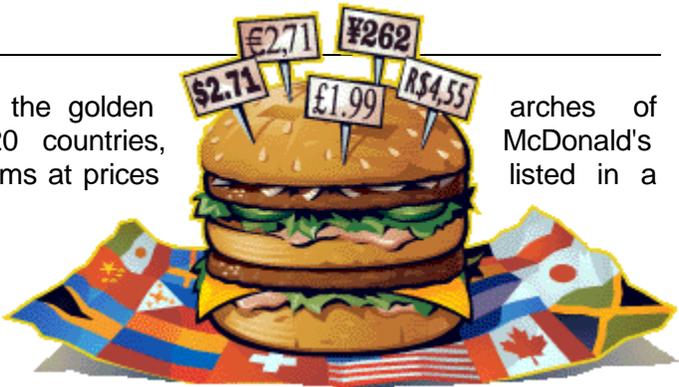


Big Mac Economics

A familiar sight to international travelers is the golden McDonald's. With restaurants in over 120 countries, offers the world a fairly standard menu of items at prices multitude of local currencies.



arches of McDonald's listed in a

The ubiquity of McDonald's around the world prompted The Economist to begin an annual feature comparing prices of the Big Mac sandwich in different countries as a tongue-in-cheek exercise explaining relative currency valuations. These lighthearted analyses of hamburger prices provide a palatable example of the economic principle of **Purchasing Power Parity (PPP)**—as well as an illustration of why the principle often does not appear to hold as a practical matter.

PPP in Action

The accompanying table shows the price of a Big Mac in various countries from a few years ago. The first column lists **1** prices in local currencies. Dividing this price by the **2** exchange rate in the second column yields the **3** price of a Big Mac in US dollars, which is shown in the third column. These directly comparable US dollar prices show a wide disparity, ranging from \$1.40 or less in China, Malaysia, Philippines, Russia and Thailand to \$3.60 or more in Denmark, Sweden and Switzerland. On the face of it, this range violates the principle of PPP, which suggests that the Big Mac should have the same price everywhere.

Law of One Price

The underlying foundation of PPP is known as the "**Law of One Price**," which states that the price of a particular commodity—say, sesame seeds—should be equal in different countries after accounting for exchange rates between currencies. If the law of one price holds for the individual components of a basket of goods, PPP suggests that the price of the bundle of goods should be equal from country to country. It is clear from the table, however, that the price of a bundle consisting of "two all-beef patties, special sauce, lettuce, cheese, pickles, onions on a sesame seed bun" varies considerably around the world.

Country	1 Big Mac Price (Local Currency)	2 Exchange Rate (Local Currency/Dollar)	3 Big Mac Price (Dollars)	4 Net Hourly Wage (Dollars)	5 Minutes of Work to Buy a Big Mac
Argentina	4.10	2.88	1.42	1.70	50
Australia	3.00	1.61	1.86	7.80	14
Brazil	4.55	3.07	1.48	2.05	43
Britain	1.99	0.63	3.14	12.30	15
Canada	3.20	1.45	2.21	9.35	14
Chile	1,400.00	716.00	1.96	2.80	42
China	9.90	8.28	1.20	2.40	30
Czech. Rep.	56.57	28.90	1.96	2.40	49
Denmark	27.75	6.78	4.09	14.40	17
Hong Kong	11.50	7.80	1.47	7.00	13
Hungary	490.00	224.00	2.19	3.00	44
Indonesia	16,100.00	8,740.00	1.84	1.50	74
Japan	262.00	120.00	2.18	13.60	10
Malaysia	5.04	3.80	1.33	3.10	26
Mexico	23.00	10.53	2.18	2.00	65
New Zealand	3.95	1.78	2.22	6.80	20
Peru	7.90	3.46	2.28	2.20	62
Philippines	65.00	52.50	1.24	1.20	112
Poland	6.30	3.89	1.62	2.20	44
Russia	41.00	31.10	1.32	2.60	30
Singapore	3.30	1.78	1.85	5.40	21
South Africa	13.95	7.56	1.85	3.90	28
South Korea	3,300.00	1,220.00	2.70	5.90	27
Sweden	30.00	8.34	3.60	10.90	20
Switzerland	6.30	1.37	4.60	17.80	16
Taiwan	70.00	34.80	2.01	6.90	17
Thailand	59.00	42.70	1.38	1.70	49
Turkey	3,750,000.00	1,600,500.00	2.34	3.20	44
United States	2.71	—	2.71	14.30	11
Venezuela	3,700.00	1,598.00	2.32	2.10	66
Euro area	2.71	0.91	2.98	9.59	19

Big Mac Economics

Undervalued or Overvalued?

For those countries in which the dollar equivalent price is lower than the US price, the dollar has relatively high purchasing power, meaning that the local currency is undervalued relative to the dollar. Countries with a higher dollar-equivalent Big Mac price have a currency that is overvalued.

Price Disparities

Many factors contribute to such price disparities, including transportation costs, trade barriers, taxes and even differences in tastes. One of the most pervasive and explicable causes for deviations from PPP derives from the fact that a Big Mac—like many other "bundles" of goods—is more than just the sum of its components. The sandwiches are prepared and served by local workers, in restaurants that are also built and maintained by the domestic labor force. Hence the local wage rate is a factor in the total cost of serving a Big Mac. Moreover, the local level of earnings affects the demand for McDonald's products.

Influence of Wages and Incomes

Countries that are relatively more productive at producing tradable goods will have higher wages for workers in the tradable goods sector. This tends to drive up wages and prices throughout the economy, including non-tradable, service-intensive sectors. The table illustrates this principle in relation to the prices of Big Macs. The fourth column of the table shows ④ average net wages. It is clear from these figures that locations with lower wages tend to have lower Big Mac prices, while those with higher wages tend to have higher Big Mac prices. This relationship is also revealed in the final column of the table, which uses the wage data to calculate the ⑤ number of minutes of work needed to purchase a Big Mac. In fact, in countries with relatively high prices, the working time required to purchase a Big Mac turns out to be relatively low. Much of the discrepancy between Big Mac prices in different countries is explained by differences in wages and incomes.

Questions for Discussion

- A. Explain in your own words what is meant by the concept of Purchasing Power Parity (PPP) and the Law of One Price.
- B. Why are Big Macs used as a "bundle" of goods to analyze Purchasing Power Parity?
- C. Theoretically, the price of a Big Mac (once you convert to US dollars) should be the same in every country. What explains the price disparities between Big Macs in different countries?
- D. Which country has the most expensive Big Macs (from column 3)? Is that country's currency worth more or less than the US dollar (does it have more or less purchasing power)? How can you tell?
- E. Which country has the cheapest Big Macs based on how many minutes of work it takes to buy one (see column 5)? What explains this?

**You must TYPE and EMAIL your answers.
Each answer needs to be at least TWO sentences in length and IN YOUR OWN WORDS.**