

A Big Mac Update

February 02, 2015

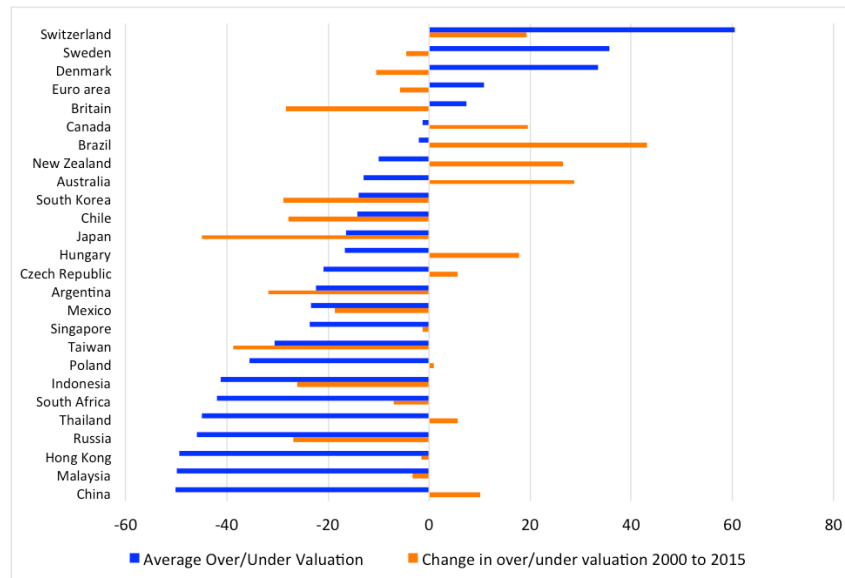
If you have been abroad, at some point you probably had the same reaction we did: How can things be so expensive? Or, how can things be so cheap? Go out for pizza in Zurich, or a beer in Oslo, and you will have the first reaction. Try buying a cup of coffee in Mexico City or a souvenir in Buenos Aires, and you are likely to have the second.

The *Economist* magazine's *Big Mac index* has obtained cult status (at least among economists). It's now been around for nearly 30 years, and provides a nice rough indicator of whether currencies are under- or over-valued. The simple idea – which economists call purchasing-power parity (PPP) – is that it should take the same number of dollars to buy a Big Mac in Omaha as it does in Mexico City, London, Istanbul, or Seoul. That is, convert the \$4.79 it costs in the United States into Mexican Pesos at the current exchange rate of 14.6 pesos to the dollar, and you should be able to use the 70 pesos to buy a Big Mac. The fact that it will only cost you 49 pesos implies that the peso is under-valued by about 30%. And, after recent events, getting ahold of the 6.50 Swiss Francs that you will need to pay for a Big Mac in Basel or Berne means putting your hands on something over \$7.50 – an overvaluation of more than 50%.

In a world governed by economic theory and free trade, you might expect these differences to disappear over time. That is, the goods, services, capital, and people would move so that costs equilibrated. Do they?

Well, *The Economist* is kind enough to post the history of the Big Mac index [here](#). We can use these data to get a very rough impression of whether the deviations from Big Mac Parity (BMP) fade over time. The following chart plots average over-/under-valuation relative to the US dollar (the blue bars) and the change from 2000 to 2015 (the orange bars). We have ordered the data based on the first variable, so the currency with the largest under-valuation on average is at the bottom, and the largest over-valuation on average is at the top.

Big Mac Index: Percent of under- and over-valuation of currencies relative to the U.S. dollar, 2000–2015



Source: *The Economist* and authors' calculations. Computed using mid-year data, except for January 2015.

The basic message here is that big deviations tend to be highly persistent. In other words, when a currency is either significantly over- or under-valued (relative to BMP), it tends to stay there.

This is hardly a problem with economic theory. Many things can explain these large and persistent deviations from PPP. The first is that Big Macs are perishable and costly to transport per unit value. You can't really expect someone in New York to import and eat a Big Mac produced in Shanghai – the flight time of more than 14 hours would surely leave the burger a bit worse for wear.

Local Big Mac prices reflect the cost of inputs into production that are relatively immobile, including local labor and local buildings. Differences in these costs mean that McDonalds in different cities will charge a different price. The same applies to local taxes and (for the most part) to perishable inputs, like beef, buns, lettuce, and tomatoes that are costly to transport. And, when the cities are in different countries, transactions in these inputs also may be hindered by trade barriers like tariffs and quotas, while cross-border labor mobility is severely limited.

These enduring frictions, described in detail in research on the Big Mac index over the years (you can start [here](#)), mean that the deviations in the implied currency valuations should persist for quite some time; and they do. But once you take account of these persistent differences, the residual deviations go away fairly quickly: the estimate in the paper we have linked above is that the deviations from Big Mac Parity disappear at the rate of about 50% per year. By comparison, the half-life of deviations from economy-wide PPP is probably about five years.

So, does the Big Mac index – hampered by its narrow focus on a single, nontraded good – accurately reflect patterns observed in broadly constructed exchange rate indices? The perhaps surprising answer to this question is yes. Consider, for example, the real effective exchange rate measures computed by the BIS (and available [here](#)). Like the Big Mac Index, movements of the BIS indices are highly persistent – highly-valued currencies tend to stay highly valued, and low-valued currencies tend to stay low-valued. And measures of persistence for the Big Mac index are similar in magnitude to those you can compute from the more comprehensive measures published by the BIS.

Over the long run, to be sure, PPP works. And – adjusting for the limitations of a nontraded good – we would expect Big Mac Parity to do so as well. But, as [we recently pointed out](#), don't try using an exchange rate index – however much it deviates from a long-run norm – to forecast exchange rate movements reliably over a month, a year, or even a few years. To paraphrase an old trader's tale, currencies can stay under- or over-valued much longer than you can stay solvent.

[Permalink](#)

Tags: Big Mac Index, Purchasing power parity, Real exchange rate, Exchange rate valuation

♥ 3 Likes

[Prev](#) / [Next](#)

