

Wealth and Inheritance in the Long Run

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- **There are two ways to become rich:** either through one's own work, or through inheritance
- In Ancien Regime societies, as well as in 19^C and early 20^C, it was obvious to everybody that the inheritance channel was important
- Inheritance and successors were everywhere in the 19^C literature: Balzac, Jane Austen, etc.
- Inheritance flows were huge not only in novels; but also in 19^C tax data: major economic, social and political issue

- **Question: Does inheritance belong to the past?**
Did modern growth kill the inheritance channel? E.g. due to the natural rise of human capital and meritocracy?
- This lecture answers « **NO** » to this question: I show that inherited wealth will probably play as big a role in 21^C capitalism as it did in 19^C capitalism

Lecture based upon T. Piketty, « On the long run evolution of inheritance: France 1820-2050 », QJE 2011 (available on line at piketty.pse.ens.fr) and on on-going similar work on US, UK, Germany and Italy

Figure 1: Annual inheritance flow as a fraction of national income, France 1820-2008

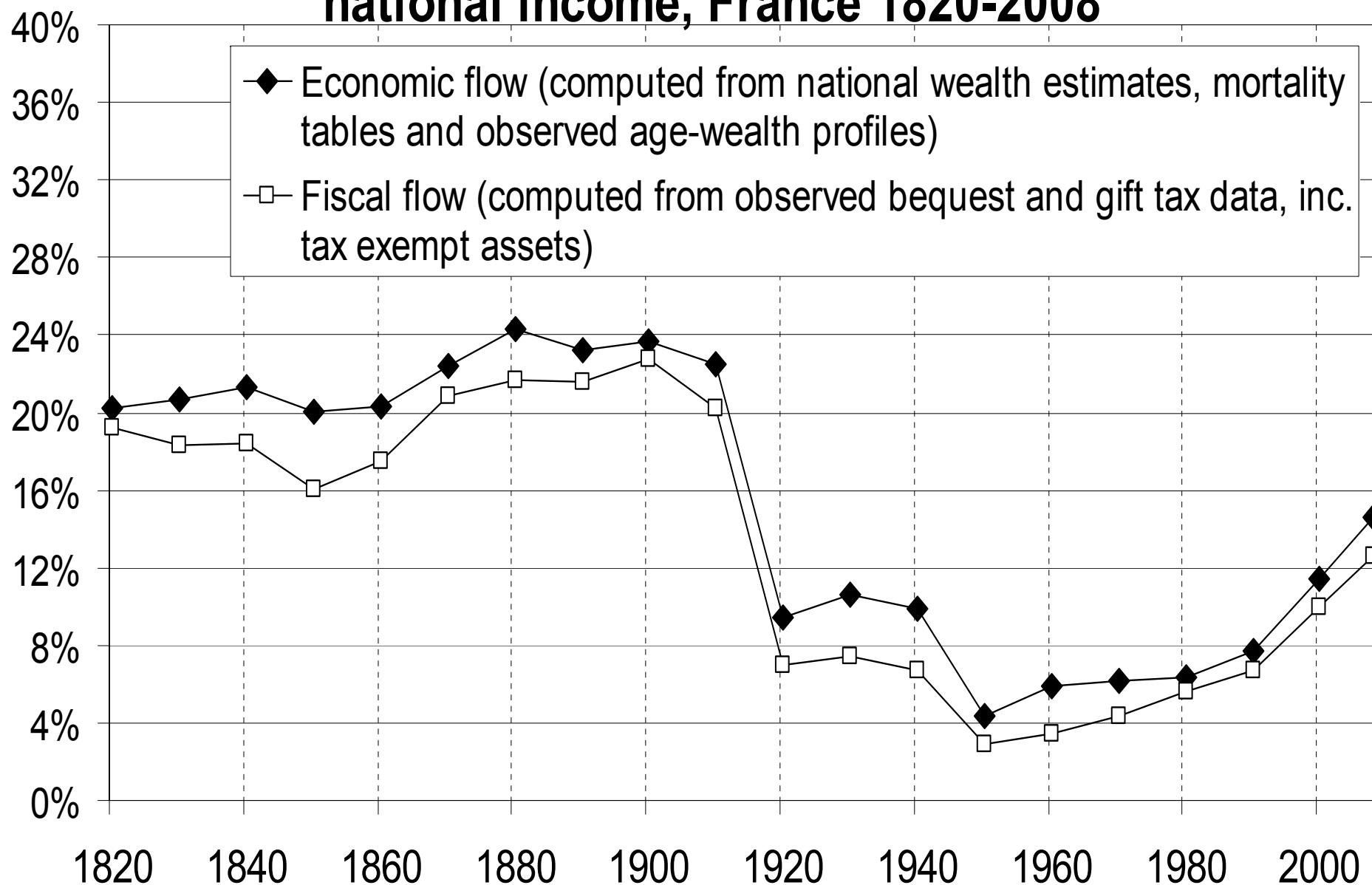
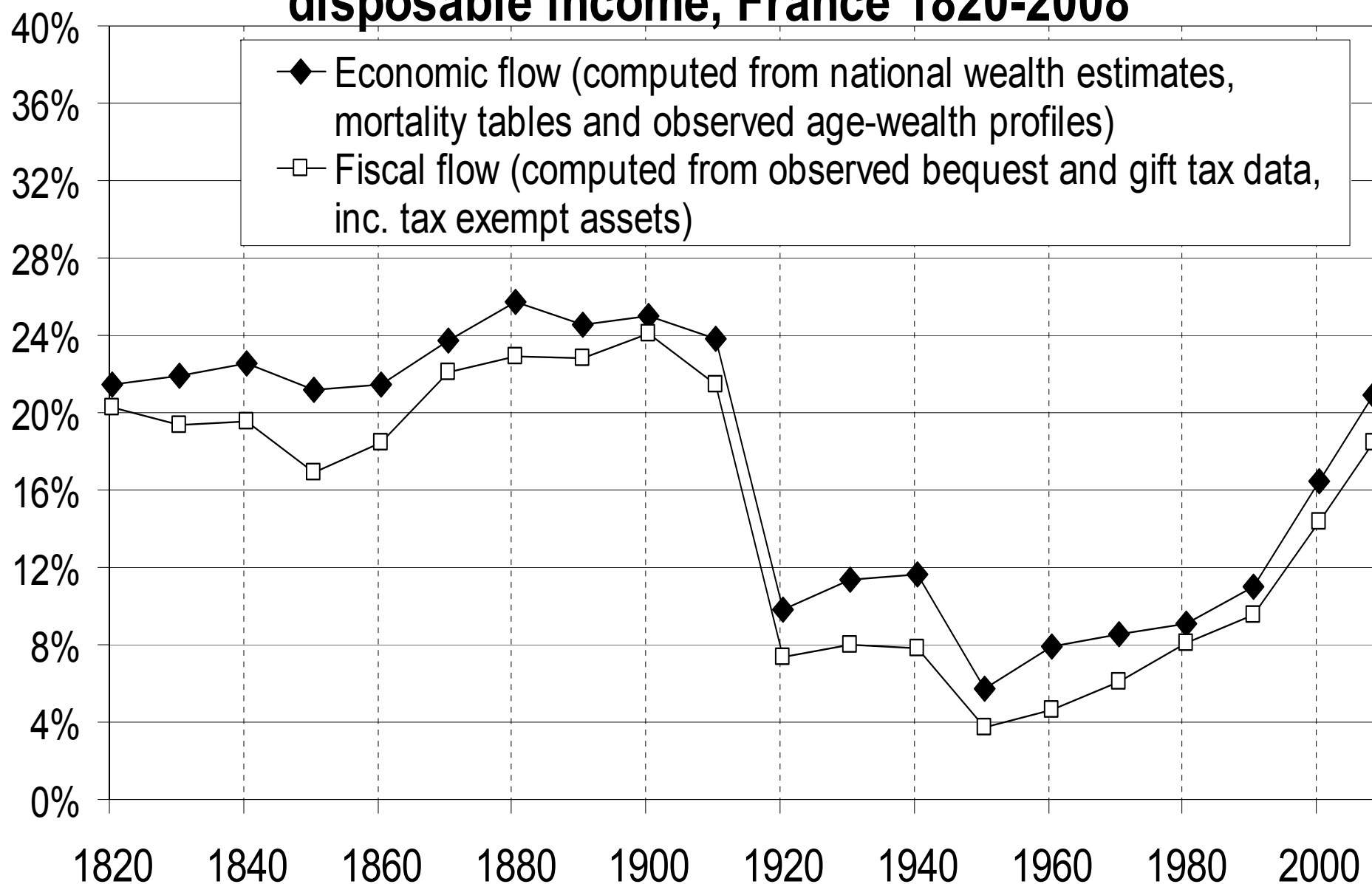


Figure 2: Annual inheritance flow as a fraction of disposable income, France 1820-2008



- An annual inheritance flow around 20%-25% of disposable income is a very large flow
- E.g. it is much larger than the annual flow of new savings (typically around 10%-15% of disposable income), which itself comes in part from the return to inheritance (it's easier to save if you have inherited your house & have no rent to pay)
- An annual inheritance flow around 20%-25% of disposable income means that total, cumulated inherited wealth represents the vast majority of aggregate wealth (typically above 80%-90% of aggregate wealth), and vastly dominates self-made wealth

- **Main lesson: with g low & $r > g$, inheritance is bound to dominate new wealth; the past eats up the future**

g = growth rate of national income and output

r = rate of return to wealth = (interest + dividend + rent + profits + capital gains etc.)/(net financial + real estate wealth)

- **Intuition:** with $r > g$ & g low (say $r=4\%-5\%$ vs $g=1\%-2\%$) (=19^C & 21^C), wealth coming from the past is being capitalized faster than growth; heirs just need to save a fraction g/r of the return to inherited wealth
- It is only in countries and time periods with g exceptionally high that self-made wealth dominates inherited wealth (Europe in 1950s-70s or China today)

This lecture: two issues

(1) The return of wealth

(Be careful with « human capital » illusion: human k did not replace old-style financial & real estate wealth)

(2) The return of inherited wealth

(Be careful with « war of ages » illusion: the war of ages did not replace class war; inter-generational inequality did not replace intra-generational inequality)

(=continuation of « World Top Incomes Database » project)

1. The return of wealth

- The « human capital » illusion: « in today's modern economies, what matters is human capital and education, not old-style financial or real estate wealth »
- Technocratic model : Parsons, Galbraith, Becker
(unidimensional class structure based upon human K)
- But the share of old-style capital income (rent, interest, dividend, etc.) in national income is the same in 2010 as in 1910 (about 30%), and the aggregate wealth-income ratio is also the same in 2010 as in 1910 (about 600%)
- Today in France, Italy, UK: $\beta = W/Y \approx 600\%$

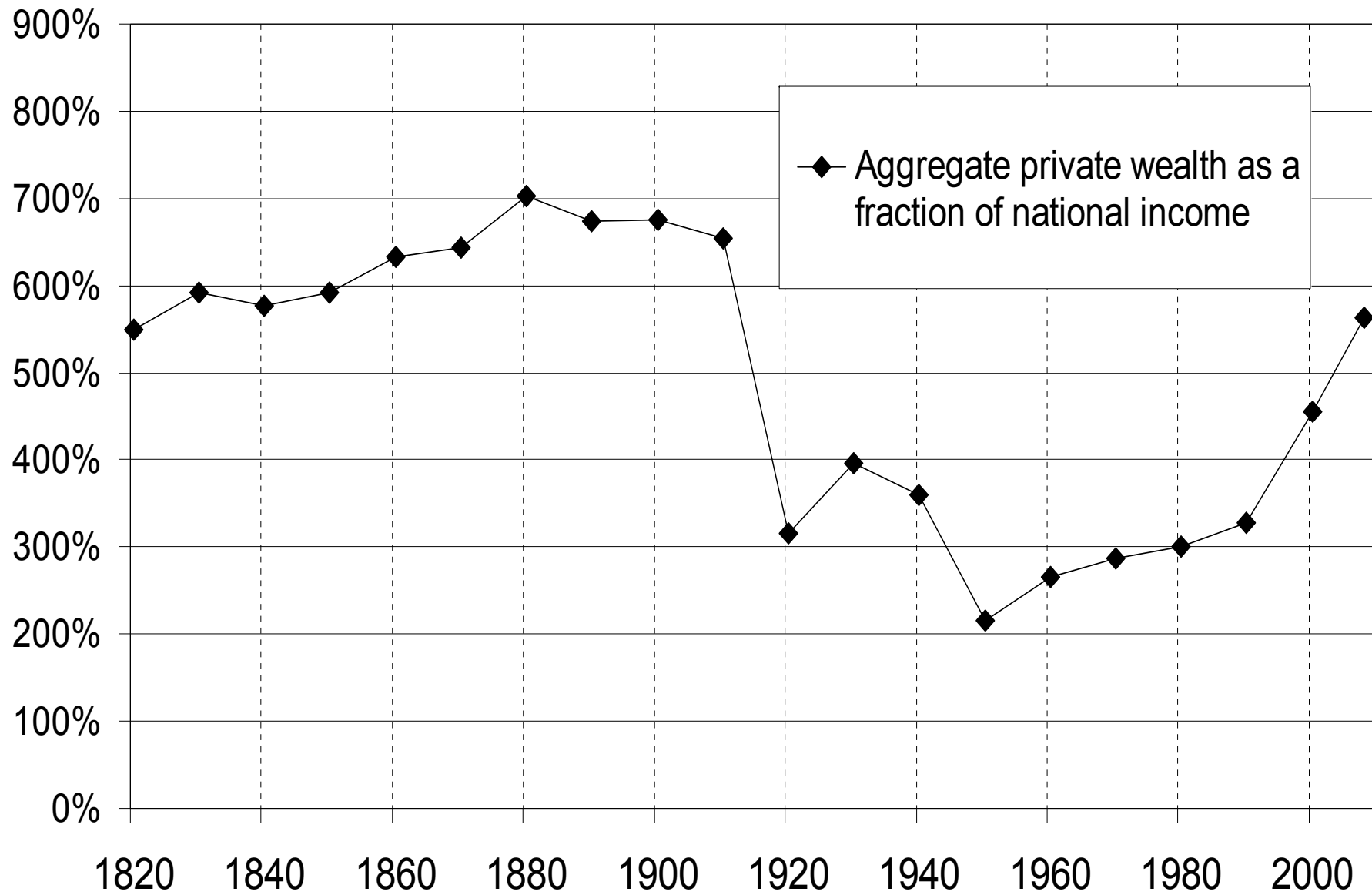
Per adult national income $Y \approx 35\,000\text{€}$

Per adult private wealth $W \approx 200\,000\text{€}$

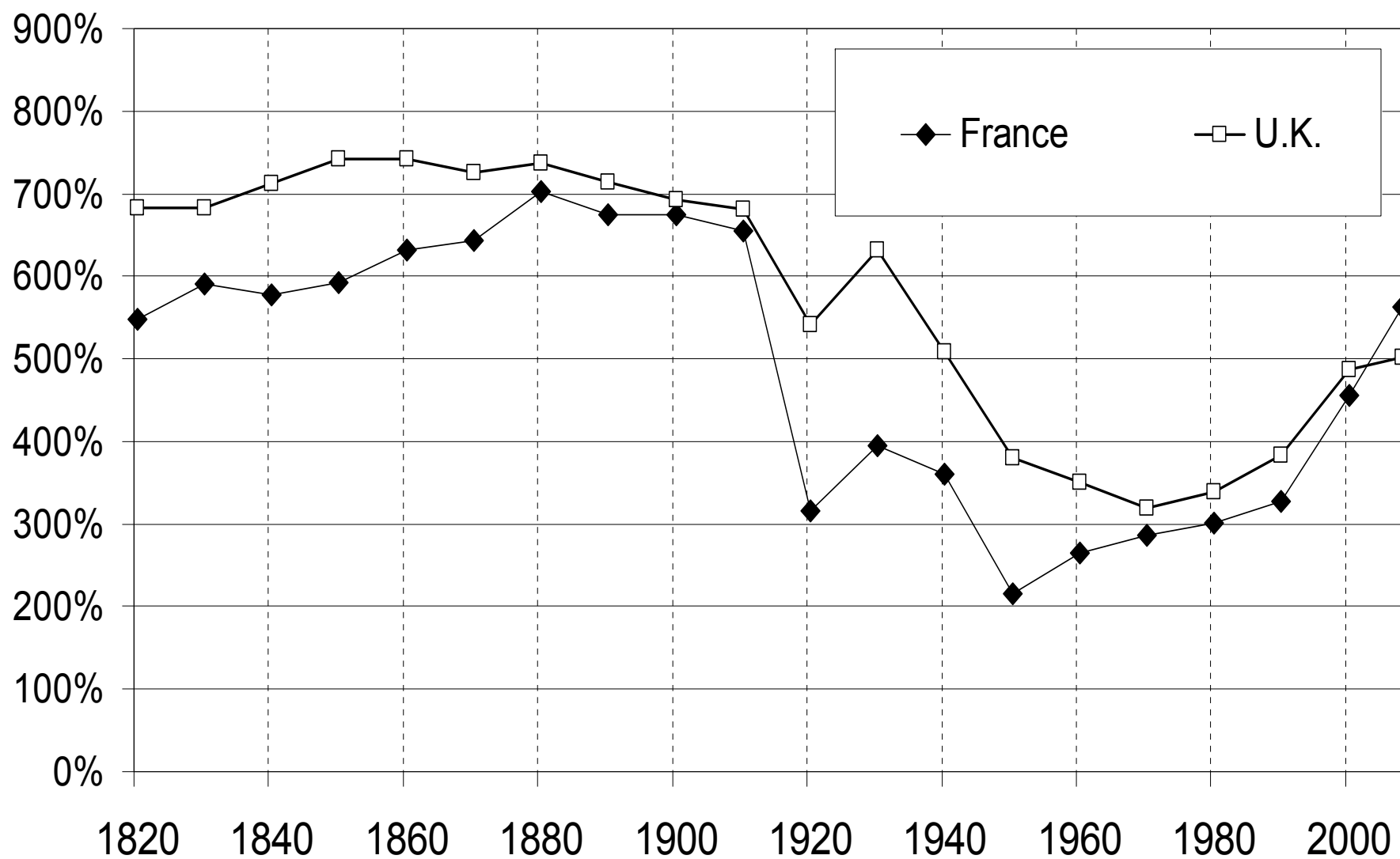
(wealth = financial assets + real estate assets – financial liabilities)

(on average, households own wealth equal to about 6 years of income)

Wealth-income ratio in France 1820-2010

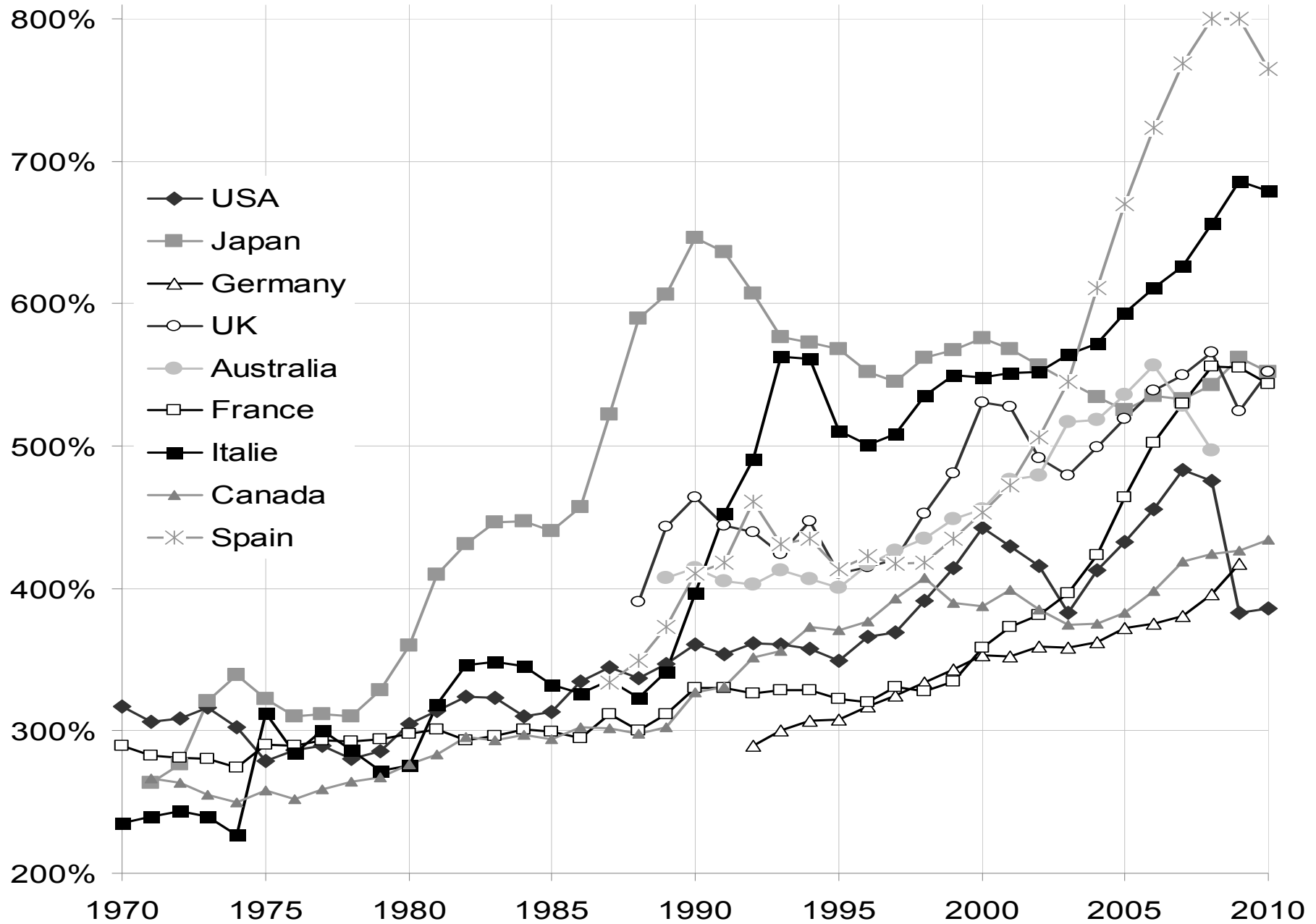


Wealth-income ratio: France vs UK 1820-2010



Sources: France: Piketty 2011; UK: Atkinson 2012, Giffen 1878, Goldsmith 1985

Private wealth-national income ratios, 1970-2010



- There are several long-run effects explaining the return of high wealth-income ratios :
 - it took a long time to recover from world war shocks
(1913 stock mkt & real estate capitalization recovered during 2000s)
 - financial deregulation & tax competition → rising capital shares and wealth-income ratios
 - growth slowdown in rich countries: $r > g$
 - rise of wealth-income and inheritance-income ratios
 - + rise of wealth inequality (amplifying mechanism)
 - (r = rate of return to wealth, g = productivity growth + pop growth)
- **Aggregate effect: Harrod-Domar-Solow formula: $\beta^* = s/g$**
 - (β^* = wealth-income ratio, s = saving rate)
 - (i.e. $s=10\%$, $g=2\%$ → $\beta^*=500\%$; if $g=1\%$, then $\beta^*=1000\%$)
 - (i.e. if we save 10% of income each year, then in the long run we accumulate 5 years of income if growth rate is 2%)
 - highly unstable process if growth rate is low

2. The return of inherited wealth

- In principle, one could very well observe a return of wealth without a return of inherited wealth
- I.e. it could be that the rise of aggregate wealth-income ratio is due mostly to the rise of life-cycle wealth (pension funds)
- Modigliani life-cycle theory: people save for their old days and die with zero wealth, so that inheritance flows are small

- However the Modigliani story happens to be partly wrong (except in the 50s-60s, when there's not much left to inherit...): pension wealth is a limited part of wealth (<5% in France... but 30% in the UK)
- Bequest flow-national income ratio **$B/Y = \mu m W/Y$**
(with m = mortality rate, μ = relative wealth of decedents)
- B/Y has almost returned to 1910 level, both because of W/Y and of μ
- Dynastic model: $\mu = (D-A)/H$, $m=1/(D-A)$, so that $\mu m = 1/H$
and $B/Y = \beta/H$
(A = adulthood = 20, H = parenthood = 30, D = death = 60-80)
- General saving model: with g low & $r>g$, $B/Y \rightarrow \beta/H$
→ with $\beta=600\%$ & H =generation length=30 years, then $B/Y \approx 20\%$, i.e. annual inheritance flow $\approx 20\%$ national income

**Figure 10: Steady-state cross-sectional age-wealth profile
in the dynastic model with demographic noise**

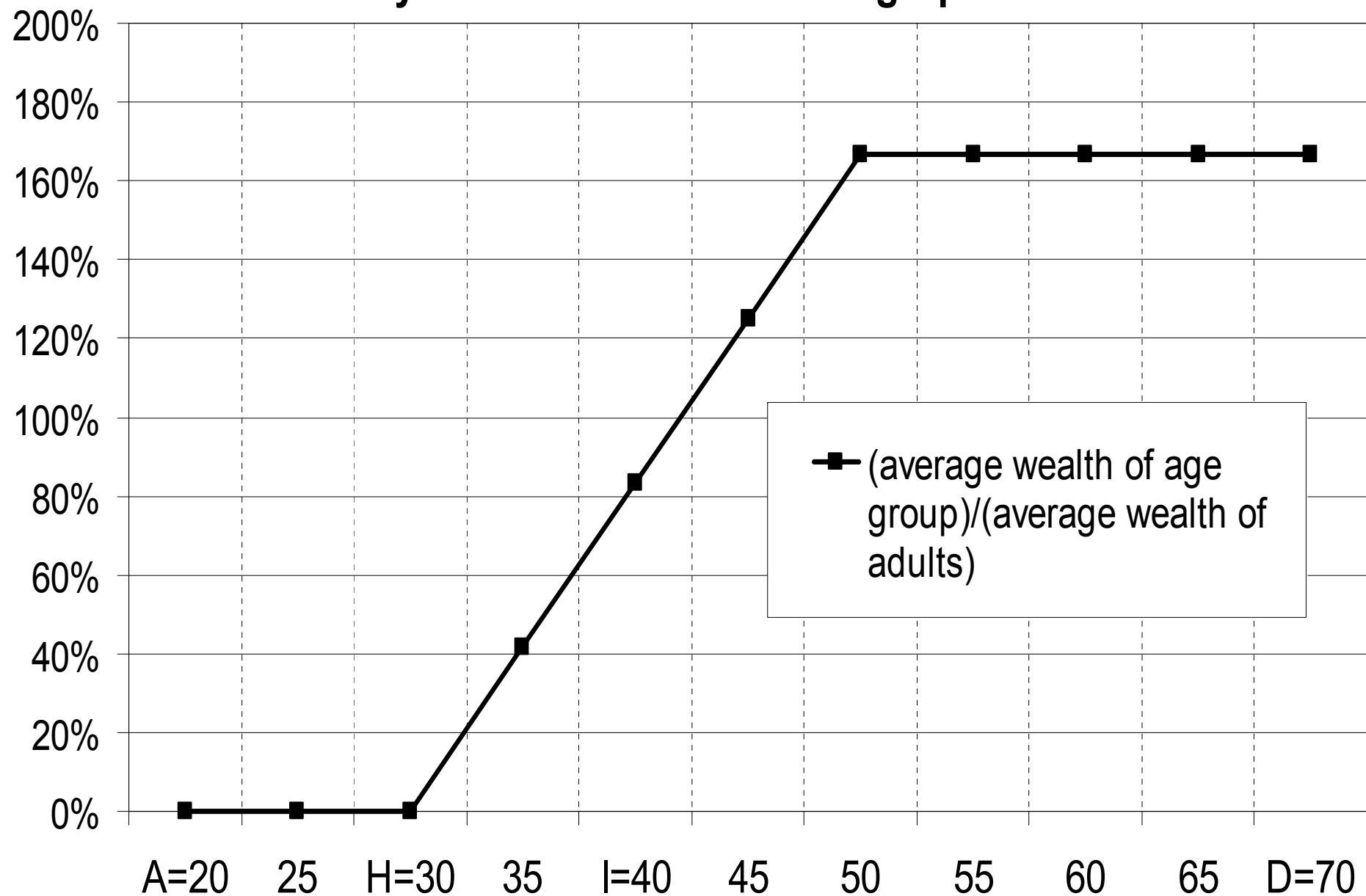


Figure 8: The ratio between average wealth of decedents and average wealth of the living in France 1820-2008

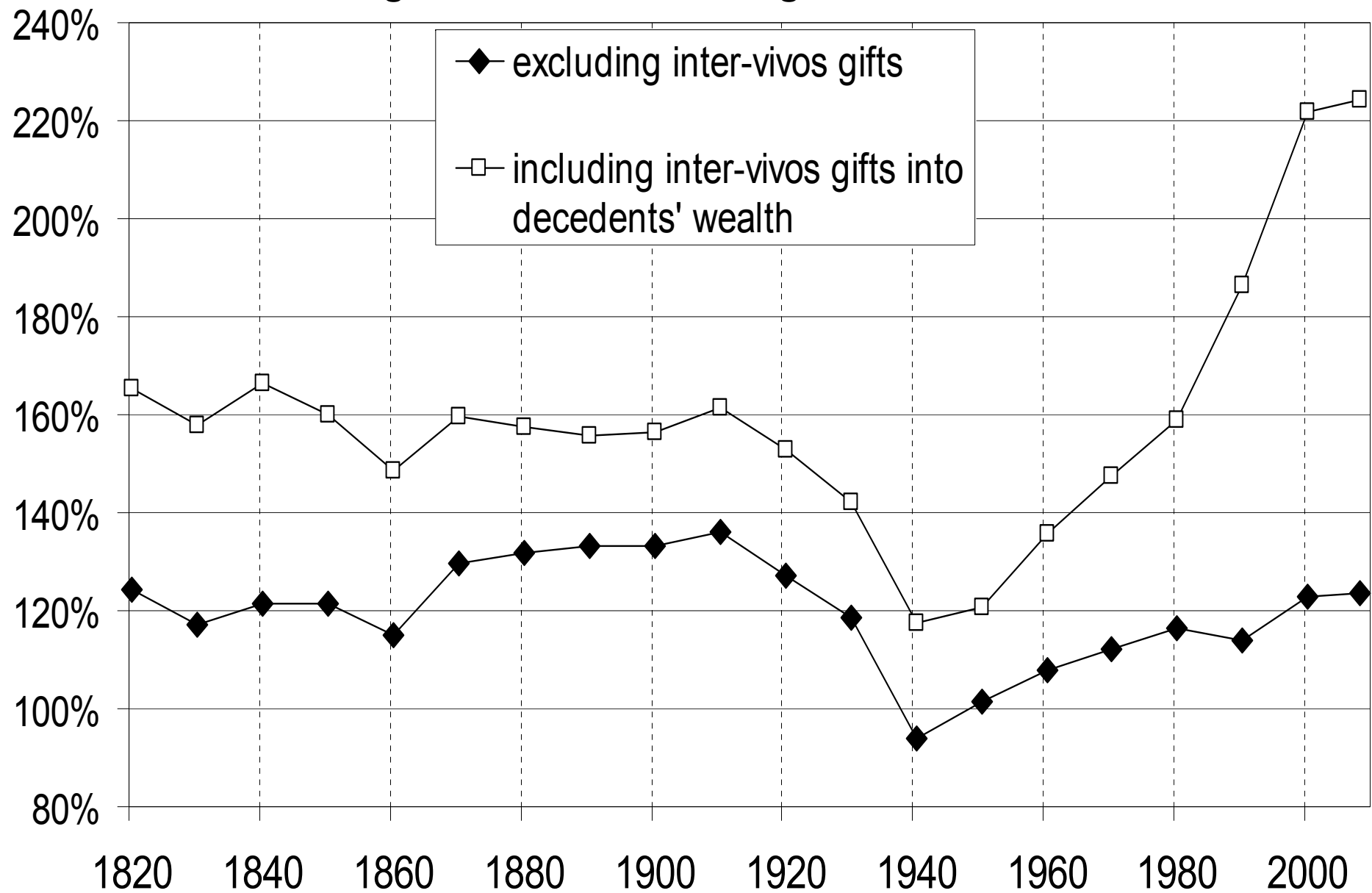
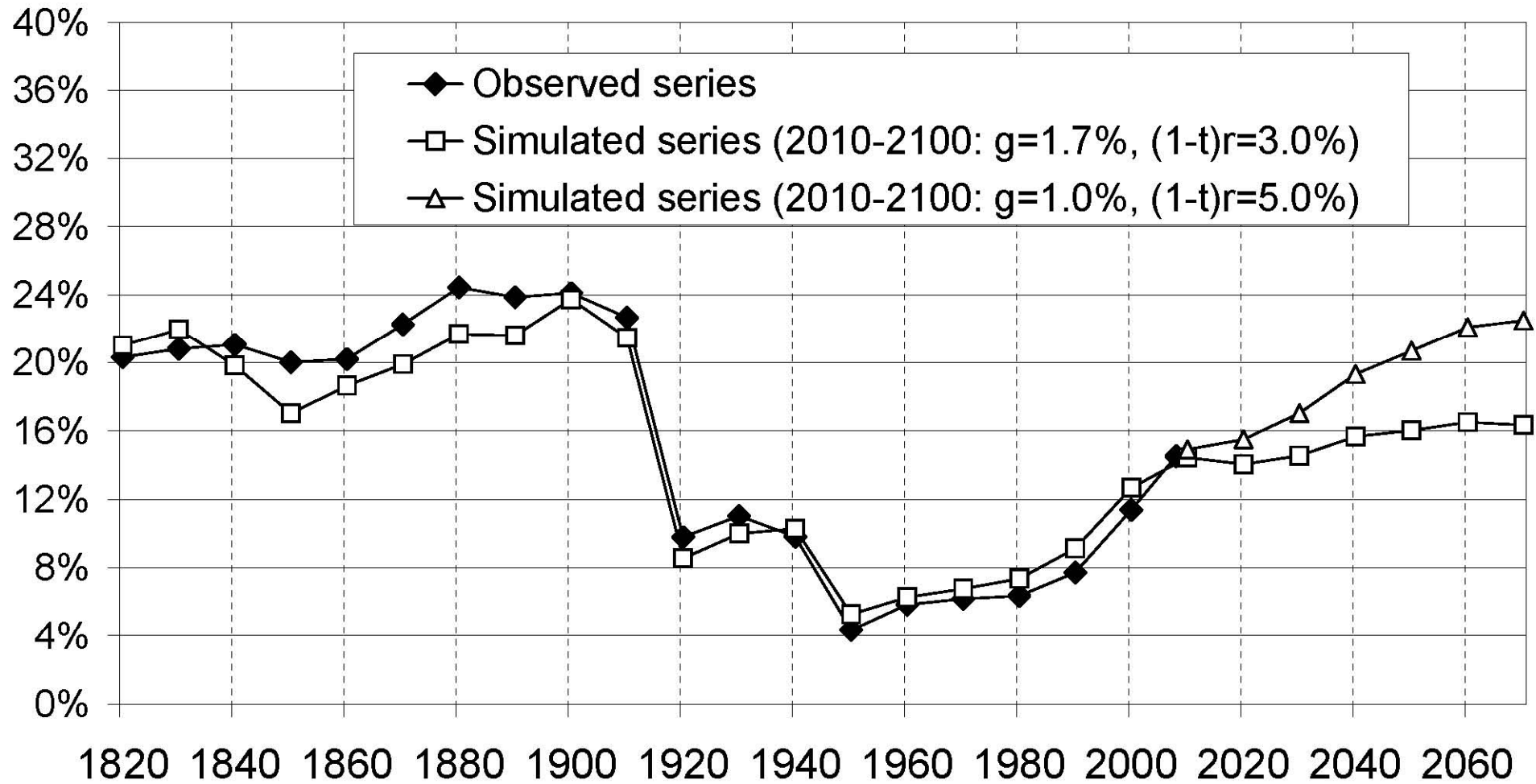


Table 2: Raw age-wealth-at-death profiles in France, 1820-2008

	20-29	30-39	40-49	50-59	60-69	70-79	80+
1827	50%	63%	73%	100%	113%	114%	122%
1857	57%	58%	86%	100%	141%	125%	154%
1887	45%	33%	63%	100%	152%	213%	225%
1902	26%	57%	78%	100%	172%	176%	233%
1912	23%	54%	74%	100%	158%	176%	237%
1931	22%	59%	77%	100%	123%	137%	143%
1947	23%	52%	77%	100%	99%	76%	62%
1960	28%	52%	74%	100%	110%	101%	87%
1984	19%	55%	83%	100%	118%	113%	105%
2000	19%	46%	66%	100%	122%	121%	118%
2006	25%	42%	74%	100%	111%	106%	134%

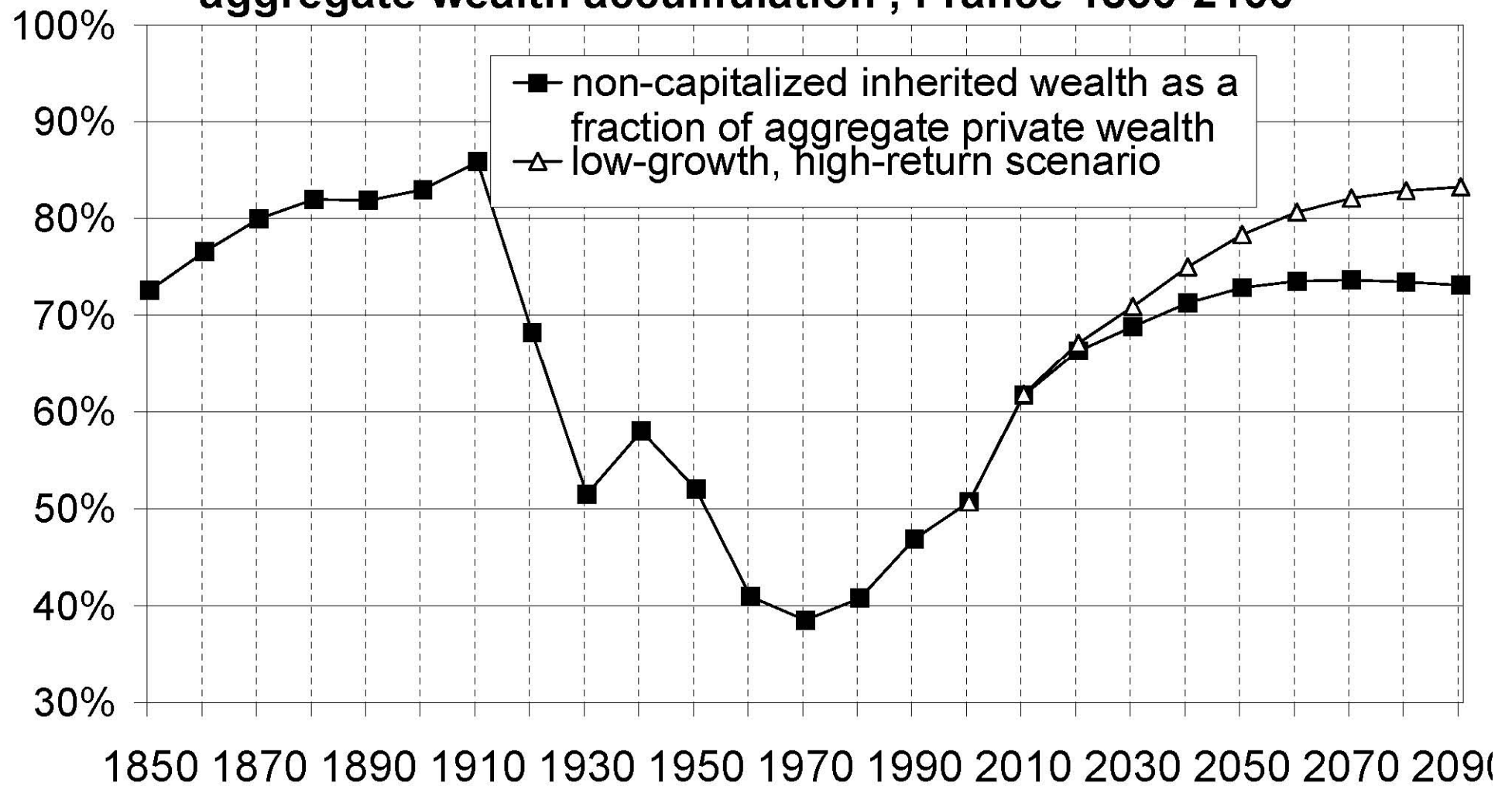
**Figure 9: Observed vs simulated inheritance flow B/Y,
France 1820-2100**



The share of inherited wealth in total wealth

- Modigliani AER 1986, JEP 1988: inheritance = 20% of total U.S. wealth
 - Kotlikoff-Summers JPE 1981, JEP 1988: inheritance = 80% of total U.S. wealth
 - Three problems with this controversy: - Bad data
 - **We do not live in a stationary world: life-cycle wealth was much more important in the 1950s-1970s than it is today**
 - We do not live in a representative-agent world → new definition of inheritance share
- **my findings show that the share of inherited wealth has changed a lot over time, but that it is generally much closer to Kotlikoff-Summers (80%) than Modigliani (20%)**

Figure 18: The share of non-capitalized inheritance in aggregate wealth accumulation , France 1850-2100



Back to distributional analysis: macro ratios determine who is the dominant social class

- 19^c: top successors dominate top labor earners
→ rentier society (Balzac, Jane Austen, etc.)
- For cohorts born in 1910s-1950s, inheritance did not matter too much → labor-based, meritocratic society
- But for cohorts born in the 1970s-1980s & after, inheritance matters a lot
→ 21^c class structure will be intermediate between 19^c rentier society than to 20^c meritocratic society – and possibly closer to the former (more unequal in some dimensions, less in others)
- The rise of human capital & meritocracy was an illusion .. especially with a labor-based tax system

Table 3: Intra-cohort distributions of labor income and inheritance, France, 1910 vs 2010

Shares in aggregate labor income or inherited wealth	Labor income 1910-2010	Inherited wealth	
		1910	2010
Top 10% "Upper Class"	30%	90%	60%
<i>incl. Top 1% "Very Rich"</i>	<i>6%</i>	<i>50%</i>	<i>25%</i>
<i>incl. Other 9% "Rich"</i>	<i>24%</i>	<i>40%</i>	<i>35%</i>
Middle 40% "Middle Class"	40%	5%	35%
Bottom 50% "Poor"	30%	5%	5%

Figure 15: Cohort fraction inheriting more than bottom 50% lifetime labor resources (cohorts born in 1820-2020)

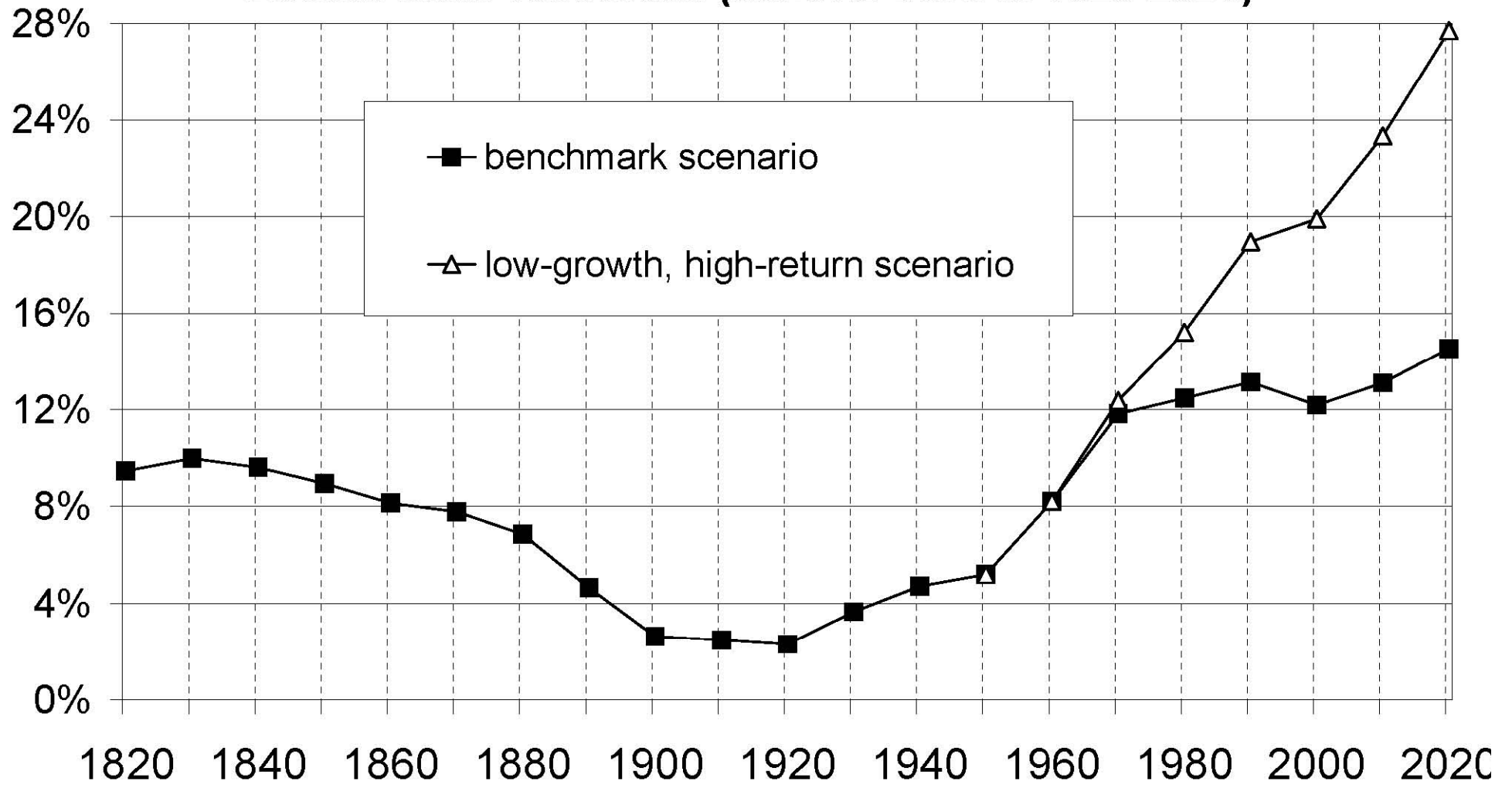
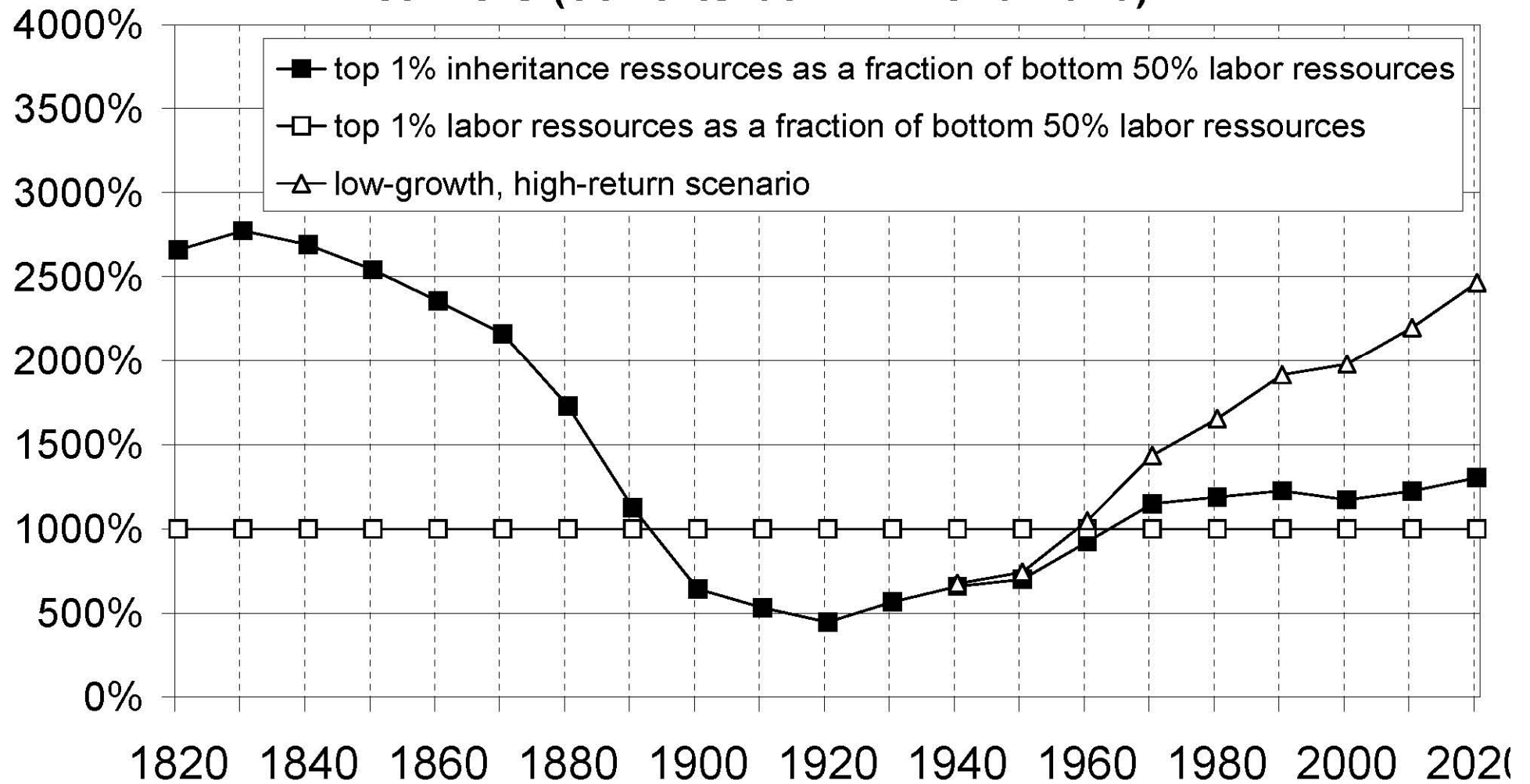


Figure 14: Top 1% successors vs top 1% labor income earners (cohorts born in 1820-2020)



What have we learned?

- A world with g low & $r > g$ is gloomy for workers with zero initial wealth... especially if global tax competition drives capital taxes to 0%... especially if top labor incomes take a rising share of aggregate labor income
- A world with $g = 1-2\%$ (=long-run world technological frontier?) is not very different from a world with $g = 0\%$ (Marx-Ricardo)
- From a r -vs- g viewpoint, 21^c maybe not too different from 19^c – but still better than Ancien Regime... except that nobody tried to depict AR as meritocratic...

The meritocratic illusion

Democracies rely on meritocratic values: in order to reconcile the principle of political equality with observed socio-economic inequalities, they need to justify inequality by merit and/or common utility

- **But effective meritocracy does not come naturally from technical progress & market forces; it requires specific policies & institutions**
- Two (quasi-)illusions: (1) human K didn't replace financial K (2) war of ages didn't replace war of classes
- « Meritocratic extremism » : the rise of working rich & the return of inherited wealth can seem contradictory; but they go hand in hand in 21st century discourse: working rich are often viewed as the only cure against the return of inheritance – except of course for bottom 90% workers...

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 $r > g$ → 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

- **More competitive & efficient markets won't help to curb divergence forces:**

(1) Competition and greed fuel the grabbing hand mechanism; with imperfect information, competitive forces not enough to get $\text{pay} = \text{marginal product}$; **only confiscatory top rates can calm down top incomes**

(2) The more efficient the markets, the sharper the capital vs labor distinction; with highly developed k markets, any dull successor can get a high rate of return

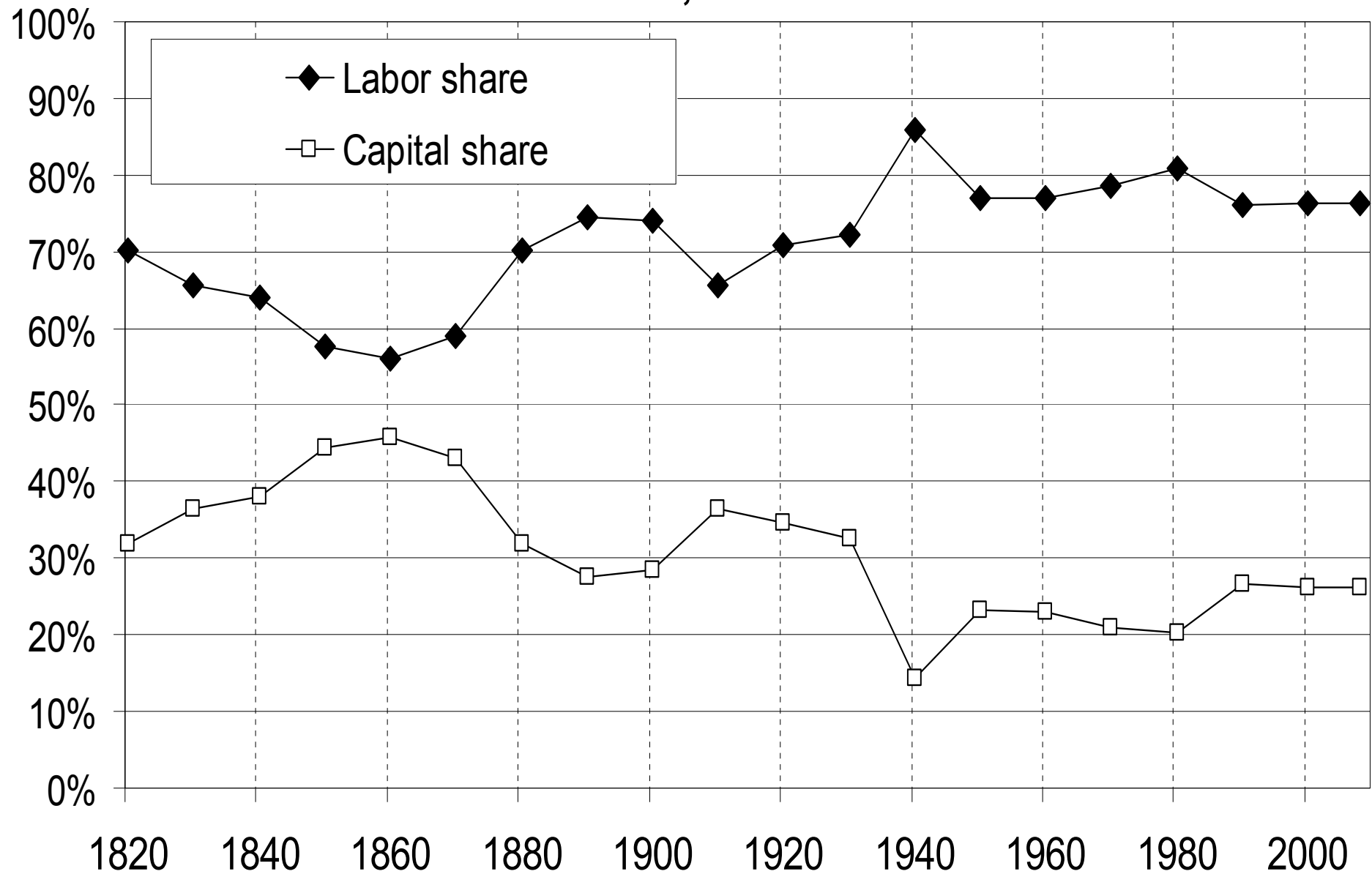
- **$r > g$ = nothing to do with market imperfections**

- Standard model: $r = \delta + \sigma g > g$ (Golden rule)

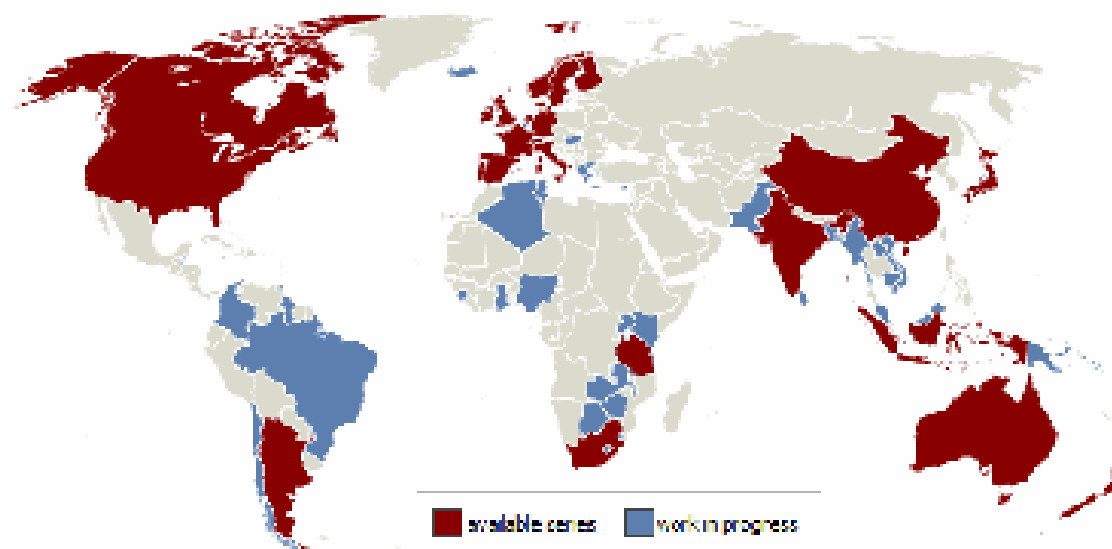
→ The important point about capitalism is that r is large ($r > g$ → tax capital, otherwise society is dominated by rentiers), volatile and unpredictable (→ financial crisis)

Supplementary slides

**Figure 13: Labor & capital shares in (factor-price)
national income, France 1820-2008**



THE WORLD TOP INCOMES DATABASE



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[The Database](#)

[Graphics](#)

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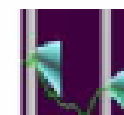
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TOP INCOMES OVER THE 20TH CENTURY

*A Contrast Between Continental European
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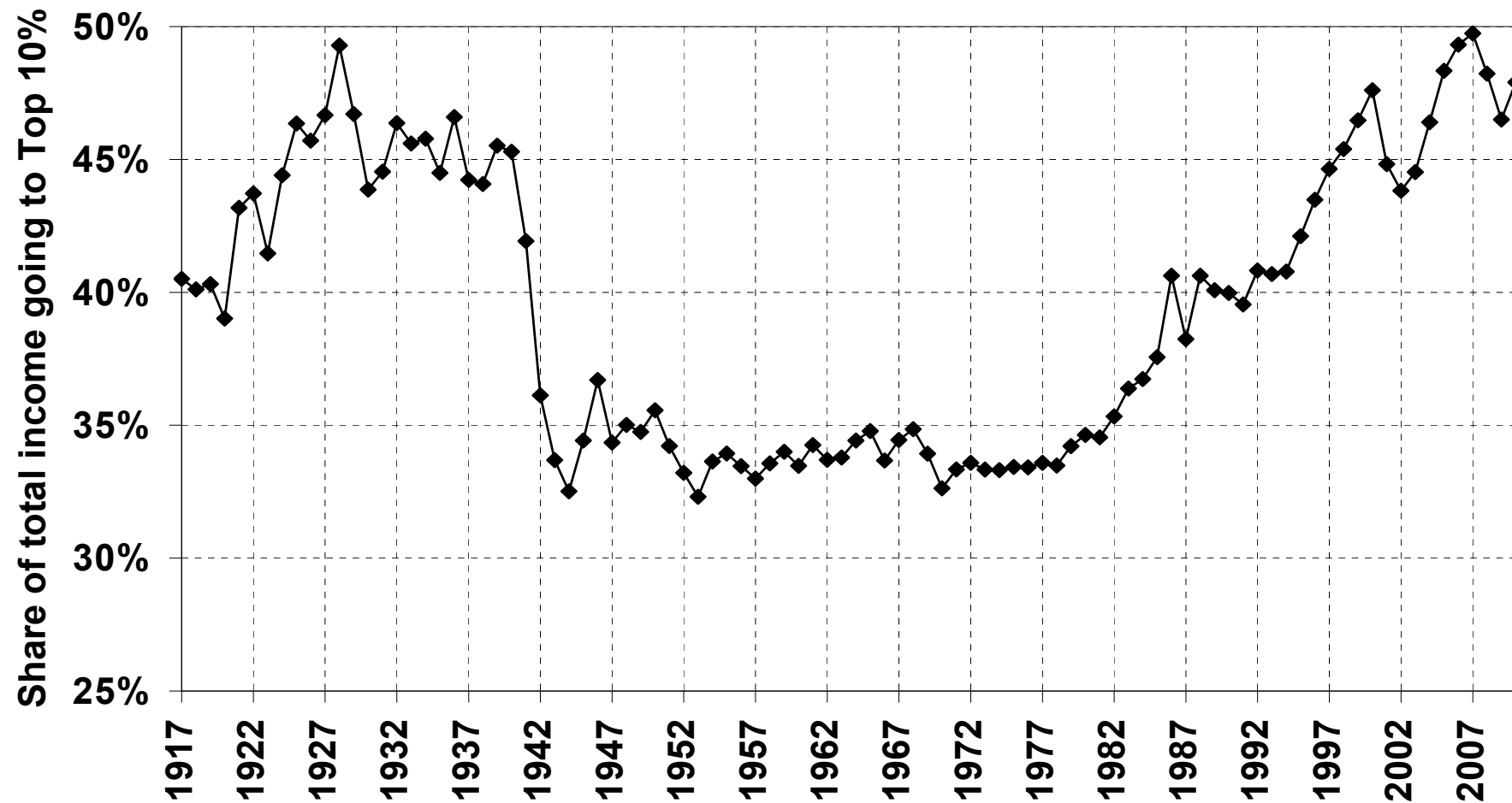


FIGURE 1

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).

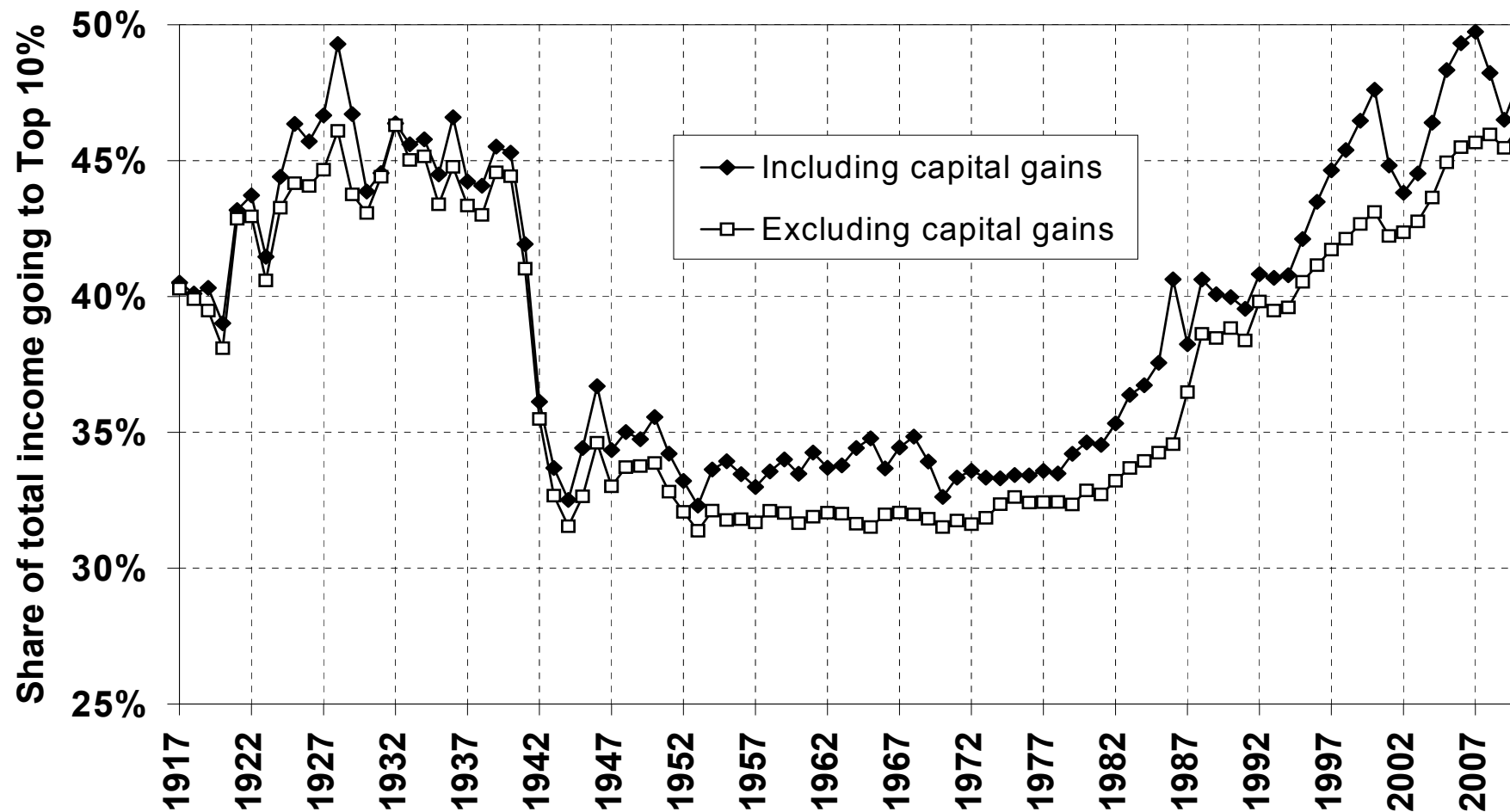


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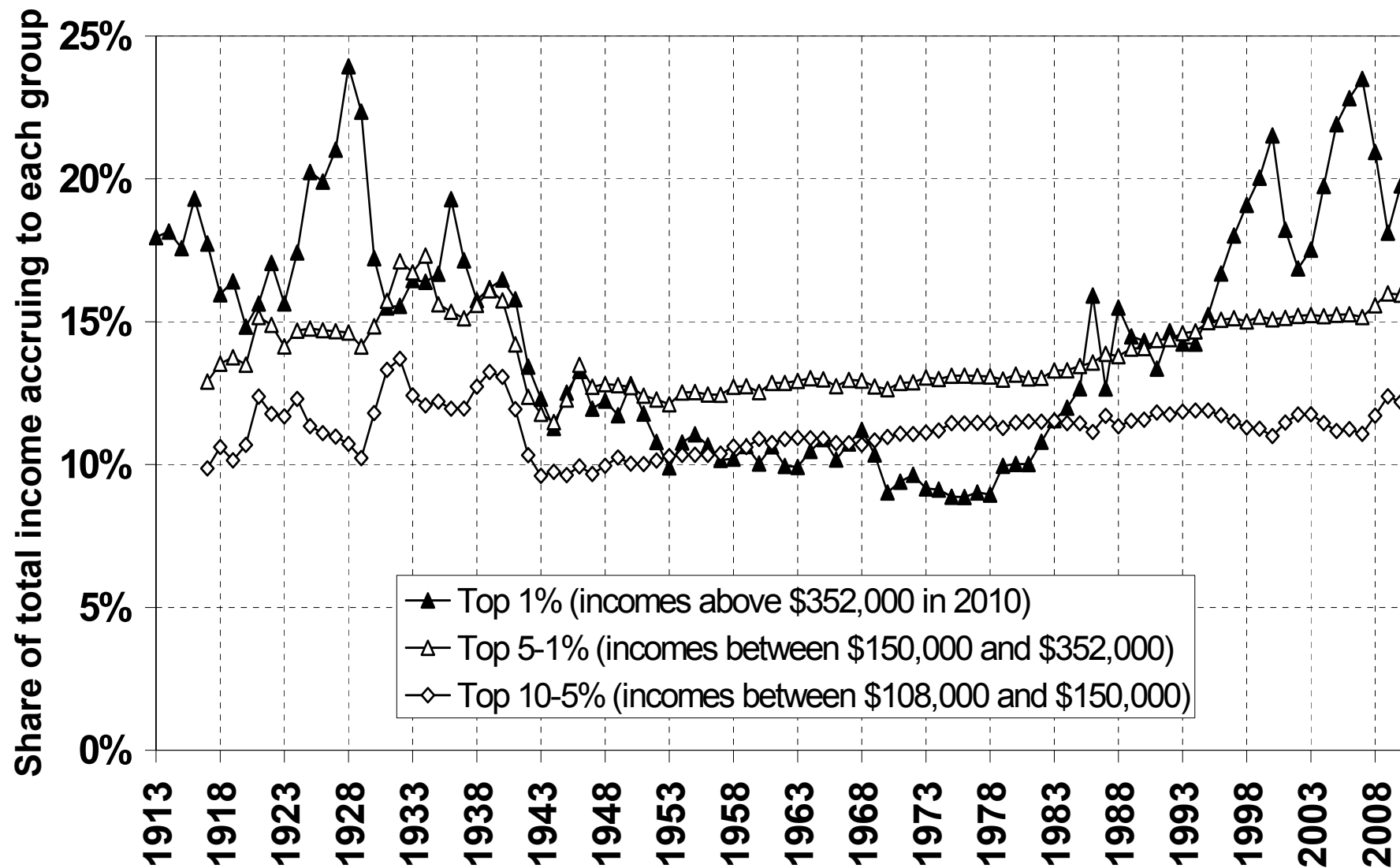
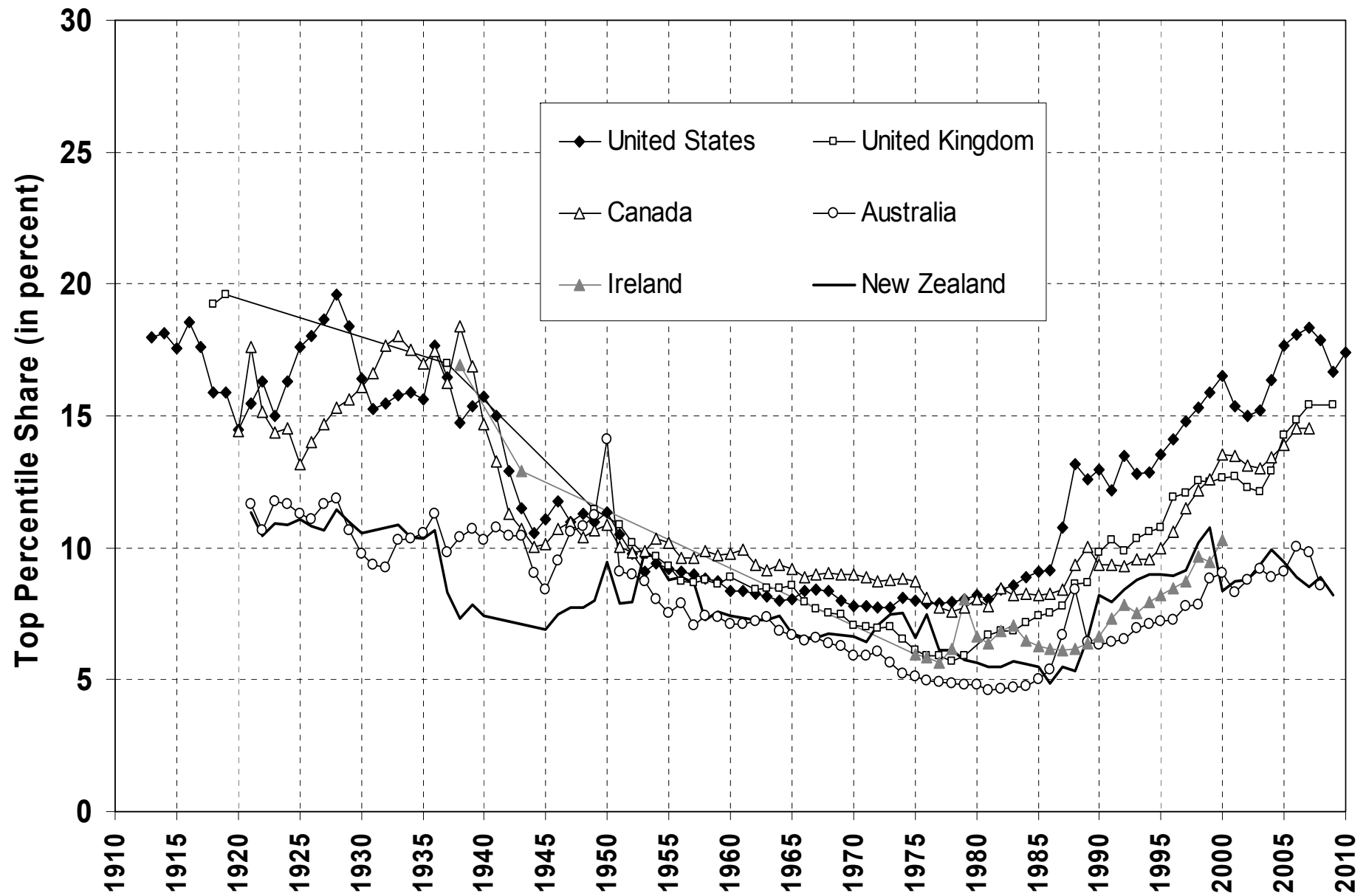


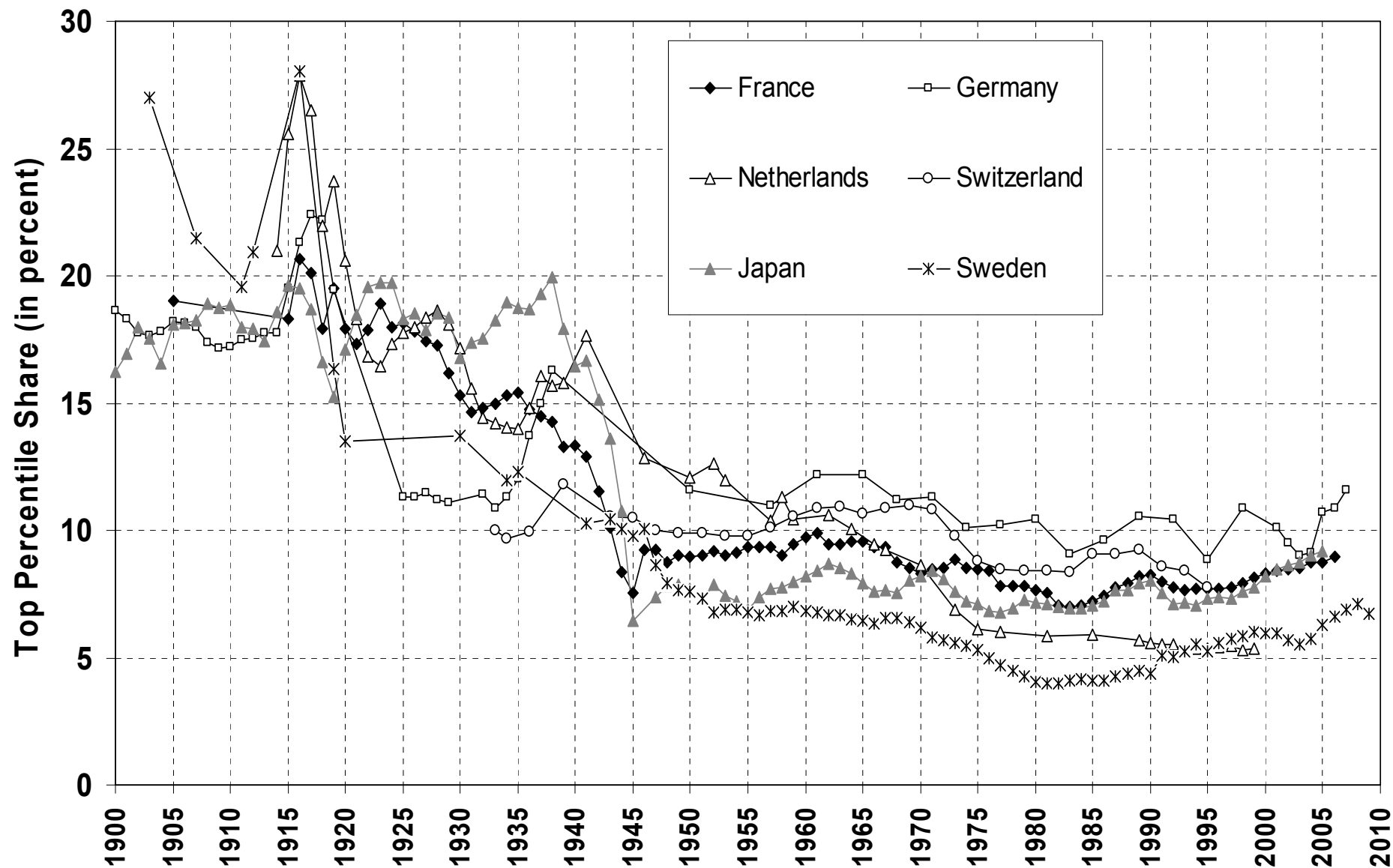
FIGURE 2

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

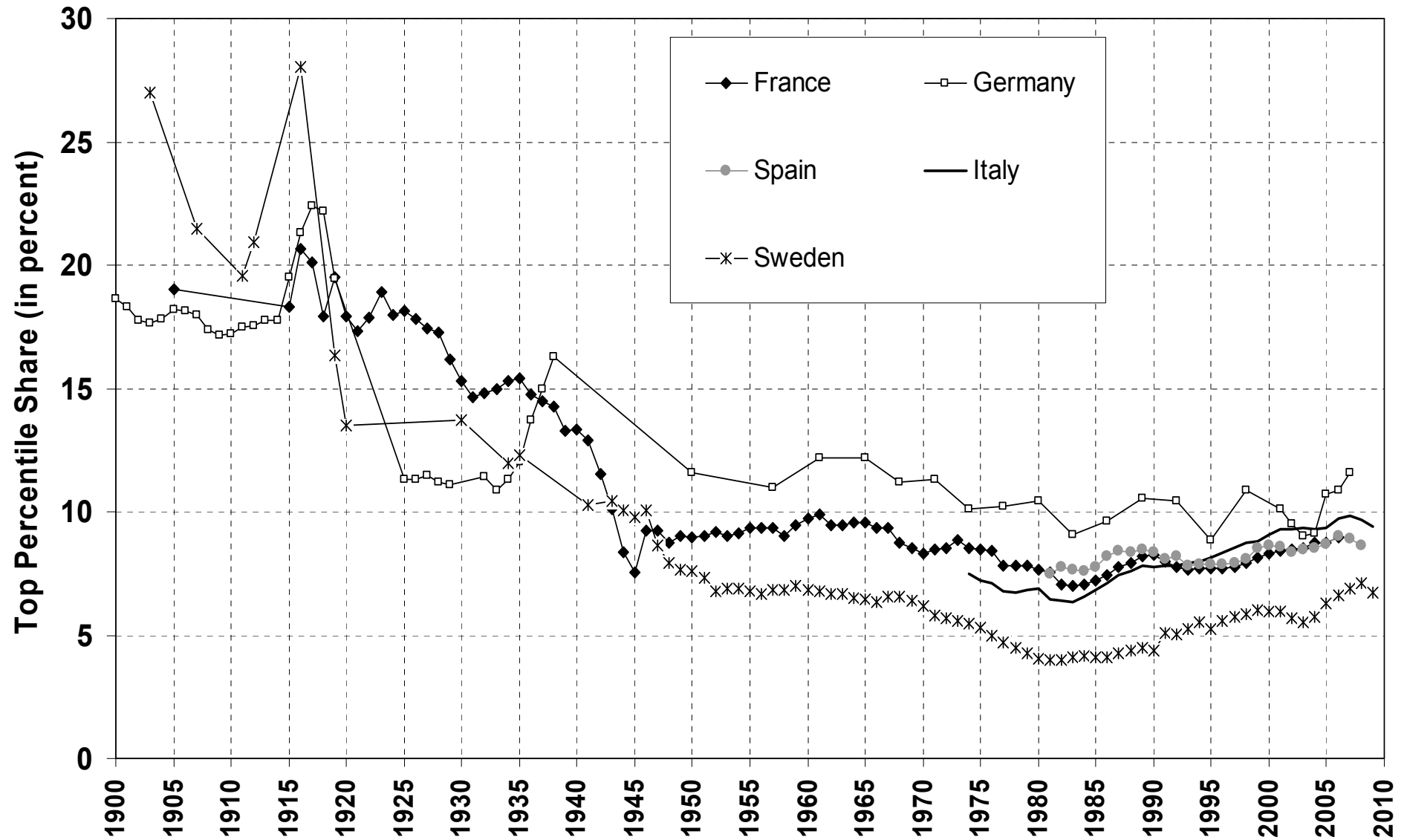
Top 1% share: English Speaking countries (U-shaped), 1910-2010



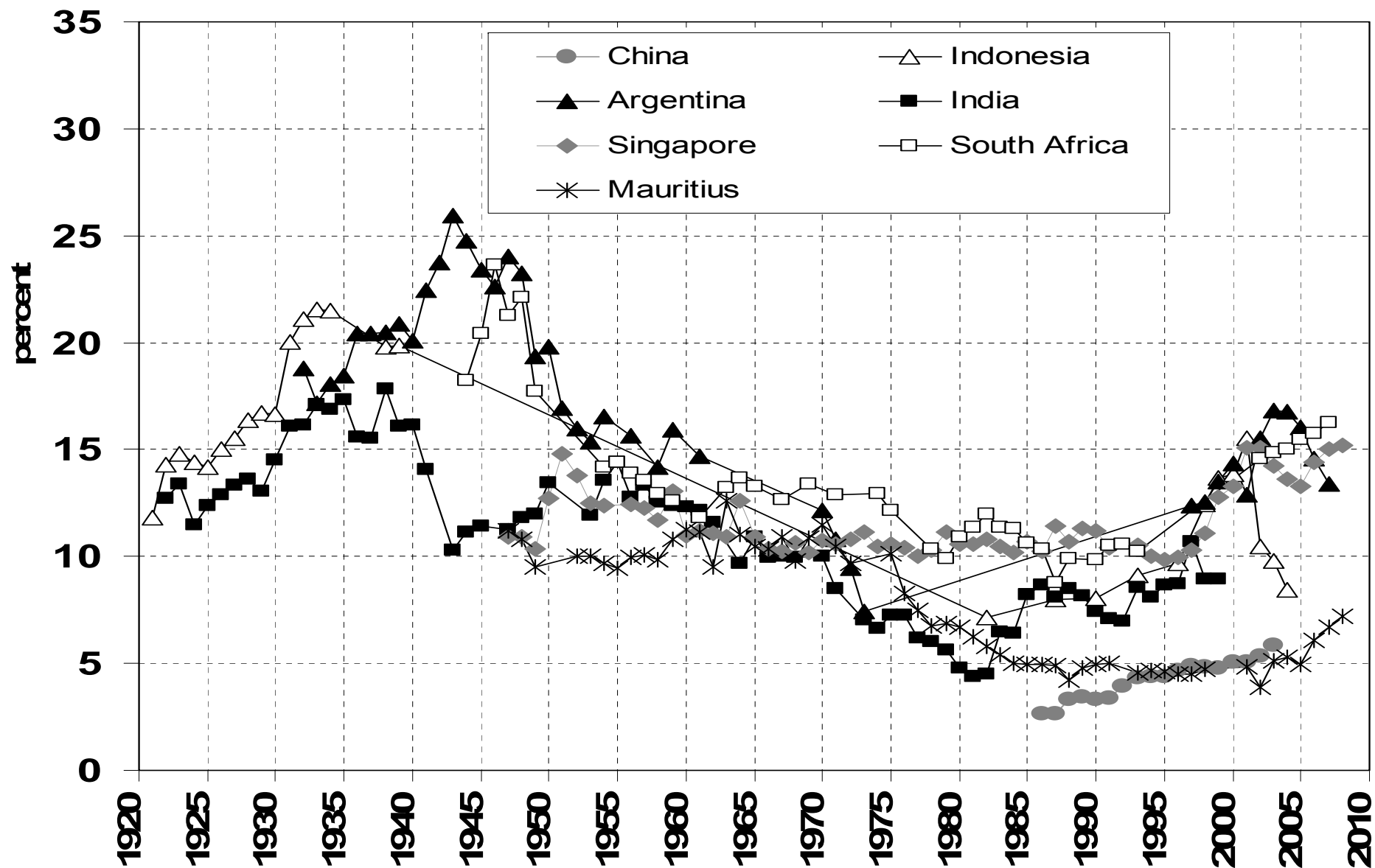
Top 1% share: Continental Europe and Japan (L-shaped), 1900-2010



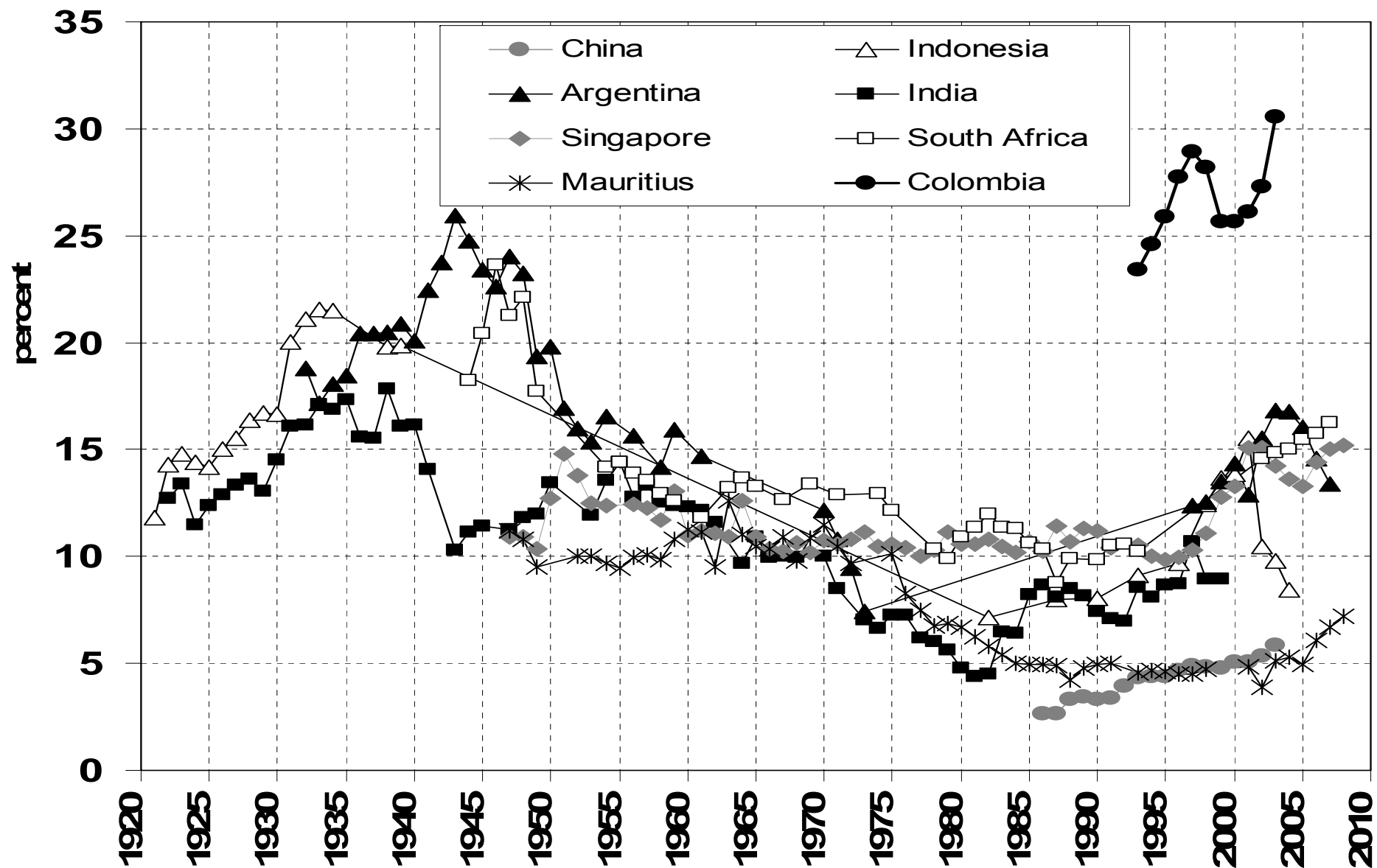
Top 1% share: Continental Europe, North vs South (L-shaped), 1900-2010



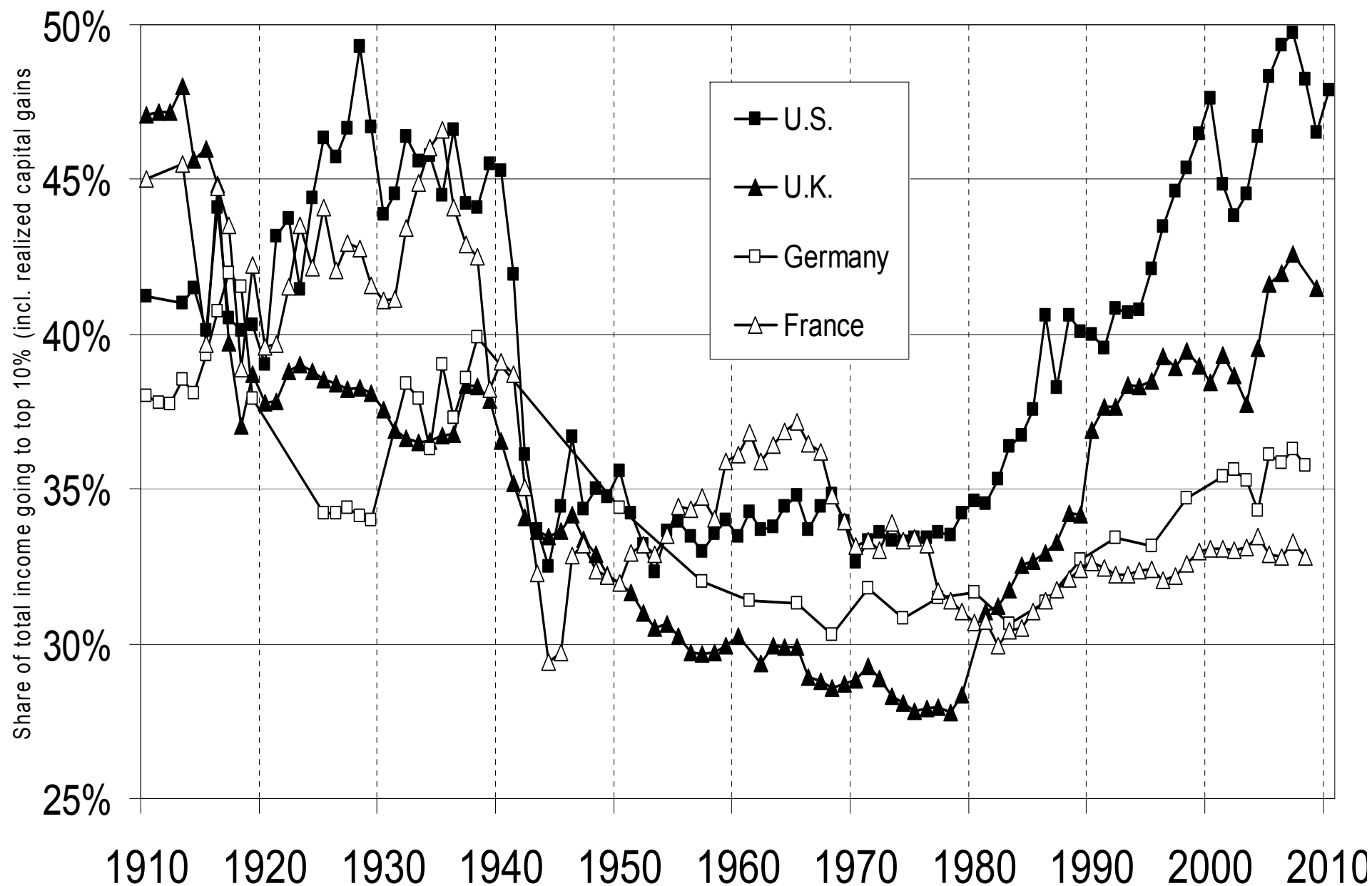
Top 1% share: Developing and emerging countries, 1920-2010



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



Top Decile Income Shares 1910-2010



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

Why did top incomes rise so much?

- 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 could well be that prices are distorted upwards...

- 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**)

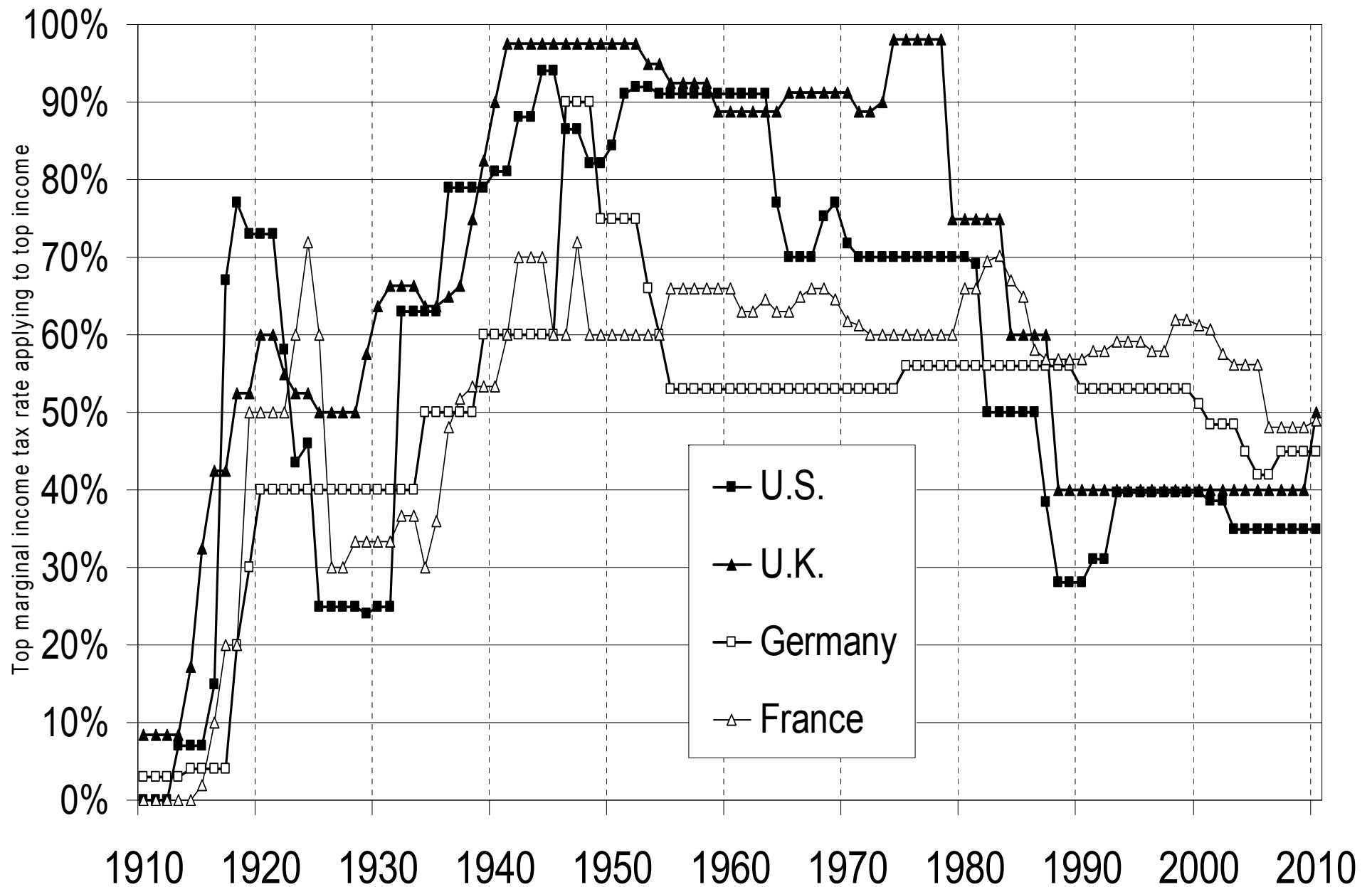
→ when pay setters set their own pay, there's no limit to rent extraction... **unless confiscatory tax rates at the very top**

(memo: US top tax rate (1m\$+) 1932-1980 = 82%)

(no more fringe benefits than today)

(see Piketty-Saez-Stantcheva, NBER WP 2011)

Top Income Tax Rates 1910-2010



Source: World Top Incomes Database, 2012.

Table 1. 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).

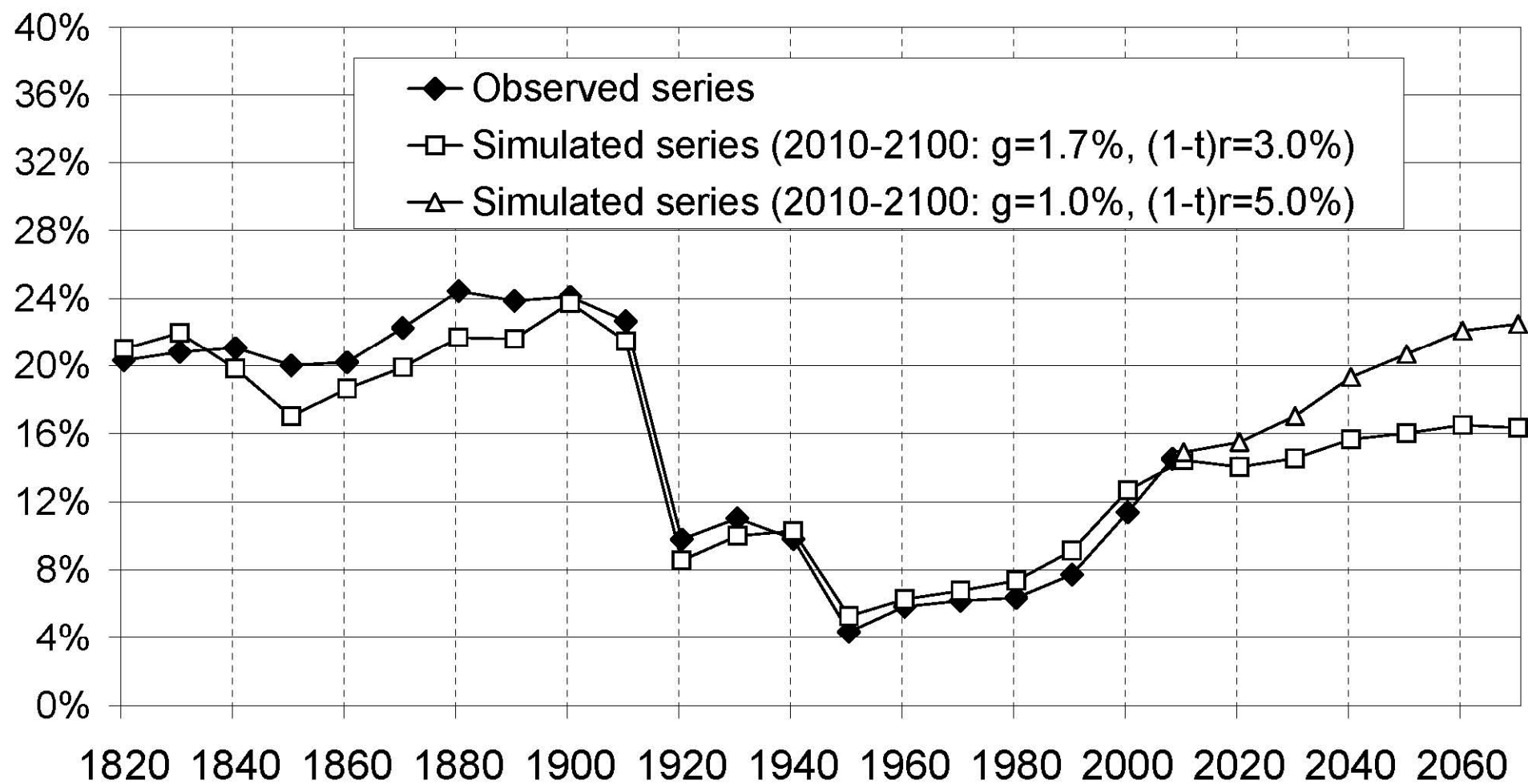
Incomes are deflated using the Consumer Price Index (and using the CPI-U-RS before 1992).

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.

**Figure 9: Observed vs simulated inheritance flow B/Y,
France 1820-2100**



The meritocratic illusion

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- But effective meritocracy does not come naturally; it requires specific policies & institutions
- Two (quasi-)illusions: (1) human K didn't replace financial K
(2) war of ages didn't replace war of classes
- (1) Technocractic model : Parsons, Galbraith, Becker
(unidimensional class structure based upon human K)
- But no long run decline of capital share in national income
- (2) Lifecycle wealth model: Modigliani
- But no long run decline of inherited share in national wealth