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Real exchanges rates, commodity prices and structural factors in developing countries

Vincent Bodart ^a, Bertrand Candelon ^b,
Jean-Francois Carpentier ^{c, *, 1}

^a Université Catholique de Louvain, IRES, B-1348 Louvain-La-Neuve, Belgium

^b IPAG Business School, 184 Boulevard Saint-Germain, 75006 Paris, France

^c University of Luxembourg, CREA, L-1511, Luxembourg

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ABSTRACT

This paper provides new empirical evidence about the relationship that may exist between real exchange rates and commodity prices in developing countries that are specialized in the export of a main primary commodity. It investigates how structural factors like the exchange rate regime, the degree of financial and trade openness, the degree of export concentration and the type of the commodity exports affect the strength of the commodity price–real exchange rate dependence.

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1. Introduction

This paper provides new empirical evidence about the relationship that may exist between real exchange rates and commodity prices in developing countries that are specialized in the export of a main primary commodity. It is largely documented that for many developing countries that are

* Corresponding author.

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dependent on the production of primary commodities, commodity price shocks may have important economic implications, either positive or negative.² As shown by the literature on the "Dutch disease",³ the principal channel through which commodity price shocks may affect a country's economic performances is the real exchange rate. For that reason, the dependence of real exchange rates on commodity prices (or, more generally, on terms of trade) has been the subject of numerous empirical studies, that usually find that increases in the world price of commodity prices are associated with an appreciation of the real exchange rate.⁴ With a very few exceptions, the focus of these studies is strictly limited to the estimation of the real exchange rate response to commodity price shocks. However, what determines the magnitude of the real exchange rate reaction is not examined in these studies. It is the purpose of our paper to fill this gap. We do that by exploring the role played by several structural factors in shaping the real exchange rate–commodity price relationship.

Our analysis focuses on five structural features: the exchange rate regime, the degree of financial openness, the degree of trade openness, the degree of export diversification and the type of the main commodity exported by the country. From a policy stand point, understanding the role of these factors is particularly important given that many developing countries have been or are faced with questions such as which exchange rate regime to choose, how and by how much to open the capital account, and whether and how to reduce the concentration of exports on a few products. As shown in the next Section, the choice of these factors is also dictated by theoretical considerations.

Despite its narrow focus, our analysis is at the cross-section of two important topics of the literature about the determinants of economic growth in developing countries. As reminded above, the first one is about the impact that commodity price shocks may have on the economic performances of developing countries that are specialized in the export of primary products as many small African countries are. The second topic is about the influence of structural factors such as the exchange rate regime or the degree of financial openness on economic growth.

Existing empirical evidence on what determines the strength of the real exchange rate–commodity price relationship is very scarce. To our knowledge, it is almost limited to Broda (2004) who examines whether the response of real exchange rates to terms-of-trade shocks differ systematically across exchange rate regimes.⁵ He shows that in response to a fall in terms-of-trade, there is a small and slow depreciation of the real exchange rate in developing countries with a currency peg but a large and immediate real exchange rate depreciation in country where the exchange rate is floating. His analysis also concludes that the response of the real exchange rate does not differ significantly across regimes when the terms-of-trade shock is positive. The role played by structural factors in shaping the relationship between real exchange rates and commodity prices is also evoked by Chen and Rogoff (2003) who estimate such a relationship for Australia, Canada and New Zealand. They find that the relation is strong for Australia and New Zealand but less robust for Canada, and they suggest that this difference is due to the fact that the Canadian dollar is de facto tied to the US dollar, while the Australia and NZ dollars are floating. A second explanation that they put forward is that commodities constitute a smaller share of the Canadian exports compared to Australia and New Zealand. Their tentative explanations are however not tested formally.

² For instance, the literature on the "Natural Resource Curse" suggests that increases in commodity prices have adverse, rather than positive, effects on the economic growth of commodity producing countries. For a recent survey on this topic, see Frankel (2010).

³ The term "Dutch disease" usually refers to the decline in the production of several sectors that is caused by a favorable shock such as a large natural resource discovery or a rise in the world market price of a primary commodity. The main source of the decline in sectoral output is an appreciation of the real exchange rate. For a nice non-technical discussion of the "Dutch disease" phenomenon, see Brahmhatt et al. (2010). For more detailed analyses, see Corden (1984) and Corden and Neary (1982).

⁴ Recent studies are Chen and Rogoff (2003), Broda (2004), Cashin et al. (2004), Coudert et al. (2008) and Bodart et al. (2012). Coudert et al. (2008) provides a comprehensive survey of these studies.

⁵ An analysis similar to that of Broda (2004) has been realized recently for 9 East Asian countries by Dai and Chia (2008) and for Latin American economies by Aizenman et al. (2011). Edwards (2011) and Edwards and Yeyati (2003) also examine empirically the economic impact of terms of trade disturbances under alternative exchange rate regimes, but their evidence is limited to the impact on GDP growth.

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