How Important is the Real Exchange Rate for Exports and Growth?

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Introduction

- In most theoretical models of long-run growth, the real exchange rate (RER) does not play any role
  - Both mainstream (Solow, Romer) and heterodox (classical-Marxian, Harrodian, Robinsonian, Kaleckian, etc.)
    - Post-Keynesian economists are especially suspicious of emphasizing relative prices instead of income effects
    - The balance-of-payments-constrained growth model of Thirlwall (1979) explicitly excludes long-run RER effects
- But in the Latin American structuralist tradition and some versions of Kaldorian export-led growth, relative prices or costs play a key role
  - The terms of trade are an important variable in models of North-South trade
  - RERs can become important in the presence of externalities and spillovers
- Many recent studies have found empirical evidence that competitive RERs have positive effects on export performance and growth rates

Two opposing views

- McCombie and Thirlwall (1994, pp. 265, 300):

  "non-price factors are of much greater importance than price competition in determining the [long-run] success ... of a country in overseas markets"; "non-price competitiveness ... [includes] quality, reliability, speed of delivery, ... the distribution network and the availability of export credit and guarantees."

- Bresser-Pereira et al. (2015, pp. 37, 40):

  "the exchange rate is a variable of the utmost importance ... it is the most strategic macroeconomic price for economic development." And "if the current level of the exchange rate is at the level of the industrial equilibrium – or a little above it [more depreciated] – then there will be a deepening of the country's process of industrialization...."

Focus and caveats

- This presentation will try to sort out the evidence on both sides and evaluate the implications for development policy
- With several caveats:
  - There is also a debate about the short-run impact of RER changes, but I will focus only on medium- and long-run effects
  - Whether relative prices (RERs) adjust to clear the BOP and whether they have significant effects when they do change are two separate questions; I will focus only on the latter
    - It is possible for the RER to have a significant impact on trade and growth, even if it does not automatically adjust in an equilibrating direction
  - There are many theoretical models of RER effects (or questioning them), but this presentation will focus on empirical studies and policy implications

Key concepts and distinctions

- Alternative concepts of the real exchange rate (RER)
  - **External** (relative price of foreign goods): EP^*/P
  - **Internal** (relative price of tradables): P_T/P_N
  - Relative ULC or relative wages can also be used
- Trade-weighted real *effective* exchange rate (REER)
  - Blecker and Razmi (2008) distinguish REERs with rival exporters and in destination markets
- Overvaluation (or undervaluation) relative to an equilibrium level – which may be:
  - PPP exchange rates adjusted for Balassa-Samuelson effects (e.g., Rodrik, 2008)
  - Fundamental equilibrium exchange rates and related concepts, based on a sustainable current account balance (e.g., Williamson, 1985)
  - Industrial equilibrium exchange rate in New Developmentalism (e.g., Marconi et al., 2021)

Subtleties and complexities

Estimated RER effects can (and do) differ depending on:

- RER measure and price indexes used
- Time dimension (short, medium or long run)
- Levels vs. rates of change
- Type of country (income level, structure)
- Type of goods or specialization
  - Degree of reliance on imported intermediate goods
- Nonlinearities
- Causes of RER fluctuations
- Econometric methods used
  - Model specification
  - Control variables included
  - Identification strategies

Channels for growth effects of RER undervaluation

- Traditional price-competition effects on export and import demand
- Distributional effects with wage- or profit-led growth
  - Redistribution to profits can boost saving and investment
- Reallocation of resources to tradable goods sectors
  - Raising profitability and encouraging investment in export industries
- Second-best solution for externalities, institutional weaknesses, and other market failures (Rodrik, 2008; Guzmán et al., 2018)
  - RER depreciation is equivalent to an export subsidy and an import tariff
- Structural change favoring industries with learning spillovers, scale economies, greater scope for innovation
  - Also industries with higher income elasticities of export demand (Oreiro et al., 2015; Cimoli et al., 2019; Marconi et al., 2021)
  - Dynamic productivity gains eventually outweigh static welfare losses (Korinek and Servén, 2016)

The evidence on exports

- Boggio and Barbieri (2017) show that *levels* of relative ULC explain the growth of export market *shares* in manufacturing
- Pariboni and Paternesi Meloni (2022) find that *both* relative prices and non-price competition affect exports among high-income OECD countries (long run and short run)
  - Using RERs in terms of ULC and the export complexity index as a proxy for qualitative competitiveness
- Caglayan and Demir (2019) distinguish North vs. South countries and five types of exports from Lall (2000)*
  - Full-sample effects are significant for total exports and three types of manufactures (low- and medium-skill, resource-intensive)
  - For all goods, effects are significant in all directions *except* South-North
  - For South-North exports, RER effects are strongest for medium-skill and resource-intensive manufactures
    - Positive but weaker for high-skill, insignificant for other goods

*Primary goods and four types of manufactures (high, medium, and low skill; resource-intensive).

Evidence on exports, *continued*

- Relative price or RER effects become (mostly) insignificant after controlling for technological differences (Romero and McCombie, 2018; Bottega and Romero, 2021)
  - The former use TFP (!) and the latter use patents
  - But "non-price and technological competitiveness are more relevant for the export performance of high-tech products, while price competitiveness is a more determinant factor for exports of low-tech products" Bottega and Romero (2021, p. 182)

The evidence on growth

- Many studies in the last 10–15 years have found significant positive effects of RER depreciation or undervaluation on economic growth
  - For example, Gala (2008); Rodrik (2008); Berg et al. (2012); Rapetti et al. (2012); Razmi et al. (2012); Levy-Yeyati et al. (2013)
  - Excellent recent surveys with new econometric estimates: Rapetti (2020) and Demir and Razmi (2022)
  - Some also find negative effects of RER volatility
- Typical findings include important asymmetries and nonlinearities:
  - Effects are larger and/or more statistically significant for developing and/or emerging countries compared with advanced economies
  - Negative effects of overvaluations tend to be stronger (and more statistically significant) than positive effects of undervaluations
  - Diminishing gains from larger undervaluations
- Results may be considered "medium-run" since time periods of 5+ years are usually used

The Fallacy of Composition

An important note of caution

- Depreciating the RER is only effective when *some* countries do it, not when all try to do it at the same time
- For example, China's gains from currency undervaluation in the 1990s and early 2000s imposed severe losses on USA, Mexico, and other countries
  - See Autor et al. (2016) and Gallagher et al. (2008), among others
- Blecker and Razmi (2010): gains in exports and growth for developing country exporters of manufactures to advanced country markets come from devaluations relative to rival exporting nations, not relative to the advanced economies

The RER, relative productivity, and the wage share

When relative productivity and the wage share are included in a growth regression, the RER becomes insignificant (Ribeiro et al., 2020).

- But what does this mean?
  - Assuming markup pricing $P = (1+\tau)W/Q$, where $\tau > 0$ is the markup rate, W is the nominal wage, $Q = Y/L$ is labor productivity, and * indicates foreign, the external RER can be written as

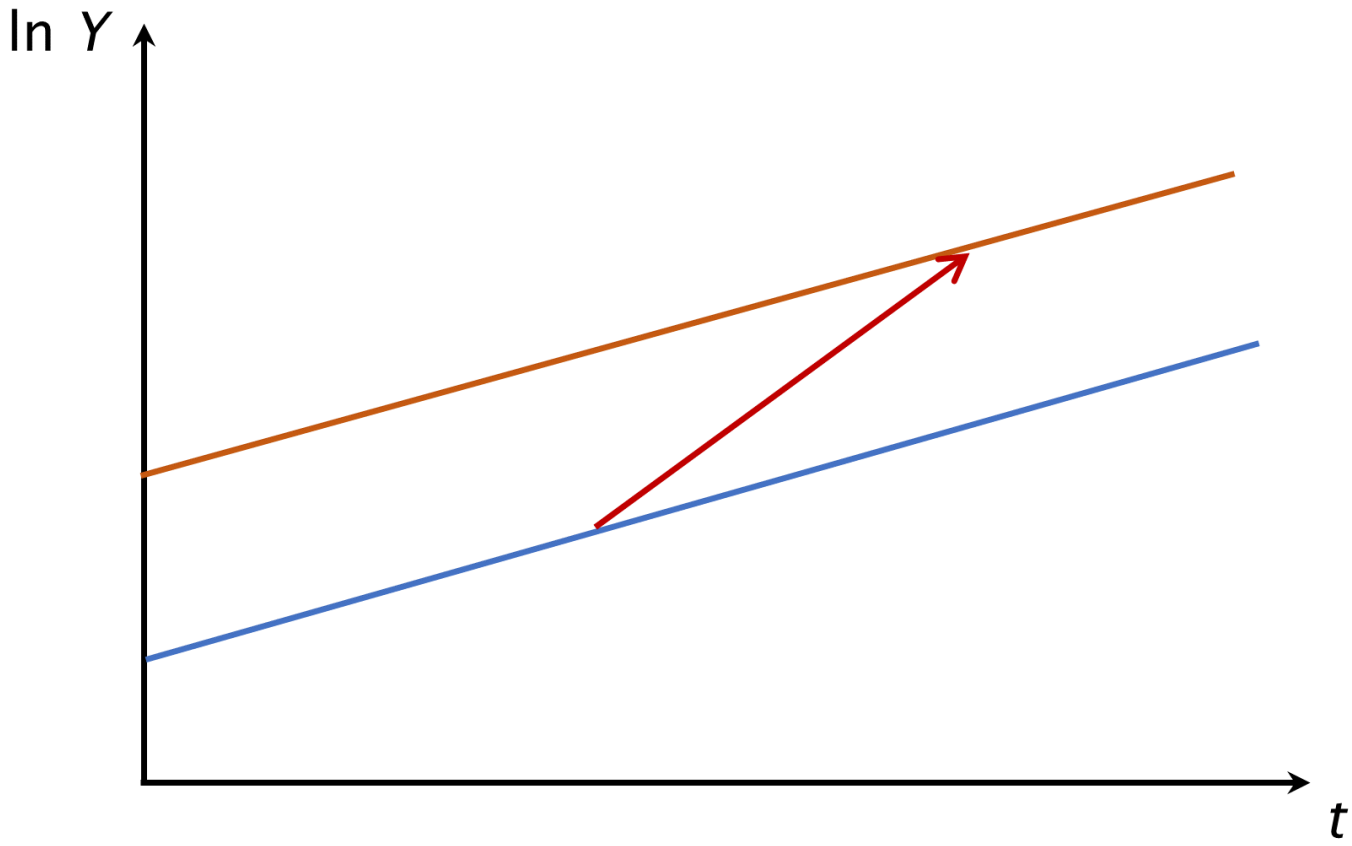
$$RER = \frac{EP^*}{P} = \left(\frac{EW^*}{W}\right)\left(\frac{1+\tau*}{1+\tau}\right)\left(\frac{Q}{Q^*}\right)$$

  - It is therefore not surprising that when (Q/Q^*) and wage share $= (1+\tau)^{-1}$ are included, RER becomes insignificant!
- Ribeiro et al. (2020) argue that the RER affects growth *through* these channels (distribution and productivity)
- But since distribution and productivity are determinants or components of the RER, the latter could be a conduit for *their* effects

The time dimension: the importance of the "medium run"

Also known as the "traverse" between steady states, or a "growth spurt"

- Recall the growth rate is the slope: $g_Y = \frac{d \ln Y}{dt}$



Important take-aways

- The two growth paths shown have equal steady-state growth rates, yet one offers a distinctly higher level of output or standard of living (if Y is income per capita)
- A "medium-run" acceleration of growth *can* have a lasting long-run impact, even if the growth *rate* does not stay permanently higher
- Research on medium-run growth spurts
  - Berg et al. (2012): RER overvaluation shortens the duration of "growth spells" (episodes of sustained rapid growth) of at least 8 years
  - Libman et al. (2019): RER undervaluation increases the probability of starting an "investment surge" of 8+ years
  - Ribeiro et al. (2017) show theoretically how Kaldor-Verdoorn effects on price competitiveness can drive BOP-constrained growth in the medium run (but not the long run)
- Even if these types of RER effects are "only" medium run, they can still be quite important for long-run income levels

Can policy interventions control the RER?

Of course, monetary policies affect E and P, but also:

- Levy-Yeyati et al. (2013): foreign exchange (FE) market intervention aimed at avoiding RER appreciation is effective for ...
  - depreciating RERs for up to 2 years and this is not reversed
  - raising GDP growth rates, including over 3-year periods and for trend as well as cyclical components
- Surprisingly, Levy-Yeyati et al. (2013) find no evidence for a "trade channel" of FE market interventions
  - FE intervention has no significant effect on exports; wrong sign (+) for imports
  - Rather FE interventions raise saving and investment rates
  - Interventions lower the wage share and redistribute income to profits
- Montecino (2018) finds that capital controls slow the adjustment of the RER toward its long-run equilibrium path
  - The effect is stronger for undervaluations than for overvaluations
  - It is stronger with fixed compared with flexible exchange rates

A possible reconciliation (speculative)

Combining the findings of Levy-Yeyati et al. (2013); Romero and McCombie (2018); Ribeiro et al. (2020); Bottega and Romero (2021), we can hypothesize that:

- RER depreciations due to exchange market intervention raise growth through an income distribution and capital accumulation channel
  - Redistribution to profits boosts investment and saving
- RER depreciations brought about by rapid productivity growth and technological innovation raise growth through the trade channel
  - Boosting exports (evidence for reducing imports is weaker)
- This needs more research, especially in regard to income distribution
  - Does a lower wage share cause the RER to depreciate, or does a currency depreciation cause the wage share to fall, or both?
  - Are the short-term sacrifices in real wages "worth it" for raising long-term living standards?

Implications for policy

- Sweeping generalizations about RER effects are unlikely to be true
  - A competitive RER is important, but it's not a panacea
- There is strong evidence that overvaluation is harmful to growth
  - Moderate undervaluation is more likely to be beneficial than extreme undervaluation
- Effects of RERs vary by income level of country and type of export specialization
  - Export gains from RER depreciation seem strongest for low tech, or medium-skill and low-skill, manufactures
  - This suggests that RER depreciation/undervaluation is more likely to help a developing country reach middle income status than to help a country escape the middle-income trap and achieve high-income status
- More research is needed to determine what kinds of policies (monetary/FE, industrial, distributive, etc.) are most effective for maintaining a stable, competitive RER

Implications for theory

- Theoretical models should not focus exclusively on long-run, steady-state growth rates
- Even if the RER has little or no effect on the long-run equilibrium growth rate, the impact on medium-run growth spurts can have a strong influence on long-run income levels (paths)
  - Long-run growth models need to consider level as well as growth rate effects of RERs (and other factors!)
  - Recognition of ecological constraints also suggests a greater focus on raising levels of well-being rather than increasing steady-state rates of compound growth
- An important area for future research is modeling the (likely mutual) causal relationships between the RER, productivity, and income distribution
  - Dynamic as well as static

Final notes of caution

- Robinson (1947) saw currency devaluation as a "beggar-thy-neighbour" policy
  - Competitive gains come at the expense of other countries
- Devaluations are often contractionary in the short run, especially in developing countries (e.g., Krugman and Taylor, 1978)
  - Because of adverse distributional and balance sheet effects
- Undervalued and overvalued currencies are associated with global trade imbalances and financial instability
  - Undervalued RERs in export-led economies, overvalued ones in debt-driven economies (Pariboni and Paternesi Meloni, 2022)
- Models of cumulative causation imply that some countries' "virtuous circles" can come at the expense of "vicious circles" for others
  - Implicit in models such as Araujo (2013); Setterfield and Cornwall (2002)
  - These conflicts are driven by changes in relative prices (RERs) combined with Kaldor-Verdoorn effects in the medium run

Conclusions

- The RER is an important variable for growth rates in the medium run and income levels in the long run
  - Evidence is clear that RER overvaluation should be avoided
  - For a given country, maintaining a competitive or moderately undervalued currency seems beneficial
- Nevertheless, currency undervaluation cannot be a general or global strategy
  - It is still a beggar-thy-neighbour policy, which boosts one country's exports and growth at the possible expense of others'
  - All countries cannot depreciate at the same time
- Therefore, the best policy is to maintain a stable, competitive RER and use other policy levers for equitable growth and development
  - Coordinated fiscal expansions to boost global demand
  - Incomes policies to tie real wage growth to productivity growth
  - Industrial policies, social policies, and public investment are necessary complements

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