Cayman Islands had fully implemented Basel II in 2011. The rest of the countries declared Basel I to be the regulatory standard in place[1]. Currently, plans for the full implementation of Basel III are underway in Brazil, Mexico and Argentina, member states of the Basel Committee on Banking Supervision and the G-20. Other countries such as Uruguay and Colombia have been modifying their regulatory chapters to incorporate elements of Basel III, whereas the rest of the region shows reform delay. Hence, both because of the timing of implementation and of the drastic regulatory reformulation after the crisis, the current state of banking regulation in the region is characterized as non-convergent, and caught in the middle of incomplete implementation of both Basel II and III.

It should be noted that the formal adoption of Basel III does not seem to pose a disproportionate challenge for Latin American and Caribbean banks. Galindo et al. (2012) examine the initial conditions for the implementation of Basel III in Andean countries, Bolivia, Colombia, Ecuador and Peru. They find that these countries would have little difficulty adapting their banking systems to the new standards of Basel III, and would even be reducing their current level of regulatory capital. Warman (2013) draws a similar conclusion for the main banking systems of the region. Although initial conditions of countries and their regulatory capital items differ and countries' regulatory standards overlap, most countries are capable of formally adopting the regulatory standards stipulated in Basel III.

However, little attention has been paid to the de facto real economic initial conditions of the Latin America and the Caribbean countries and to the implications of the new philosophy and measures proposed by Basel III. The constitution of counter cyclical capital buffers is a central element of the new regulatory package. As capital ratios under Basel I and II were designed to reflect underlying risks in bank's portfolios more closely, and given the cyclical nature of those risks, the frameworks proposed by the first two versions of the Accord might have contributed to procyclical behavior over business cycles since their global implementation[2].

The main objective of this paper is to assess the cyclical patterns of capital buffers empirically for a panel of banks from thirteen Latin American and Caribbean countries for the period 2001–2012. The contribution of this paper to the related literature is to provide new information on the behavior of capital buffers using data from emerging markets in Latin America. There are a limited number of studies on this issue in the literature. Previous research has mostly focused on developed countries' banking sectors. A few studies use single country data to investigate the behavior of capital buffers for emerging

[1] The survey's results are found at: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTGLOBALFINREPORT/0,,contentMDK:23267421~pagePK:64168182~piPK:64168060~theSitePK:8816097,00.html.

[2] See Borio and Zhu (2008) and Repullo and Suarez (2009, 2012) for an assessment on the procyclicity of Basels I and II. For fundamental documents that shaped the new regulatory package, see: Brunnermeier et al. (2009).