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The effects of U.S. monetary policy on Colombia and Panama (2002–2007)☆

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ABSTRACT

I study the economies of Colombia (floating exchange rate) and Panama (dollarized) to illustrate how the monetary policy of a large economy can export capital structure distortions to small open economies that follow different exchange rate regimes. The paper contributes to the literature on international business cycles in two ways. First, it adds to recent research that extends the Mises–Hayek business cycle theory to an international context. Second, most current research abstracts from effects on the production structures of emerging market economies when analyzing the transmission of monetary policy shocks. This paper seeks to fill this gap by studying structural effects of U.S. monetary policy on the economies of Colombia (floating exchange rate) and Panama (dollarized).

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1. Introduction

It has been suggested that the 2008 crisis resulted from an accumulation of imbalances produced by an excess of liquidity driven by major central banks (Diamond & Rajan, 2009a; Dowd, 2009; McKinnon, 2010; Meltzer, 2009; O'Driscoll, 2011; Schwartz, 2009; Taylor, 2009). However, it has also been observed that business cycle theories, for example, Real Business Cycle models, cannot fully explain the 2008 crisis (Caballero, 2010; Ohanian, 2010; White, 2009). Some scholars argue that a missing piece needed to explain the recent financial crisis is found in the Mises–Hayek, or Austrian, Business Cycle theory (Borio & Disyatat, 2011; Calvo, 2013; Diamond & Rajan, 2009; Garrison, 2009; Lal, 2010; Leijonhufvud, 2009; O'Driscoll, 2009; Young, 2012).

This paper contributes to the literature on international business cycles in two ways. First, it adds to recent research that extends the Mises–Hayek business cycle theory to an international context (Cachanosky, 2012a; Hoffmann, 2010, 2012; Hoffmann & Schnabl, 2011; Kollar, 2008). Second, most current research abstracts from effects on the production structures of emerging market economies when analyzing the transmission of monetary policy shocks. This paper seeks to fill this gap by studying structural effects of U.S. monetary policy on the economies of Colombia (floating exchange rate) and Panama (dollarized). If U.S. monetary policy produces economic imbalances that bear sufficient weight, then a factor common to small open economies with different exchange rate regimes should explain business cycle co-movements that respond to an external monetary shock.

The 2008 crisis was the largest economic crisis in Latin America, a region particularly sensitive to U.S. monetary policy and FDI flows (Bengoa & Sanchez-Robles, 2003; Calvo, Leiderman, and Reinhart, 1993; Canova, 2005), since the 1960s.[1] Colombia and Panama are both well integrated, commercially and financially, with the U.S. As the exchange rate regime plays an important role in the transmission of external shocks to a domestic economy, these countries can be used to illustrate how a given distortion can be transmitted to a domestic economy, regardless of the exchange rate regime. These two countries also represent other economies of the region.

The paper is organized as follows: Section 2 presents the main insights of the Mises–Hayek business cycle theory and the international transmission mechanism through which the Mises–Hayek effects can affect small open economies. Section 3 offers an overview of Colombia and Panama and their respective monetary institutions. Section 4 discusses the methodology used in this

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[1] For studies on the performance of Latin America before and during the 2008 financial crisis, see Cesa-bianchi, Hashem Pesaran, Rebucci, and Xu (2011), Corbo and Tokman (2007), Gallego, Gardó, Martin, Molina, and Serena (2010), Izquierdo and Talvi (2008), Jara, Moreno, and Tovar (2009) and Ocampo (2009).

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paper. Section 5 presents and discusses our empirical results. Section 6 comments on the policy implications of the findings of this paper and concludes.

2. The Mises–Hayek business cycle theory in the international context

2.1. The Mises–Hayek business cycle theory

According to Hayek (1931, 1933, 1937) and Mises (1912, chap. 3.5, 1949, chap. 20), a boom artificially driven by a policy that lowers interest rates below their equilibrium levels produces a business cycle through misallocations of capital goods and factors of production, misallocations that are costly to correct.[2] There are three intertwined ideas in Mises and Hayek's theory of business cycles.

First, because production takes time, production processes can be divided into different stages. For example, a production process can start with mining activities, continue with refining, move on to manufacturing, then to distribution and finally to retailing. Mining would be the earliest stage of production and retailing the final stage, at which point goods are ready to be consumed. This business cycle theory is linked to Bohm–Bawerk's idea that the more stages of production there are, the longer is the average period of production. Following Hayek's (1931) and Kirzner's (2010) treatment of this topic, I will call "more roundabout" those economic activities that are more capital intensive and more forward-looking relative to other "less roundabout" activities.[3]

Second, because more roundabout projects require more time and are more capital intensive, they are more sensitive to changes in interest rates than less roundabout projects. When interest rates are lowered, the present value of cash-flows to be produced by an investment project that requires substantial time and is relatively capital intensive increase proportionately more than those of a project that requires less time and is less capital intensive. The more roundabout the economic project, the more sensitive it is to interest rate policy. This means that entrepreneurs of relatively roundabout projects will tend to bid up the prices of factors of production and drive entrepreneurs committed to less roundabout projects out of the market. Therefore, capital goods and factors of production are reallocated from less to more roundabout economic activities.[4]

Third, when consumers are faced with a lower interest rate, they reduce savings and increase consumption because their time preference has not changed. The behaviors of producers and consumers are thus inconsistent with each other. Entrepreneurs are prepared to increase investment, but consumers are unwilling to provide the required savings by postponing consumption.

Because interest rates cannot remain below equilibrium levels indefinitely, at some point, the monetary authority must increase the interest rate. This action then sets in motion effects that are opposite those described above.[5] The market value of more roundabout economic activities decreases more than that of the relatively less roundabout economic activities. However, because capital goods are heterogeneous, they cannot easily be reallocated. The market correction from a "too roundabout" economy to a "less roundabout" economy is costly and constitutes a bust. In the words of Calvo (2013, p. 16), "once credit over-expansion hits the real sector, rolling back credit is unlikely to be able to put 'Humpty–Dumpty' together again." The reallocation of capital goods and factors of production takes time. The cost of restructuring production manifests as a crisis.

2.2. The international transmission mechanism

In an open economy, entrepreneurs have access to international funds, in addition to the domestic pool of savings. This implies that the economic distortions discussed in the previous section can be exported from large economies to small open economies.

If the U.S. decides to follow an expansionary monetary policy, two developments may ensue in Latin American countries, depending on their exchange rate regimes. The central banks of countries that fix their exchange rates will follow the Federal Reserve lead. Specifically, central banks in small open economies will buy financial assets through open market operations, the prices of the assets will rise and interest rates will fall. If, however, the exchange rate is allowed to float, then domestic currencies in Latin America should appreciate.

This implies that the effects discussed in the previous section can occur in small open economies that follow either a fixed exchange rate regime or a floating exchange rate regime if the low interest rates that prevail in large economies are transmitted to an economy through the exchange rate. Therefore, if the expansionary monetary policy of a large economy affects interest rates in small economies, although such economies have different exchange rate regimes, small open economies can undergo similar distortions, giving rise to output co-movements across economies with different exchange rate regimes.

3. Colombia and Panama

Colombia and Panama are well integrated with the United States, both financially and in terms of trade, as is the rest of the region. For both countries, the United States is the largest export recipient, receiving 40.8% and 44.2% of exports from Colombia and Panama, respectively, over the 2002–2007 period.[6] The main exports from these countries are oil and derivative products from Colombia and manufacturing products from Panama.

The 2008 financial crisis occasioned the largest drop in GDP growth rates of Latin American countries since the early 1980s. The integration with the United States economy and similar behavior of the growth rates of these two countries between 2002 and 2007 makes the cases of Colombia and Panama suitable for the study of distortions in capital structures common to both countries. Fig. 1 shows the GDP growth rates of Latin America (thick line) along with those of Colombia and Panama for the last 30 years; the GDP growth rates for these countries behave similar since the turn of the millennium.

3.1. Monetary policy in Colombia

Two international events drove Colombian monetary policy in the late 1990s when the Colombian Peso was under a managed exchange rate against the US dollar. The Russian crisis and a fall in commodity prices, particularly the price of oil, entailed that reserves would not be as abundant as previously expected. Uncertainty about the capability of the Colombian Central Bank

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[2] See Cowen (1997) and Garrison (2001) for more recent expositions of the Mises–Hayek business cycle theory. For comparison with other business cycle theories, see Garrison (1989), Prychitko (2010), Sechrest (1997) and Shah (1997).

[3] Fore a more comprehensive discussion of roundaboutness and the time structure of production, see Cohen (2008) and Lewin (1999, chap. 4).

[4] For a financial representation of this effect, see Cachanosky (2012b) and Cwik (2008).

[5] Not everyone agrees on this point; see Hummel (1979, pp. 49–50).

[6] Source: Based on IMF's Direction of Trade Statistics 2008.

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