Should developing countries undervalue their currencies? ☆

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ABSTRACT

The Washington Consensus emphasizes the economic costs of real exchange rate distortions. However, a sizable recent empirical literature finds that undervalued real exchange rates help countries to achieve faster economic growth. This paper shows that recent findings are driven by inappropriate homogeneity assumptions on cross-country long-run real exchange rate behavior and/or growth regression misspecification. When these problems are redressed, the empirical results for a sample of 63 developing countries suggest that deviations of the real exchange rate in either direction from the value that is consistent with external and internal equilibriums reduce economic growth. Deviations from Balassa–Samuelson adjusted purchasing power parity on the other hand do not seem to matter for growth performance. The real exchange rate should thus be consistent with external and internal balances irrespective of implied purchasing power parity benchmarks.

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1. Introduction

The real exchange rate (RER) does not play a central role in traditional growth theory. Both the canonical Solow–Swan growth model and endogenous growth models feature closed economies. However, Ricardo's and Lewis's theories of economic growth suggest a more important role for the RER. As nations develop, the "modern" manufacturing sector absorbs "surplus labor", which directly translates into higher national output. The RER, which creates an incentive to allocate resources to the modern manufacturing sector, is therefore of first-order importance to economic growth. The question of what is the optimal relative price of traded goods arises. There are two opposing views on the answer to that question. The aim of this paper is to shed more light on this debate.

The "Washington Consensus", articulated by Williamson (1990), acknowledges a crucial role of the RER in the growth process. According to this view, an appropriate real exchange rate should be consistent with macroeconomic objectives in the medium run and "sufficiently competitive" such that exports grow at a rate consistent with external balance. However, an overly competitive RER is not appropriate because it would fuel inflation and curb resources available for investment. Underlying this view is the notion that there exists an equilibrium real exchange

rate (ERER) that satisfies external and internal balances (Nurkse, 1945). Seen in this light, any deviation from the ERER will hamper economic growth.

The opposing view, with Rodrik (2008) at the forefront, maintains that RER overvaluation harms growth and undervaluation promotes it. This stance is in part due to the success story of export-led growth in conjunction with apparently undervalued currencies in East-Asian countries. But there are also other plausible explanations for why real undervaluation is good for growth. In the export-oriented growth literature it is often argued that the manufacturing sector is special because positive externalities (learning-by-doing effects, technology spillovers) are more pronounced for export-linked activities than other sectors of the economy. Another explanation is that an undervalued RER encourages higher savings and investment (Dooley et al., 2004; Levy-Yeyati and Sturzenegger, 2007). Finally, Rodrik (2008) conjectures that the manufacturing sector in developing countries is disproportionately subject to distortions and hence it is below its optimal size in equilibrium. Because removing those distortions proves difficult in practice, an undervalued RER serves as a "more practical" second-best mechanism to optimally reallocate resources toward the manufacturing sector (Rodrik, 2008).

However, there is little systematic evidence supporting any of these views. The nature and prevalence of those positive externalities associated with exporting remain obscured (Eichengreen, 2008; Harrison and Rodríguez-Clare, 2009). Rodrik (2008) was unable to empirically verify that the manufacturing sector is disproportionately subjected to distortions in developing countries. In addition, all of these propositions seem to ignore the distortion cost associated with real undervaluation in the

form of reduced aggregate demand (Corden, 1981). It is therefore not clear if the gain in exports outweighs the loss in absorption, especially over longer time horizons. Finally, according to Edwards (1989), RER distortions can lead to resource misallocation across sectors as economic agents base their investment decisions on a relative price in disequilibrium. Because the RER tends to adjust to equilibrium over time, real undervaluation may induce investments in short-lived projects.

The early empirical literature identifies a negative impact of RER overvaluation on growth but does not address RER undervaluation (Cottani et al., 1990; Ghura and Grennes, 1993).[1] However, recent empirical studies unanimously reject the Washington Consensus view in the sense that they find a positive effect of RER undervaluation on economic growth.[2] The most prominent example is Rodrik (2008), whose empirical findings suggest that higher medium-term growth is systematically associated with undervalued exchange rates in developing countries. While Rodrik (2008) defines purchasing power parity (PPP) adjusted for the Balassa–Samuelson effect as the ERER, there is also a sizable number of empirical studies estimating ERERs consistent with internal and external balances that broadly reach the same conclusion (Aguirre and Calderón, 2005; Béreau et al., 2009; Berg and Miao, 2010; MacDonald and Vieira, 2010; Razin and Collins, 1997).[3] Since these two concepts vastly differ from one another and are not directly comparable, this paper considers both ERER definitions but with the prime focus being on RER misalignment in the sense of Nurkse (1945).

There are two important sources of inconsistencies driving previous results and the bulk of the literature suffers from at least one of these. First, relying on conventional panel data techniques to estimate ERERs imposes strong homogeneity assumptions on cross-country long-run RER behavior. This approach does not conform to the economic theory underlying the ERER and therefore generates misleading results. Second, the objective to infer the effect on growth of two variables (real over- and undervaluation) from a single continuous variable (RER misalignment) introduces a number of pitfalls, which can lead to growth regression misspecification.

This paper explicitly takes into account heterogeneity in long-run RER behavior across countries by individually estimating RER misalignments for 63 developing countries over the period 1970–2007. It then empirically analyzes how RER over- and undervaluation affect economic growth. To this end, the study employs system generalized method of moments (SGMM) developed by Arellano and Bover (1995) and Blundell and Bond (1998). To ensure robust inference, various measures of RER misalignment are used.

The empirical results provide evidence in favor of the Washington Consensus view and reject the notion that RER undervaluation is an expedient development policy tool. This means that the optimal growth promoting relative price of traded goods is the value of the equilibrium real exchange rate. The study also shows that the identified inconsistencies drive previous results, rather than differences in estimation methods or data sets.

As for deviations from adjusted PPP, using the same data set and estimation methods as those of Rodrik (2008) but redressing the above problems generates results which suggest that adjusted PPP misalignment does not matter for the growth performance of developing countries.

The rest of the paper is organized as follows. Section 2 defines the Nurksian ERER and estimates RER misalignments. Section 3 empirically analyzes the effects of RER distortions and adjusted PPP deviations on growth. Section 4 concludes.

2. Estimation of real exchange rate misalignment

Before the relationship between RER distortions and economic growth can be analyzed, deviations of the actual RER from its equilibrium value need to be estimated. The problem which any empirical study on this subject faces is that the ERER is not directly observable. The starting point to resolve this issue is to define the RER and the ERER.

2.1. The equilibrium real exchange rate

The real exchange rate is defined as the domestic relative price of traded to nontraded goods. That is, $RER = EP_T/P_N$, where E denotes the nominal exchange rate (measured as domestic currency per foreign currency). P_T and P_N refer to the price of tradables and nontradables, respectively. Note that an increase in RER indicates depreciation.

The equilibrium real exchange rate (ERER) in the sense of Nurkse (1945) is defined as that value of the RER that results in the simultaneous attainment of both internal and external equilibriums, given sustainable values of relevant variables achieving this objective.[4]

Nurkse's definition directly implies that the ERER is determined by a set of macroeconomic fundamentals. Based on Edwards (1989), Faruqee (1995), and Montiel (1999b), the ERER is a function of the following variables:

$$ERER = ERER(\underset{(+/-)}{TOT}, \underset{(+)}{\phi}, \underset{(-)}{\zeta}, \underset{(-)}{G_N}, \underset{(+)}{G_T}, \underset{(+/-)}{I}, \underset{(+/-)}{NFA}), \qquad (1)$$

where TOT refers to the terms of trade, ϕ is a measure of trade policy, ζ captures productivity differentials (Balassa–Samuelson effect), G_N and G_T are government consumption on nontradables and tradables, I refers to investment, and NFA to the net foreign asset position. Importantly, theoretical priors point to an ambiguous effect of some fundamentals on the ERER, as shown by the signs of the partial derivatives below.[5,6] In case a country faces a binding credit constraint, the trade surplus will depend on exogenous foreign aid flows (Baffes et al., 1999). Therefore, Eq. (1) takes a modified form:

$$ERER = ERER(\underset{(+/-)}{TOT}, \underset{(+)}{\phi}, \underset{(-)}{\zeta}, \underset{(-)}{G_N}, \underset{(+)}{G_T}, \underset{(+/-)}{I}, \underset{(+)}{TS}), \qquad (1a)$$

where the net foreign asset position has been replaced with the trade surplus, TS.[7]

These two specifications differ fundamentally with regard to the underlying assumption of how the stock of net international indebtedness feeds back on net capital inflows and the ERER. The former conditions the ERER on given (sustainable) values of the stock of net international indebtedness, which also affects the non-exogenous component of net capital inflows (Montiel, 1999a). The latter on the other hand specifies the ERER as a function of exogenous (sustainable) net capital inflows only, with no feedback from the accumulated stock of net foreign assets. Therefore, the concept of external balance is a "stock-flow" approach in

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[1] The term undervaluation only appears once in a footnote in Cottani et al. (1990) and not at all in Ghura and Grennes (1993).

[2] The only exception is Nouira and Sekkat (2012) whose empirical results are inconclusive regarding the impact of real undervaluation on growth.

[3] See Table B.1 in the Online Appendix for a list of previous empirical studies.

[4] Internal equilibrium implies that the nontraded goods market clears with the unemployment rate being at its "natural" level. External equilibrium means that the current account deficit can be financed through "sustainable" levels of capital inflows.

[5] For details on the relationship between the ERER and its fundamentals, see the Online Appendix.

[6] In theory, international real interest rate differentials and the extent of capital controls also form part of the ERER fundamentals as permanent changes in both variables affect foreign borrowing decisions and therefore the path of the ERER (Edwards, 1989). Unfortunately, severe data limitations prevent including these variables in the ERER equation. This caveat should not worry us, however, since the stock of international indebtedness will capture any adjustment in foreign borrowing and lending that is brought about by capital account liberalizations or changes in real interest rates. Additionally, as pointed out below, misalignment estimates are similar across alternative specifications. Finally, note that the ERER depends on real variables only (Edwards, 1989).

[7] Notice that this ERER specification may be among the sources that introduce endogeneity in the estimation of the growth model since the level of development may affect credit constraints. As it will turn out, however, the data favor the inclusion of binding credit ceilings for only four countries.