Wealth and Inheritance in the Long Run

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LIS Lecture, July 4th 2012

- **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

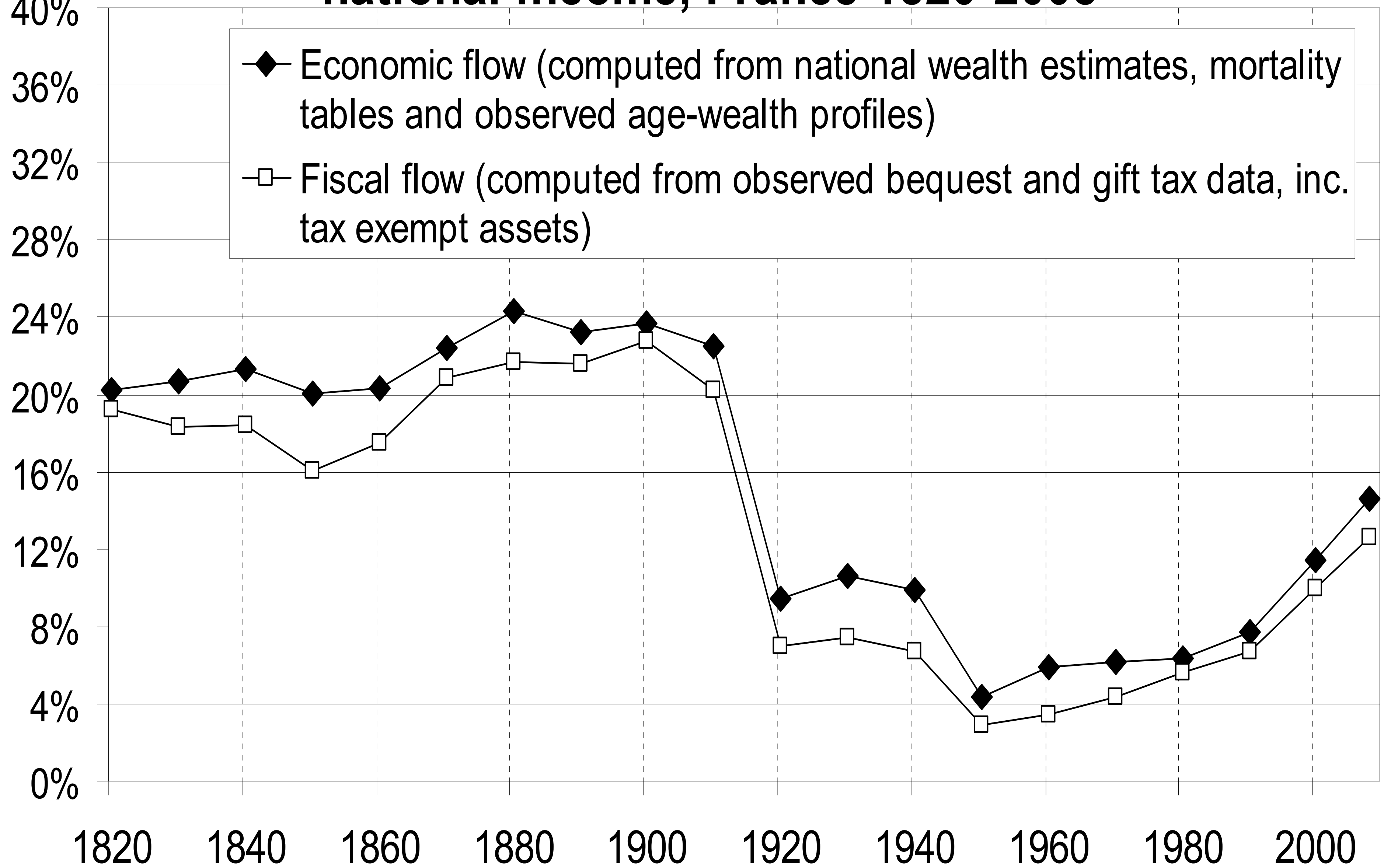
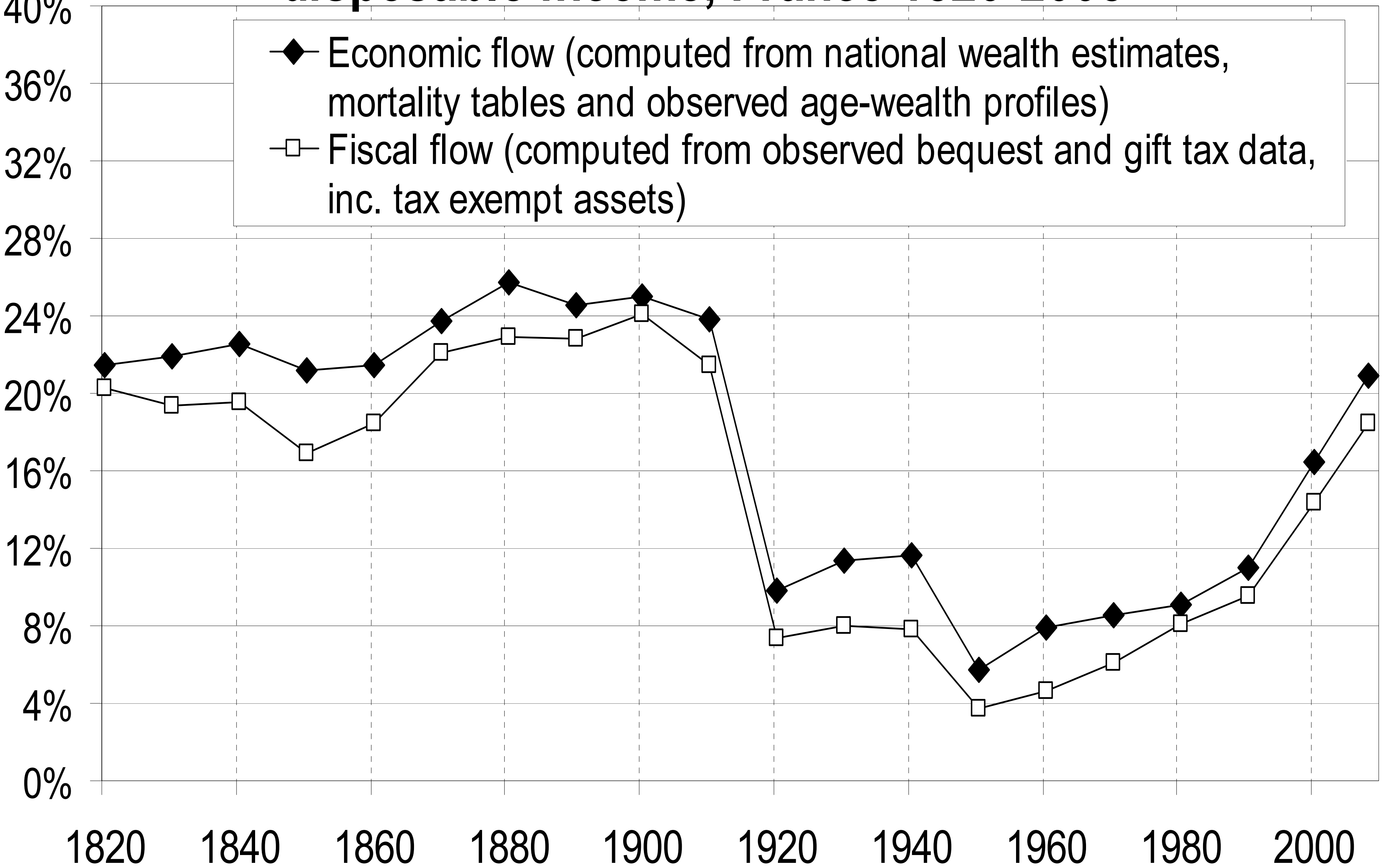


Figure 2: Annual inheritance flow as a fraction of disposable income, France 1820-2008



- 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%) (=19C & 21C), 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 »
- Technocractic model : Parsons, Galbraith, Becker

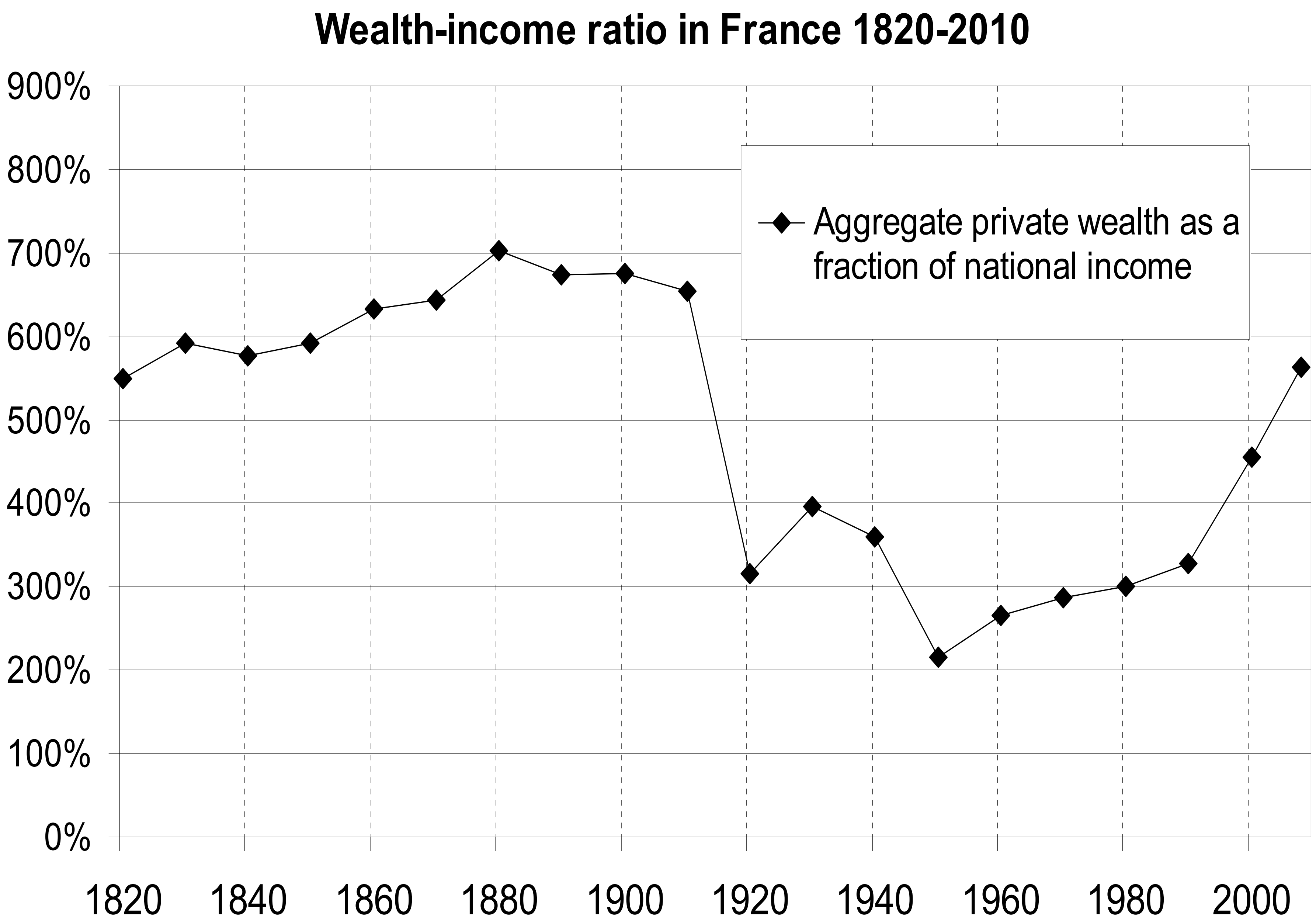
  (unidimensional class structure based upon human K)
- But the share of old-style capital income (rent, interest, dividend, etc.) in national income is the same in 2010 as in 1910 (about 30%), and the aggregate wealth-income ratio is also the same in 2010 as in 1910 (about 600%)
- Today in France, Italy, UK: $\beta = W/Y \approx 600\%$

Per adult national income $Y \approx 35\ 000€$

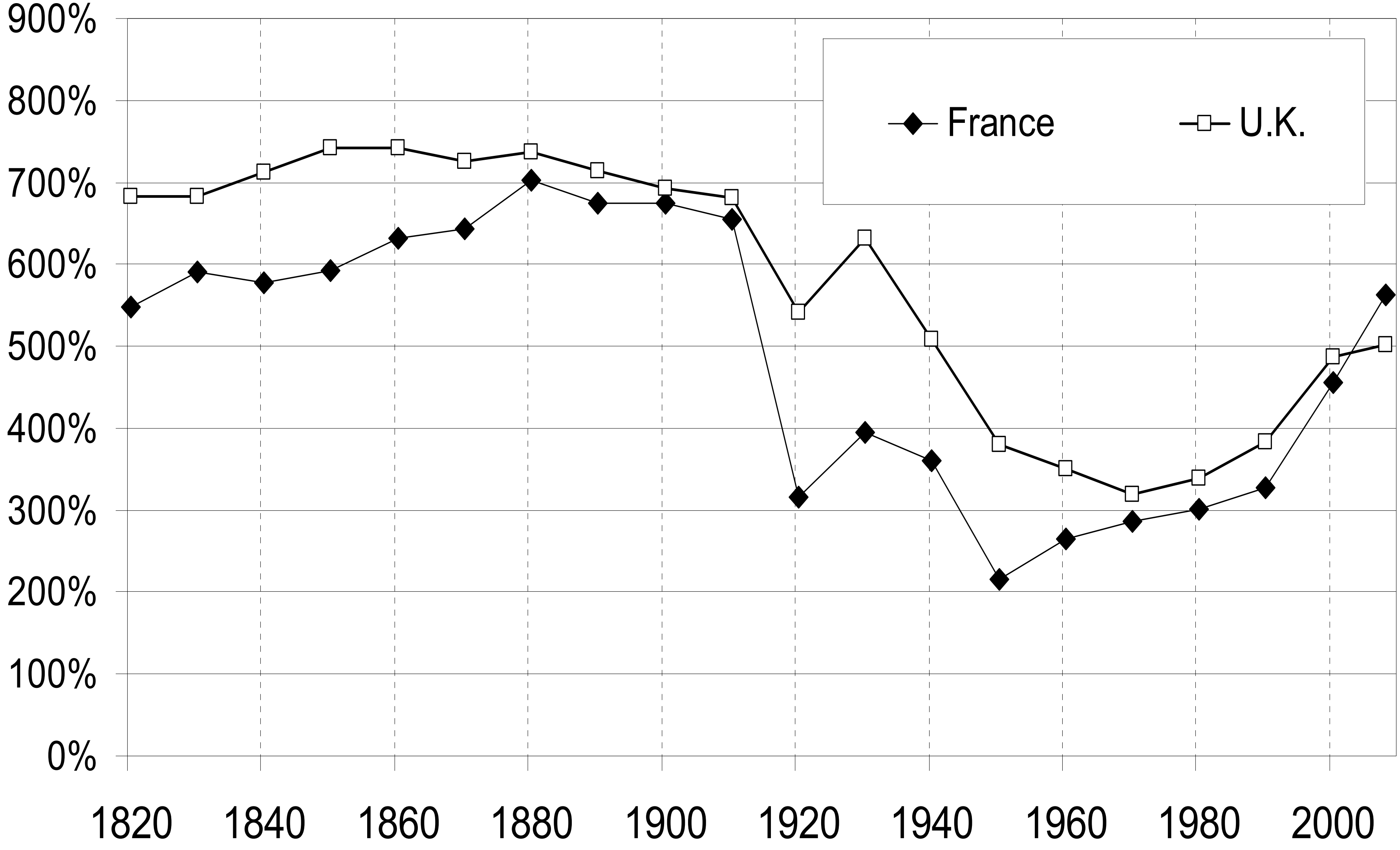
Per adult private wealth $W \approx 200\ 000€$

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

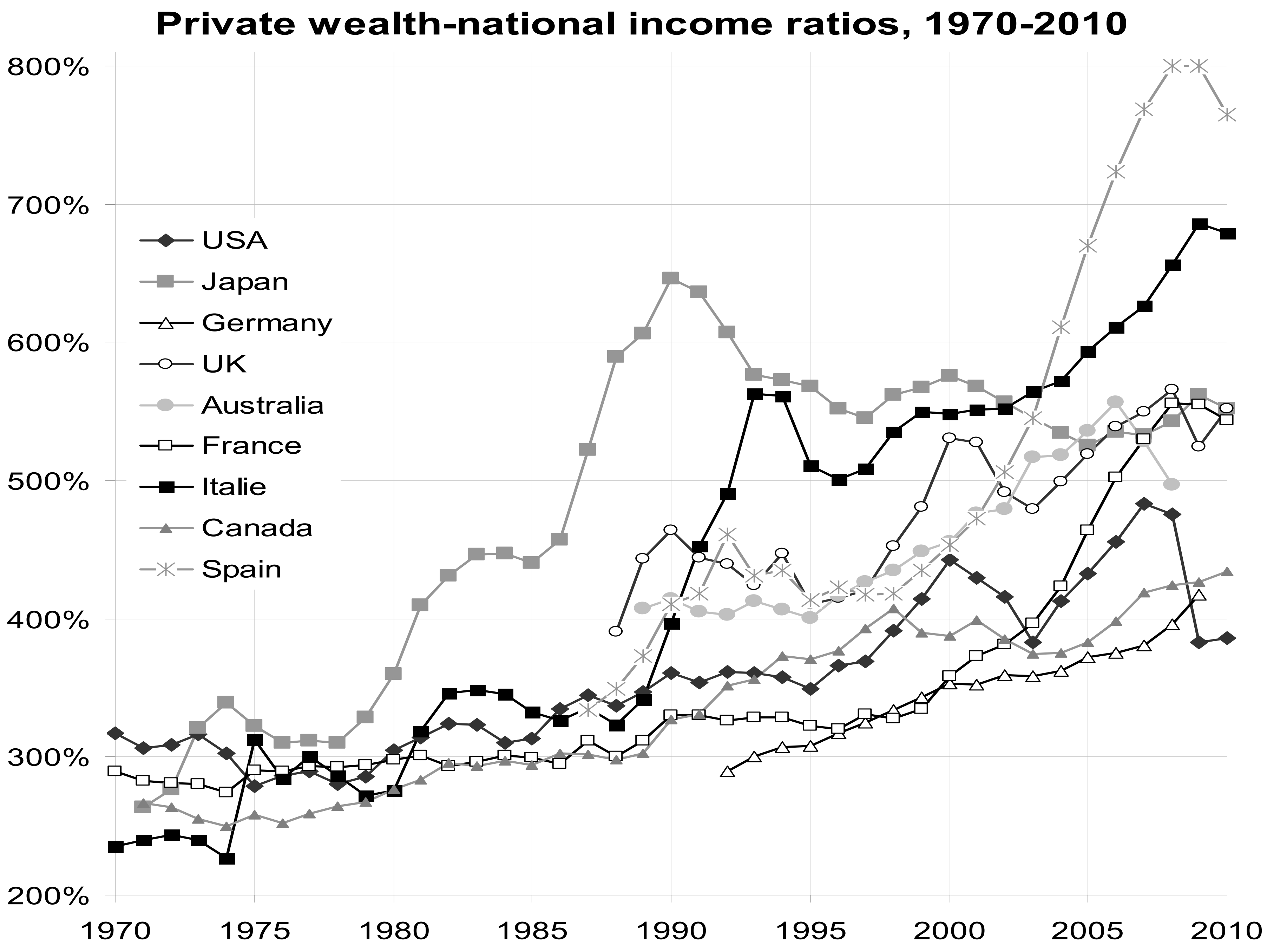
(on average, households own wealth equal to about 6 years of income)


Wealth-income ratio in France 1820-2010
900%
800%
700%
600%
500%
400%
300%
200%
100%
0%
1820
1840
1860
1880
1900
1920
1940
1960
1980
2000
Aggregate private wealth as a fraction of national income

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
800%
700%
600%
500%
400%
300%
200%
1970
1975
1980
1985
1990
1995
2000
2005
2010
USA
Japan
Germany
UK
Australia
France
Italie
Canada
Spain

- There are sevreal 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: β* = s/g**
  (β* = wealth-income ratio, s = saving rate)

(i.e. s=10%, g=2% → β*=500%; if g=1%, then β*=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 β=600% & H=generation length=30 years, then B/Y≈20%, i.e. annual inheritance flow ≈ 20% national income

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

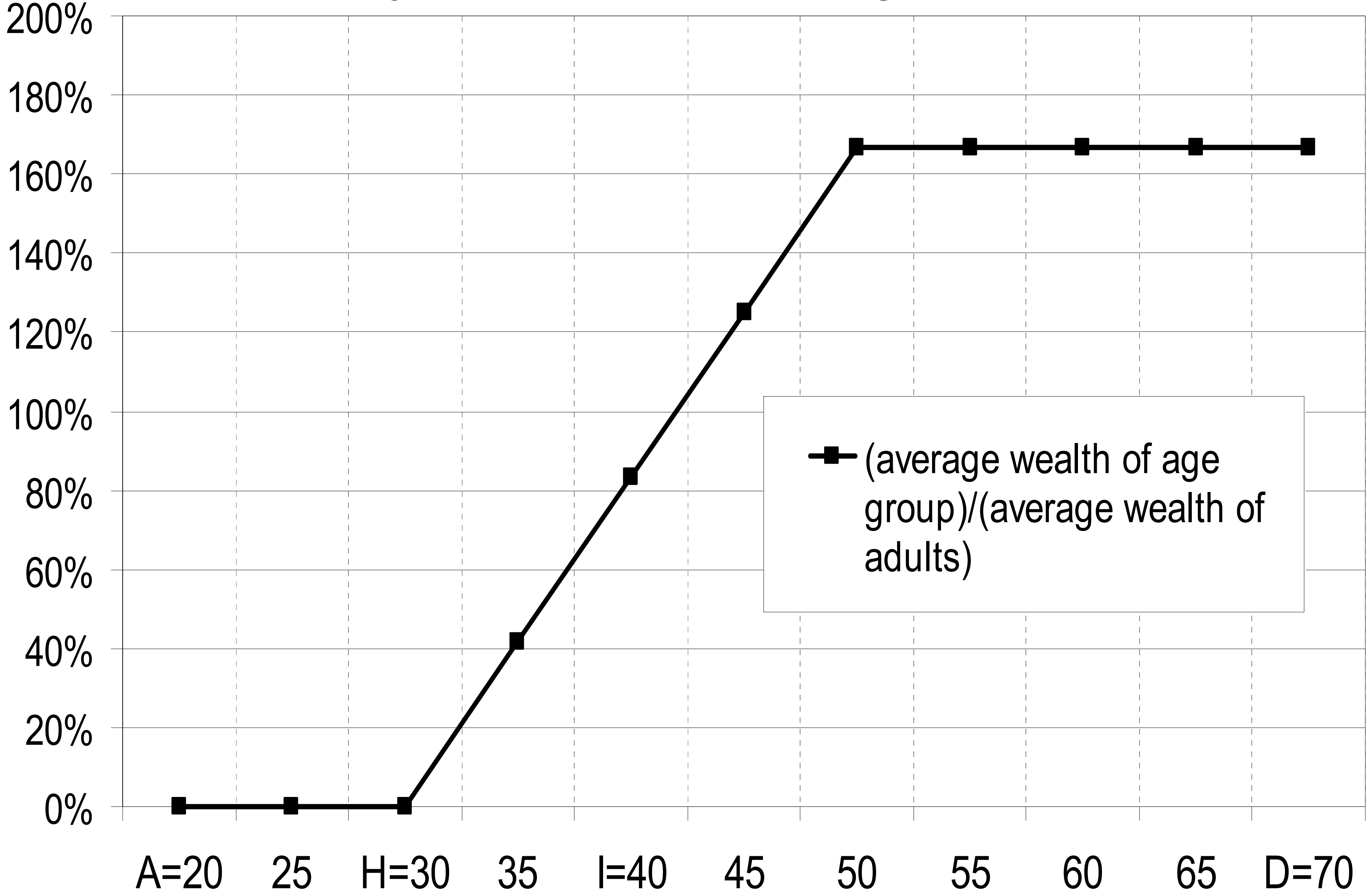


Figure 8: The ratio between average wealth of decedents and average wealth of the living in France 1820-2008

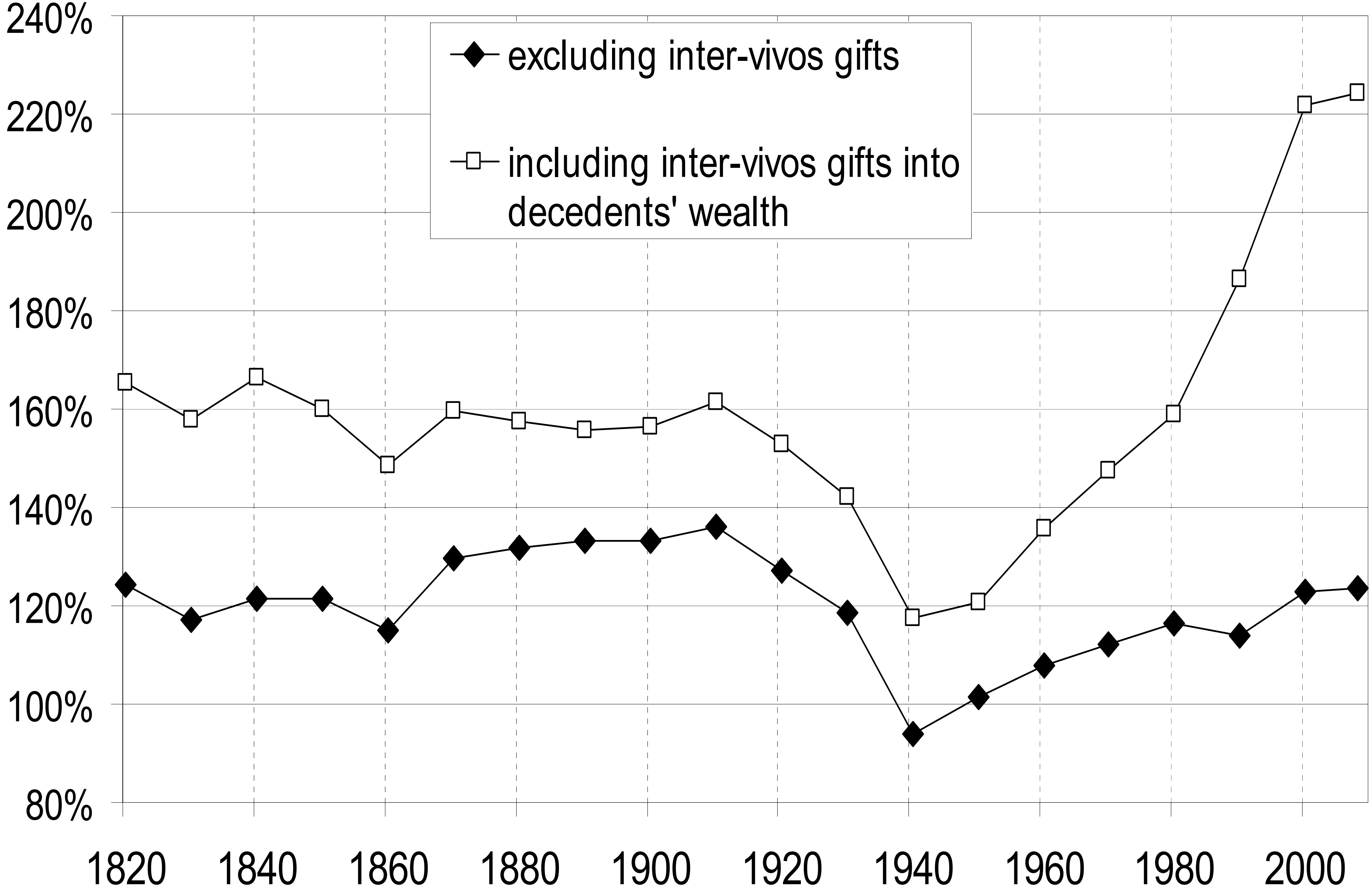
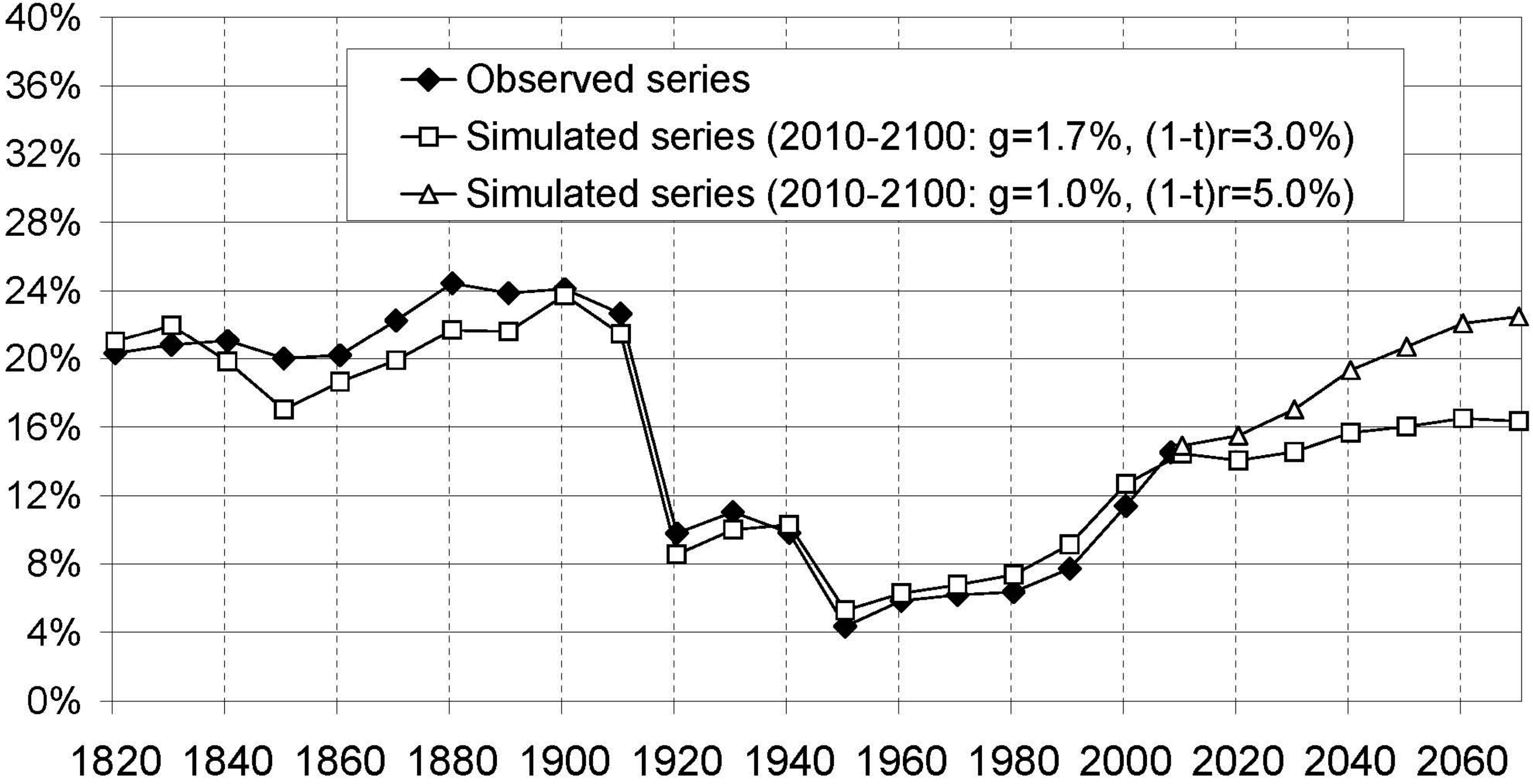


Table 2: Raw age-wealth-at-death profiles in France, 1820-2008

	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



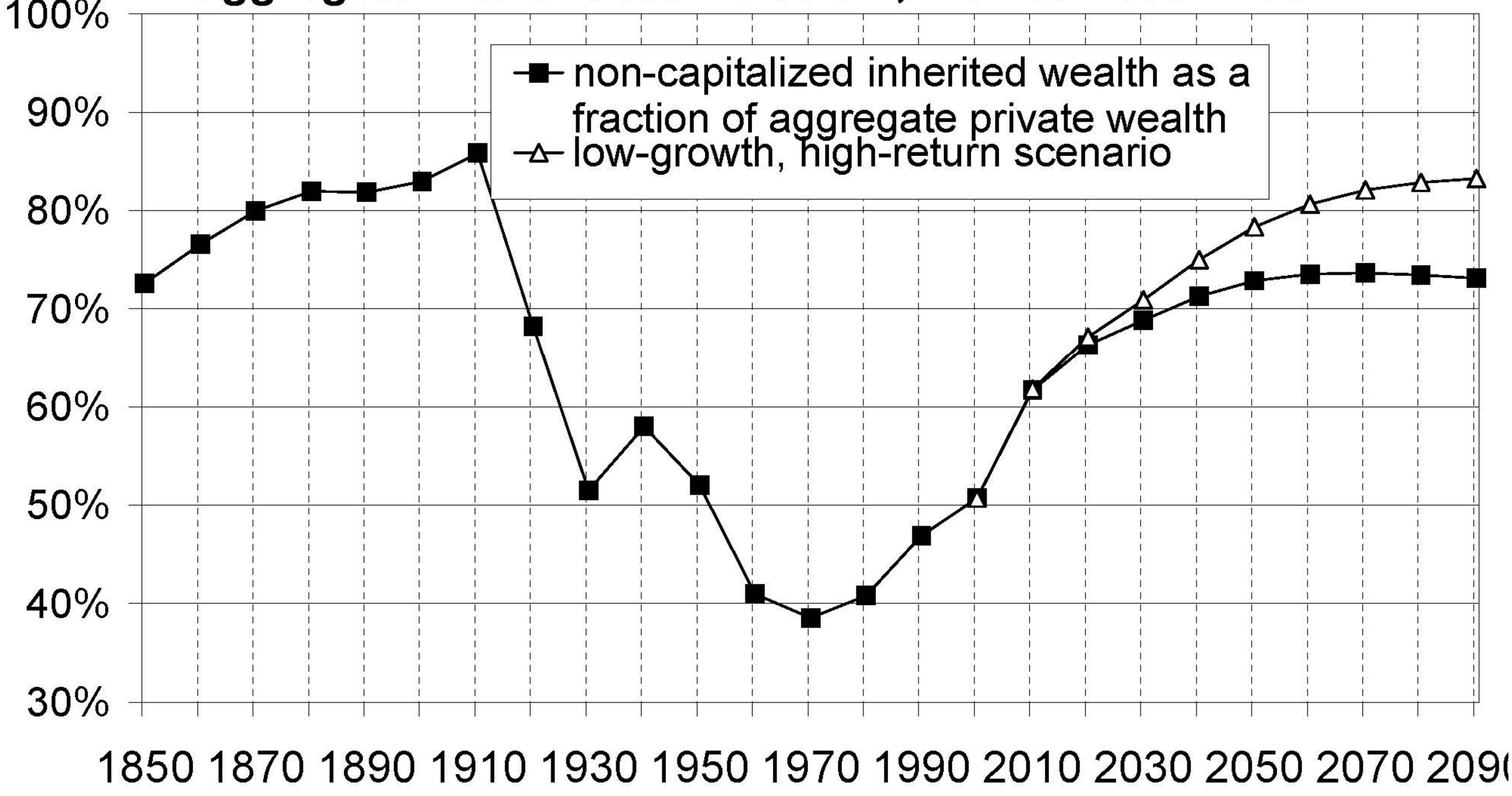
The share of inherited wealth in total wealth

- 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 in1910s-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 dimens., 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	Inherited wealth 2010
Top 10% "Upper Class"	**30%**	**90%**	**60%**
incl. Top 1% "Very Rich"	*6%*	*50%*	*25%*
incl. Other 9% "Rich"	*24%*	*40%*	*35%*
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)

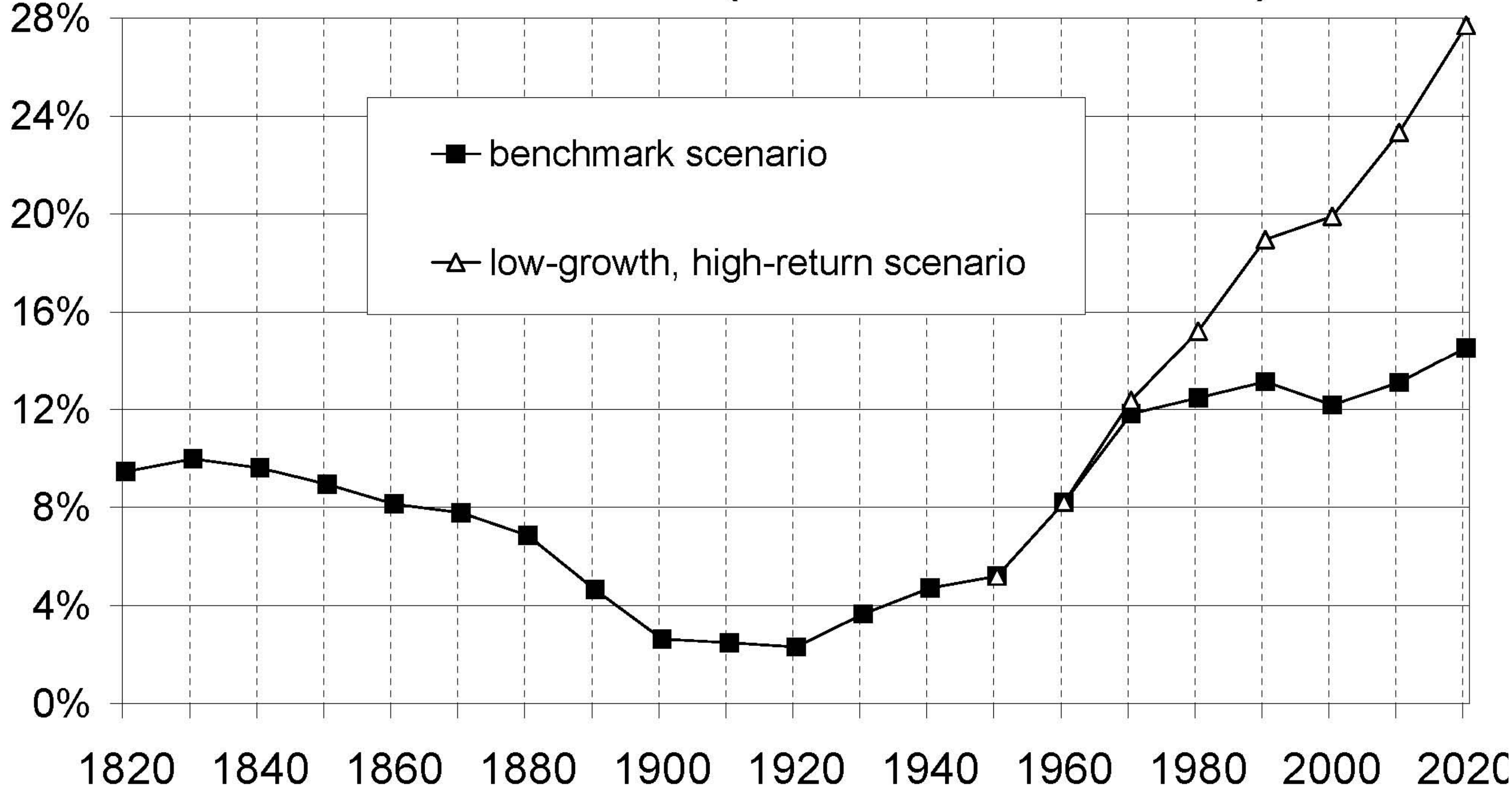
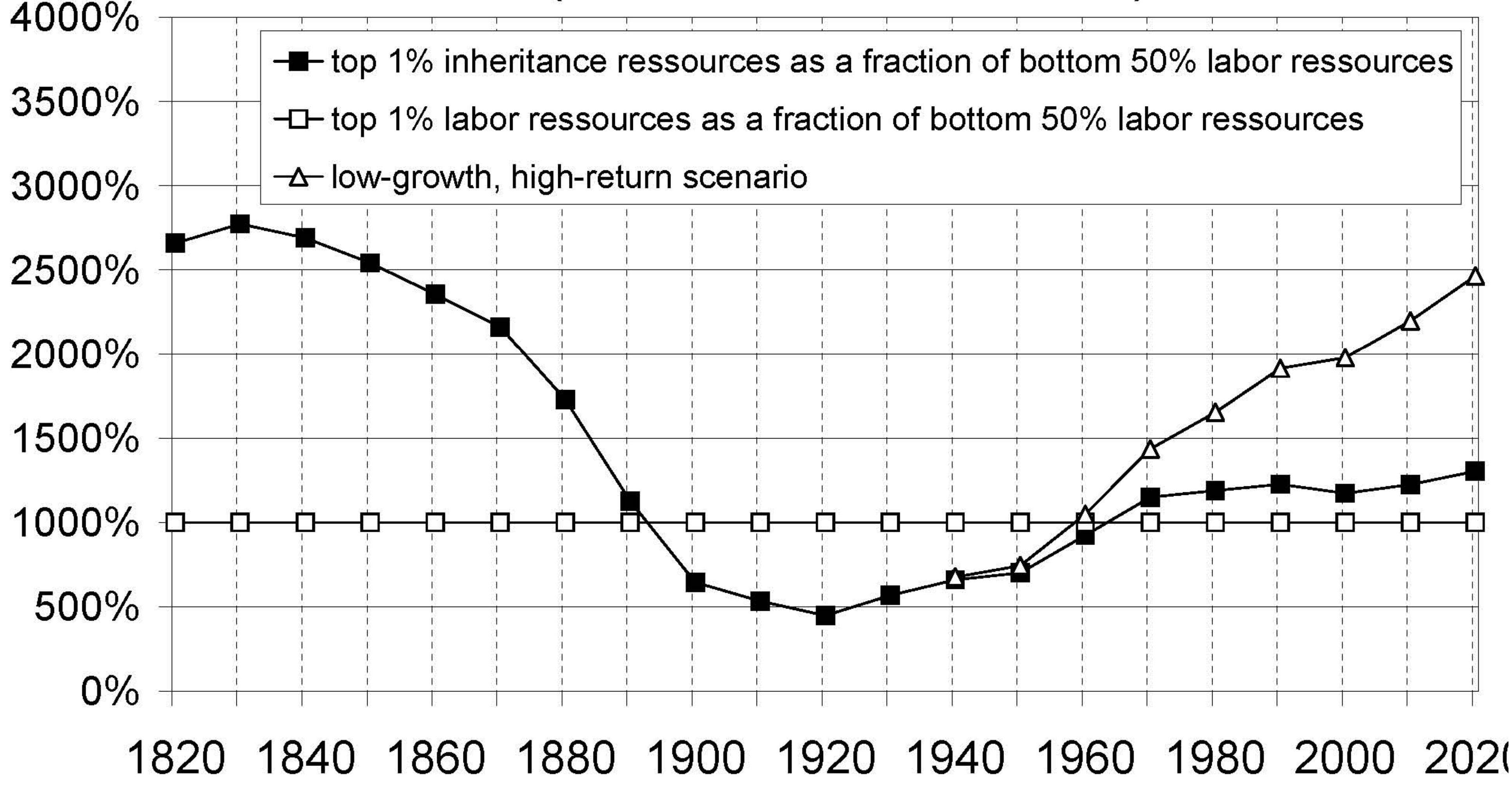


Figure 14: Top 1% successors vs top 1% labor income earners (cohorts born in 1820-2020)



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 21^{c} 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 pay = marginal product; **only confiscatory top rates can calm down top incomes**

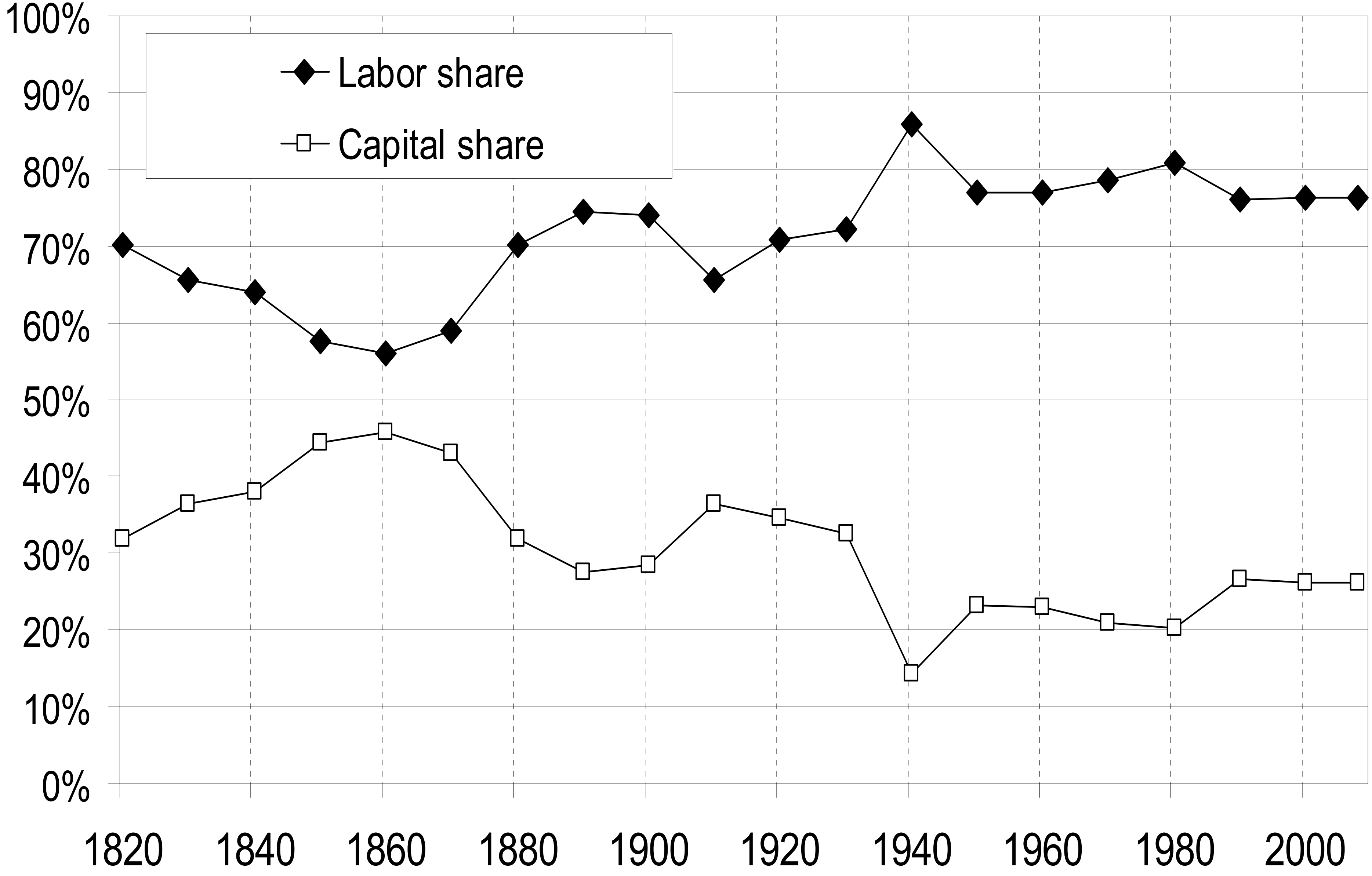
(2) The more efficient the markets, the sharper the capital vs labor distinction; with highly developed k markets, any dull successor can get a high rate of return

- **$r>g$ = nothing to do with market imperfections**
- Standard model: $r = \delta+\sigma g > g$ (Golden rule)

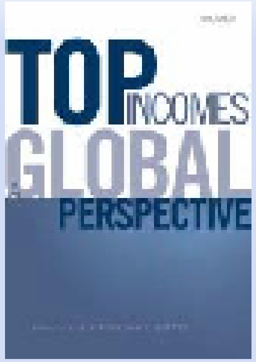
→ The important point about capitalism is that r is large ($r>g$ → tax capital, otherwise society is dominated by rentiers), volatile and unpredictable (→ financial crisis)

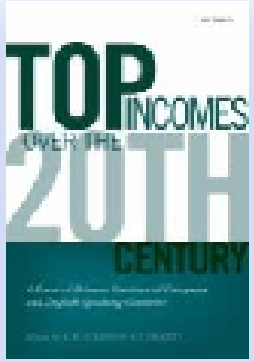
Supplementary slides

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



The World Top Incomes Database





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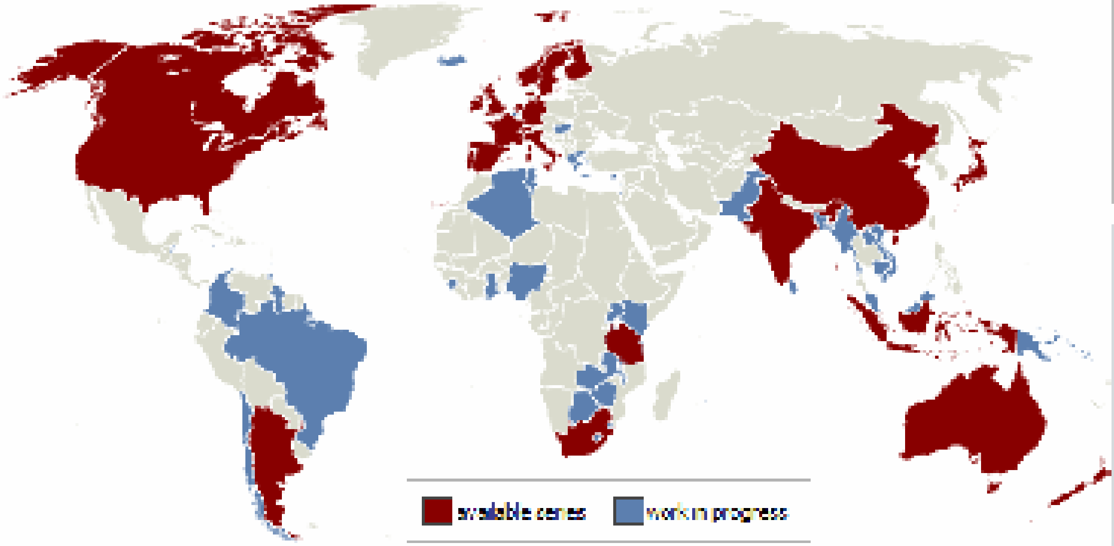
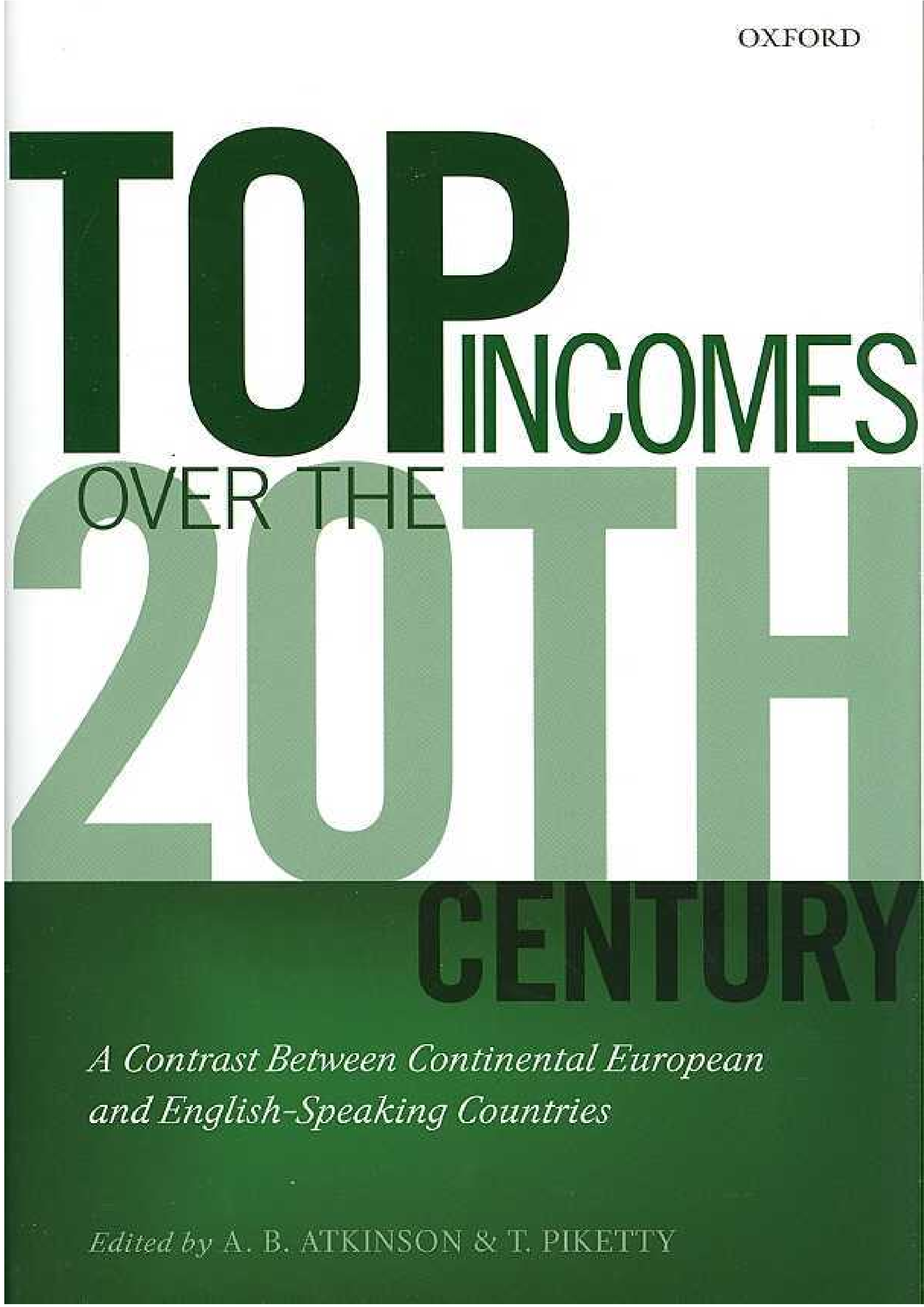


Institute for New Economic Thinking

Center for Equitable Growth


OXFORD
TOP INCOMES
OVER THE
20TH
CENTURY
A Contrast Between Continental European and English-Speaking Countries
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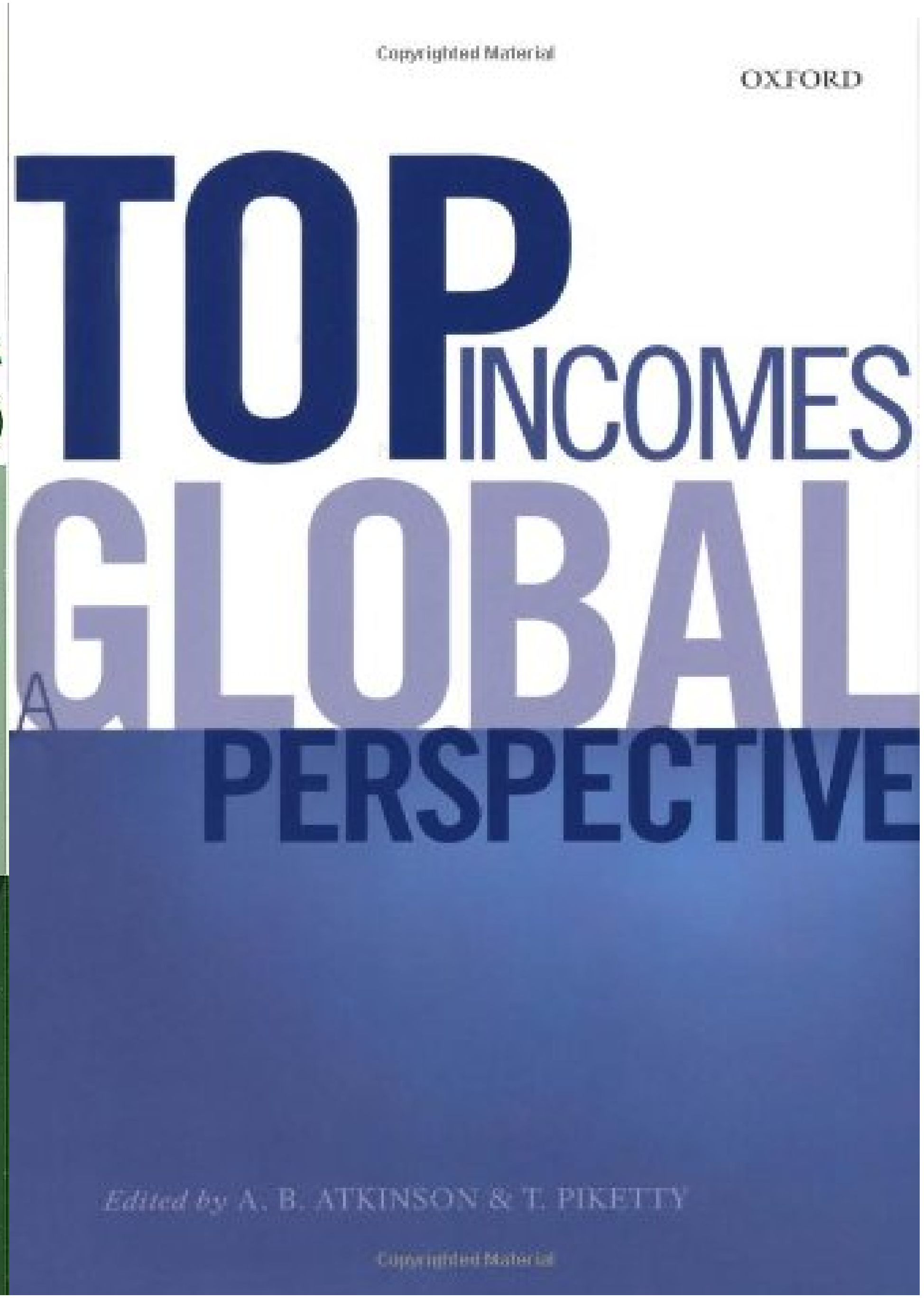
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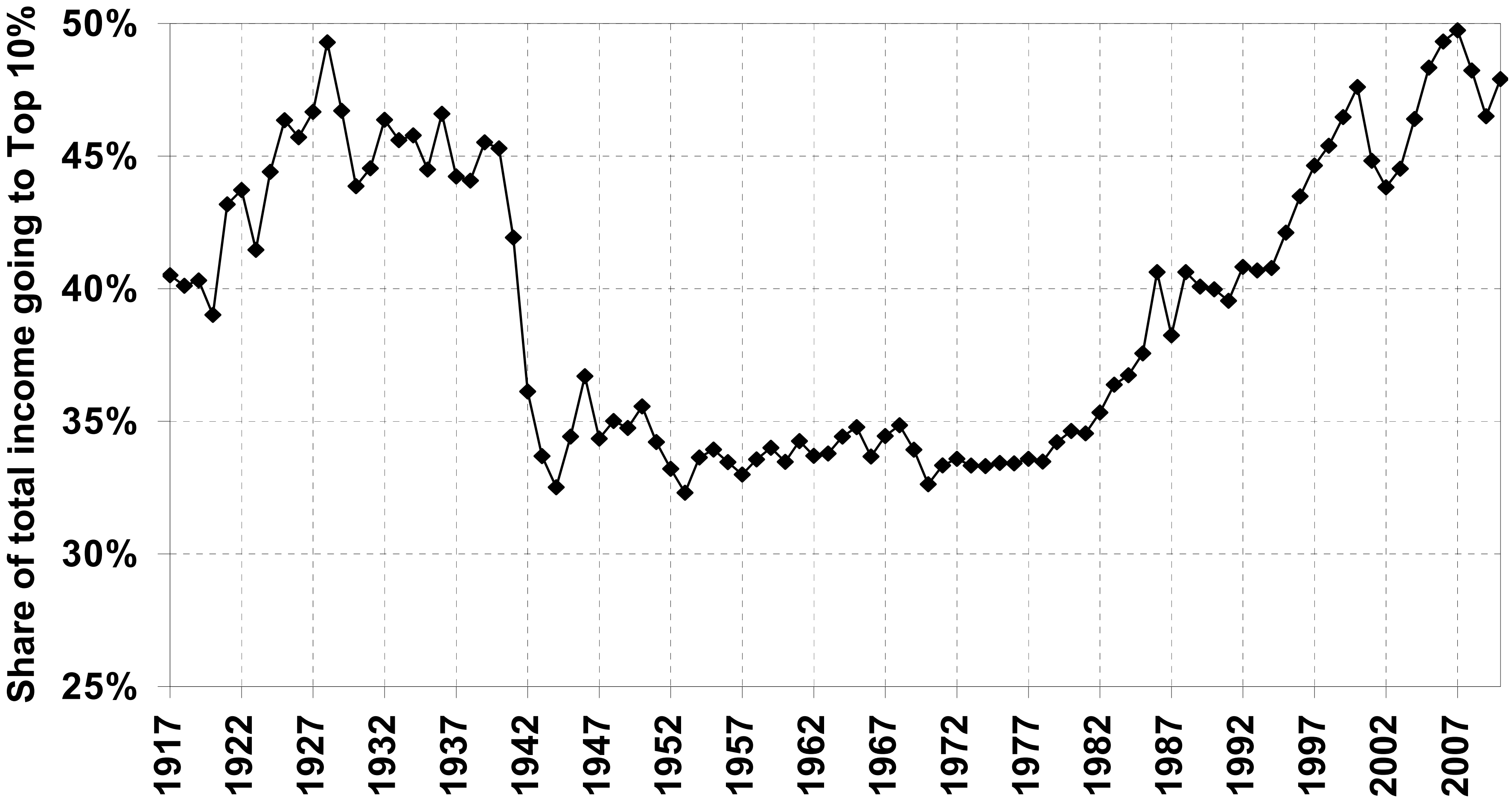
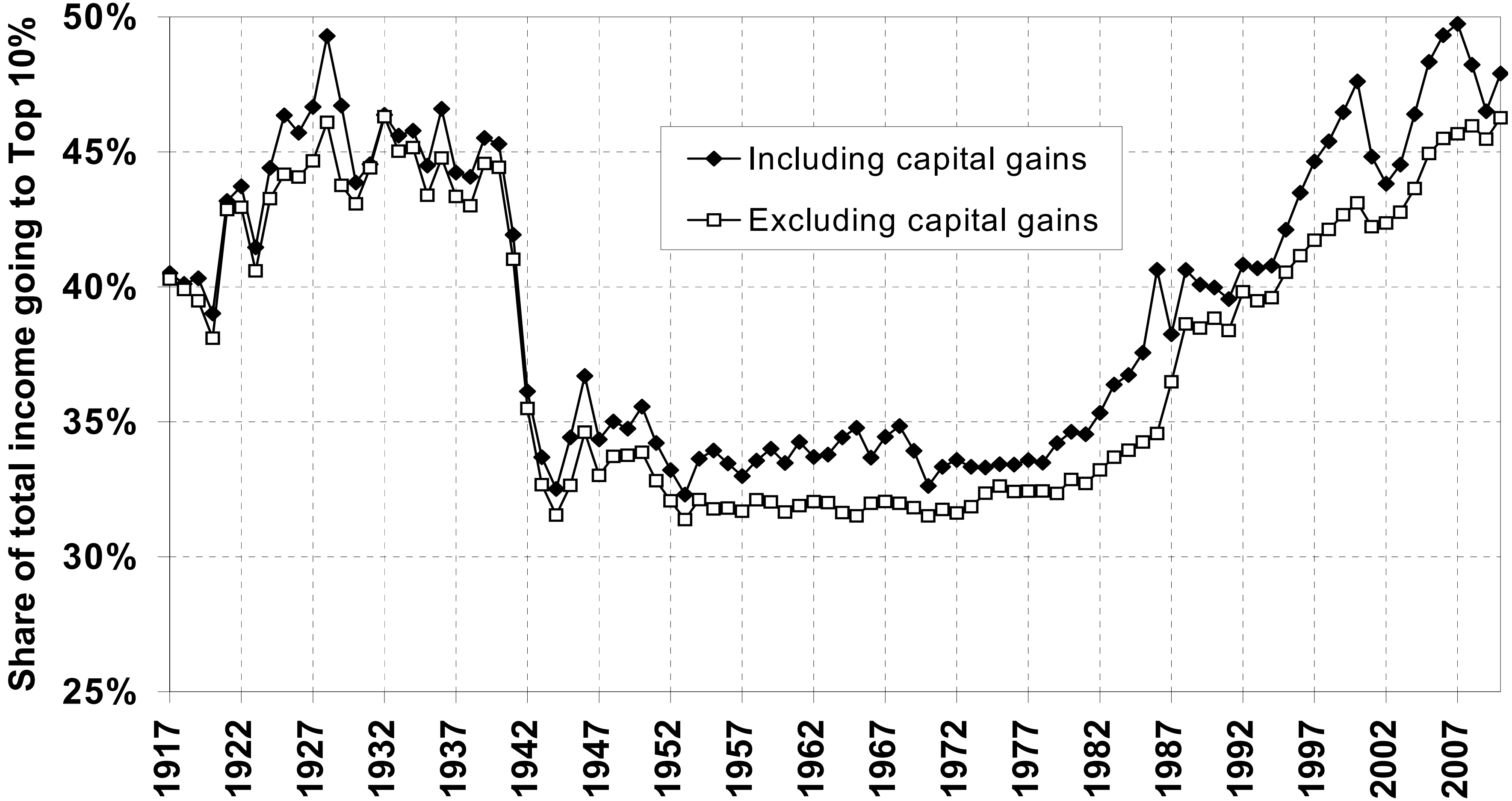


FIGURE 1

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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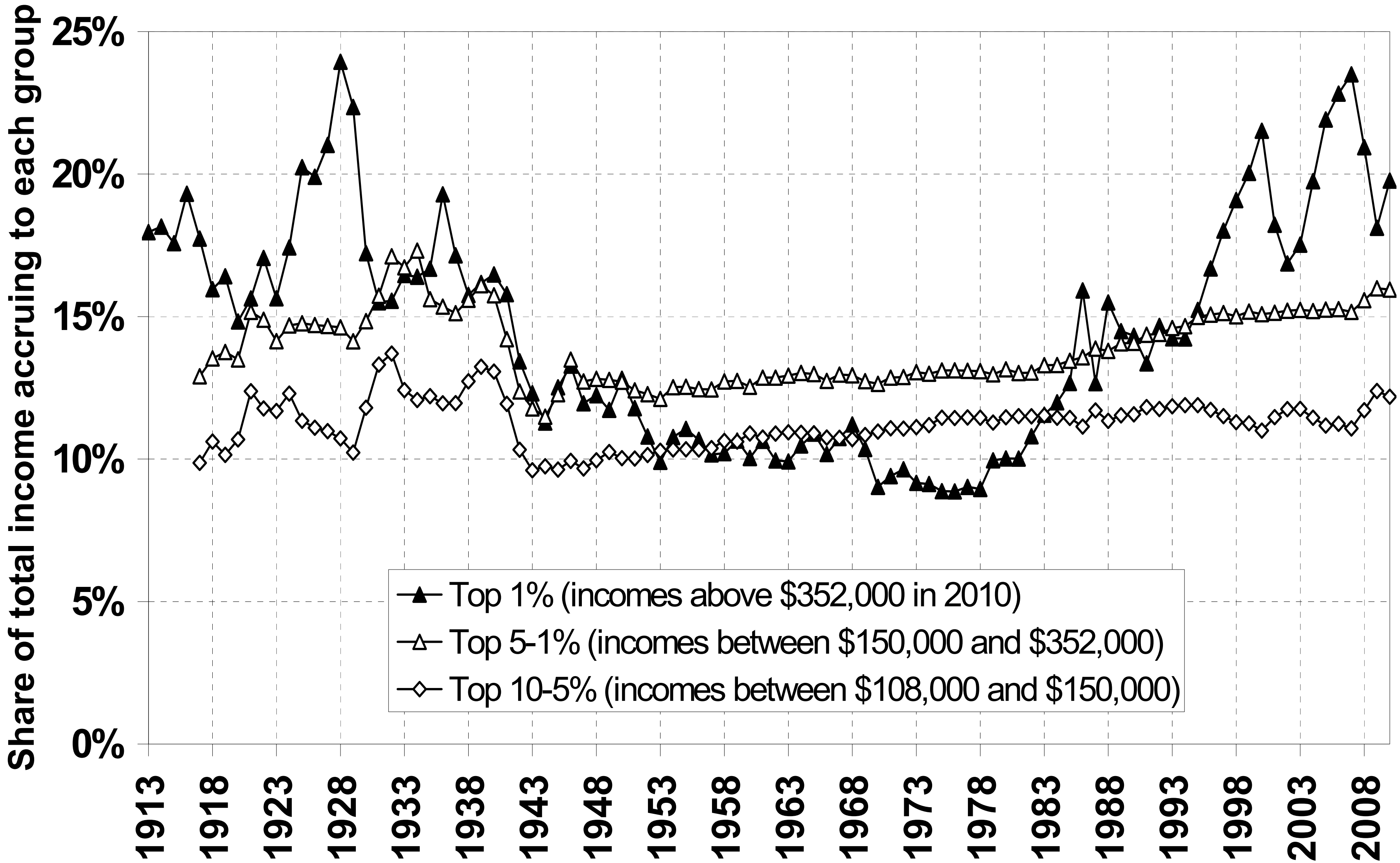
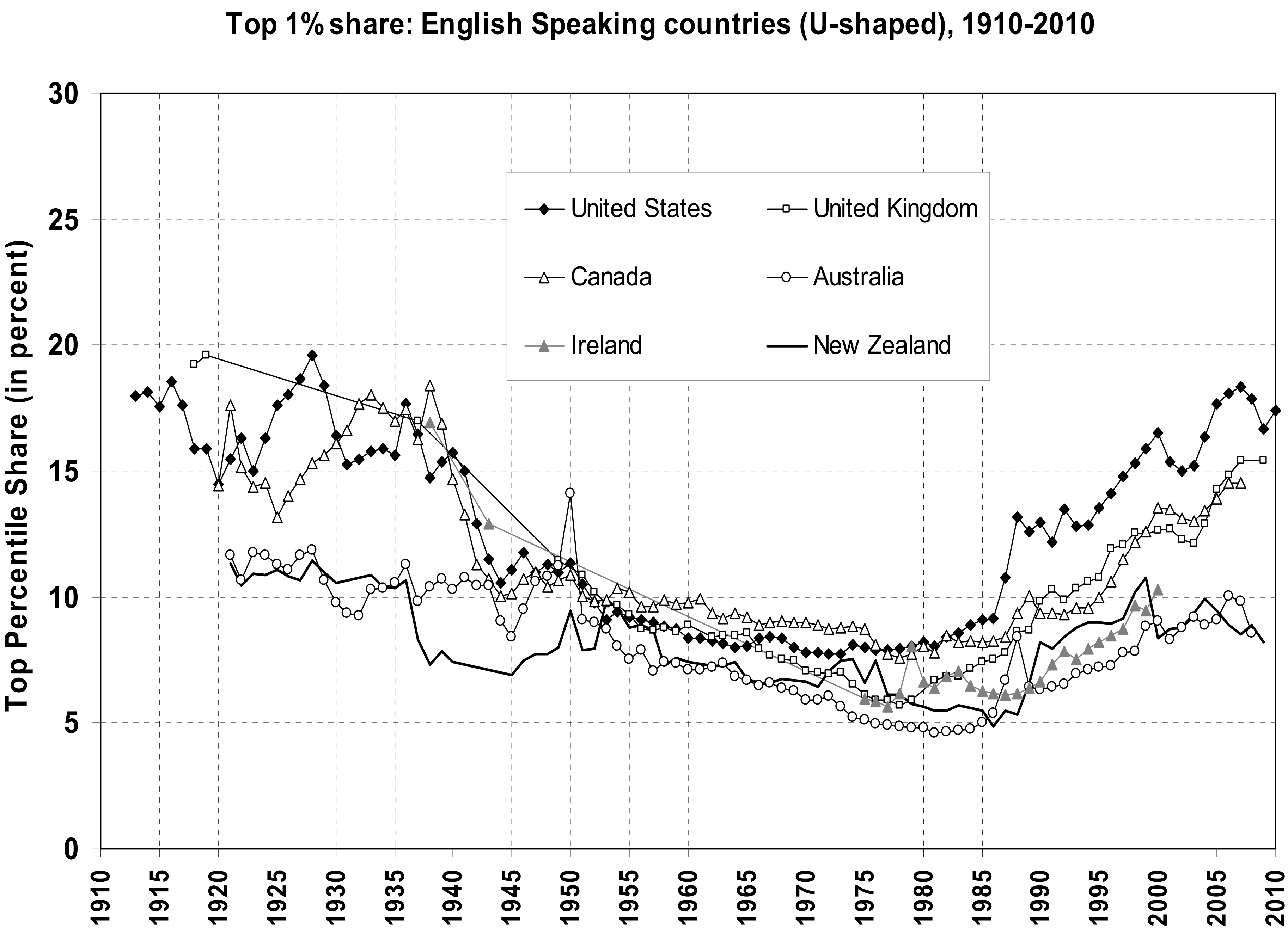


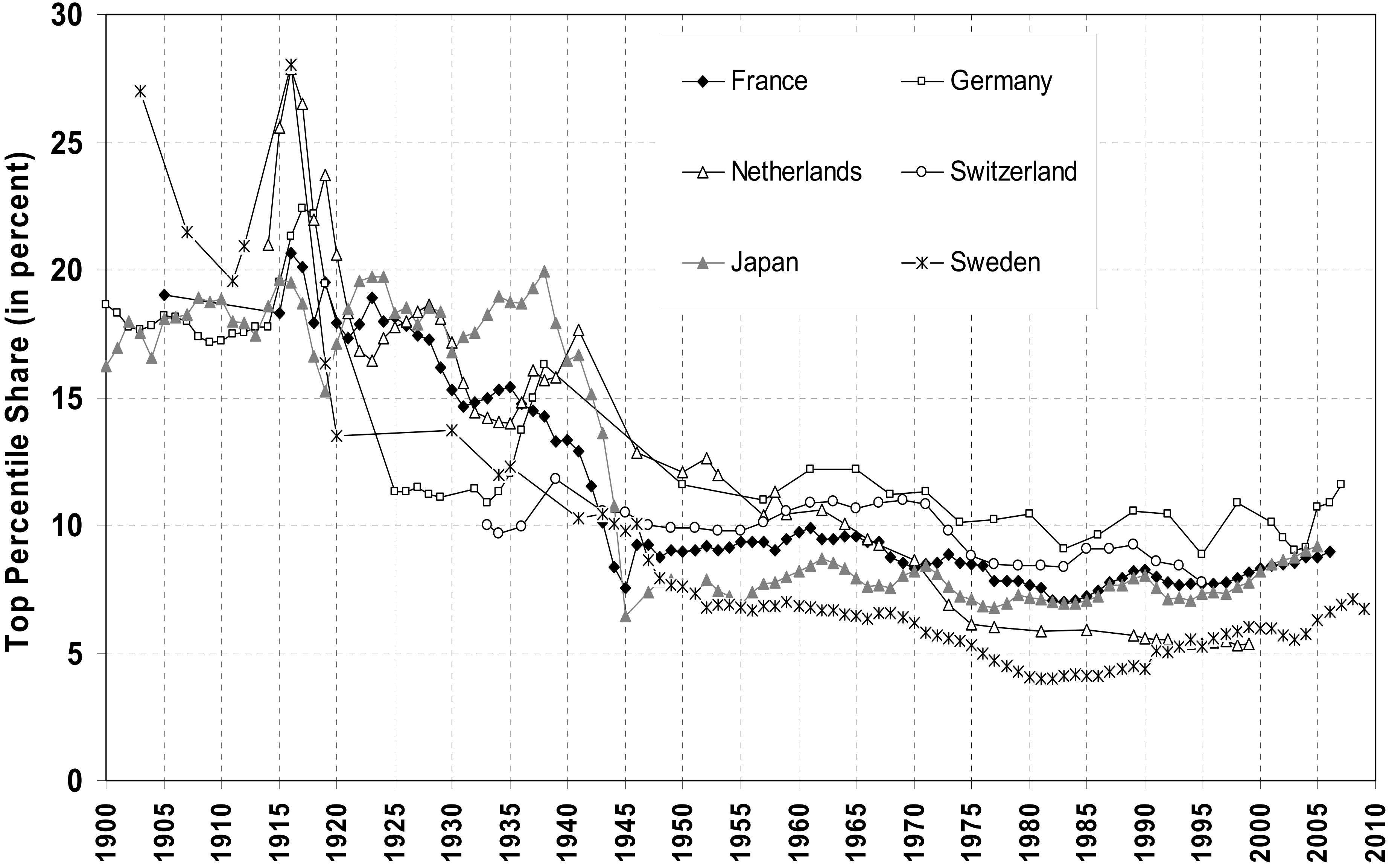
FIGURE 2

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

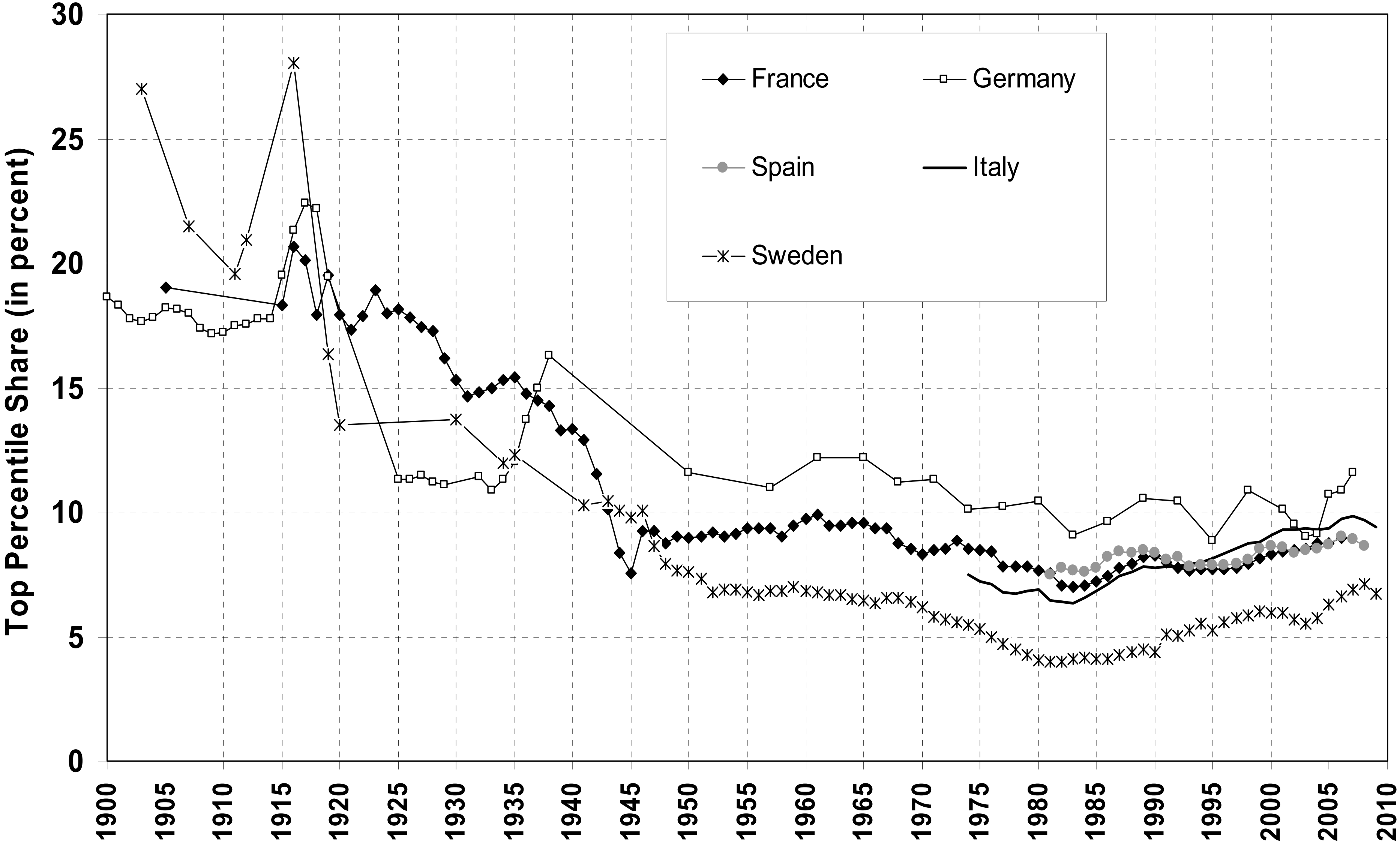


Top 1% share: English Speaking countries (U-shaped), 1910-2010
Top Percentile Share (in percent)
United States
United Kingdom
Canada
Australia
Ireland
New Zealand
0
5
10
15
20
25
30
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010

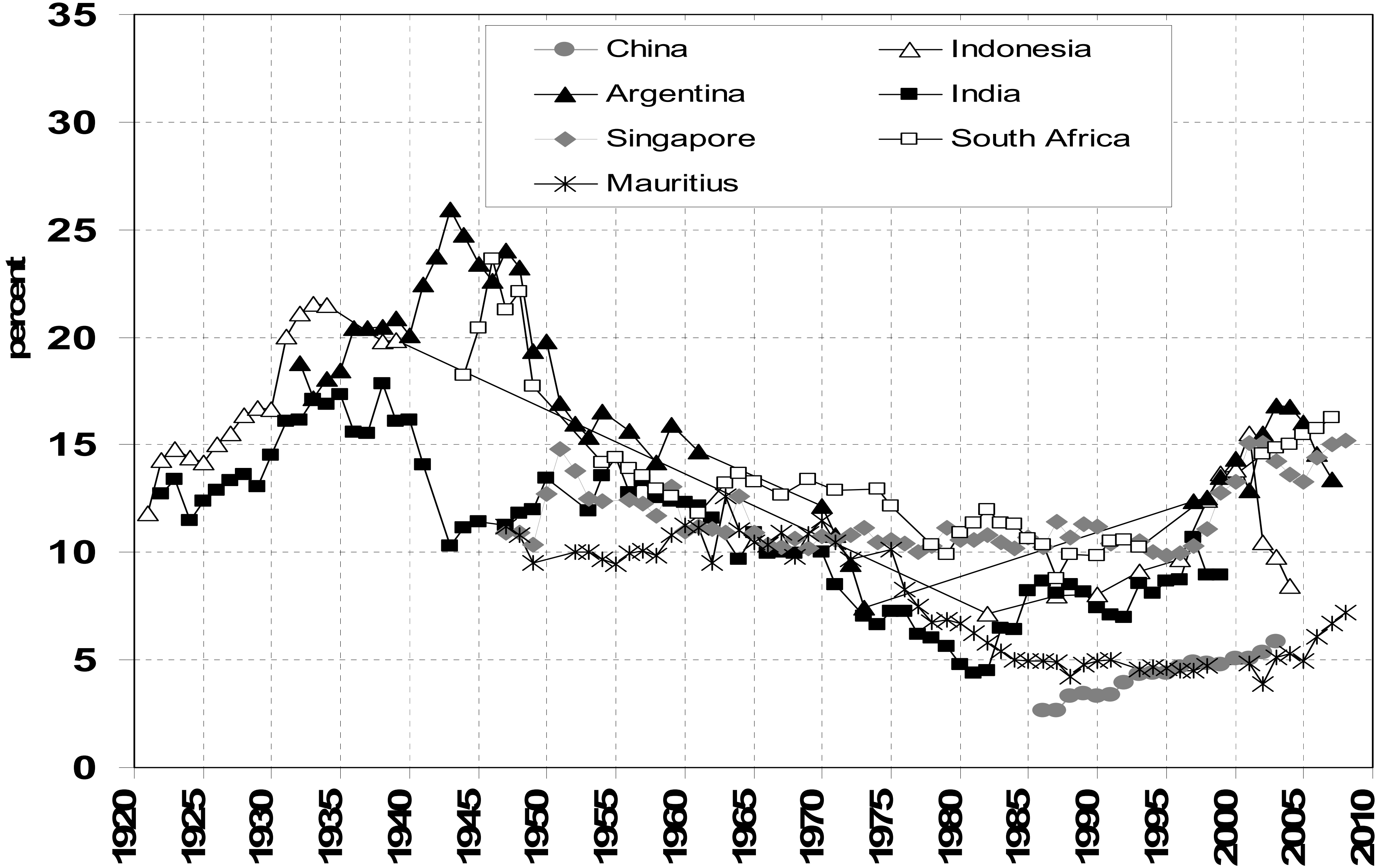
Top 1% share: Continental Europe and Japan (L-shaped), 1900-2010



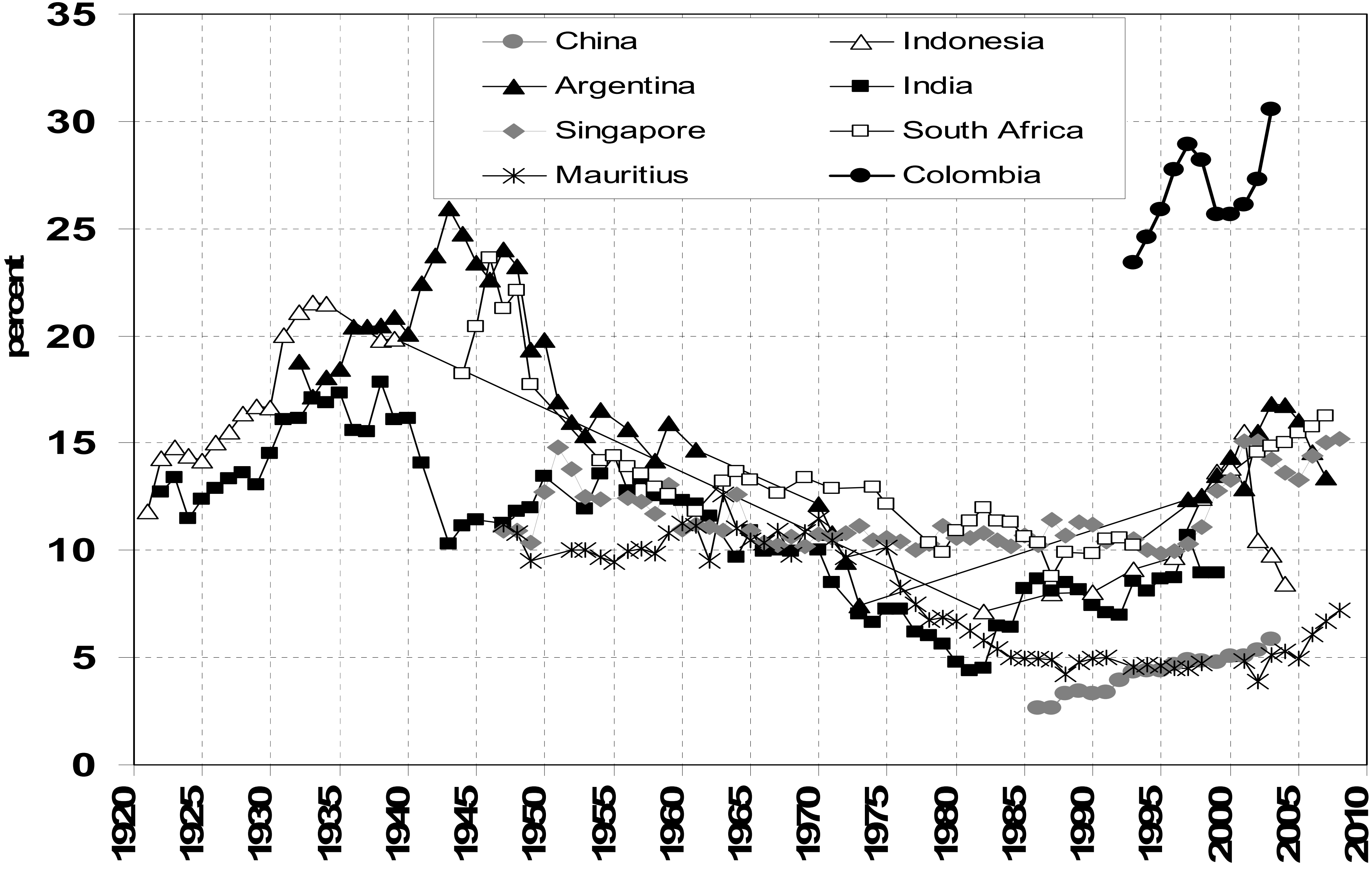
Top 1% share: Continental Europe, North vs South (L-shaped), 1900-2010



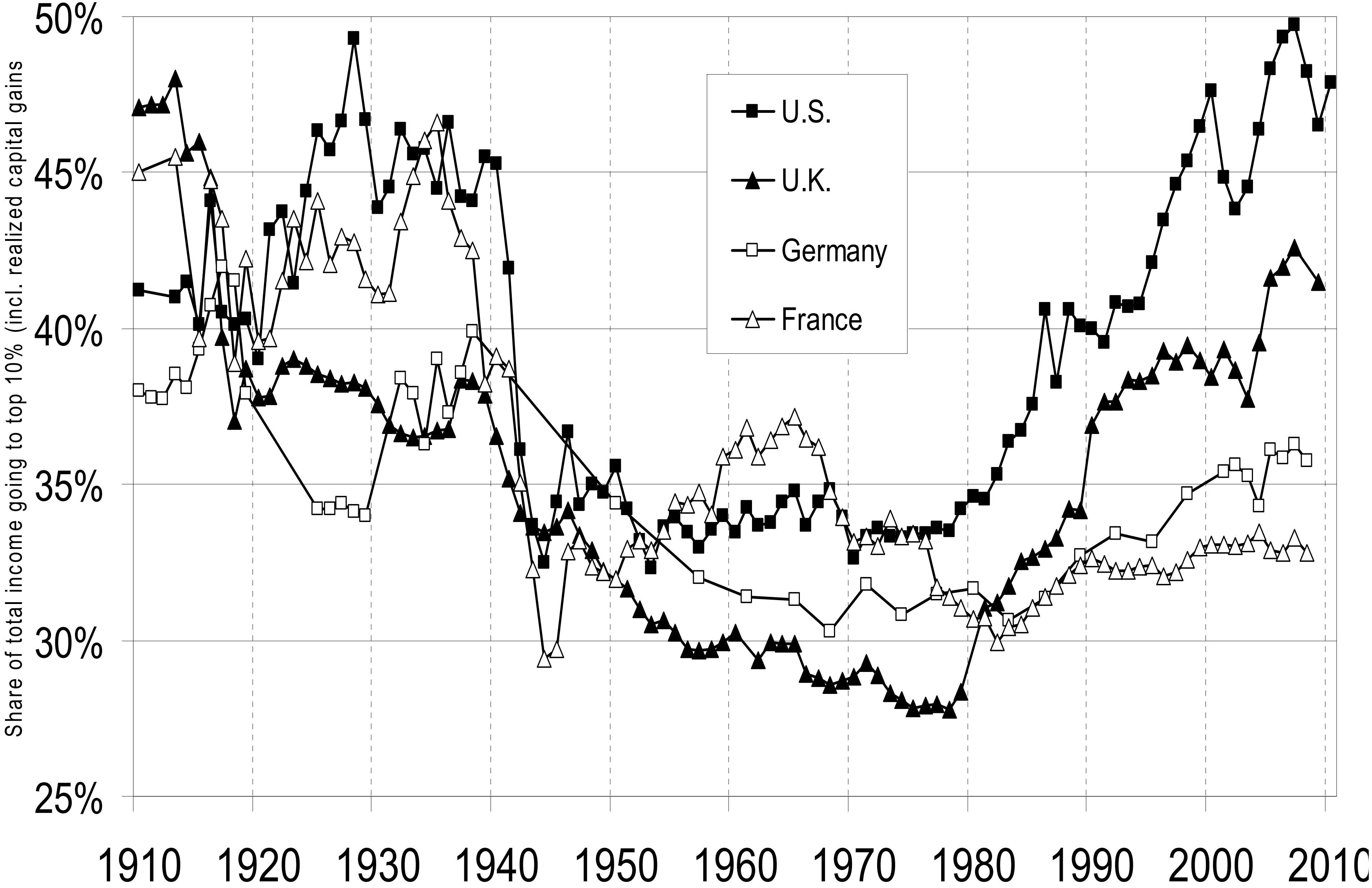
Top 1% share: Developing and emerging countries, 1920-2010



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)

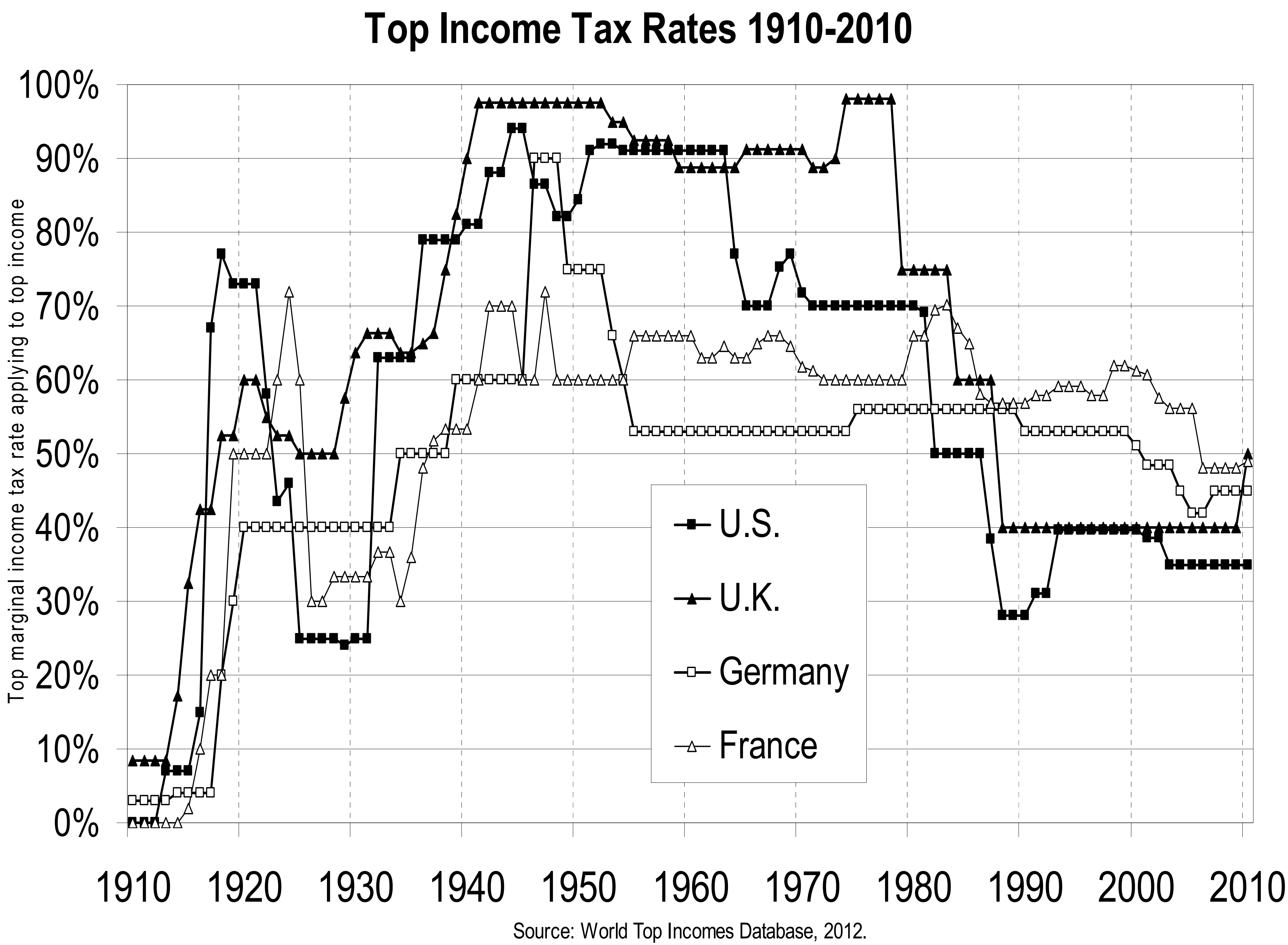
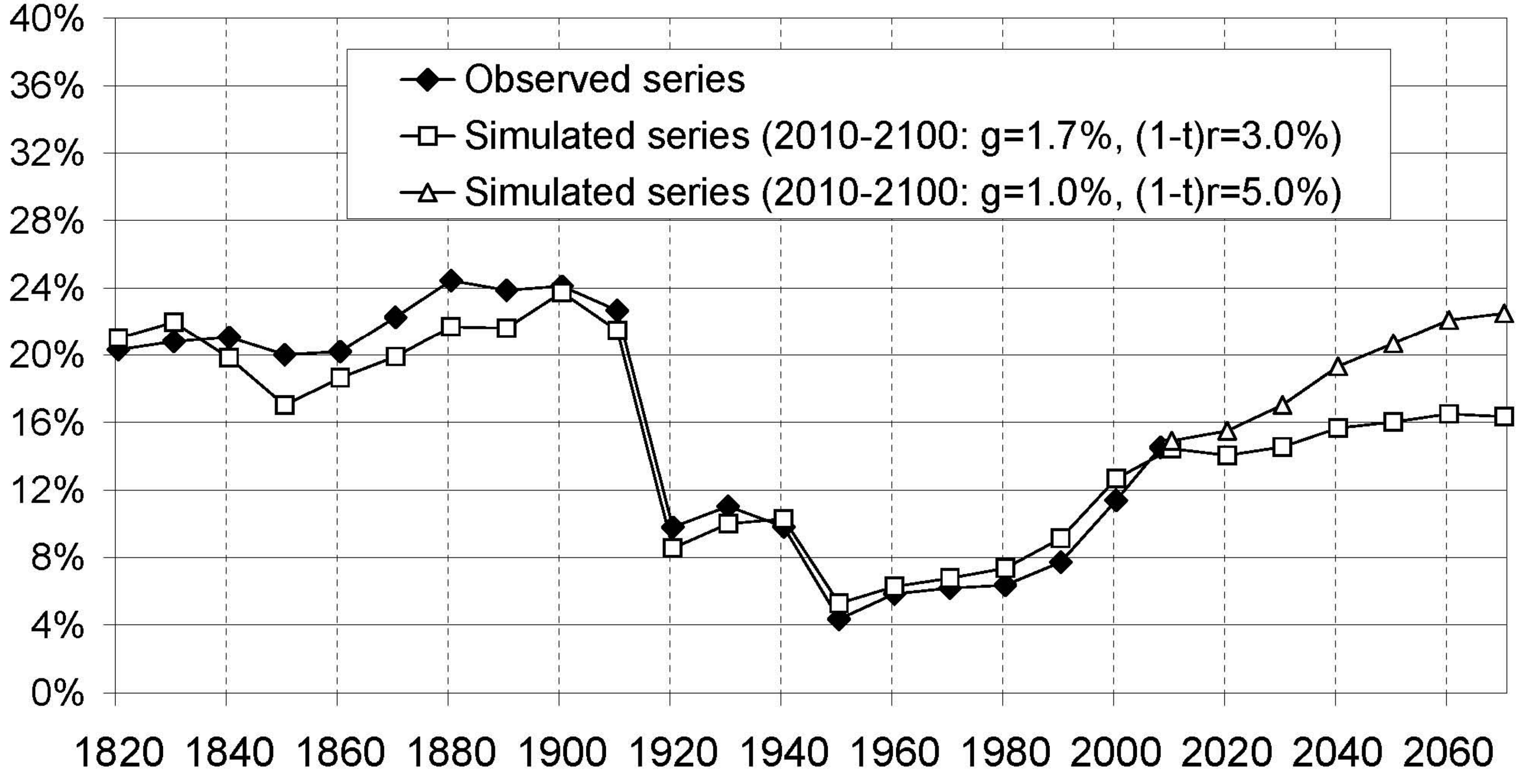

Top Income Tax Rates 1910-2010
Top marginal income tax rate applying to top income
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
U.S.
U.K.
Germany
France
Source: World Top Incomes Database, 2012.

Table 1. Top Percentile Share and Average Income Growth in the US

	Average Income Real Annual Growth (1)	Top 1% Incomes Real Annual Growth (2)	Bottom 99% Incomes Real Annual Growth (3)	Fraction of total growth captured by top 1% (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

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; 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