



13TH JACQUES POLAK ANNUAL RESEARCH CONFERENCE

NOVEMBER 8–9, 2012

Top Incomes and the Great Recession: Recent Evolutions and Policy Implications

Thomas Piketty
Paris School of Economics

Emmanuel Saez
University of California, Berkeley

Paper presented at the 13th Jacques Polak Annual Research Conference
Hosted by the International Monetary Fund
Washington, DC—November 8–9, 2012

The views expressed in this paper are those of the author(s) only, and the presence of them, or of links to them, on the IMF website does not imply that the IMF, its Executive Board, or its management endorses or shares the views expressed in the paper.

Top Incomes and the Great Recession: Recent Trends & Policy Implications

Thomas Piketty & Emmanuel Saez
IMF Annual Research Conference
November 8 2012

General motivation: inequality in the long run

- Long run distributional trends = key question asked by 19^C economists
- Many came with apocalyptic answers
- Ricardo-Marx: a small group in society (land owners or capitalists) will capture an ever growing share of income & wealth
 - no “balanced development path” can occur
- During 20^C, a more optimistic consensus emerged: “growth is a rising tide that lifts all boats”
(Kuznets 1953; cold war context)

- But inequality ↑ since 1970s destroyed this fragile consensus (US 1977-2007: ≈60% of total growth was absorbed by top 1%, ≈70% by top 10%)
→ 19^C economists raised the right questions; we need to address these questions again; we have no strong reason to believe in balanced development path
- 2007-2011 world financial crisis also raised doubts about balanced devt path... will stock options & bonuses, or oil-rich countries, or China, or tax havens, absorb an ever growing share of world resources in 21^C capitalism?

Convergence vs divergence

- **Convergence forces do exist:** diffusion of knowledge btw countries (fostered by econ & fin integration) & wth countries (fostered by adequate educ institutions)
- **But divergence forces can be stronger:**
 - (1) When top earners set their own pay, there's no limit to rent extraction → top income shares can diverge
 - (2) The wealth accumulation process contains several divergence forces, especially with low g (→ high wealth-income ratio: $\beta = s/g$) & with $r > g$ → a lot depends on the net-of-tax global rate of return r on large diversified portfolios : if $r = 5\% - 6\%$ in 2010-2050 (=what we observe in 1980-2010 for large Forbes fortunes, or Abu Dhabi sovereign fund, or Harvard endowment), then global wealth divergence is very likely

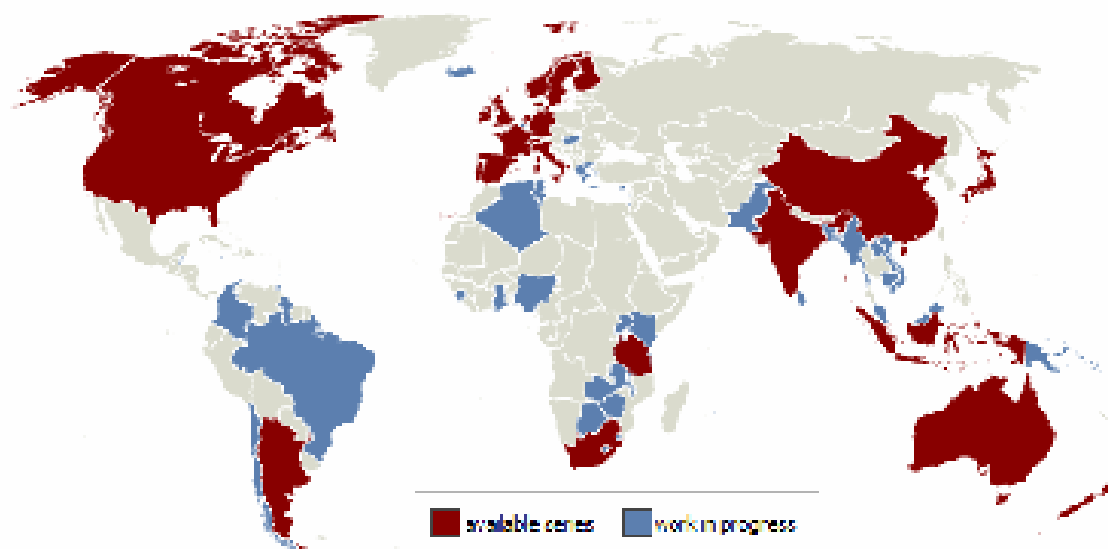
This paper: three points

- **1. The continuing rise of top income shares**
 - Updated series from *World Top Incomes Database (WTID)*; rebound of top shares in '10; Great Recession unlikely to reverse long run trend
- **2. How much should we use progressive tax to reverse the trend?**
 - Cross-country & micro evidence suggests that rise of top shares has more to do with « grabbing hand » model (bargaining elasticity) than with technical change and rising return to talent
 - Socially optimal top tax rates might be larger than commonly assumed: say 70%-80% rather than 50%-60% (see Piketty-Saez-Stantcheva, « Optimal Taxation of Top Labor Income: A Tale of Three Elasticities », '12)
- **3. Does rising inequality exacerbate financial fragility?**
 - Rising top shares & stagnant median incomes certainly did put extra pressure on financial systems; but modern finance is sufficiently fragile to crash by itself (without inequality ↑); see Europe vs US
 - Rising aggregate wealth-income ratios might be more relevant for macro fragility than rising top income shares: Spain (see Piketty-Zucman, « Capital is Back: Wealth-Income Ratios in Rich Countries 1870-2010 », '12)

1. The Continuing Rise of Top Income Shares

- **World top incomes database:** 25 countries, annual series over most of 20^C, largest historical data set
- **Two main findings:**
 - **The fall of rentiers:** inequality ↓ during first half of 20^C = top capital incomes hit by 1914-1945 capital shocks; did not fully recover so far (long lasting shock + progressive taxation)
 - without war-induced economic & political shock, there would have been no long run decline of inequality; nothing to do with a Kuznets-type spontaneous process
 - **The rise of working rich:** inequality ↑ since 1970s; mostly due to top labor incomes, which rose to unprecedented levels; top wealth & capital incomes also recovering, though less fast; top shares ↓ '08-09, but ↑ '10; **Great Recession is unlikely to reverse the long run trend**
 - **what happened?**

THE WORLD TOP INCOMES DATABASE



- Home
- Introduction
- The Database
- Graphics
- Country Information
- Work In Progress
- Acknowledgments



PARIS SCHOOL OF ECONOMICS
Ecole Supérieure d'Économie Industrielle



CENTER FOR EQUITABLE GROWTH
UNIVERSITY OF CALIFORNIA, BERKELEY



CENTER FOR GLOBAL DEVELOPMENT
THE BROOKINGS INSTITUTION

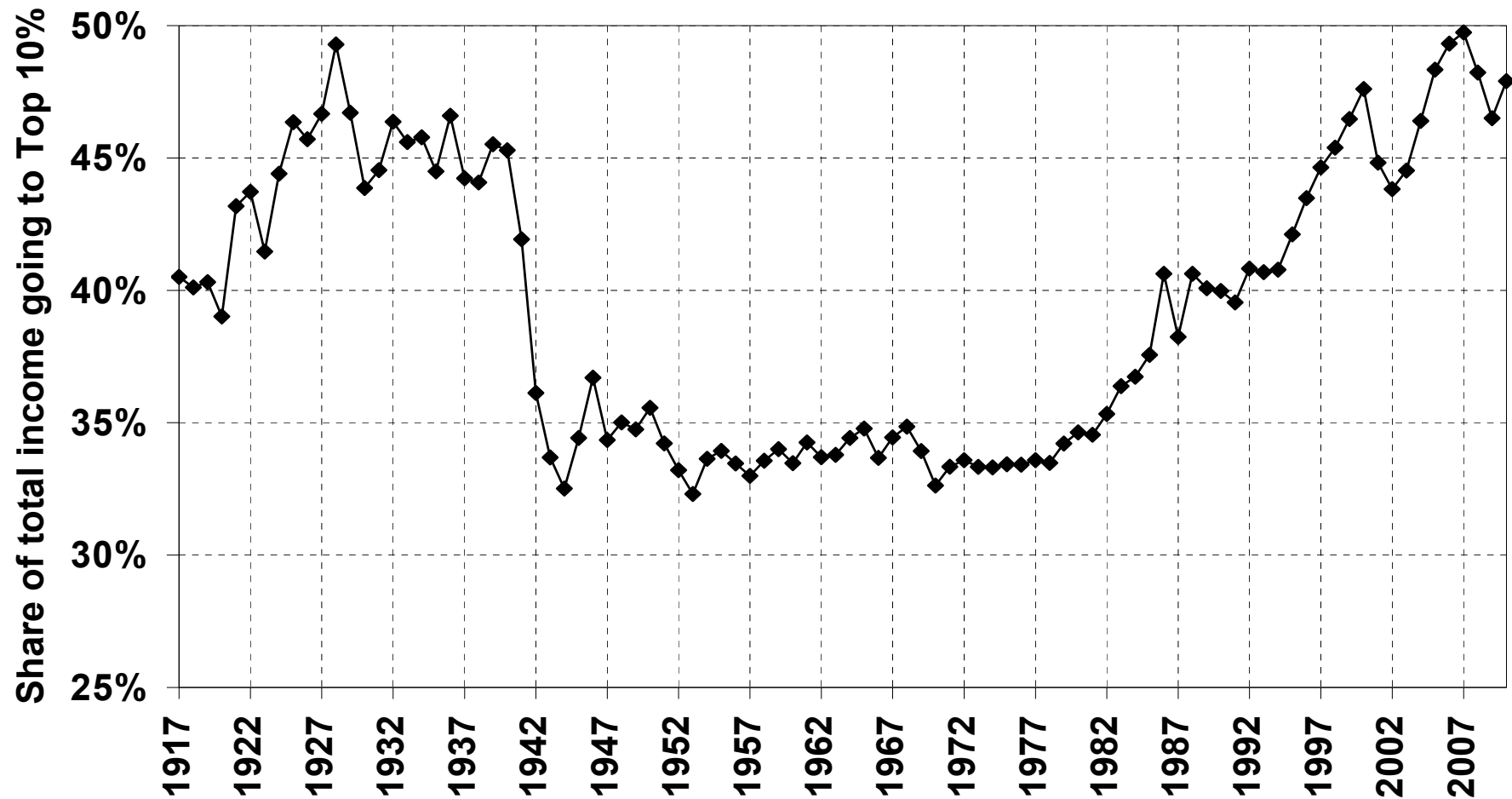


FIGURE 1

The Top Decile Income Share in the United States, 1917-2010

Source: Piketty and Saez (2003), series updated to 2010.

Income is defined as market income including realized capital gains (excludes government transfers).

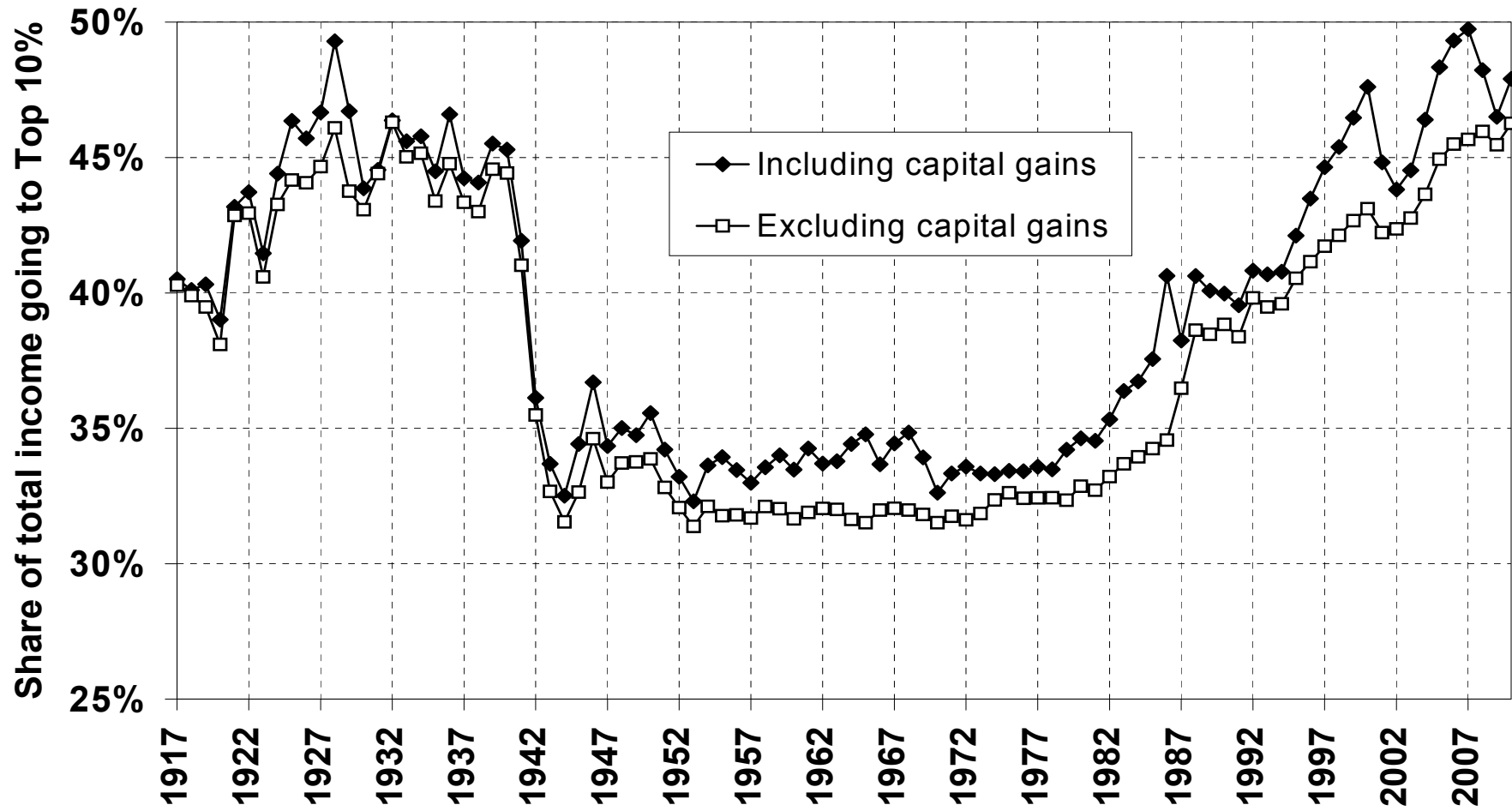


FIGURE 1

The Top Decile Income Share in the United States, 1917-2010

Source: Piketty and Saez (2003), series updated to 2010.

Income is defined as market income including realized capital gains (excludes government transfers).

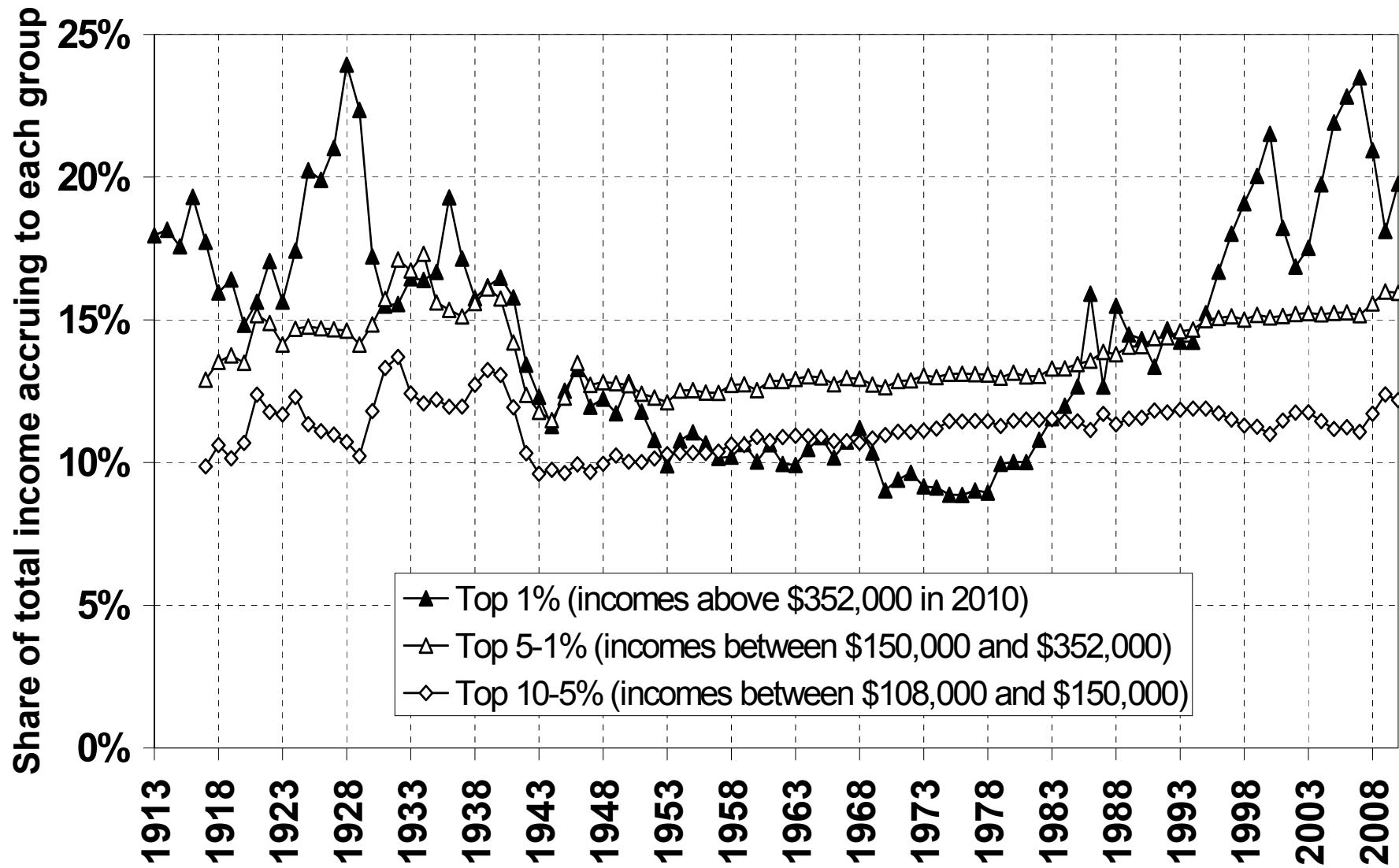
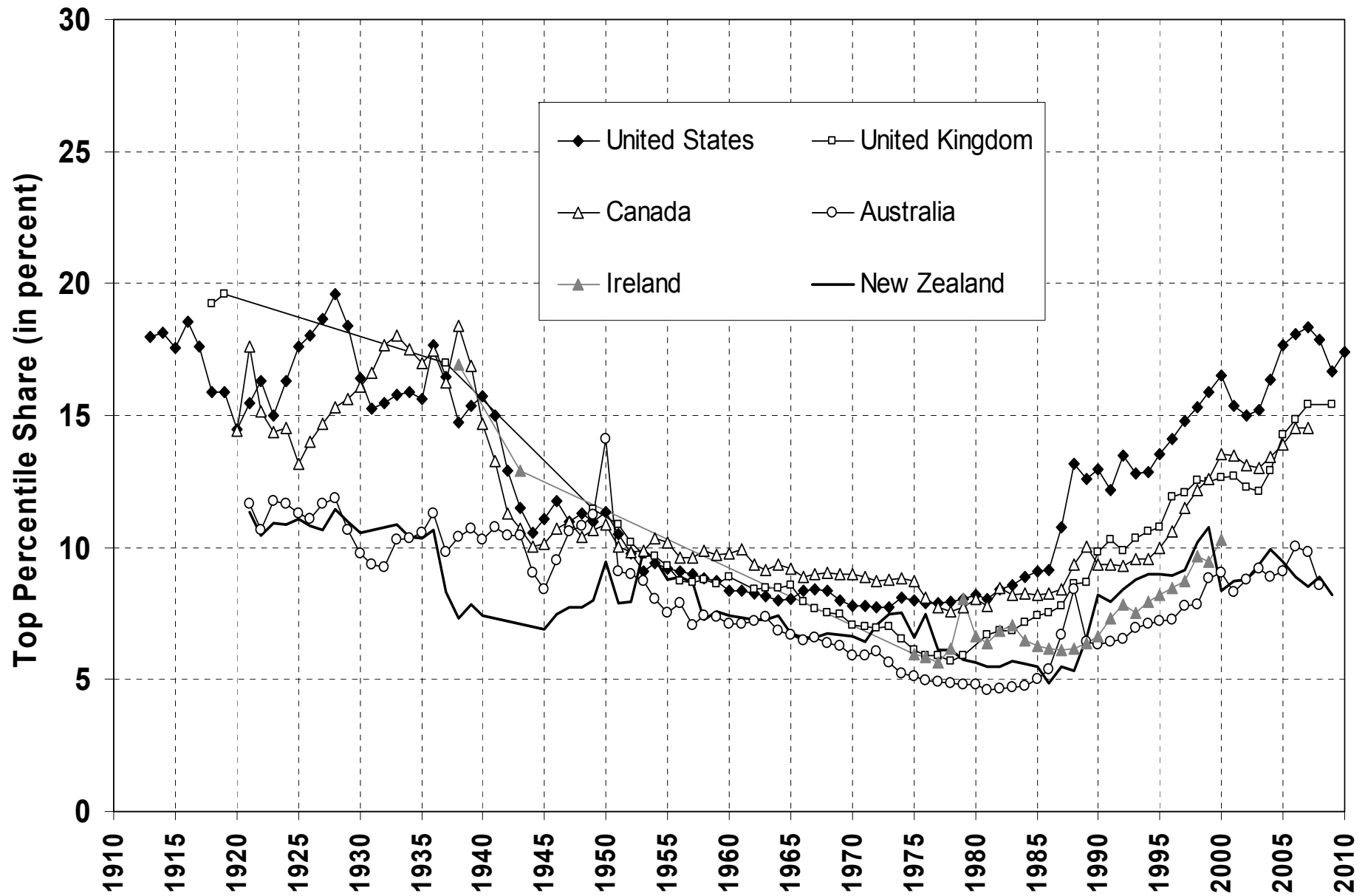


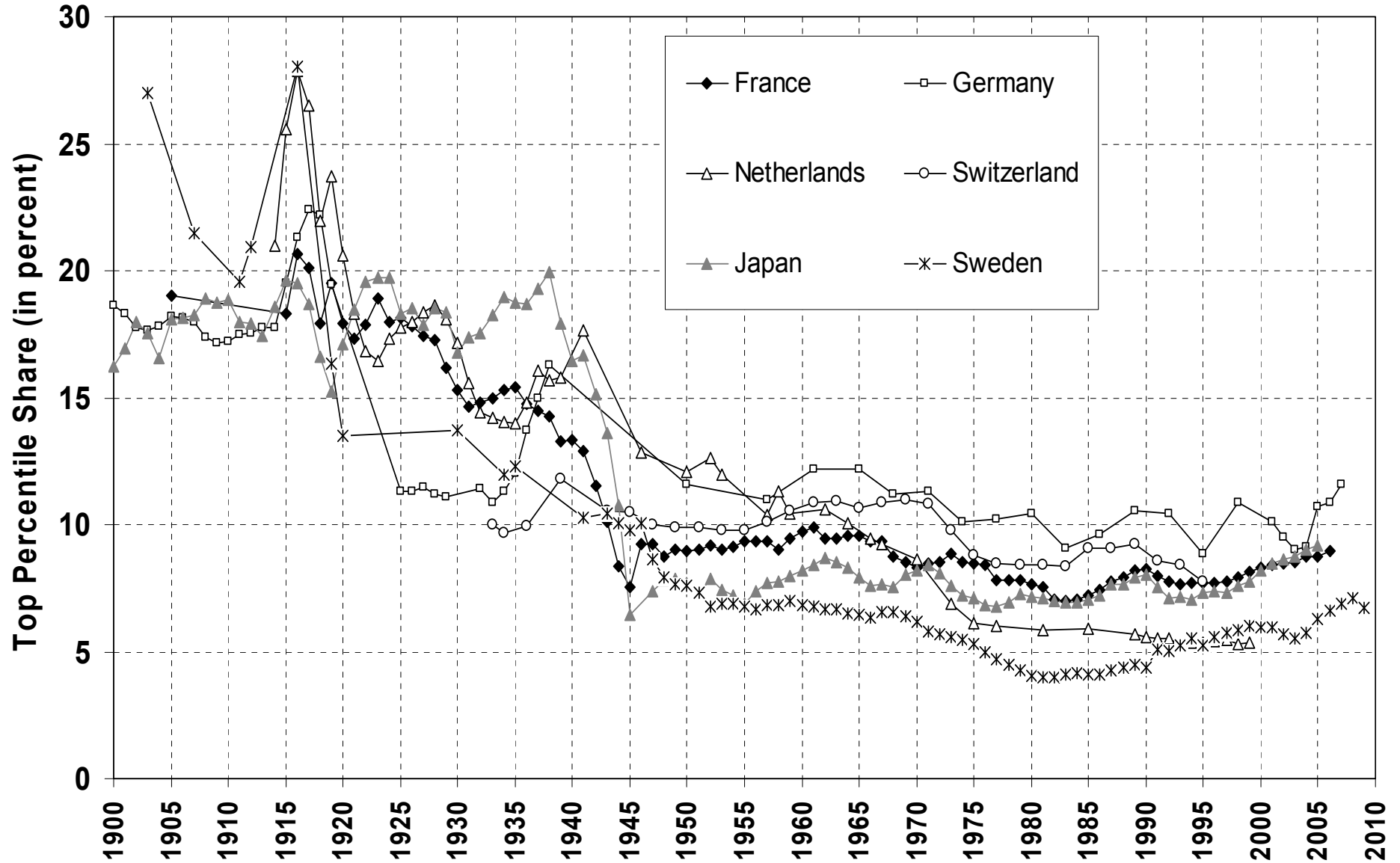
FIGURE 2

Decomposing the Top Decile US Income Share into 3 Groups, 1913-2010

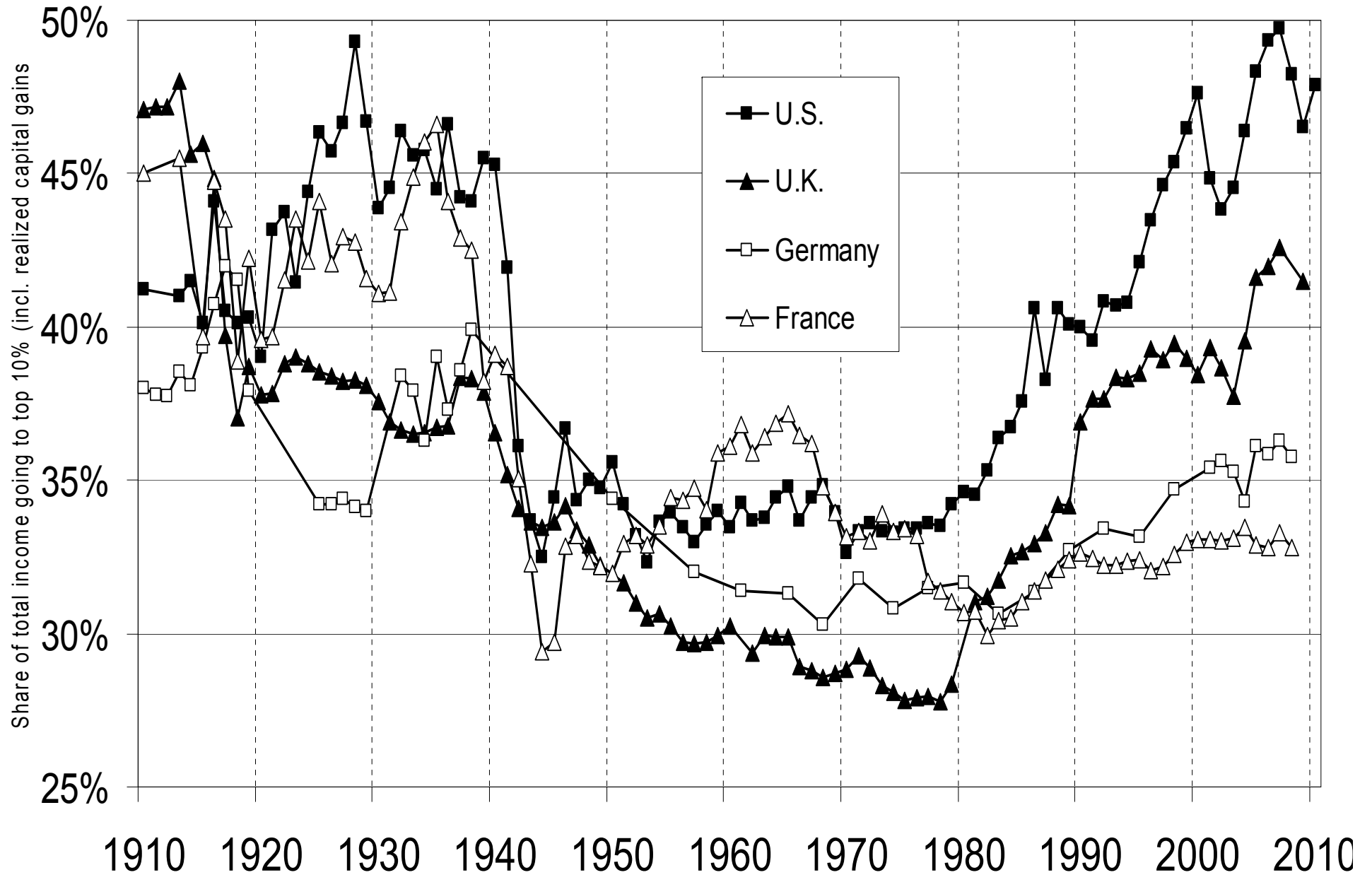
Top 1% share: English Speaking countries (U-shaped), 1910-2010



Top 1% share: Continental Europe and Japan (L-shaped), 1900-2010



Top Decile Income Shares 1910-2010



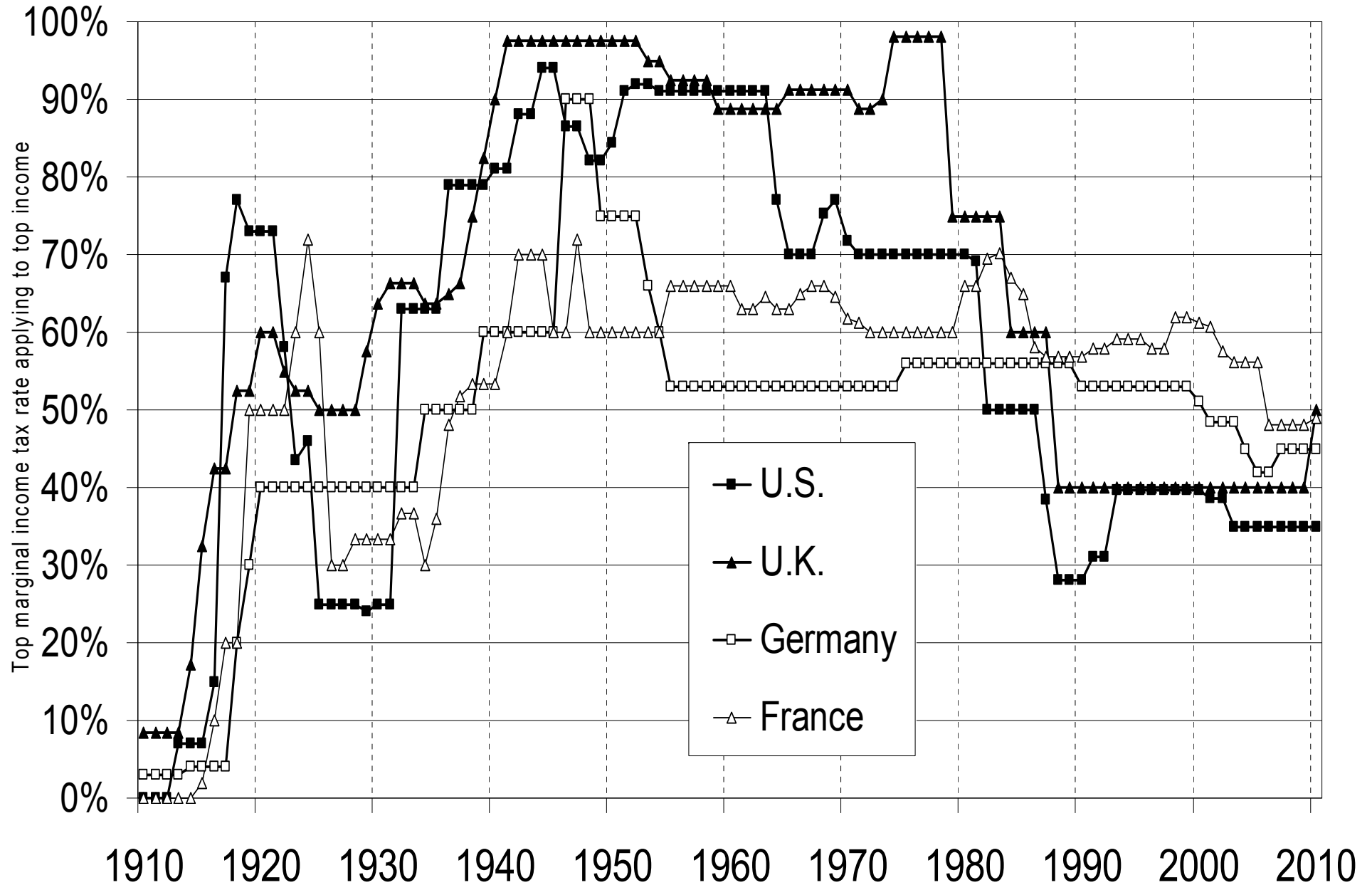
Source: World Top Incomes Database, 2012. Missing values interpolated using top 5% and top 1% series.

2. How much should we use progressive taxation to reverse the trend?

- Hard to account for observed cross-country variations with a pure technological, marginal-product story
- One popular view: US today = working rich get their marginal product (globalization, superstars); Europe today (& US 1970s) = market prices for high skills are distorted downwards (social norms, etc.)
→ very naïve view of the top end labor market
& very ideological: we have zero evidence on the marginal product of top executives; it may well be that prices are distorted upwards (more natural for price setters to bias their own price upwards rather than downwards)

- A more realistic view: grabbing hand model = marginal products are unobservable; top executives have an obvious incentive to convince shareholders & subordinates that they are worth a lot; no market convergence because constantly changing corporate & job structure (& costs of experimentation → **competition not enough to converge to full information**)
- when pay setters set their own pay, there's no limit to rent extraction... **unless confiscatory tax rates at the very top**
- (memo: US top tax rate (1m\$+) 1932-1980 = 82%)
(no more fringe benefits than today)
- see Piketty-Saez-Stantcheva, NBER WP 2012
(macro & micro evidence on rising CEO pay for luck)

Top Income Tax Rates 1910-2010



Source: World Top Incomes Database, 2012.

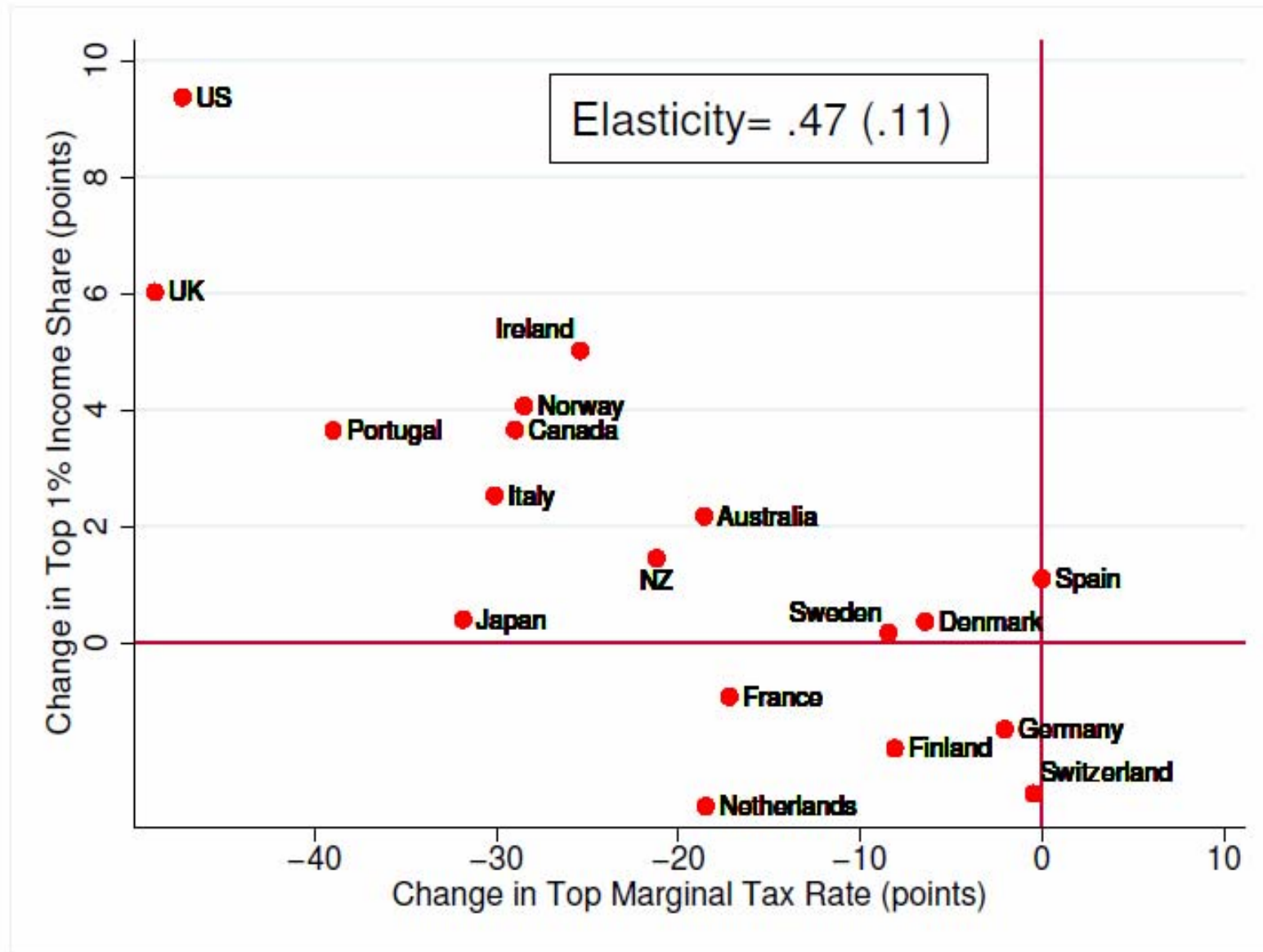
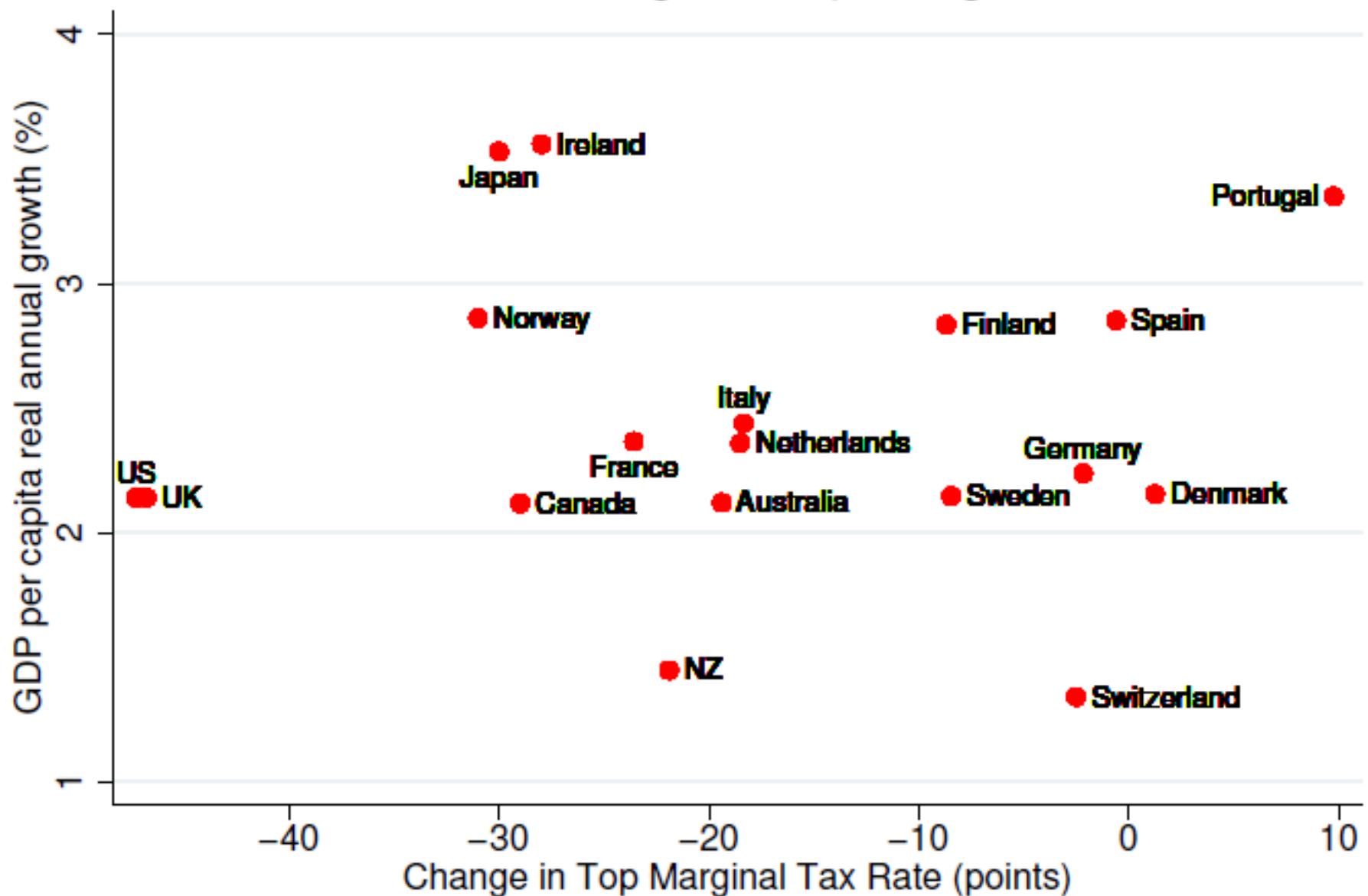


Figure 3: Changes in Top Income Shares and Top Marginal Tax Rates

A. Growth and Change in Top Marginal Tax Rate



Optimal Taxation of Top Labor Incomes

- **Standard optimal top tax rate formula: $\tau = 1/(1+ae)$**

With: e = elasticity of labor supply, a = Pareto coefficient

- $\tau \downarrow$ as elasticity $e \uparrow$: don't tax elastic tax base
- $\tau \uparrow$ as inequality \uparrow , i.e. as Pareto coefficient $a \downarrow$
(US: $a \approx 3$ in 1970s $\rightarrow \approx 1.5$ in 2010s; $b = a/(a-1) \approx 1.5 \rightarrow \approx 3$)
(memo: $b = E(y|y > y_0)/y_0$ = measures fatness of the top)

- **Augmented formula: $\tau = (1+tae_2+ae_3)/(1+ae)$**

With $e = e_1 + e_2 + e_3$ = labor supply elasticity + income shifting elasticity + bargaining elasticity (rent extraction)

- **Key point: $\tau \uparrow$ as elasticity $e_3 \uparrow$**

**Table 4: How Much Should We Tax Top Incomes ?
A Tale of Three Elasticities**

$$\text{Total elasticity } e = e_1 + e_2 + e_3 = 0.5$$

Scenario 1: Standard supply side tax effects	
$e_1 =$	0.5
$e_2 =$	0.0
$e_3 =$	0.0

Scenario 2: Tax avoidance effects	
(a) current narrow tax base	(b) after base broadening
$e_1 = 0.2$	$e_1 = 0.2$
$e_2 = 0.3$	$e_2 = 0.1$
$e_3 = 0.0$	$e_3 = 0.0$

Scenario 3: Compensation bargaining effects	
$e_1 =$	0.2
$e_2 =$	0.0
$e_3 =$	0.3

$$\text{Optimal top tax rate } \tau^* = (1 + tae_2 + ae_3)/(1 + ae)$$

$$\text{Pareto coefficient } a = 1.5$$

$$\text{Alternative tax rate } t = 20\%$$

Scenario 1	
$\tau^* =$	57%

Scenario 2	
(a) $e_2=0.3$	(b) $e_2=0.1$
$\tau^* = 62\%$	$\tau^* = 71\%$

Scenario 3	
$\tau^* =$	83%

3. Does inequality \uparrow exacerbate financial fragility?

- **Rising top shares & stagnant median incomes certainly did put extra pressure on financial systems**
- In US, $\approx 15\%$ Y transferred from bottom 90% to top 10% since 1970s; if C does not adjust, huge debt buildup; domestic imbalance = much bigger than global imbalance
- But modern finance is sufficiently fragile to crash by itself, even without inequality \uparrow ; see Europe vs US
- **Rising aggregate wealth-income ratios might be more relevant for macro fragility than rising top income shares**
- See Piketty-Zucman, « Capital is Back: Wealth-Income Ratios in Rich Countries 1870-2010 », '12: we put together new data set of national balance sheets to study long run evolution of wealth-income ratios

- **Result 1:** we find in every country a gradual rise of wealth-income ratios over 1970-2010 period, from about 200%-300% in 1970 to 400%-600% in 2010
- **Result 2:** in effect, today's ratios seem to be returning towards the high values observed in 19^c Europe (600%-700%)
- This can be accounted for by a combination of factors:
 - Politics: long run asset price recovery effect (itself driven by changes in capital policies since WWs)
 - Economics: slowdown of productivity and pop growth

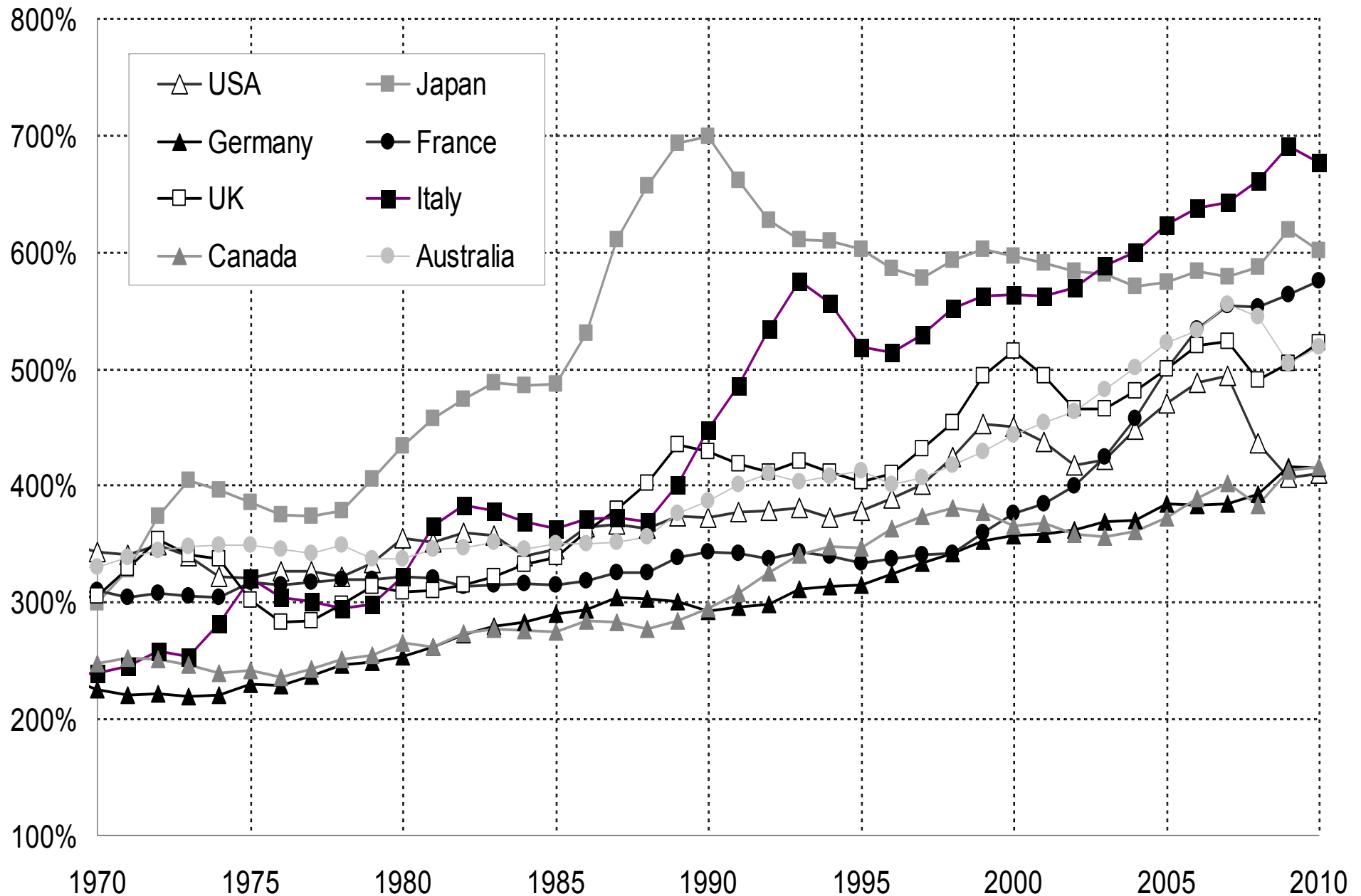
Harrod-Domar-Solow: wealth-income ratio $\beta = s/g$

If saving rate $s=10\%$ & growth rate $g=3\%$, then $\beta \approx 300\%$

But if $s=10\%$ & $g=1.5\%$, then $\beta \approx 600\%$

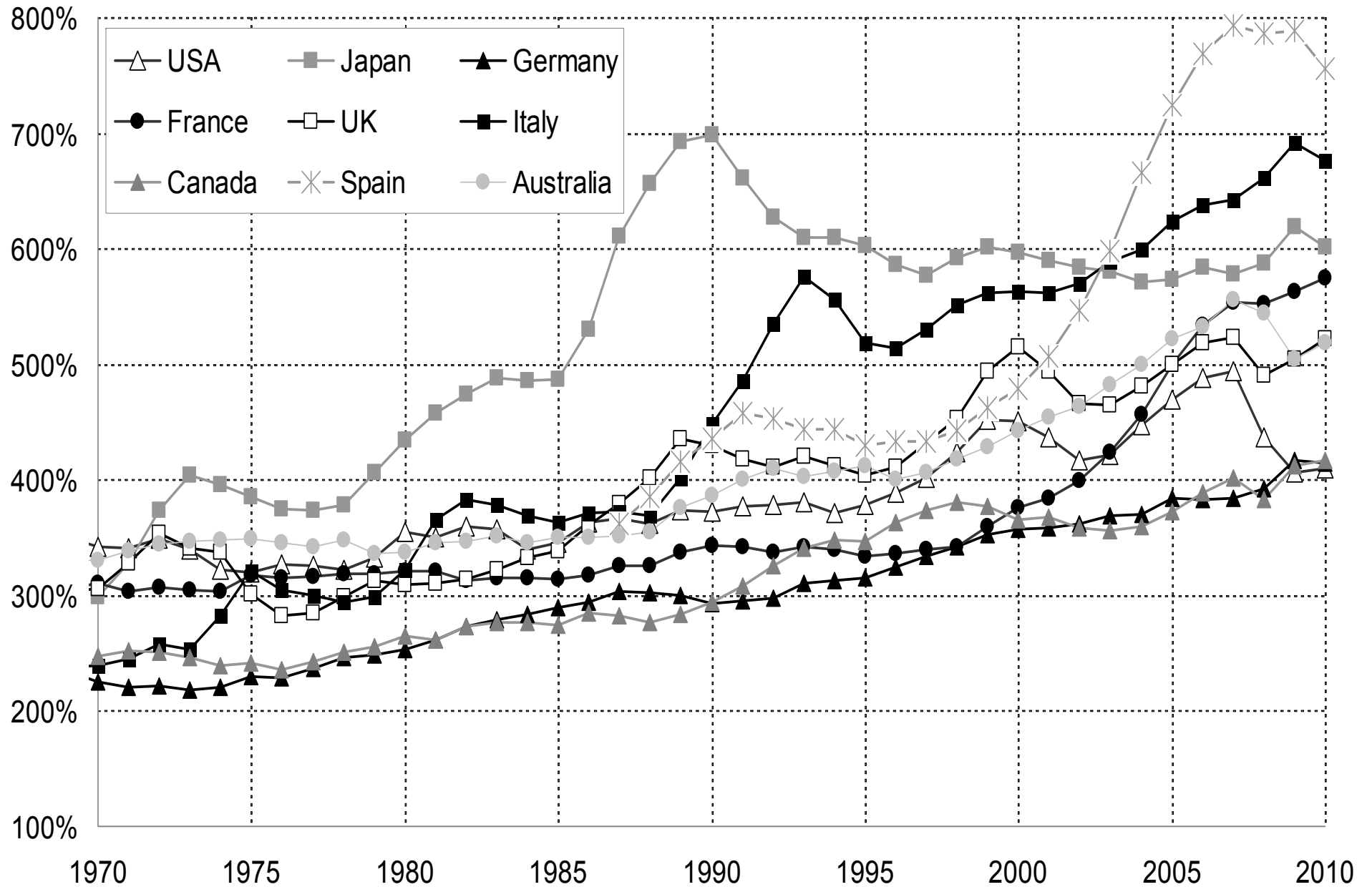
Explains long run change & level diff Europe vs US

Private wealth / national income ratios, 1970-2010



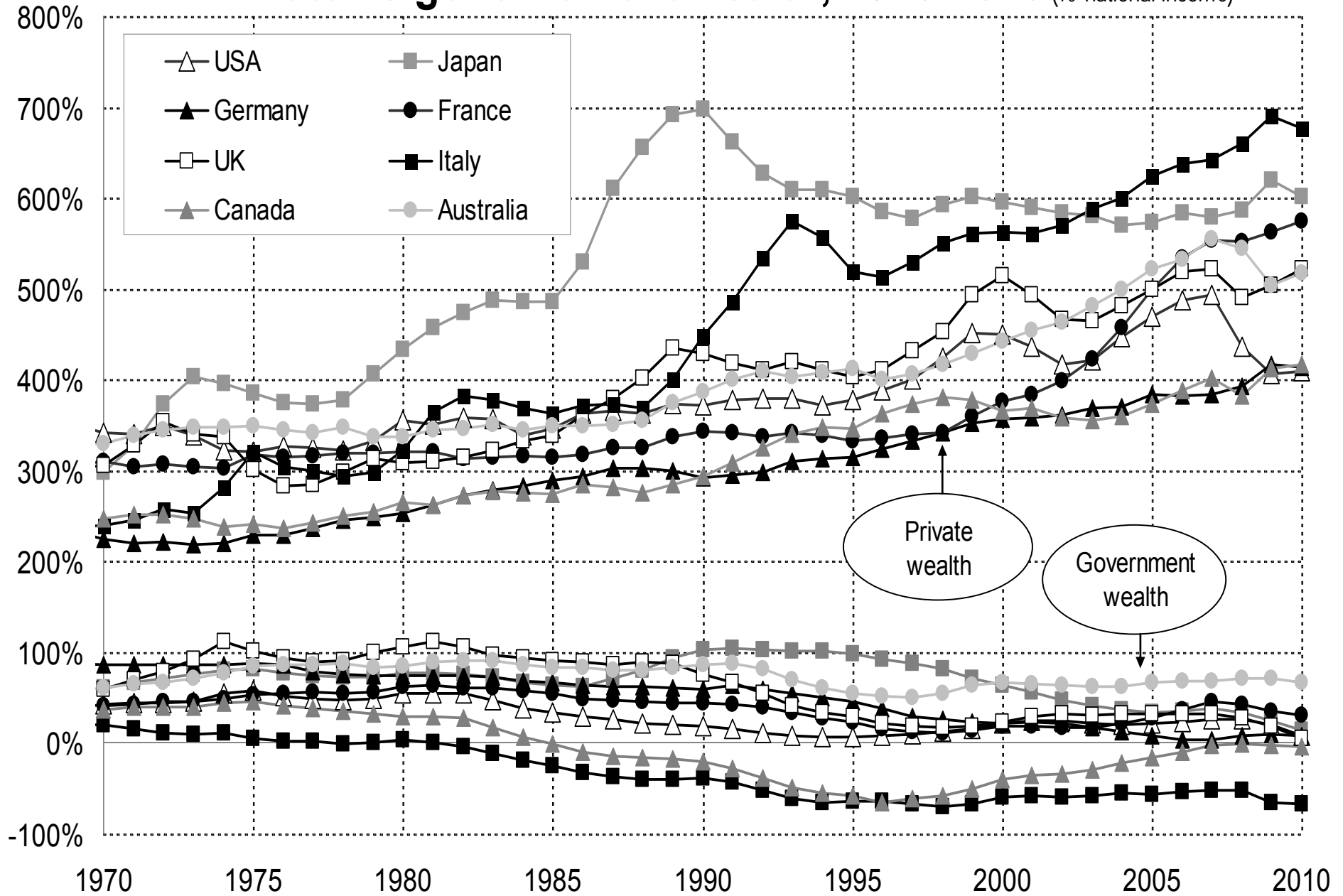
Authors' computations using country national accounts. Private wealth = non-financial assets + financial assets - financial liabilities (household & non-profit sectors)

Private wealth / national income ratios, 1970-2010 (incl. Spain)



Authors' computations using country national accounts. Private wealth = non-financial assets + financial assets - financial liabilities (household & non-profit sectors)

Private vs government wealth, 1970-2010 (% national income)



Authors' computations using country national accounts. Government wealth = non-financial assets + financial assets - financial liabilities (govt sector)

- **Lesson 1:** one-good capital accumulation model with factor substitution works relatively well in very long run; but in short & medium run, volume effects (saving flows) can be vastly dominated by relative price effects (capital gains or losses)
- **Lesson 2:** long run wealth-income ratios $\beta = s/g$ can vary a lot btw countries: s and g determined by diff. forces; countries with low g and high s naturally have high β ; high β is not bad per se (capital is useful); but **high β raises new issues about capital regulation and taxation:**
- With integrated capital markets, this can generate large net foreign asset positions, even in the absence of income diff (or reverse to income diff); so far net positions are smaller than during colonial period; but some countries positions are rising fast (Japan, Germany,..)
- With limited capital mobility, and/or home portfolio biases, high β can lead to large domestic asset price bubbles: see Japan, UK, Italy, France, **Spain**,..

What have we learned?

- Rising top income shares & rising wealth-income ratios involve two different mechanisms that can reinforce each other; both have important implications for taxation & regulation
- Without international coordination (e.g. automated information exchange on cross border asset positions), it is hard to implement the proper policy
- It is high time to put distribution back at the center of economic analysis

Supplementary slides

TABLE 1.**Thresholds and Average Incomes in Top Income Groups in the US in 2010**

Percentile threshold	Income threshold	Income Groups	Number of families	Average income in each group
(1)	(2)	(3)	(4)	(5)
		Full Population	156 167 000	\$51 550
		Bottom 90%	140 550 300	\$29 840
Top 10%	\$108 024	Top 10-5%	7 808 350	\$125 627
Top 5%	\$150 400	Top 5-1%	6 246 680	\$205 529
Top 1%	\$352 055	Top 1-0.5%	780 835	\$418 378
Top 0.5%	\$521 246	Top 0.5-0.1%	624 668	\$798 120
Top 0.1%	\$1 492 175	Top 0.1-0.01%	140 550	\$2 802 020
Top 0.01%	\$7 890 307	Top 0.01%	15 617	\$23 846 950

Piketty and Saez (2003), series updated to 2010. Computations based on income tax return statistics.

Income threshold defined as market income (annual gross income reported on tax returns excluding all government transfers and individual income taxes), including realized capital gains

Table 2. Top Percentile Share and Average Income Growth in the US

	Average Income Real Annual Growth	Top 1% Incomes Real Annual Growth	Bottom 99% Incomes Real Annual Growth	Fraction of total growth captured by top 1%
	(1)	(2)	(3)	(4)
Period				
1976-2007	1.2%	4.4%	0.6%	58%
Clinton Expansion 1993-2000	4.0%	10.3%	2.7%	45%
Bush Expansion 2002-2007	3.0%	10.1%	1.3%	65%

Computations based on family market income including realized capital gains (before individual taxes).

Incomes are deflated using the Consumer Price Index (and using the CPI-U-RS before 1992).

Column (4) reports the fraction of total real family income growth captured by the top 1%.

For example, from 2002 to 2007, average real family incomes grew by 3.0% annually but 65% of that growth accrued to the top 1% while only 35% of that growth accrued to the bottom 99% of US families.

Source: Piketty and Saez (2003), series updated to 2007 in August 2009 using final IRS tax statistics.

Table 3. Are Top Incomes Properly Reported in Tax Returns?

	Components of national income (NIPA, 2010)	Components of fiscal income (IRS, 2010)	Ratio IRS/NIPA (2010)	Ratio IRS/NIPA (average 2000-2010)	
(billions dollars)	(1)	(2)	(3)	(4)	
National income	12 840	IRS income	8 210	64%	67%
Wage income	7 971	Wage income	6 592	83%	82%
Entrepreneurial income	1 036	Entrepreneurial income	669	65%	57%
Capital income (rent + dividend + interest)	1 751	Capital income (rent + dividend + interest)	377	22%	26%
Undistributed profits	652	Realized capital gains	361	55%	139%

Panel B: 2007

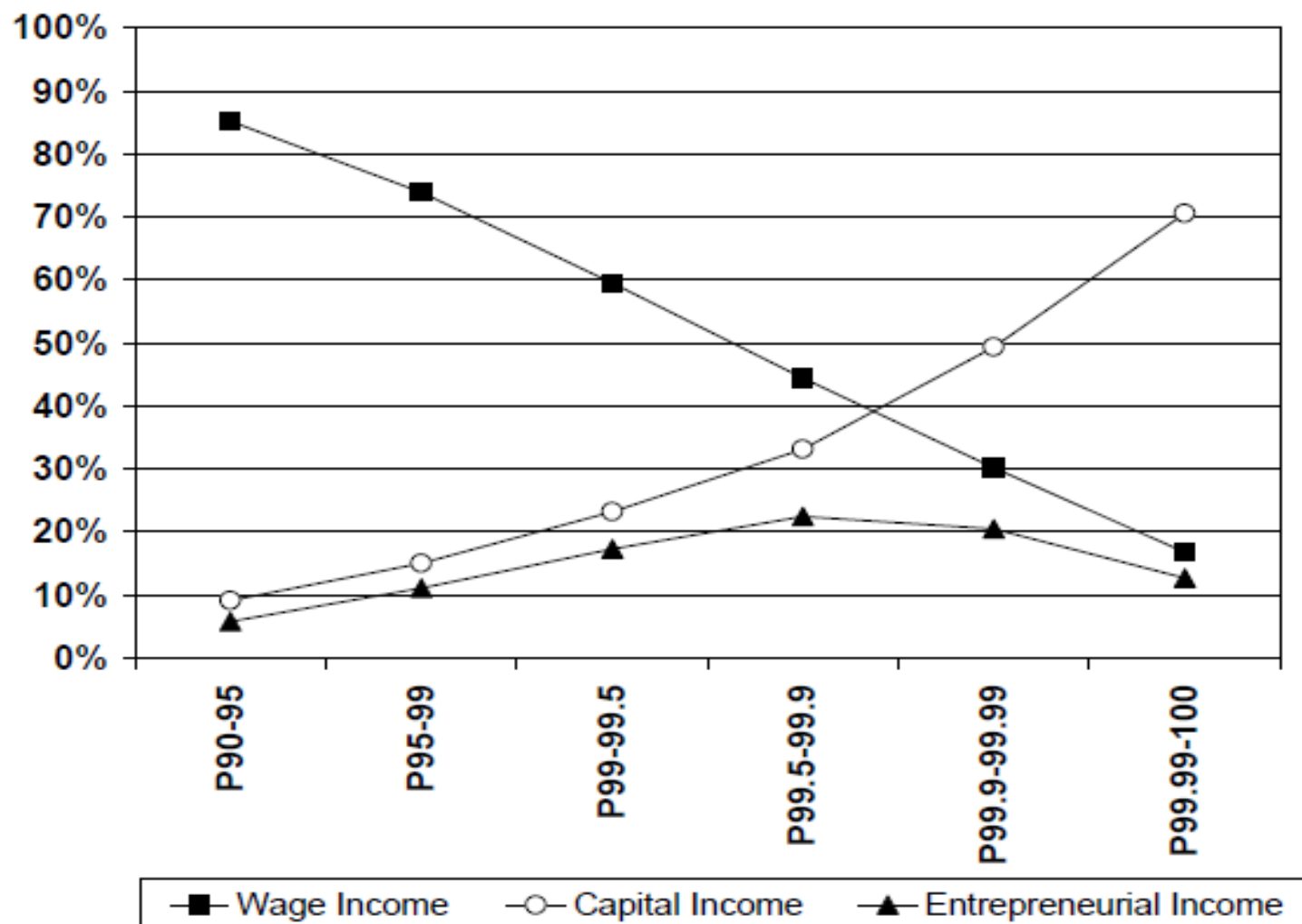
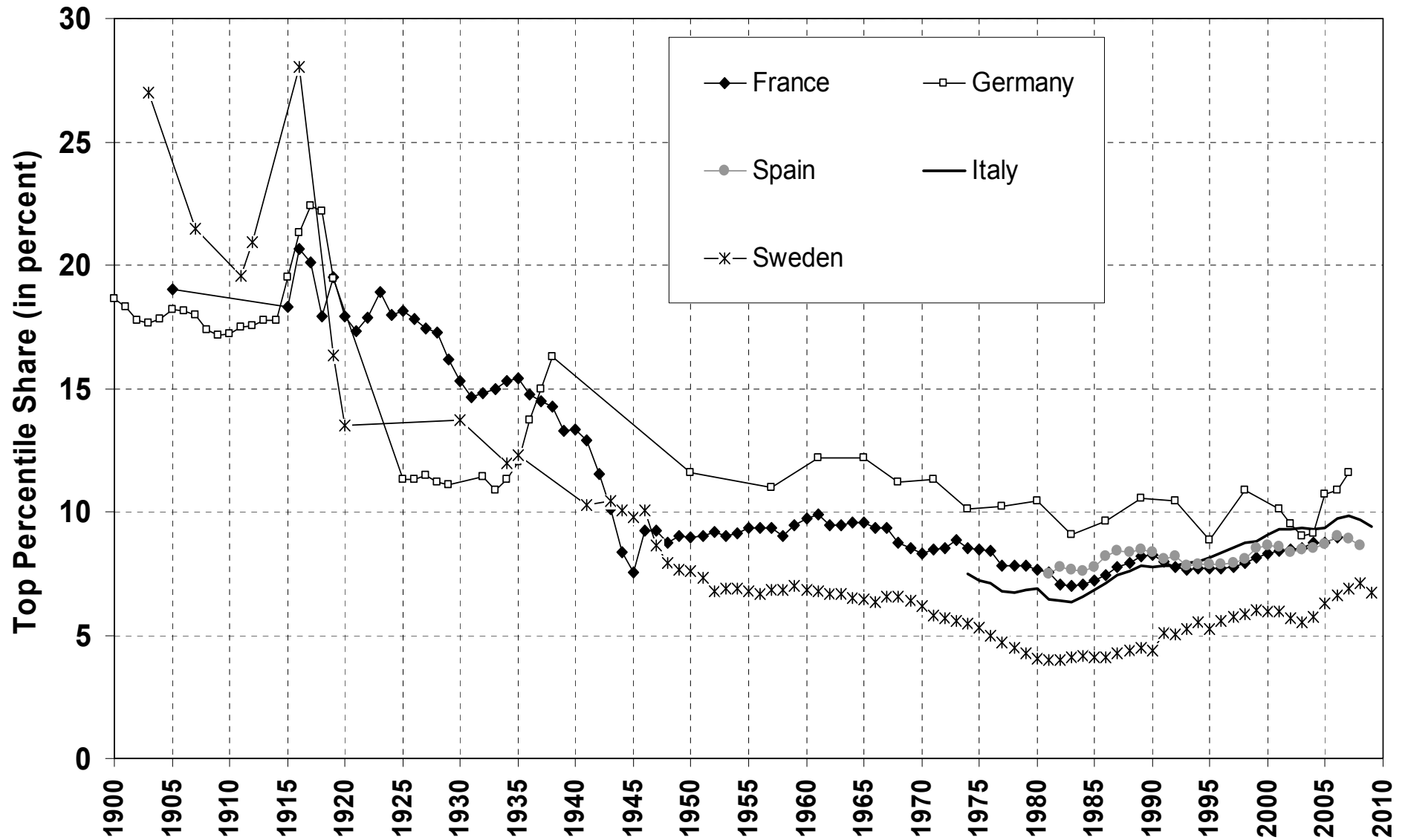


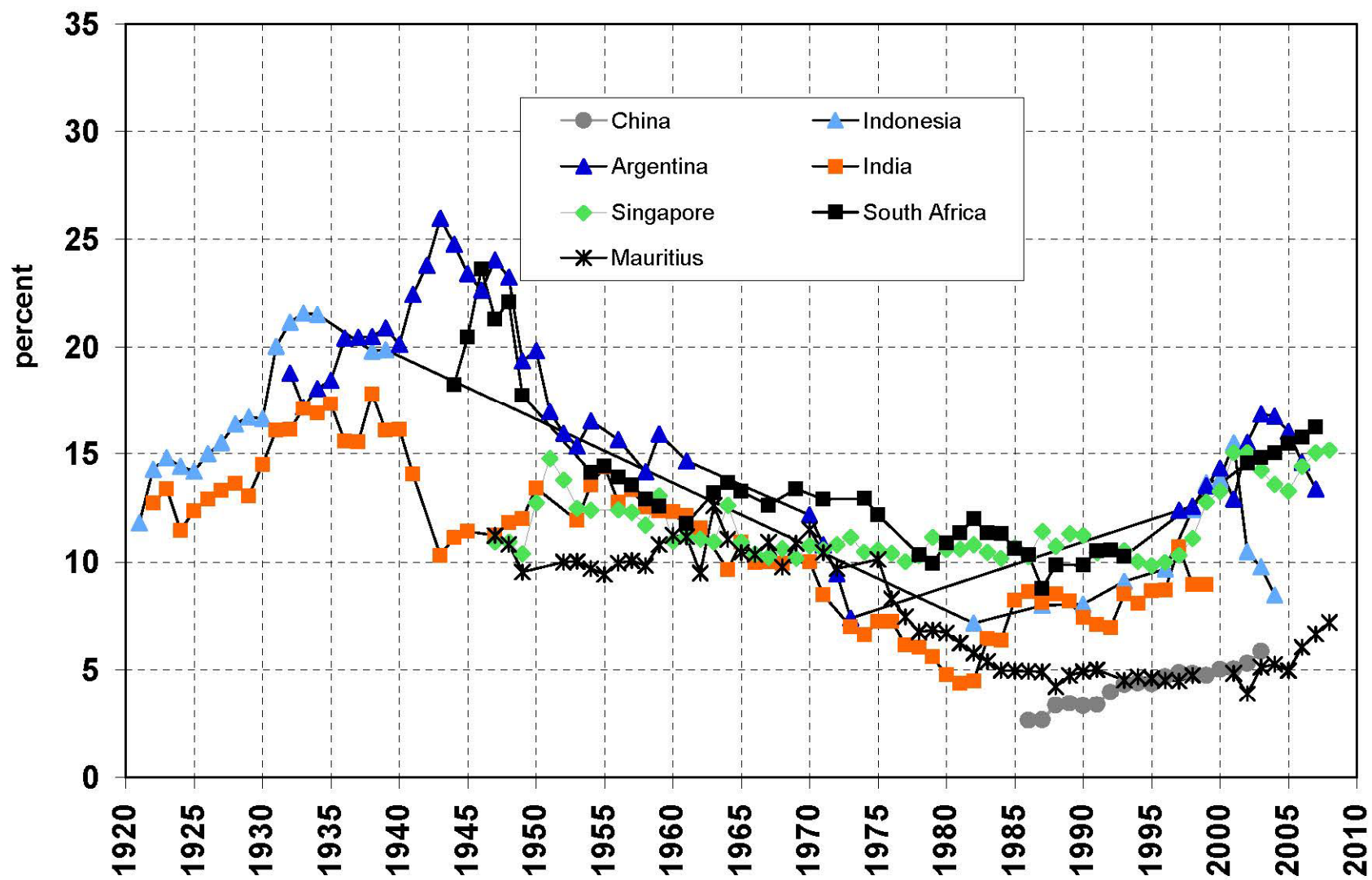
FIGURE 4

Income Composition of Top Groups within the Top Decile in 1929 and 2007

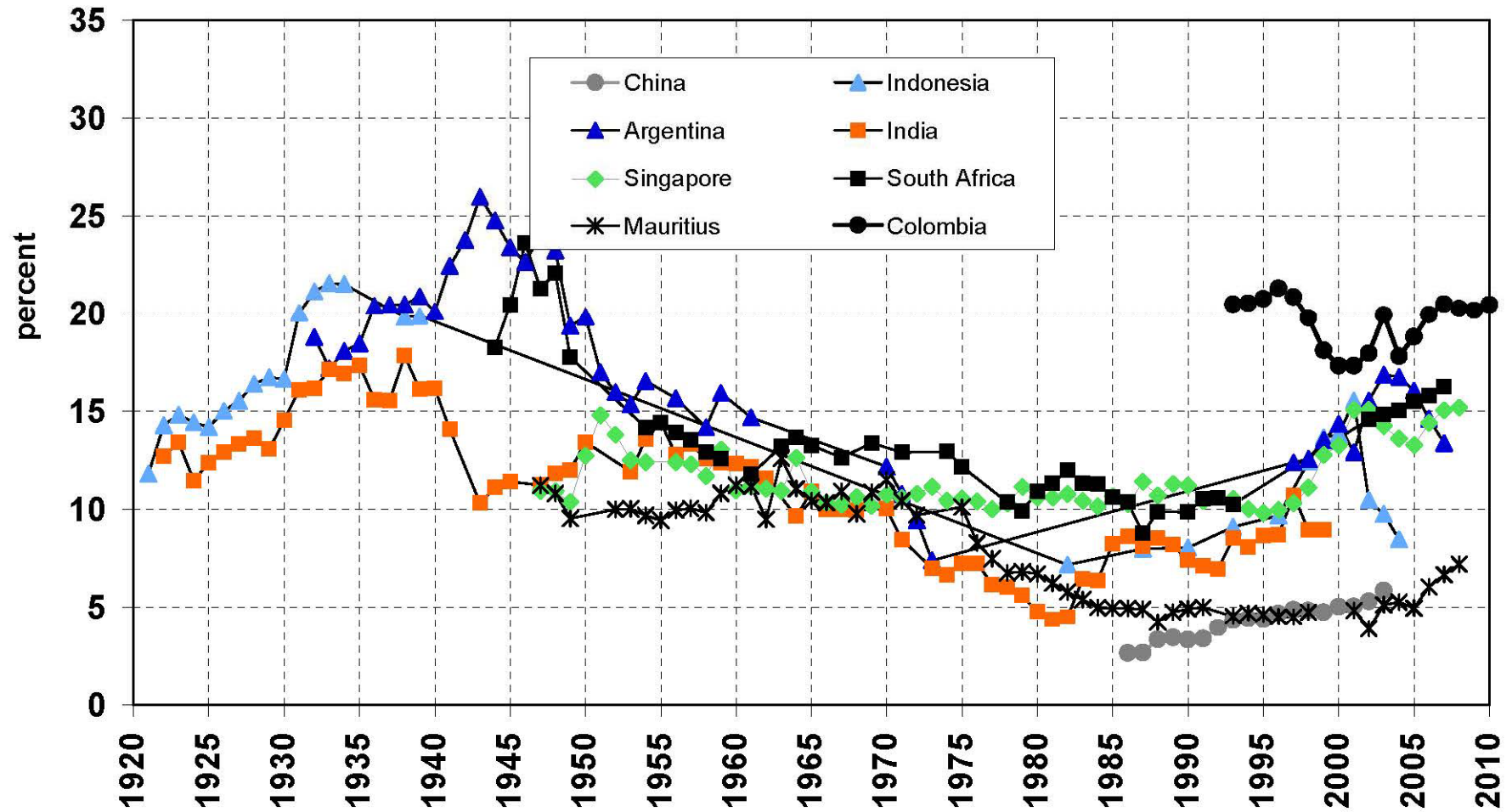
Top 1% share: Continental Europe, North vs South (L-shaped), 1900-2010



Top 1% share: Developing and emerging countries, 1920-2010



Top 1% share: Developing and emerging countries, 1920-2010



B. Growth (adjusted for initial 1960 GDP)

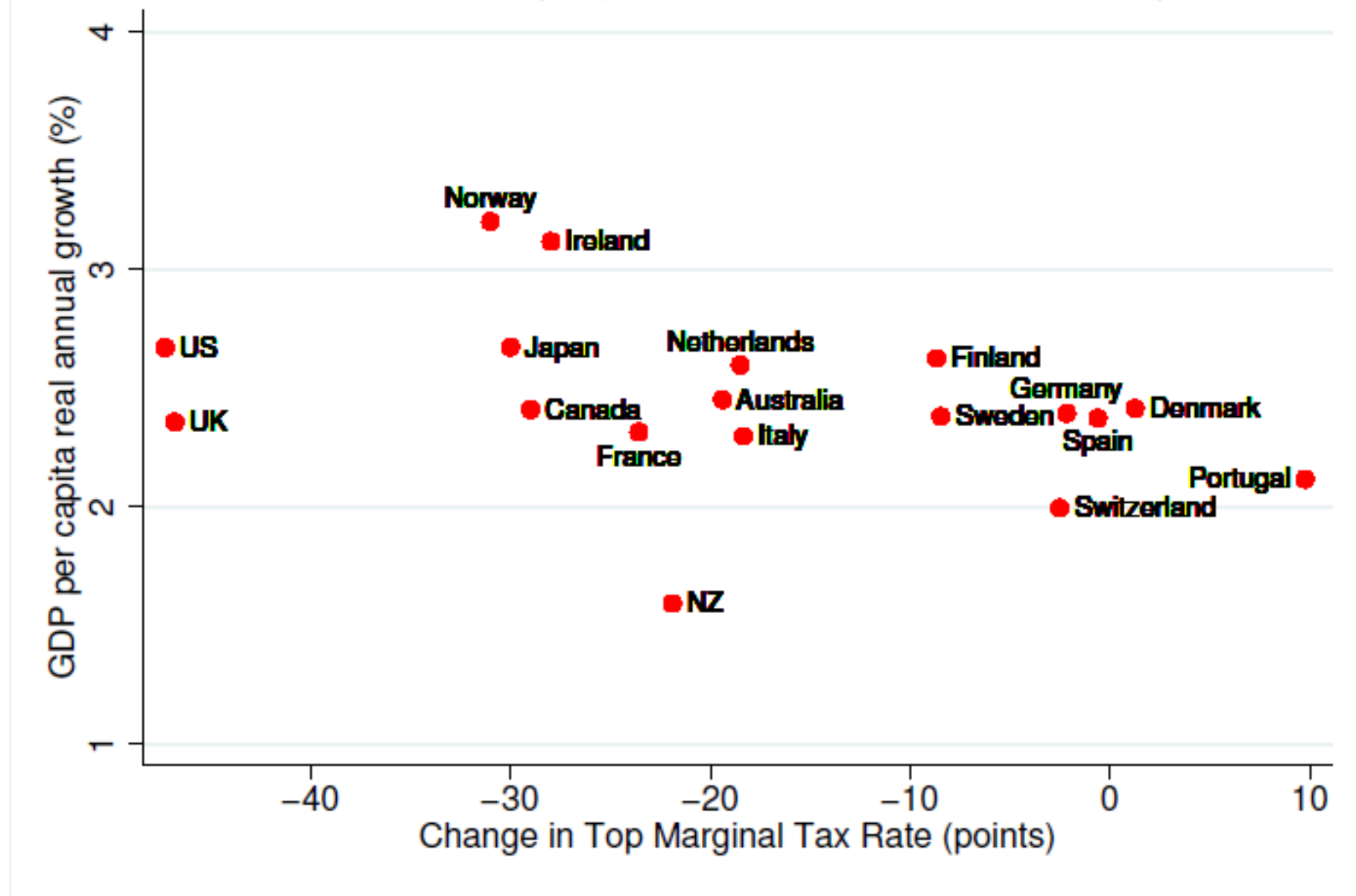
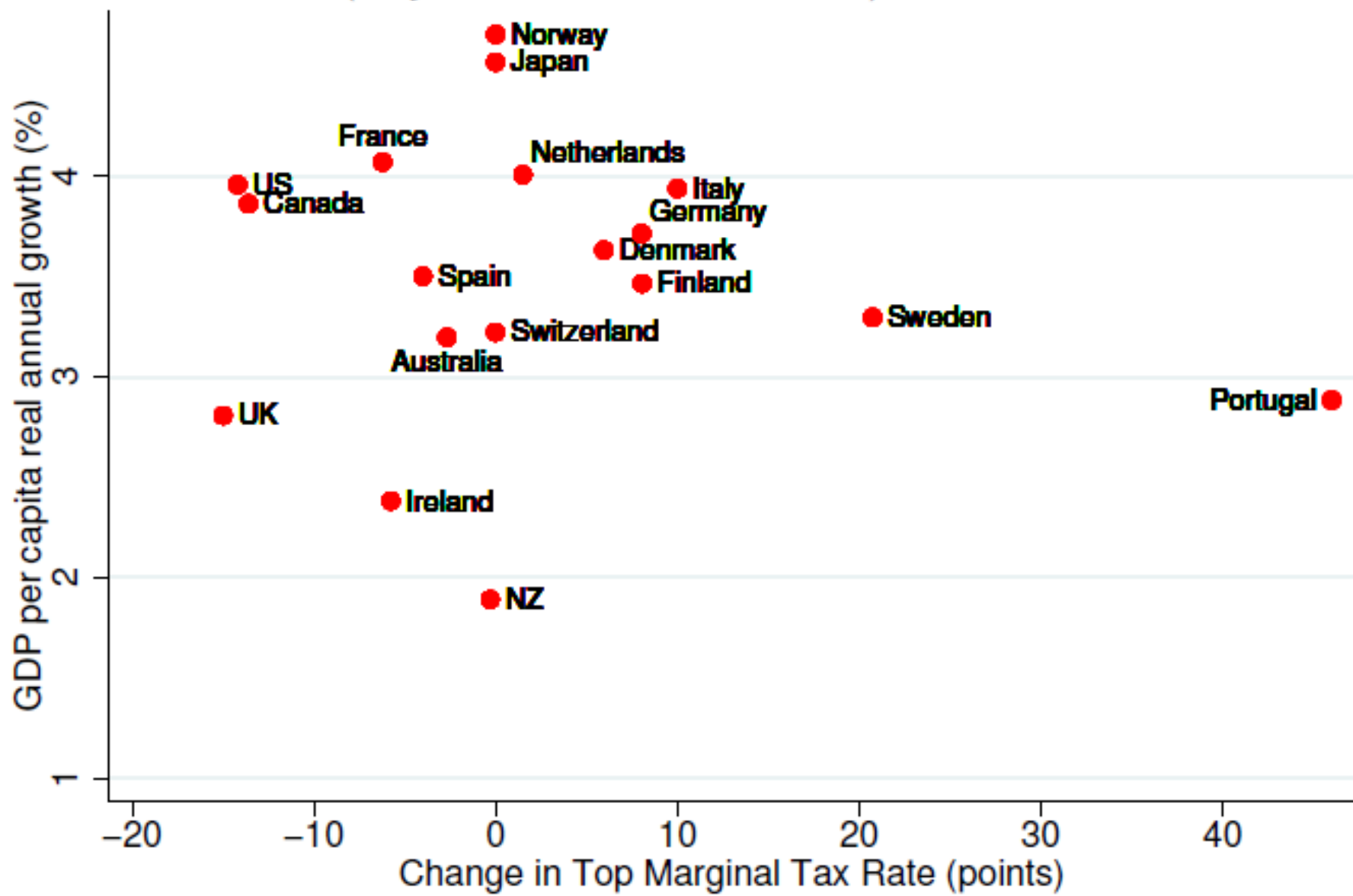
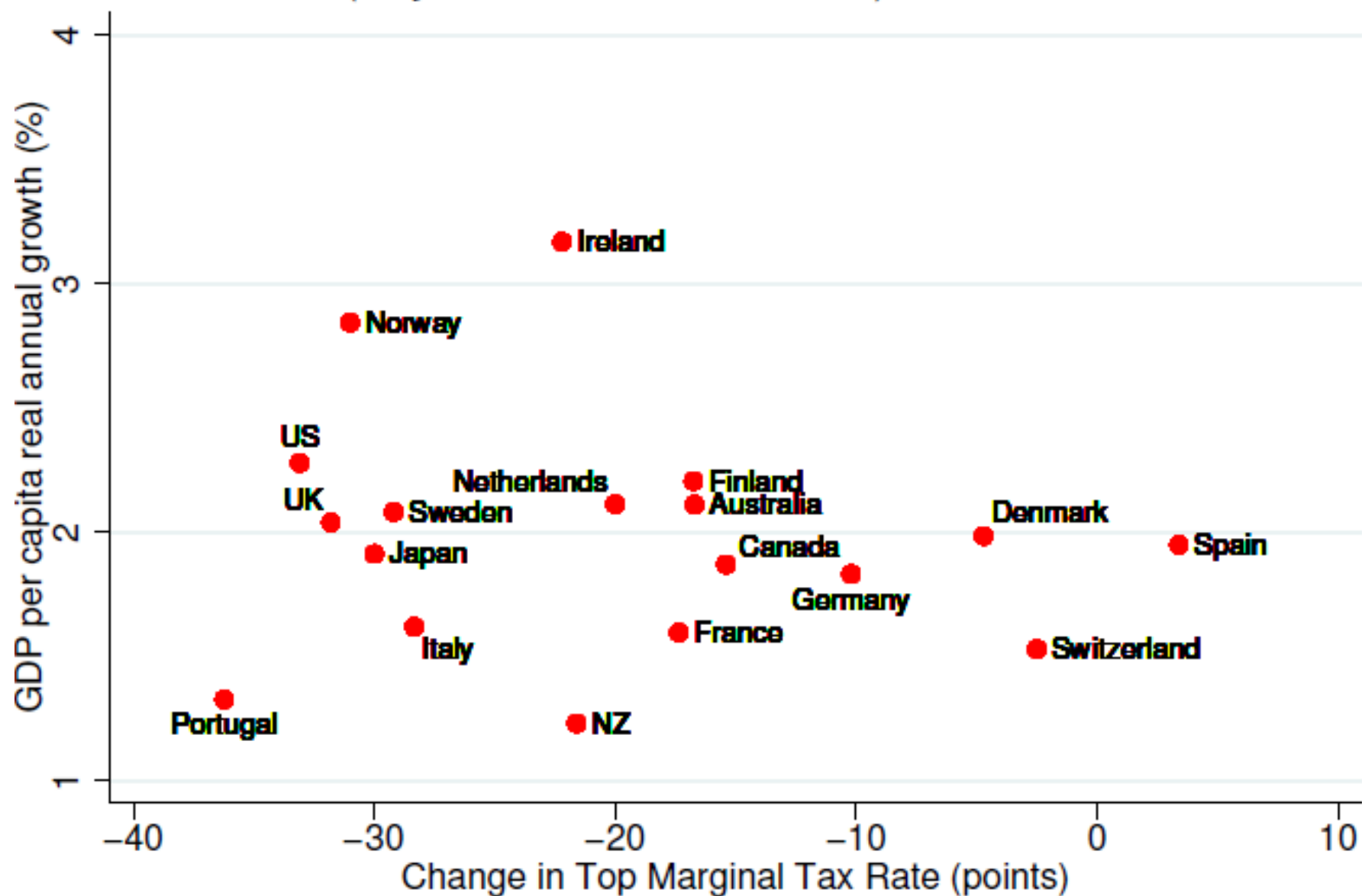


Figure 4: Top Marginal Tax Rates and Growth from 1960-4 to 2006-10

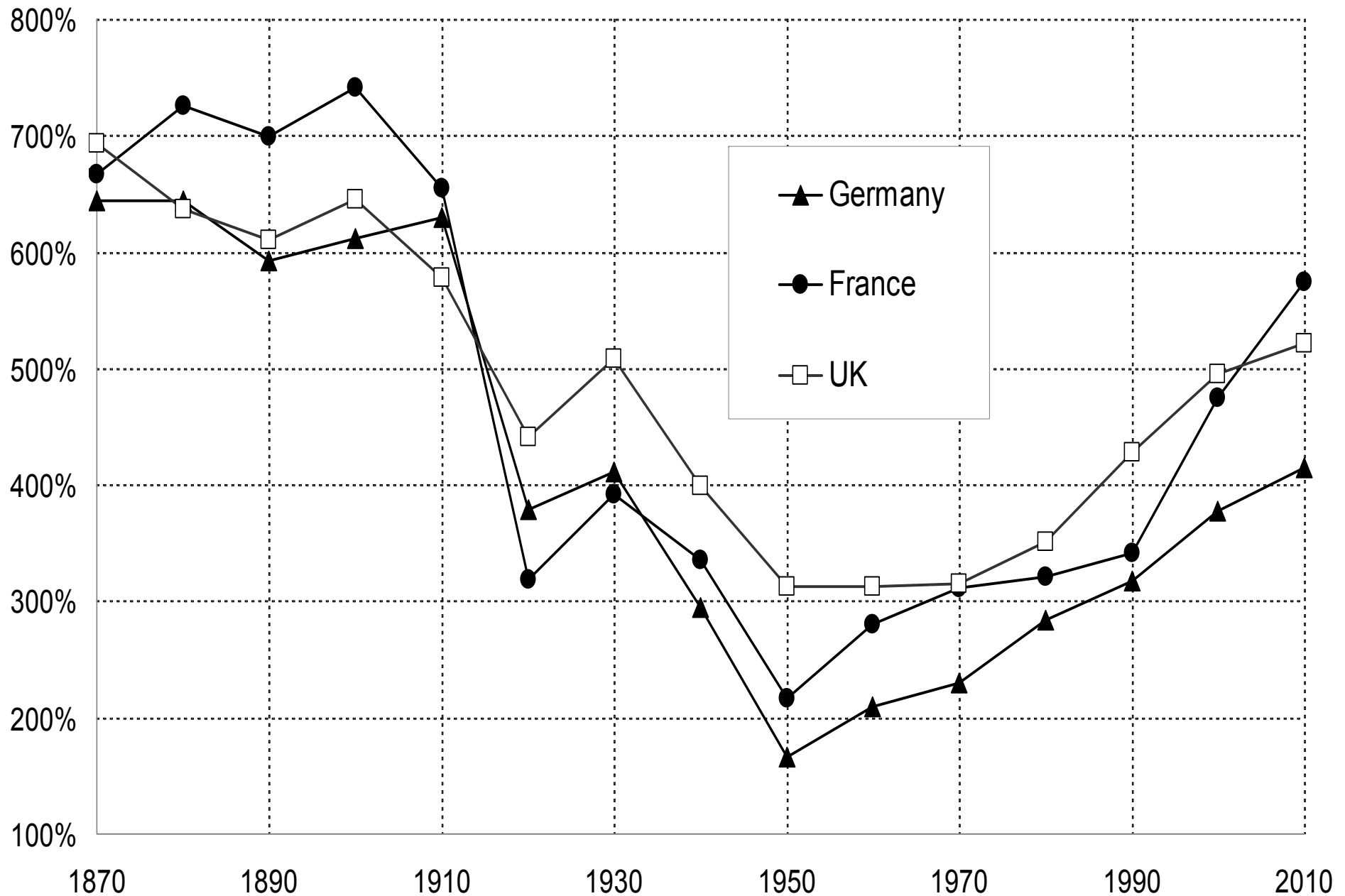
A. Growth (adjusted for initial GDP) 1960–64 to 1976–80



B. Growth (adjusted for initial GDP) 1976–80 to 2006–10

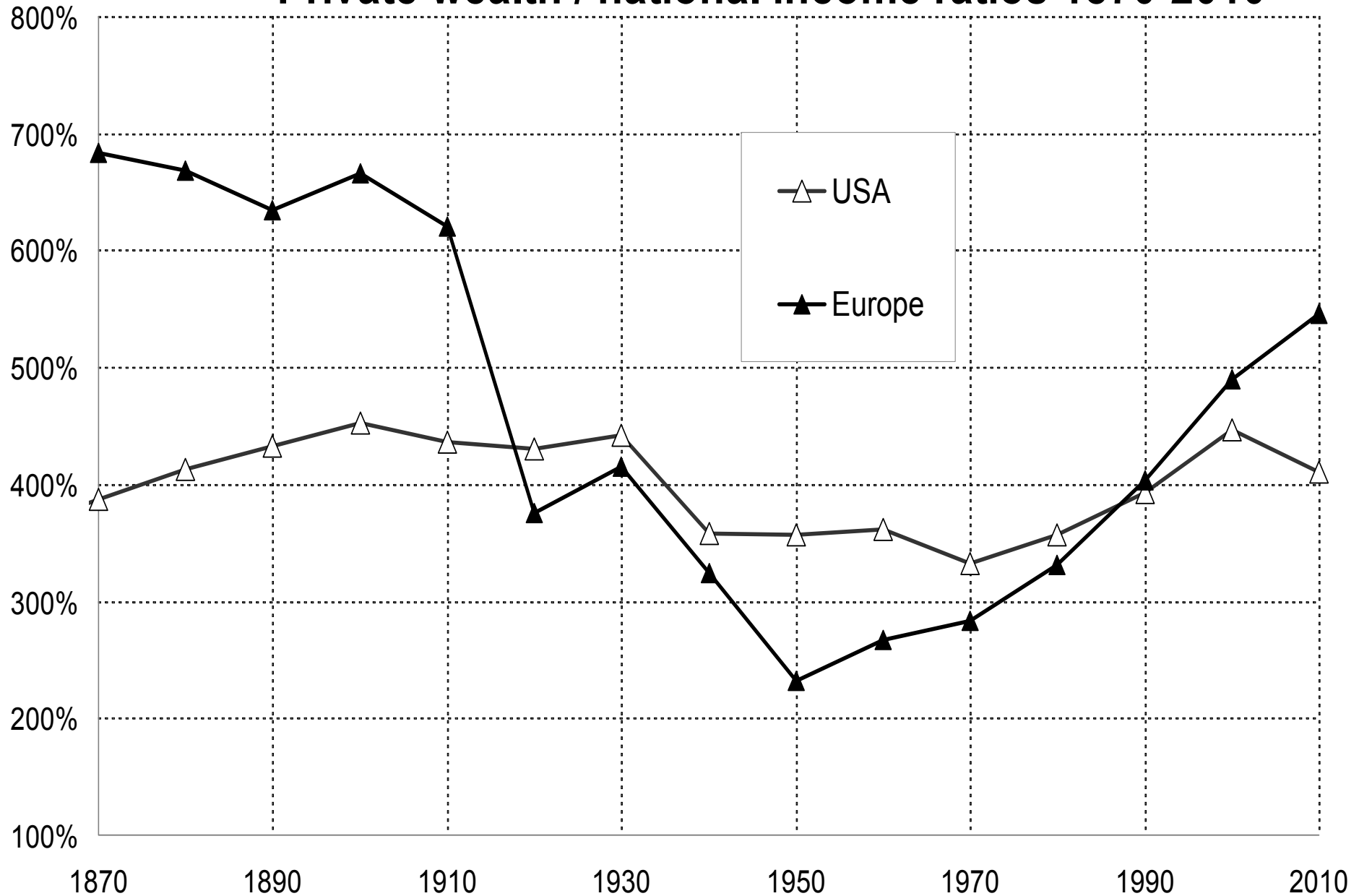


Private wealth / national income ratios in Europe, 1870-2010



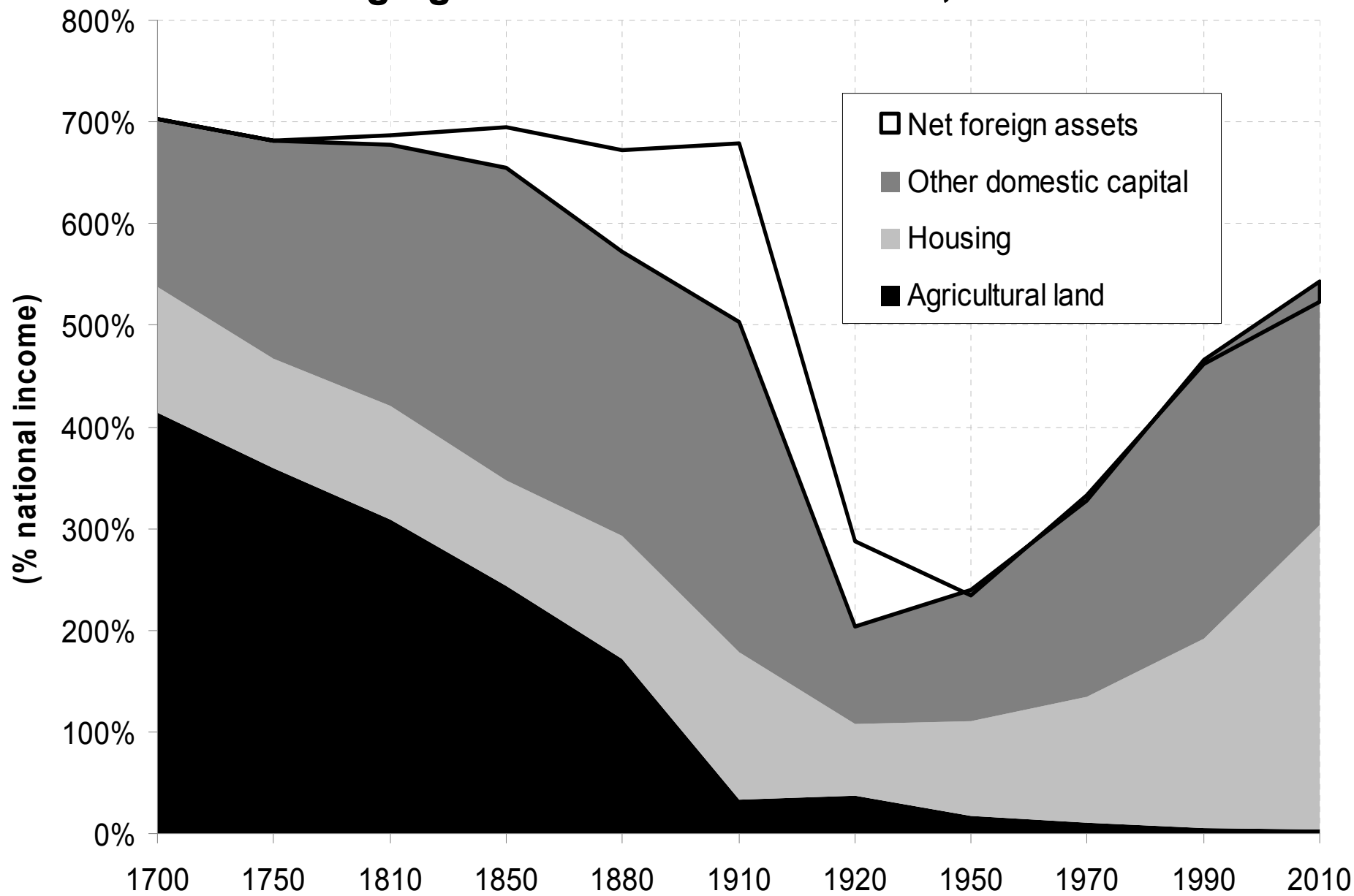
Authors' computations using country national accounts. Private wealth = non-financial assets + financial assets - financial liabilities (household & non-profit sectors)

Private wealth / national income ratios 1870-2010



Authors' computations using country national accounts. Private wealth = non-financial assets + financial assets - financial liabilities (household & non-profit sectors)

The changing nature of national wealth, UK 1700-2010



National wealth = agricultural land + housing + other domestic capital goods + net foreign assets

Concepts & methods

- National income $Y = \text{domestic output } Y_d + r \text{ NFA}$
- Private wealth $W = \text{non-financial assets} + \text{financial assets} - \text{financial liabilities}$ (household & non-profit sector)
- $\beta = W/Y = \text{private wealth-national income ratio}$

- Govt wealth $W_g = \text{non-fin} + \text{fin assets} - \text{fin liab}$ (govt sector)
- National wealth $W_n = W + W_g = K + \text{NFA}$

with $K = \text{domestic capital}$ (= land + housing + other domestic k)

$\text{NFA} = \text{net foreign assets}$

- $\beta_n = W_n/Y = \text{national wealth-national income ratio}$
- Domestic output $Y_d = F(K,L)$ ($L = \text{labor input}$) (e.g. $K^\alpha L^{1-\alpha}$)
- Capital share $\alpha = r \beta$ ($r = \text{average rate of return to wealth}$)

- **One-good capital accumulation model:** $W_{t+1} = W_t + s_t Y_t$
 $\rightarrow \beta_{t+1} = \beta_t (1+g_{wt})/(1+g_t)$

With $1+g_{wt} = 1+s_t/\beta_t =$ saving-induced wealth growth rate)

$1+g_t = Y_{t+1}/Y_t =$ exogenous output growth rate (productiv.+pop)

- With fixed saving rate $s_t=s$ and growth rate $g_t=g$, then:
 $\beta_t \rightarrow \beta = s/g$ (Harrod-Domar-Solow steady-state formula)
- E.g. if $s=10\%$ & $g=2\%$, then $\beta = 500\%$

- **Pure accounting formula:** valid with any saving motive or utility function, i.e. wherever s comes from
- Wealth or bequest in the utility function: saving rate s set by $u()$ (intensity of wealth or bequest taste) and/or demographic structure; then $\beta=s/g$ follows
- Dynastic utility: rate or return r set by $u()$; if α set by technology, then $\beta = \alpha/r$ follows ($s=\alpha g/r$, so $\beta=\alpha/r=s/g$)
- With general utility functions, both s and r are jointly determined by $u()$ and technology

- **Two-good capital accumulation model:** one capital good, one consumption good
 - Define $1+q_t$ = real rate of capital gain (or capital loss)
= excess of asset price inflation over consumer price inflation
 - Then $\beta_{t+1} = \beta_t (1+g_{wt})(1+q_t)/(1+g_t)$
- With $1+g_{wt} = 1+s_t/\beta_t$ = saving-induced wealth growth rate
 $1+q_t$ = capital-gains-induced wealth growth rate

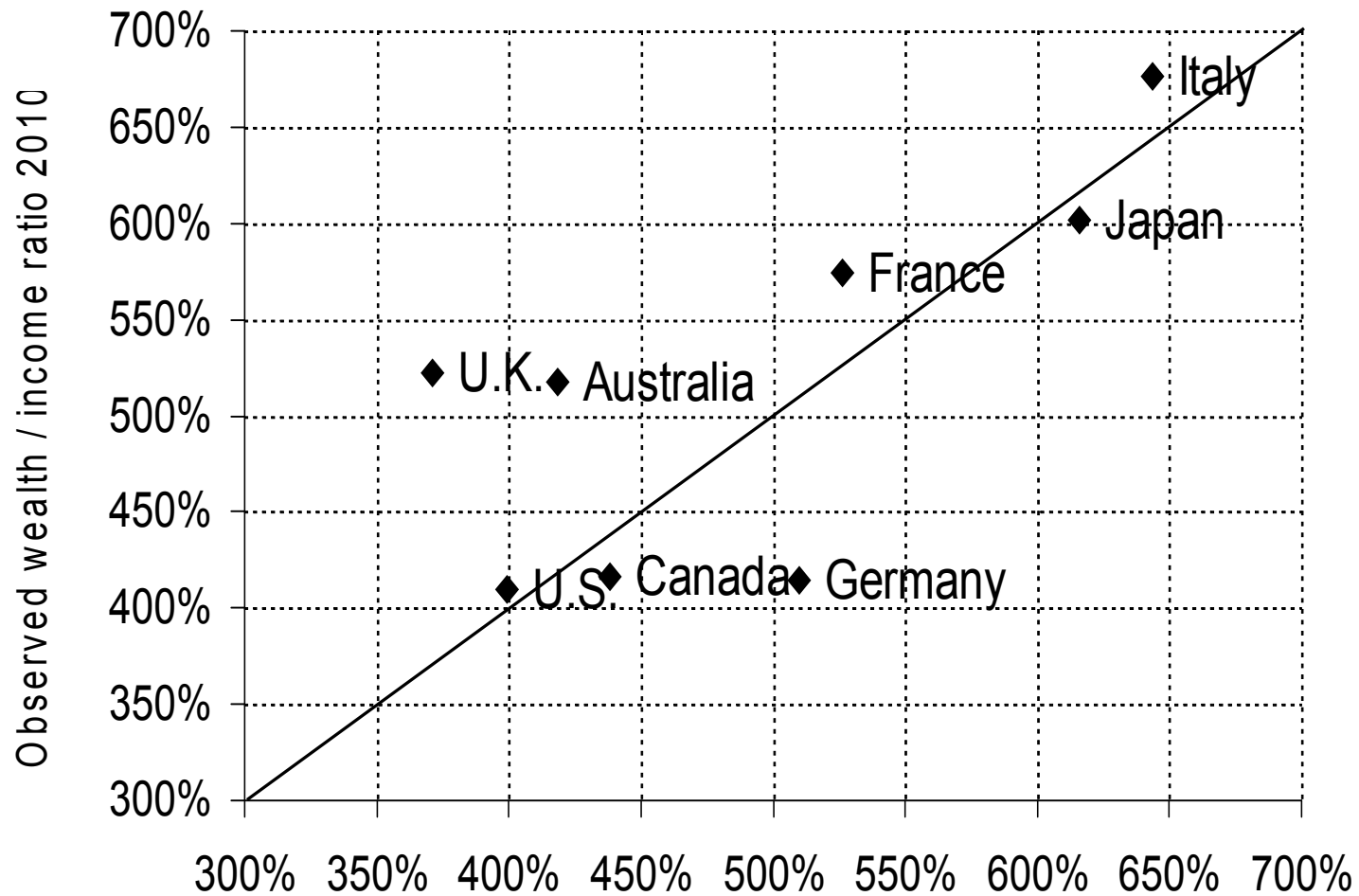
Our empirical strategy:

- we do not specify where q_t come from (maybe stochastic production functions to produce capital vs consumption good, with diff. rates of technical progress);
- we observe $\beta_t, \dots, \beta_{t+n}$, s_t, \dots, s_{t+n} , g_t, \dots, g_{t+n} , and we decompose the wealth accumulation equation between years t and $t+n$ into volume (saving) vs price effect (capital gain or loss)

Table 2: Growth rate vs private saving rate in rich countries, 1970-2010

	Real growth rate of national income	Population growth rate	Real growth rate of per capita national income	Net private saving rate (personal + corporate) (% national income)
U.S.	2.8%	1.0%	1.8%	7.7%
Japan	2.5%	0.5%	2.0%	14.6%
Germany	2.0%	0.2%	1.8%	12.2%
France	2.2%	0.5%	1.7%	11.1%
U.K.	2.2%	0.3%	1.9%	7.3%
Italy	1.9%	0.3%	1.6%	15.0%
Australia	3.2%	1.4%	1.7%	9.9%

Observed vs predicted private wealth / national income ratio (2010)



Predicted wealth / income ratio 2010 (on the basis of 1970 initial wealth and 1970-2010 cumulated saving flows) (additive decomposition, incl. R&D)

**Table 3: Accumulation of private wealth in rich countries, 1970-2010
(additive decomposition)**

	Private wealth-national income ratios		Decomposition of 2010 private wealth-national income ratio		
	β (1970)	β (2010)	Initial wealth effect	Cumulated new savings	Capital gains or losses
U.S.	342%	410%	113%	236%	60%
			28%	58%	15%
				80%	20%
Japan	299%	601%	110%	456%	35%
			18%	76%	6%
				93%	7%
Germany	225%	415%	104%	356%	-45%
			25%	86%	-11%
				115%	-15%
France	310%	575%	130%	346%	98%
			23%	60%	17%
				78%	22%
U.K.	306%	522%	128%	193%	201%
			25%	37%	39%
				49%	51%
Italy	239%	676%	114%	480%	83%
			17%	71%	12%
				85%	15%
Canada	247%	416%	80%	308%	28%
			19%	74%	7%
				92%	8%
Australia	330%	518%	94%	275%	149%
			18%	53%	29%
				65%	35%

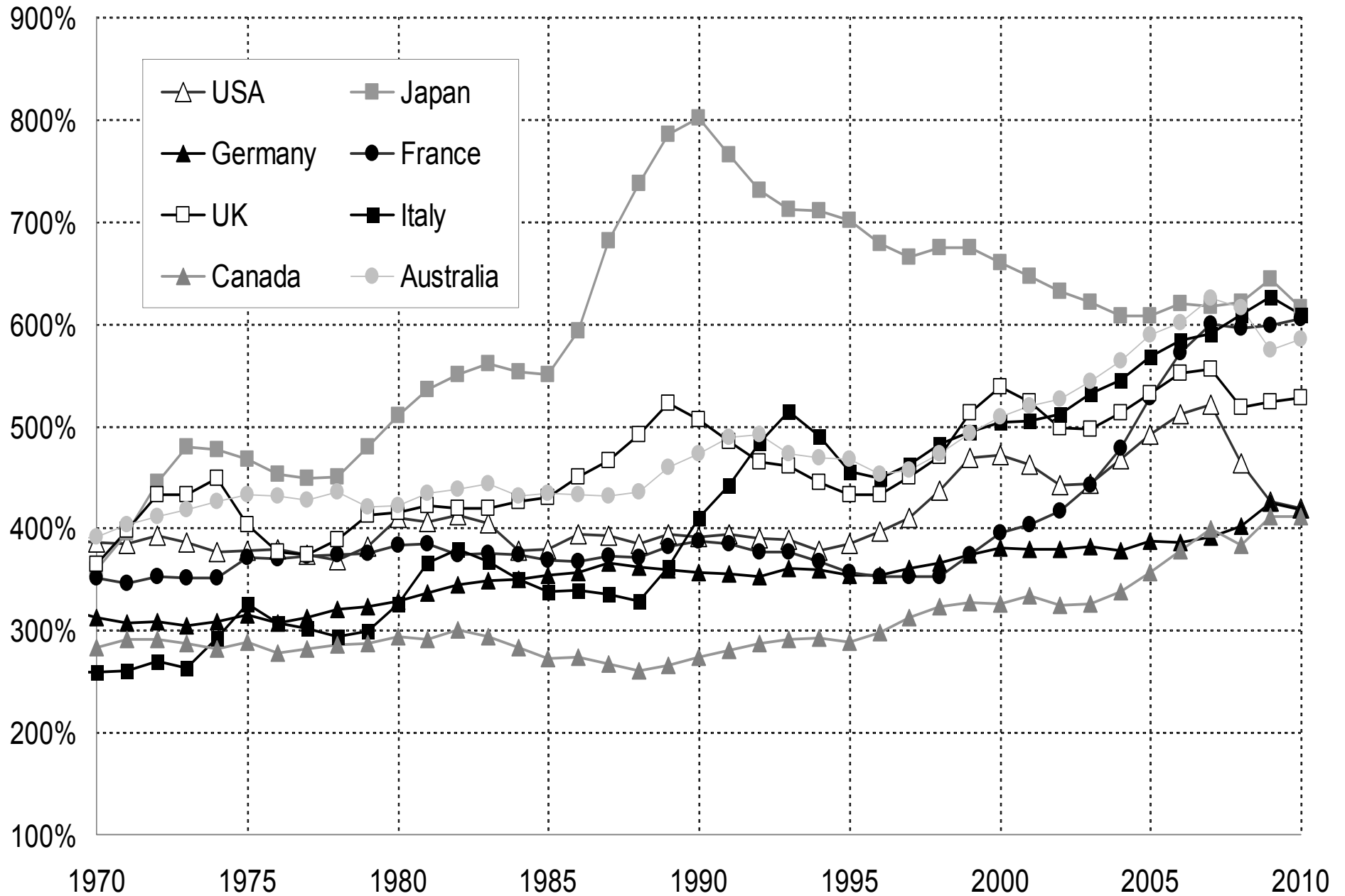
**Table 4: Accumulation of private wealth in rich countries, 1970-2010
(multiplicative decomposition)**

	Private wealth-national income ratios		Decomposition of 1970-2010 wealth growth rate		
			Real growth rate of private wealth	Savings- induced wealth growth rate	Capital-gains- induced wealth growth rate
	β (1970)	β (2010)	g_w	$g_{ws} = s/\beta$	q
U.S.	342%	410%	3.3%	2.9% 88%	0.4% 12%
Japan	299%	601%	4.3%	3.4% 78%	0.9% 22%
Germany	225%	415%	3.5%	4.3% 121%	-0.7% -21%
France	310%	575%	3.8%	3.4% 90%	0.4% 10%
U.K.	306%	522%	3.6%	1.9% 55%	1.6% 45%
Italy	239%	676%	4.6%	4.2% 92%	0.4% 8%
Canada	247%	416%	4.2%	4.3% 103%	-0.1% -3%
Australia	330%	518%	4.4%	3.4% 79%	0.9% 21%

Table 6: Private savings 1970-2010: personal vs corporate

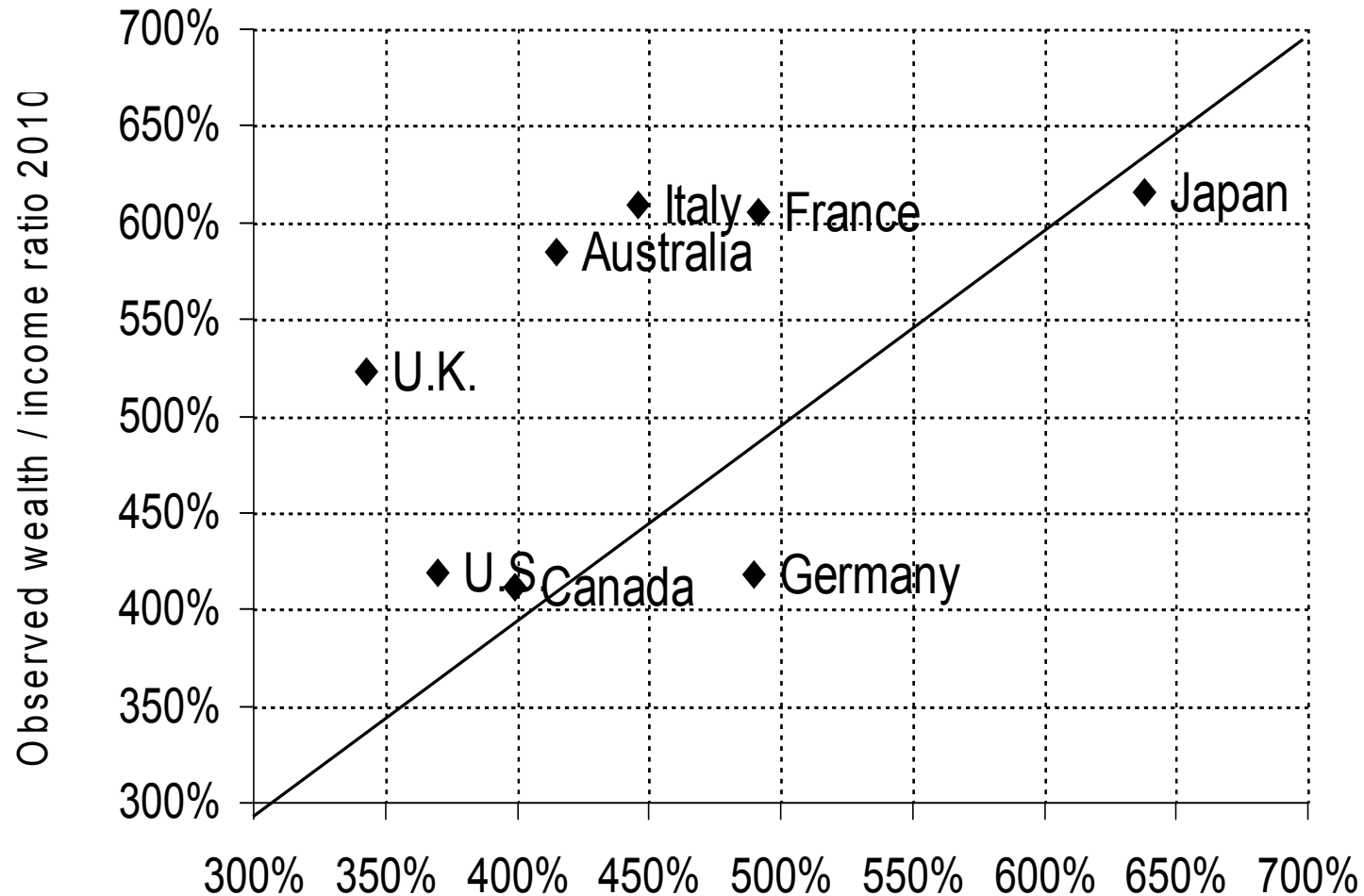
<i>Average saving rates 1970-2010 (% national income)</i>	Net private savings (personal + corporate)	incl. personal savings	incl. corporate savings (retained earnings)
U.S.	7.7%	4.6% 60%	3.1% 40%
Japan	14.6%	6.8% 47%	7.8% 53%
Germany	12.2%	9.4% 76%	2.9% 24%
France	11.1%	9.0% 81%	2.1% 19%
U.K.	7.3%	2.8% 38%	4.6% 62%
Italy	15.0%	14.6% 97%	0.4% 3%
Canada	12.1%	7.2% 60%	4.9% 40%
Australia	9.9%	5.9% 60%	3.9% 40%

National wealth / national income ratios, 1970-2010



Authors' computations using country national accounts. National wealth = private wealth + government wealth

Observed vs predicted national wealth/national income ratio (2010)

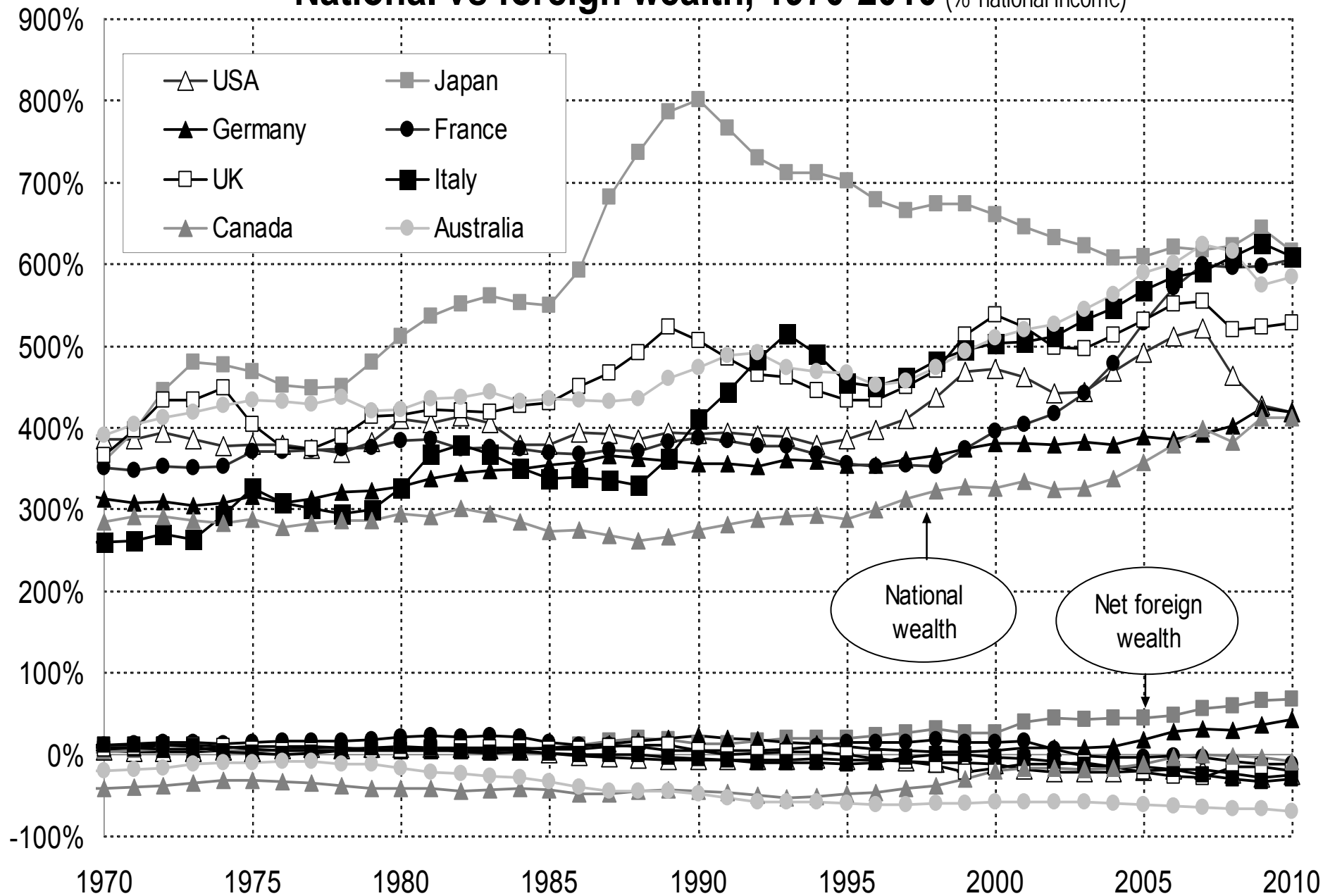


Predicted wealth / income ratio 2010 (on the basis of 1970 initial wealth and 1970-2010 cumulated saving flows) (additive decomposition, incl. R&D)

Table 9: National saving 1970-2010: private vs government

<i>Average saving rates 1970-2010 (% national income)</i>	Net national saving (private + government)	incl. private saving	incl. government saving
U.S.	5.2%	7.7%	-2.4%
Japan	14.6%	14.6%	0.0%
Germany	10.2%	12.2%	-2.1%
France	9.2%	11.1%	-1.9%
U.K.	5.3%	7.3%	-2.0%
Italy	8.5%	15.0%	-6.5%
Canada	10.1%	12.1%	-2.0%
Australia	8.9%	9.9%	-0.9%

National vs foreign wealth, 1970-2010 (% national income)

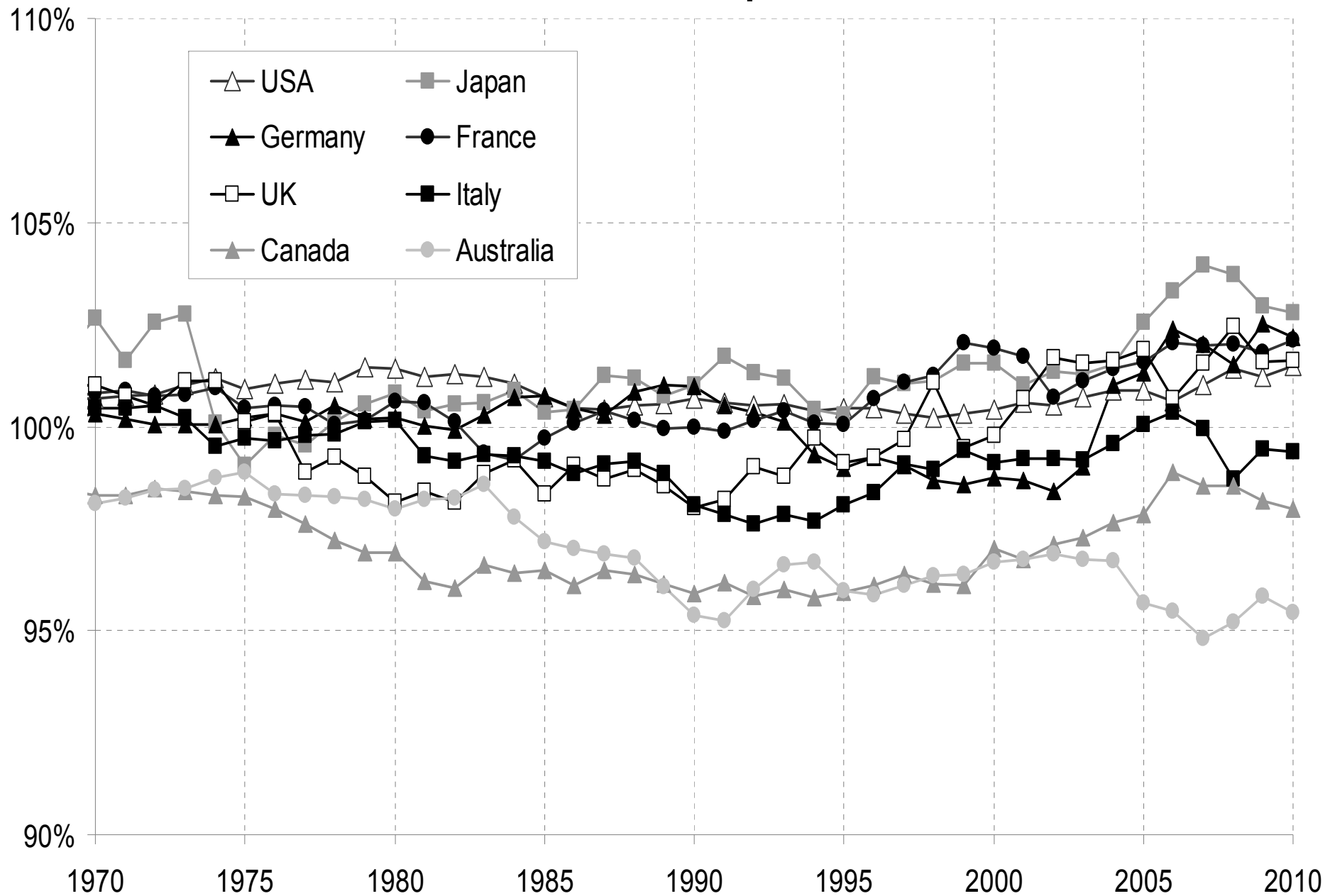


Authors' computations using country national accounts. Net foreign wealth = net foreign assets owned by country residents in rest of the world (all sectors)

**Table 12: National wealth accumulation in rich countries, 1970-2010:
domestic capital vs foreign wealth**

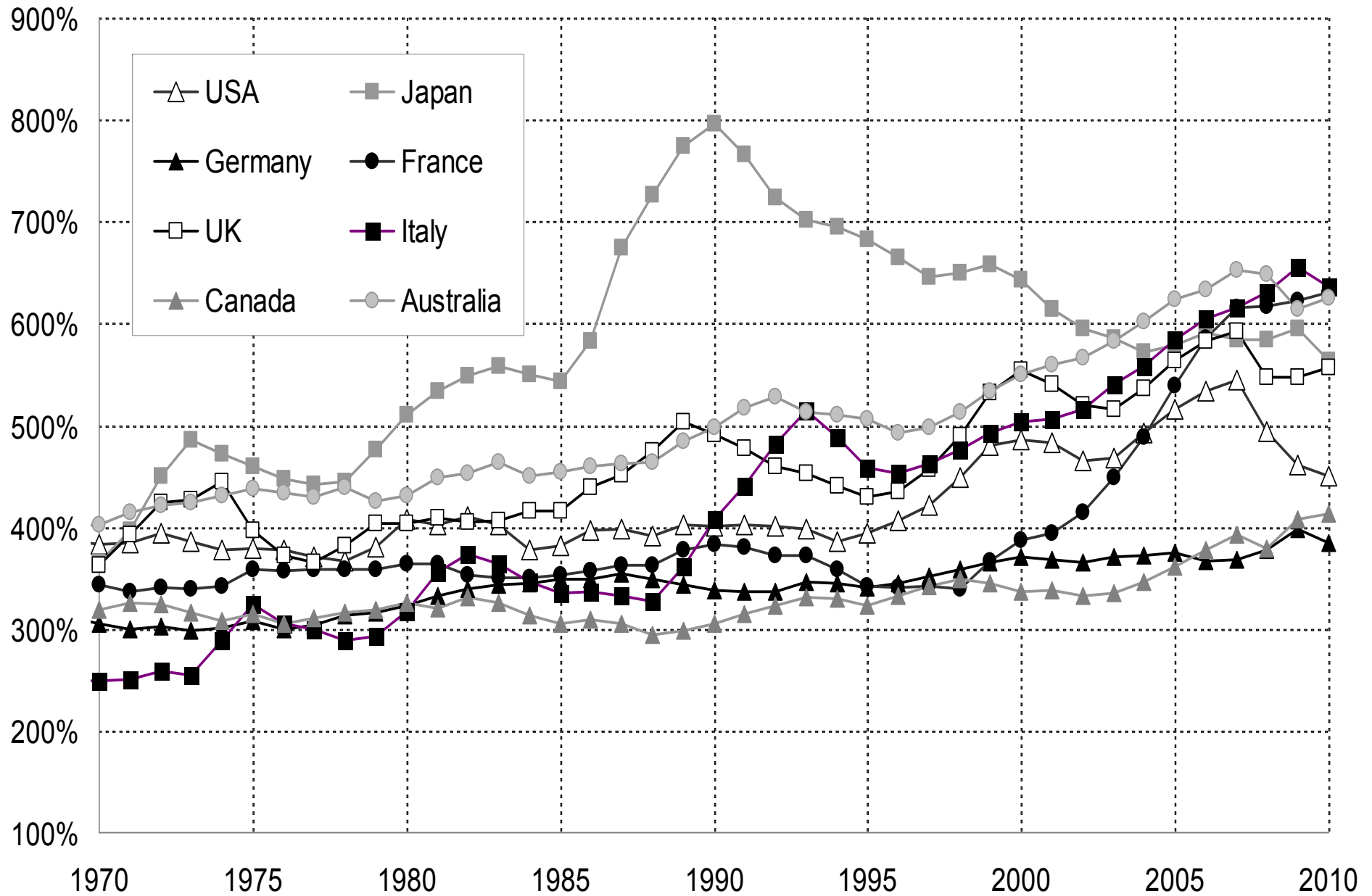
	National wealth / national income ratio (1970)		National wealth / national income ratio (2010)		Rise in national wealth / national income ratio (1970-2010)	
	<i>incl. Domestic capital</i>	<i>incl. Foreign wealth</i>	<i>incl. Domestic capital</i>	<i>incl. Foreign wealth</i>	<i>incl. Domestic capital</i>	<i>incl. Foreign wealth</i>
U.S.	385%		419%		33%	
	381%	4%	444%	-25%	63%	-30%
Japan	359%		616%		256%	
	356%	3%	548%	67%	192%	64%
Germany	312%		418%		106%	
	304%	8%	376%	42%	72%	34%
France	351%		605%		254%	
	340%	11%	618%	-13%	278%	-24%
U.K.	365%		527%		163%	
	359%	6%	548%	-20%	189%	-26%
Italy	259%		609%		350%	
	247%	12%	640%	-31%	392%	-42%
Canada	284%		412%		128%	
	325%	-41%	422%	-10%	97%	31%
Australia	391%		584%		194%	
	410%	-20%	655%	-70%	244%	-50%

National income / domestic product ratios, 1970-2010



Authors' computations using country national accounts. National income = domestic product + net foreign income

Domestic capital / output ratios, 1970-2010



Authors' computations using country national accounts. Domestic capital/output ratio = (national wealth - foreign wealth)/domestic product

**Table 16: Domestic capital accumulation in rich countries, 1970-2010:
housing vs other domestic capital**

	Domestic capital / national income ratio (1970)		Domestic capital / national income ratio (2010)		Rise in domestic capital / national income ratio (1970-2010)	
	<i>incl. Housing</i>	<i>incl. Other domestic capital</i>	<i>incl. Housing</i>	<i>incl. Other domestic capital</i>	<i>incl. Housing</i>	<i>incl. Other domestic capital</i>
U.S.	381%		444%		63%	
	142%	239%	182%	262%	41%	23%
Japan	356%		548%		192%	
	131%	225%	220%	328%	89%	103%
Germany	304%		376%		72%	
	129%	175%	241%	135%	112%	-40%
France	340%		618%		278%	
	104%	236%	371%	247%	267%	11%
U.K.	359%		548%		189%	
	98%	261%	300%	248%	202%	-13%
Italy	247%		640%		392%	
	107%	141%	386%	254%	279%	113%
Canada	325%		422%		97%	
	108%	217%	208%	213%	101%	-4%
Australia	410%		655%		244%	
	172%	239%	364%	291%	193%	52%