



## 5.7

## Relative prices and exchange rates

	Exchange rate arrangements <sup>a</sup>		Official exchange rate	Purchasing power parity (PPP) conversion factor		Ratio of PPP conversion factor to official exchange rate	Real effective exchange rate	Interest rate		
	Classification	Structure		local currency units to \$	local currency units to international \$			index 1995 = 100	Deposit	% Lending
			2002	1990	2002	2002				
Afghanistan	MF	U	3,000.00	..	..	..	..	..	..	..
Albania	IF	U	140.15	2.0	44.5	0.3	..	8.5	15.3	8.7
Algeria	MF	U	79.68	5.0	24.7	0.3	101.7	5.3	8.5	7.4
Angola	MF	U	43.53	0.0	17.5	0.4	..	48.7	97.3	-2.9
Argentina	MF	U	3.06	0.3	0.8	0.2	..	39.2	51.7	16.2
Armenia	IF	U	573.35	..	141.9	0.2	95.9	9.6	21.1	18.5
Australia	IF	U	1.84	1.4	1.4	0.7	96.1	3.0	8.0	5.5
Austria	Euro	U	1.06	0.9	0.9	0.9	92.1	..	..	..
Azerbaijan	MF	U	4,860.82	1.1	1,127.8	0.2	..	8.7	17.4	16.5
Bangladesh	P	U	57.89	9.6	11.9	0.2	..	8.2	16.0	12.4
Belarus	P	U	1,790.92	..	465.9	0.3	..	26.9	36.9	-3.6
Belgium	Euro	U	1.06	0.9	0.9	0.9	90.2	2.6	7.7	5.8
Benin	EA/Euro	U	696.99	160.7	267.2	0.4	..	3.5	..	..
Bolivia	P	U	7.17	1.3	2.6	0.4	115.4	9.6	20.6	17.5
Bosnia and Herzegovina	CB/Euro	U	2.08	..	..	..	..	4.5	12.7	10.4
Botswana	P/Euro	D	6.33	1.2	2.4	0.4	..	10.3	16.0	9.9
Brazil	IF	U	2.92	0.0	1.0	0.3	..	19.1	62.9	50.1
Bulgaria	CB/Euro	U	2.08	0.0	0.6	0.3	135.6	2.8	9.3	5.3
Burkina Faso	EA/Euro	U	696.99	136.3	168.0	0.2	..	3.5	..	..
Burundi	MF	U	930.75	49.6	149.3	0.2	79.1	..	19.5	5.8
Cambodia	MF	D	3,912.08	..	610.5	0.2	..	2.5	16.2	12.8
Cameroon	EA/Euro	U	696.99	171.8	210.9	0.3	102.1	5.0	18.0	17.2
Canada	IF	U	1.57	1.3	1.2	0.8	97.7	0.8	4.2	3.2
Central African Republic	EA/Euro	U	696.99	136.0	162.6	0.2	95.4	5.0	18.0	16.3
Chad	EA/Euro	U	696.99	106.1	163.6	0.2	..	5.0	18.0	13.8
Chile	IF	U	688.94	149.5	288.7	0.4	90.7	3.8	7.8	5.0
China	P	U	8.28	1.2	1.8	0.2	121.4	2.0	5.3	5.6
Hong Kong, China	CB	U	7.80	6.4	6.9	0.9	..	0.3	5.0	8.2
Colombia	IF	U	2,504.24	120.6	727.5	0.3	90.4	8.9	16.3	9.7
Congo, Dem. Rep.	IF	U	346.48	0.0	58.7	0.2	109.2	..	66.8	35.3
Congo, Rep.	EA/Euro	U	696.99	387.9	587.7	0.8	..	5.0	18.0	18.8
Costa Rica	P	U	359.82	32.8	173.8	0.5	109.4	11.5	26.4	15.8
Côte d'Ivoire	EA/Euro	U	696.99	168.0	324.3	0.5	103.7	3.5	..	..
Croatia	MF	U	7.87	..	3.9	0.5	103.7	1.9	12.8	9.6
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	MF	U	32.74	8.1	14.1	0.4	133.6	2.2	6.2	3.5
Denmark	P	U	7.89	8.1	8.2	1.0	96.7	2.4	7.1	6.2
Dominican Republic	MF	D	18.61	2.6	7.0	0.4	112.1	16.5	26.1	18.4
Ecuador	EA/Other	U	1.00	0.4	0.5	0.5	113.8	5.5	15.1	2.9
Egypt, Arab Rep.	MF	U	4.50	0.8	1.5	0.3	..	9.3	13.8	9.4
El Salvador	EA/Other	U	8.75	2.4	4.0	0.5	..	9.3	14.0	10.5
Eritrea	P	U	13.96	1.2	2.3	0.2	..	..	..	..
Estonia	CB/Euro	U	16.61	0.1	6.5	0.4	..	2.7	6.7	2.5
Ethiopia	MF	U	8.57	0.7	1.0	0.1	79.4	4.1	8.7	16.9
Finland	Euro	U	1.06	1.0	1.0	1.0	90.2	1.5	4.8	3.5
France	Euro	U	1.06	1.0	0.9	0.9	89.8	3.0	6.6	4.7
Gabon	EA/Euro	U	696.99	341.2	399.5	0.6	91.4	5.0	18.0	11.4
Gambia, The	MF	U	19.92	1.8	3.0	0.2	68.4	12.7	24.0	3.6
Georgia	IF	U	2.20	..	0.6	0.3	..	9.8	31.8	23.9
Germany	Euro	U	1.06	1.0	0.9	0.9	86.6	2.7	9.7	8.0
Ghana	MF	U	7,932.70	94.9	1,134.2	0.1	81.0	16.2	..	..
Greece	Euro	U	1.06	0.4	0.7	0.7	100.0	2.8	7.4	3.6
Guatemala	MF	U	7.82	1.4	3.7	0.5	..	6.9	16.9	8.2
Guinea	P	U	1,975.84	225.0	390.8	0.2	..	7.4	19.4	7.4
Guinea-Bissau	EA/Euro	U	696.99	11.0	137.8	0.2	..	3.5	..	..
Haiti	MF	U	29.25	1.2	7.2	0.2	..	8.2	25.7	15.3

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	Exchange rate arrangements <sup>a</sup>		Official exchange rate	Purchasing power parity (PPP) conversion factor		Ratio of PPP conversion factor to official exchange rate	Real effective exchange rate	Interest rate		
	Classification 2002	Structure 2002	local currency units to \$	local currency units to international \$		2002	index 1995 = 100 2002	Deposit 2002	% Lending 2002	Real 2002
			2002	1990	2002					
Honduras	P	U	16.43	1.3	6.1	0.4	..	13.7	22.7	15.5
Hungary	P	U	257.89	22.3	124.8	0.5	130.8	7.4	10.2	-0.5
India	MF	U	48.61	4.9	8.8	0.2	..	..	11.9	8.7
Indonesia	MF	U	9,311.19	642.6	2,357.7	0.3	..	15.5	18.9	11.0
Iran, Islamic Rep.	MF	D	6,906.96	180.4	1,963.4	0.3	198.1	..	..	..
Iraq	MF	U	0.31	..	..	..	..	..	..	..
Ireland	Euro	U	1.06	0.8	0.9	0.9	99.0	0.1	3.8	-2.7
Israel	P	U	4.74	1.8	3.8	0.8	102.5	6.0	9.9	5.2
Italy	Euro	U	1.06	0.7	0.8	0.8	110.0	1.4	5.8	2.9
Jamaica	MF	U	48.42	4.4	36.6	0.8	..	8.6	18.5	9.7
Japan	IF	U	125.39	190.2	146.2	1.2	78.9	0.0	1.9	3.6
Jordan	P	U	0.71	0.3	0.3	0.4	..	4.4	10.2	9.7
Kazakhstan	MF	U	153.28	..	43.2	0.3	..	..	..	..
Kenya	MF	U	78.75	9.1	30.4	0.4	..	5.5	18.5	9.0
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	IF	U	1,251.09	563.7	738.7	0.6	..	4.9	6.8	5.0
Kuwait	P	U	0.30	0.3	0.3	0.9	..	3.2	6.5	3.0
Kyrgyz Republic	MF	U	46.94	..	9.3	0.2	..	5.9	24.8	22.0
Lao PDR	MF	D	10,056.33	174.9	1,884.2	0.2	..	6.0	29.3	18.4
Latvia	p	U	0.62	..	0.2	0.4	..	3.2	8.0	6.1
Lebanon	P	U	1,507.50	307.0	1,346.0	0.9	..	11.0	16.6	13.8
Lesotho	P	U	10.54	1.0	1.7	0.2	60.8	5.2	17.1	7.4
Liberia	IF	U	61.75	..	..	..	..	6.2	20.2	-7.1
Libya	P	U	1.27	..	..	..	..	3.0	7.0	..
Lithuania	CB/Euro	U	3.68	..	1.4	0.4	..	1.7	6.8	6.9
Macedonia, FYR	P	U	64.35	..	18.5	0.3	72.6	9.6	18.4	14.3
Madagascar	IF	U	6,831.96	516.0	2,456.7	0.4	..	12.0	25.3	8.6
Malawi	IF	U	76.69	1.4	23.3	0.3	115.0	28.1	50.5	28.1
Malaysia	P	U	3.80	1.5	1.6	0.4	91.3	3.2	6.4	2.7
Mali	EA/Euro	U	696.99	141.4	222.8	0.3	..	3.5	..	..
Mauritania	MF	U	271.74	36.5	42.7	0.2	..	..	..	..
Mauritius	MF	U	29.96	6.5	10.5	0.3	..	9.9	21.0	15.1
Mexico	IF	U	9.66	1.5	6.8	0.7	..	3.8	8.2	3.4
Moldova	MF	U	13.57	..	3.5	0.3	100.2	14.2	23.5	14.3
Mongolia	MF	U	1,110.31	2.9	296.8	0.3	..	13.2	28.4	21.1
Morocco	P	U	11.02	3.2	3.5	0.3	103.4	4.5	13.1	12.5
Mozambique	IF	U	23,677.96	321.5	4,406.7	0.2	..	18.0	26.7	13.9
Myanmar	MF	D	6.57	..	..	..	..	9.5	15.0	-6.2
Namibia	P	U	10.54	0.9	2.5	0.2	..	7.8	13.8	4.0
Nepal	P	U	77.88	6.8	12.7	0.2	..	4.8	7.7	4.3
Netherlands	Euro	U	1.06	0.9	0.9	0.9	95.8	2.8	4.0	0.7
New Zealand	IF	U	2.16	1.6	1.5	0.7	88.9	5.3	9.8	8.0
Nicaragua	P	U	14.25	0.0	4.3	0.3	111.6	7.3	23.2	17.0
Niger	EA/Euro	U	696.99	122.3	165.4	0.2	..	3.5	..	..
Nigeria	MF	M	120.58	3.8	46.2	0.4	90.3	16.7	24.8	11.8
Norway	IF	U	7.98	8.0	9.2	1.1	107.9	6.5	8.5	10.0
Oman	P	U	0.38	0.3	0.2	0.6	..	2.9	8.5	6.6
Pakistan	MF	U	59.72	5.8	12.9	0.2	90.0	..	..	..
Panama	EA/Other	U	1.00	0.6	0.7	0.7	..	5.0	10.6	9.3
Papua New Guinea	IF	U	3.90	0.5	0.9	0.2	81.2	5.8	13.9	1.5
Paraguay	MF	U	5,716.26	408.1	1,240.2	0.2	75.6	22.9	38.7	21.0
Peru	IF	U	3.52	0.1	1.5	0.4	..	4.2	14.7	14.1
Philippines	IF	U	51.60	5.6	12.1	0.2	85.6	4.6	9.1	4.1
Poland	IF	U	4.08	0.2	1.9	0.5	133.4	6.2	12.1	10.3
Portugal	Euro	U	1.06	0.5	0.7	0.7	100.6	..	..	..
Puerto Rico	..	..	..	0.7	0.7	..	..	..	..	..



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	Exchange rate arrangements <sup>a</sup>		Official exchange rate  local currency units to \$ 2002	Purchasing power parity (PPP) conversion factor		Ratio of PPP conversion factor to official exchange rate 2002	Real effective exchange rate  index 1995 = 100 2002	Interest rate		
	Classification 2002	Structure 2002		1990	2002			Deposit 2002	% Lending 2002	Real 2002
Romania	P	U	33,055.43	6.9	10,344.3	0.3	110.2	..	..	..
Russian Federation	MF	U	31.35	..	9.2	0.3	109.0	5.0	15.7	0.4
Rwanda	MF	U	476.33	31.4	79.5	0.2	..	8.0	..	..
Saudi Arabia	P	U	3.74	2.9	2.5	0.7	107.2	2.2	..	..
Senegal	EA/Euro	U	696.99	185.8	222.2	0.3	..	3.5	..	..
Serbia and Montenegro	MF	U	..	..	..	..	..	..	..	..
Sierra Leone	IF	D	2,099.03	30.0	599.7	0.3	94.1	8.2	22.2	17.6
Singapore	MF	U	1.79	1.9	1.6	0.9	93.7	0.9	5.4	5.2
Slovak Republic	MF	U	45.33	5.9	15.5	0.3	105.8	6.6	10.2	6.1
Slovenia	P	U	240.25	..	144.9	0.6	..	8.2	13.2	4.7
Somalia	IF	D	..	..	..	..	..	..	..	..
South Africa	IF	U	10.54	1.0	2.4	0.2	62.6	10.8	15.8	6.6
Spain	Euro	U	1.06	0.6	0.8	0.7	98.3	2.5	4.3	-0.1
Sri Lanka	MF	U	95.66	10.3	23.4	0.2	..	9.2	13.2	4.5
Sudan	P	U	263.31	0.7	59.8	0.2	..	..	..	..
Swaziland	P	U	10.54	0.9	2.5	0.2	..	8.0	15.3	1.5
Sweden	IF	U	9.74	9.9	10.1	1.0	89.8	2.2	5.8	4.5
Switzerland	IF	U	1.56	2.0	1.9	1.2	93.1	0.4	3.9	3.5
Syrian Arab Republic	P	M	11.23	10.3	16.9	1.5	..	4.0	9.0	4.4
Tajikistan	MF	U	2.76	..	0.5	0.2	..	9.2	14.2	-6.4
Tanzania	IF	U	966.58	76.0	444.9	0.5	..	3.3	16.4	11.8
Thailand	MF	U	42.96	10.8	12.6	0.3	..	2.0	6.9	6.1
Togo	EA/Euro	U	696.99	94.5	137.1	0.2	105.4	3.5	..	..
Trinidad and Tobago	MF	U	6.25	3.1	4.9	0.8	126.6	4.8	12.5	11.6
Tunisia	P	U	1.42	0.4	0.5	0.3	96.2	..	..	..
Turkey	IF	U	1,507,226.38	1,643.1	621,572.8	0.4	..	50.5	..	..
Turkmenistan	P	D	5,200.00	..	1,544.1	0.3	..	..	..	..
Uganda	IF	U	1,797.55	111.4	298.4	0.2	76.7	5.6	19.1	23.1
Ukraine	P	U	5.33	..	0.9	0.2	112.4	7.9	25.3	21.4
United Arab Emirates	P	U	3.67	3.4	..	..	..	..	8.1	..
United Kingdom	IF	U	0.67	0.6	0.7	1.0	130.4	..	4.0	0.8
United States	IF	U	1.00	1.0	1.0	1.0	133.6	..	4.7	3.5
Uruguay	IF	U	21.26	0.6	10.0	0.5	87.9	14.3	126.1	90.3
Uzbekistan	MF	M	236.61	..	177.4	0.4	..	..	..	..
Venezuela, RB	P	U	1,160.95	24.7	810.6	0.7	132.9	29.0	36.6	3.8
Vietnam	MF	U	15,279.50	644.4	2,892.2	0.2	..	6.4	9.1	4.8
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	IF	U	175.63	20.4	108.3	0.6	..	13.0	17.7	11.9
Zambia	MF	U	4,398.60	18.7	1,893.0	0.4	115.8	23.3	45.2	21.1
Zimbabwe	P	U	55.04	1.0	16.4	0.3	..	18.4	36.5	-34.2

a. Exchange rate arrangements are given for the end of the year in 2002. Exchange rate classifications include independent floating (IF), managed floating (MF), pegged (P), currency board (CB), and several exchange arrangements (EA): Euro that the currency is pegged to the euro, and other that the currency of another country is used as legal tender. Exchange rate structures include dual exchange rates (D), multiple exchange rates (M), and unitary rate (U).

**About the data**

In a market-based economy the choices households, producers, and governments make about the allocation of resources are influenced by relative prices, including the real exchange rate, real wages, real interest rates, and a host of other prices in the economy. Relative prices also reflect, to a large extent, the choices of these agents. Thus relative prices convey vital information about the interaction of economic agents in an economy and with the rest of the world.

The exchange rate is the price of one currency in terms of another. Official exchange rates and exchange rate arrangements are established by governments. (Other exchange rates fully recognized by governments include market rates, which are determined largely by legal market forces, and for countries maintaining multiple exchange arrangements, principal rates, secondary rates, and tertiary rates.) Also see *Statistical methods* for information on alternative conversion factors used in the Atlas method of calculating gross national income (GNI) per capita in U.S. dollars.

The official or market exchange rate is often used to compare prices in different currencies. Since exchange rates reflect at best the relative prices of tradable goods, the volume of goods and services that a U.S. dollar buys in the United States may not correspond to what a U.S. dollar converted to another country's currency at the official exchange rate would buy in that country. Since identical volumes of goods and services in different countries correspond to different values (and vice versa) when official exchange rates are used, an alternative method of comparing prices across countries has been developed. In this method national currency estimates of GNI are converted to a common unit of account by using conversion factors that reflect equivalent purchasing power. Purchasing power parity (PPP) conversion factors are based on price and expenditure surveys conducted by the International Comparison Program and represent the conversion factors applied to equalize price levels across countries. See *About the data* for table 1.1 for further discussion of the PPP conversion factor.

The ratio of the PPP conversion factor to the official exchange rate (also referred to as the national price level) makes it possible to compare the cost of the bundle of goods that make up gross domestic product (GDP) across countries. These national price levels vary systematically, rising with GNI per capita.

Real effective exchange rates are derived by deflating a trade-weighted average of the nominal exchange rates that apply between trading partners.

For most high-income countries the weights are based on trade in manufactured goods with other high-income countries in 1989–91, and an index of relative, normalized unit labor costs is used as the deflator. (Normalization smooths a time series by removing short-term fluctuations while retaining changes of a large amplitude over the longer economic cycle.) For other countries the weights before 1990 take into account trade in manufactured and primary products in 1980–82, the weights from January 1990 onward take into account trade in 1988–90, and an index of relative changes in consumer prices is used as the deflator. An increase in the real effective exchange rate represents an appreciation of the local currency. Because of conceptual and data limitations, changes in real effective exchange rates should be interpreted with caution.

Many interest rates coexist in an economy, reflecting competitive conditions, the terms governing loans and deposits, and differences in the position and status of creditors and debtors. In some economies interest rates are set by regulation or administrative fiat. In economies with imperfect markets, or where reported nominal rates are not indicative of effective rates, it may be difficult to obtain data on interest rates that reflect actual market transactions. Deposit and lending rates are collected by the International Monetary Fund (IMF) as representative interest rates offered by banks to resident customers. The terms and conditions attached to these rates differ by country, however, limiting their comparability. Real interest rates are calculated by adjusting nominal rates by an estimate of the inflation rate in the economy. A negative real interest rate indicates a loss in the purchasing power of the principal. The real interest rates in the table are calculated as  $(i - P) / (1 + P)$ , where  $i$  is the nominal interest rate and  $P$  is the inflation rate (as measured by the GDP deflator).

**Definitions**

- **Exchange rate arrangements** describe the arrangements furnished to the IMF by each member country under article IV, section 2(a) of the IMF's Articles of Agreement.
- **Classification** indicates how the exchange rate is determined in the main market when there is more than one market: floating (managed or independent), pegged (conventional, within horizontal bands, crawling peg, or crawling band), currency board (implicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate), and exchange arrangement (currency is pegged to the French franc, or another country's currency is used as legal tender).
- **Structure** shows whether countries have a unitary exchange rate or dual or multiple rates.
- **Official exchange rate** is the exchange rate determined by national authorities or the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar).
- **Purchasing power parity (PPP) conversion factor** is the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a U.S. dollar would buy in the United States.
- **Ratio of PPP conversion factor to official exchange rate** is the result obtained by dividing the PPP conversion factor by the official exchange rate.
- **Real effective exchange rate** is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.
- **Deposit interest rate** is the rate paid by commercial or similar banks for demand, time, or savings deposits.
- **Lending interest rate** is the rate charged by banks on loans to prime customers.
- **Real interest rate** is the lending interest rate adjusted for inflation as measured by the GDP deflator.

**Data sources**

The information on exchange rate arrangements is from the IMF's *Exchange Arrangements and Exchange Restrictions Annual Report, 2003*. The official and real effective exchange rates and deposit and lending rates are from the IMF's *International Financial Statistics*. PPP conversion factors are from the World Bank. The real interest rates are calculated using World Bank data on the GDP deflator.