

Committee for Development Policy
Seventh Session
14-18 March 2005
PURCHASING POWER PARITY (PPP)
Note by the Secretariat

This note provides *extracts* from the paper entitled: Purchasing Power Parity (PPP) for International Comparison of Poverty: Sources and Methods, by Sultan Ahmad*.

Introduction and Summary

1. For the purpose of comparing levels of poverty across countries, the World Bank uses estimates of consumption converted to US dollars using purchasing power parity (PPP) rates rather than exchange rates. PPP conversion allows national accounts aggregates in national currencies to be compared on the basis of their purchasing powers of the currencies in their respective domestic markets free from differences in price levels across countries, much the same way as constant price estimates do in a time series comparison of real values free from differences in prices over time. This paper describes the sources and methods of compiling these PPP numbers and discusses the processes used in previous rounds to calculate poverty estimates. Details of data collection and organization for the current ICP round can be found on the International Comparison of Poverty (ICP) website section under Overview of the ICP 2003-2005 round.

2. PPP estimates are made for total GDP and its various sub-aggregates. For the purpose of comparing poverty, the World Bank uses PPP for consumption. Because PPPs for consumption are computed as a component of GDP, the sources and methods used to compile consumption PPP are the same as those used to compile GDP PPP.

Rationale for using PPP

3. Policy makers who wish to compare levels of income and poverty across national boundaries are attracted to PPP because exchange rate conversion of national currency values of GDP and its components yields inconsistent results. This inconsistency shows up in two ways:

- (a) It fails to reflect the true *levels* of volumes of goods and services embodied in the aggregates being compared in a given year; and
- (b) It fails to reflect *movements* in relative volumes of these goods and services over time.

* Views expressed are the author's own and may not be attributed to The World Bank, its affiliates or to any one acting on its behalf.

This is because exchange rates do not usually reflect relative prices across countries nor do they adjust to movements in these relative prices overtime.

4. Purchasing power parity conversion eliminates both these inconsistencies. PPP is defined as the numbers of units of a country's currency needed to buy in the country the same amounts of goods and services as, say, one US dollar would buy in the United States. They are computed on the basis of data collected in benchmark surveys, which are undertaken usually every five years but sometimes even longer. Statistically, PPPs are expenditure-weighted averages of relative prices of a vast number of goods and services on which people spend their incomes. By eliminating price differences, PPPs yield comparisons based on real quantities¹ of goods and services. As the PPPs are adjusted over time (between surveys) by relative rates of inflation, they also track movements in real quantities over time.

5. Since one dollar converted at the PPP rate would buy the same amounts of goods and services in every country, it has been possible for the World Bank to estimate the number of people in the world living under "a dollar a day" or "two dollars a day"². It is not possible to make such estimates on the basis of exchange rate converted values since a US dollar converted at exchange rate does not typically buy the same amounts of goods and services in every country.

6. Over the last thirty-five years or so, the vehicle for the collection of data for PPPs has been the International Comparison Program (ICP). Surveys have historically been conducted in about 120 countries at one time or another, and repeatedly in many of them. The 2004 round anticipates around 160 participant countries, including those of the European Union and the OECD. The wealth of data collected in these surveys constitutes the source from which all PPP computations are made. The World Bank's most recent PPP estimates are derived from the 1993/96 round of surveys in which 117 countries participated.

7. The list of 117 participating countries in each region is provided in table 1. Table 2 provides an overview of country specific ratios between GNI per capita calculated using the World Bank Atlas conversion factor, and the GNI per capita using purchasing power parity rates.

¹ PPP adjusted values are often referred to as "real values" or "real quantities".

² These dollars are often referred to as "PPP dollars" or "international dollars". An "international dollar" has the same purchasing power as the US dollar for total GDP for US, but the purchasing power of components is determined by average international price structure instead of US price relatives. The concept of "international dollar" is not strictly applicable when the PPPs are generated by the EKS method or other non-additive method.

**Table 1: Countries in ICP Surveys, 1993/96
By Region and Coordinator**

Africa (EuroCost)		Caribbean (Caricom, The World Bank)@
1 Benin	6 Finland	1 Antigua& Barbuda
2 Botswana	7 France	2 Bahamas, The
3 Cameroon	8 Germany	3 Barbados
4 Congo	9 Greece	4 Belize
5 Cote d'Ivoire	10 Iceland	5 Bermuda
6 <i>Egypt, Arab Rep.</i>	11 Ireland	6 Dominica
7 Gabon	12 Italy	7 Grenada
8 Guinea	13 Japan	8 Guyana #
9 Kenya	14 Luxembourg	9 Jamaica
10 Madagascar	15 <i>Mexico \$</i>	10 St. Kitts & Nevis
11 Malawi	16 Netherlands	11 St. Lucia
12 Mali	17 New Zealand	12 St. Vincent & the Grenadines
13 Mauritius	18 Norway	13 Trinidad and Tobago
14 Morocco	19 Portugal	
15 Nigeria	20 Spain	
	21 Sweden	
		Latin America (ECLAC, The World Bank)
16 Senegal	22 Switzerland	1 Argentina
17 Sierra Leone	23 <i>Turkey</i>	2 Bolivia
18 Swaziland	24 United Kingdom	3 Brazil
19 Tanzania	25 United States	4 Chile
20 Tunisia		5 Ecuador
21 Zambia	Europe II (CIS, OECD, Austria)	6 Mexico
22 Zimbabwe	1 Austria	7 Panama
	2 Belarus	8 Peru
Asia (ESCAP)	3 Bulgaria	9 Uruguay
1 Bangladesh	4 Croatia	10 Venezuela
2 China *	5 Czech Republic	
3 Fiji	6 Estonia	Middle East (ESCWA, The World Bank@)
4 Hong Kong	7 Hungary	1 Bahrain
5 Indonesia	8 Latvia	2 Egypt, Arab Rep.
6 <i>Iran, Islamic Rep. of</i>	9 Lithuania	3 Jordan
7 <i>Japan</i>	10 Moldova	4 Lebanon
8 Korea, Republic of	11 Poland	5 Oman
9 Lao, PDR@	12 Romania	6 Palestine
10 Malaysia @	13 Russian Federation	7 Qatar
11 Nepal	14 Slovak Republic	8 Saudi Arabia
12 Pakistan	15 Slovenia	9 Syrian Arab Rep.
13 Philippines	16 Ukraine	10 United Arab Emirates
14 Singapore		11 Yemen, Rep. of
15 Sri Lanka	Europe III (Turkey, CIS, Russian Goskomstat, OECD)	
16 Thailand	1 Armenia	
17 Vietnam	2 Azerbaijan	
Europe I, OECD (OECD, Eurostat)	3 Georgia	
1 Australia	4 Kazakhstan	
2 <i>Austria</i>	5 Kyrgyz Republic	
3 Belgium	6 Mongolia\$	
4 Canada	7 Russian Federation	
5 Denmark	8 Tajikistan	
	9 Turkey	
	10 Turkmenistan	
	11 Uzbekistan	

* Limited survey in two regions only. @ Regions or countries in the World Bank reduced information survey. # Country surveyed but not included in comparison. \$ These two countries were added in 1996. Countries in **bold letters** appear in more than one regional survey. Names of coordinating agencies appear in parentheses after every region.

Table 2. GNI per capita 2003, Atlas Method and PPP

World Bank WDI	Atlas	Purchasing power	ratio		Atlas	Purchasing power	ratio
	methodology	parity			methodology	parity	
	current US\$	current int'l \$			current US\$	current int'l \$	
	2003	2003			2003	2003	
Albania	1740	4700	2.70	Ethiopia	90	710	7.89
Algeria	1890	5940	3.14	Burundi	100	620	6.20
Angola	740	1890	2.55	Congo, Dem. Rep.	100	640	6.40
Antigua and Barbuda	9160	9590	1.05	Guinea-Bissau	140	660	4.71
Argentina	3650	10920	2.99	Sierra Leone	150	530	3.53
Armenia	950	3770	3.97	Malawi	170	600	3.53
Azerbaijan	810	3380	4.17	Eritrea	190	1110	5.84
Bangladesh	400	1870	4.68	Tajikistan	190	1040	5.47
Barbados	9270	15060	1.62	Niger	200	820	4.10
Belarus	1590	6010	3.78	Mozambique	210	1070	5.10
Benin	440	1110	2.52	Rwanda	220	1290	5.86
Bolivia	890	2450	2.75	Nepal	240	1420	5.92
Bosnia and Herzegovina	1540	6320	4.10	Uganda	240	1440	6.00
Botswana	3430	7960	2.32	Chad	250	1100	4.40
Brazil	2710	7480	2.76	Central African Republic	260	1080	4.15
Bulgaria	2130	7610	3.57	Madagascar	290	800	2.76
Burkina Faso	300	1180	3.93	Mali	290	960	3.31
Burundi	100	620	6.20	Tanzania	290	610	2.10
Cambodia	310	2060	6.65	Burkina Faso	300	1180	3.93
Cameroon	640	1980	3.09	Cambodia	310	2060	6.65
Cape Verde	1490	5440	3.65	Gambia, The	310	1820	5.87
Central African Republic	260	1080	4.15	Togo	310	1500	4.84
Chad	250	1100	4.40	Ghana	320	2190	6.84
Chile	4390	9810	2.23	Lao PDR	320	1730	5.41
China	1100	4990	4.54	Nigeria	320	900	2.81
Colombia	1810	6520	3.60	Kyrgyz Republic	330	1660	5.03
Comoros	450	1760	3.91	Haiti	380	1630	4.29
Congo, Dem. Rep.	100	640	6.40	Zambia	380	850	2.24
Congo, Rep.	640	710	1.11	Kenya	390	1020	2.62
Costa Rica	4280	9040	2.11	Bangladesh	400	1870	4.68
Cote d'Ivoire	660	1390	2.11	Uzbekistan	420	1720	4.10
Croatia	5350	10710	2.00	Guinea	430	2100	4.88
Czech Republic	6740	15650	2.32	Mauritania	430	2010	4.67
Djibouti	910	2200	2.42	Benin	440	1110	2.52
Dominica	3360	5090	1.51	Comoros	450	1760	3.91
Dominican Republic	2070	6210	3.00	Sudan	460	1880	4.09
Ecuador	1790	3440	1.92	Pakistan	470	2060	4.38
Egypt, Arab Rep.	1390	3940	2.83	Mongolia	480	1800	3.75
El Salvador	2200	4890	2.22	Vietnam	480	2490	5.19
Eritrea	190	1110	5.84	Papua New Guinea	510	2240	4.39
Estonia	4960	12480	2.52	Yemen, Rep.	520	820	1.58
Ethiopia	90	710	7.89	India	530	2880	5.43
Fiji	2360	5410	2.29	Senegal	550	1660	3.02
Gabon	3580	5700	1.59	Lesotho	590	3120	5.29
Gambia, The	310	1820	5.87	Moldova	590	1750	2.97
Georgia	830	2540	3.06	Solomon Islands	600	1630	2.72
Ghana	320	2190	6.84	Cameroon	640	1980	3.09
Grenada	3790	6710	1.77	Congo, Rep.	640	710	1.11
Guatemala	1910	4060	2.13	Cote d'Ivoire	660	1390	2.11
Guinea	430	2100	4.88	Nicaragua	730	2400	3.29
Guinea-Bissau	140	660	4.71	Angola	740	1890	2.55
Guyana	900	3950	4.39	Azerbaijan	810	3380	4.17
Haiti	380	1630	4.29	Indonesia	810	3210	3.96
Honduras	970	2580	2.66	Georgia	830	2540	3.06
Hungary	6330	13780	2.18	Bolivia	890	2450	2.75
India	530	2880	5.43	Guyana	900	3950	4.39
Indonesia	810	3210	3.96	Djibouti	910	2200	2.42
Iran, Islamic Rep.	2000	7190	3.60	Sri Lanka	930	3730	4.01

Jamaica	2760	3790	1.37	Armenia	950	3770	3.97
Jordan	1850	4290	2.32	Honduras	970	2580	2.66
Kazakhstan	1780	6170	3.47	Ukraine	970	5410	5.58
Kenya	390	1020	2.62	Philippines	1080	4640	4.30
Kyrgyz Republic	330	1660	5.03	China	1100	4990	4.54
Lao PDR	320	1730	5.41	Paraguay	1100	4740	4.31
Latvia	4070	10130	2.49	Turkmenistan	1120	5840	5.21
Lebanon	4040	4840	1.20	Syrian Arab Republic	1160	3430	2.96
Lesotho	590	3120	5.29	Vanuatu	1180	2880	2.44
Lithuania	4490	11090	2.47	Morocco	1320	3950	2.99
Macedonia, FYR	1980	6720	3.39	Swaziland	1350	4850	3.59
Madagascar	290	800	2.76	Egypt, Arab Rep.	1390	3940	2.83
Malawi	170	600	3.53	Cape Verde	1490	5440	3.65
Malaysia	3780	8940	2.37	Tonga	1490	6890	4.62
Mali	290	960	3.31	Bosnia and Herzegovina	1540	6320	4.10
Mauritania	430	2010	4.67	Belarus	1590	6010	3.78
Mauritius	4090	11260	2.75	Samoa	1600	5700	3.56
Mexico	6230	8950	1.44	Albania	1740	4700	2.70
Moldova	590	1750	2.97	Kazakhstan	1780	6170	3.47
Mongolia	480	1800	3.75	Ecuador	1790	3440	1.92
Morocco	1320	3950	2.99	Colombia	1810	6520	3.60
Mozambique	210	1070	5.10	Jordan	1850	4290	2.32
Namibia	1870	6620	3.54	Namibia	1870	6620	3.54
Nepal	240	1420	5.92	Algeria	1890	5940	3.14
Nicaragua	730	2400	3.29	Guatemala	1910	4060	2.13
Niger	200	820	4.10	Macedonia, FYR	1980	6720	3.39
Nigeria	320	900	2.81	Iran, Islamic Rep.	2000	7190	3.60
Pakistan	470	2060	4.38	Dominican Republic	2070	6210	3.00
Panama	4250	6310	1.48	Bulgaria	2130	7610	3.57
Papua New Guinea	510	2240	4.39	Peru	2150	5090	2.37
Paraguay	1100	4740	4.31	Thailand	2190	7450	3.40
Peru	2150	5090	2.37	El Salvador	2200	4890	2.22
Philippines	1080	4640	4.30	Tunisia	2240	6840	3.05
Poland	5270	11450	2.17	Romania	2310	7140	3.09
Romania	2310	7140	3.09	Fiji	2360	5410	2.29
Russian Federation	2610	8920	3.42	Russian Federation	2610	8920	3.42
Rwanda	220	1290	5.86	Brazil	2710	7480	2.76
Samoa	1600	5700	3.56	Jamaica	2760	3790	1.37
Senegal	550	1660	3.02	South Africa	2780	10270	3.69
Seychelles	7480	15960	2.13	Turkey	2790	6690	2.40
Sierra Leone	150	530	3.53	St. Vincent and the Gren	3300	6590	2.00
Slovak Republic	4920	13420	2.73	Dominica	3360	5090	1.51
Solomon Islands	600	1630	2.72	Botswana	3430	7960	2.32
South Africa	2780	10270	3.69	Venezuela, RB	3490	4740	1.36
Sri Lanka	930	3730	4.01	Gabon	3580	5700	1.59
St. Kitts and Nevis	6880	11040	1.60	Argentina	3650	10920	2.99
St. Lucia	4050	5220	1.29	Malaysia	3780	8940	2.37
St. Vincent and the Gren	3300	6590	2.00	Grenada	3790	6710	1.77
Sudan	460	1880	4.09	Uruguay	3790	7980	2.11
Swaziland	1350	4850	3.59	Lebanon	4040	4840	1.20
Syrian Arab Republic	1160	3430	2.96	St. Lucia	4050	5220	1.29
Tajikistan	190	1040	5.47	Latvia	4070	10130	2.49
Tanzania	290	610	2.10	Mauritius	4090	11260	2.75
Thailand	2190	7450	3.40	Panama	4250	6310	1.48
Togo	310	1500	4.84	Costa Rica	4280	9040	2.11
Tonga	1490	6890	4.62	Chile	4390	9810	2.23
Trinidad and Tobago	7260	9450	1.30	Lithuania	4490	11090	2.47
Tunisia	2240	6840	3.05	Slovak Republic	4920	13420	2.73
Turkey	2790	6690	2.40	Estonia	4960	12480	2.52
Turkmenistan	1120	5840	5.21	Poland	5270	11450	2.17
Uganda	240	1440	6.00	Croatia	5350	10710	2.00
Ukraine	970	5410	5.58	Mexico	6230	8950	1.44
Uruguay	3790	7980	2.11	Hungary	6330	13780	2.18
Uzbekistan	420	1720	4.10	Czech Republic	6740	15650	2.32
Vanuatu	1180	2880	2.44	St. Kitts and Nevis	6880	11040	1.60
Venezuela, RB	3490	4740	1.36	Trinidad and Tobago	7260	9450	1.30
Vietnam	480	2490	5.19	Seychelles	7480	15960	2.13
Yemen, Rep.	520	820	1.58	Antigua and Barbuda	9160	9590	1.05
Zambia	380	850	2.24	Barbados	9270	15060	1.62