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Mind the gap: Computing finance-neutral output gaps in Latin-American economies

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ABSTRACT

We compute a measure of the finance-neutral potential output for Colombia, Chile and Mexico. Our methodology is based on Borio et al. (2013, 2014) and incorporates the cycle of credit, house prices and the real exchange rate in the computation of the output gap. The literature on business cycles in emerging market economies, particularly papers focusing on Latin American economies, has highlighted the importance of including shocks to the interest rate in world capital markets together with financial frictions, terms of trade fluctuations, and a procyclical government spending process. Our results show that around the financial crises of the 1990s the finance-neutral output gap behaved differently than the traditional measures observed by policymakers. In particular, gaps are higher before crises and lower after them.

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1. Introduction

Economics, as well as everyday life, is full of important yet unobservable realities. Potential output is the paramount example of this fact. This variable is traditionally defined as the highest level of output that an economy can sustainably achieve (see, for instance, Okun, 1962; Mishkin, 2007).

However, several different sustainability criteria have been proposed and debated over time, and clearly there is no consensus on which is better than the others (see, for instance, Smets, 2002; Billmeier, 2004; Cobo, 2005). Unfortunately, potential output estimations depend heavily on the particular assumptions. This fact is challenging for policymakers, as key decisions depend upon the measurement of the output gap. For instance, the sign and level of the output gap is crucial for monetary policy within an inflation targeting environment that follows Taylor-type rules.

It is common practice to include economic information in potential output estimations in order to address the sustainability criterion. This approach has gained favor because it yields meaningful economic and statistical improvements (Borio et al., 2014).

However, the recent international financial crisis has made evident that financial stability is a key concept for understanding economic sustainability (for example, see Adrian et al., 2012). Ignoring this fact may lead to specification

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errors and misleading policy recommendations. In many different episodes, the build-up of financial imbalances in a low-level inflation environment has led to huge posterior output losses (see, for instance, [Schularick and Taylor, 2012](#)). Whenever a monetary authority follows a Taylor rule with a traditional output gap estimate, financial imbalances can accumulate, leading to potentially harmful macroeconomic outcomes. The best-known example of such a process is the recent international financial crisis that started in 2007–2008.

Many emerging economies experienced deep financial crises in the late 1990s. The Latin American region constitutes an interesting example of the effects of financial imbalances on economic performance during this period of time. These countries experienced pronounced capital-flow cycles that led to credit and asset price booms followed by large sudden stops and financial cycle busts.

Taking into account the episodes of financial distress occurring in Latin American economies during the 1990s, a growing body of literature studying the complex relationships between financial and real variables is developing. A strand of this literature has centered on the dynamic interactions among financial variables, real activity, monetary aggregates and asset prices (for example, see [Goodhart and Hofmann, 2008](#)). Another strand deals with the predictive power of financial indicators on economic crises ([Ng, 2011](#)).

Recently, much attention has been paid to the interdependence between financial and real business cycles ([Borio, 2012](#); [Claessens et al., 2012](#); [Gómez-González et al., 2014](#); among others). Emphasis has been placed on the frequencies at which credit and property prices are related with the business cycle. [Drehmann et al. \(2012\)](#) highlight the importance of considering the interdependence between medium-term financial cycles and short-term product cycles.

Following [Borio et al. \(2013, 2014\)](#), in this paper we perform estimations of the output gaps that take into account the financial cycle (finance-neutral output gaps) for three major Latin-American economies (Colombia, Chile and Mexico). Studying these countries is important, as they all experienced major financial crises during the 1990s and their recoveries lasted about 5 years. Our second contribution is to propose a specific way of applying the methodology of Borio and his co-authors to the case of small open and emerging economies. Namely, we incorporate the real exchange rate as a measure of the stance of the external sector. As mentioned above, small open economies like those we include in our empirical analysis are sensitive to external shocks that increase their vulnerability to financial crises and deep economic downturns. As a robustness check, we also include the terms of trade indicator as an alternative measure of external sector innovations.

We use this framework to gain new insights on output fluctuations in emerging market countries. There are several important factors that exert influence on business cycles in emerging market economies, including financial cycle aspects. In fact, the greater volatility of emerging market economies can account for the higher vulnerability of these economies to waves of banking failures. Therefore, the characterization of business cycles in emerging market economies needs to take into account financial variables which control for the likelihood of occurrence of a financial crash ([Oviedo, 2004](#)). External financial liberalization can also be a source of increased volatility of cycles after real interest rate shocks ([Minetti and Peng, 2013](#)).

We compute finance-neutral output gaps by including real asset price growth, real total credit growth and the first difference of the real exchange rate. The two first indicators account for the interplay among financial frictions, credit and collateral value and the third one for the balance of payments behavior. These links are very important. First, asset prices affect the perceived wealth of households that in turn influence credit demand (see [Kiyotaki and Moore, 1997](#)). Second, several studies have shown that abnormal credit growth is the main predictor of financial crises ([Schularick and Taylor, 2012](#)). Finally, real exchange rate movements is the key adjustment variable behind possible external imbalances in small and open economies. These episodes are able to explain a significant part of their business cycles ([Bracke et al., 2008](#)). We also use the terms of trade as an alternative external sector indicator in order to perform robustness checks.

Our contribution to the literature is twofold. First, we estimate finance-neutral output gaps for three Latin-American economies. We did not find any previous estimation using this methodology for these countries. Given their peculiarities, we extend the existing literature by including the real exchange rate to account for the build-up of external financial imbalances that makes emerging economies more prone to financial crashes. And second, we complement the existing literature by showing that taking into account financial factors is a key issue for output gap estimation.

Our results also have interesting policy implications. Policymakers in Latin American economies should consider the stage of the financial cycle when making monetary policy decisions. If financial variables are omitted from the output gap, important financial and/or external sector imbalances that may lead to further recessions can be neglected.

Section 2 presents a brief literature review, while Section 3 discusses the methodology. Section 4 describes the data used in the empirical analysis and the estimation results. Section 5 performs a robustness check of the initial results. Finally, Section 6 concludes.

2. Literature review

The recent international financial crisis has renewed academic interest in studying the interdependence between financial and real variables. A strand of this literature has centered on the dynamic interactions among financial variables, real activity, monetary aggregates and asset prices. For instance, [Goodhart and Hofmann \(2008\)](#) use a sample of 17 industrialized economies for the period 1970–2006 and estimate the multidimensional links between money, credit, house prices and economic activity. They find a strong link between house prices and monetary variables post-1985. They also find that the macroeconomic effects of monetary and credit shocks are stronger when house prices are booming.

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