Calculating PPP

PPP + Big Mac Index

The Big Mac index

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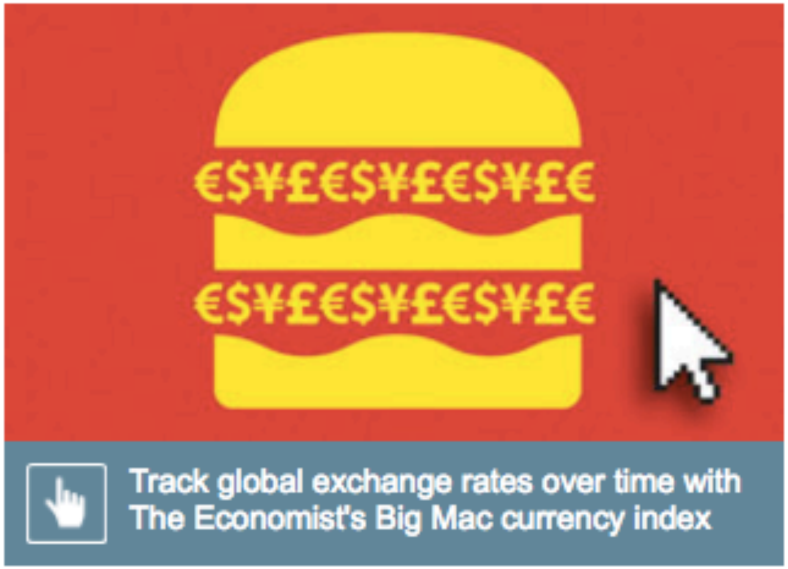
The Economist's interactive currency-comparison tool

THE Big Mac index is a lighthearted guide to whether currencies are at their "correct" level. It is based on the theory of purchasing-power parity (PPP), the notion that global exchange rates should eventually adjust to make the price of identical baskets of tradable goods the same in each country. Our basket contains just one thing, a Big Mac hamburger.



Track global burger-based exchange-rates

Purchasing Power Parity

Definition: PPP measures the rate at which the currency of one country would have to be converted in the currency of another country to buy the same amount of goods and services in each country…Big Mac index concept

PPP

- Points to note for development:

1. Costs of goods + services in LEDC's are lower than in developed countries (MEDC's)
2. What is the standard of living (gdp impact) then of a poor country like India when we say that that the average per capita income is $1627 per year
3. PPP converts this income into PPP$ to give a better understanding of the buying power of the local – Indian – currency.

PPP

Under/Overvaluation of Currency

	Big Mac in local Price (I)	actual Dollar exchange rate (II)	implied PPP of US Dollar (III)	under/over valuation (percent) (IV)
US ($)	2.71	-	-	-
Britain (£)	1.99	1.58	0.73	-53
Germany (€)	2.71	1.10	1.00	-9
Poland (PLN)	6.3	3.89	2.32	-40

$$\text{under/over valuation} = \frac{\text{III}-\text{II}}{\text{II}} \times 100$$

$$\text{for Germany: } \frac{1.00-1.10}{1.10} \times 100 = -9$$

PPP......purchasing power parity

Note 1 on PPP: The exchange rate is 1 US$ = 0.73 British pounds . This is calculated by dividing the Big Mac cost in the UK (1.99) by the US price (2.71) therefore 1 US $ will be worth 0.73 British Pounds (Sterling).

Note 2: Simple Rule is:
If the PPP price is less than the exchange rate then the currency is undervalued.

How to calculate PPP

- Note: in order to calculate the whether a currency is over/under valued simply
- Find the ratio between the price(s) in $ and the local price(s).Divide the difference between the PPP value and the actual $ exchange rate by the $ exchange rate because you want to compare with $ price i.e. $ is the denominator:
- OR
- (Take the P.P.P. – eR with $) / eR with $ and multiply by 100

Switzerland

https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart

- PPP in 2016 = 1.232 (OECD value)
- Subtract eR for $ with Swiss Franc at a rate of 1$ = 0.985 = 0.247
- Divide by 0.985
- = +25%
- Currency is Overvalued

India

https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart

- PPP in 2016 = 17.447 (OECD value)
- Subtract eR for $ with Indian Rupee at a rate of 1$ = 67.195 = - 49.748
- Divide by 67.195
- = -74%
- Currency is Undervalued

Czech Republic

https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart

- PPP in 2016 = 13.000 (OECD value)
- Subtract eR for $ with Czech/Euro at a rate of 24.440 = - 11.440
- Divide by 24.440
- = - 47 %
- Currency is undervalued

PPP Poland

https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart

- PPP in 2016 = 1.788 (OECD value)
- Subtract eR for $ with Polish/Euro/Zloty at a rate of 3.943
- Divide by 3.943
- = - 55 %
- Currency is Undervalued

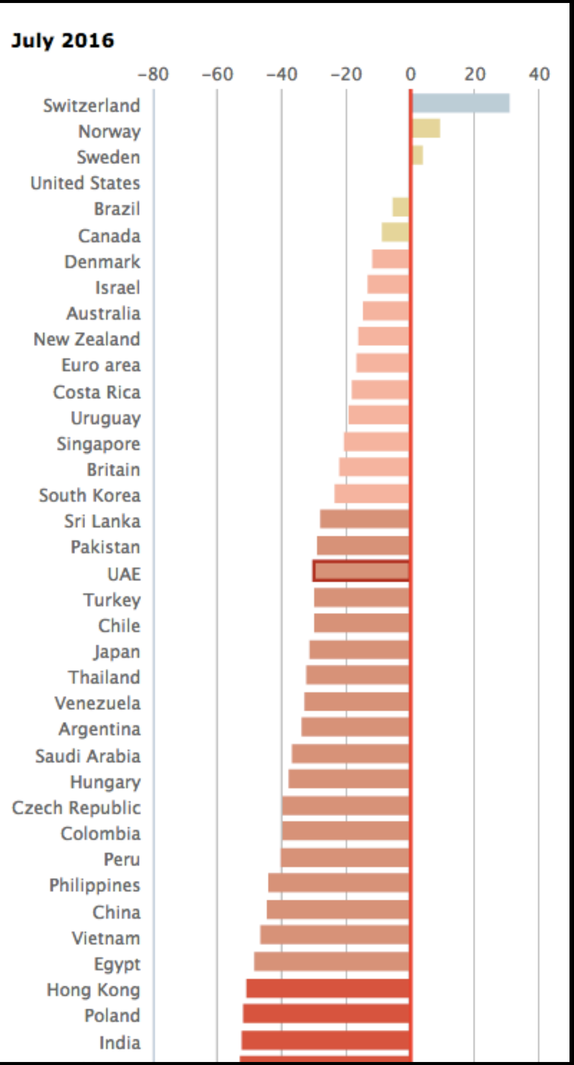
Finland

https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart

- PPP in 2016 = 0.905 (OECD value)
- Subtract eR for $ with Finland/Euro at a rate of 0.904
- = -0.1 %
- Currency is Undervalued

Big Mac index 2016 - sample

India:
GDP (nominal) per capita of India in 2014 at current prices is $1,627



India:
2015

PPP 5730.14 USD.

Why? Because the buying power of the average income in India is PPP 5730 $ when measured against the US$ as per the Big Mac index

Calculate

https://data.oecd.org/conversion/exchange-rates.htm#indicator-chart

- Using the data on the website above calculate whether the currencies for the following countries are over or under valued
- Indonesia
- Turkey
- Malta
- Peru

What does a PPP value actually mean?

India's per capita income (nominal) was **$1670** in 2016, ranked at 112th out of 164 countries by the World Bank, while its per capita income on purchasing power parity (PPP) basis was US**$5,350**, and ranked 106th. Other estimates for per capita Gross National Income and Gross Domestic Product vary by source.

Does our PPP calculation work: Using the data we can multiply the $1670 by our undervalued % which was -74%

Then $ 1670 = average income in India in 2016 but it has a local purchasing value of $5.350 on a purchasing power parity comparison i.e. cost of living in India is low and US$ buys a lot of goods and services!

What does a PPP value actually mean?