

# **Crisis, Wealth & Inequalities**

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# Can we study macro issues without looking at distributions?

- Distribution & balanced growth = key question asked by 19<sup>C</sup> 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 growth path can occur
- During 20<sup>C</sup>, 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 1976-2007: >50% of total growth was absorbed by top 1%)
  - 2007-2010 crisis also raised doubts about balanced devt path... **did rising inequality cause the crash?** will stock options & bonuses, or oil-rich countries & China, or tax havens, absorb an ever growing share of world resources in 21<sup>C</sup> capitalism?
- 19<sup>C</sup> economists raised the right questions; we need to address these questions again; we have no strong reason to believe in balanced growth path; **it is high time to put distribution back into mainstream macroeconomics**

# This talk: two points

- 1. The rise of inequality & the crisis

(Atkinson-Piketty-Saez, « Top Incomes in the Long Run of History » JEL 2010)

- 2. Wealth & inheritance in a low growth world: where is Europe heading?

(Piketty, « On the Long Run Evolution of Inheritance – France 1820-2050 », PSE WP 2010, & on-going research on global trends in wealth distribution)

# 1. The Rise of inequality & the crisis

- Top income project: 23 countries, annual series over most of 20<sup>C</sup>. **Two main findings:**
  - **The fall of rentiers:** inequality ↓ during first half of 20<sup>C</sup> = top capital incomes hit by 1914-1945 capital shocks; never fully recovered, possibly because of progressive taxation  
→ no long run decline of earnings inequality; nothing to do with a Kuznets-type process
  - **The rise of working rich:** inequality ↑ since 1970s; mostly due to top labor incomes  
→ **what happened? did it cause the crash?**

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**TOP INCOMES**  
OVER THE  
**20TH**  
**CENTURY**

*A Contrast Between Continental European  
and English-Speaking Countries*

*Edited by A. B. ATKINSON & T. PIKETTY*

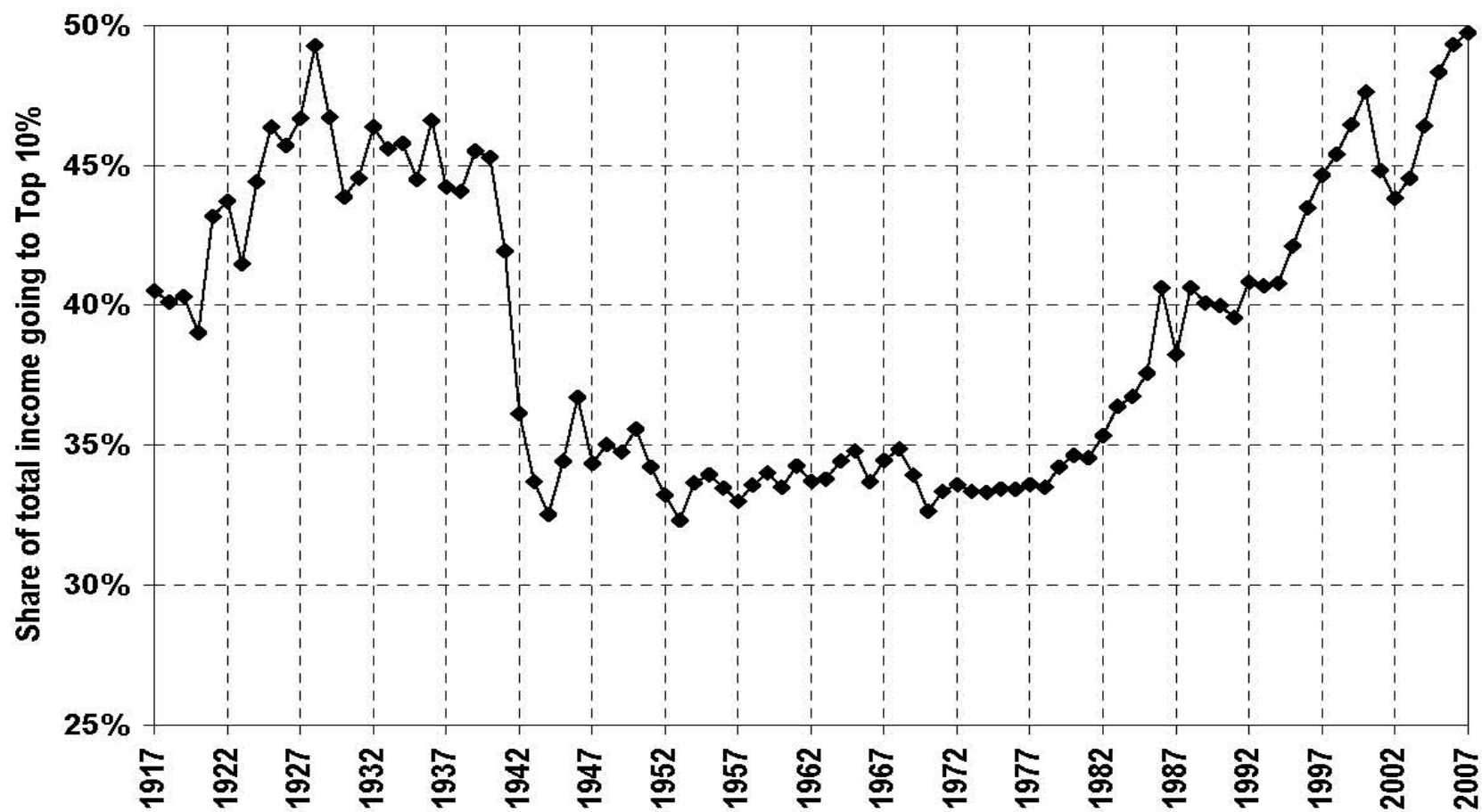
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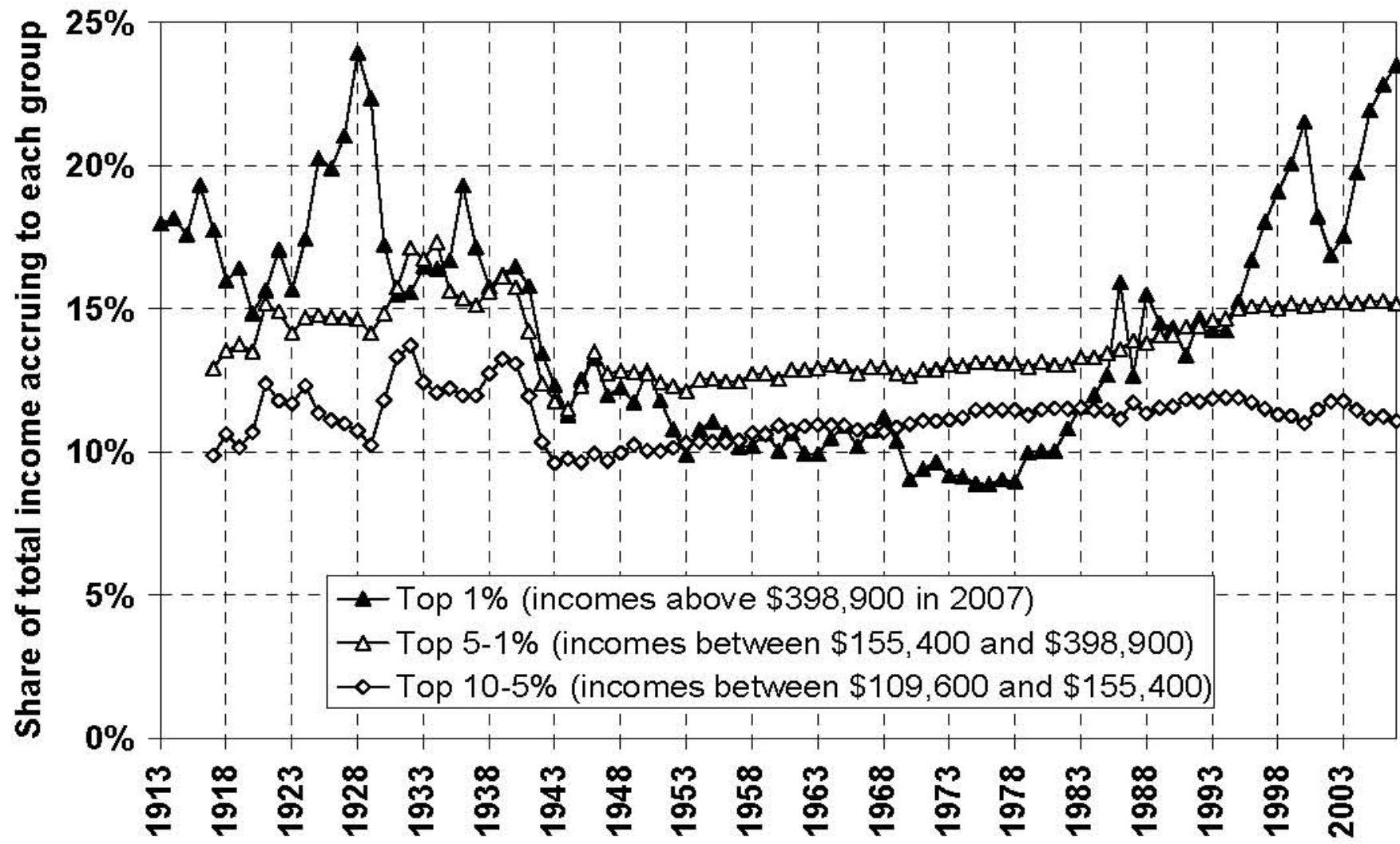


**FIGURE 1**

The Top Decile Income Share in the United States, 1917-2007

Source: Piketty and Saez (2003), series updated to 2007.

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, 1913-2007



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

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

# Did inequality ↑ cause the crash?

- Kumhof-Ranciere, « Inequality, Leverage & Crises », IMF WP 2010: YES: US poor borrowed a lot because of inequality ↑ & stagnant incomes
- My own view: - global financial systems are so fragile that they can crash without inequality↑
  - but inequality ↑ does put extra stress on the financial system; large financial transactions between income gainers & losers; **domestic imbalances are even bigger than global imbalances**
  - Europe: this effect can get much bigger in the future

Figure 7A. Top 1% share: English Speaking countries (U-shaped), 1910-2005

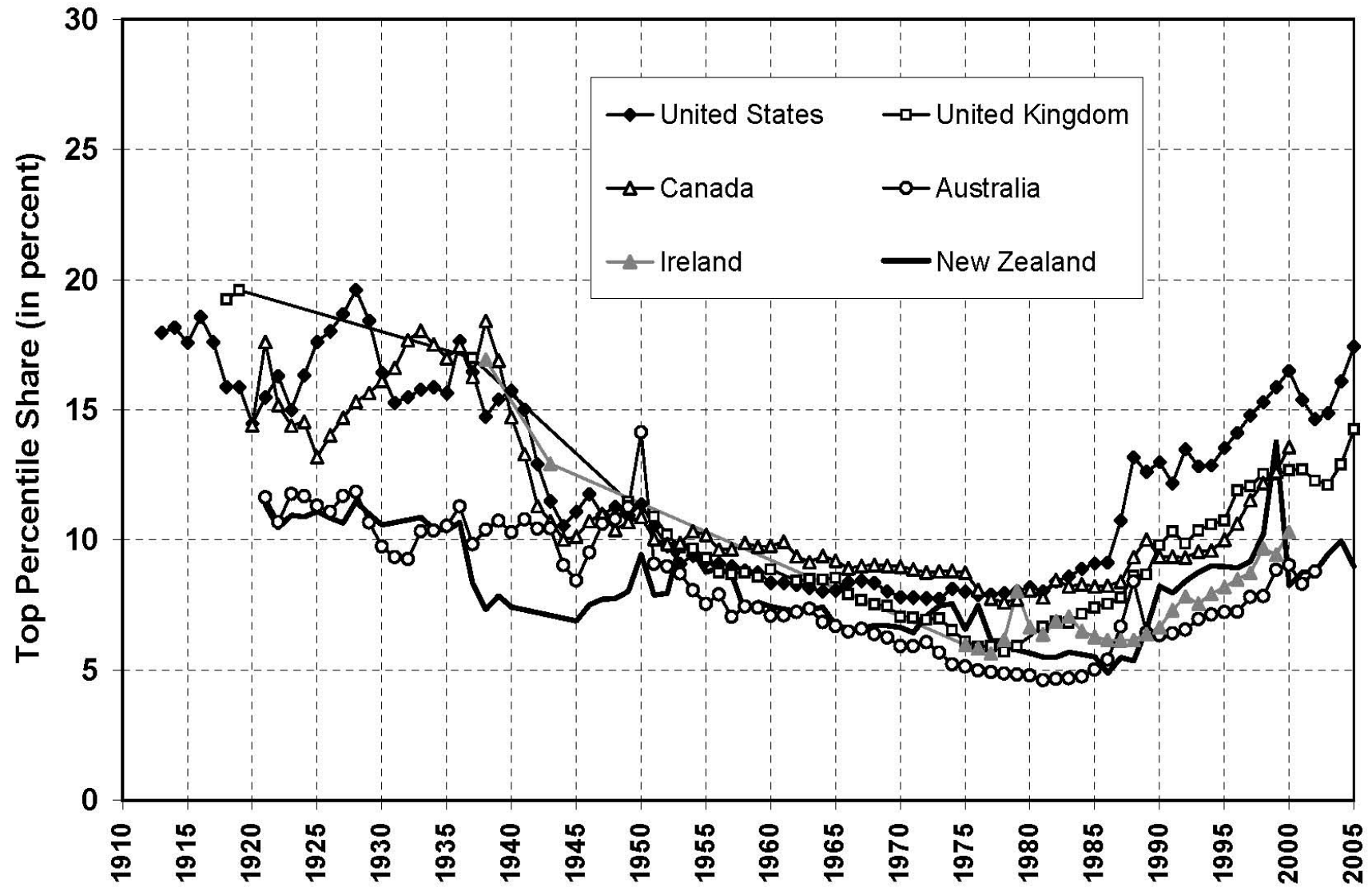
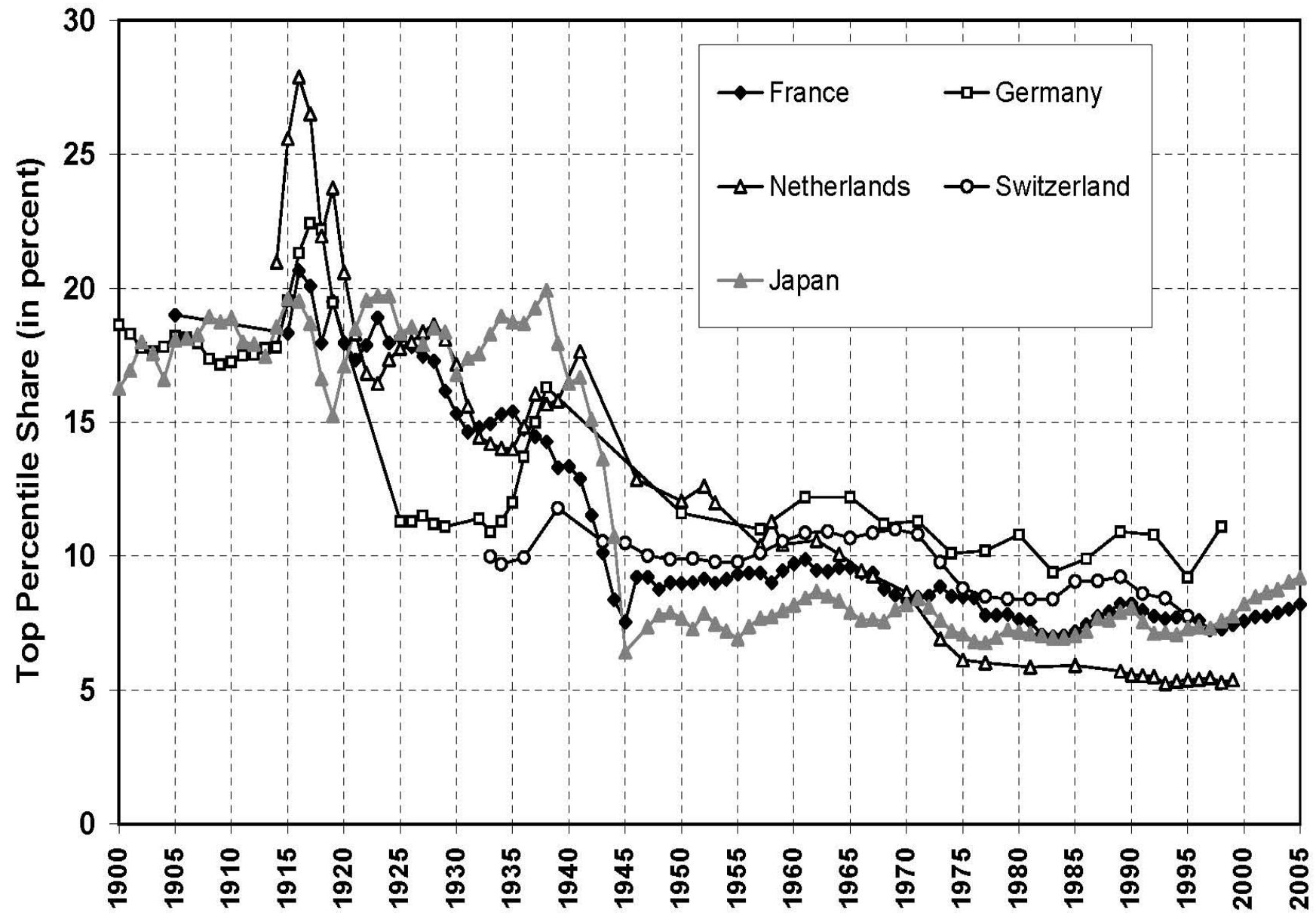


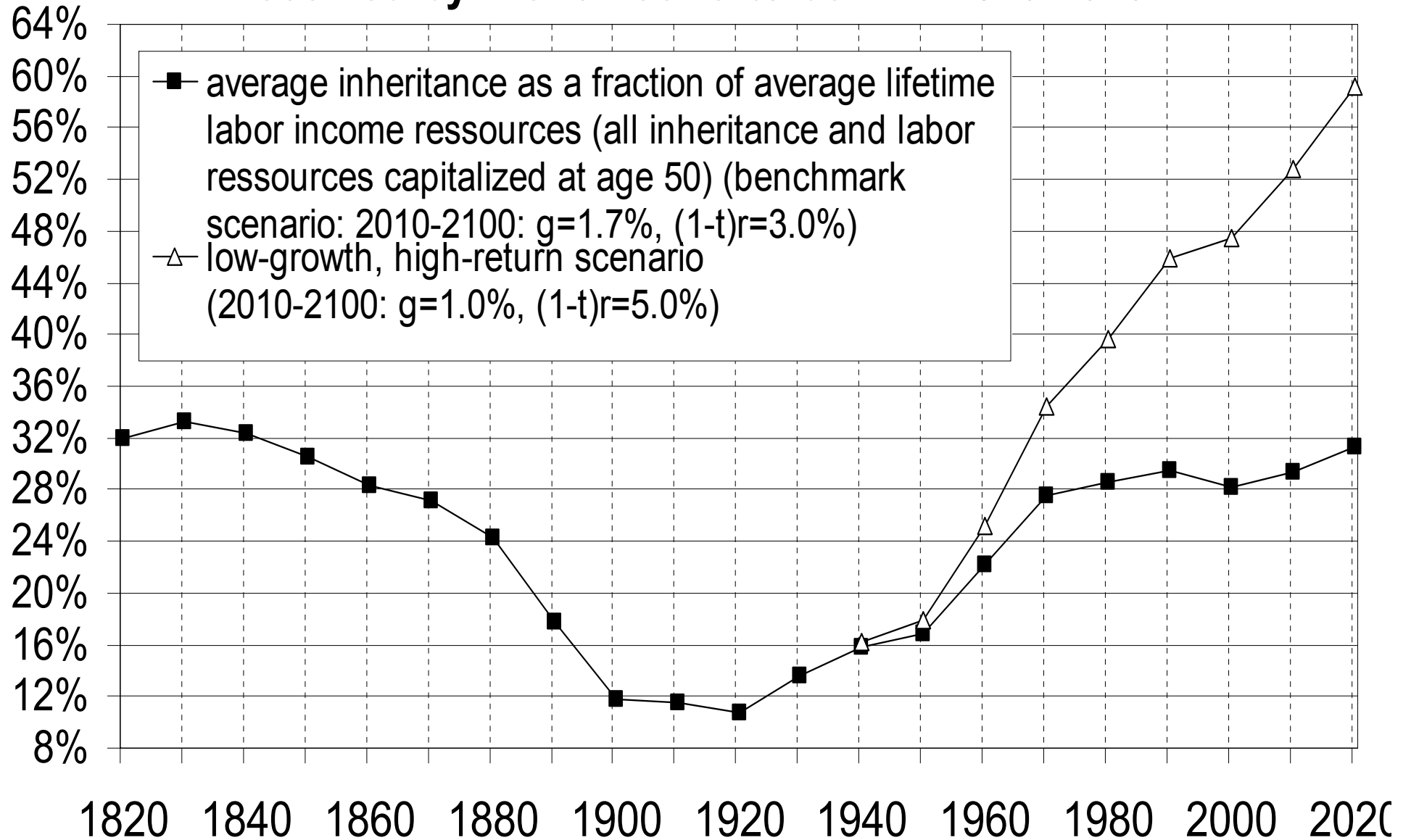
Figure 7B. Top 1% Share: Middle Europe and Japan (L-shaped), 1900-2005



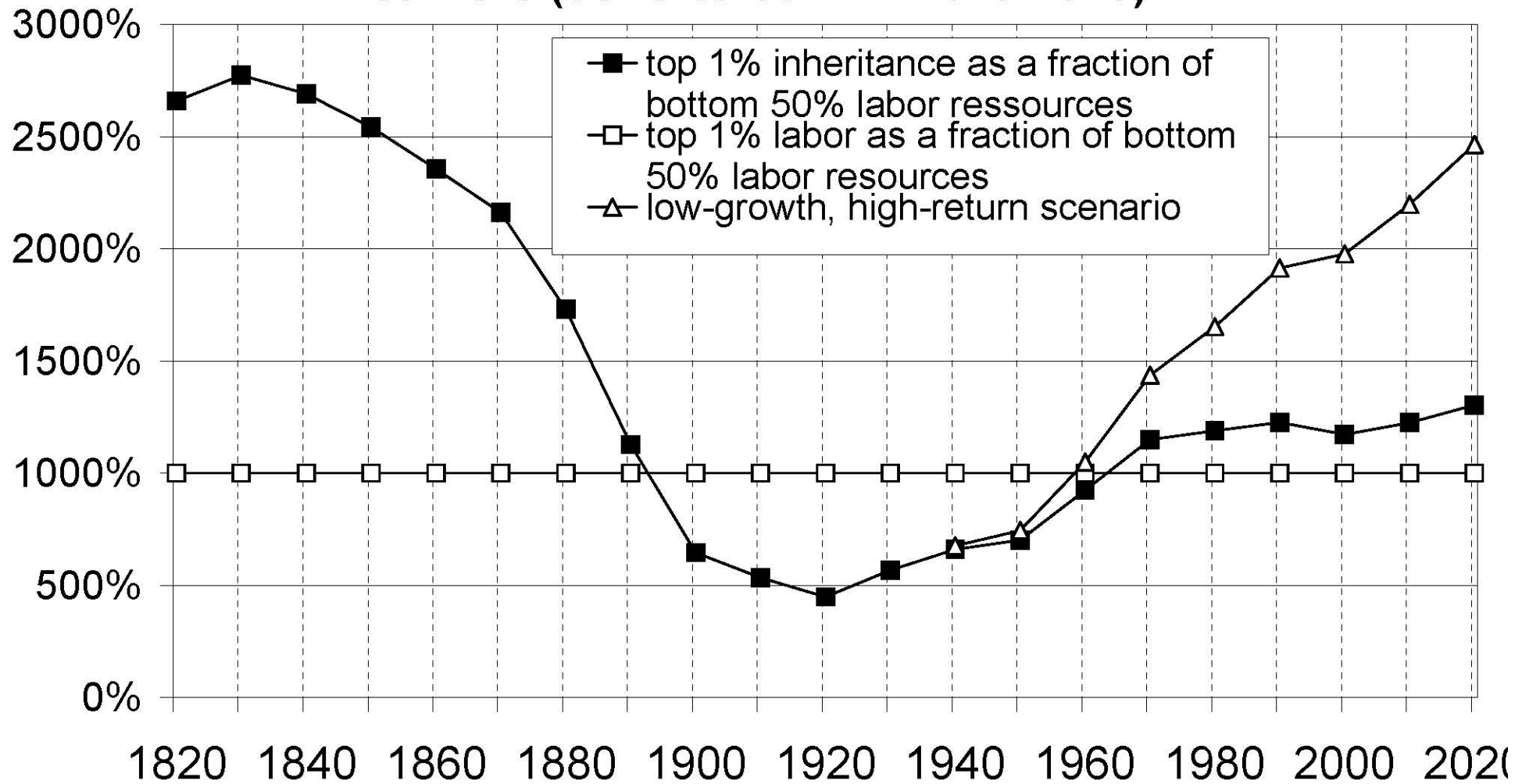
## 2. Wealth in a low growth world

- Wealth inequality did not decline very much in the long run
- What made 20c societies less unequal & more meritocratic than 19c societies is the decline in the share of inherited wealth
- But this was purely temporary: with  $g$  small &  $r > g$ , inherited wealth is bound to dominate again self-made wealth in the future
- Europe: with negative population growth, this  $r > g$  effect is likely to become very large

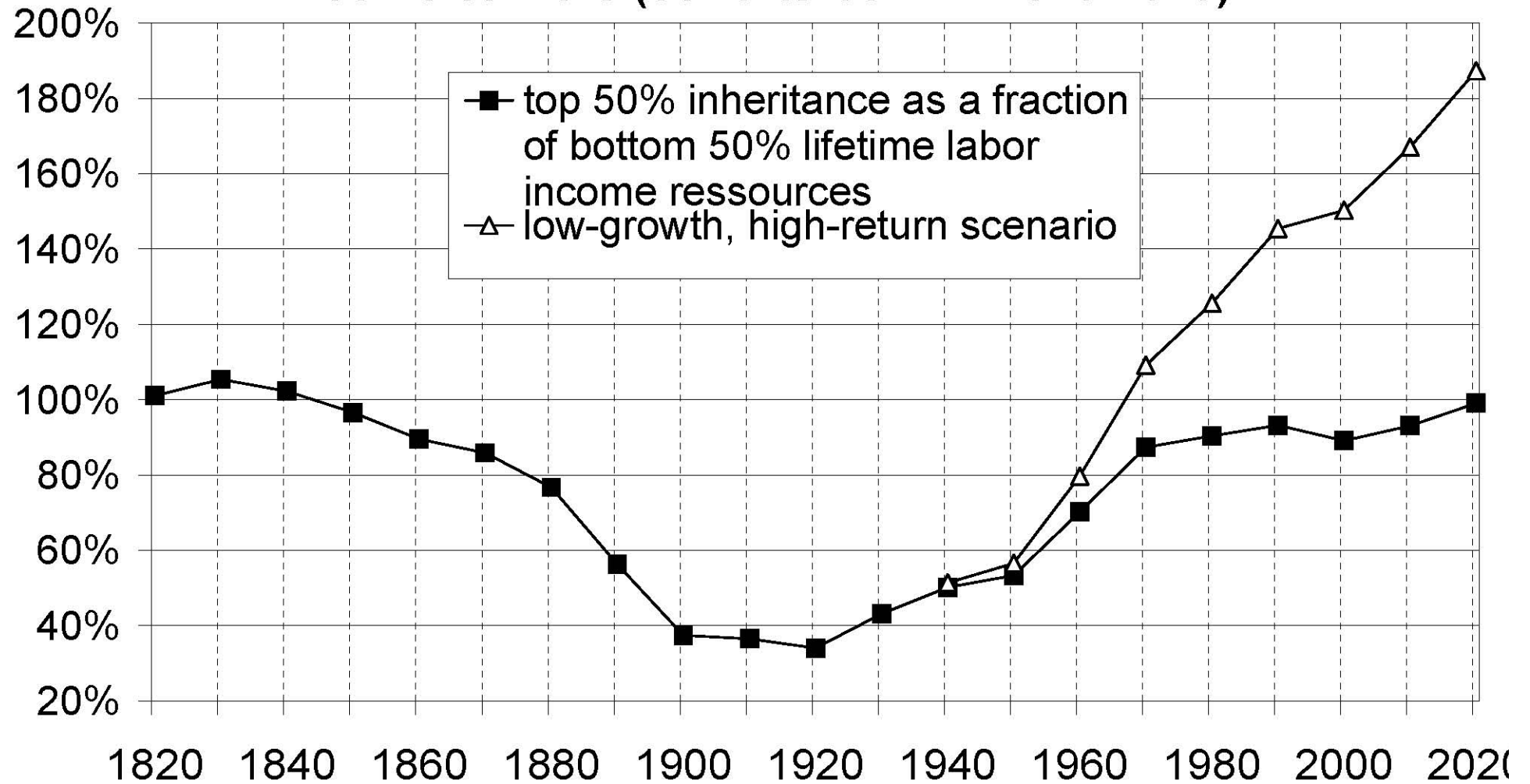
# The share of inheritance in lifetime resources received by French cohorts born in 1820-2020



**Figure 16: Top 1% successors vs top 1% labor income earners (cohorts born in 1820-2020)**



**Figure 14: Top 50% successors vs bottom 50% labor income earners (cohorts born in 1820-2020)**





# Policy implications

- A world with  $g$  low &  $r > g$  is gloomy for workers with zero inherited wealth
  - ... especially if global tax competition drives capital taxes to 0% and the tax system relies entirely on labor income
  - ... especially if top labor incomes take a rising share of aggregate labor income
- let's unite to tax capital & top labor at the EU level; otherwise the future looks gloom

# Why are US working rich so rich?

- Hard to account for obs. 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 (social norms, etc.)
- very naïve view of the top labor market...
- & very ideological: we have zero evidence on the marginal product of top executives; social norms can also go the other way...

- Another 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)  
→ 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 rate (1m\$+) 1932-1980 = 82%)  
(no more fringe benefits than today)

- A more consensual view: the truth must be somewhere in between these two views; we know very little; top labor market institutions & pay setting processes are important and ought to attract more research; be careful with low quality survey data (with bad coverage of the top)

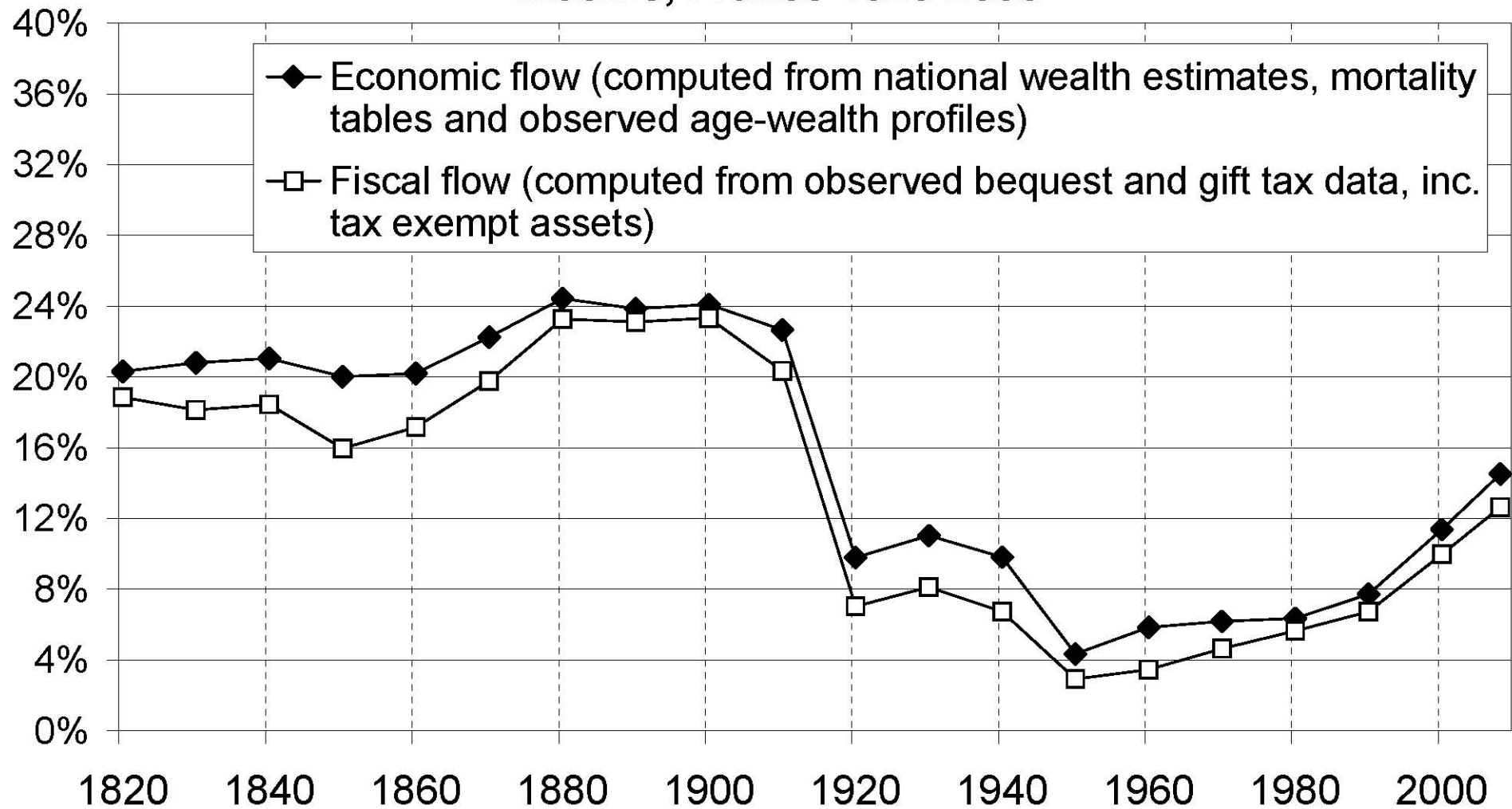
# The return of inheritance

- **Distributional issue:** wealth inequality ↓ during 20<sup>C</sup>.. but not that much (see table)
  - **Macro issue:** aggregate inheritance flow vs aggregate labor income
- this is the issue explored in « On the Long Run Evolution of Inheritance – France 1820-2050 »

**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
<b>Top 10% "Upper Class"</b>	<b>30%</b>	<b>90%</b>	<b>60%</b>
<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>
<b>Middle 40% "Middle Class"</b>	<b>40%</b>	<b>5%</b>	<b>35%</b>
<b>Bottom 50% "Poor"</b>	<b>30%</b>	<b>5%</b>	<b>5%</b>

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

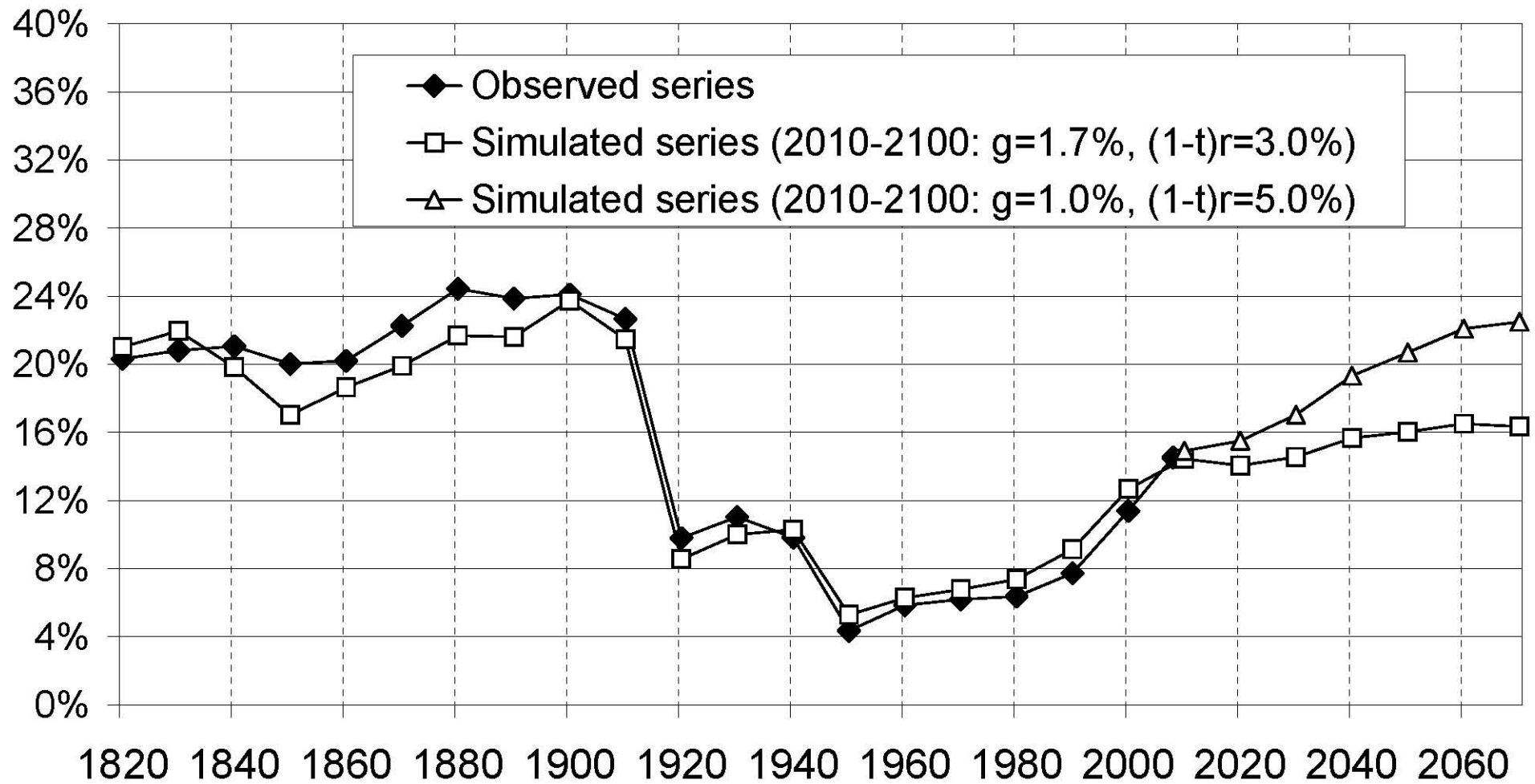


# What this paper does

- Documents this fact
  - Develops a simple theoretical model explaining & reproducing this fact
  - **Main lesson: with  $r > g$ , inheritance is bound to play a key role & to dominate new wealth**
  - **Intuition:** with  $r > g$  (&  $g$  low), 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  $\rightarrow b_y = \beta/H$
- $\rightarrow$  with  $\beta = 600\%$  &  $H = 30$ , then  $b_y = 20\%$
- It is only in countries & time periods with  $g$  exceptionally high that self-made wealth dominates inherited wealth



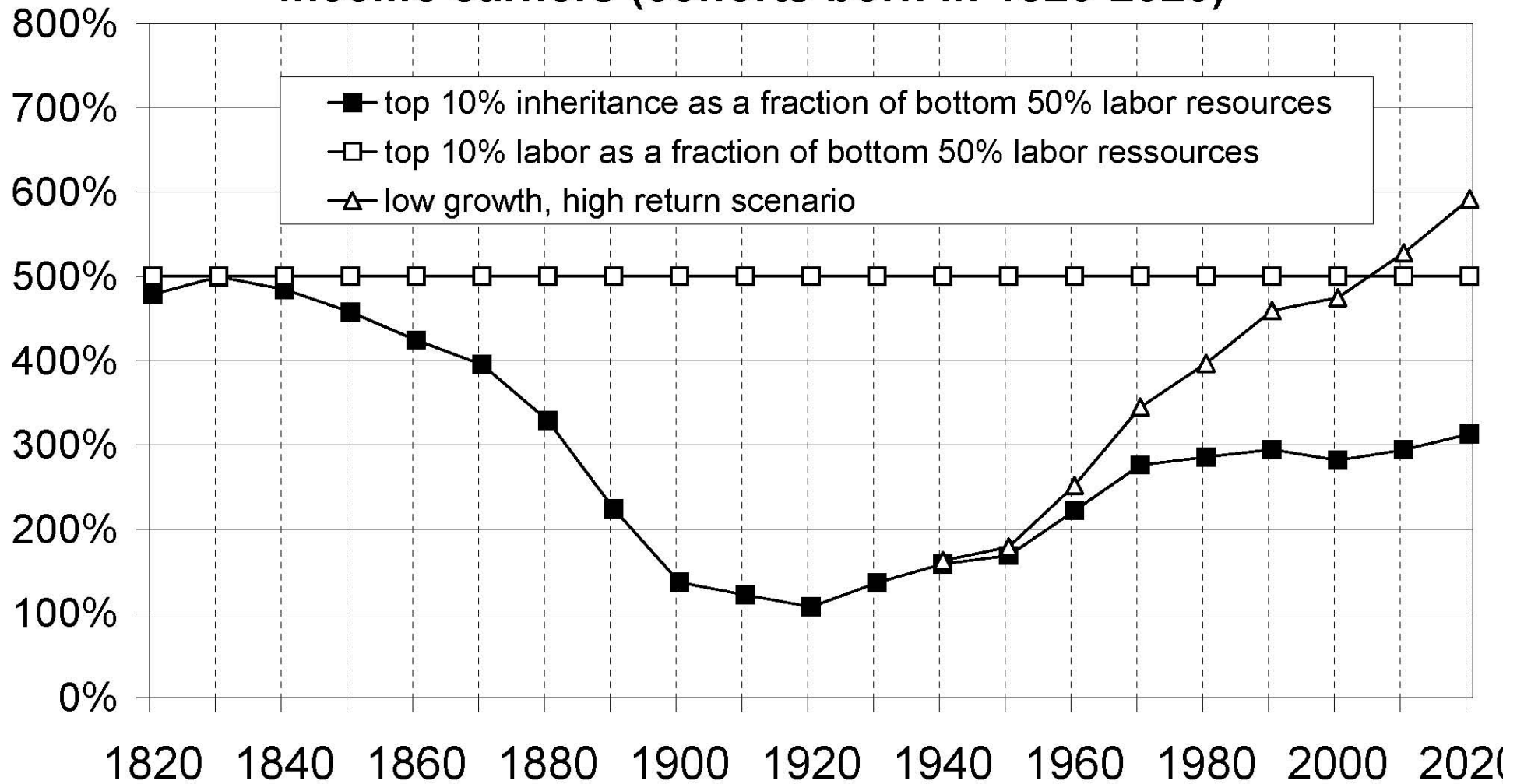
**Figure 9: Observed vs simulated inheritance flow B/Y,  
France 1820-2100**



# Back to distributional analysis

- For cohorts born in the 1910s-1950s, inheritance did not matter too much  
→ labor-based, meritocratic society
- But for cohorts born in the 1970s & after, inheritance matters a lot → 21<sup>c</sup> closer to 19<sup>c</sup> rentier society than to 20<sup>c</sup> merit society
- The rise of human capital was an illusion .. especially with a labor-based tax system

**Figure 15: Top 10% successors vs top 10% labor income earners (cohorts born in 1820-2020)**

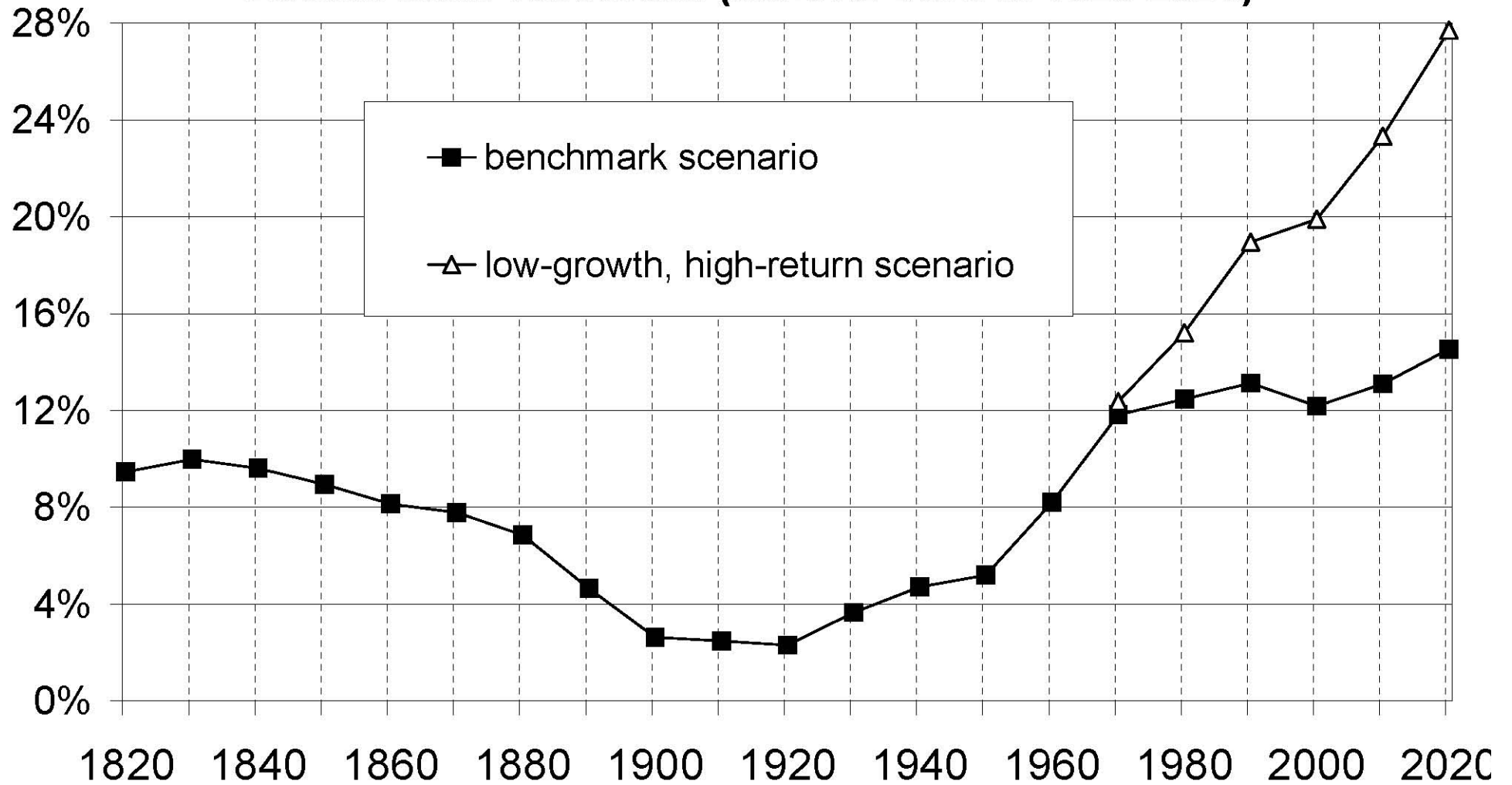


**Table 4: Lifetime inequality: illustration with cohorts born in the 1970s**

Lifetime ressources capitalized at age 50	Labor income	Inherited wealth	<i>Inherited wealth with 1910 distribution</i>
<b>Top 10% "Upper Class"</b>	<b>4 740 000 €</b>	<b>2 640 000 €</b>	<b>3 960 000 €</b>
<i>incl. Top 1% "Very Rich"</i>	<i>9 480 000 €</i>	<i>11 000 000 €</i>	<i>22 000 000 €</i>
<i>incl. Other 9% "Rich"</i>	<i>4 210 000 €</i>	<i>1 710 000 €</i>	<i>1 960 000 €</i>
<b>Middle 40% "Middle Class"</b>	<b>1 580 000 €</b>	<b>390 000 €</b>	<b>60 000 €</b>
<b>Bottom 50% "Poor"</b>	<b>950 000 €</b>	<b>40 000 €</b>	<b>40 000 €</b>
Cohorts averages (€ 2009)	1 580 000 €	440 000 €	440 000 €

**Supplementary slides**

**Figure 17: Cohort fraction inheriting more than bottom 50% lifetime labor resources (cohorts born in 1820-2020)**

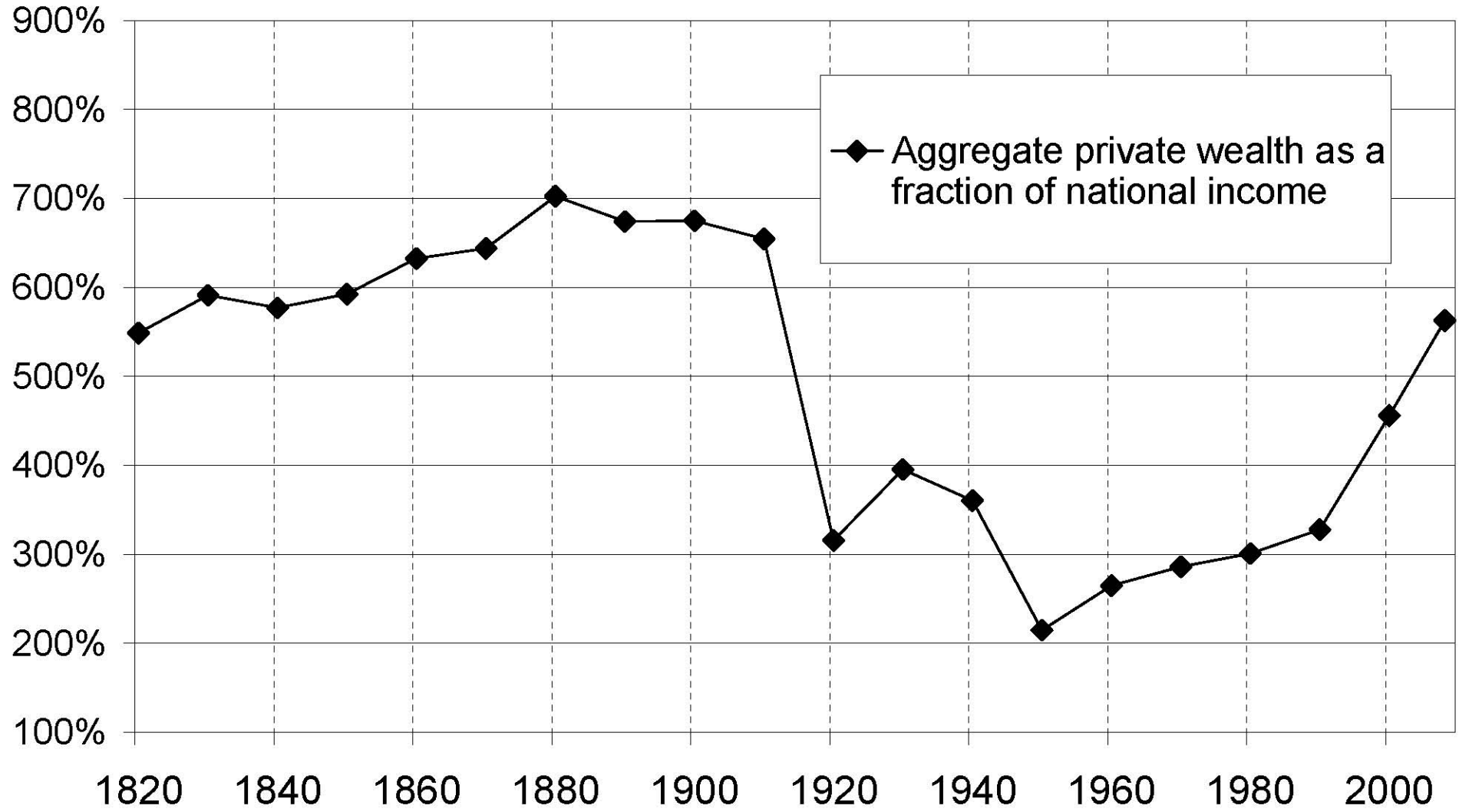


# Computing inheritance flows: simple macro arithmetic

$$\mathbf{B}_t/Y_t = \mu_t m_t W_t/Y_t$$

- $W_t/Y_t$  = aggregate wealth/income ratio
  - $m_t$  = aggregate mortality rate
  - $\mu_t$  = ratio between average wealth of decedents and average wealth of the living (= age-wealth profile)
- The U-shaped pattern of inheritance is the product of three U-shaped effects

**Figure 2: Wealth-income ratio in France 1820-2008**

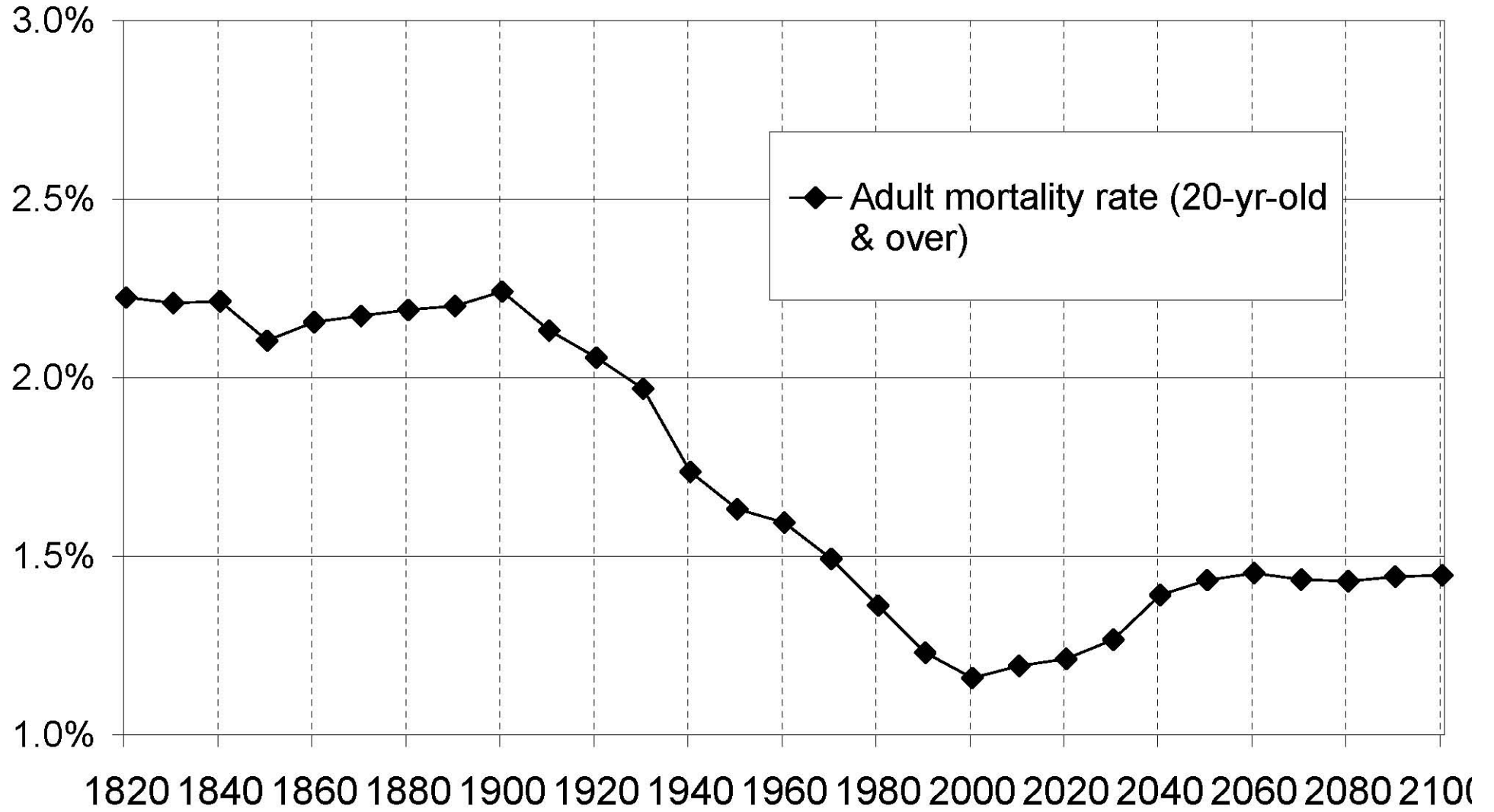




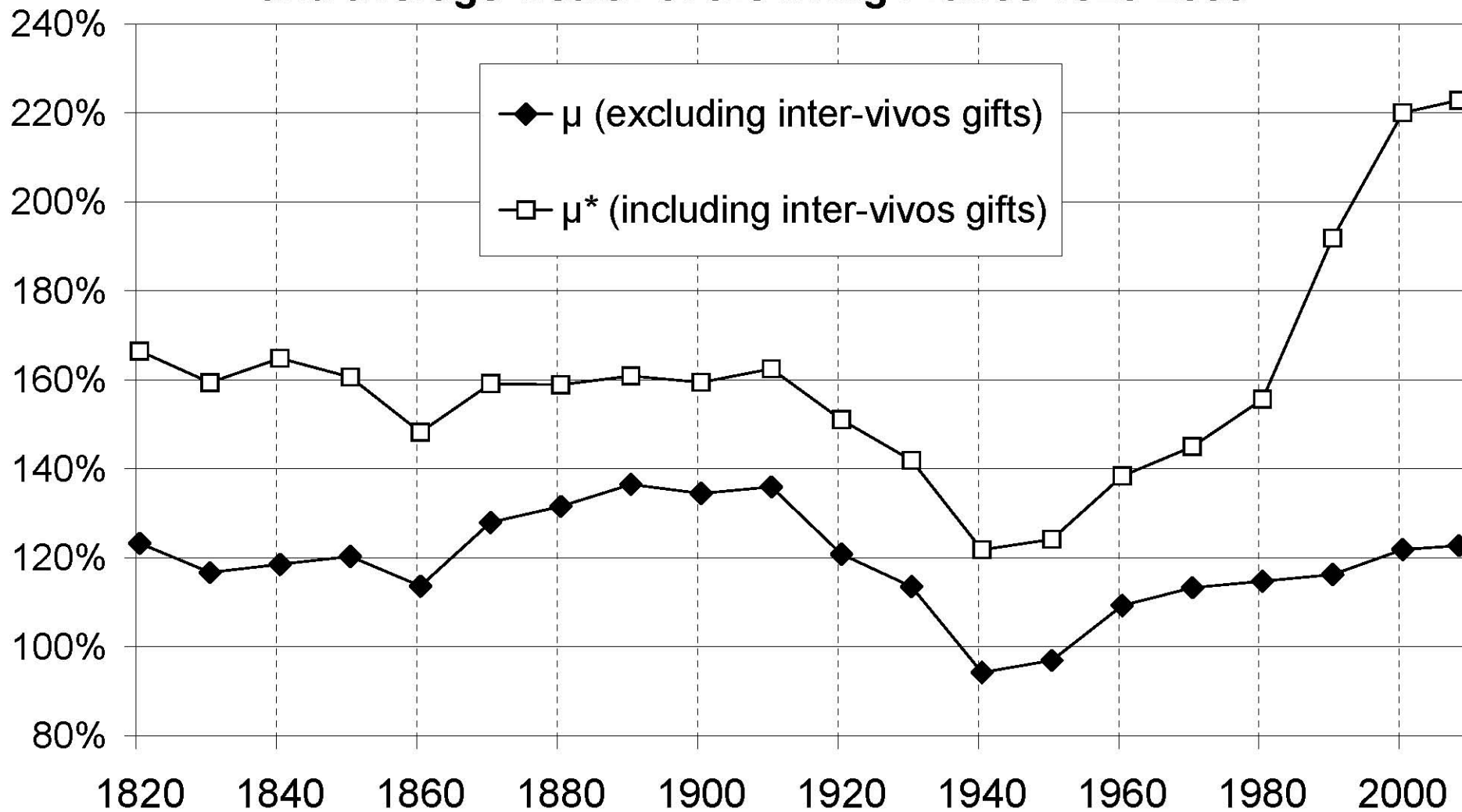
**Table 1: Accumulation of private wealth in France, 1820-2009**

	Real growth rate of national income $g$	Real growth rate of private wealth $g_w$	Savings-induced wealth growth rate $g_{ws} = s/\beta$	Capital-gains-induced wealth growth rate $q$	<i>Memo:</i> <i>Consumer price inflation</i> $p$
1820-2009	1.8%	1.8%	2.1%	-0.3%	4.4%
1820-1913	1.0%	1.3%	1.4%	-0.1%	0.5%
1913-2009	2.6%	2.4%	2.9%	-0.4%	8.3%
1913-1949	1.3%	-1.7%	0.9%	-2.6%	13.9%
1949-1979	5.2%	6.2%	5.4%	0.8%	6.4%
1979-2009	1.7%	3.8%	2.8%	1.0%	3.6%

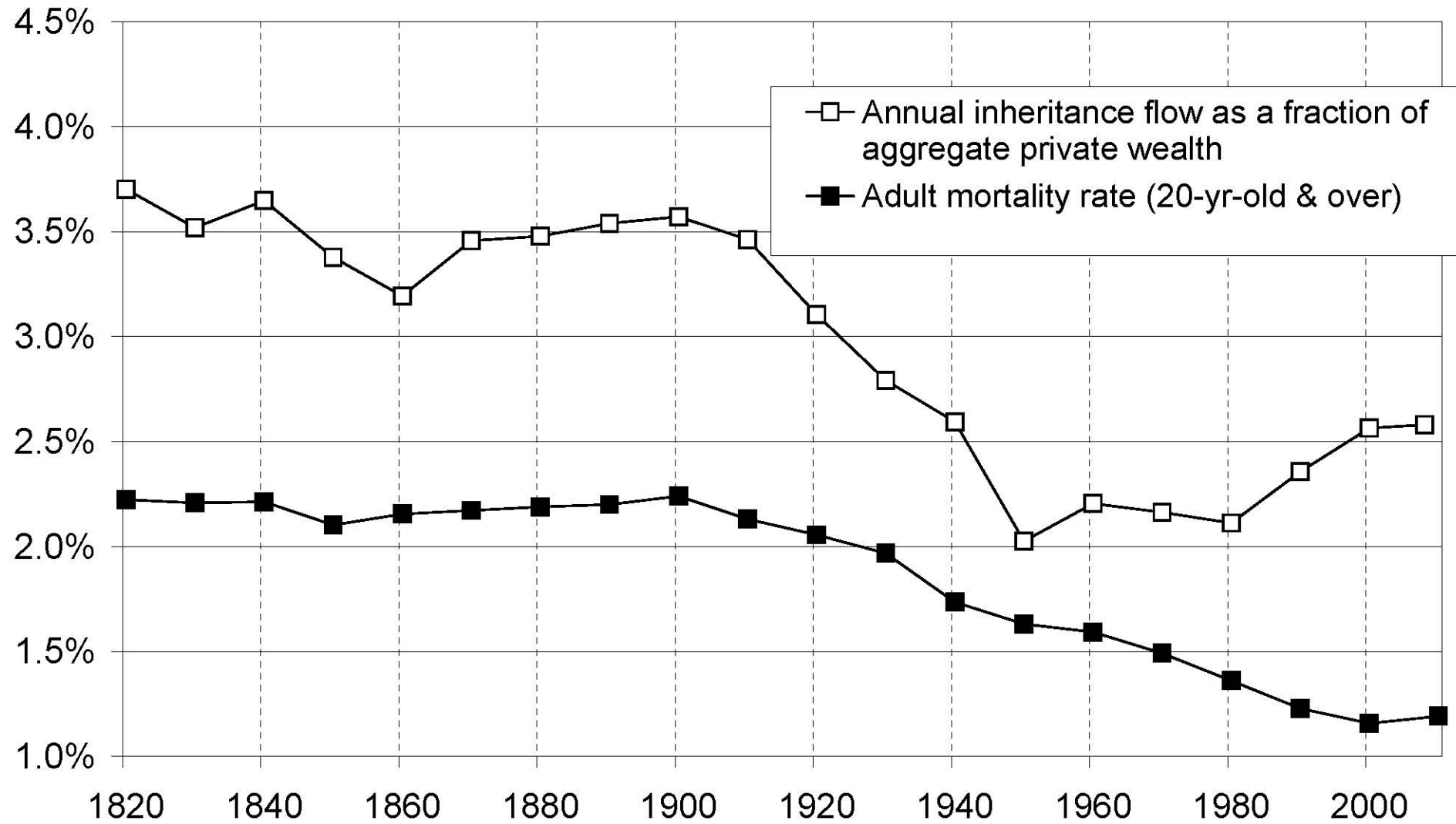
**Figure 3: Mortality rate in France, 1820-2100**



**Figure 4: The ratio between average wealth of decedents and average wealth of the living France 1820-2008**



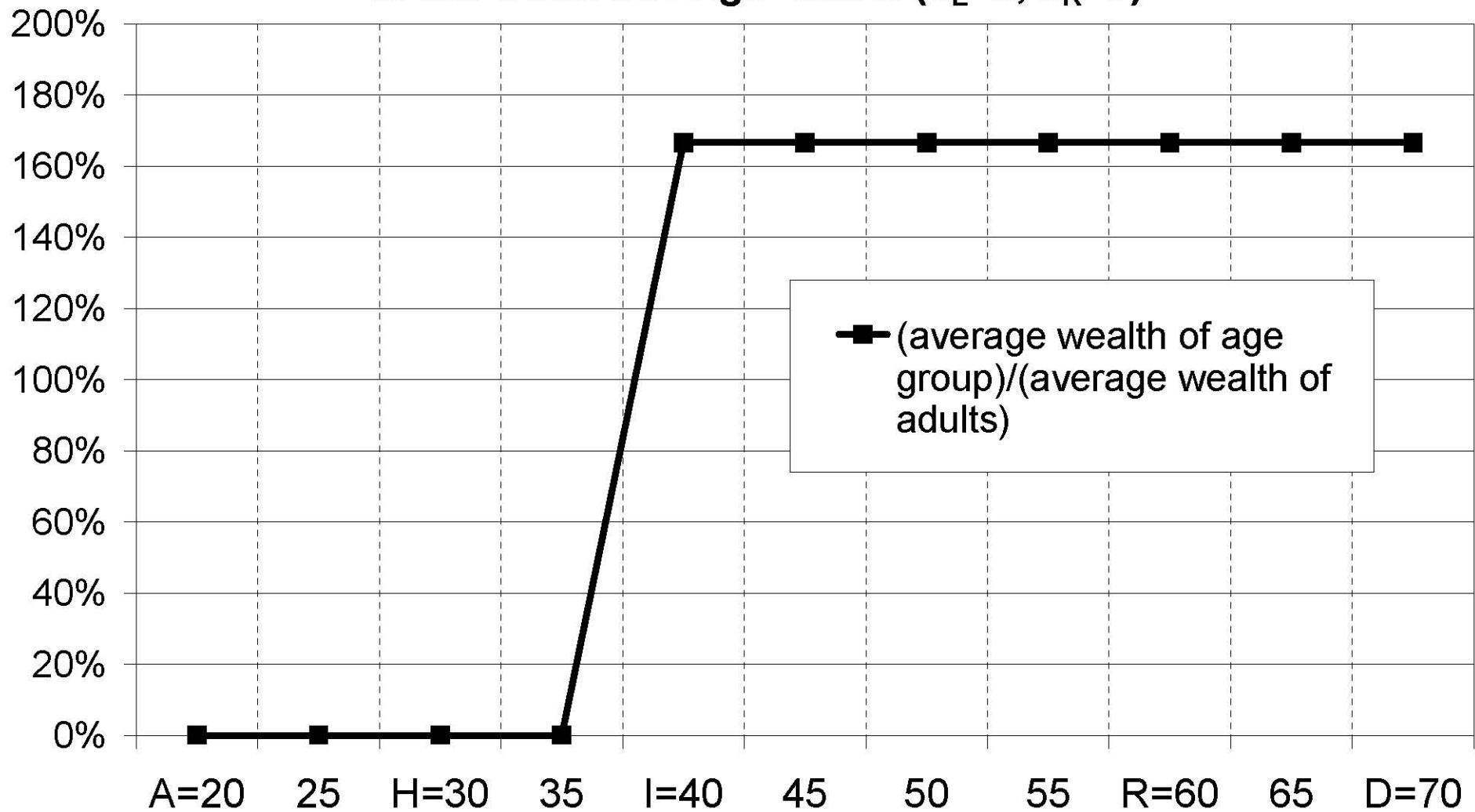
**Figure 5: Inheritance flow vs mortality rate in France, 1820-2008**



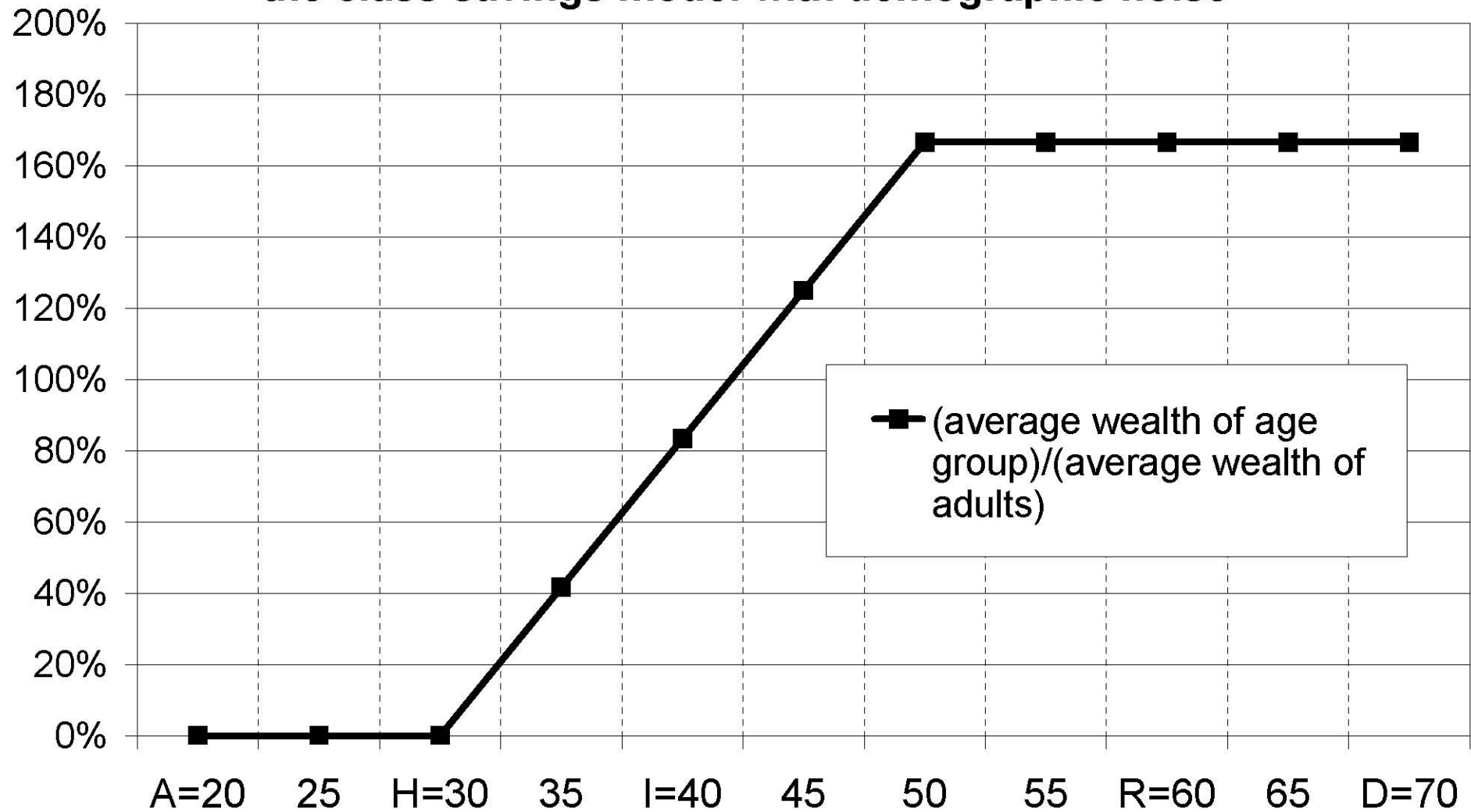
# Steady-state inheritance flows

- Standard models:  $r = \theta + \sigma g = \alpha g/s (>g)$
- Everybody becomes adult at age  $A$ , has one kid at age  $H$ , inherits at age  $I$ , and dies at age  $D \rightarrow I = D-H, m = 1/(D-A)$
- Dynastic or class saving:  $\mu = (D-A)/H$   
 $\rightarrow b_y = \mu m \beta = \beta/H$
- **Proposition:** As  $g \rightarrow 0, b_y \rightarrow \beta/H$

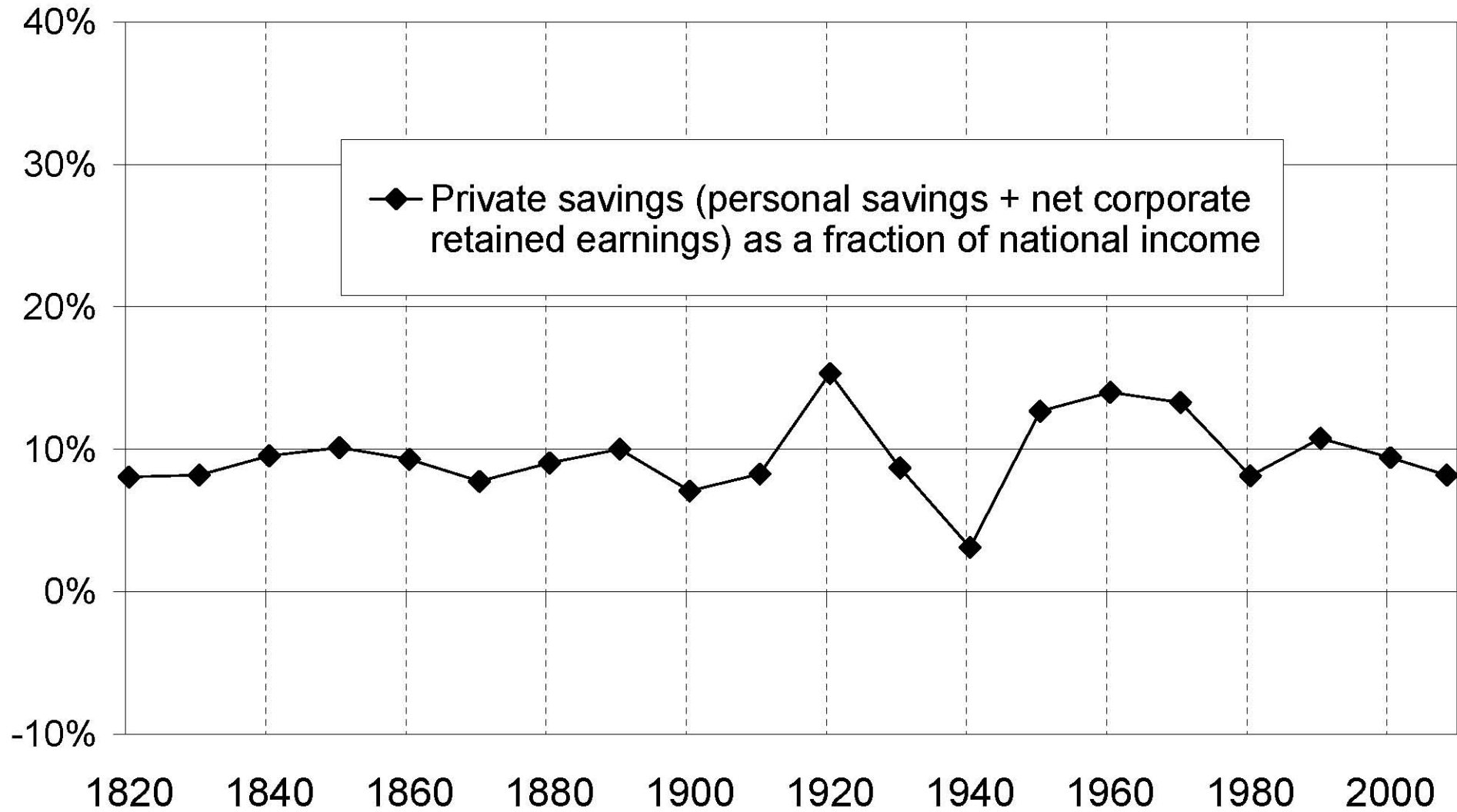
**Figure 6: Steady-state cross-sectional age-wealth profile  
in the class savings model ( $s_L=0$ ,  $s_K>0$ )**



**Figure 7: Steady-state cross-sectional age-wealth profile in the class savings model with demographic noise**

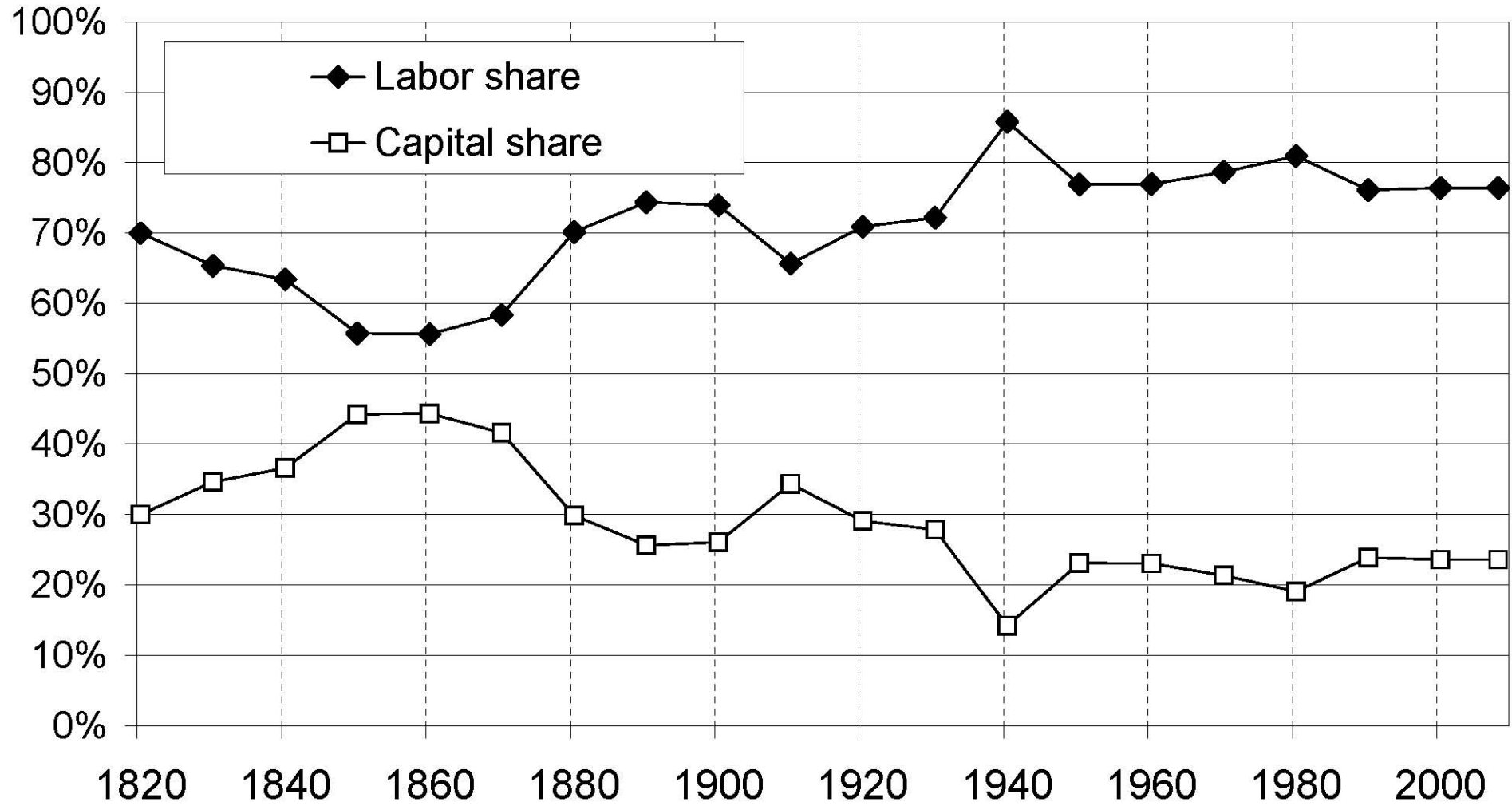


**Figure 8: Private savings rate in France 1820-2008**

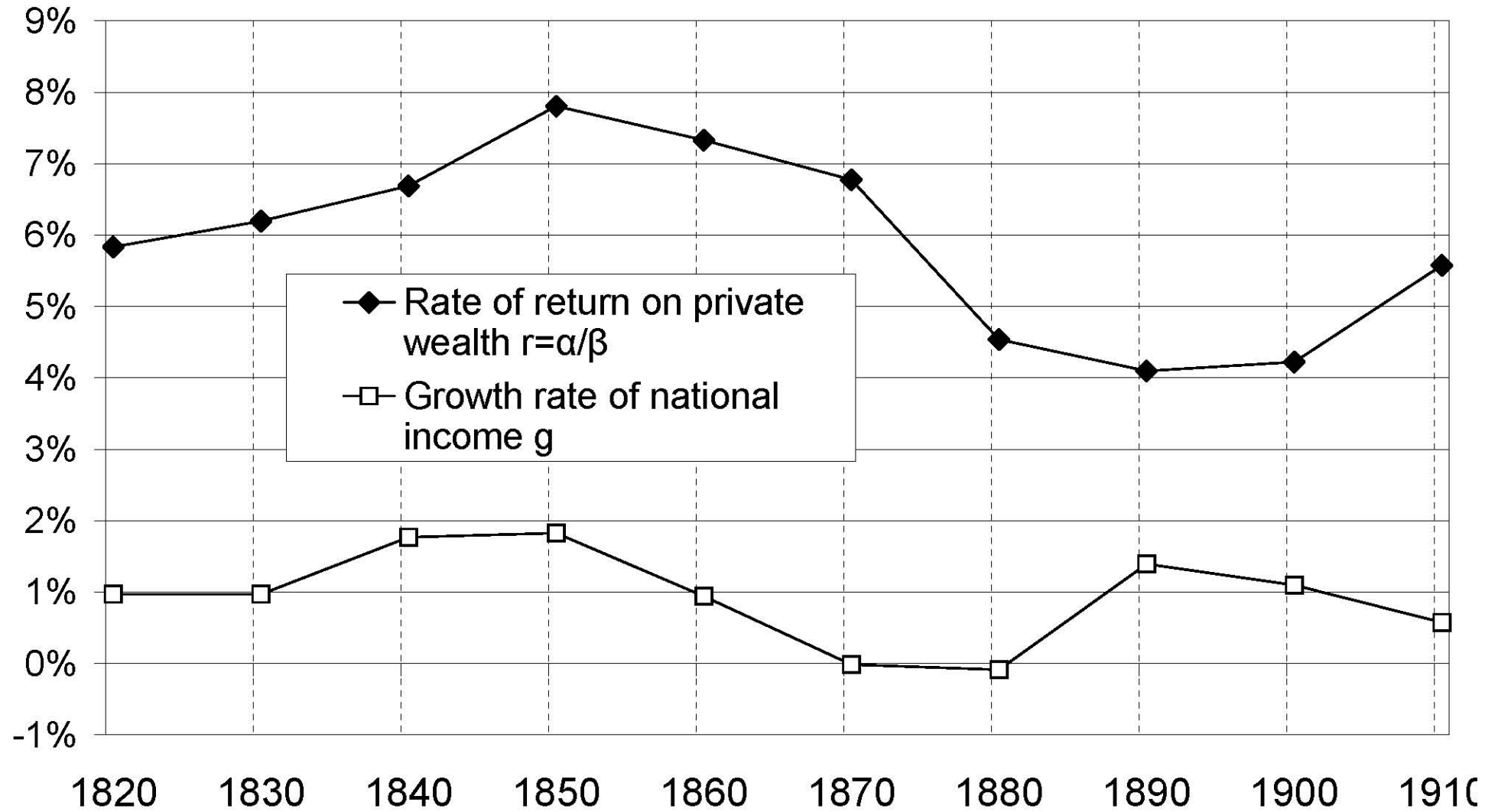




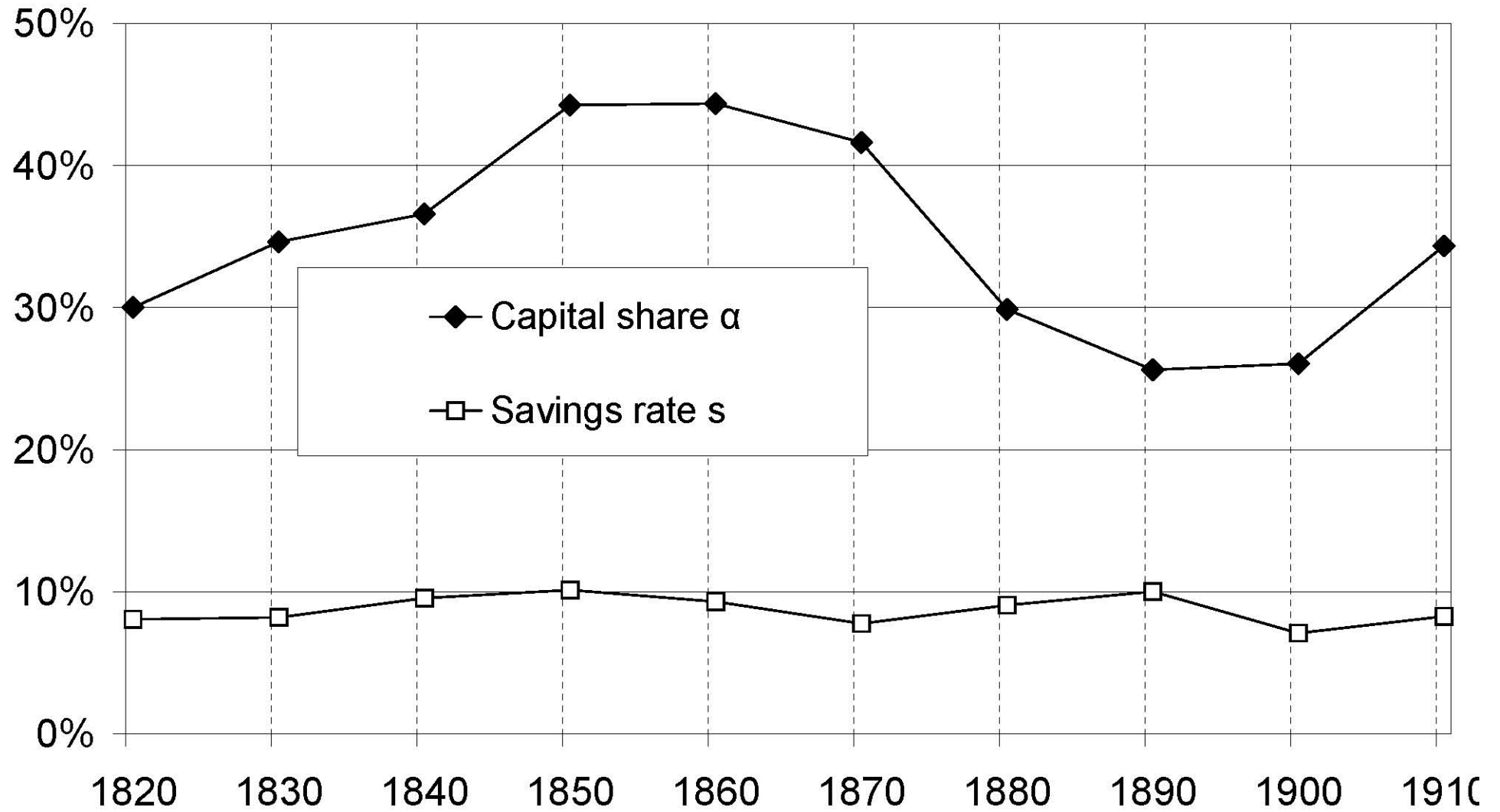
**Figure 10: Labor & capital shares in national income, France 1820-2008**



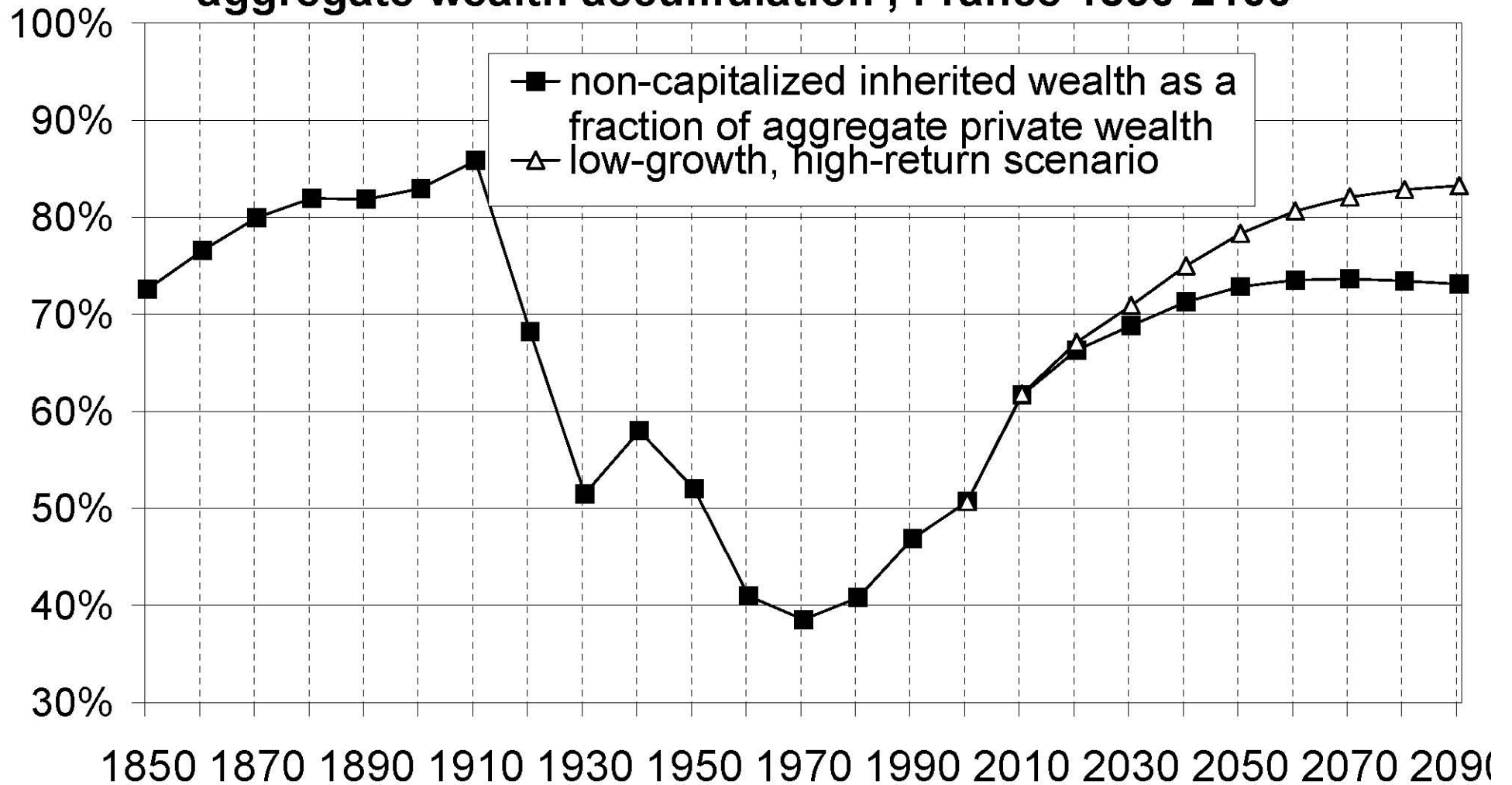
**Figure 11: Rate of return vs growth rate France 1820-1913**



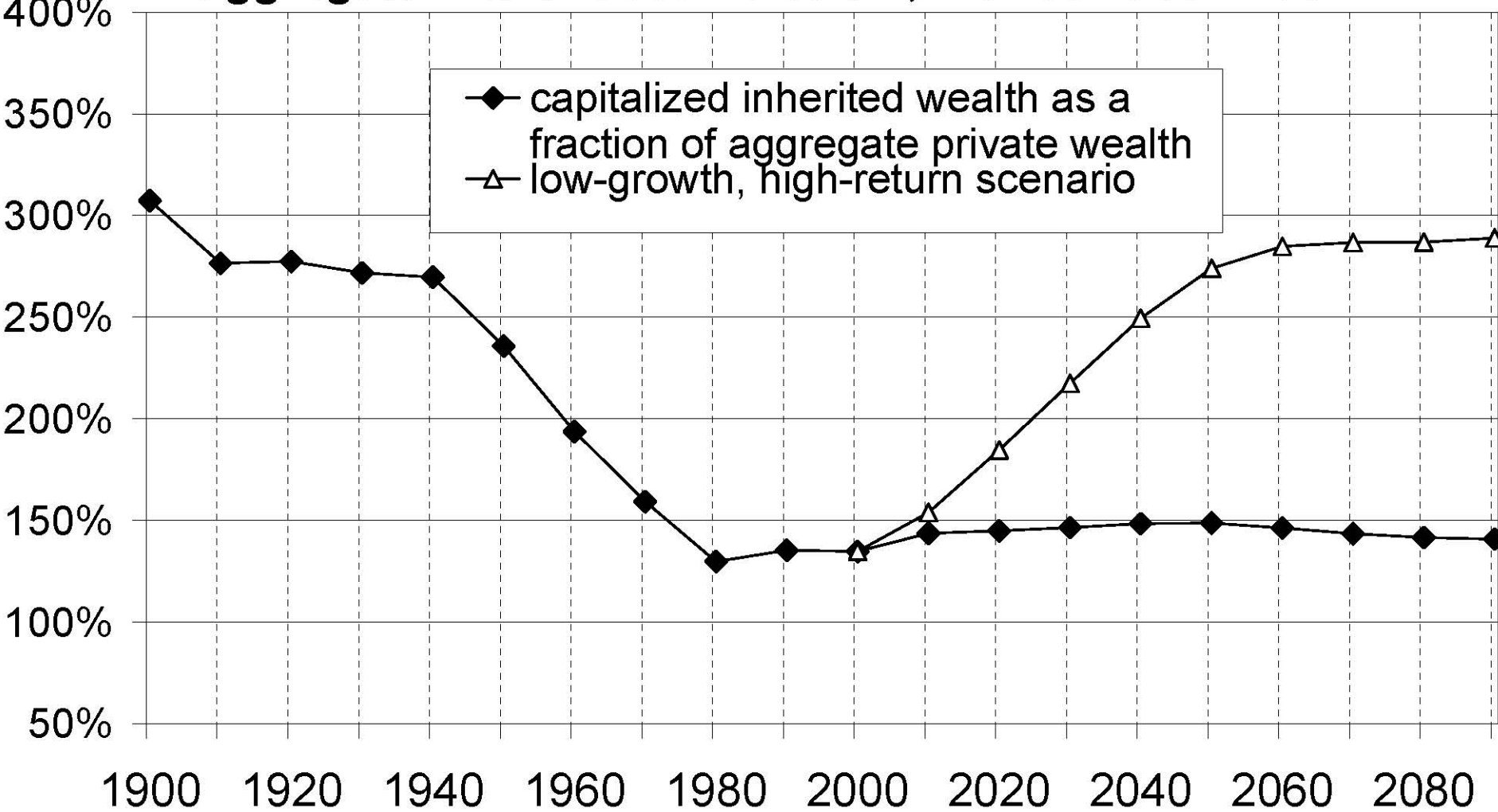
**Figure 12: Capital share vs savings rate France 1820-1913**



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



**Figure 19: The share of capitalized inheritance in aggregate wealth accumulation , France 1900-2100**



**Table 2: Rates of return vs growth rates in France, 1820-2009**

	Growth rate of national income $g$	Rate of return on private wealth $r = \alpha/\beta$	Capital tax rate $T_K$	After-tax rate of return $r_d = (1-T_K)\alpha/\beta$	Real rate of capital gains $q$	Rate of capital destruct. (wars) $d$	After-tax real rate of return (incl. k gains & losses) $r_d = (1-T_K)\alpha/\beta + q + d$
1820-2009	<b>1.8%</b>	<b>6.8%</b>	19%	<b>5.4%</b>	-0.1%	-0.3%	<b>5.0%</b>
1820-1913	<b>1.0%</b>	<b>5.9%</b>	8%	<b>5.4%</b>	-0.1%	0.0%	<b>5.3%</b>
1913-2009	<b>2.6%</b>	<b>7.8%</b>	31%	<b>5.4%</b>	-0.1%	-0.7%	<b>4.6%</b>
1913-1949	<b>1.3%</b>	<b>7.9%</b>	21%	<b>6.4%</b>	-2.6%	-2.0%	<b>1.8%</b>
1949-1979	<b>5.2%</b>	<b>9.0%</b>	34%	<b>6.0%</b>	0.8%	0.0%	<b>6.8%</b>
1979-2009	<b>1.7%</b>	<b>6.9%</b>	39%	<b>4.3%</b>	1.0%	0.0%	<b>5.3%</b>