

Conference *Ethical Foundations of Public Policy*, Wellington

Measuring Development: Poverty and Gender Equity

Thomas Pogge

**Leitner Professor of Philosophy and International Affairs, Yale University
with additional affiliations at
the Australian Centre for Applied Philosophy and Public Ethics (CAPPE)
and the University of Oslo Centre for the Study of Mind in Nature (CSMN)**

The Grand Promise to Halve Poverty by 2015: First Version

1996 *World Food Summit* in Rome: the **number** of extremely poor is to be halved during **1996**-2015. This implies an annual reduction by **3.58%** (50% over 19 years).

*"We pledge our political will and our common and national commitment to achieving food security for all and to an on-going effort to eradicate hunger in all countries, with an immediate [!] view to reducing the **number** of undernourished people to half their **present** level no later than 2015."*

The Grand Promise to Halve Poverty by 2015: Second Version

1996 World Food Summit in Rome: the **number** of extremely poor is to be halved during **1996-2015**. This implies annual reduction by **3.58%**.

2000 Millennium Declaration: the **proportion** of extremely poor **among the world's people** is to be halved **2000-2015**. This implies annual decline by **3.35%** (40% in 15 yrs).

*"to halve, by the year 2015, the **proportion** of the world's people whose income is less than one dollar a day and the **proportion** of people who suffer from hunger."*

“Goal 1: Eradicate Extreme Hunger and Poverty”

- *“Target 1. Halve, between 1990 and 2015, the proportion of people whose income is less than US\$1 a day”*
- *“Target 2. Halve, between 1990 and 2015, the proportion of people who suffer from hunger”*

**UN: *The Millennium Development Goals Report 2008*,
p.6; www.un.org/millenniumgoals**

MDGs 4 and 5

“By the year 2015, to have reduced maternal mortality by three quarters, and under-five child mortality by two thirds, of their **current** rates.”

(United Nations Millennium Declaration, A/res/55/2, dated 8 September 2000, article 19(3))

“Reduce by two thirds, between **1990** and 2015, the under-five mortality rate (MDG-4)

Reduce by three quarters, between **1990** and 2015, the maternal mortality ratio (MDG-5)”

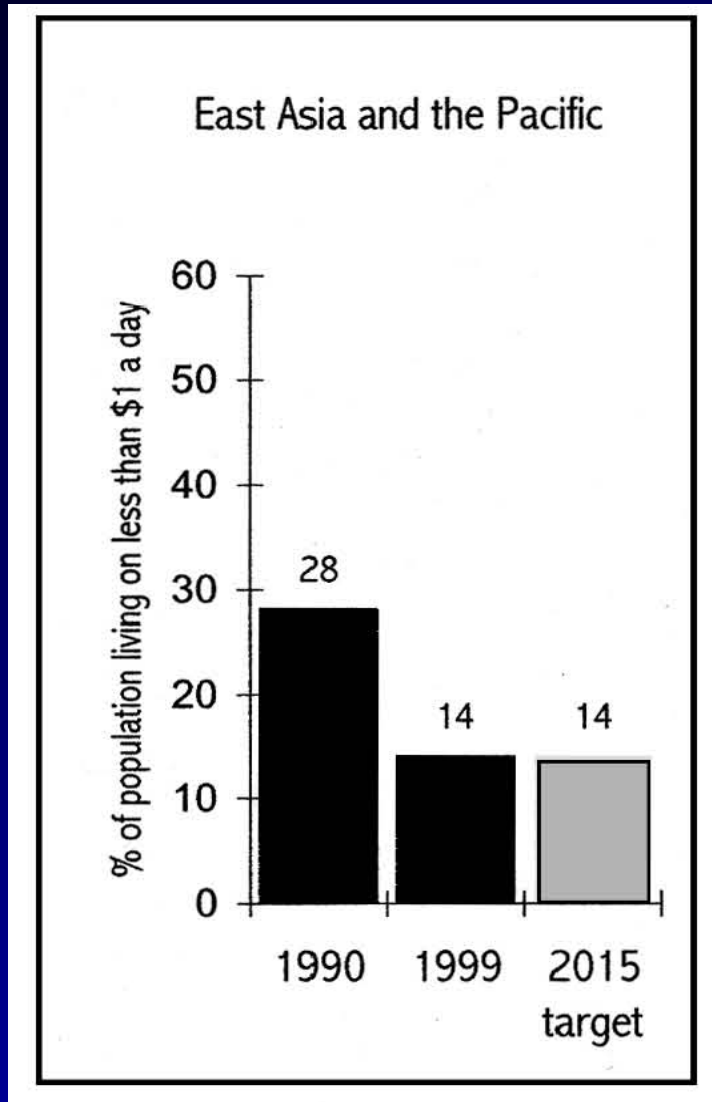
(The Millennium Development Goals Report 2008, p. 24)

The Grand Promise to Halve Poverty by 2015: Third Version

1996 World Food Summit in Rome: the **number** of extremely poor is to be halved during **1996-2015**. This implies an annual reduction by **3.58%**.
(www.fao.org/wfs)

2000 Millennium Declaration: the **proportion** of extremely poor **among the world's people** is to be halved **2000-2015**. This implies annual decline by **3.35%** (40% in 15 yrs).

MDG-1 as subsequently revised by the UN: the **proportion** of extremely poor **among the population of the developing countries** is to be halved **1990-2015**. This implies an annual reduction by **1.25%** (27% over 25 years).



Source: Report of the Secretary-General on implementation of the Millennium Declaration. Data based on World Bank estimates.

¹\$1 a day is expressed in Purchasing Power Parity (PPP)

MDG-1: A Promise Diluted

	Baseline Year	Baseline Number of Poor (millions)	Promised Reduction in number by 2015	Target for 2015 (millions)	Required annual rate of reduction
World Food Summit	1996	1656	50% in 19 yrs	828	3.58%
MDG-1 as adopted	2000	1665	40% in 15 yrs	999	3.35%
MDG-1 as revised	1990	1813	27% in 25 yrs	1324	1.25%

MDG-1: World Poverty

YEAR	Poverty Rate
1981	51.8%
1984	46.6%
1987	41.8%
1990	41.6%
1993	39.1%
1996	34.4%
1999	33.7%
2002	30.6%
2005	25.2%
2015 target	20.8%

Good news, we are well ahead of schedule toward achieving MDG-1!!

econ.worldbank.org/docsearch; Paper 4703, p. 42

The Impact of the IPL level on the Bank's Poverty Count

It is very obvious that the lower the Bank sets its IPL, the fewer poor people it will count. It is less obvious how the level of the IPL is affecting the charted evolution of poverty: a lower poverty line will reduce the poverty count *in each year* and may therefore have no effect on the assessed poverty *trend* at all. (The Bank uses 2005 PPPs to convert its IPL into 2005 local currency units (LCUs), then national consumer price indices to convert it further into LCUs of other years.)

Changes in World Poverty

Period IPL	1981- 2005	1984- 2005	1987- 2005	1990- 2005 (-17.2%)	Relative to path of diluted MDG-1	1993- 2005	1996- 2005	1999- 2005
\$1.00 PPP 2005	-42%	-35%	-29%	-32%	86% ahead	-29%	-24%	-18%
\$1.25 PPP 2005	-27%	-23%	-20%	-24%	40% ahead	-23%	-19%	-14%
\$2.00 PPP 2005	+1%	-2%	-3%	-7%	59% behind	-9%	-11%	-8%
\$2.50 PPP 2005	+13%	+8%	+5%	+.45%	103% behind	-3%	-7%	-6%

“Updating” the World Bank’s International Poverty Line

The Bank initially fixed its IPL at *1.02 1985-dollars per day*, noting that eight poor countries’ 1985 domestic poverty lines were close to this amount. Soon rounded down to *1.00 1985-dollar per day*.

In 2000 the Bank reset its IPL to *1.08 1993-dollars per day*, noting that this was the median of the ten lowest domestic poverty lines in 1993.

In mid-2008 the Bank reset its IPL again to *1.25 2005-dollars per day*, noting that this was the mean of the 15 poorest countries’ domestic poverty lines.

Many of the domestic poverty lines used to “anchor” all these IPLs are themselves fixed by the Bank.

“Updating” the World Bank’s International Poverty Line

Used from 1990 until 1999:

1.02 1985-dollar per day, today **\$2.03** in US

1.00 1985-dollar per day, today **\$1.99** in US

Used from 2000 until 2008:

1.08 1993-dollar per day, today **\$1.60** in US

Used since August 2008:

1.25 2005-dollar per day, today **\$1.37** in US
or **\$9.59** per week or **\$500** annually

www.bls.gov/data/inflation_calculator.htm

Is \$1.25 (2005) a day enough?

The Bank converts its International Poverty Line (IPL) at purchasing power parities (PPPs) and thus takes cost of living differences into account. (The PPP_{iceh} of a poor country to the USD is calculated to be, typically, between one third and one half of the currency exchange rate.) The Bank's whole methodology is based on the assumption that its PPPs for "individual consumption expenditure by households" facilitate accurate comparisons of incomes and consumption expenditures by poor households anywhere. For example, in 2005 China's PPP_{iceh} was 4.09 while its currency exchange rate was 8.28 RMB to the USD. Is 5.11 RMB enough?

Is \$1.25 (2005) a day enough?

The US Department of Agriculture has for many decades published data about what it costs to adhere to an elaborately designed low-cost food plan that was variously called “the Restricted Food Plan for Emergency Use,” the “Economy Food Plan . . . developed as a nutritionally adequate diet for short-term or emergency use,” and the “Thrifty Food Plan.” In 2005, the cost of purchasing this minimal diet for a household of two to four people was (depending on household size and children’s ages) between \$3.59 and \$4.97 per person per day – **3 to 4 times \$1.25.**

Is \$1.25 (2005) a day enough?

The cost of the USDA's Thrifty Food Plan covers the cost of nutrition only. It includes no money at all for minimal requirements of clothing, shelter, medical care, water and other utilities.

But perhaps food and other necessities are cheaper in the countries in which very poor people live than they are in the United States?

Is \$1.25 (2005) a day enough?

Actually, the much narrower and more poverty-relevant PPPs for “food and nonalcoholic beverages” are considerably *higher* — in each and every one of 88 listed poor countries — than the broader PPPs used in the Bank’s conversion. They are, on average, over 50 percent higher. At the Bank’s converted IPL, poor people on average can buy about as much *food* as could be bought with US\$0.83 in the US in 2005.

COUNTRY	2005 PPP_{iceh}	2005 PPP_{fnb}	Ratio
Angola	70.50	126.79	1.798
Argentina	1.35	1.70	1.259
Armenia	196.19	277.66	1.415
Bangladesh	25.49	34.28	1.345
Benin	275.90	495.42	1.796
Bhutan	18.46	25.39	1.375
Bolivia	2.57	3.61	1.405
Botswana	3.38	5.43	1.607
Brazil	1.57	1.69	1.076
Brunei Darussalam	1.08	1.50	1.389
Burkina Faso	242.42	388.15	1.601
Burundi	447.04	803.65	1.798
Cambodia	1615.30	2304.16	1.426
Cameroon	294.50	471.30	1.600
Cape Verde	78.17	97.06	1.242
Central African Republic	307.47	566.14	1.841
Chad	327.57	597.46	1.824
China	4.09	5.52	1.350

	2000	2001	Ratio
Colombia	1191.74	1738.54	1.459
Comoros	294.41	470.80	1.599
Congo, Dem. Rep.	316.23	542.69	1.716
Congo, Rep.	375.57	632.74	1.685
Cote d'Ivoire	325.81	528.52	1.622
Djibouti	107.81	185.37	1.719
Ecuador	0.50	0.66	1.320
Egypt, Arab Rep.	2.02	3.00	1.485
Equatorial Guinea	436.29	736.79	1.689
Ethiopia	2.75	4.13	1.502
Fiji	1.55	1.78	1.148
Gabon	443.75	751.51	1.694
Gambia, The	10.34	23.21	2.245
Georgia	0.78	1.04	1.333
Ghana	4475.82	8920.97	1.993
Guinea	1479.57	2947.16	1.992
Guinea-Bissau	284.28	461.33	1.623
Hong Kong, China	7.24	8.82	1.218

COUNTRY	2005 PPP_{iceh}	2005 PPP_{fnb}	Ratio
India	15.60	21.13	1.354
Indonesia	4192.83	5817.59	1.388
Iran, Islamic Rep.	2714.82	5664.83	2.087
Iraq	639.87	820.45	1.282
Kazakhstan	64.96	71.24	1.097
Kenya	32.68	54.14	1.657
Kyrgyz Republic	13.00	18.69	1.438
Lao PDR	3741.62	5999.52	1.603
Lebanon	1107.12	1149.93	1.039
Lesotho	3.43	5.66	1.650
Liberia	0.51	0.89	1.745
Madagascar	756.38	1367.97	1.809
Malawi	56.92	100.86	1.772
Malaysia	2.11	2.76	1.308
Maldives	9.74	11.30	1.160
Mali	289.68	482.74	1.666
Mauritania	125.67	223.16	1.776
Mexico	7.65	8.16	1.067

COUNTRY	2005 PPP_{iceh}	2005 PPP_{fnb}	Ratio
Moldova	4.83	6.35	1.315
Mongolia	522.49	697.10	1.334
Montenegro	0.50	0.66	1.320
Morocco	5.51	7.82	1.419
Mozambique	11625.69	18411.54	1.584
Namibia	5.06	7.03	1.389
Nepal	26.47	34.09	1.288
Niger	267.33	460.78	1.724
Nigeria	78.58	159.02	2.024
Pakistan	20.71	33.45	1.615
Paraguay	2127.80	2621.79	1.232
Peru	1.65	2.28	1.382
Philippines	24.18	33.60	1.390
Rwanda	236.75	333.21	1.407
Sao Tome and Principe	6363.13	10467.10	1.645
Senegal	298.24	522.49	1.752
Serbia	34.31	48.03	1.400
Sierra Leone	1396.21	2758.54	1.976

South Africa	4.57	5.53	1.210
Sri Lanka	40.04	59.95	1.497
Sudan	123.51	209.25	1.694
Swaziland	3.73	5.64	1.512
Syrian Arab Republic	24.65	28.17	1.143
Tajikistan	0.93	1.39	1.495
Tanzania	482.45	793.51	1.645
Togo	282.26	506.06	1.793
Tunisia	0.70	1.01	1.443
Turkey	1.00	1.29	1.290
Uganda	744.62	1040.09	1.397
Venezuela, RB	1251.12	1833.68	1.466
Vietnam	5919.89	8352.05	1.411
Yemen, Rep.	91.06	114.72	1.260
Zambia	2830.33	3930.78	1.389
Zimbabwe	47952.42	70339.25	1.467
Average Ratio (geometric mean)			1.496
Average Ratio (arithmetic mean)			1.516

A Hypothetical Example

Commodities	Poor Country		United States		Price Ratio
	Price in Pesos	Share of National Consumption Spending	Price in Dollars	Share of National Consumption Spending	Computed: 1 Peso = \$1.55
Necessities	5	30%	3	10%	0.60
Discretionaries	6	50%	4	50%	0.67
Services	1	20%	9	40%	9.00

Another Reality Check

While the Bank reports a stream of good news from the poverty front, the FAO has reported (June 2009) that the number of chronically undernourished people (Target 2 of MDG-1) is exceeding 1 billion for the first time ever. In the 1990s and until 2006 this number was reported to be around 800 million. One important cause: food prices doubled 2006-08 (partly on account of rapidly rising biofuel demand).

IPL Level and Global Poverty Gap

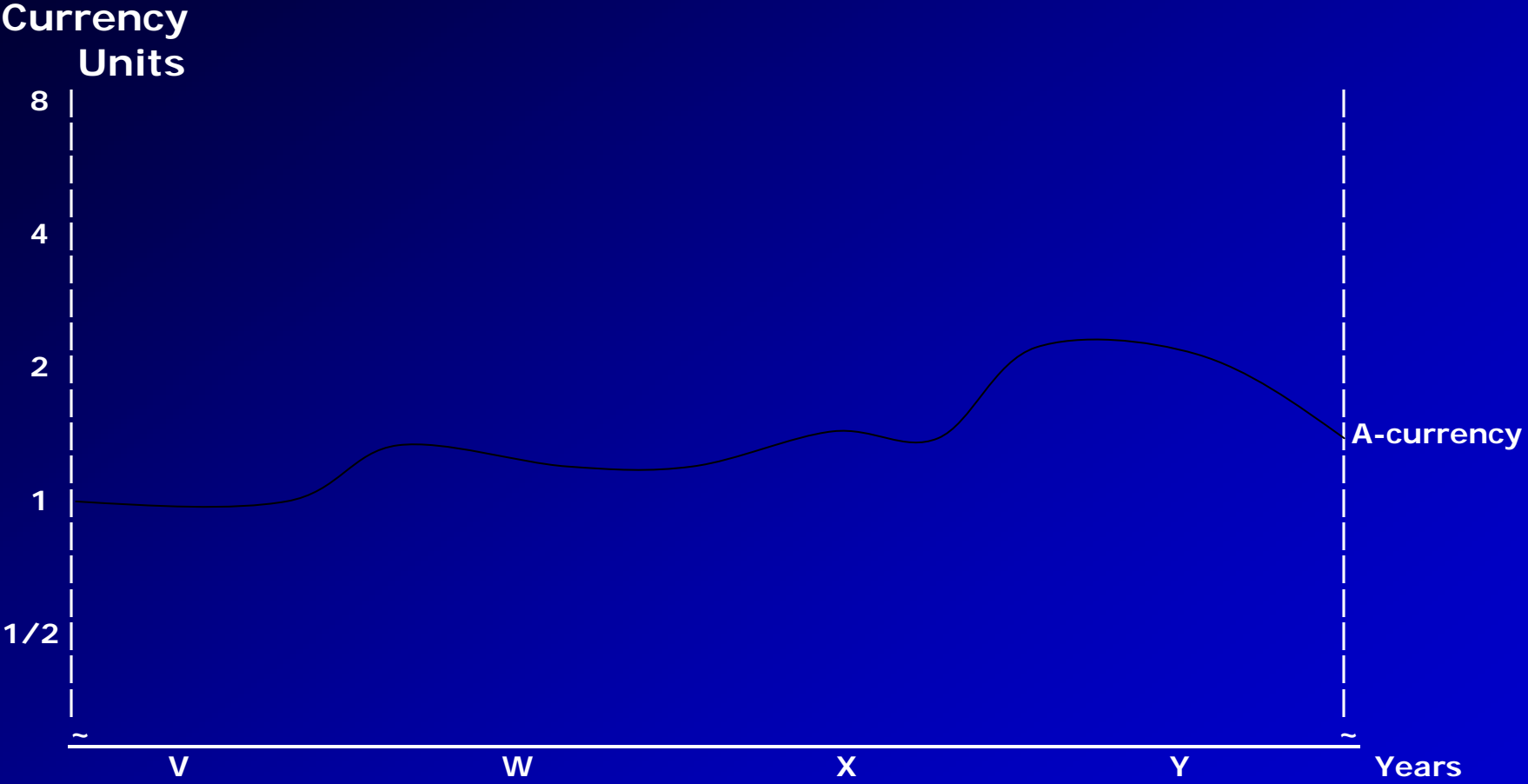
IPL in 2005 int'l dollars per person per day	Poor People in 2005		Aggregate Shortfall from the IPL		
	Number in billions	Average Shortfall from the IPL	in percent of gross global income		in \$bn p.a.
			at PPPs	at current (2005) exchange rates	
1.25	1.38	30%	0.33%	0.17%	76
2.00	2.56	40%	1.28%	0.66%	296
2.50	3.08	45%	2.2%	1.13%	507

Segment of World Population	Global Household Income 1988	Global Household Income 2002	Absolute Change in Income Share	Relative Change in Income Share
Richest Ventile	42.87	48.80	+5.93	+13.8%
Next Four Ventiles	46.63	42.78	-3.85	-8.3%
Second Quarter	6.97	5.44	-1.53	-22.0%
Third Quarter	2.37	2.06	-0.31	-13.1%
Poorest Quarter	1.16	0.92	-0.24	-20.7%

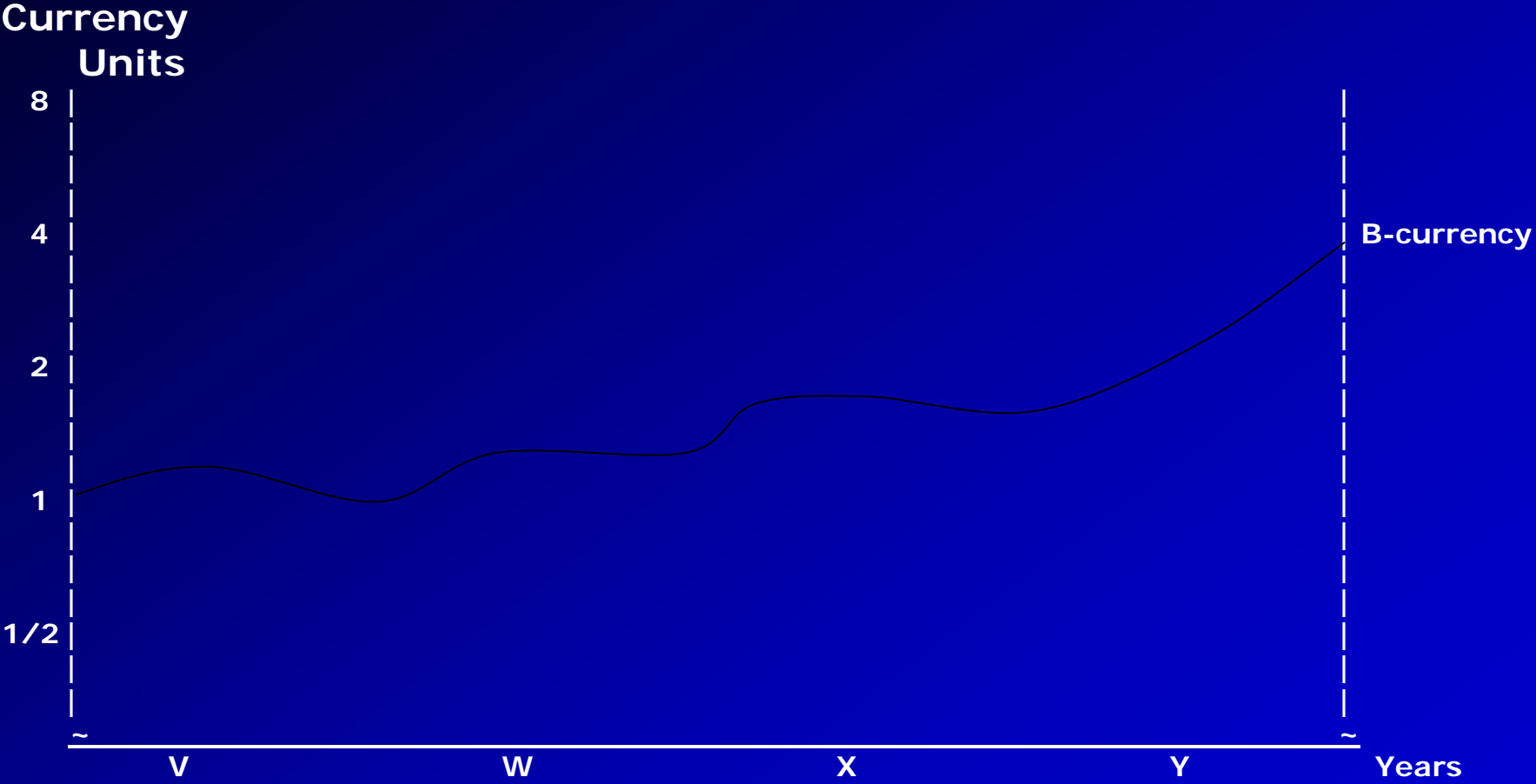
How International Purchasing Power Comparisons are Base-Year Dependent



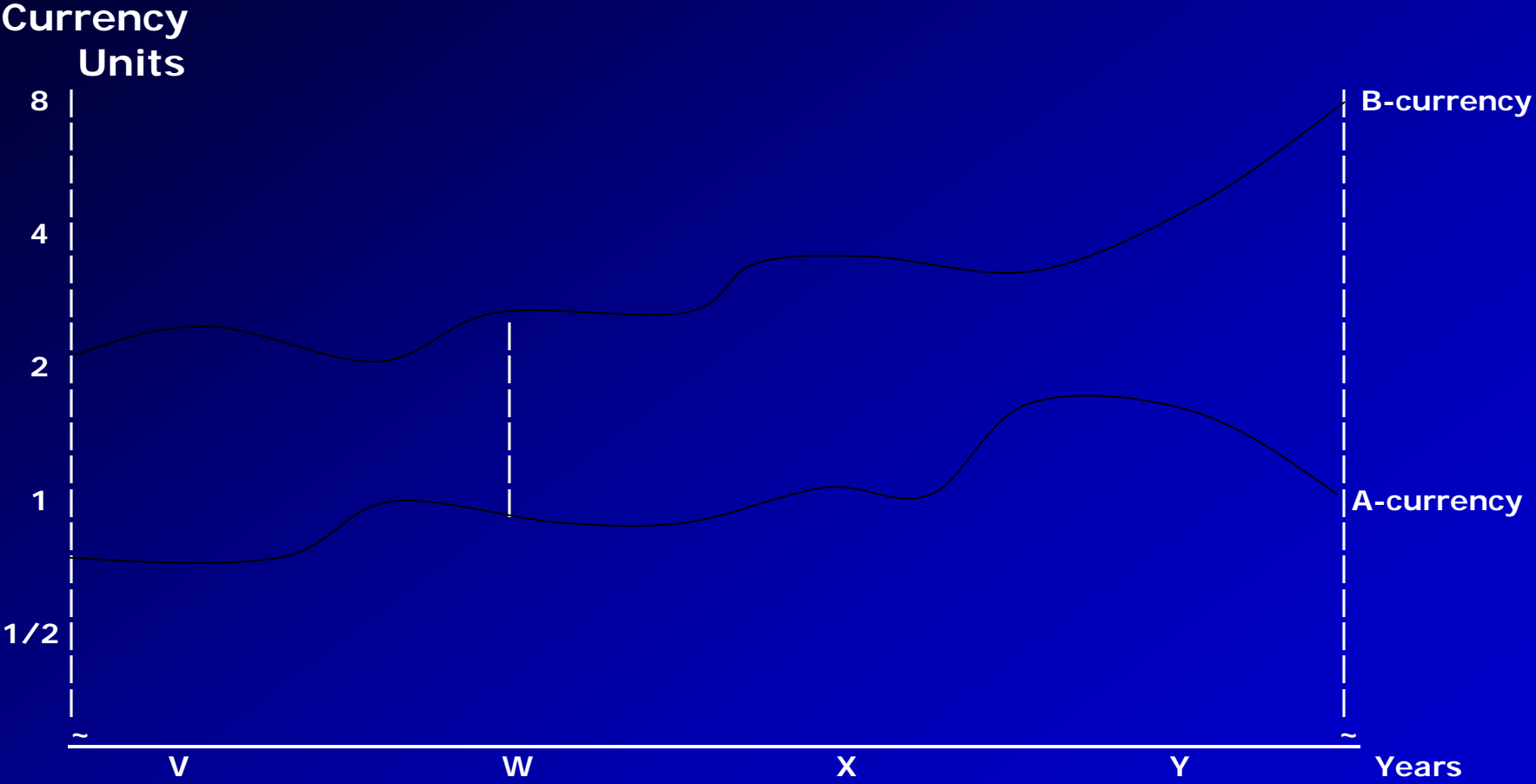
How International Purchasing Power Comparisons are Base-Year Dependent



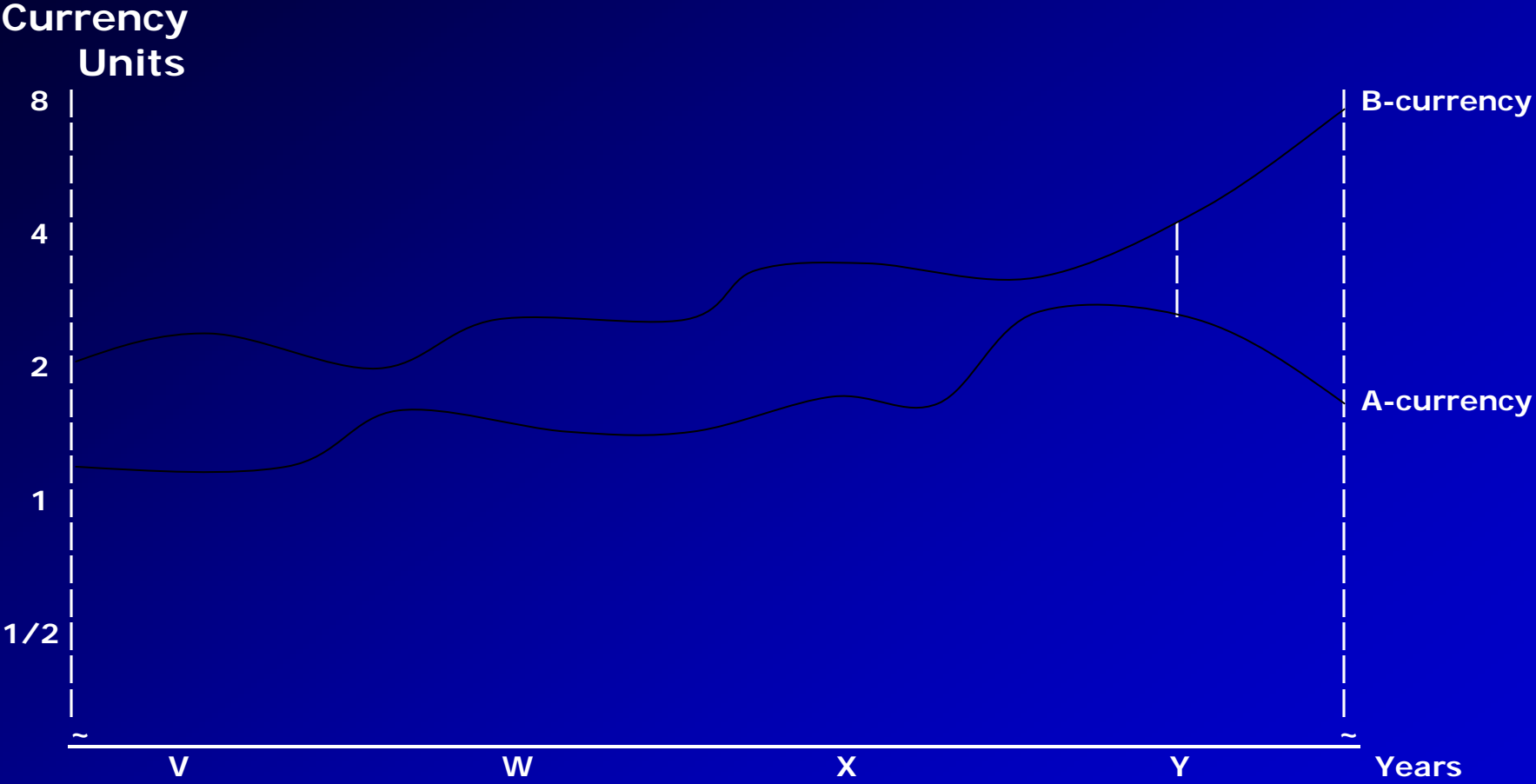
How International Purchasing Power Comparisons are Base-Year Dependent



How International Purchasing Power Comparisons are Base-Year Dependent



How International Purchasing Power Comparisons are Base-Year Dependent



World Bank Poverty Estimates are Not Robust w.r.t Choice of PPP Base Year

The World Bank's switch in PPP base year — from 1985 to 1993 — produced the following changes:

For most countries, poverty lines were uniformly lowered for all years -- e.g. by 20% for the US and by 61% for Mauritania.

For a few countries, poverty lines were uniformly raised for all years -- e.g. by 42% for Nigeria.

As a consequence, Mauritania's poverty rate estimate (1990 survey) was lowered from 31.4% to 3.8%, while Nigeria's poverty rate estimate (1985 survey) was raised from 31.1% to 72.2%.

Likewise, the 1993 poverty rate for Latin America was lowered from 23.5% to 15.3%, while the 1993 poverty rate for Sub-Saharan Africa was raised from 39.1 to 49.7 percent.

The Human Development Index

$$\text{HDI}_c = (L_c + E_c + P_c) / 3$$

The HDI includes a country's *life expectancy at birth* (L), its *education* (E), and its *gross domestic product (GDP) per capita* (P).

E is calculated from two subcomponents, namely the population's *adult literacy rate* (weight two-thirds) and its *primary, secondary, and tertiary school enrollment rate* (weight one-third).

The Gender Development Index

Uses the harmonic mean of female and male subscores. [The harmonic mean of two numbers, a and b, is $2/(1/a+1/b)$. The harmonic mean of 6 and 12 this is $2/(1/6+1/12)=8$.] Example, a country's HDI education score is **0.6**. If males average 0.9 and females 0.3, this country's GDI education score would be:

$$2/(1/0.9+1/0.3) = \mathbf{0.45}$$

The GDI imposes then a **0.15** gender inequality penalty relative to the HDI.

First Scenario

Second Scenario

Female Average	Male Average	Female Share of Earned Income		Female Average	Male Average	Female Share of Earned Income	
0	43	0.0000	Decile 1	44	43	0.5057	
0	96	0.0000	Decile 2	99	96	0.5077	
13	148	0.0807	Decile 3	147	148	0.4983	
77	202	0.2760	Decile 4	204	202	0.5025	
129	294	0.3050	Decile 5	292	294	0.4983	
189	383	0.3304	Decile 6	385	383	0.5013	
288	519	0.3569	Decile 7	520	519	0.5005	
449	731	0.3805	Decile 8	711	731	0.4931	
979	1293	0.4309	Decile 9	1192	1293	0.4797	
6180	6441	0.4897	Decile 10	4710	6441	0.4224	
830	1015	0.4500	AVERAGE	830	1015	0.4500	34

Four Defects in Existing Indices

(1) lack of a moral rationale, which results in some aspects of development or gender inequity being selected in preference to others without a sound justification of the former as being of greater constitutive or instrumental importance;

(2) false universality – a focus on deprivations (e.g., income poverty) that anyone may suffer combined with relative neglect of deprivations that differentially affect persons according to gender, age, and environment;

(3) bias toward the better-off, which manifests itself in

(3a) a focus on indicators that are relevant mostly to the more privileged, such as women in parliament or women in higher education, which matter but are less important than gender inequities that constitute much greater burdens for much larger numbers of more disadvantaged women and girls, and in

(3b) implausible aggregation that ignores correlations among different aspects of deprivation, for instance, or compares male and female income totals and thereby implicitly gives much greater weight to income inequalities at the top; and

(4) lack of integration, as when several partial indices are presented side-by-side without any guidance for how to resolve conflicts among them about the ranking of programs and policies.

Two Ideas toward New Indices

