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Exchange rates and prices

	Official exchange rate		Purchasing power parity (PPP) conversion factor		Ratio of PPP conversion factor to market exchange rate	Real effective exchange rate	GDP implicit deflator		Consumer price index		Wholesale price index	
	local currency units to \$		local currency units to international \$			Index 2000 = 100	average annual % growth		average annual % growth		average annual % growth	
	2007	2008 ^a	1995	2007	2007	2007	1990-2000	2000-07	1990-2000	2000-07	1990-2000	2000-07
Afghanistan	49.96	50.52	..	16.1	0.3	..	..	11.8	..	..	..	..
Albania	90.43	96.84	24.4	43.7	0.5	..	38.0	3.7	27.8	2.9	..	4.8
Algeria	69.29	70.91	15.3	35.8	0.5	82.3	18.5	8.8	17.3	2.6	..	3.5
Angola	76.71	75.13	0.0	51.6	0.7	..	739.4	56.1	711.0	54.4	..	..
Argentina	3.10	3.41	0.9	1.6	0.5	..	5.2	12.3	8.9	10.6	0.1	18.0
Armenia	342.08	307.83	116.6	183.8	0.5	122.6	212.5	4.3	72.8	3.5	..	0.9
Australia	1.20	1.49	1.3	1.4	1.1	133.3	1.5	3.7	2.1	2.9	1.1	3.5
Austria ^b	0.73	0.73	0.9	0.9	1.2	106.7	1.7	1.7	2.2	1.9	0.3	2.4
Azerbaijan	0.86	0.81	0.2	0.4	0.5	..	203.0	8.9	170.9	6.8	..	..
Bangladesh	68.88	68.89	19.2	24.0	0.3	..	4.0	4.4	5.5	6.4	..	..
Belarus	2,146.08	2,189.82	3.5	913.5	0.4	..	355.1	27.6	271.3	22.2	267.8	26.6
Belgium ^b	0.73	0.73	0.9	0.9	1.2	110.8	1.8	2.0	1.9	2.0	1.2	2.3
Benin	479.27	481.53	187.5	219.7	0.5	..	8.7	2.9	8.7	2.7	..	..
Bolivia	7.85	7.02	1.6	2.6	0.3	81.8	8.6	6.8	8.7	4.0	..	..
Bosnia and Herzegovina	1.43	1.44	0.6	0.7	0.5	..	3.7	3.7	..	..	..	..
Botswana	6.14	7.84	1.4	3.0	0.5	..	9.7	7.4	10.4	8.4	..	..
Brazil	1.95	2.39	0.7	1.4	0.7	..	211.8	8.5	199.5	7.7	204.9	11.6
Bulgaria	1.43	1.46	0.0	0.7	0.5	133.9	103.3	5.0	117.5	5.7	85.7	5.5
Burkina Faso	479.27	481.53	189.6	195.3	0.4	..	3.7	2.2	5.5	2.4	..	..
Burundi	1,081.87	1,234.53	126.6	363.9	0.3	68.7	13.4	8.4	16.1	7.4	..	..
Cambodia	4,056.17	4,091.00	1,142.8	1,345.7	0.3	95.3	4.4	3.8	6.3	3.5	..	..
Cameroon	479.27	481.53	241.2	251.4	0.5	114.6	6.3	2.2	6.5	2.1	..	..
Canada	1.07	1.24	1.2	1.2	1.1	132.3	1.5	2.0	1.7	2.2	2.7	1.2
Central African Republic	479.27	481.53	272.0	264.8	0.6	115.1	4.5	2.0	5.3	2.4	6.0	4.4
Chad	479.27	481.53	135.5	213.6	0.4	126.7	7.1	8.2	6.9	2.0	..	..
Chile	522.46	649.32	263.8	371.8	0.7	95.2	7.9	7.0	8.9	2.7	7.0	5.8
China	7.61	6.84	3.4	3.6	0.5	99.1	7.9	3.8	8.6	1.8	..	..
Hong Kong, China	7.80	7.75	7.9	5.5	0.7	..	4.5	-2.3	5.9	-0.5	0.6	0.5
Colombia	2,078.29	2,273.16	423.8	1,143.3	0.6	115.8	22.3	7.0	20.3	5.9	16.4	5.4
Congo, Dem. Rep.	516.75	560.84	0.0	267.8	0.5	31.8	964.9	31.0	932.8	29.5	..	..
Congo, Rep.	479.27	481.53	150.9	277.1	0.6	..	9.0	5.7	9.3	2.8	..	..
Costa Rica	516.62	549.80	103.1	280.5	0.5	95.3	15.9	10.0	15.6	11.1	14.1	12.2
Côte d'Ivoire	479.27	481.53	261.9	291.4	0.6	117.9	9.2	3.0	7.2	2.9	..	..
Croatia	5.37	5.38	3.1	3.9	0.7	112.9	86.0	3.7	86.2	2.5	74.2	2.5
Cuba	..	..	..	..	..	..	3.0	2.6	..	..	..	..
Czech Republic	20.29	19.48	11.1	14.2	0.7	136.8	12.8	2.2	7.8	2.1	8.2	2.3
Denmark	5.44	5.58	8.5	8.6	1.6	109.7	1.6	2.2	2.1	1.9	1.1	2.3
Dominican Republic	33.26	35.44	6.7	18.7	0.6	100.9	9.4	17.4	8.7	17.3	..	..
Ecuador	1.00	1.00	0.4	0.4	0.4	138.5	4.3	9.6	37.1	7.5	..	8.7
Egypt, Arab Rep.	5.73	5.30	1.2	1.8	0.3	..	8.7	7.2	8.8	6.2	6.1	9.5
El Salvador	1.00	1.00	0.4	0.5	0.5	..	6.2	3.5	8.5	3.6	..	4.2
Eritrea	15.38	15.38	1.9	7.0	0.5	..	7.9	18.6	..	..	..	..
Estonia	11.43	11.66	4.8	8.7	0.8	..	53.6	5.2	21.6	3.7	8.1	2.7
Ethiopia	8.95	9.32	2.1	2.8	0.3	99.6	6.4	6.6	5.5	8.3	..	..
Finland ^b	0.73	0.73	1.0	1.0	1.3	106.2	2.0	0.9	1.5	1.2	1.0	1.9
France ^b	0.73	0.73	1.0	0.9	1.2	109.0	1.3	2.1	1.6	1.9	..	1.9
Gabon	479.27	481.53	188.0	274.8	0.6	105.6	7.0	5.0	4.6	1.1	..	..
Gambia, The	24.88	21.64	3.9	7.7	0.3	59.6	4.2	11.9	4.1	9.7	..	..
Georgia	1.67	1.66	0.4	0.8	0.5	109.7	356.7	6.9	24.7	6.7	..	6.6
Germany ^b	0.73	0.73	1.0	0.9	1.2	108.9	1.7	1.1	2.0	1.6	0.4	2.6
Ghana	0.94	1.07	0.1	0.5	0.5	115.5	26.7	19.5	28.4	17.0	..	..
Greece ^b	0.73	0.73	0.6	0.7	1.0	116.8	9.2	3.3	9.0	3.3	3.6	4.0
Guatemala	7.67	7.71	2.9	4.2	0.6	..	10.4	4.7	10.1	7.1	..	..
Guinea	3,644.33	4,478.00	666.8	1,857.1	0.4	..	5.5	18.1	..	..	..	..
Guinea-Bissau	479.27	481.53	114.9	211.4	0.4	..	32.5	1.6	34.0	1.5
Haiti	36.86	39.82	6.0	22.3	0.6	..	22.8	17.4	21.9	18.9

Exchange rates and prices

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	Official exchange rate		Purchasing power parity (PPP) conversion factor		Ratio of PPP conversion factor to market exchange rate	Real effective exchange rate	GDP implicit deflator		Consumer price index		Wholesale price index	
	local currency units to \$		local currency units to international \$				Index 2000 = 100	average annual % growth		average annual % growth		average annual % growth
	2007	2008 ^a	1995	2007	2007	1990-2000		2000-07	1990-2000	2000-07	1990-2000	2000-07
Honduras	18.90	18.90	3.0	8.6	0.5	..	19.8	6.2	22.8	7.8	..	..
Hungary	183.63	196.78	61.6	134.8	0.7	142.5	19.6	5.1	20.3	5.5	16.8	3.2
India	41.35	48.64	11.1	15.3	0.4	..	8.1	4.3	9.1	4.4	7.4	4.9
Indonesia	9,141.00	11,836.00	1,031.8	4,724.6	0.5	..	15.8	10.1	13.7	9.3	15.4	9.4
Iran, Islamic Rep.	9,281.15	9,896.38	567.5	3,412.4	0.4	143.1	27.7	17.4	26.0	14.3	28.4	10.7
Iraq	1,254.57	1,203.00	..	558.7	..	..	..	..	..	..	..	..
Ireland ^b	0.73	0.73	0.8	1.0	1.3	133.1	3.7	2.9	2.3	3.5	1.6	0.3
Israel	4.11	3.87	3.1	3.6	0.9	79.4	11.0	1.1	9.7	1.5	8.1	4.6
Italy ^b	0.73	0.73	0.8	0.9	1.2	112.3	3.8	2.6	3.7	2.3	2.9	2.7
Jamaica	68.95	73.88	16.8	47.8	0.7	..	23.0	11.2	23.5	10.7	..	..
Japan	117.75	91.32	174.3	120.1	1.0	66.6	0.1	-1.2	0.8	-0.2	-0.9	0.3
Jordan	0.71	0.71	0.4	0.4	0.6	..	3.2	3.0	3.5	3.3	..	9.0
Kazakhstan	122.55	120.58	17.5	76.4	0.6	..	204.7	14.3	67.8	7.5	16.3	11.5
Kenya	67.32	78.04	15.8	31.3	0.4	..	16.6	5.1	15.6	9.4	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	929.26	1,373.84	690.0	749.9	0.8	..	5.7	1.7	5.1	3.1	3.7	2.1
Kuwait	0.28	0.28	0.1	0.2	0.8	..	1.5	8.7	2.0	2.3	1.4	2.5
Kyrgyz Republic	37.32	39.38	3.5	13.3	0.4	..	110.6	6.3	23.3	4.6	35.6	7.9
Lao PDR	9,603.16	8,640.71	309.7	3,096.8	0.3	..	27.0	9.6	28.2	9.5	..	..
Latvia	0.51	0.52	0.2	0.4	0.7	..	48.0	6.9	29.2	5.1	12.0	6.6
Lebanon	1,507.50	1,507.50	837.2	886.4	0.6	..	17.9	2.1	..	..	..	..
Lesotho	7.05	9.97	2.3	3.6	0.5	128.8	7.7	5.4	9.8	7.8	..	..
Liberia	61.27	62.57	0.6	33.5	0.5	..	51.8	10.1	..	..	..	..
Libya	1.26	1.30	..	0.8	0.7	..	..	21.0	5.6	-3.0	..	..
Lithuania	2.52	2.57	1.2	1.6	0.6	..	75.0	2.9	32.6	1.6	24.7	4.3
Macedonia, FYR	44.73	45.73	17.9	18.5	0.4	100.4	79.3	2.8	10.6	1.9	8.4	0.7
Madagascar	1,873.88	1,841.20	287.6	754.2	0.4	..	19.1	11.6	18.7	10.8	..	..
Malawi	139.96	140.60	3.9	47.1	0.3	65.0	33.6	21.2	33.8	13.2	..	..
Malaysia	3.44	3.55	1.4	1.8	0.5	102.1	4.0	3.8	3.6	2.1	3.4	4.6
Mali	479.27	481.53	226.8	246.2	0.5	..	7.0	3.6	5.2	1.7	..	..
Mauritania	258.59	235.99	62.4	118.0	0.4	..	8.7	11.3	6.1	7.5	..	..
Mauritius	31.31	32.10	10.5	15.4	0.5	..	6.4	5.4	6.9	5.9	..	..
Mexico	10.93	13.37	2.9	7.5	0.7	..	19.0	8.6	19.4	4.5	18.4	6.2
Moldova	12.14	10.40	1.2	5.5	0.5	101.9	119.6	11.5	19.2	11.0	..	..
Mongolia	1,170.97	1,228.87	158.7	544.9	0.5	..	57.8	14.1	35.7	6.8	..	..
Morocco	8.19	8.10	4.9	4.9	0.6	92.6	4.0	1.3	3.8	1.8	2.9	..
Mozambique	25.84	24.13	3.9	11.7	0.5	..	34.1	7.9	31.8	11.8	..	..
Myanmar	5.56	5.65	40.2	249.7	..	..	25.5	21.1	25.9	23.6	..	..
Namibia	7.05	9.97	2.5	4.4	0.7	..	10.4	4.8	..	4.7	..	..
Nepal	66.42	78.07	15.4	24.7	0.4	..	8.0	5.6	8.7	5.0	..	..
Netherlands ^b	0.73	0.73	0.9	0.9	1.2	113.5	2.1	2.2	2.4	2.0	1.3	2.5
New Zealand	1.36	1.80	1.5	1.5	1.2	137.8	1.7	2.7	1.7	2.6	1.4	2.8
Nicaragua	18.45	19.81	3.5	7.3	0.4	88.6	42.4	7.7	..	7.5	..	..
Niger	479.27	481.53	209.8	224.4	0.5	..	6.0	2.0	6.1	1.8	..	..
Nigeria	125.81	117.73	15.5	71.4	0.6	130.6	29.5	17.9	32.5	13.5	..	..
Norway	5.86	7.01	9.2	9.0	1.5	112.2	2.7	4.2	2.2	1.6	1.6	6.2
Oman	0.39	0.39	0.2	0.2	0.6	..	0.1	5.7	..	1.3	..	..
Pakistan	60.74	79.09	10.1	21.5	0.4	95.6	11.1	6.7	9.7	6.0	10.4	7.0
Panama	1.00	1.00	0.5	0.5	0.5	..	3.6	1.7	1.1	1.5	1.0	2.7
Papua New Guinea	2.97	2.66	0.7	1.4	0.5	96.5	7.6	7.2	9.3	6.1	..	..
Paraguay	5,032.72	4,837.00	949.3	2,267.1	0.5	97.6	11.5	10.8	13.1	8.7	..	11.8
Peru	3.13	3.11	1.2	1.5	0.5	..	26.7	3.6	27.3	2.0	23.7	2.3
Philippines	46.15	48.09	14.1	22.2	0.5	112.3	8.3	5.1	7.7	5.2	5.6	8.2
Poland	2.77	2.97	1.2	1.9	0.7	114.1	24.7	2.4	25.3	2.3	19.8	2.7
Portugal ^b	0.73	0.73	0.6	0.7	0.9	113.5	5.2	3.0	4.5	2.9	..	2.6
Puerto Rico	1.00	1.00	3.0



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Exchange rates and prices

	Official exchange rate		Purchasing power parity (PPP) conversion factor		Ratio of PPP conversion factor to market exchange rate	Real effective exchange rate	GDP implicit deflator		Consumer price index		Wholesale price index		
	local currency units to \$		local currency units to international \$				Index 2000 = 100	average annual % growth		average annual % growth		average annual % growth	
	2007	2008 ^a	1995	2007				2007	1990-2000	2000-07	1990-2000	2000-07	1990-2000	2000-07
Romania	2.44	2.90	0.1	1.5	0.6	140.5	98.0	18.0	100.5	13.8	93.8	17.5	
Russian Federation	25.58	28.13	1.5	15.8	0.6	172.7	161.5	16.7	99.1	12.9	99.8	16.9	
Rwanda	546.96	551.35	129.3	216.5	0.4	..	14.3	9.7	16.2	7.8	..	..
Saudi Arabia	3.75	3.75	1.8	2.6	0.7	78.5	1.6	8.1	1.0	0.9	1.3	1.9	
Senegal	479.27	481.53	252.0	258.5	0.5	..	6.0	2.2	5.4	1.7	..	..
Serbia	58.45	64.71	2.6	31.0	0.5	..	..	18.8	50.2	18.0	..	..
Sierra Leone	2,985.19	2,990.63	387.6	1,251.2	0.4	73.8	31.9	8.8	29.3	8.1	..	..
Singapore	1.51	1.48	1.3	1.1	0.7	95.8	1.3	0.9	1.7	0.8	-1.0	3.4	
Slovak Republic ^b	24.69 ^c	22.65 ^c	13.0	17.1	0.7	158.1	11.1	4.0	8.4	5.4	9.5	5.2	
Slovenia ^b	0.73	0.73	0.4	0.6	0.9	..	29.3	4.4	12.0	4.5	9.1	4.0	
Somalia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	7.05	9.97	2.3	4.3	0.6	94.9	9.9	6.7	8.7	4.9	7.7	6.0	
Spain ^b	0.73	0.73	0.7	0.7	1.0	117.3	3.9	4.1	3.8	3.2	2.4	3.0	
Sri Lanka	110.62	111.37	18.3	42.1	0.4	..	9.1	10.0	9.9	9.9	8.1	11.1	
Sudan	2.02	2.03	0.3	1.2	0.6	..	65.5	9.6	71.9	7.8	..	..
Swaziland	7.05	9.97	2.2	3.7	0.5	..	10.5	7.3	9.4	6.5	..	..
Sweden	6.76	8.02	9.4	9.1	1.4	98.9	2.2	1.5	1.9	1.4	2.4	2.6	
Switzerland	1.20	1.15	2.0	1.7	1.4	98.0	1.1	0.8	1.6	0.9	-0.4	0.8	
Syrian Arab Republic	11.23	11.23	12.8	21.0	0.4	..	7.9	6.2	6.4	5.1	4.7	2.2	
Tajikistan	3.44	3.42	0.0	1.1	0.3	..	235.0	20.4	..	12.7	..	..
Tanzania	1,245.04	1,273.83	154.8	412.4	0.3	..	21.6	9.0	20.9	4.9	..	..
Thailand	34.52	35.08	15.1	16.3	0.5	..	4.2	2.9	4.9	2.7	3.8	5.3	
Timor-Leste	1.00	1.00	..	0.5	0.5	..	..	2.6	..	4.4	..	..
Togo	479.27	481.53	238.6	230.9	0.5	113.5	7.0	0.8	8.5	2.2	..	..
Trinidad and Tobago	6.33	6.26	2.9	4.2	0.7	115.5	5.4	6.4	5.7	5.5	2.8	2.0	
Tunisia	1.28	1.34	0.5	0.6	0.5	82.2	4.4	2.7	4.4	3.0	3.6	3.7	
Turkey	1.30	1.54	0.0	0.9	0.7	..	74.7	18.7	79.9	20.6	..	8.7	
Turkmenistan	..	..	..	3,950.3	0.4	..	408.0	..	..	..	..	..
Uganda	1,723.49	1,959.26	472.8	640.1	0.4	90.0	12.0	4.8	10.5	5.0	..	..
Ukraine	5.05	7.58	0.3	2.2	0.4	112.6	271.0	14.0	155.7	8.5	161.6	12.2	
United Arab Emirates	3.67	3.67	1.7	2.7	0.7	..	2.2	7.7	..	..	..	..
United Kingdom	0.50	0.64	0.6	0.6	1.3	107.9	2.9	2.7	2.9	2.8	2.4	1.3	
United States	1.00	1.00	1.0	1.0	1.0	88.8	2.0	2.6	2.7	2.7	1.2	4.2	
Uruguay	23.47	24.35	5.7	14.5	0.6	79.6	31.1	9.4	33.9	9.9	27.2	15.3	
Uzbekistan	..	..	11.2	432.7	0.3	..	245.8	26.5	..	..	..	..
Venezuela, RB	2.15	2.15	0.1	1.5	0.7	81.2	45.3	26.8	49.0	20.2	44.1	27.6	
Vietnam	16,105.13	16,600.00	3,170.2	5,167.5	0.3	..	15.2	6.6	4.1	5.8	..	..
West Bank and Gaza	..	..	..	..	..	..	5.7	3.4	..	3.8	..	..
Yemen, Rep.	198.95	200.03	22.0	85.7	0.4	..	22.4	13.5	26.3	12.9	..	..
Zambia	4,002.52	4,882.97	393.5	2,808.8	0.7	151.5	52.1	18.3	57.0	17.6	101.4	..	
Zimbabwe	9,675.78	30,000.00	..	..	..	..	26.7	232.0	29.0	497.7	25.9	..

Note: The differences in the growth rates of the GDP deflator and consumer and wholesale price indexes are due mainly to differences in data availability for each of the indexes during the period.

a. Average for December or latest monthly data available. b. As members of the euro area, these countries share a single currency, the euro. c. Koruny.

About the data

In a market-based economy, household, producer, and government choices about resource allocation are influenced by relative prices, including the real exchange rate, real wages, real interest rates, and other prices in the economy. Relative prices also largely reflect these agents' choices. 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 recognized by governments include market rates, which are determined largely by legal market forces, and for countries with multiple exchange arrangements, principal rates, secondary rates, and tertiary rates. (Also see *Statistical methods* for alternative conversion factors in the *World Bank Atlas* method of calculating gross national income [GNI] per capita in U.S. dollars.)

Official or market exchange rates are often used to convert economic statistics in local currencies to a common currency in order to make comparisons across countries. Since market 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, particularly when nontradable goods and services account for a significant share of a country's output. An alternative exchange rate—the purchasing power parity (PPP) conversion factor—is preferred because it reflects differences in price levels for both tradable and nontradable goods and services and therefore provides a more meaningful comparison of real output. See table 1.1 for further discussion.

The ratio of the PPP conversion factor to the official exchange rate—the national price level or comparative price level—measures differences in the price level at the gross domestic product (GDP) level. The price level index tends to be lower in poorer countries and to rise with income. The market exchange rate (or alternative conversion factor) is the official exchange rate adjusted for some countries by World Bank staff to reflect actual price changes. National price levels vary systematically, rising with GNI per capita. The real effective exchange rate is a nominal effective exchange rate index adjusted for relative movements in national price or cost indicators of the home country, selected countries, and the euro area. A nominal effective exchange rate index is the ratio (expressed on the base 2000 = 100) of an index of a currency's period-average exchange rate to a weighted geometric average of exchange rates

for currencies of selected countries and the euro area. For most high-income countries weights are derived from industrial country trade in manufactured goods. Data are compiled from the nominal effective exchange rate index and a cost indicator of relative normalized unit labor costs in manufacturing. For selected other countries the nominal effective exchange rate index is based on manufactured goods and primary products trade with partner or competitor countries. For these countries the real effective exchange rate index is the nominal index adjusted for relative changes in consumer prices; an increase represents an appreciation of the local currency. Because of conceptual and data limitations, changes in real effective exchange rates should be interpreted with caution.

Inflation is measured by the rate of increase in a price index, but actual price change can be negative. The index used depends on the prices being examined. The GDP deflator reflects price changes for total GDP. The most general measure of the overall price level, it accounts for changes in government consumption, capital formation (including inventory appreciation), international trade, and the main component, household final consumption expenditure. The GDP deflator is usually derived implicitly as the ratio of current to constant price GDP—or a Paasche index. It is defective as a general measure of inflation for policy use because of long lags in deriving estimates and because it is often an annual measure.

Consumer price indexes are produced more frequently and so are more current. They are also constructed explicitly, based on surveys of the cost of a defined basket of consumer goods and services. Nevertheless, consumer price indexes should be interpreted with caution. The definition of a household, the basket of goods, and the geographic (urban or rural) and income group coverage of consumer price surveys can vary widely by country. In addition, weights are derived from household expenditure surveys, which, for budgetary reasons, tend to be conducted infrequently in developing countries, impairing comparability over time. Although useful for measuring consumer price inflation within a country, consumer price indexes are of less value in comparing countries.

Wholesale price indexes are based on the prices at the first commercial transaction of commodities that are important in a country's output or consumption. Prices are farm-gate for agricultural commodities and ex-factory for industrial goods. Preference is given to indexes with the broadest coverage of the economy.

The least-squares method is used to calculate growth rates of the GDP implicit deflator, consumer price index, and wholesale price index.

Definitions

- **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 that a U.S. dollar would buy in the United States.
- **Ratio of PPP conversion factor to market exchange rate** is the result obtained by dividing the PPP conversion factor by the market 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.
- **GDP implicit deflator** measures the average annual rate of price change in the economy as a whole for the periods shown.
- **Consumer price index** reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or may change at specified intervals, such as yearly. The Laspeyres formula is generally used.
- **Wholesale price index** refers to a mix of agricultural and industrial goods at various stages of production and distribution, including import duties. The Laspeyres formula is generally used.

Data sources

Data on official and real effective exchange rates and consumer and wholesale price indexes are from the International Monetary Fund's *International Financial Statistics*. PPP conversion factors and GDP deflators are from the World Bank's data files.