Journal of Applied Economics. Vol XVII, No. 2 (November 2014), 229-256

ON THE OPTIMALITY OF BANK CAPITAL REQUIREMENT POLICY IN A MACROECONOMIC FRAMEWORK

Mario Catalán *

International Monetary Fund

Eduardo Ganapolsky

University Torcuato Di Tella

Submitted September 2011; accepted August 2013

An increasingly widespread "macro-prudential" view holds that bank capital requirements should be loosened during recessions and tightened during expansions to avoid excessive credit and output swings. We present a dynamic general equilibrium framework that accounts for the effects of capital requirement policies on the saving decisions of households, and, through this channel, on bank loans and output. We evaluate optimal capital requirement policy in the presence of loan write-offs (loan supply) and productivity (loan demand) shocks. We show that capital requirements should be reduced in response to unanticipated loan write-offs. We also show that capital requirements should be tightened in anticipation of future declines in productivity, and loosened at the onset of recessions. We conclude that macro-prudential capital requirement policies can be optimal from a welfare standpoint, but they can also generate output and credit booms through general equilibrium effects.

JEL classification codes: E58, E32, E44, G28.
Key words: macro-prudential, capital requirements, bank regulation, deposit insurance.

---

* Mario Catalán (corresponding author): International Monetary Fund, 700 19th St., NW, Washington, DC 20431, e-mail: mcatalan@imf.org. Eduardo J. J. Ganapolsky: University Torcuato Di Tella and Proficio Investment, 25 de Mayo 267, 8th floor, Suite 48 - 1002 - CABA – Argentina, e-mail:eganapolsky@proficioinvestment.com. The views expressed in this paper are those of the authors and should not be attributed to the International Monetary Fund. We appreciate helpful comments on earlier drafts from Larry Wall, Juan Rubio, Alexander Hoffmaister, Jose Wynne, Karsten Jeske, Jaime Guajardo, Diego Saravia, Leonardo Martinez, and Pablo Lopez Murphy. We are also thankful for comments received from participants in the following events: a joint seminar organized by the University of Brasilia and the Catholic University of Brasilia; a conference organized by the Federal Reserve Bank of Atlanta and the Inter-American Development Bank, "Toward Better Banking in Latin America;" a seminar organized by the Institute Department of the International Monetary Fund.

I. Introduction

The recent global financial crisis has revealed the limits of standing macroeconomic policy frameworks that rely on monetary and fiscal policies alone. These policies moderated business cycles and kept inflation low and stable, but they were unable to prevent a massive build-up of systemic financial risk and, ultimately, a deep and prolonged global recession (Blanchard, Dell'Ariccia, and Mauro 2010).

To address the shortcomings of current macroeconomic frameworks, an increasingly widespread "macro-prudential" view holds that prudential financial regulations should be used as policy instruments to limit the inherent pro-cyclicality of financial systems (Borio, Furfine, and Lowe 2001; Borio 2003; Kashyap and Stein 2004). Specifically, prudential regulations should be loosened during recessions and tightened during expansions to limit systemic financial risk and dampen credit and output swings.

One argument that supports the counter-cyclical use of bank capital requirements goes as follows. During recessions, loan defaults cause bank capital write-offs that, in turn, force banks to raise new capital or withdraw maturing loans and accumulate cash assets in order to satisfy the required risk-weighted asset ratio. As raising new capital is typically difficult in bad times, banks tend to satisfy the requirement through loan supply reductions, which amplify the credit crunches and the recessions. These amplification effects can be avoided by lowering the capital requirements at the beginning of recessions. Similarly, during upswing phases of business cycles, credit booms and pro-cyclicality could be contained by tightening bank capital requirements.[1]

Though appealing, this argument overlooks the fact that the banking system's lending capacity is determined, to a large extent, by the households' willingness to provide savings in the form of bank deposits and equity holdings. The literature is missing a general equilibrium framework that accounts for the effects of capital requirement policies on the consumption-saving decisions of households and, through this channel, on credit and output. In this paper, we provide such

[1] Other regulatory and non-regulatory sources of pro-cyclicality in financial systems include those related to risk measurement, risk management techniques, individuals' behavioral biases, etc. See Borio, Furfine, and Lowe (2001).