

Should We Fear Foreign Exchange Depreciation?

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Moderate and gradual changes of the real exchange rate are beneficial for the economy to help it attain domestic and external equilibrium. They should not be feared. However, large and sharp devaluations can lead to insolvency and even systemic crisis. They should be prevented by macroprudential policies and by avoiding unsustainable fixed exchange rate regimes. Central bank intervention to avoid a secular depreciation is useless: it only leads to massive losses of foreign reserves.

Foreign Exchange Rates: Trends, Consequences, and Policies

In the last few years, the majority of currencies around the world, both in developing and developed countries, have depreciated with respect to the U.S. dollar. Governments, entrepreneurs, and households are concerned because drastic depreciation of the national currency could lead to bankruptcy and even economic crisis. But are these fears justified? And could there actually be benefits from currency depreciations?

This brief considers the main stylized facts on foreign exchange rates, with particular focus on developing countries; it examines the reasons and evidence for both potentially negative and positive effects of real exchange rate (RER) depreciation; and it discusses whether policies can be effective in reversing depreciation or mitigating its negative impact.

Stylized Facts

In the aftermath of the 2008–09 international financial crisis, many developing countries experienced an appreciation of their currencies, as financial flows were redirected to the—paradoxically—safer and higher-return possibilities offered in emerging economies. A period of relative exchange rate stability around stronger currency values in these economies ensued until about 2013, when the financial and economic panorama in the world changed. First, the United States and a few other developed economies—which had been limping since the financial crisis—started to recover and attract financial flows back to them. Second, commodity prices declined

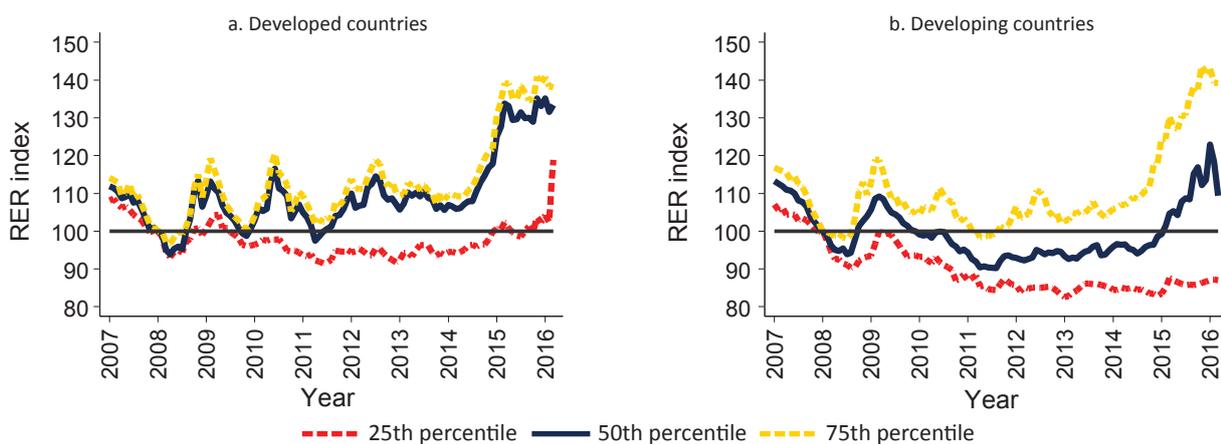
abruptly at the end of 2014 and beginning of 2015, making resource-rich developing countries less attractive destinations for foreign investment. As result, the national currencies of many emerging economies began a secular process of exchange rate depreciation (see figure 1).

Not every country has followed the same trend, however. Within the group of developing countries, national currencies have followed diverging paths. To cite a few cases, since 2013, Turkey, Indonesia, Malaysia, and Mexico have experienced strong RER depreciations, Peru's RER has depreciated mildly, and China's RER has remained stable (see figure 2). The observed dispersion of real exchange rates, especially since the end of 2014, may reflect a general sense of uncertainty in international financial markets and in particular economies, but it may also represent differing paths of macroeconomic adjustment to the international shocks that have occurred in recent years.

The general pattern of appreciation, after 2009, followed by depreciation, starting in 2013 and intensifying in 2014, can also be observed by looking at the annual growth of the real exchange rate across different geographic regions and income categories (see figure 3). Similarly, the contrasting behavior of these RER growth rates, especially in 2015, reveals the diverging paths of real exchange rates across groups of countries.

Though substantial, the recent changes in exchange rates do not match the abrupt currency collapses experienced in the last four decades around the world. They were associated with insolvency and liquidity crisis, such as those related to the sovereign debt crisis in Latin America in the late 1970s and 1980s, the Mexican Tequila

Figure 1. The Real Exchange Rate with Respect to the U.S. Dollar Has Depreciated in Most Countries, and Sharply in Some Cases



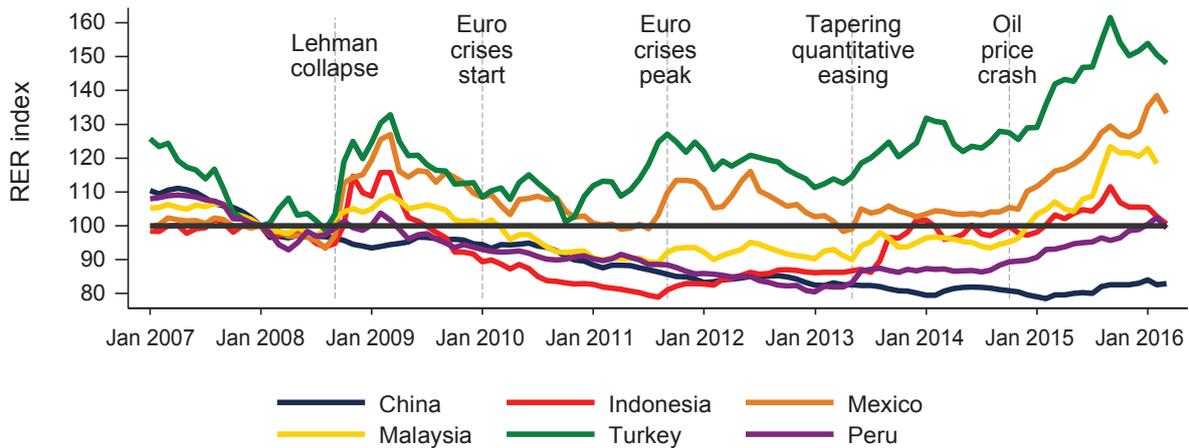
Source: Haver Analytics monthly data and World Bank staff estimates.

Note: The figure uses a complete monthly sample over the period January 2007–March 2016 for 72 countries. Aggregations use 2016–17 World Bank income definitions. The real exchange rate (RER) is a nominal exchange rate with respect to the U.S. Dollar adjusted for relative movements in national price or cost indicators of the home country and the United States. The real exchange rate index (RERI) is the ratio of the real exchange rate with respect to a base period. The figure uses January 2008 as the base period, such that $RERI = 100$. A decrease in the RERI denotes an appreciation. $RERI_{t,t_0} = \frac{RER_{t,t_0}}{RER_{t_0,t_0}} * 100$; $RER_{t,t_0} = ER_t \left[\frac{CPI_{t,t_0,t}}{CPI_{t_0,t,US}} \right]$; $CPI_{t_0,t,US} = \frac{CPI_{t,US}}{CPI_{t_0,US}}$; $CPI_{t,t_0,t} = \frac{CPI_{t,t_0,t}}{CPI_{t_0,t_0,t}}$, where t_0 = base period; t = current period; t_b = CPI original base period; CPI_{t,t_b} = consumer price index in period t with original base period t_b ; ER_t = nominal exchange rate in period t .

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Figure 2. Most Currencies Have Weakened with Respect to the U.S. Dollar, Especially Since 2013, While a Few Have Remained Stable



Source: Haver Analytics monthly data and World Bank staff estimates.
 Note: The figure uses January 2007–March 2016 monthly observations. Details about the construction of the RER index are presented in figure 1. A decrease in the RERI denotes an appreciation. Episodes: Lehman Brothers collapse = September 2008; start of the Europe’s sovereign debt crisis = January 2010–May 2010; Europe’s sovereign debt crisis peak = September 2011–November 2011; Federal Reserve announcement of gradual tapering of the quantitative easing program = May 22, 2013; oil-price crash = October 2014–January 2015.

crisis in 1994–95, the East Asia crisis in the mid- to late-1990s, and the great recession in 2009. Frankel and Rose (1996) define a currency crash as a nominal depreciation of the currency vis-à-vis the U.S. dollar of at least 30 percent. Using this definition, Valencia and Laeven (2012) find 218 currency crashes from 1970 to 2011, of which only 10 episodes occurred from 2008 to 2011, despite the latest international financial crisis and the great recession.

Insolvency and Sharp Real Exchange Rate Depreciations

A sudden and drastic depreciation of the national currency can generate a chain of liquidity constraints and even insolvency at different economic levels, from households to firms and governments (Chang and Velasco 2000). These effects can be compounded as different sectors affect one another, decreasing consumption, restricting credit, increasing interest rates, and limiting investments.

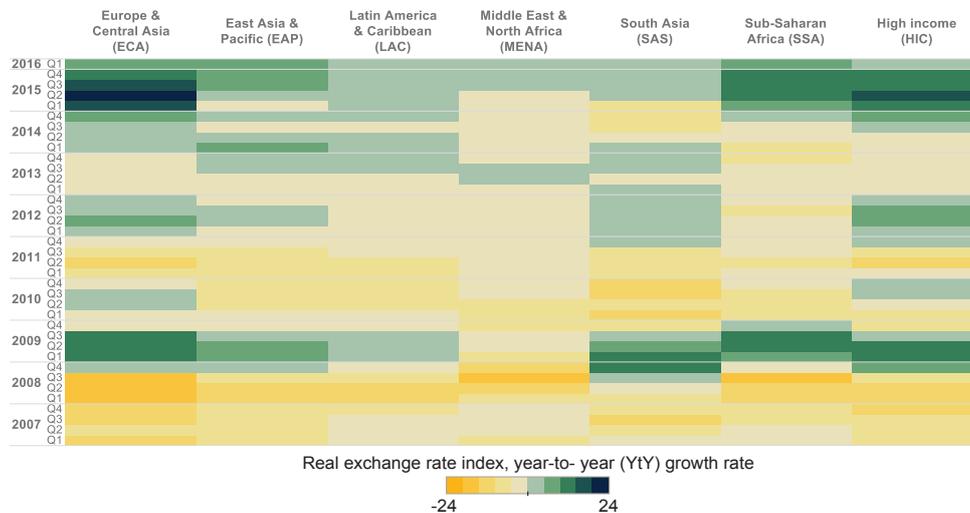
For the majority of agents in the economy that consume or use foreign products, a depreciation of the real exchange rate will

increase their costs, often without a matching increase in their revenues. Indeed, households, firms, and governments usually receive their income in national currency: for households, wages and salaries; for firms, sales revenues; and for governments, income and sales taxes. For them, a depreciation will likely have a negative impact on income and induce a substitution away from foreign goods and services and toward domestic ones.

Moreover, for people and institutions that are indebted in foreign currency, a depreciation increases the real value of their debt. This may result in repayment difficulties, a deterioration of their balance sheet, and the risk of bankruptcy, unless they own matching assets denominated in foreign currency (Glick and Hutchison 2000; Gupta, Mishra, and Sahay 2007).

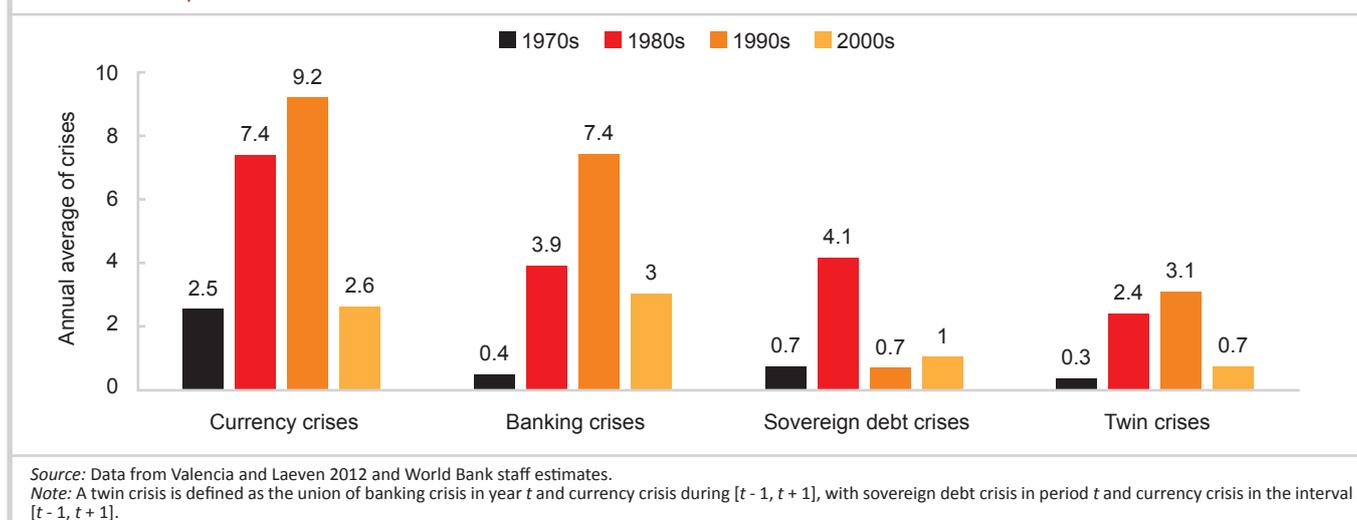
It is worth emphasizing that these negative effects may occur when depreciations are large and abrupt. Using a set of seven country currency crashes in the 1990s, Fallon and Lucas (2002) observe negative effects on workers, finding a fall in real wages in the

Figure 3. The Depreciation with Respect to the U.S. Dollar Has Generalized across Regions in Recent Years



Source: Haver Analytics monthly data and World Bank staff estimates.
 Note: The figure is a heat map of annual (year-to-year, YtY) compound growth rates of the RERI indicator, as defined in figure 1. The quarterly regional growth rates are unweighted averages of country median values of monthly observations. A sample of 72 countries is used based on availability and world economic importance. 2016–17 World Bank income and regional definitions. Regional data is distributed in the following form: East Asia and Pacific (EAP) includes 6 countries; Europe and Central Asia (ECA) includes 13 countries; Latin America and the Caribbean (LAC) includes 9 economies; the Middle East and North Africa (MENA) includes 2 countries; South Asia (SAS) covers 2 countries; Sub-Saharan Africa (SSA) includes 6 economies; high-income countries (HICs) aggregates 34 countries.

Figure 4. The Frequency of Currency, Banking, and Sovereign Debt Crisis Decreased Markedly in the 2000s, despite the Strong International Shocks Experienced in the Second Half of the Decade



manufacturing sector in all crisis countries and quite severely in Indonesia (-44 percent), Turkey (-31.5 percent), and Mexico (-18.5 percent). The effect on firms seems to depend on their intrinsic characteristics. If they are importers, the effect will tend to be negative; if they are exporters, the effect will tend to be positive. Forbes (2002) studies the effects of currency crashes on firms by comparing 1,100 firms in 8 countries that had currency crashes and 48 countries that did not between 1996 and 2000. The estimates suggest that firms in crisis countries have lower rates of capital growth and worse stock return performance after devaluations if they are capital intensive and if their cost of capital increases.

Governments can also be negatively affected by sharp devaluations, but this depends on their exposure to foreign currency. Using a sample of 24 emerging markets from 1975 to 2002, Hutchison and Noy (2006) estimate that, after a currency crash, the budget deficit can increase by almost 1 percentage point and inflation by 2 percentage points on average, with larger impacts in more exposed countries.

Systemic Crises and Currency Collapses

A sharp depreciation can cause more than isolated cases of illiquidity and insolvency. It can produce a systemic crisis if these instances of insolvency are closely connected, in a domino-like effect. A depreciation can produce a systemic crisis if it sufficiently affects the financial system, which in many economies is the center of interconnection between businesses, consumers, and government (Gourinchas and Obstfeld 2012). A financial system is vulnerable to a depreciation shock directly if its assets and liabilities are mismatched in terms of currency of denomination, and indirectly if its debtors become insolvent.

Moreover, governments can be the source of a systemic crisis if they are unprepared to absorb the depreciation shock and become insolvent or strapped for liquidity (Reinhart and Rogoff 2011). Governments with high levels of foreign debt or with contingent liabilities on foreign exchange movements are particularly vulnerable to a depreciation shock. Indeed, governments that provide explicit or implicit insurance against exchange rate fluctuations (by keeping a fixed exchange rate or by providing price and profit guarantees in foreign exchange) are among the most vulnerable of all (Frankel 2011; Ghosh, Qureshi, and Tsangarides 2013).

The empirical evidence suggests that currency crises are sometimes related to banking crises and sovereign debt crises. Using a sample of 162 countries over the period 1970 to 2012, Valencia and Laeven (2012) identify a total of 432 currency, banking, or sovereign debt crises (see figure 4). Of them, 15 percent represent “twin crises” of currency collapse and either of the other two

systemic crises. In the 1980s, currency crises were especially linked to sovereign debt crises, while in the 1990s currency crises occurred in closer connection with banking crises. Importantly, the frequency of these crises (both individual and “twin”) decreased markedly in the 2000s, despite the strong international shocks experienced in the second half of the decade.

Currency crises and systemic crises are worrisome because they disrupt employment, induce poverty, and create uncertainty. Currency crisis are associated with negative effects on output growth, as well as on its components related to public and private consumption and investment. Using a panel data set from 1975 to 1997 covering 24 emerging economies, Hutchison and Noy (2006) find that after a currency crisis, GDP declines around 2–3 percent. However, the negative effect can be worsened if the currency crisis is accompanied by a sudden stop of foreign investment and if it leads to a systemic financial crisis; in such cases, the cumulative effect is a 10–15 percent decline. For example, during the East Asia currency crises in 1997, the Indonesian and the Thai economies contracted by 13 percent and 10 percent, respectively; and during the Argentina currency crisis in 2002, output fell by 11 percent (Gupta, Mishra, and Sahay 2007).

Positive Effects of Real Exchange Rate Depreciation

Do these risks associated with sharp depreciations imply that all depreciations should be avoided? No, not at all. Gradual and moderate depreciations (and appreciations) usually denote an orderly movement toward a new domestic and external equilibrium (Corsetti, Dedola, and Leduc 2010). A new equilibrium entails restoring potential employment and growth and resolving balance of payments gaps when there are changes in fundamental factors (such as productivity growth and demographic changes) and shocks of various types (such as terms of trade, commodity prices, and global financial crisis). Thus depreciations can help reduce trade deficits and prompt domestic growth.

In the face of exchange rate fluctuations, it should be kept in mind that the real exchange rate is a relative price, whose flexibility and movement is essential to avoid large imbalances and distortions (Calvo, Izquierdo, and Mejía 2008; Asonuma and Trebesch 2016). To obtain this flexibility, the exchange rate, as a national currency price, can serve the function of coordinating a (very) large set of individual prices in both labor and output markets (Corsetti 2006). An exchange rate depreciation, for instance, can achieve the same objective as a reduction of domestic prices in a large variety of goods and services.

Flexible exchange rates are shock buffers and effective coordinating mechanisms, and both currency depreciations and appreciations are just a reflection of such flexibility. Countries with flexible

exchange rates tend to adjust better to external or internal economic shocks. The flexible exchange rate regime allows a faster and more sustainable recovery from trade and current account imbalances (Edwards and Yeyati 2005); from natural disasters like hurricanes, typhoons, and earthquakes (Ramcharan 2007); and from a variety of shocks that produce internal and external imbalances (Edwards 2004; Lane and Milesi-Ferretti 2012). Moreover, flexible exchange rate regimes are less vulnerable to speculative attacks, especially as they become financially developed (Aghion and others 2009; Frankel 2011; De Gregorio 2013).

Conclusion and the Role of Policy Interventions

On balance, moderate and gradual depreciations and appreciations of the real exchange rate are beneficial for the economy to help it attain domestic and external equilibrium. These are long-term phenomena and a reflection of a healthy economy. It can be argued that the best policy in this case is to allow the exchange rate to move in a flexible way, without undue interference by monetary or fiscal authorities (World Bank 2013).

A different situation occurs, however, when fluctuations in the real exchange rate are abrupt or highly volatile as a result of either a large and sudden shock or the unraveling of an unsustainable policy. These real exchange fluctuations can cause insolvency for various economic agents (from households and firms to banks and governments) and even systemic financial crises. They should be mitigated through short-term crisis management measures, including deploying previously determined prudential policies such as short-term

capital controls and central bank interventions as lender of last resort (Claessens, Ghosh, and Mihet 2013; Cerutti, Claessens, and Laeven 2015). In addition, if adverse international conditions exacerbate financial frictions, the central bank's sale of foreign currency (held as international reserves) can be effective—albeit only in the short run—in preventing negative real impacts and systemic crises (Chang and Velasco 2016).

Beyond these short-term crisis management measures, is there a role for central bank interventions to prop up the exchange rate? No, there is not. The evidence indicates clearly that there is no large or long-lasting impact of foreign exchange interventions on the real exchange rate (Blanchard, Adler, and Carvalho Filho 2015). In the face of fundamental forces driving the exchange rate, “defending” the national currency does not prevent its depreciation and only leads to massive losses of foreign reserves.

Although little can be done to avoid large external shocks, much can be done to prevent crises. This starts by avoiding unsustainable policies. For exchange rate matters, the worst of these policies are keeping a fixed but misaligned exchange rate (sooner or later, it will burst) and providing implicit or explicit insurance on undue or excessive risk taking (by intervening against a clear exchange rate trend, by subsidizing foreign exchange transactions, and by bailing out financial institutions). These only invite speculative attacks, unwarranted risk taking, and losses of foreign reserves. As Larry Summers points out, “the best national response to a crisis is not to have one” (Summers 2000).

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