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Measuring the Global Distribution of Wealth

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Collaborators

Susanna Sandström, Tony Shorrocks, Ed Wolff

- “The world distribution of household wealth” in J.B. Davies (ed.) *Personal Wealth from a Global Perspective* (OUP, 2008)
- “The level and distribution of global household wealth”, *Economic Journal*, March 2011

Tony Shorrocks, Rodrigo Lluberas, Michael O’Sullivan, Giles Keating

- Credit Suisse Global Wealth Report 2010, 2011
- Credit Suisse Global Wealth Databook 2010, 2011

Objective

To measure the world distribution of *household wealth* across individuals, countries and regions

- wealth = **real assets + financial assets – debts**
- wealth level results for years **2000 – 2012**
- global distribution pattern for **2000, 2010 - 2012**
- compared across countries using **official exchange rates**
- comparisons for **adult** population

Some details regarding methods

(1) **adult population**

(2) **average wealth level:** based on

- Complete household balance sheets and wealth survey data (covering 20 countries, 53% of world pop., 83% of world wealth)
- Financial balance sheets for 31 countries
- extended by regression methods; total of 150 countries
- region-income class averages imputed to 16 countries

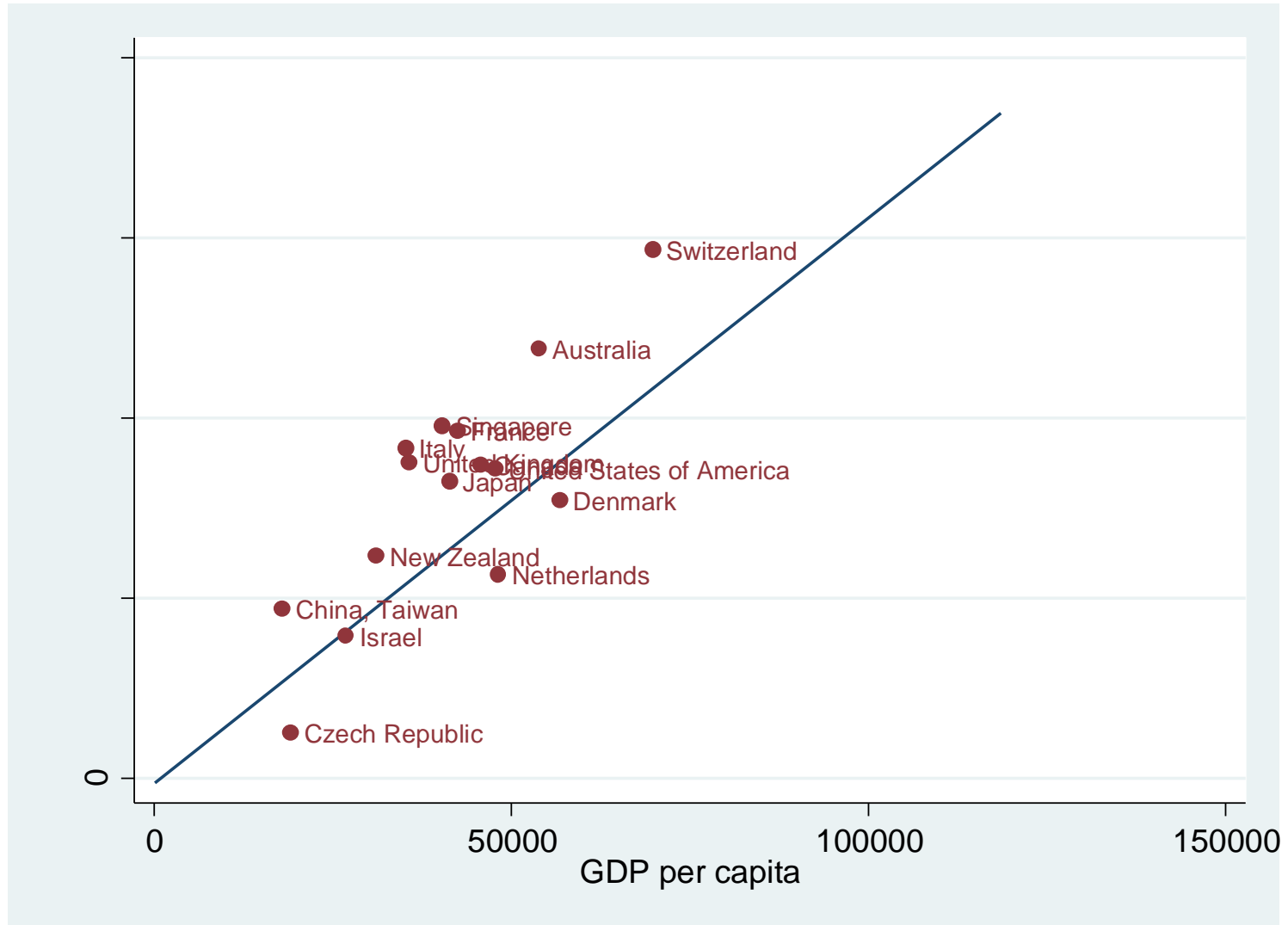
(3) **distribution of wealth:** based on

- distribution data for 20 countries
- wealth dist estimated from income distribution for most other countries
- region-income class averages imputed to remaining countries

Estimating Wealth *Levels*

- Household Balance Sheet Data - - 17 countries complete, 31 with financial data only
 - Est'd by national statistical organizations, central banks, ministries of finance, using multiple sources
 - Counterparty data for most financial assets
 - Surveys, perpetual inventories for non-financial
- Household Survey Data - - 3 countries
 - Used when HBS data unavailable
 - Financial Assets adjusted, based on regressions

Wealth vs. GDP per capita, 2010

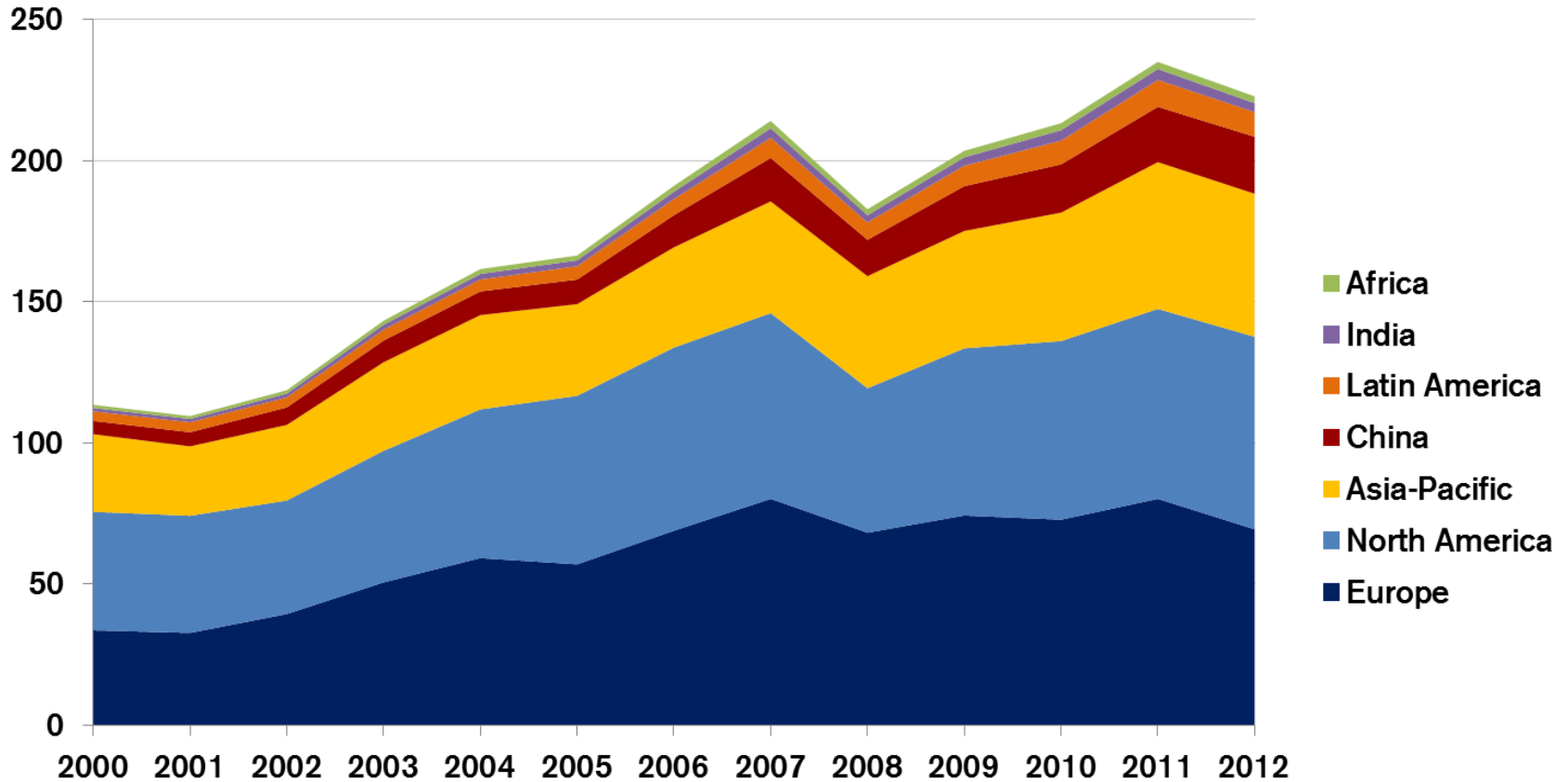


Log Financial Assets Per Capita regression (SUR) with year and region dummies, 2000-2008

Variable	Coefficient	Standard Error
Log Consumption per capita	1.2157	.0861
GDP per capita growth rate	-0.0122	.0031
Log Market Capitalization Rate	0.1168	.0357
% Urban Population	.0088	.0023
Survey Dummy	-2.6763	.3581
“R2” = .9369 329 Observations		

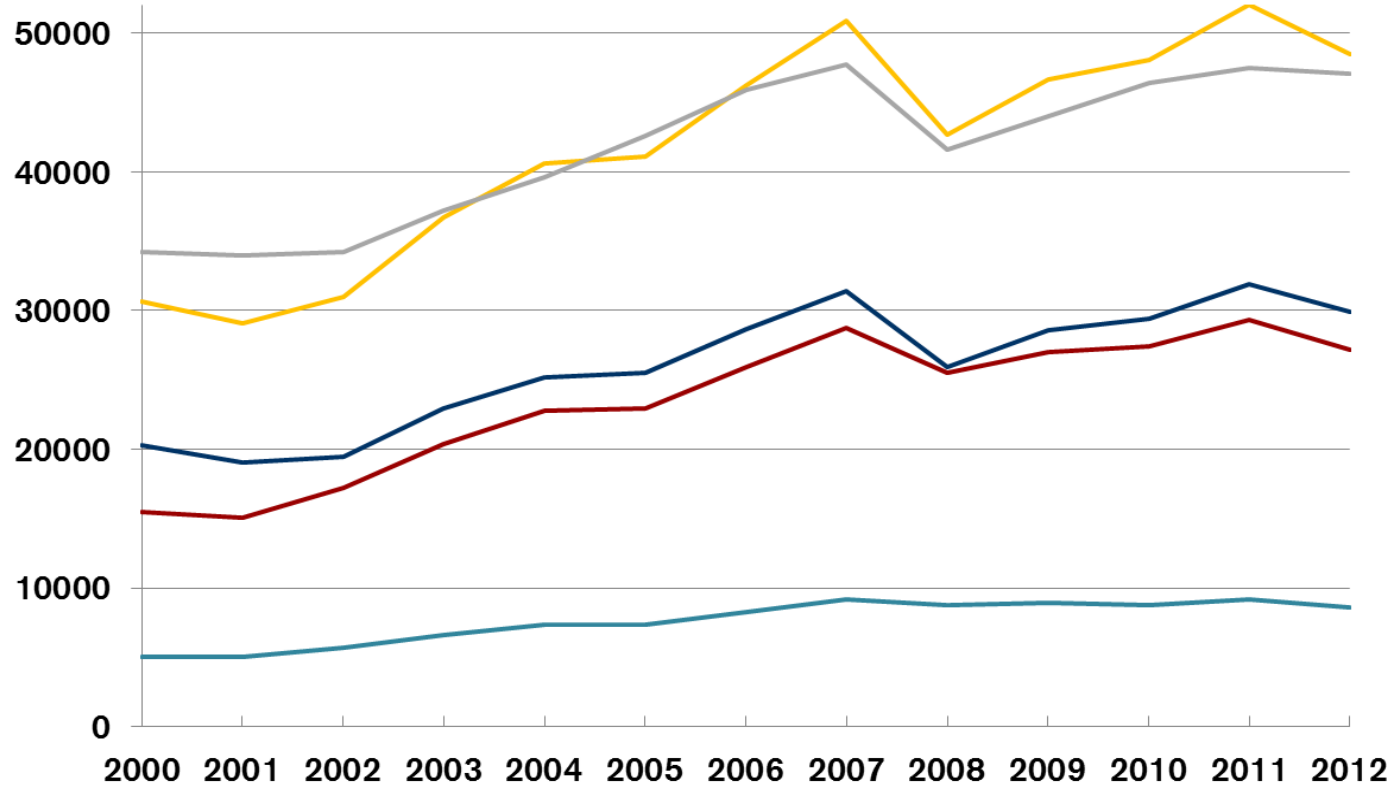
Aggregate Global Wealth, 2000-2012

trillion USD



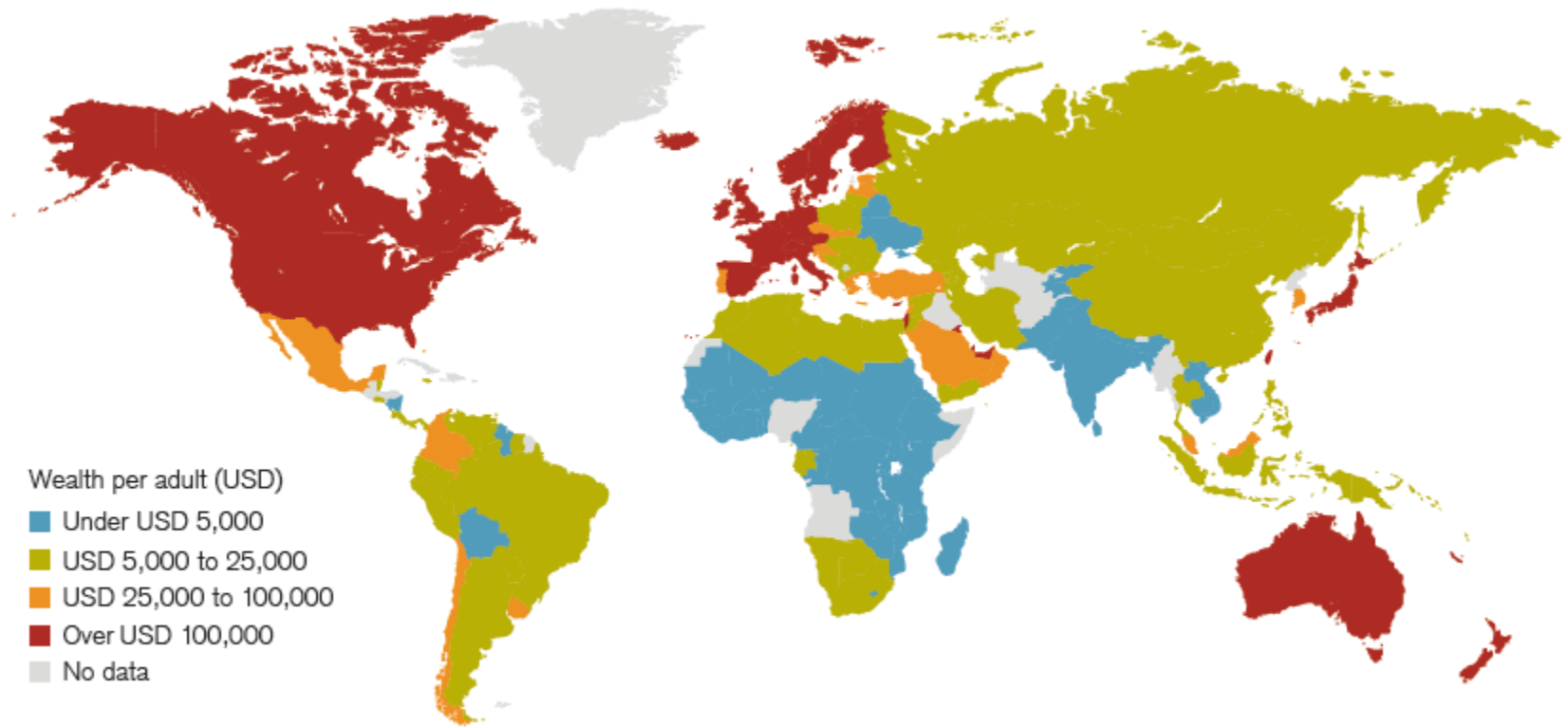
Global trends in wealth per adult, 2000-2012

USD per adult



— net worth — net worth at constant exchange rates — financial wealth — non-financial wealth — debt

World wealth levels, 2012



Wealth levels across Countries

Global household wealth using official exchange rates

2000	\$ 30,672	
2010	\$ 47,720	
2011	\$ 51,078	

Average wealth per adult	end 2010	mid 2011
Switzerland	\$ 420,000	\$ 540,000
USA	\$ 247,000	\$ 248,000
Japan	\$ 215,000	\$ 249,000
China	\$ 18,000	\$ 21,000
Indonesia	\$ 11,000	\$12,000
India	\$ 5,100	\$ 5,500

Differences in wealth and in financial development

- Bottom 80% of countries by GDP in 2011:
 - Wealth/GDP: 1.95
 - Financial/Non-Financial Assets: 0.67
- Top 20% of countries by GDP in 2011:
 - Wealth/GDP: 4.04
 - Financial/Non-Financial Assets: 1.27

Wealth distribution data

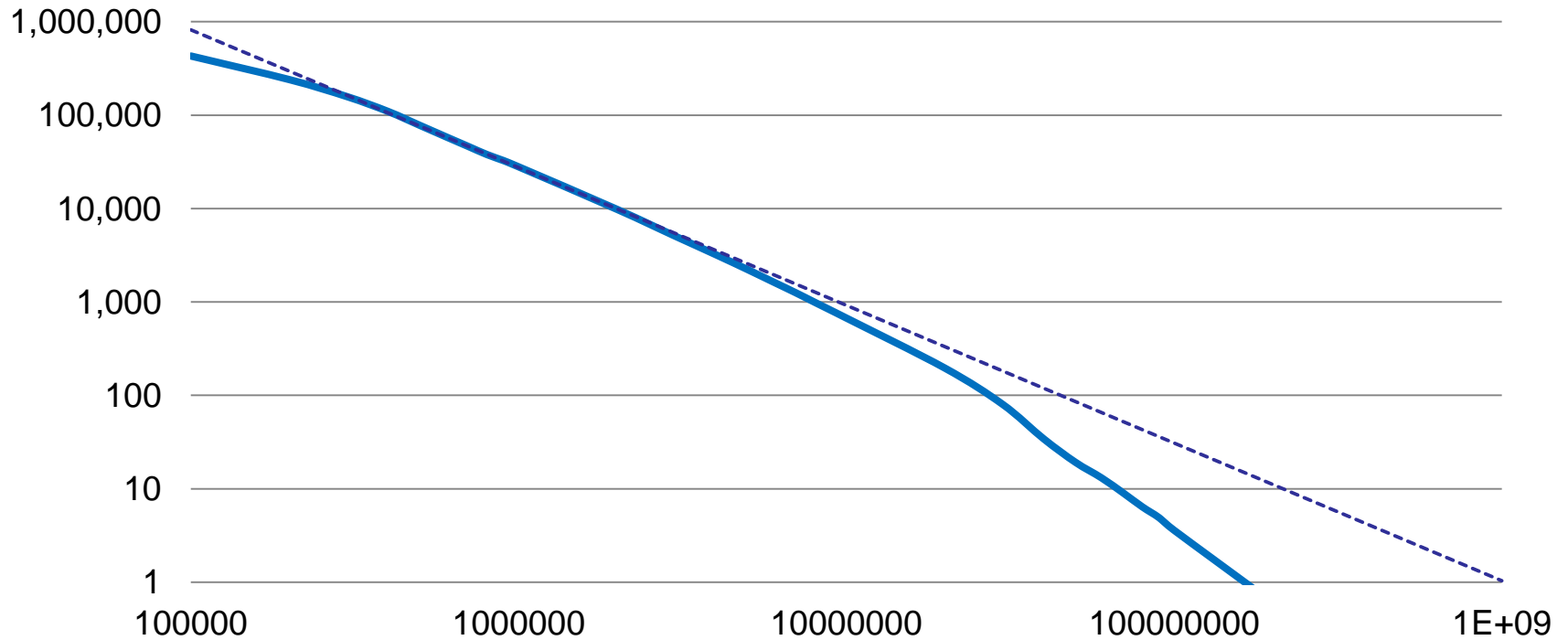
Country	Year Unit	Share of top								
		25%	20%	10%	5%	2%	1%	0.50%	0.10%	
Australia	2006 household		61.2							
Canada	2005 family		69	50.4	35.8		15.5			
Chile	2007 household		65.5	44						
China	2002 person		59.3	41.4						
Denmark	1996 family		98.7	76.4	56		28.8	22.3	11.7	
France	2010 adult			62			24			
Germany	2003 household		67.4	46.7						
India	2002-3 household		69.9	52.9	38.3		15.7			
Indonesia	1997 household		78.9	65.4	56		28.7			
Italy	2008 household		59.4	42.3	29.6		12.2			
Japan	1999 household		57.7	39.3						
Korea,	1988 household		60.1	43.1	31		14			
Netherlands	2008 household		78.5	62.7						
New Zealand	2001 tax unit		67	48						
Norway	2004 household		80.1	65.3						
Spain	2005 household	64.2		41.6						
Sweden	2007 adult			67	49		24			
Switzerland	1997 family			71.3	58		34.8	27.6	16	
Thailand	2006 household		69.5							
UK	2005 household		62.8	44.3	30.5		12.5			
USA	2007 family		83.4	71.5	60.4		33.8			

Estimating *shape* of wealth distributions

- published wealth (and income) dist data for 20 countries
- impute missing quantile shares using “ungrouping” program
- compare wealth to income shares
- estimate wealth dist from income dist data for 143 countries
- generate synthetic wealth samples for each country
 - 1 observation per 10,000 adults bottom 90%
 - 1 observation per 1,000 adults top 10%
 - 1 observation per 100 adults top 1%
- scale up wealth values to match average wealth
- adjust top tail to match number of Forbes billionaires by country

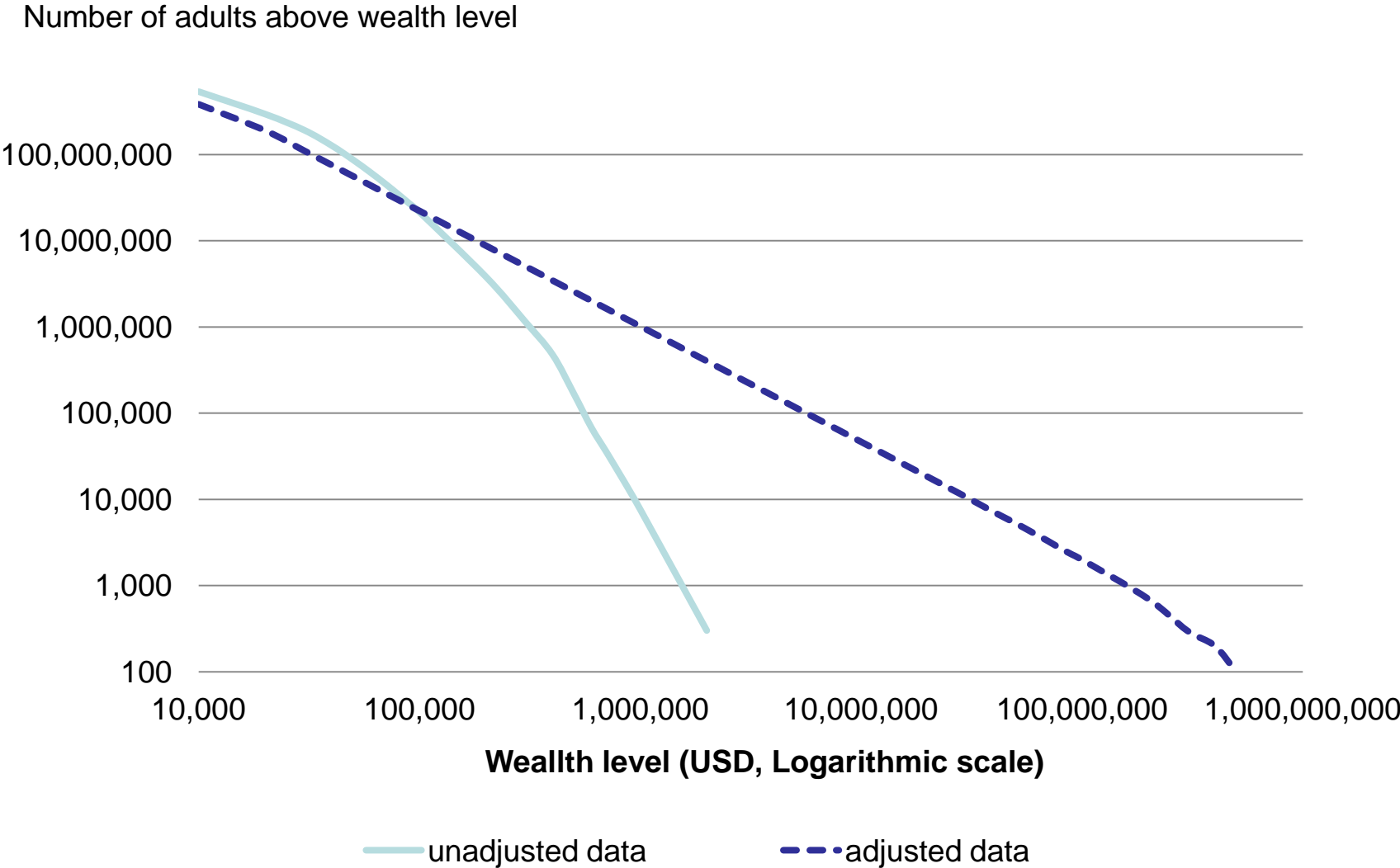
Pareto Top Tail

Thousands of adults above wealth level
(logarithmic scale)



— Unadjusted wealth estimates - - - Fitted Pareto

Unadjusted and adjusted wealth values for China



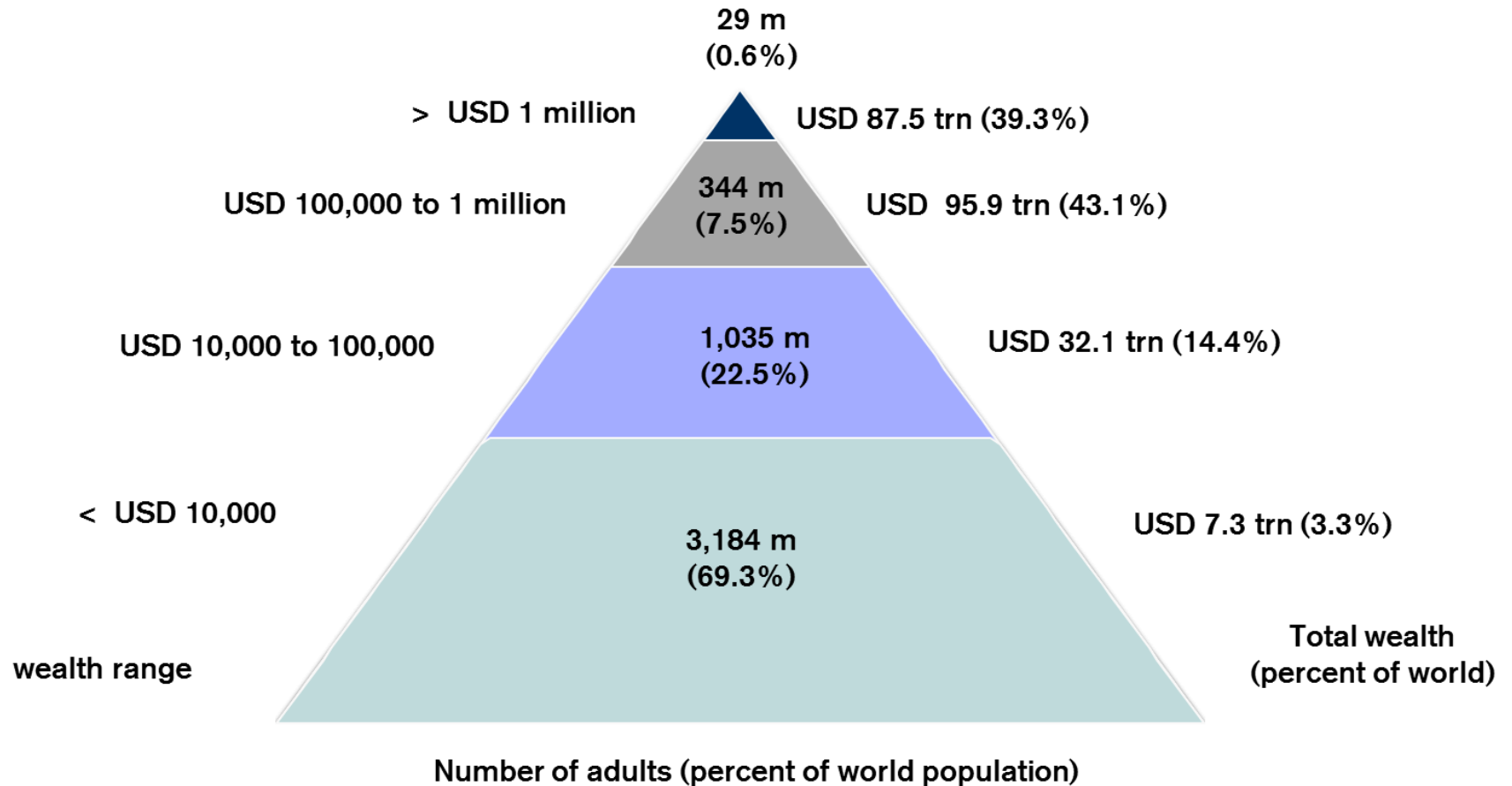
Wealth inequality is very high, in 2011...

- share of the top 10% around
 - 60% in China, 71% in US, higher in some other countries
- even higher for world as a whole
 - richest 2% of adults own more than half global wealth
 - global wealth Gini for adults is 0.893
 - most global inequality is *between country* inequality
- wealth more unequally distributed than income *across countries*
 - high income countries have bigger share of wealth than GDP
 - reverse is true of middle- and low-income nations
 - some exceptions in Nordic and Eastern Europe transition countries

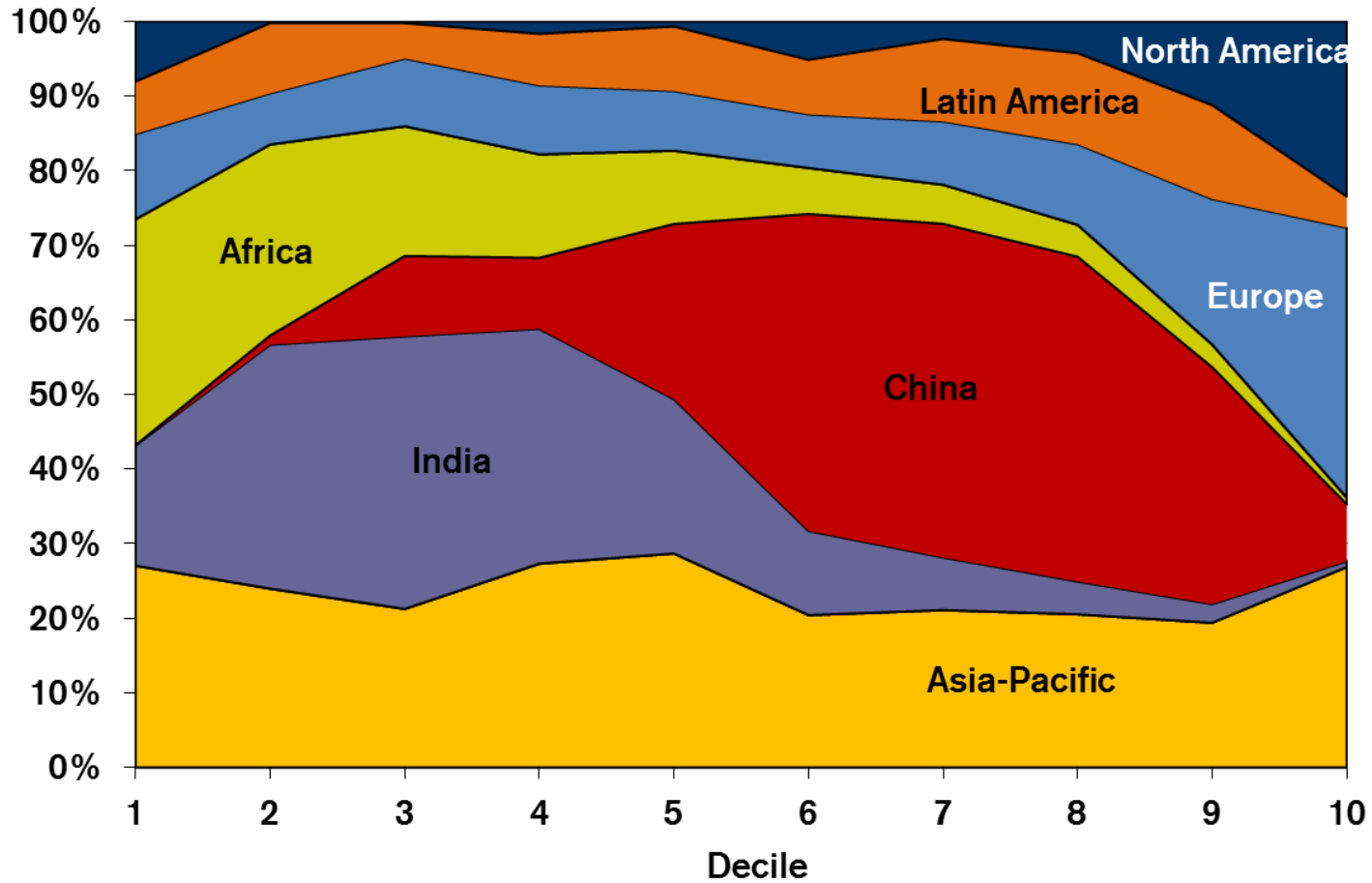
Global wealth distribution 2011, adults

Decile	Share (%)	Decile	Share (%)
1	-0.2	8	3.2
2	0.1	9	8.7
3	0.2	10	84.3
4	0.4	Top 5%	71.6
5	0.6	Top 1%	44.2
6	1.0	Gini	0.893
7	1.7	Mean	\$51,078

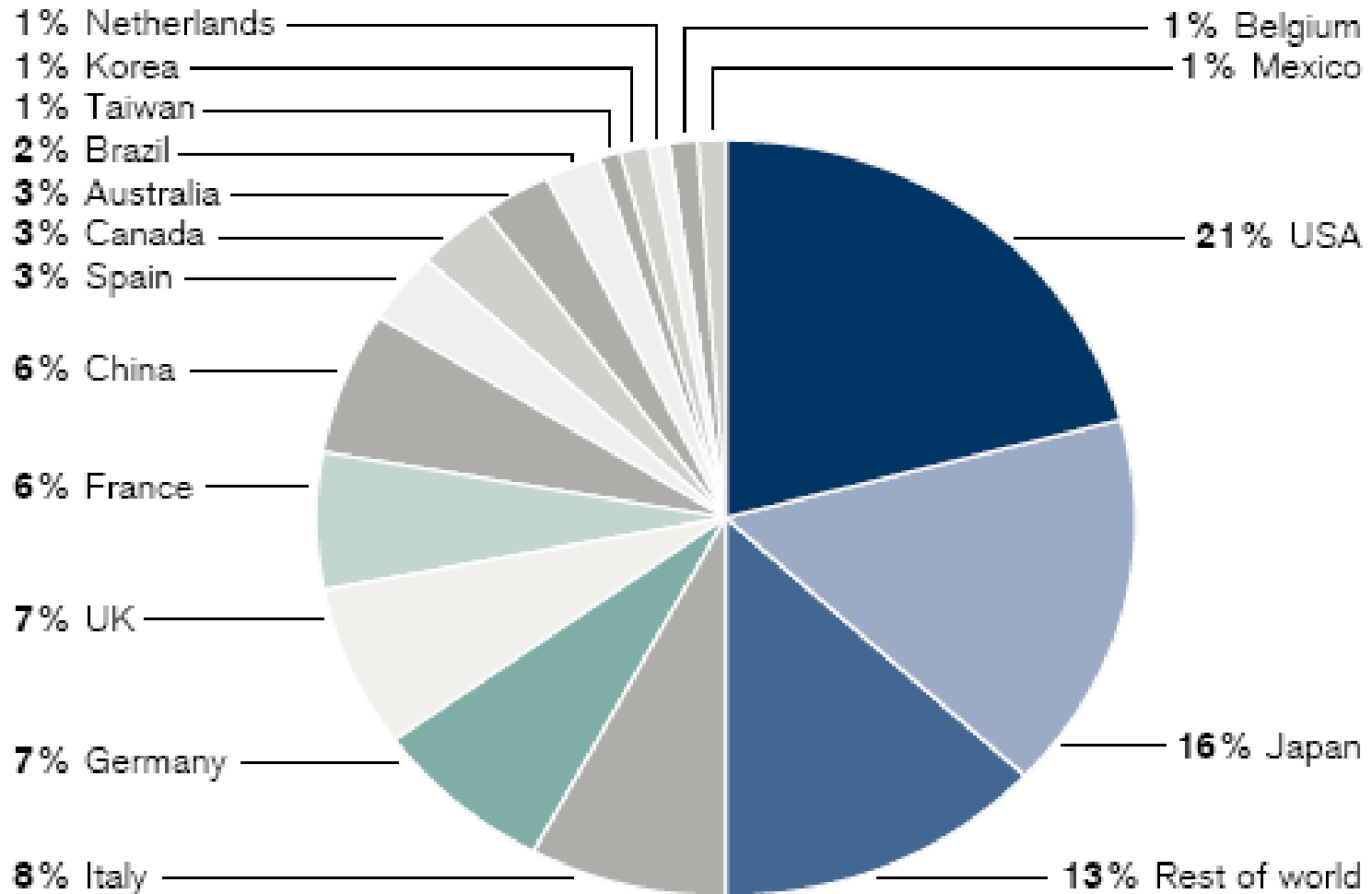
The global wealth pyramid, 2012



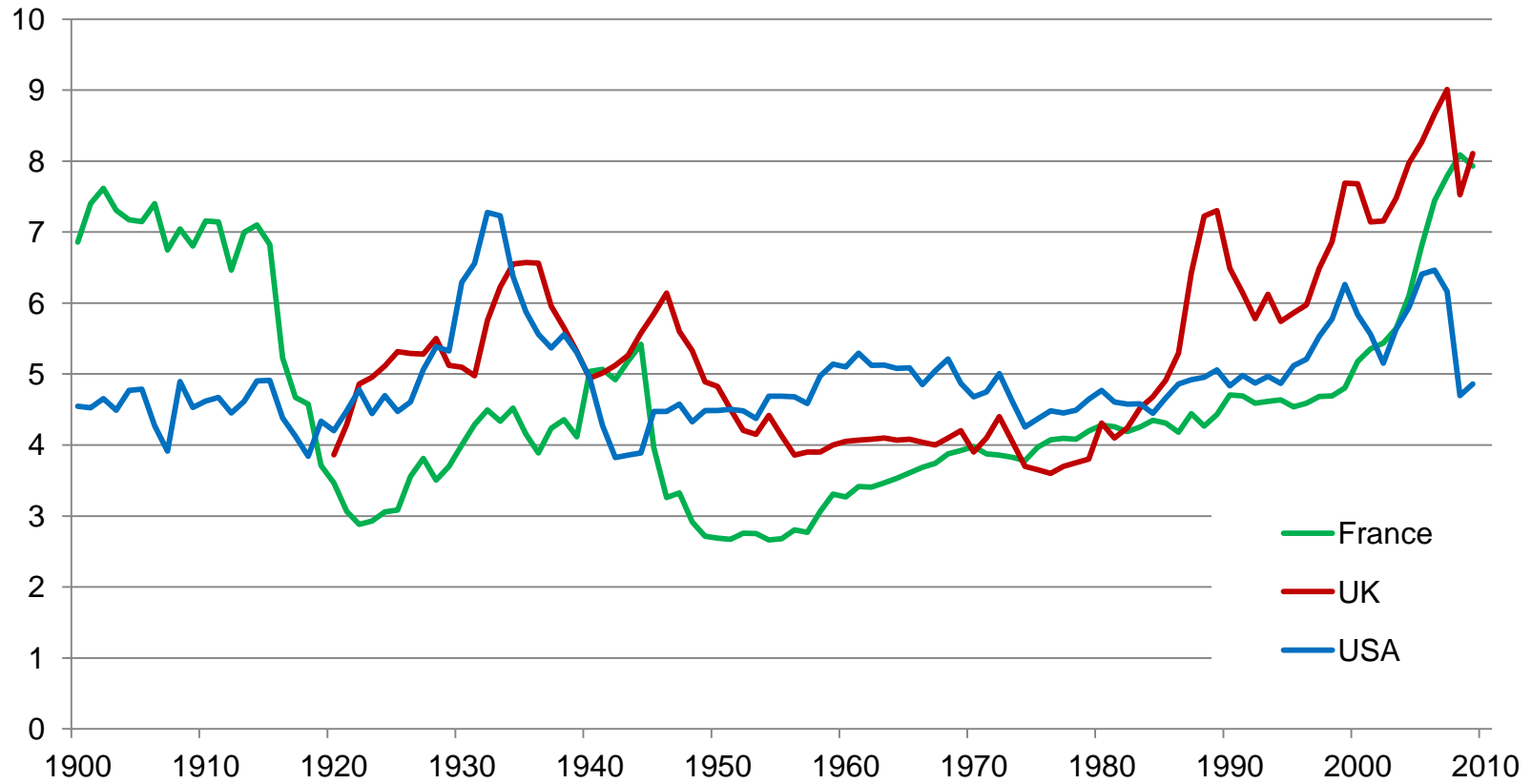
Regional composition of global wealth distribution, 2012



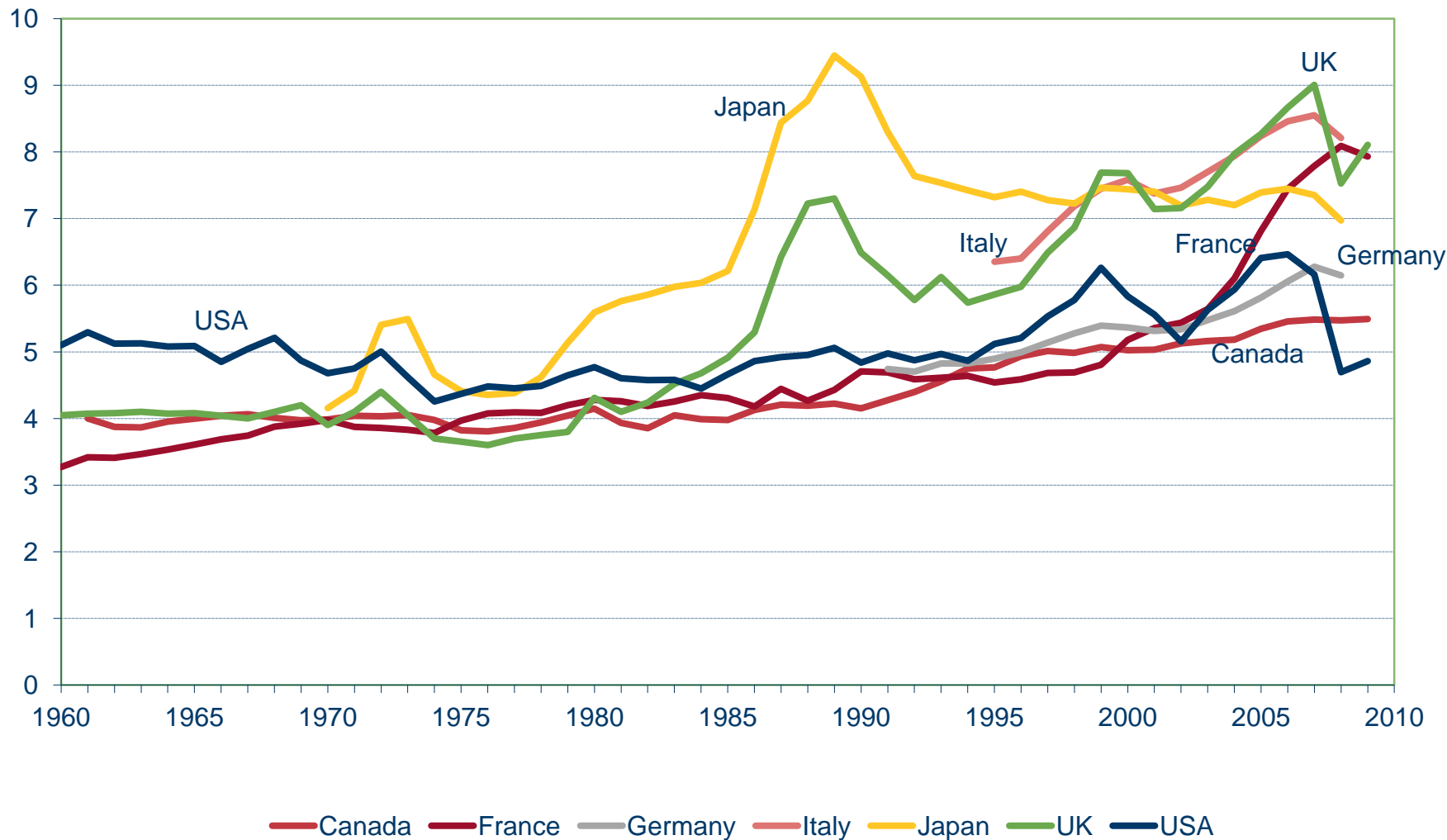
Owners of wealth above USD 100,000 by country, 2011



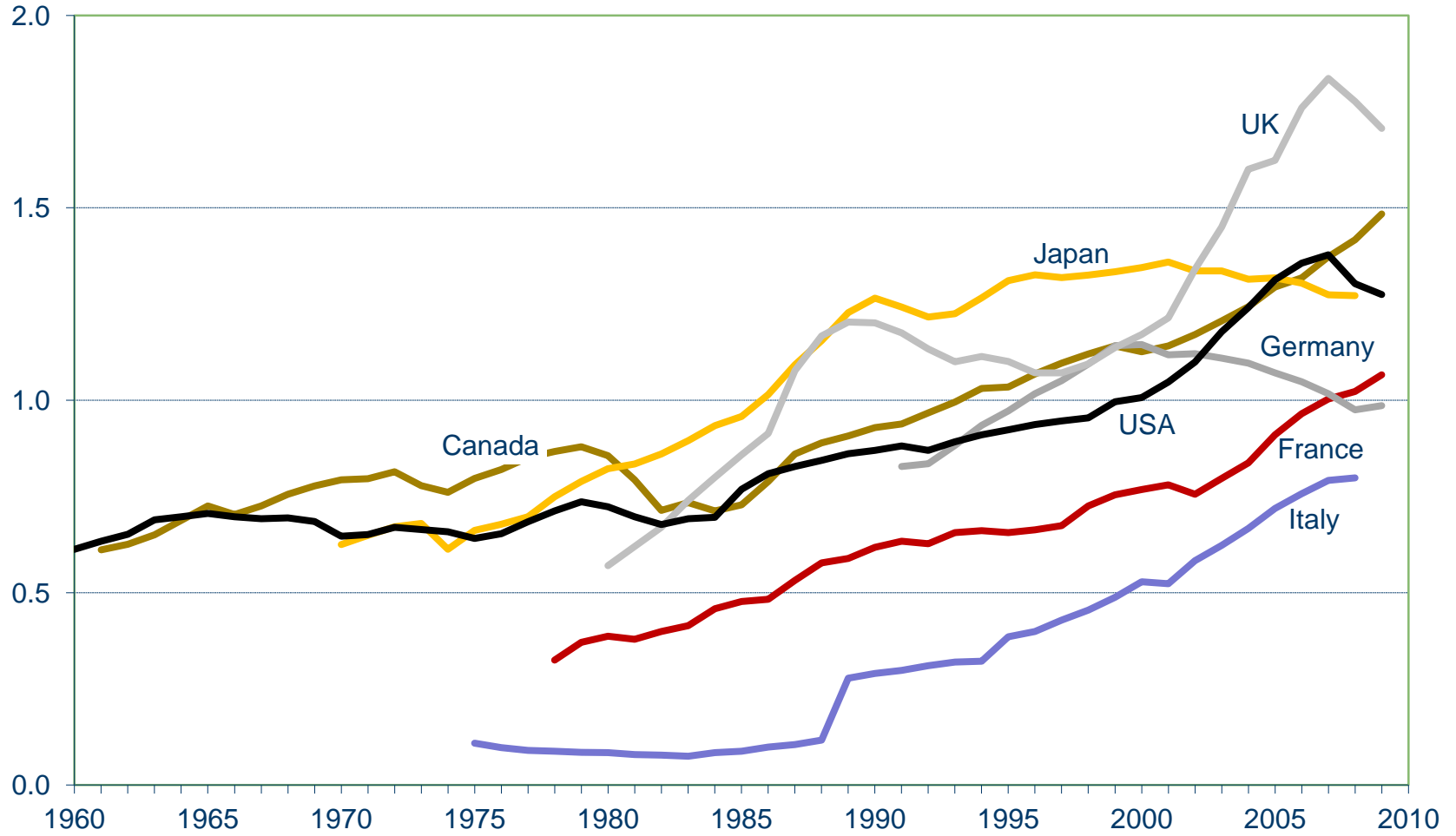
Wealth-income ratios for France, UK and USA since 1900



Household wealth-income ratio in G7 countries



Household debt-income ratio in G7 countries



Conclusions

- Levels est'd. directly in 20 countries with 53% of global population & 83% of global wealth
 - 166 countries, 99% of pop. with regressions
- Distribution directly estimated in 20 countries, goes up to 163 countries with imputations
- Wealth differences between countries greater than income differences
- Wealth and income *imperfectly correlated* across countries: both for levels and inequality.