

## International Income Comparisons

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Per Capita Consumption of Hamburgers (pounds)	200	20
Rice (pounds)	20	300
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Valued in Dollars	\$1080	\$1300

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$$\frac{\text{Japan}}{\text{US}} = \frac{\frac{\text{¥106,000}}{125}}{\frac{\$848}{\$1080}} = \frac{\$848}{\$1080} = 78\%$$

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**Purchasing Power Equivalent:** compute both countries GDP using one country's prices.

## Who has the Larger GDP

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## Who has the Larger GDP

$\frac{\text{Japan}}{\text{US}} = \frac{\$1,300}{\$1,080} = 120\%$		
Per Hamburger	\$5	¥800
Price of Rice (per pound)	\$4	¥300
Valued in Yen	166,000	¥106,000
Valued in Dollar	\$1080	\$1300

The answer if you apply purchasing power using Dollars

## A Quick Exam

- Per Capita GDP in Japan is
    - (a) 78%
    - (b) 64%
    - (c) 120%
- of that in the United States

## The True Answer

- While most comparisons are based on method (c), using US prices, this method is flawed.
- The true answer is

$$(b) < \frac{\text{Japan}}{\text{US}} < (c)$$

## The Big Mac Index



## The Idea

- Compute the Cost of a *single* common traded good in all countries.
- Convert to dollars using the exchange rate.
- The ratio would give a measure of differential living costs.

## An Example

- Big Mac costs \$1.50 in US
- Big Mac costs £1.00 in UK
- Exchange rate is £ = \$1.65

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$$\frac{\$1.00(\$1.65/\pounds)}{\$1.50} = 110\%$$

## The hamburger standard

	Big Mac price in local currency	Big Mac price in US dollars	Implied PPP of the dollar	Actual dollar exchange rate \$/local	Under/Over (+/-) valuation against the dollar, %
United States	\$2.43	2.43	1.00	1.00	-
Argentina	100.00	41.50	2.41	1.80	-25
Australia	1.50	1.50	1.00	1.00	-
Brunei	1.50	1.50	1.00	1.00	-
Canada	1.50	1.50	1.00	1.00	-
Chile	1,400	2.38	582	655	-14
China	10.50	2.37	4.43	8.28	-46
Czech Rep	15.28	1.66	22.8	16.0	-33
Denmark	12.75	2.96	4.31	6.38	-32
Euro zone	1.50	1.50	1.00	1.00	-
Hong Kong	11.20	1.40	8.00	7.80	+2
Hungary	400	1.80	133	272	-52
Indonesia	18,000	2.75	6,545	9,400	-32
Israel	12.00	2.51	4.82	4.70	+3
Japan	140	1.50	93	150	-39
Malaysia	1.50	1.50	1.00	1.00	-
Mexico	21.00	2.37	8.80	9.28	-5
New Zealand	125.00	2.37	1.18	1.24	-9
Peru	10.50	2.48	4.23	3.43	-18
Philippines	15.00	1.88	26.1	11.0	-58
Poland	15.00	1.48	2.07	4.06	-41
Russia	18.00	1.25	14.4	11.2	-22
Singapore	1.50	1.50	1.00	1.00	-
South Africa	1.50	1.50	1.00	1.00	-
South Korea	1.50	2.36	1.24	1.50	-18
Sweden	15.00	2.52	5.94	5.93	+1
Switzerland	1.50	1.50	1.00	1.00	-
Taiwan	15.00	2.00	26.1	24.8	-5
Thailand	15.00	2.27	22.1	41.3	-46
Turkey	1,000,000	1.08	1,000,000	1,324,100	-23
Uruguay	1,500	2.00	1,000	857	+17

## A decade of burgeronomics

Local currency under (-) / over (+) valuation against the dollar, %

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Australia	-16	-20	-14	-11	-23	-25	-22	-17	-20	-32
Belgium	14	27	29	47	47	35	66	48	28	12
Britain	5	5	32	39	23	15	21	14	22	19
Canada	-11	-14	-10	6	-4	-10	-14	-11	-14	-23
Denmark	68	82	85	97	86	67	112	87	63	32
France	38	43	42	49	52	38	66	46	26	11
Germany	13	16	14	25	28	17	50	37	18	5
Hong Kong	-52	-50	-49	-47	-49	-48	-47	-46	-47	-49
Italy	18	44	29	52	30	21	14	23	13	-3
Japan	38	6	25	31	51	64	100	14	-3	-19
Netherlands	18	27	24	33	35	24	52	36	17	3
Singapore	-29	-37	-30	-24	n/a	-17	-9	-8	-14	-28
South Korea	78	35	29	35	27	24	29	25	6	-31
Russia*	n/a	183	155	-73	-50	-29	-30	-18	-21	-22
Spain	19	26	50	41	25	9	23	23	7	-6
Sweden	62	79	91	96	50	39	53	64	39	17

Source: McDonald's

\*Soviet Union up to 1991

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\*Soviet Union up

Danish per capita GDP, adjusted at the current exchange rate is 22% higher than that of the US. But prices are 32% higher, so Danes are worse off.

End

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