

# FINANCIAL CRISES AND THE BENEFITS OF MILDLY REPRESSED EXCHANGE RATES

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## Abstract

The devaluation of the Mexican peso of 1995 along with the more recent financial crises in emerging economies are viewed as systematic outcomes of the operation of free currency markets. The hypothesis is that there exists a distortion in free currency markets that makes developing countries systematically misallocate resources. The distortion lies in “asymmetric reputation” that leads to substitution of the reserve currency for the country’s soft currency in liquid asset holdings, thus making systemic devaluations inevitable. Moreover, the empirical analysis shows that currency-substitution-led endemic devaluations misallocate resources in competitive devaluation trade, as opposed to comparative advantage trade. In a case that is parallel to asymmetric information and incomplete credit markets, the appropriate policy intervention in asymmetric-reputation driven incomplete currency markets is maintaining mildly repressed exchange rates. The operational definition of “mild” is imposing restrictions on the home-grown variety of currency substitution.

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## FINANCIAL CRISES AND THE BENEFITS FROM MILDLY REPRESSED EXCHANGE RATES

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The art of economic policy-making lies in tethering between the confines of the Market and those of the State. In economics in general, and in economic development as well, the presumption should deservedly be in favor of the market. Where the market works well, free-market, free-trade, laissez-faire capitalism will lead to Pareto optimal outcomes, and to growth. But markets can fail and intervention becomes requisite. Governments also can fail and intervention becomes disastrous.

Within these confines the pendulum has at times violently swung one way or the other. Back in the 1920s, the era of laissez faire, the market received the lion's share. In the aftermath of the War the mainstream view had changed in favor of a proactive economic policy. Import substitution industrialization was at the heart of the development strategy. It was backed by fixed exchange rates, foreign exchange restrictions and controls on trade. Under this regime, and to the middle of the 1970s, the world experienced an unprecedented spurt of economic growth that was also broadly spread to most corners of the earth. Following the oil crisis and on the heels of the debt bonanza of the late 1970s the paradigm started shifting again. And by the 1980s there was a new mainstream view that was actually quite old, dating back to the 1920s: liberalization and strong currency. It has been dubbed the Washington Consensus, not so much in honor of the US capital city as to denote the center of gravity of the international financial institutions and the locus of most international meetings that deal with issues in international finance and globalization.

Krugman (1995) has written vividly, and to the point, predicting the demise of the Washington Consensus. On the liberalization and free trade component of the thesis Krugman finds that the gains from free markets are generally small while the costs of protectionism are usually not as large as people talking knowledgeably about the subject commonly claim. The sound money component of the consensus is also deflated on the grounds of efficacy. While severe inflation destructures the economy with grave cost consequences, reducing a moderate rate of inflation, say from 20 to 2 percent has not been found to produce any large gains. The argument is empirical, and it has proven merit. The first part of this paper proposes to extend the conceptual base of the argument and to provide the empirical foundation for it. The

problem with the Washington Consensus is congruity rather than efficacy. Free markets, and the free currency market in specific, tend to lead to systemic devaluations in developing countries, and therefore produce weak currencies. Pairing free markets and strong currency constitutes an oxymoron.

It may well be that the juxtaposition of open financial markets and strong local currencies proves flawed if the outcome is, instead, devaluations and weak currencies. But could the latter outcome still be valid if devaluation is part of a strategy for growth? The market for foreign exchange where weak currencies are traded is incomplete and competitive price setting, where supply equals demand, produces “bad competition” and sets off a “race for GDP growth. The purpose of the second part of the paper is to complete the argument by making an empirical case for mildly repressed exchange rates as an instrument for growth. The paper concludes with policy implications.

The devaluation of the Mexican peso of December 1994 will be used to inform the discussion in the first part. The endogenous growth analysis in the second part links exchange rate regimes and growth and it is based on sample of international panel data.

#### CURRENCY SUBSTITUTION AND FOREIGN EXCHANGE CRISES

The essence of sound money, as practiced in the current development orthodoxy, consists of putting the domestic currency in direct competition with other (reserve) currencies by liberalization of the foreign exchange market. Lifting the restrictions on foreign exchange is the centerpiece of the Washington Consensus, and of the strategy for liberalizing capital flows and integrating emerging economies into global capital markets.<sup>1</sup>

The last three years have produced four full-scale financial crises (Mexico, Thailand, Malaysia, and Indonesia) with a few more brewing. In searching for both causes and cures the unrestricted access to foreign exchange needs to be re-examined. The existence of free currency markets in developing countries validates the functional and analytical content of the distinction between hard and soft currencies. This brings the issue of *asymmetric reputation*

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<sup>1</sup> Gwartney, Lawson and Block (1996) who compiled seventeen indicators of economic freedom assign the highest weights (next only to freedom from forced conscription) to the citizens' right to hold foreign currency accounts at home and bank accounts abroad.

and of currency substitution squarely into the foreign exchange crises.<sup>2</sup>

There is a continuum between hard and soft currencies in the real world. Still, there is only a handful of currencies in which central banks hold their reserve positions. These *reserve currencies* are treated as a store of value internationally and as a safe haven for capital. The international appeal of reserve currencies is based on "reputation," which means that there is a credible commitment to stability of relative hard-currency prices (towards other hard currencies, or say, gold). The soft currency, in contrast, is expected to devalue in a free currency market since it lacks reputation as a safe haven. Under these conditions, and with international financial intermediation present, there is an asymmetric demand from Mexicans to hold dollars as a store of value - a demand not offset by Americans holding pesos as an asset. This asymmetry tends to increase the price of the dollar in Mexico - to depreciate the peso. This will encourage currency substitution, with Mexican fleeing the peso in exchange for dollars, which will precipitate further depreciation. Expectations of devaluation feed unto themselves to become self-fulfilling prophecies. The fault is not with the peso as such. In free currency markets, without restrictions on foreign exchange, devaluation of the soft currency is inevitable and it becomes a political economy bubble: a set of reinforcing expectations.

The systematic and endemic devaluation of soft currencies is likely to occur in a regime of free currency markets whether the soft currency is fixed, pegged, or floating freely. The anatomy of the devaluation of the Mexican peso of December 1994 will be used to demonstrate the effects of currency substitution.

The peso had been previously pegged (at 3.5 pesos to 1 U.S. dollar) and it was initially devalued by roughly 20 percent. Within a week, in late December, the efforts to support the peso had failed and a free exchange rate was adopted that settled for a while (at 6 pesos to 1 U.S. dollar). The peso has systematically devalued since then. The discussion on Mexico applies equally well to the economy of other developing countries that, in accord with the Washington Consensus, have opened the capital account and afforded to residents unrestricted access to foreign exchange. These characteristics make vulnerable to future "peso fiascos" most emerging market economies of the Third World.<sup>3</sup>

There have been two (largely complementary) views of serious observers on what went

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<sup>2</sup> Asymmetric reputation in this context is different from credibility that entered the literature on foreign exchange management following the seminal article of Barro and Gordon (1983). In this literature reputation is related to time inconsistency with policy-makers reneging on their commitment to target one of the two alternative targets, the inflation rate or the balance of payments. For examples of this literature see Agenor (1994) and references therein.

<sup>3</sup> The financial crises in Southeast Asia of the summer of 1997 fit the same anatomical characteristics. But time

wrong with the peso. The one is the fundamentals story, and the other the story of the onslaught of foreign financial capital.

The fundamentals story has certain merit. There has been a persistent current account deficit - the difference between what Mexico takes in from exports and what it pays out for imports and for servicing the foreign debt. By the end of 1994 it had grown to 7.6 percent of GDP. Liberalization of a repressed economy was bound to contribute to the deficit. Dismantling of long-standing restrictions on imports, reducing tariffs and opening up the economy into a world-market system drove imports up. The consumerist drive is reflected in the rate of personal savings decreasing from 15 percent of GDP in 1988 to 7.4 percent in 1994. How was the Mexican penchant for consuming more and saving less financed? Enter the second story, the flood of foreign finance.

The net foreign capital streaming into Mexico in 1994 rose to \$30 billion. Little of that was in equity capital of corporate investment in plant and equipment. And little was in long-term government debt, which actually had been drastically reduced from its pre-crisis peaks. Most foreign capital was short-term and it went to financial instruments or to portfolio investments. It was attracted by high interest rates, and it has been described as “the lemming-like march of multinational banks and mutual funds bearing loans to emerging markets.” The explanation offered for the collapse of the peso invokes the nervous exit of this capital through the swinging door of financial flows. This supply side of the Mexican crisis also has merit.

But the import binge cannot explain the total debacle, and the supply of foreign financial capital was certainly not forced on non-consenting adults and on unwilling Mexican clients. What has been left out of both stories is the demand side. Keynes (1936) had distinguished *precautionary* demand as a motive for holding foreign exchange.

The new thesis being proposed is that in free currency markets with unrestricted access to foreign exchange the precautionary demand for foreign exchange becomes the tail that wags the dog of the transactions demand for money. Over and above the demand for dollars to pay for imports and for servicing the debt, there is also demand for dollars as an asset to substitute for peso-asset-holding in an attempt to pre-empt the expected depreciation of the domestic currency. The strategy of liberalizing capital flows and lifting the restrictions in foreign exchange is crucial for integrating emerging economies into global capital markets. It sounds like a good idea, and in many cases it is. But premature liberalization of the financial sector as

in the case of Mexico (and most other emerging economies) can signal a catastrophe that is waiting to happen: *asymmetric financial integration*. The words in emphasis have nothing to do with Mexico's giant U.S. neighbor in the north. They refer to the status of the dollar as a reserve currency that leads to currency substitution for the soft peso in free currency markets under asymmetric reputation.

The official data that came out a few months after the crisis (*Economist*, August 26, 1995) confirmed this scenario built around currency substitution, as opposed to the imbalance in fundamentals or to the foreign capital exit thesis. In the three weeks of December 1994 leading up to the devaluation, the reserves of the Mexican Central Bank fell by \$2.8 billion. In the same period foreign investors sold \$326 million worth of Mexican debt, leaving roughly \$2.5 billion to be accounted for. The situation worsened in the final week of December, after the initial modest devaluation. For the month as a whole the Central Bank lost \$6.7 billion in reserves. Foreign investors sold only \$370 million worth of debt and equity, and another \$1.7 billion of the loss in reserves can be accounted for by Mexico's trade deficit for the month. The balance remaining for currency substitution is \$4.6 billion, up \$2.1 billion for the final week as a minimum (after considering the trade-deficit portion of the first three weeks for which data are unavailable). The unraveling of the "orderly" devaluation was inevitable. Moreover, as long as there is a free market in foreign exchange the Mexican peso is bound to remain weak and the currency-substitution-led devaluation is going to continue.

There are two analytical issues involved in this discussion. First, what is the role that fundamentals and speculative capital flows play in exchange rate instability. There is nothing to add to the conventional analysis on this count. Where the fundamentals weaken currencies tend to devalue. Inflow of hot money tends to strengthen currencies temporarily until its outflow precipitates devaluations. Controlling for the fundamentals and for financial capital inflow, however, currency substitution that is fuelled by asymmetric reputation can lead to endemic devaluations of soft currencies and can contribute to creating full-blown financial crises.

Second, currency substitution will take place whether or not the exchange rate is floating, fixed, or pegged. In the former case devaluation is likely to be continuous and smooth. In the latter two cases devaluation will happen in discrete steps.

Discrete devaluations were occurring in the regime that held in Mexico prior to the 1994 crisis when the stability of the peso was a policy objective. With asymmetric reputation still operating, the fixed exchange rate had to fend with the tide of peso-asset-holders in

Mexico who wanted to hedge their wealth against future depreciations of the currency by buying dollars. This was done by offsetting this precautionary demand through increasing the supply of speculative short-term capital that the banking system borrowed in the international market. There is a causal relationship between currency substitution and inflow of hot money in which the latter is lured by high interest rates in an attempt to thwart the former. In the end, the reserves of the Central Bank, both earned and borrowed on a short-term account, were thrown into the market to flush out pesos, thus providing for currency substitution without disturbing the equilibrium of the foreign exchange at 3.5 pesos to the dollar. When the dam burst on December 20th the diagnosis was that the exchange rate had appreciated.

In the floating rate regime that followed the exchange rate was supposed to be the instrument that stabilizes the real economy by getting the tradable and nontradable prices right. The continuing devaluation of the currency is now being attributed to inflation that quickly dissipates any temporary gains in competitiveness in the economy.

The thesis of asymmetric reputation advanced here considers the argument over fixed or floating exchange rates as largely irrelevant. The choice becomes relevant only when a policy of mildly repressed exchange rates is adopted along with other measures that are intended to contain currency substitution. We will return to this issue below.

The evidence on the Mexican experience confirms that there is a reverse Gresham's law, in which the good currency, the dollar, drives out the bad. The absence of exchange restrictions that leads to currency substitution in effect constitutes a form of insurance that protects peso-asset holders against capital losses. Moreover, since it is mostly the wealthy who can afford to hold liquid assets, the process also works as an indexation for the well-off against future currency depreciation. Free currency markets in developing countries provide welfare relief for the wealthy whether the exchange rate is fixed, pegged or flexible - only that with the fixed exchange rate the windfall becomes more generous, courtesy of the Central Bank that supports the price of the peso.

Blaming the financial crisis on the appreciation of the peso in the past, or for that matter on its further depreciation subsequently, is no more convincing than the drunk driver's complaint on smashing up his car that the roads are unsafe. Both depreciation and appreciation are the symptoms of the same disease that is endemic in free capital markets: currency substitution away from the soft currency.

## MILDLY REPRESSED EXCHANGE RATES AND GROWTH

There are winners and losers when there is unrestricted access to foreign exchange in soft-currency countries. Providing welfare for the wealthy is not the worst feature of currency substitution. The more important question is how currency substitution, which relates to financial flows, is transmitted to the real economy, and how does it translate into prospects for economic growth?

In answering this question it helps to return to the distinction between reserve and soft currencies and link it to the distinction between tradables and nontradables. There are many advantages to a country's issuing the reserve currency – among others the windfall of seigniorage, and the ability to borrow its reserve currency from central banks at interest rates lower than would otherwise apply. But the most important benefit accruing to the issuer of reserve currency is that the operational and analytical distinction between tradables and nontradables becomes immaterial in its international transactions. For the other countries, and especially for the soft currency countries, the distinction can become binding.

Tradables can be defined as those commodities that enter country's current account as exports or imports – and their respective values can be used as weights in constructing a commodity-specific index of tradability (Yotopoulos, 1996). Nontradables are defined accordingly as commodities that do not enter to a significant degree a country's international trade. Tradability, therefore, is not a binary issue but a question of degree. And the degree, at least in part, is determined by what a country can afford to pay for in foreign exchange, most often in reserve currency.

One way of understanding the coupling of the distinction between hard and soft currency with that of tradables and nontradables is to compare two economies along the continuum of possibilities for transforming nontradable output, or the resources that produce it, into tradables. To enhance the intuition suppose both countries are overindebted, e.g., the United States and Mexico. With the peso being a soft currency and the Mexican debt being denominated in dollars (because the peso is soft currency), Mexico cannot service its foreign debt from the proceeds of producing nontradables. These are traded in pesos. It has instead to shift resources away from the nontradable sector to produce tradable output in order to procure the dollars for servicing the debt. In the U.S., on the other hand, the debt is serviced in dollars. Then all output produced, whether it consists of more aircraft or more haircuts, serves directly to service the dollar-denominated debt.

A parable can help enhance understanding of how the process of shifting resources from the production of nontradables to that of tradables, when fuelled by currency substitution and systemic devaluations, can create a negative feedback loop that leads to resource misallocation in developing countries. Consider an equilibrium allocation where a bundle of resources produces tradables (T) and nontradables (N), measured so that one unit of each is worth \$1. Entrepreneurs should be normally indifferent between producing one unit of the former or one of the latter. But in the case of Mexico T trade in dollars while N trade in pesos. Since the soft currency may be devalued it becomes risky for entrepreneurs to produce (or hold) one unit of N that could not be converted for later spending into \$1. Expressed in another way, entrepreneurs see the future price of tradables increasing relative to the price of nontradables and they are attracted to producing T because that is the cheapest way they can acquire \$1 from their bundle of resources in the future. This dilemma does not exist with the developed countries that have hard currency. For their entrepreneurs \$1 of T will always be worth \$1 of N in hard currency, contrary to the soft currency case where the expectation of devaluation becomes a self-fulfilling prophecy.

In the latter case production becomes biased excessively toward T, despite the fact that the relative productivities of the bundle of resources have remained unchanged ex hypothesi. This shift of resources represents misallocation and produces inefficiency and output losses. It originated in free currency markets setting prices wrong, not right, for the soft peso.<sup>4</sup>

The intuition behind the parable is simple. Distortions inherent in free currency markets lead to systematic depreciation of soft currencies of developing countries - to "high" nominal exchange rates. Devaluation of the exchange rate means increasing prices of tradables and leads to increased exports. But not all exports are a bargain to produce compared to the alternative of producing nontradables. For instance, some countries without a climatic or resource advantage in producing grapes are known to export wine. Other countries graduate from being exporters of sugar and copra to exporting their teak forests, and on to systematically exporting nurses and doctors, while they remain underdeveloped all the same. If this happens, it may represent *competitive devaluation trade* as opposed to *comparative advantage trade*. Competitive-devaluation trade is misallocating resources against nontradables at great cost to growth and to the detriment of development.

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4 Wouldnt the process make N relatively scarce and help restore equilibrium? This is the classical textbook case. markets where there is 'bad competition' that sets off a race for the exit of currency substitution.

In a book recently published (Yotopoulos, 1996) I re-examine some of the conventional wisdom of the Washington Consensus, especially with respect to "setting the prices right" for trade and development. It so turns out that when there is market failure, even more so when markets are "incomplete" (i.e., they "do not span time, space, and uncertainty"), the market-clearing price where supply is equal to demand does not produce Pareto-optimum outcomes. Government intervention and rationing become necessary in these cases. To make things worse, there is no presumption that government intervention will be successful.

This section abstracts one part of my book that relates to the dynamics between real and nominal exchange rates under free currency markets in developing countries. It is intended to provide a test and quantification of the losses in GDP and welfare in developing countries when the price of T becomes "too high" by means, as an example, of devaluation-induced high nominal exchange rates (NER).

The theoretical framework is an adaptation of the Australian model that distinguishes T and N (Salter, 1959; Corden, 1977). In a soft currency country the distinction between T and N has operational and analytical implications and the production of N can become a binding constraint for economic development. This situation arises when the prices of T are "high" relative to those of N, with resources moving "excessively" from the latter to the former. The case is a mirror image of the Dutch disease (Corden and Neary, 1982), only that the origin is depreciation, as opposed to appreciation of the domestic currency, and the result is not de-industrialization but contraction in the N sector with detrimental outcomes for growth.

The operational framework of the research utilizes purchasing power parity data. Micro-ICP (International Comparisons Project, Kravis, Heston and Summers, 1982) data provide prices for a complete set of outputs of an economy, appropriately normalized by the international prices of the same commodities. Data from international trade statistics are used to define T ("tradables") and N ("non-tradables") on a country-by-country basis. The ratio of the prices of the two is an index of the real exchange rate (RER, with prices of T in the numerator). An example appears in Table 1 that ranks 33 countries by the value of their RER index in 1985.

The meaning of "setting the prices right" is precisely setting this RER at its equilibrium value. And although the index cannot be used to measure the deviation of the RER from its equilibrium value, it can clearly tell whether one country has higher prices of tradables relative to nontradables than another - i.e., it has a more undervalued RER, always in relative terms. Moreover, the proposition of reputation asymmetry of the previous section constitutes the link

between the RER and the NER. Examined within an international cross-section, high values of the index (which mean high prices of tradables) are more likely to be associated with high NER than are low values. “High” exchange rates, or devaluations, lead initially to high prices of tradables, until the effect of devaluation is eventually offset by price increases in the nontradable sector.

The maintained hypothesis is that competitive price setting of foreign exchange rates in soft-currency countries is detrimental to growth. It is tested in an endogenous growth model that relates the impact of *RER* (and indirectly of the NER) on the growth of real per capita GDP (*GRGDPC*).<sup>5</sup>

An endogenous growth model is used to test the impact of the RER (and indirectly of the NER) on growth. In the tradition of that literature the model includes factors that relate to public sector policies (*GOVCONS*, *GINFL*, *SECENROL*, *GPOP*), private sector choices (*INV*), and institutional factors that capture a country's exposure to international trade (*OPEN*, *DIR*).<sup>6</sup> The innovation in this paper is the introduction of the *RER* as a variable capturing the extent to which the operation of the free market extends to the capital account. The hypothesis is that a free currency market (which implies high values of RER) leads developing countries to a systematic misallocation of resources (and therefore low growth outcomes). The motivation behind the analytical framework is to control for the effect of the stylized endogenous growth variables while measuring the impact that *RER* has on measures of development performance.

The reduced form estimating equation of endogenous growth is:

$$G_t = f(RER, DUM, OPEN, DIR, INV, GINFL, GOVCONS, SECENRL, GPOP)$$

where  $G_t$  is the rate of growth of real GDP per capita. The test of the hypothesis consists of explaining the intercountry variance in  $G_t$  by the variance in *RER*, subject to the other conditioning variables. Besides the *RER* that is the distinct variable in this study, the other variables in the endogenous growth equation are those most commonly included in such analyses (Levine and Renelt, 1992). There are two *DUM* variables, one accounting for differences in initial per capita incomes by distinguishing among high- and low/middle-income countries<sup>7</sup>, and the second to account for the general slowdown in growth since the 1980s. By

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5 The properties of this type of endogenous growth models are well-rehearsed in the literature. For examples see Romer (1986, 1990), Lucas (1998), Grossman and Helpman (1990, 1992), Barro (1990, 1991), Rivera-Batiz and Romer (1991), Levine and Renelt (1992).

6 For definition of variables see below.

7 The classification of countries as low/middle- and high-income is from World Bank (1992).

using dummy variables to partition the panel data we exclude the influence of these two factors from the analysis.

Since Adam Smith first formulated the traditional trade-growth nexus the extent of the market has been considered a determinant of efficiency. This is usually captured by the openness of an economy, *OPEN*, which is a measure of the ratio of trade to GDP. More recently a second effect, the direction of trade, *DIR*, has become a prominent variable. Controlling for the volume of trade, the direction-of-trade variable may capture the technological spillovers from trading with more developed partners. One advantage of such trade is that the innovation-producing skilled labor of DCs is extended to LDCs through technological diffusion (Grossman and Helpman, 1991, 1992). Investment, *INV* (as opposed to the accumulated stock of capital), becomes an important vehicle for technological diffusion because of the vintage effect of new capital. The two conventional variables intended to capture the crowding out of private investment that may occur as a result of public sector policies are *GOVCONS*, which represents (unproductive) government consumption expenditure, and *GINFL*, the average rate of change in inflation that depresses the level of savings. Finally, an education variable, commonly *SECENRL*, secondary school enrollment, and a demographic variable, *GPOP*, the rate of growth of population, often appear in endogenous growth equations.

The results in Table 2 refer to the international cross section model of the parent study. The presentation is organized in five models that group variables so as to provide an immediate indicator of the robustness of the maintained hypothesis. The logic of the testing procedure is to regress *GRGDPC* on *RER*, the main variable of interest, and successively on a greater number of variables. Comparison of the parameter values across models gives an idea of the robustness of the functional form employed.

The test reported is the longitudinal analysis for the sample of 123 observations (62 countries) for the years 1970, 1975, 1980 and 1985.<sup>8</sup> In model I *RER* appears as the single variable. The simple regression of *GRGDPC* on *RER* has the expected negative sign and is consistently significant. Moreover, the coefficient of *RER* is robust, as evidenced from the fact that it varies within a very narrow range (from -0.020 to -0.024) as other conditioning variables are added seriatim in the other models reported in the table. The maintained hypothesis construes the inverse relationship between *RER* and *GRGDPC* as evidence that

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<sup>8</sup> The parent study tests specifically for the sensitivity of the results to various partitions of the data sample. This formulation is extremely robust (Yotopoulos, 1996, Ch. 7).

interventions in an incomplete foreign exchange market can lead to better developmental outcomes.

Model II increases the number of explanatory variables to three, by including the two dummy conditioning variables that describe the state of the world within which the *RER* operates. *DumL/M* (=1) accounts for the fact that incomplete markets in exchange rates are the characteristic of LDCs only and not of DCs. Its coefficient remains invariant as the other conditioning variables are introduced, but it is insignificant. *Dum80/85* (=1), on the other hand, has a robust coefficient that fully captures the slowdown of the rate of growth in the latter period of this study.

Model III includes *OPEN* and *DIR*, another two variables of primary interest that describe the trade regime that complements the *RER* policy instrument. The coefficient of *OPEN* is consistently negative, albeit significant only in the last iteration with model V. Its sign is different from the expected (and elusive) result in the literature. While the negative coefficient, ubiquitous in endogenous growth studies, is puzzling for the orthodox approach to trade and development, it can be readily explained in this interpretation. Controlling for the value of the *RER*, one would expect a negative relationship between *GRGDPC* and *OPEN*. Countries that control the level of *NER*, have low *RER*, and grow fast, are expected to have lower volume of trade than would have obtained under free foreign exchange markets. The more *OPEN* the economy is, as a result, the lower the rate of growth. The *DIR*, on the other hand, has a positive but nonsignificant coefficient. The sign indicates that, controlling for *RER* and *OPEN*, the benefit of trade arises from the technological spill-over of having more developed trading partners (proxied by OECD).

Model IV increases the number of explanatory variables to six, by including *INV*, the only variable that has proven robust in other endogenous growth studies. The *INV* variable in model IV is highly significant with values ranging from 0.089 to 0.104, which is very close to the modal values reported in other studies for the same variable. This coefficient presents a strong link with the celebrated and most significant result that other studies of endogenous growth have established (Levine and Renelt, 1992).

Model V increases the number of explanatory variables to ten by adding *GINFL*, *GOVCONS*, *SECENRL*, and *GPOP*. The last four variables are among those most commonly used in endogenous growth studies, and they were chosen, as were the new variables in each group, because they do not measure the same phenomenon with the main variable of interest. The coefficient for *GINFL* is significant and has the expected negative sign. The coefficient of

*GPOP* has the correct negative sign but is insignificant. Finally, *SECENRL* and *GOVCONS* have proven as difficult to capture in this study as they have in the parallel literature.

The grand theme that emerges from the analysis (and is further documented in the parent study) has as its foundation the negative relationship between the *RER* and *GRGDPC*, the rate of growth of real GDP per capita. The relationship is consistently significant and robust to changes in the other conditioning variables. Given the link that currency substitution establishes between *RER* and *NER*, the results favor policies that would reduce either one as leading to a better allocation of resources.

### IMPLICATIONS AND POLICY RECOMMENDATIONS

The maintained hypothesis makes the high prices of tradables (high *RER*) the result of currency-substitution-driven devaluation of the soft currency. This, in turn, leads to misallocation of resources through a bias for producing tradable output. In this interpretation the line of causality goes unmistakably from “high” *NER* to low development outcomes.<sup>9</sup> Devaluations and high-*NER* policies can lead to overshooting the comparative advantage of a country by extending the range of tradability to commodities that are produced at “high” resource cost relative to nontradables. This bias toward trade can lead to exporting (or import-substituting) commodities that may earn (or save) foreign exchange in the short run, but they can compromise the prospects of self-sustained growth in the future. If this happens, competitive advantage trade can turn into competitive devaluation trade.

Why should some countries, specifically LDCs, tend to have high *NER*s that lead to high *RER*s? The explanation, as already mentioned, is asymmetric reputation under free currency markets that leads to currency substitution of the hard currency for the soft. It is triggered by the reputation asymmetry and the expectation that the soft currency will devalue - an expectation that is validated by the absence of restrictions in hedging soft-currency asset-holdings by converting them into hard currency. This leads to “precautionary” demand for hard currency, a demand that is not reciprocated by residents in hard-currency countries holding soft currencies as a hedge against devaluation. It is asymmetric reputation that causes

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<sup>9</sup> Econometric causality tests were performed and are reported in the parent study. The assumption that the right-hand side variables of the model are truly exogenous was tested explicitly. Moreover, a simultaneous equation model was formulated with *G<sub>t</sub>*, *RER*, and *INV* determined endogenously. The results of the reported formulation

the distortion in the free currency markets. The case is parallel to the incomplete market in credit where asymmetric information relates to moral hazard and adverse selection of risk (Jaffe and Russell, 1976; Stiglitz and Weiss, 1981; Floro and Yotopoulos, 1991).

Under these conditions policies that would reduce the RER would achieve a better allocation of resources. One such set of policies is increasing the productivity in tradables, i.e., reducing their peso prices. Another policy reaction which has been largely ignored (or, worse, passionately dismissed) both in the literature and in operations so far is intervention in the foreign exchange market to reduce the NER by rationing or protection. Intervention contains the increase in RER and the premature shift of resources away from nontradables.

The policy of maintaining a “mildly repressed” exchange rate is totally symmetrical with, and a logical consequence of the finding in the literature on credit in favor of mildly repressed interest rates and financial markets (World Bank, 1993). In the latter case, some restrictions of free entry into banking and setting interest rate ceilings help keep banks profitable and eliminate adverse selection of risk (Caprio and Summers, 1993). By analogy, restricting competition in dealing in foreign exchange, e.g., by limiting it to authorized banks only, will increase the spread between the two sides of currency substitution and will limit the exposure of a soft currency to it. Conceptually, the precise meaning of “mildly repressed” exchange rates is easy to define. It consists of setting the ceiling for the exchange rate closer to the range determined by the transactions demand for foreign exchange, the balance between imports and exports, plus the capital account balance in the investment account. On the other hand, short-term capital inflow and asymmetric demand for currency substitution should be restricted and “sterilized” from impacting on the exchange rate.<sup>10</sup>

Fixed exchange rates, let alone “mildly repressed” markets, have their disadvantages and require skill and resources to be managed properly. Would not currency substitution taken to its extreme through “dollarization” of the economy directly, or in the form of a currency board, indirectly, remedy the distortion in free currency markets and solve the problem of reputation asymmetry and its contractionary effects on the economy?

The benefits of dollarization derive from removing uncertainty, reducing foreign exchange risk, and cutting inflation, which translates to lower interest rates. But the costs of

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were proven extremely robust (Yotopoulos 1996: Chapter 7).

<sup>10</sup> In any event, a case can be made that the last two are causally related and by imposing restrictions on both the instability in exchange rates (and in interest rates) plus some incremental weakness in the fundamentals through higher current account deficits, can be alleviated.

the process are substantial and may offset its expansionary benefits. The cost of seigniorage is trivial and can be handled readily as in the case of Argentina where the peso is still the legal tender. More importantly, currency substitution, or in the extreme case dollarization, is predicated on a country's success in attracting the requisite foreign exchange. In the process of luring foreign financial capital higher interest rates, not lower, become necessary. Next, foreign exchange, once attracted, has an opportunity cost in being productively used for the growth of the real economy. Holding it as reserves in a currency board system or as a store of value for asset-holders represents an inefficient use of a valuable resource. Finally, dollarization amounts to adopting the international rate of inflation. While this is appropriate for the tradable sector of the economy, it is totally gratuitous and unnecessarily contractionary for the nontradable sector (Yotopoulos, 1996, ch. 12). This may be one reason why a quasi-currency-board system has worked well in city-states, like Singapore and Hong Kong, where the bulk of the economy consists of the tradable sector.

The systematic nature of the relationship between RER and NER at different levels of income implies that market incompleteness, and thus the need for rationing, abates as development occurs. The same two factors, the real and the financial, that account for the incomplete market are at play in remedying the situation. As development occurs the prices of N increase relative to those of T, thus reducing the RER (the Ricardo principle). At the same time, self-sustained growth breeds reputation and the soft currency "hardens," thus inducing less currency substitution and dampening expectations of devaluation. This reduces the NER. As the divergence between the allocation of resources that obtains under the equilibrium RER and the one under the equilibrium NER decreases, i.e., as the two equilibria tend to converge, eventually free-market, free-trade, laissez-faire policies can be allowed to determine the NER. Empirically, this stage has been reached when a soft currency operates in a free market as hard currency: its exchange rate fluctuates instead of depreciating systematically.

The orthodoxy represented by the Washington Consensus starts from the perception that currencies in developing countries are likely to be overvalued, and in any event, there is an advantage in erring on the side of devaluation since devaluations have remedial and growth-inducing effects of the latter. According to this view, overvaluation and low NERs lead to misaligned RERs with low prices of tradables. This type of misalignment may have adverse effects on development on the assumption that export and import-competing industries are uniquely conducive to productivity improvements and can propel growth. At the same time, a tight monetary policy not only safeguards the devaluation against inflation but also leads to

higher interest rates that make it attractive to foreign investors to hold peso-denominated assets. The inflow of foreign (mostly portfolio) capital will lead to strengthening the exchange rate thus further protecting it against future devaluations.<sup>11</sup> And even portfolio capital, at least under certain scenarios, could lead to real growth.

The evidence does not add up to the case that overvalued currencies are the bane of developing countries. Moreover, there is not a single test confirming the proposition that export and import-competing industries propagate high growth, and the evidence soundly rejects the hypothesis that the growth of trade, per se, is related to economic growth (Edwards, 1993; Rodrik 1995). The view expressed here considers the general perception of both the need for and the favorable effects of devaluation as unwarranted, except if a special case can be made. By the same token, and especially in free currency markets, devaluation of a soft currency is more likely to be followed by further devaluation than by an offsetting appreciation. When devaluation of a soft currency in a free currency market is interpreted as part of a trend - as opposed to a single event - it has none of the curative effects that the Washington Consensus ascribes to it.

In conclusion, the simple arithmetic of comparative statics that led to the formulation of the Washington Consensus is technically right as it applies to hard currencies that fluctuate in free currency markets and show mean-reversion properties: they appreciate and depreciate against other hard currencies around a mean value. But the same comparative statics formulation, applied to developing countries, is operationally wrong in ignoring the dynamics that link the free currency market to the endemic devaluations that are observed. In the real world there is a perpetual state of dynamic disequilibrium that can make devaluation a path dependent process with deleterious effects on growth. Both the endemic nature of devaluation and its adverse effects on growth are the result of “bad competition” and signal “a race for the bottom” in a market that is incomplete and not properly regulated.

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<sup>11</sup> If anything, direct foreign investment is likely to be deterred by devaluations. If prices are to decrease tomorrow, why buy today?

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Table 1. *Countries ranked by the value of the RER index, 1985*

Country	RER	Country	RER
Ethiopia		Kenya	1.070
Rwanda	1.962	Morocco	1.069
Pakistan	1.747	Norway	1.013
Malawi	1.713	Netherlands	1.009
Sri Lanka	1.546	Turkey	0.998
Yugoslavia	1.542	Denmark	0.980
Greece	1.417	Australia	0.969
Ivory Coast	1.329	Belgium	0.963
Portugal	1.230	Jamaica	0.949
New Zealand	1.208	Sweden	0.933
Nigeria	1.196	Canada	0.928
Thailand	1.193	Japan	0.923
Hungary	1.192	Ireland	0.918
Egypt	1.186	Finland	0.879
India	1.178	Italy	0.831
Germany	1.155	Poland	0.829
France	1.095		

*Source:* Yotopoulos (1996), Chapter 6, Table 6.2.

Table 2. Cross-section / time-series regressions on growth, all countries, 1970, 1975, 1980 and 1985

Explanatory variables	Model				
	I	II	III	IV	V
Constant	0.040	0.056	0.068	0.043	0.044
RER	-0.021 (-2.708)	-0.022 (-2.774)	-0.024 (-2.947)	-0.020 (-2.450)	-0.022 (-2.683)
Dummy low/middle (DumL/M=1)		-0.003 (-0.668)	-0.003 (-0.601)	-0.004 (-0.824)	-0.004 (0.493)
Dummy 1980/1985 (Dum80/85=1)		-0.017 (-3.652)	-0.017 (-3.474)	-0.016 (-3.439)	-0.016 (-3.346)
Openness (OPEN)			-0.010 (-1.127)	-0.012 (-1.352)	-0.017 (-1.731)
Dir. of trade (share of OECD) (DIR)			0.015 (0.904)	0.023 (1.410)	0.022 (1.341)
Investment in GDP (INV)				0.104 (2.812)	0.089 (2.277)
Rate of inflation (change) (GINFL)					-0.023 (-1.960)
Gov.consumption in GDP (GOVCONS)					-0.000 (-0.178)
Secondary enrolment (SECENRL)					0.012 (0.880)
Population growth (GPOP)					-0.048 (-0.460)
Sample size	123	123	123	123	123
Adjusted R <sup>2</sup>	0.049	0.142	0.139	0.187	0.193
Standard error	0.025	0.024	0.024	0.023	0.023
F-statistics (zero slopes)	7.333	7.754	4.944	5.682	3.923

*Note:*

The dependent variable is annual rate of growth of real per capita GDP, GRGDPC, for the five-year period centered on the year of observation.

For definition of independent variables see text.

Numbers in parantheses are t-statistics.

*Source:* Yotopoulos (1996), Chapter 7, Table 7.1.