What Do We Mean by Undervalued or Overvalued Currencies?

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Abstract

This article explains currency overvaluation and undervaluation and reveals the means through which currency valuation can be measured. The benefits, costs, and consequences of currency overvaluation and undervaluation, including its implications for global trade are presented. Currencies such as the Chinese Renminbi and the Indian Rupee are discussed in detail.

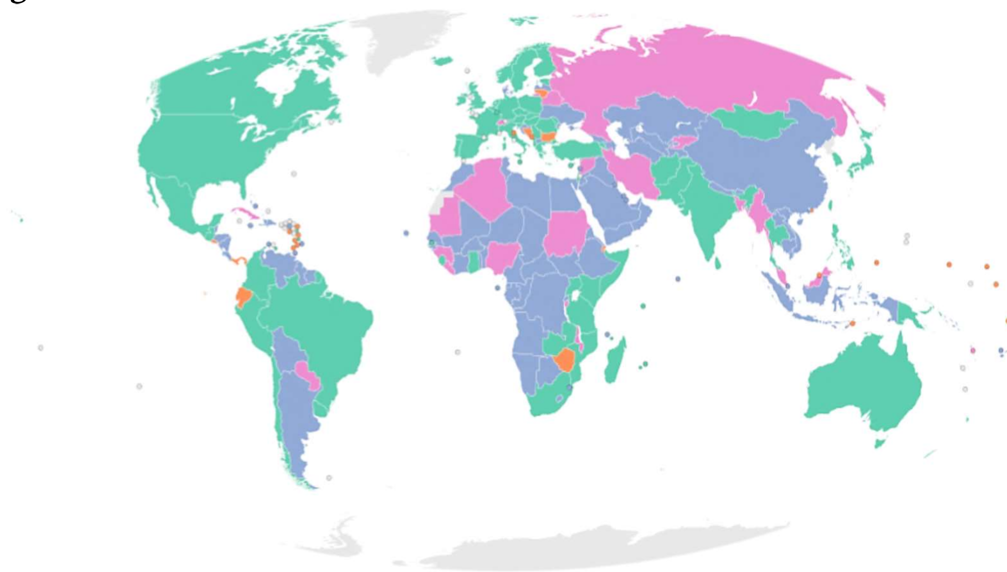
For decades, going back to the Clinton administration, US presidents have complained that the Chinese government has kept its currency (the Renminbi Yuan or RMB) undervalued,[1] thereby giving the Chinese economy an unfair advantage. Indeed, this is one of the sticking points in the ongoing negotiation between the Trump administration and the Chinese government. Chinese negotiators have apparently agreed not to devalue their currency.[2] Contrariwise, for many years, other currencies ranging from the Nigerian naira, to the Norwegian krone, to the Indian rupee are said to be overvalued.

What exactly do we mean by currency undervaluation and overvaluation? How do we measure this? And what are the benefits, costs, and consequences of overvaluation and undervaluation?

The Foreign Exchange Market

Every 24 hours, over $ 5.1 trillion in currencies change hands worldwide. The US dollar dominates, making up one side of the transaction in 85% of all trades.[3] The other side of the trades are taken up by the Euro, Yen -- and increasingly, emerging market currencies such as the Indian rupee, Brazilian real and Chinese yuan which tend to exhibit greater overvaluation or undervaluation.

Figure 1. Extent of Government Intervention



Floating (floating and free floating)

Soft pegs (conventional peg, stabilized arrangement, crawling peg, crawl-like arrangement, pegged exchange rate with horizontal bands)

Hard pegs (no separate legal tender, currency board)

Residual (other managed arrangement)

Source: Exchange-Rate Regime, *Wikipedia*.

Many large advanced country currencies "float" as depicted in Figure 1. Their value goes up or down depending on demand and supply in the foreign exchange markets – and there is little or only rare government intervention. Examples include the US dollar, the euro, the Japanese yen and British pound. But that does not mean that government actions, such as interest-rate setting by their central banks cannot affect their currency value.

The majority of currencies on the planet, especially in emerging countries, are partially controlled, or pegged, by their governments.[4] The government's agent can directly buy or sell its own currency in order to influence its value. In extreme cases, there is a hard peg, or currency value dictated, by fiat from the government.

There are advantages and disadvantages to currency overvaluation or undervaluation, depending on a country's circumstances, as we discuss later. But first let us examine some of the other causes of undervaluation (low value, or too much devaluation against other currencies such as the dollar) and overvaluation (too strong a value, or not enough devaluation, against other currencies such as the dollar)

Causes of Undervaluation or Overvaluation

Government actions are often a root cause. For example, even in free-floating currencies, deliberate government actions such as interest rates (set by the nation's central bank), can affect the currency markets. When interest rates offered by banks in a nation are raised, greater demand by foreigners for that currency in the foreign exchange market can raise its price (or exchange rate) thereby strengthening or appreciating it -- sometimes too much -- which leads to overvaluation – or too much appreciation.[5] Correspondingly, when a nation's central bank lowers interest rates, parking funds in that currency becomes less attractive, and foreign holders liquidate their accounts, take the local cash and dump/sell it in the foreign exchange market, thereby lowering its value. Too much capital flight out of the nation can undervalue it (i.e., too much devaluation).

Governments often manipulate their currency value (up or down) also by direct buying or selling of the currency in the foreign exchange market.[6] Other nations mandate that trading only occur within a small band or range – a range that can be kept in place for months and adjusted, as the government decides. In the extreme case, the government simply dictates the exchange rate, by fiat, and can enforce that dictated rate for months or years.[7]

External factors or influences from outside the nation, such as market sentiment, can also appreciate or devalue currencies, as foreigners buy or sell assets in a nation and move their money in or out, depending on their perception of the country's economy. Political crises can undervalue (i.e., excessively devalue) a currency. As happened in Brazil and Turkey (from 2013 to 2019), both foreigners and locals lose confidence in the economy, liquidate assets, and take their local cash to the foreign exchange market to try and convert into hard currencies like the dollar or euro. This severely devalued the Brazilian real and the Turkish lira.[8] Sometimes, desperate governments then try to stem the outflow by introducing restrictions or limits on currency conversions.

Currencies may become overvalued when foreigners desire that currency in the exchange markets because they seek to hold portfolio or real assets in that nation. Or if the country's central bank raises internal interest rates, money fund managers wishing to earn higher interest then demand that currency in the spot market.

Especially in the emerging world, governments may deliberately keep their currency overvalued (prevent devaluation) – for political reasons. By contrast, in the case of China, US officials and others allege that the People's

Bank of China's (its central bank) has consistently undervalued the renminbi/yuan since the early 1990s, in order to promote exports. We explain the motivations, advantages and drawbacks below.

The advantages of undervaluation from China's point of view include:

- Giving a boost to China's exporters because the dollars exporters earn convert into more renminbi than they would otherwise.[9] As an example, in March 2019 Chinese exporters who earned a dollar, would be given in exchange 6.7 RMB at their bank. Hypothetically speaking, if the RMB were to appreciate to say 5.0 RMB = US $ 1, then the Chinese exporter would earn only 5 RMB from their export. This illustrates how undervaluation can help exporters.
- Making foreign direct investment (FDI) more attractive to outside investors, since their currencies, say the US dollar, converts into more renminbi with which to buy land, factories or any local asset. The cost of establishing foreign direct investment in China is reduced in, say, dollar terms, thereby increasing FDI from the rest of the world.
- Causing investment and jobs to pour into China's export sector, turning it into the "factory of the world," due to the expectation of allegedly continued future undervaluation by the Chinese central bank.
- Making imports headed into China more expensive in renminbi, thereby protecting domestic Chinese firms from import competition and retaining investment and jobs in the country.
- Boosting investment and jobs overall, critical for a population of 1.4 billion people.

The drawbacks of undervaluation for China:

- Offering effective protection against imports reduces competition, which can also reduce efficiency and competitiveness of local firms.
- Can create excess demand for jobs and escalate wages in a country with a limited labor supply, which in turn could increase inflation. This did not happen in China for many decades because of its large population.[10] However, with the one-child policy having an effect starting in 2015, reports of labor shortages have emerged. Chinese labor costs have escalated sharply, threatening China's "factory of the world" position.[11]

We next discuss overvalued currencies which are more likely to be found in emerging countries (although examples of overvaluation also occur in developed economies, such as Norway and Switzerland).

Advantages of overvaluation (for countries like India, Thailand, Egypt or Nigeria as of early 2019):

- Imports are cheaper in the local currency. This can be crucial for import-dependent populations or where basic necessities like food, medicines or energy must be imported for the local market.[12]
- Political stability increases. To the extent that the government handles or subsidizes imports of necessities, the political consequences of allowing devaluation would be detrimental to the incumbent government. This is because, following devaluation, basic necessities, including energy, may still have to be imported anyway, costing more in the local currency and possibly contributing to unrest and protests.
- Especially in import-dependent economies, importing at the overvalued exchange rate is cheaper than local production, keeping price increases and inflation under control.

Drawbacks of overvaluation:

- Exports are reduced because companies converting their foreign currency earnings, say US dollars, at the overvalued exchange rate do not earn enough local currency, in Egyptian pounds, Nigerian naira, or rupees, to justify their costs. For instance, one dollar earned by an Indian exporter in March 2019 converted into 70 rupees, but if the exchange rate had been 78 rupees per dollar, the exporter's earning would have been 11 percent greater.
- Imports may appear artificially inexpensive compared with local substitute products, thereby dampening investments and jobs in the sectors that could have produced equivalent goods and services locally, to compete against imports.
- Foreign direct investment coming into a country with an over valuated currency is somewhat reduced because foreign currencies like the US dollar convert into fewer units of local currency, naira or rupees, with which to buy local assets such as land, factories, and so forth.

Comparing currency values is complicated because the comparison involves converting different moneys into one reference currency such as the US dollar whose value itself fluctuates. Also, living standards, and the cost of living vary dramatically across nations and complicate comparisons and analyses.

How Do We Measure Overvaluation or Undervaluation? Purchasing Power Parity Theory

Ultimately speaking, how do we assess if a currency is overvalued or undervalued? The theory of purchasing power parity (PPP) provides a somewhat good analysis, but only in the long run. The theory's main idea is simple: it suggests that money as such has no value and is merely odd pieces of metal, paper, plastic or even a phantasmal electronic entry. Under the theory, money has value depending on what holders can do with it – what and how much consumers can purchase with that currency.

The exchange rate for a currency in the long run, according to the theory, is based on the comparison of its purchasing power versus that of another currency.[13] In the simplest example, if a basket of goods and services can be purchased for ₹78,000 in India, and the same basket of goods and services can be purchased for $1,000 in the United States, then the theoretical purchasing power parity exchange rate should be $1 = ₹78. [As of February 2019, it was $1 = ₹70, suggesting that the rupee is somewhat overvalued].

Unfortunately, all currencies eventually lose value through the strange process of inflation – erosion of any currency's purchasing power over time -- typically over years. A number of socio-economic factors spur inflation, depending on the country. A complication is that currencies lose purchasing power at different rates. In short, the currency that has a higher inflation rate, such as the Indian rupee, should and indeed *will* in the long run, according to PPP theory, *devalue* against a reference currency, such as the US dollar that suffers *lower* inflation.

A simple way of calculating this is to take the difference between the inflation rate of the rupee and that of the US dollar as reference currency over a suitable period. According to a calculation by Rajadhyaksha,[14] seen in Figure 2, the Indian rupee should have devalued at a rate proportionate to the difference in the inflation between India and the United States, calculated as an average annual 4.15 difference, as shown in the graph.

If so, the Indian rupee should have devalued by 4.15 percent each year on average. However, it did not. The rupee devalued more slowly – less than it should have, according to PPP theory. That means the rupee is somewhat overvalued. A related method used by economists, called the Real Effective Exchange Rate (REER),[15] compares a currency against a 'basket' of currencies of its trading partners. REER arrives at the same conclusion, that the rupee is slightly overvalued, according to Rajadhyaksha.[16]

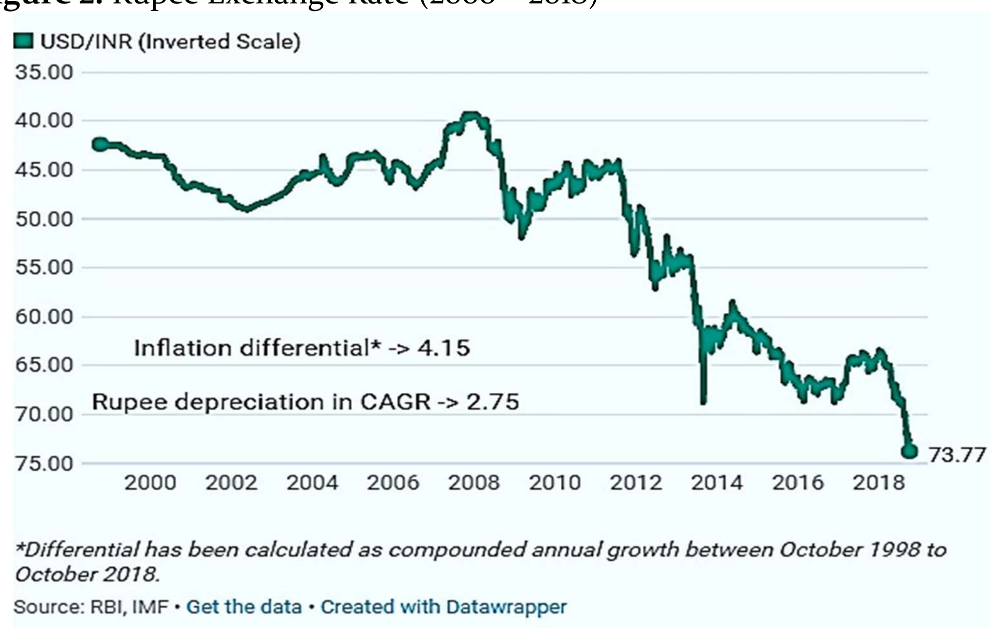
Inflation in the Indian economy has moderated recently, but remains higher than that in the United States. If this continues in the long run, the theory says, economists should expect the rupee to continue to devalue against the dollar.

Purchasing Power Parity (PPP) theory -- or assessing whether a currency is overvalued or undervalued -- is studied worldwide by consultancies, governments and multinational companies to determine the timing of their foreign direct investments (FDI), or portfolio investments. For example, a country's interest rate may look attractive to foreigners, but once the foreign bank deposit matures, at what exchange rate will the local currency proceeds convert back into the foreign investor's money? Consider the example of Brazilian, Turkish and many companies in the emerging world who found US interest rates irresistibly low in 2011 – 2013 and borrowed heavily in US dollar-denominated debt. But when the loans had to be repaid in 2018, by when the dollar had become strong, the Brazilian, Turkish and other companies found their local currency cost of repayment so high that several went under.[17]

For governments, PPP theory is useful in deciding how much to devalue or revalue their currency. For example, the Vietnamese dong, a government-controlled currency, is devalued gradually by them based on PPP calculations.

PPP theory is far from accurate, and works better only in the long run, calculated over several years. But PPP calculations can give executives, investors and governments some guidance and insights.

Figure 2. Rupee Exchange Rate (2000 – 2018)



Source: Rajadhyaksha, N. (2018, October 8). Is the rupee undervalued or is it overvalued? *LiveMint*.

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Farok Contractor is Distinguished Professor of Management and Global Business at Rutgers Business School, a Fellow of the Academy of International Business (AIB), and author of ten books and over 150 scholarly articles. He holds a Ph.D. (Managerial Science and Applied Economics) and an M.B.A. from the Wharton School, as well as two engineering degrees (M.S. in Industrial Engineering, University of Michigan, and B.S. in Mechanical Engineering, University of Bombay). He has chaired or been on the supervisory committees of 17 doctoral dissertations on International Business topics. He has taught at the Wharton School, Copenhagen Business School, Fletcher School of Law and Diplomacy, Tufts University, Nanyang Technological University, Indian Institute of Foreign Trade, XLRI (India), Rutgers business programs in Beijing and Shanghai, Lubin School of Business, and Theseus and EDHEC in France. He has also conducted executive seminars in the US, Europe, Latin America, and Asia. Farok Contractor's research focuses on key issues in International Business, such as corporate alliances, outsourcing and offshoring, valuation of intangible assets, the technology transfer process, licensing, and foreign direct investment. His papers and books have been cited approximately 10,800 times, and he is among the top-ranked contributors of scholarly papers in the field. He has served Rutgers as Department Chair, CIBER (Center for International Business Education and Research) Research Director, Ph.D. program coordinator, and other key school and university initiatives. He writes a blog for managers, students, policy makers, and educated laypeople covering International Business issues at https://globalbusiness.blog – which has been read by viewers in 171 countries.
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Endnotes

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4. The expression "majority of currencies on the planet" is numerically true – by country. But recall that the dollar, euro and yen dominate daily foreign exchange transactions. Hence as a fraction of overall global foreign exchange turnover, the majority of trades are in free-floating currencies. Albeit small, the fraction of daily trades in emerging market currencies – where governments intervene more heavily -- is rapidly growing.
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17. A Turkish company that took out a 5-year US dollar-denominated loan in 2013 received 2.2 Turkish lira for every dollar it borrowed. But in 2018 when the loan had to be repaid, it took 5.5 Turkish lira from the company's cash flows to repay that one dollar. Many could not pay and went insolvent.