

## Big MacCurrencies

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### Some people read tea leaves to predict the future. We prefer hamburgers

IT IS that time of the year when *The Economist* munches its way around the globe in order to update our Big Mac index. We first launched this 14 years ago as a light-hearted guide to whether currencies are at their "correct" exchange rate. It is not intended as a precise predictor of exchange rates, but a tool to make economic theory more digestible.

Burgernomics is based on the theory of purchasing-power parity, the notion that a dollar should buy the same amount in all countries. Thus in the long run, the exchange rate between two currencies should move towards the rate that equalises the prices of an identical basket of goods and services in each country. Our "basket" is a McDonald's Big Mac, which is produced in about 120 countries. The Big Mac PPP is the exchange rate that would mean hamburgers cost the same in America as abroad. Comparing actual exchange rates with PPPs indicates whether a currency is under- or overvalued.

The first column of the [table](#) shows local-currency prices of a Big Mac; the second converts them into dollars. The average price of a Big Mac (including tax) in four American cities is \$2.51. The cheapest burger among the countries in the [table](#) is once again in Malaysia (\$1.19); at the other extreme the most expensive is \$3.58 in Israel. This is another way of saying that the Malaysian ringgit is the most undervalued currency (by 53%), and the Israeli shekel the most overvalued (by 43%).

	Big Mac prices		Implied PPP* of the dollar	Actual \$ exchange rate 25/04/00	Under(-)/over(+) valuation against the dollar, %
	in local currency	in dollars			
United States†	\$2.51	2.51	—	—	—
Argentina	Peso2.50	2.50	1.00	1.00	0
Australia	A\$2.59	1.54	1.03	1.68	-38
Brazil	Real2.95	1.65	1.18	1.79	-34
Britain	£1.90	3.00	1.32‡	1.58‡	+20
Canada	C\$2.85	1.94	1.14	1.47	-23
Chile	Peso1,260	2.45	502	514	-2
China	Yuan9.90	1.20	3.94	8.28	-52
Czech Rep	Koruna54.37	1.39	21.7	39.1	-45
Denmark	DKr24.75	3.08	9.86	8.04	+23
Euro area	€2.56	2.37	0.98§	0.93§	-5
France	FFr18.50	2.62	7.37	7.07	+4
Germany	DM4.99	2.37	1.99	2.11	-6
Italy	Lire4,500	2.16	1,793	2,088	-14
Spain	Pta375	2.09	149	179	-17
Hong Kong	HK\$10.20	1.31	4.06	7.79	-48
Hungary	Forint339	1.21	135	279	-52
Indonesia	Rupiah14,500	1.83	5,777	7,945	-27
Israel	Shekel14.5	3.58	5.78	4.05	+43
Japan	¥294	2.78	117	106	+11
Malaysia	M\$4.52	1.19	1.80	3.80	-53
Mexico	Peso20.90	2.22	8.33	9.41	-11
New Zealand	NZ\$3.40	1.69	1.35	2.01	-33
Poland	Zloty5.50	1.28	2.19	4.30	-49
Russia	Rouble39.50	1.39	15.7	28.5	-45
Singapore	S\$3.20	1.88	1.27	1.70	-25
South Africa	Rand9.00	1.34	3.59	6.72	-47
South Korea	Won3,000	2.71	1,195	1,108	+8
Sweden	SKr24.00	2.71	9.56	8.84	+8
Switzerland	SFr5.90	3.48	2.35	1.70	+39
Taiwan	NT\$70.00	2.29	27.9	30.6	-9
Thailand	Baht55.00	1.45	21.9	38.0	-42

\*Purchasing-power parity: local price divided by price in United States †Average of New York, Chicago, San Francisco and Atlanta ‡Dollars per pound §Dollars per euro  
Sources: McDonald's; The Economist

The third column calculates Big Mac PPPs. For instance, dividing the Japanese price by the American one gives a dollar PPP of ¥117. On April 25th the actual rate was ¥106, implying that the yen is 11% overvalued against the dollar.

Despite a single currency, the price of a Big Mac varies considerably within the euro area—from a bargain \$2.09 in Spain to a beefy \$3.12 in Finland. The average price (weighted by GDPs) in the 11 countries is *euro*2.56, or \$2.37 at current exchange rates. The euro's Big Mac PPP against the dollar is *euro*1 = \$0.98, which suggests that the euro is 5% undervalued—considerably less than many market commentators claim.

The most undervalued of all the rich-world currencies is the Australian dollar, currently 38% below McParity. In contrast, most of the West European currencies outside the euro—notably, sterling, the Danish krone and the Swiss franc—are hugely overvalued, by 20-40%.

Most emerging-market currencies are undervalued against the dollar on a Big Mac PPP basis. Besides the Israeli shekel, the other main exception is the South Korean won which, as a result of currency appreciation, is now 8% overvalued against the dollar. In early 1998, at the height of the Asian crisis, it was 31% undervalued.

Adjustment back to PPP does not always come about through a shift in exchange rates, but sometimes through price changes. In 1994, for instance, Argentina's peso was 60% overvalued against the dollar; today it is spot on McParity—not because the peso has fallen (it is fixed against the dollar), but because the price of a Big Mac has tumbled in Argentina.

Some readers beef that our Big Mac index does not cut the mustard. They are right that hamburgers are a flawed measure of PPP, because local prices may be distorted by trade barriers on beef, sales taxes or big differences in the cost of non-traded inputs such as rents. Thus, whereas Big Mac PPPs can be a handy guide to the cost of living in countries, they may not be a reliable guide to future exchange-rate movements. Yet, curiously, several academic studies have concluded that the Big Mac index is surprisingly accurate in tracking exchange rates over the longer term.

Indeed, the Big Mac has had several forecasting successes. When the euro was launched at the start of 1999, most forecasters predicted that it would rise. But the euro has instead tumbled—exactly as the Big Mac index had signalled. At the start of 1999, euro burgers were much dearer than American ones. Burgernomics is far from perfect, but our mouths are where our money is.

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