

**Economics 270c**  
Graduate Development Economics

Professor Ted Miguel  
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**Economics 270c**  
Graduate Development Economics

Lecture 1 – January 20, 2009

# Lecture 1: Introduction to Economics 270c

- Lecturer: Prof. Ted Miguel  
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Office hours: Mondays 9-11am, Evans 647

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### The political economy of development

Lecture 3: History and institutions (2/3)

Lecture 4: Corruption (2/10)

Lecture 5: Patronage politics (2/17)

Lecture 6: Democracy and development (2/24)

Lecture 7: Economic Theories of Conflict (3/3) – Guest lecture by Gerard Padro

Lecture 8: War and Economic Development (3/10)

### Human resources

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Lecture 10: Increasing human capital (3/31)

Lecture 11: Labor markets and migration (4/7)

Lecture 12: Health and nutrition (4/14)

Lecture 13: The demand for health (4/21)

### Other topics

Lecture 14: Environment and development (4/28)

Lecture 15: Resource allocation and firm productivity (5/5)

### Additional topics for the development economics field exam

-- Ethnic and social divisions

-- The Economics of HIV/AIDS

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- Prerequisites: Graduate microeconomics, econometrics
- Grading:
  - Four referee reports – 40%
  - Two problem sets – 20%
  - Research proposal – 30%
  - Class participation – 10%
  - No final exam
- All readings are available online (see syllabus)
- Additional references on syllabus

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# Lecture 1 outline

- (1) This Course
- (2) Development in Human terms
- (3) Global patterns: Sala-i-Martin [2006]
- (4) Cross-country growth empirics:
  - Deaton [2005], Levine and Renelt [1992]

## (2) Development in human terms

- Themes:

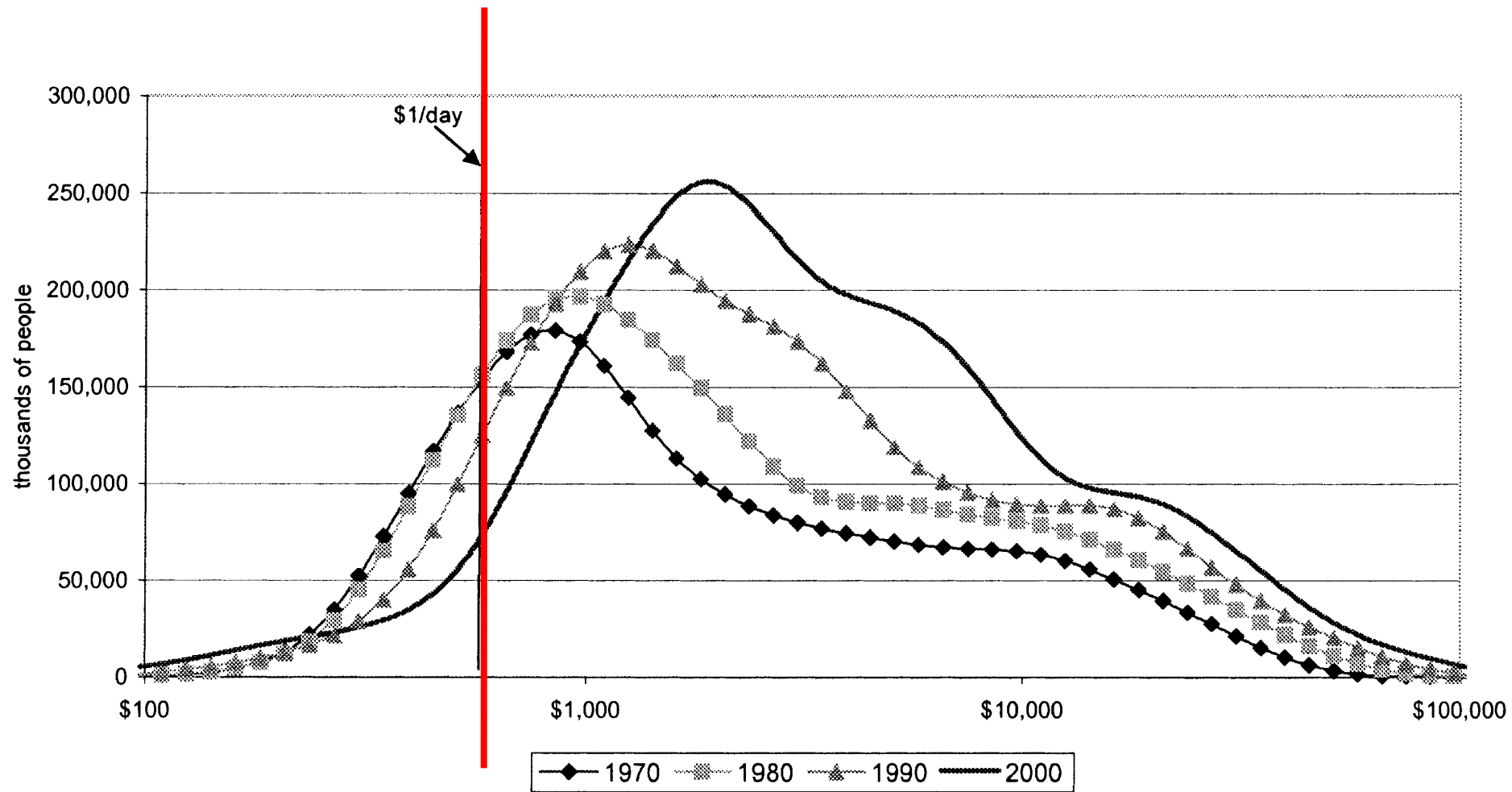
## (2) Development in human terms

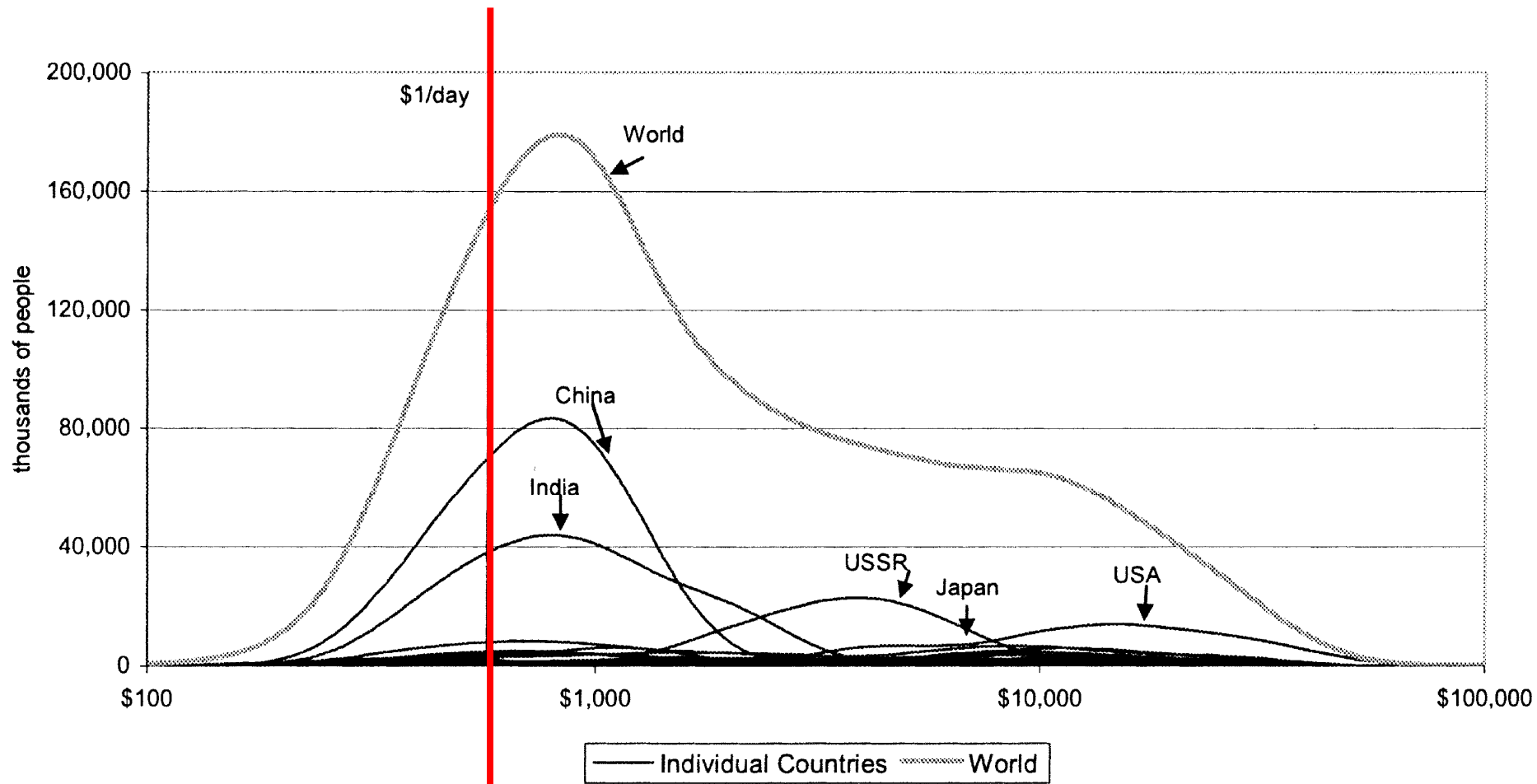
- Themes:
  - Corruption
  - Poverty traps
  - Land/asset ownership inequality
  - Health
  - Efficiency wages
  - Violent political conflict
  - Urban versus rural development
  - Population growth
  - Social (ethnic, religious) divisions
  - Others?

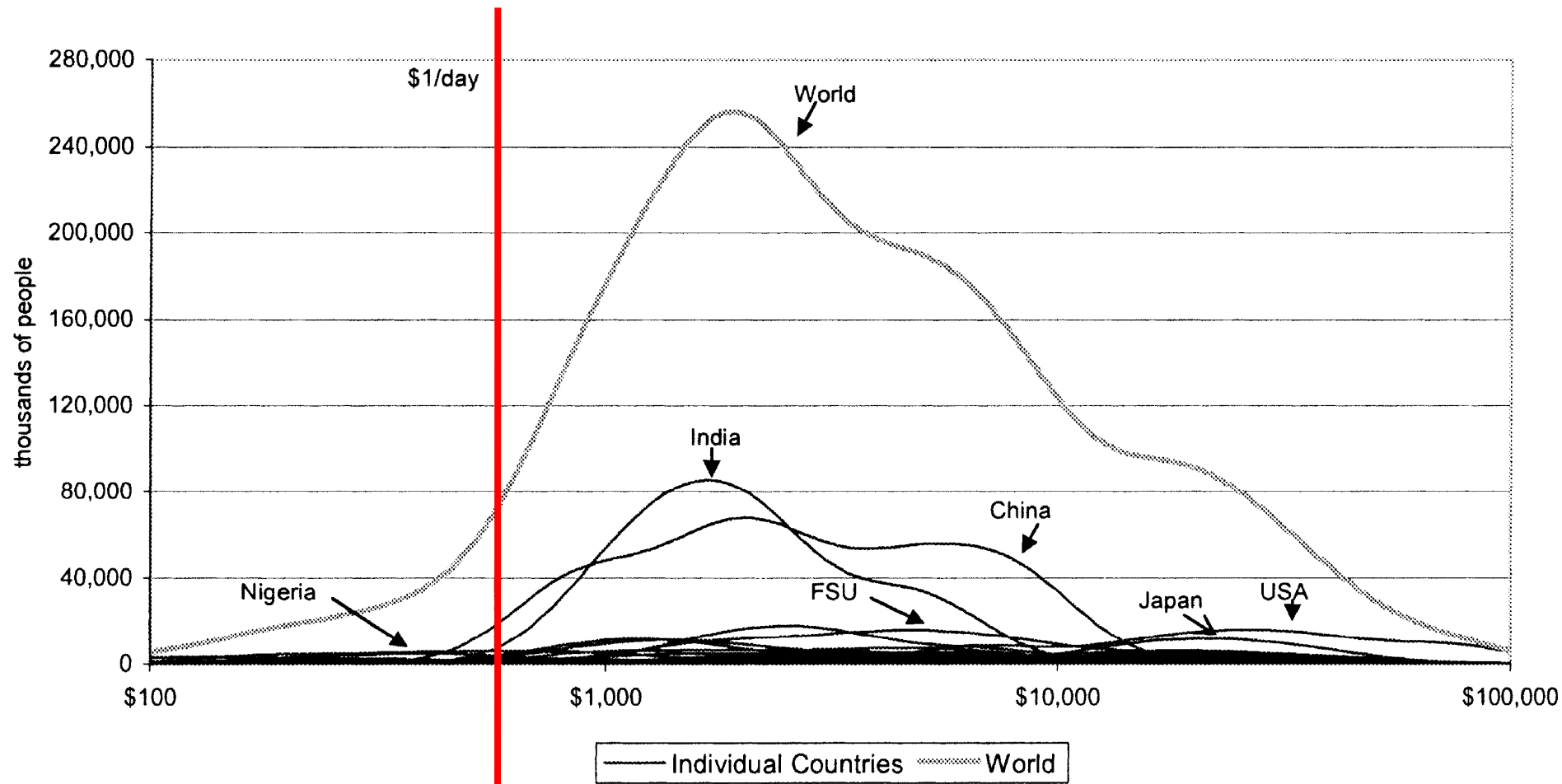
### (3) Global Patterns: Sala-i-Martin (2006, *QJE*)

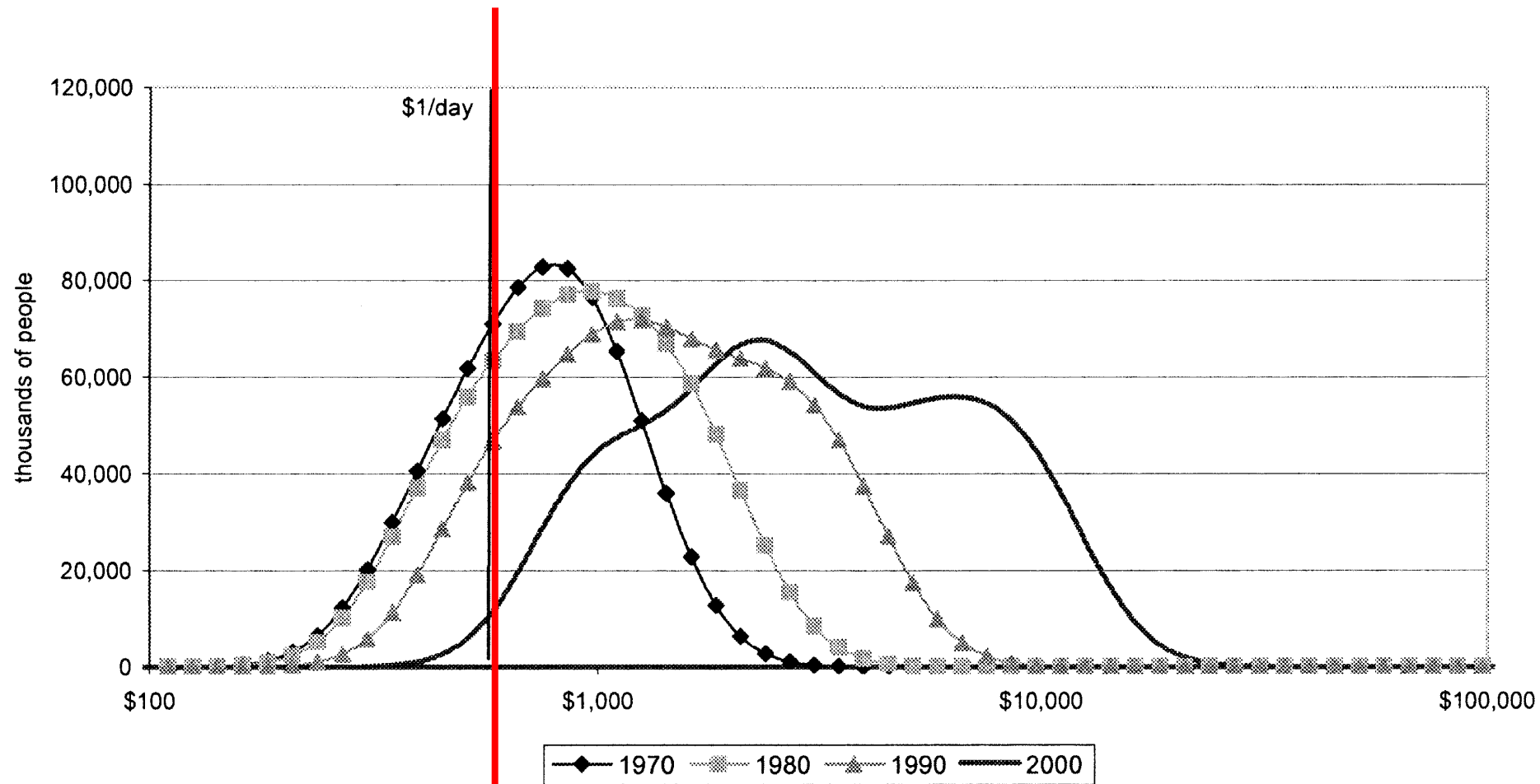
- Characterizes global patterns of economic growth and income inequality during 1970-2000, using a combination of national accounts data (NAS) and household survey data (HHS)
  - NAS data for mean income, HHS for dispersion
  - Weights by country population
- Has there been income convergence or not?
  - This is one of the most controversial and politicized topics in development today. Have recent market liberalizations (especially in Asia and Latin America) reduced poverty?











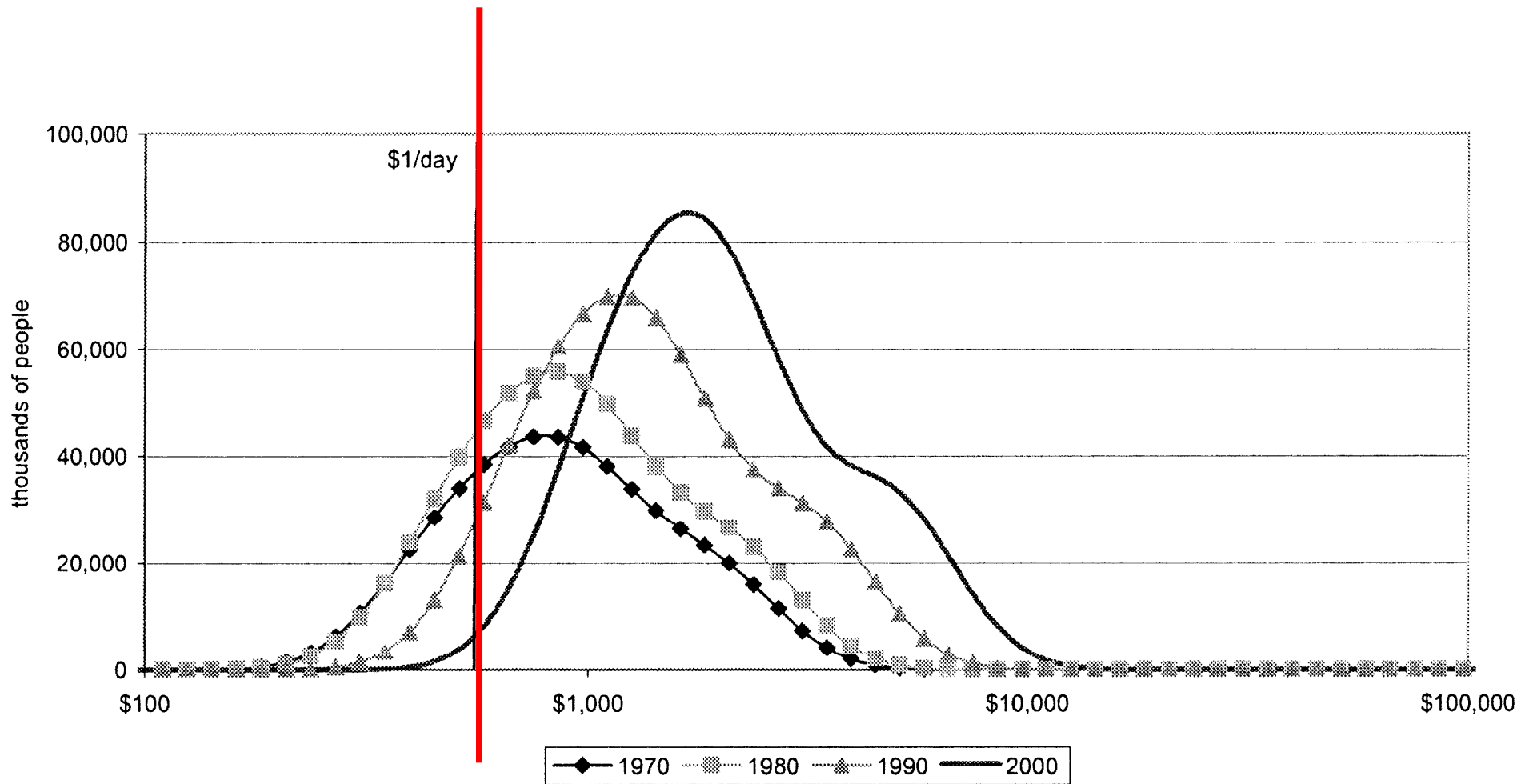


TABLE I  
POVERTY RATES AND HEADCOUNTS FOR VARIOUS POVERTY LINES

Poverty line	Definition	Poverty rates							Change 1970–2000
		1970	1975	1980	1985	1990	1995	2000	
\$495	WB Poverty Line (\$1/Day)	15.4%	14.0%	11.9%	8.8%	7.3%	6.2%	5.7%	–0.097
\$570	\$1.5/Day	20.2%	18.5%	15.9%	12.1%	10.0%	8.0%	7.0%	–0.131
\$730	\$2/Day	29.6%	27.5%	24.2%	19.3%	16.2%	12.6%	10.6%	–0.190
\$1,140	\$3/Day	46.6%	44.2%	40.3%	34.7%	30.7%	25.0%	21.1%	–0.254
		Poverty head counts (thousands)							Change 1970–2000
		1970	1975	1980	1985	1990	1995	2000	
Population		3,472,485	3,830,514	4,175,420	4,539,477	4,938,177	5,305,563	5,660,342	2,187,858
Poverty line	Definition								
	WB Poverty Line (\$1/Day)								
\$495	(\$1/Day)	533,861	536,379	498,032	399,527	362,902	327,943	321,518	–212,343
\$570	\$1.5/Day	699,896	708,825	665,781	548,533	495,221	424,626	398,403	–301,493
\$730	\$2/Day	1,028,532	1,052,761	1,008,789	874,115	798,945	671,069	600,275	–428,257
\$1,140	\$3/Day	1,616,772	1,691,184	1,681,712	1,575,415	1,517,778	1,327,635	1,197,080	–419,691

Poverty Rates are the percentages of citizens with incomes below the corresponding poverty line. Poverty head counts are constructed as the total number of people with incomes lower than the corresponding poverty line. The first poverty line (called WB poverty or 1\$/Day) line is the poverty line originally used by the World Bank and corresponds to \$1.05/Day in 1985 prices. This corresponds to \$495 per year in 1996 prices. The second poverty line is the one used by Bhalla [2002], which increases the WB by 15 percent to adjust for underreporting at the top of the distribution. This corresponds to \$570 per year or, roughly, \$1.5/Day. The third and fourth lines correspond to \$2/Day and \$3/Day in 1996 prices (\$730 and \$1140 per year, respectively).

TABLE II  
POVERTY BY REGION (ORIGINAL WB POVERTY LINE, \$1.5/DAY OR \$570/YEAR)

Poverty Rates	2000 population	1970	1975	1980	1985	1990	1995	2000	Change 1970–2000	Change 1970s	Change 1980s	Change 1990s
World	5,660,040	0.202	0.185	0.159	0.121	0.100	0.080	0.070	–0.132	–0.043	–0.059	–0.030
East Asia	1,704,242	0.327	0.278	0.217	0.130	0.102	0.038	0.024	–0.303	–0.110	–0.115	–0.078
South Asia	1,327,455	0.303	0.297	0.267	0.178	0.103	0.057	0.025	–0.277	–0.036	–0.164	–0.078
Africa	608,221	0.351	0.360	0.372	0.426	0.437	0.505	0.488	0.137	0.020	0.065	0.051
Latin America	499,716	0.103	0.056	0.030	0.036	0.041	0.038	0.042	–0.061	–0.074	0.012	0.001
Eastern Europe	436,373	0.013	0.005	0.004	0.001	0.004	0.010	0.010	–0.003	–0.009	0.001	0.006
MENA	220,026	0.107	0.092	0.036	0.016	0.012	0.007	0.006	–0.102	–0.071	–0.025	–0.006

Poverty Headcounts	2000 population	1970	1975	1980	1985	1990	1995	2000	Change 1970–2000	Change 1970s	Change 1980s	Change 1990s
World	5,660,040	699,896	708,825	665,781	548,533	495,221	424,626	398,403	–301,493	–34,115	–170,560	–96,818
East Asia	1,704,242	350,263	334,266	281,914	182,205	154,973	61,625	41,071	–309,192	–68,349	–126,941	–113,902
South Asia	1,327,455	211,364	234,070	236,366	176,536	113,661	69,582	33,438	–177,926	25,002	–122,705	–80,223
Africa	608,221	93,528	109,491	129,890	172,175	204,364	269,733	296,733	203,205	36,361	74,474	92,369
Latin America	499,716	27,897	17,014	10,195	13,836	17,406	17,379	21,012	–6,885	–17,702	7,211	3,607
Eastern Europe	436,373	4,590	1,991	1,418	369	1,906	4,238	4,402	–188	–3,172	488	2,496
MENA	220,026	11,250	10,954	4,991	2,507	2,101	1,466	1,264	–9,986	–6,259	–2,890	–837



TABLE IV  
DECOMPOSITION OF WORLD INCOME INEQUALITY

Year	Mean log deviation					Theil Index				
	Global	Across	% Across	Within	% Within	Global	Across	% Across	Within	% Within
1970	0.861	0.616	71.5%	0.246	28.5%	0.812	0.557	68.6%	0.255	31.4%
2000	0.820	0.501	61.1%	0.319	38.9%	0.783	0.499	63.8%	0.284	36.2%
Change	-0.041	-0.114	-0.104	0.073	0.104	-0.030	-0.058	-0.048	0.029	0.048



	Human development index (HDI) value	Life expectancy at birth (years)	Adult literacy rate (% ages 15 and above)	Combined gross enrolment ratio for primary, secondary and tertiary schools (%)	GDP per capita (PPP US\$)
HDI rank <sup>a</sup>	2003	2003	2003 <sup>b</sup>	2002/03 <sup>c</sup>	2003
Developing countries	0.694	65.0	76.6	63	4,359
Least developed countries	0.518	52.2	54.2	45	1,328
Arab States	0.679	67.0	64.1	62	5,685
East Asia and the Pacific	0.768	70.5	90.4	69	5,100
Latin America and the Caribbean	0.797	71.9	89.6	81	7,404
South Asia	0.628	63.4	58.9	56	2,897
Sub-Saharan Africa	0.515	46.1	61.3	50	1,856
Central and Eastern Europe and the CIS	0.802	68.1	99.2	83	7,939
OECD	0.892	77.7	..	89	25,915
High-income OECD	0.911	78.9	..	95	30,181

HDI rank	GDP		GDP per capita		Annual growth rate	
	US\$ billions	PPP US\$ billions	US\$	PPP US\$	(%)	
	2003	2003	2003	2003	1975–2003	1990–2003
Developing countries	6,981.9 T	21,525.4 T	1,414	4,359	2.3	2.9
Least developed countries	221.4 T	895.1 T	329	1,328	0.7	2.0
Arab States	773.4 T	1,683.6 T	2,611	5,685	0.2	1.0
East Asia and the Pacific	2,893.6 T	9,762.2 T	1,512	5,100	6.0	5.6
Latin America and the Caribbean	1,745.9 T	3,947.0 T	3,275	7,404	0.6	1.1
South Asia	902.2 T	4,235.9 T	617	2,897	2.6	3.5
Sub-Saharan Africa	418.5 T	1,227.4 T	633	1,856	−0.7	0.1
Central and Eastern Europe and the CIS	1,189.9 T	3,203.5 T	2,949	7,939	..	0.3
OECD	29,650.5 T	29,840.6 T	25,750	25,915	2.0	1.8
High-income OECD	28,369.5 T	27,601.9 T	31,020	30,181	2.2	1.9

Our analysis shows that, after having stagnated during the 1970s, global income inequality started a two-decade-long process of decline. This change in trend is surprising because, according to Bourguignon and Morrison [2002], world income inequality had continuously increased over the last century and a half. What caused this reversal? The answer is the growth rate of some of the largest yet poorest countries in the planet: China, India, and the rest of Asia. We could say that in 1820 the whole world was poor. Equal and poor. Slowly, the incomes of the one billion citizens (in population size of 2000) of what is today the OECD grew and diverged away from the incomes of the five billion people of the developing world. The dramatic growth rates of China, India, and the rest of the Asian countries from the 1970s meant that the incomes of three to four billion people started to converge to those of the OECD. This reduced worldwide income inequality for the first time in centuries because it more than offset the divergent incomes of 608 million Africans. The problem now is, therefore, that unless the incomes of these African citizens start growing fast, world income inequality will start rising again.

## (4) Mankiw, Romer, Weil (1992, *QJE*)

- An early and influential exposition of economic growth empirics, using cross-country data
- They take the neo-classical growth model – with its assumption of constant technological progress  $A$  (which can be interpreted broadly) – to the data, and assess the extent to which capital accumulation can explain recent economic growth patterns across countries. Technological progress is treated as a residual

## (4) Mankiw, Romer, Weil (1992, *QJE*)

- How biased are cross-country regression estimates?
  - Is it reasonable to assume that country *A* is uncorrelated with physical, human capital investment?
  - Endogeneity is a problem: are human and physical capital investment exogenous to growth in reality?
- How reliable is the cross-country data? Deaton 2005
- How robust are the estimated cross-country relationships? Levine and Renelt 1992

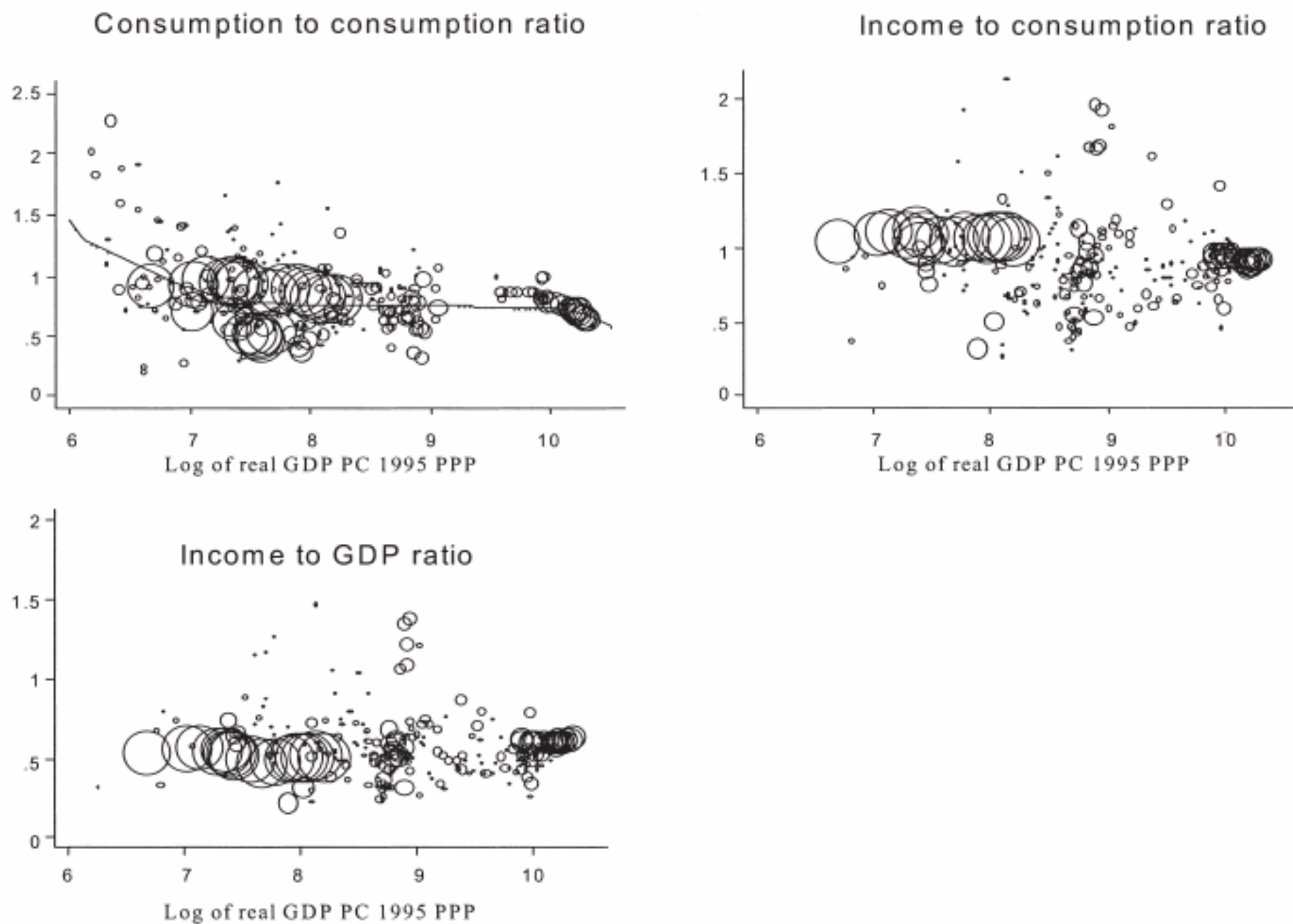
## (4) Deaton (2005, *REStat*)

- National accounts system (NAS) data and household survey (HHS) data have yielded very different estimates regarding global income trends. Which is correct?
  - Sala-i-Martin 2006 combines both data sources, using them for different parameters (means, dispersion)
- This has major implications for our understanding of the impact of economic reforms in China and India
- Studying these measures also sheds light on data quality across regions

TABLE 2.—RATIOS OF SURVEY MEANS TO MEANS FROM NATIONAL I

		Unweighted		
	No. of Surveys	Mean Ratio	Standard Error	Standard Deviation
<i>Consumption to Consumption</i>				
All	277	0.860	(0.029)	0.306
EAP	42	0.819	(0.069)	0.224
EECA	59	0.847	(0.038)	0.230
LAC	26	0.767	(0.094)	0.329
MENA	20	0.955	(0.104)	0.300
OECD	33	0.781	(0.052)	0.097
SA	23	0.649	(0.063)	0.122
SSA	74	1.000	(0.061)	0.415

FIGURE 1.—RATIO OF SURVEY ESTIMATES OF MEAN INCOME OR CONSUMPTION PER CAPITA TO COMPARABLE NATIONAL ACCOUNTS ESTIMATES





There are two points to take away from these figures. First, the top left panels in both figures show a negative relationship between the ratio of survey to national accounts consumption on the one hand, and the GDP per capita on the other. This relationship is steepest among the poorest countries, is flatter in middle income countries, but resumes its downward slope among the rich countries. The continuous lines in the two top left graphs are locally weighted non-parametric regressions of the relationship using a bandwidth of 1.5 (units of real log GDP in PPP). Second, there is no similar relationship among the income surveys, either for the ratio of survey income to national accounts consumption, or for the ratio of survey income to GDP. At least some of the pattern in figure 1 must come from the fact that consumption is typically much easier to measure in surveys than is income in poor countries, where many people are self-employed in agriculture, whereas the opposite is true in rich countries, where most people are wage earners and are more reluctant to cooperate with time-consuming consumption surveys.

TABLE 3.—POPULATION-WEIGHTED GROWTH RATES, 1990–2000: REAL CONSUMPTION OR REAL INCOME, VARIOUS MEASURES, NON-OECD COUNTRIES

	Growth Rate (%/yr)			
	Surveys with Consumption Preference	Surveys with Income Preference	PWT6.1, Matching Surveys by Year and Country	PWT6.1, all Survey Countries
Regression of log on time	1.9	4.0	3.8	2.8
Average rate of growth	2.3	5.0	4.5	2.8

Notes: Columns 1 and 2 show the growth rates of population-weighted survey means. In column 1, whenever there is both an income and a consumption mean for a country year pair, consumption is used. In column 2, whenever there are two surveys, preference is given to income. In both cases, survey means are converted to a constant-price PPP basis by dividing by the product of the U.S. CPI and the consumption PPP exchange rate from the Penn World Tables, Version 6.1 (PWT6.1). For each year from 1990 to 2000, a population-weighted average of the survey means is calculated: note that these averages involve different countries in different years (see table 1). The growth rates are then calculated in two ways, by regression of the logarithm on a time trend (first row) and by calculating the average change in the logarithm over the period. These can be quite different when the series is noisy, as is the case here, because countries come in and out of the average. Columns 3 and 4 show comparable population-weighted growth rates for real PPP (chain-weighted) consumption from PWT6.1. In column 3, consumption from PWT6.1 is used only for country year pairs for which a survey mean exists; this column therefore shares the variability in columns 2 and 3 that comes from the varying selection of countries. Column 4 shows the population-weighted growth rates for consumption from PWT6.1 using all countries for which there ever exists a survey.

FIGURE 3.—LOGARITHMS OF POPULATION-WEIGHTED AVERAGES OF CONSUMPTION OR INCOME

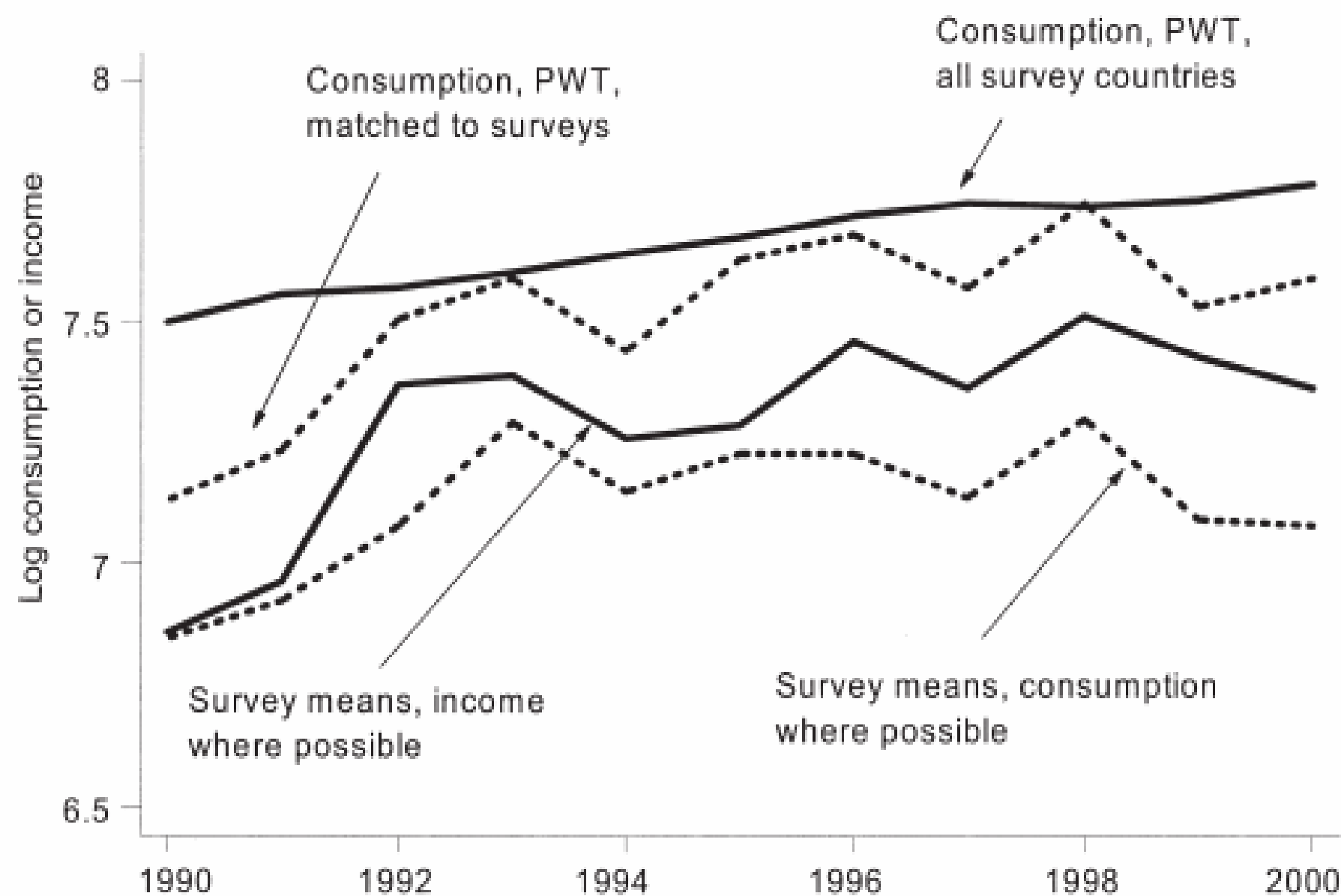


FIGURE 4.—RATIOS OF SURVEY MEANS TO NATIONAL ACCOUNTS MEANS OF CONSUMPTION AND/OR INCOME PER HEAD, INDIA AND CHINA

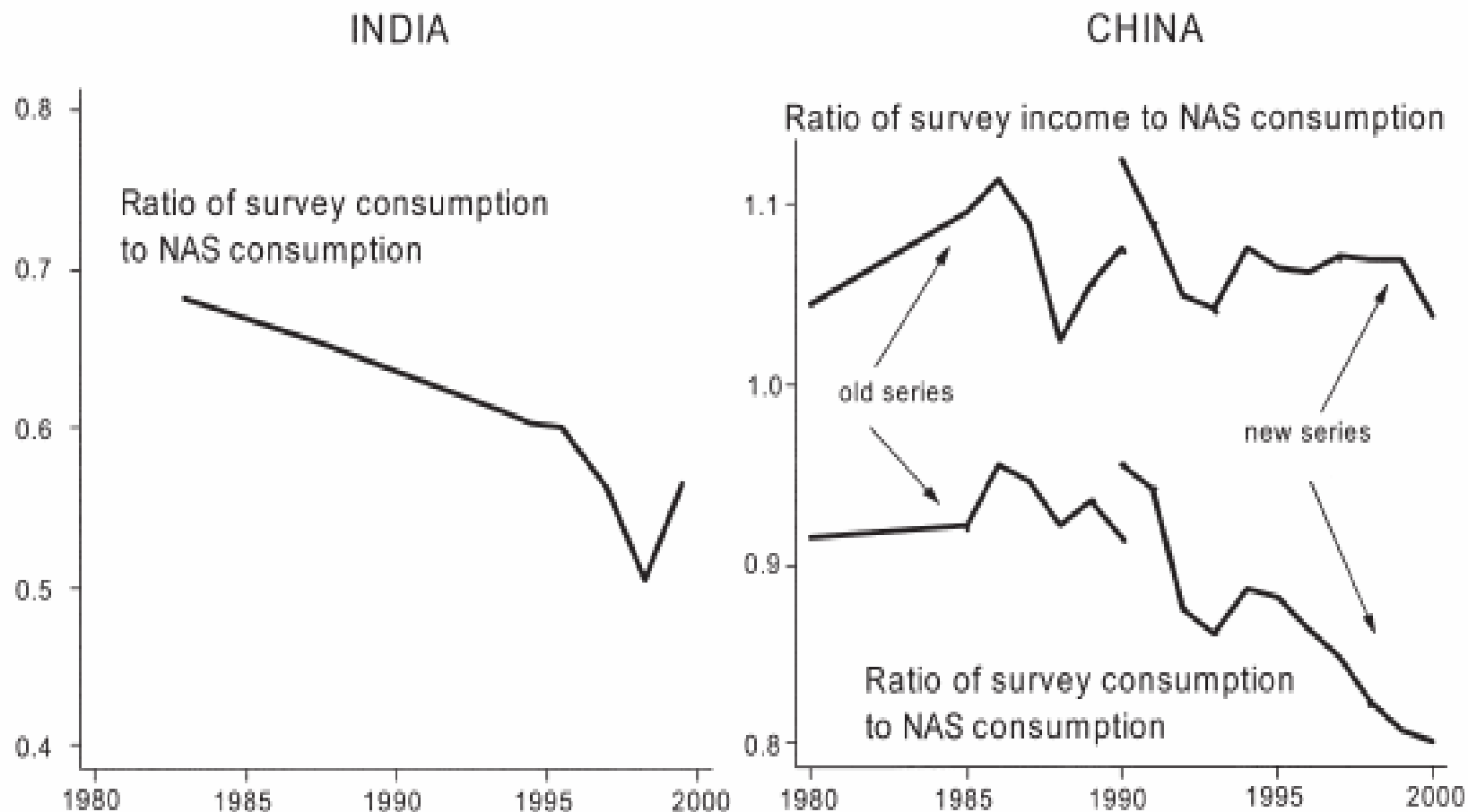
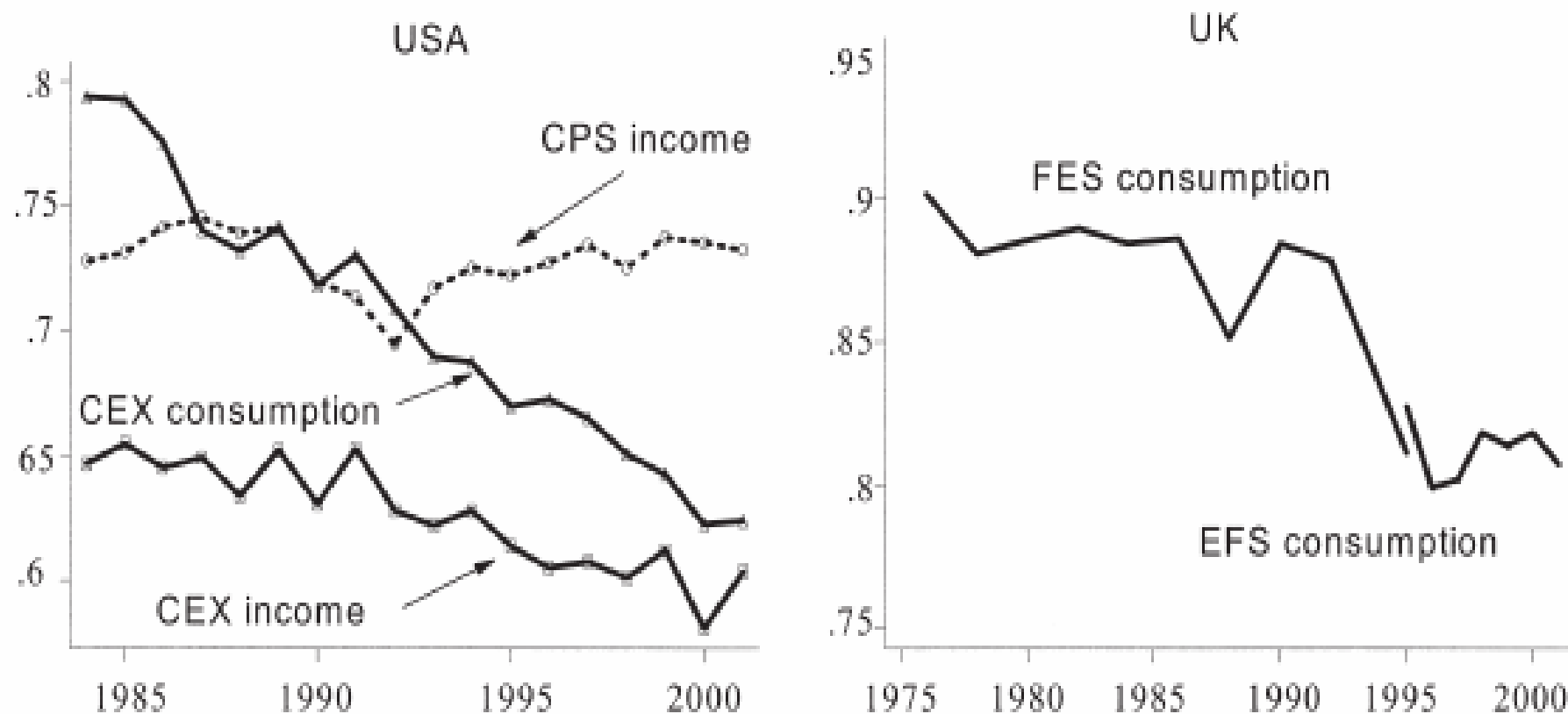


FIGURE 5.—RATIOS OF SURVEY MEANS TO NATIONAL ACCOUNTS MEANS OF CONSUMPTION AND/OR INCOME PER HEAD:  
UNITED STATES AND UNITED KINGDOM



# Deaton (2005, *REStat*)

- Weaknesses of household survey (HHS) data:
  - 1) Survey non-response / non-compliance / coverage
  - 2) Surveys often (but not always) fail to include the rental value of owner-occupied housing
  - 3) Recall periods (i.e., 1 week vs. 1 month) have a major impact on reported consumption levels
  - 4) The disaggregation of survey items has an impact
  - 5) The identity of the survey respondent matters
  - 6) NGO / non-profit related consumption activities are typically missed in HH surveys but captured (at least in theory) in NSA measures

# Deaton (2005, *REStat*)

- Weaknesses of national accounts system (NAS) data:
  - 1) Illegal / regulated activities (e.g., smuggling) may be systematically missed in the national accounts data
  - 2) The construction of NAS data often uses outdated and poorly measured official statistics, input-output tables, and estimated crop yields
  - 3) Household / informal sector production is missed in national accounts

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Do NAS / HHS provide upper / lower bounds on growth?

Does Sala-i-Martin overstate global poverty reduction?



## (4) Levine and Renelt (1992, *AER*)

- Levine and Renelt examine a regression of the form:

$$Y = a + B_I I + B_M M + B_Z Z + u$$

where  $Y$  is per capita income growth,  $I$  is the vector of standard variables (as in MRW 1992),  $M$  the variable being tested for robustness, and  $Z$  are other controls

- How robust to the addition of other controls is  $B_M$ ?
- The bottom line: nearly all variables (in terms of fiscal, monetary, and trade policy, and political variables) are fragile to the addition of other controls, except for some investment and initial income measures

# Whiteboard #1

# Whiteboard #2

# Whiteboard #3

# Whiteboard #4

# Whiteboard #5

