Inequality in the Long Run & Inherited Wealth

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Paris School of Economics
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Will 21^{C} Capitalism be as Unequal as 19^{C} Capitalism?

- 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 1976-2007: >50% of total growth was absorbed by top 1%)

→ 19^{C} economists raised the right questions; we need to adress these questions again; we have no strong reason to believe in balanced development path

- 2007-2010 crisis also raised doubts about balanced devt path… will stock options & bonuses, or oil-rich countries & China, or tax havens, absorb an ever growing share of world ressources in 21^{C} capitalism?

This talk: two issues

- 1.The rise of the working rich

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

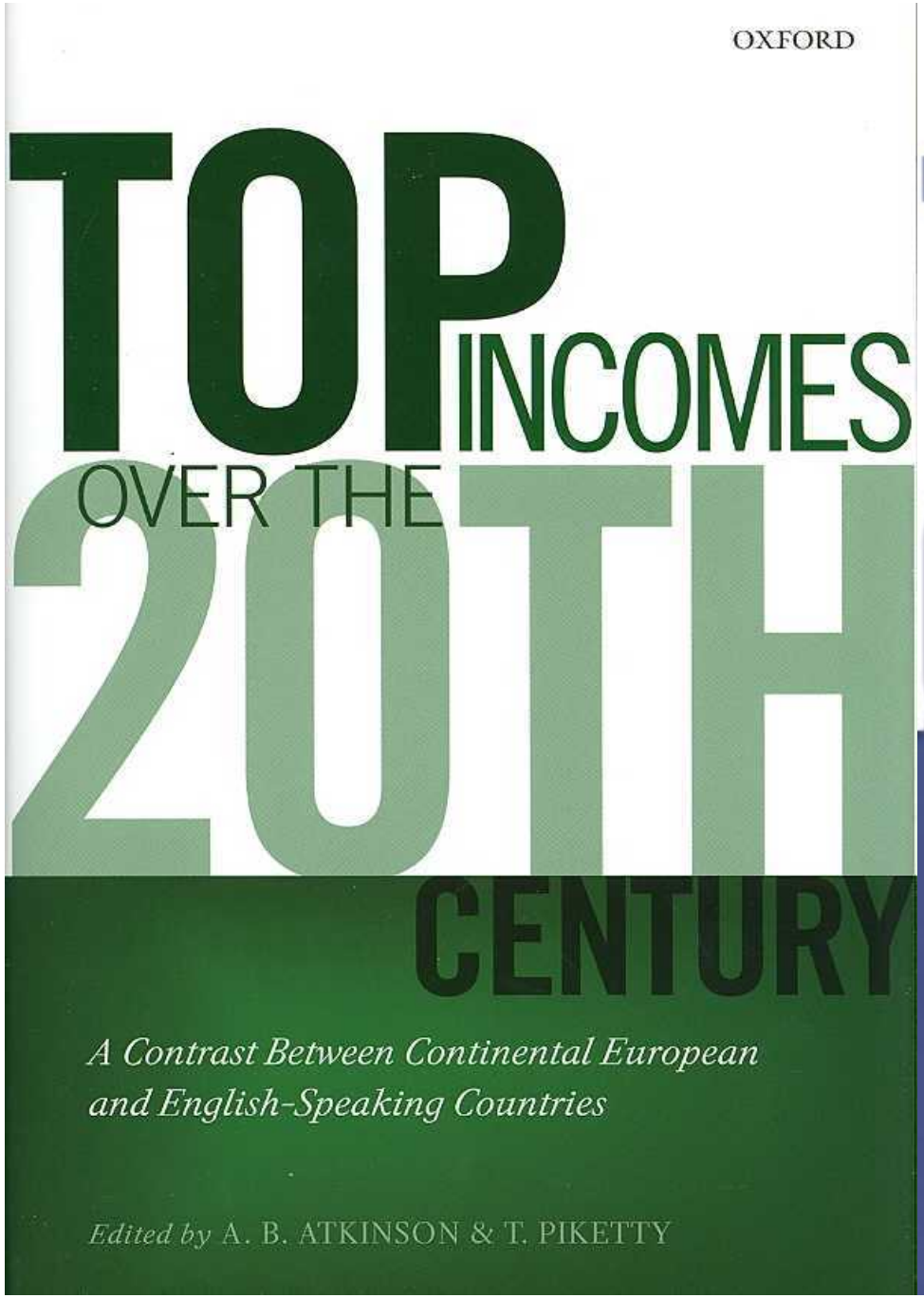
- 2.The return of inheritance

(based upon Piketty, « On the Long Run Evolution of Inheritance – France 1820-2050 », WP PSE 2010)

1. The Rise of the Working Rich

- Top income project: 23 countries, annual series over most of 20^{C}. **Two main findings**:

- **The fall of rentiers**: inequality ↓ during first half of 20^{C} = 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?**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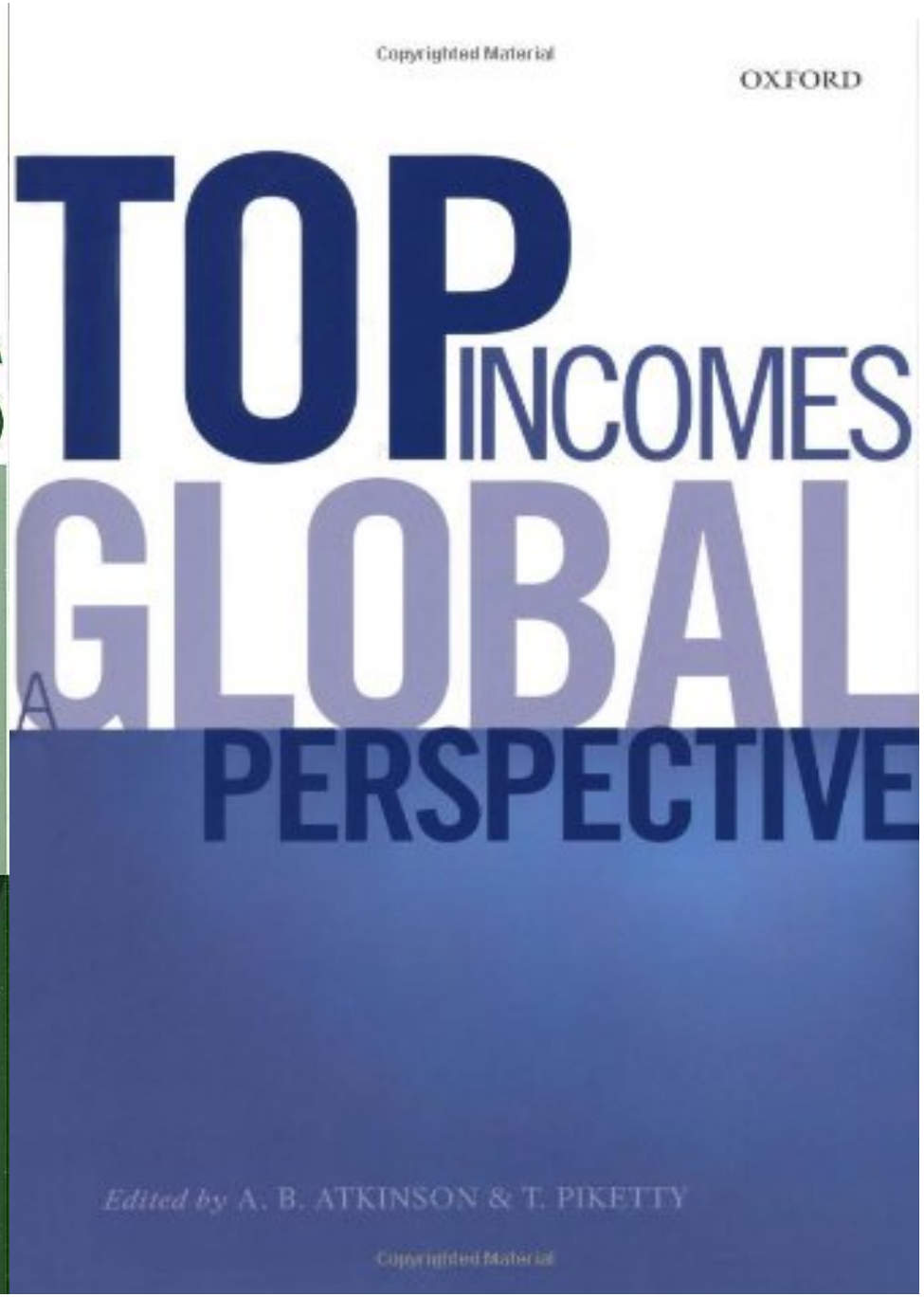
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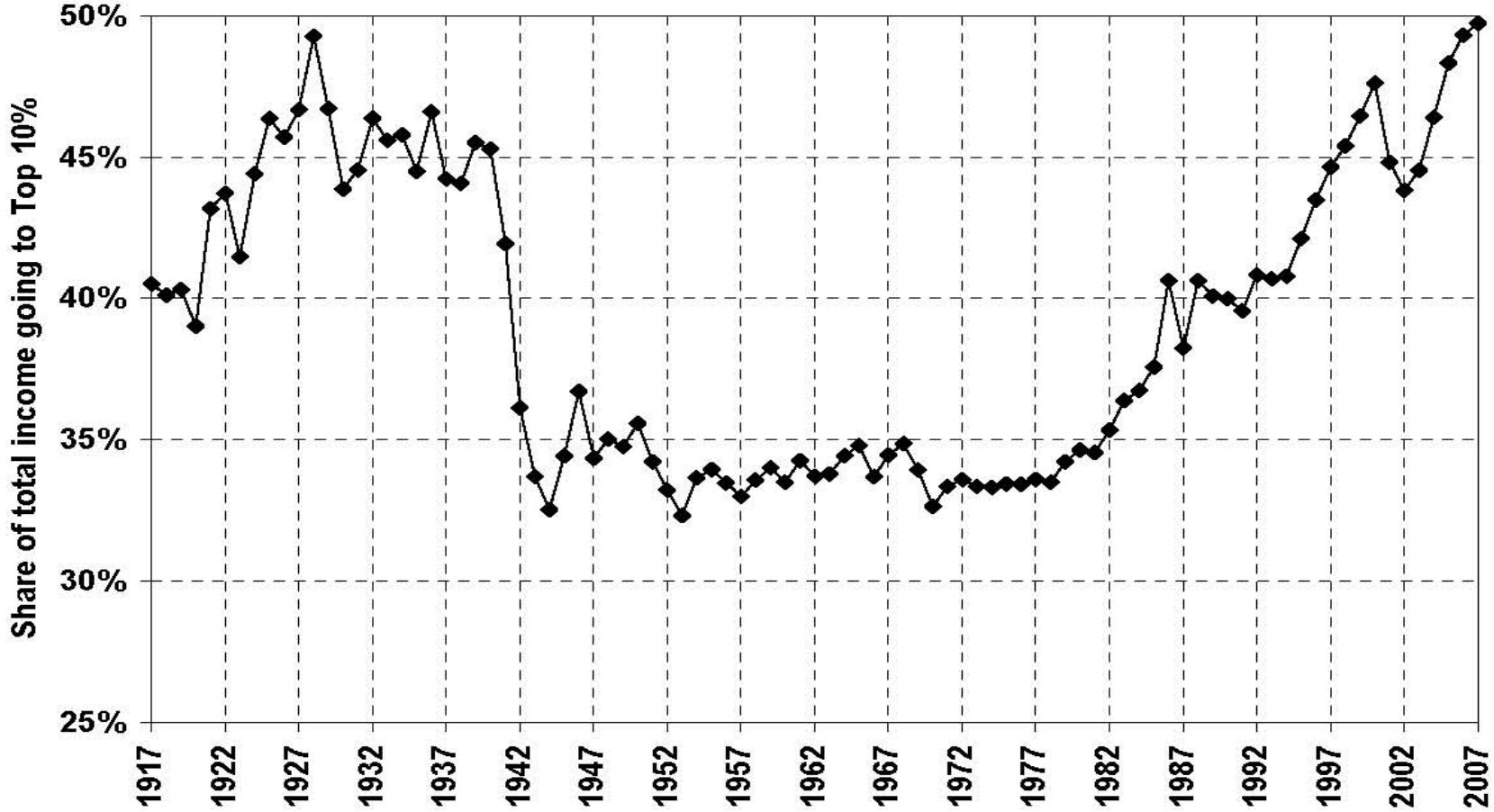


FIGURE 1

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).

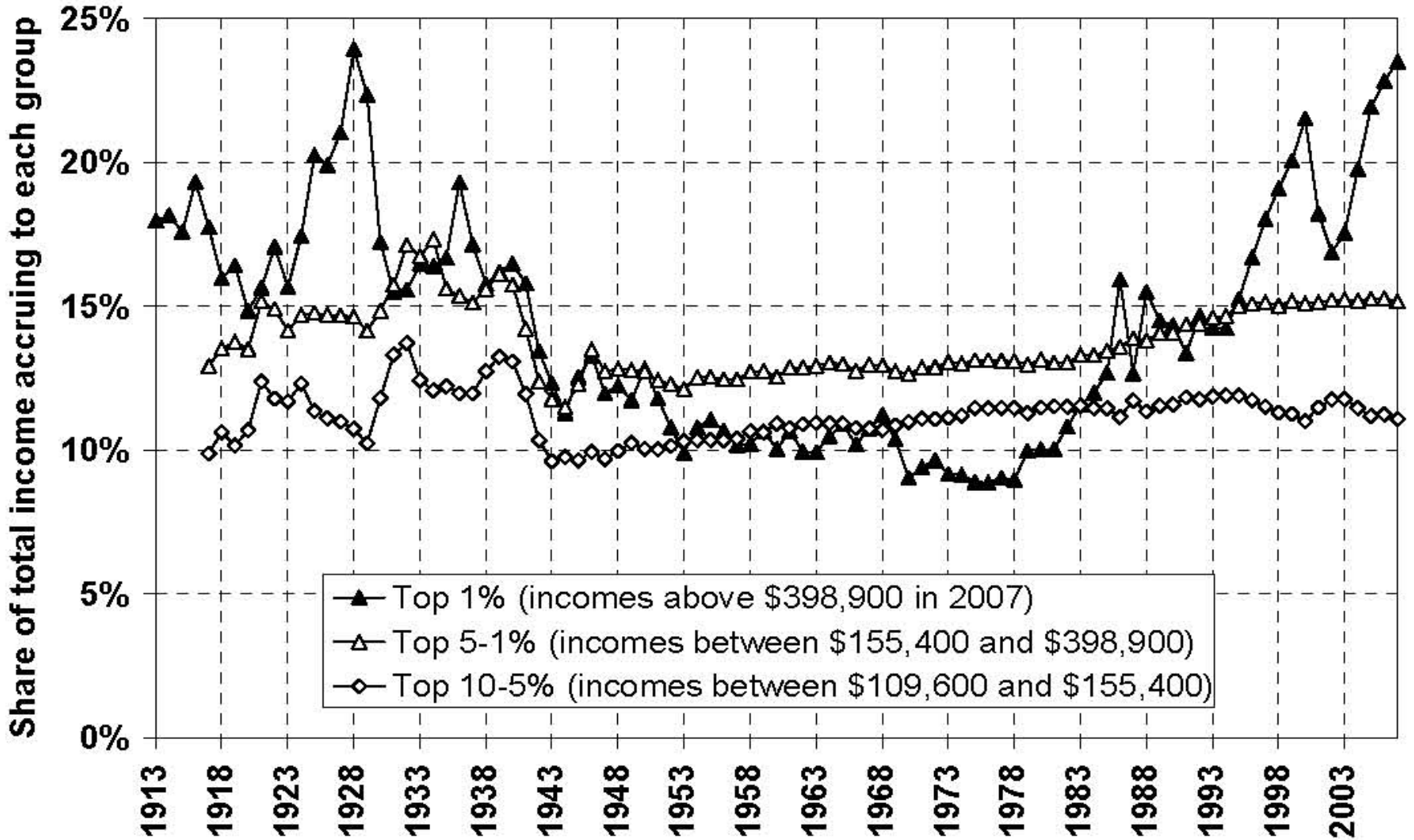


FIGURE 2

Decomposing the Top Decile US Income Share into 3 Groups, 1913-2007

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

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

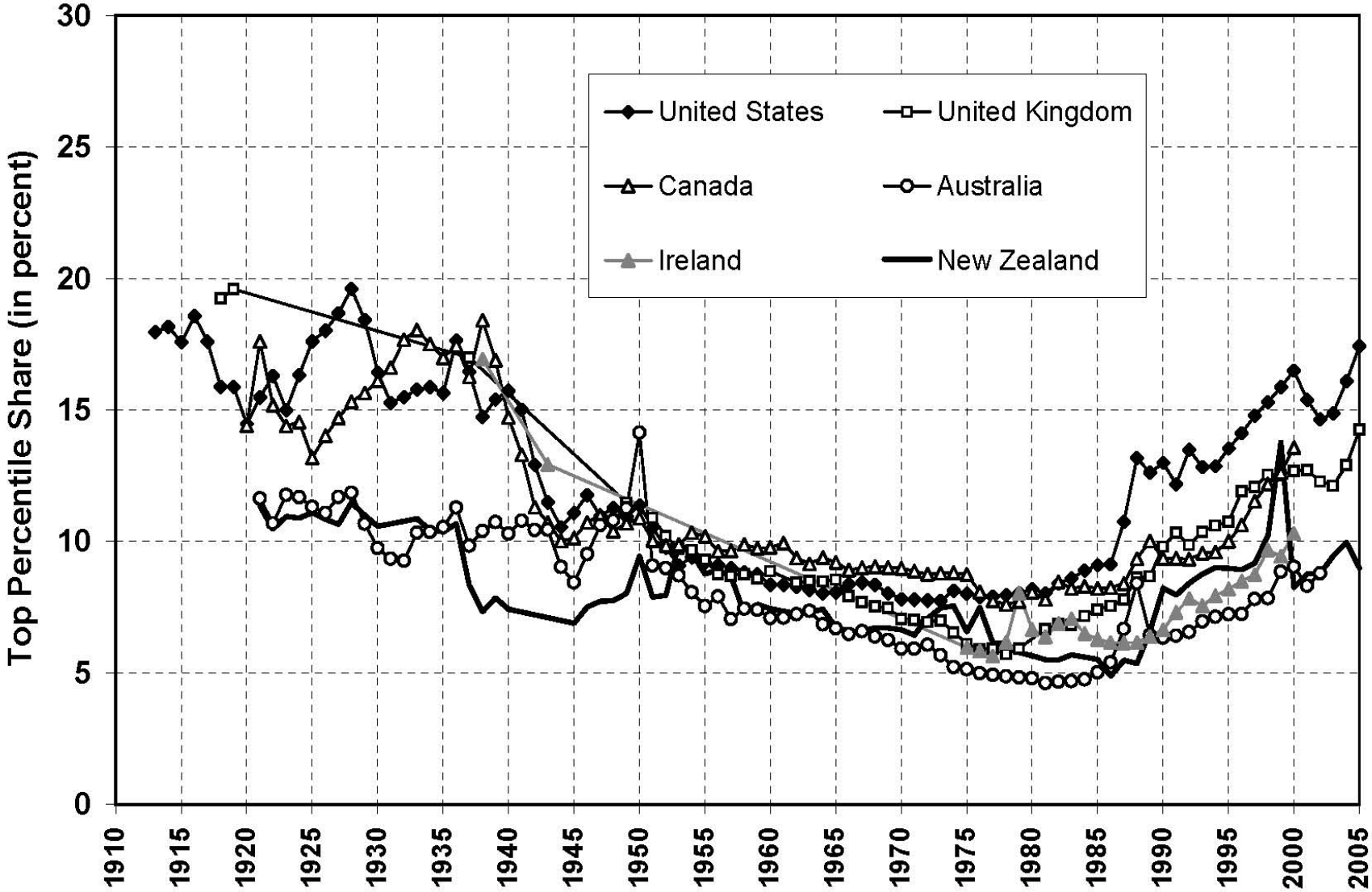
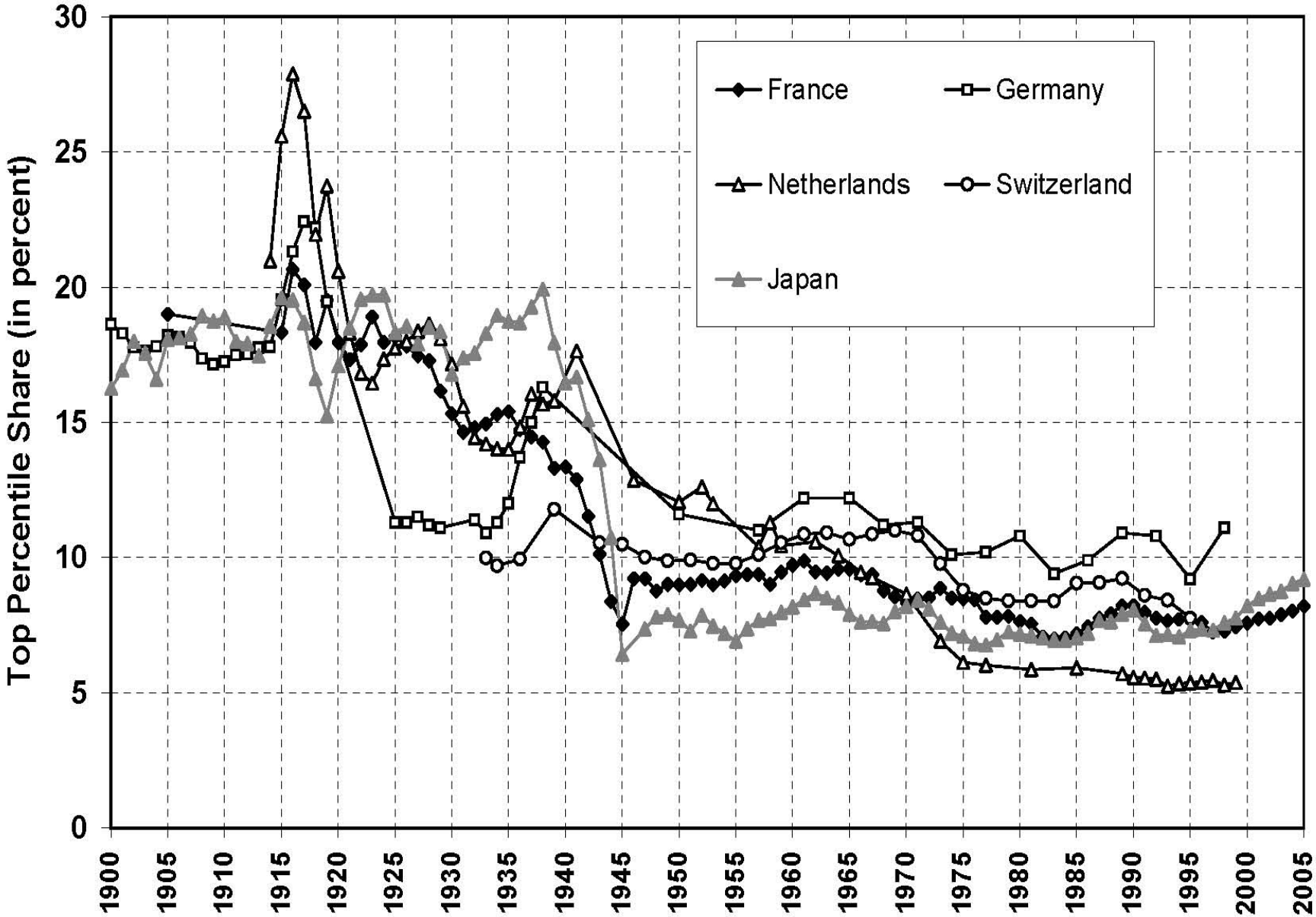


Figure 7B. Top 1% Share: Middle Europe and Japan (L-shaped), 1900-2005



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)

2. The return of inheritance

- **Distributional issue**: wealth inequality ↓ during 20^{C}.. but not that much (see table)

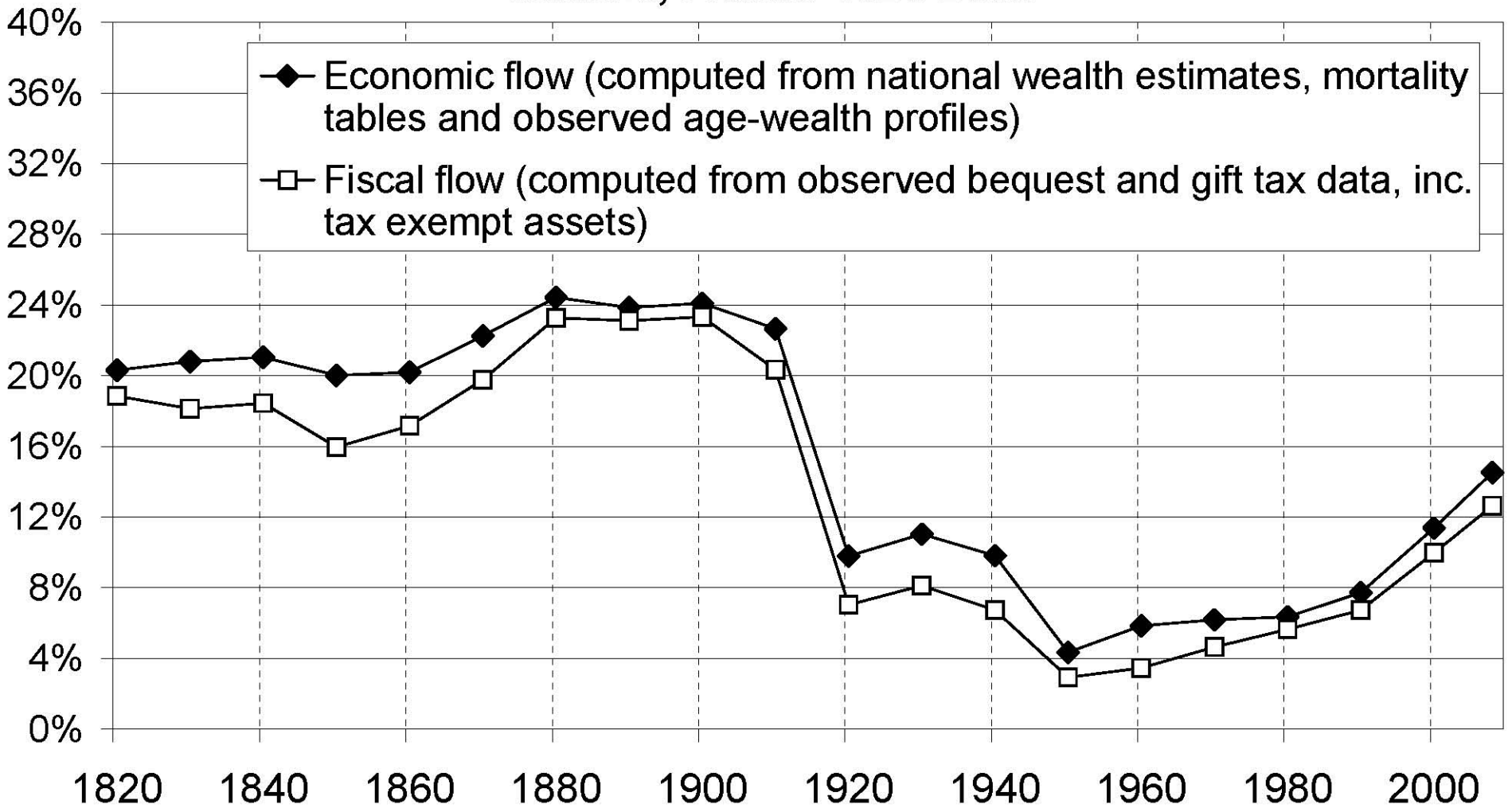
- **Macro issue**: aggregate inheritance flow vs aggregate labor income

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



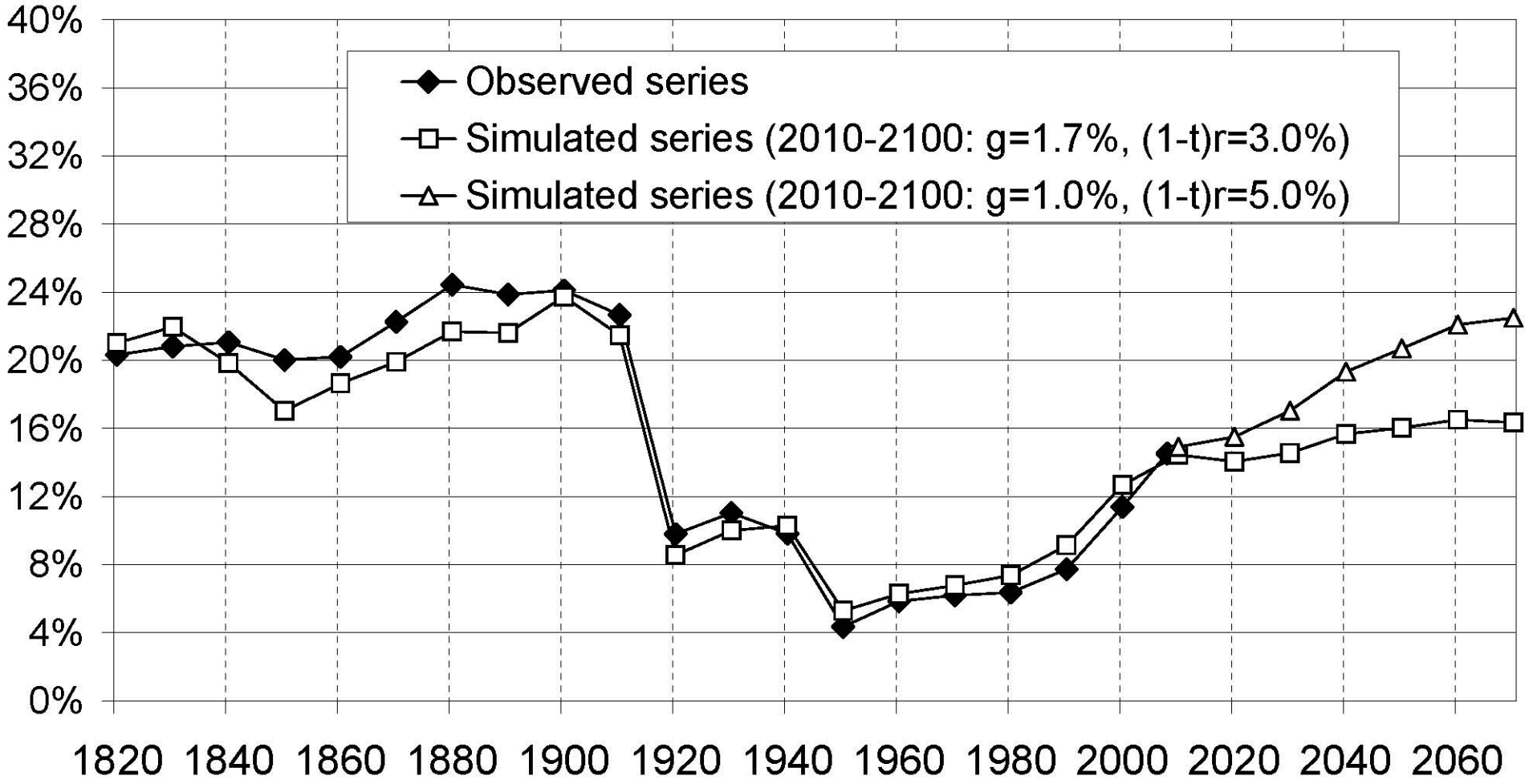
What this paper does

- 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 → $b_y=\beta/H$

→ with β=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^{c} closer to 19^{c} rentier society than to 20^{c} merit society
- The rise of human capital was an illusion .. especially with a labor-based tax system

Figure 13: The share of inheritance in lifetime ressources received by cohorts born in 1820-2020

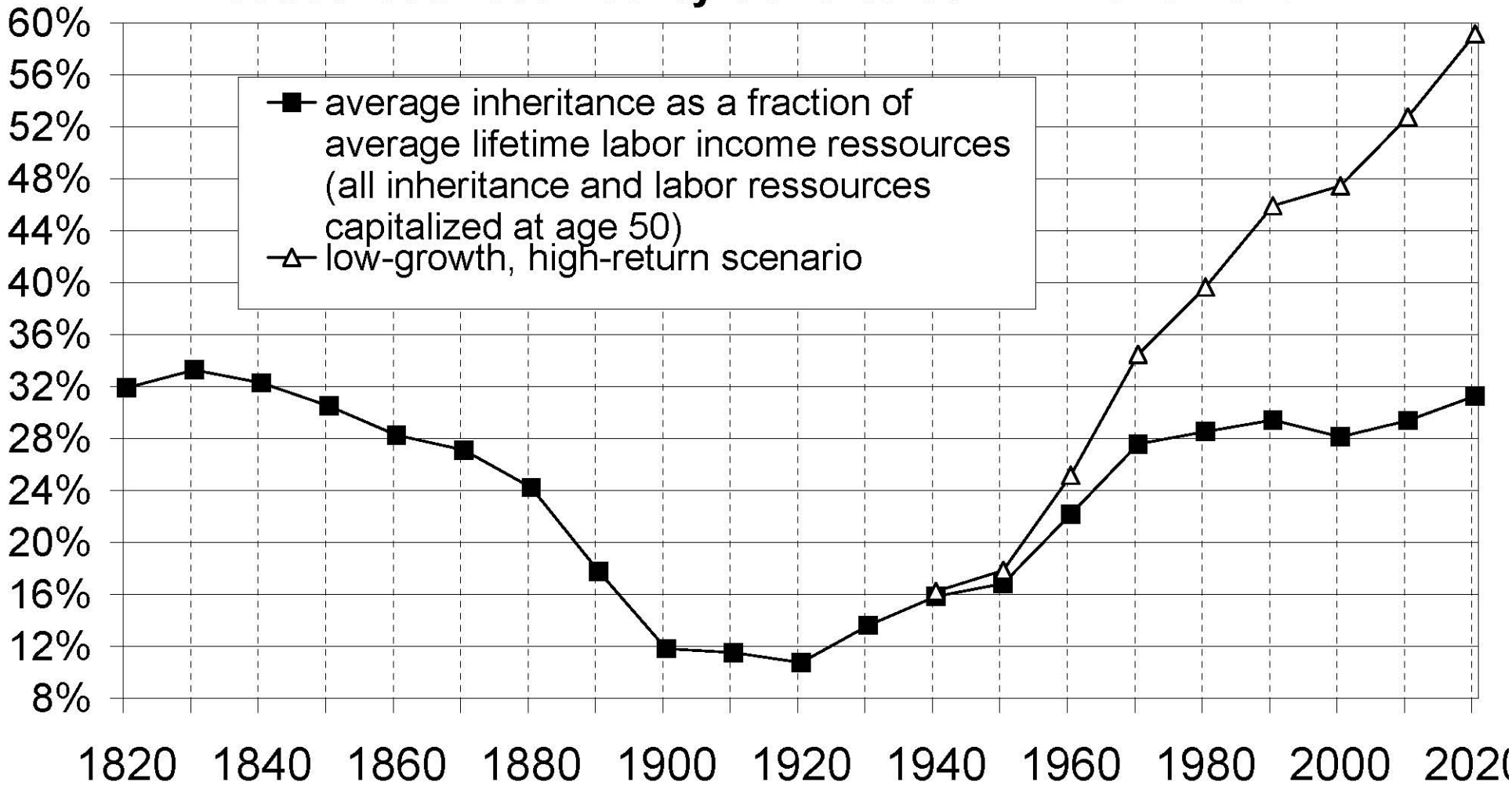


Figure 16: Top 1% successors vs top 1% labor income earners (cohorts born in 1820-2020)

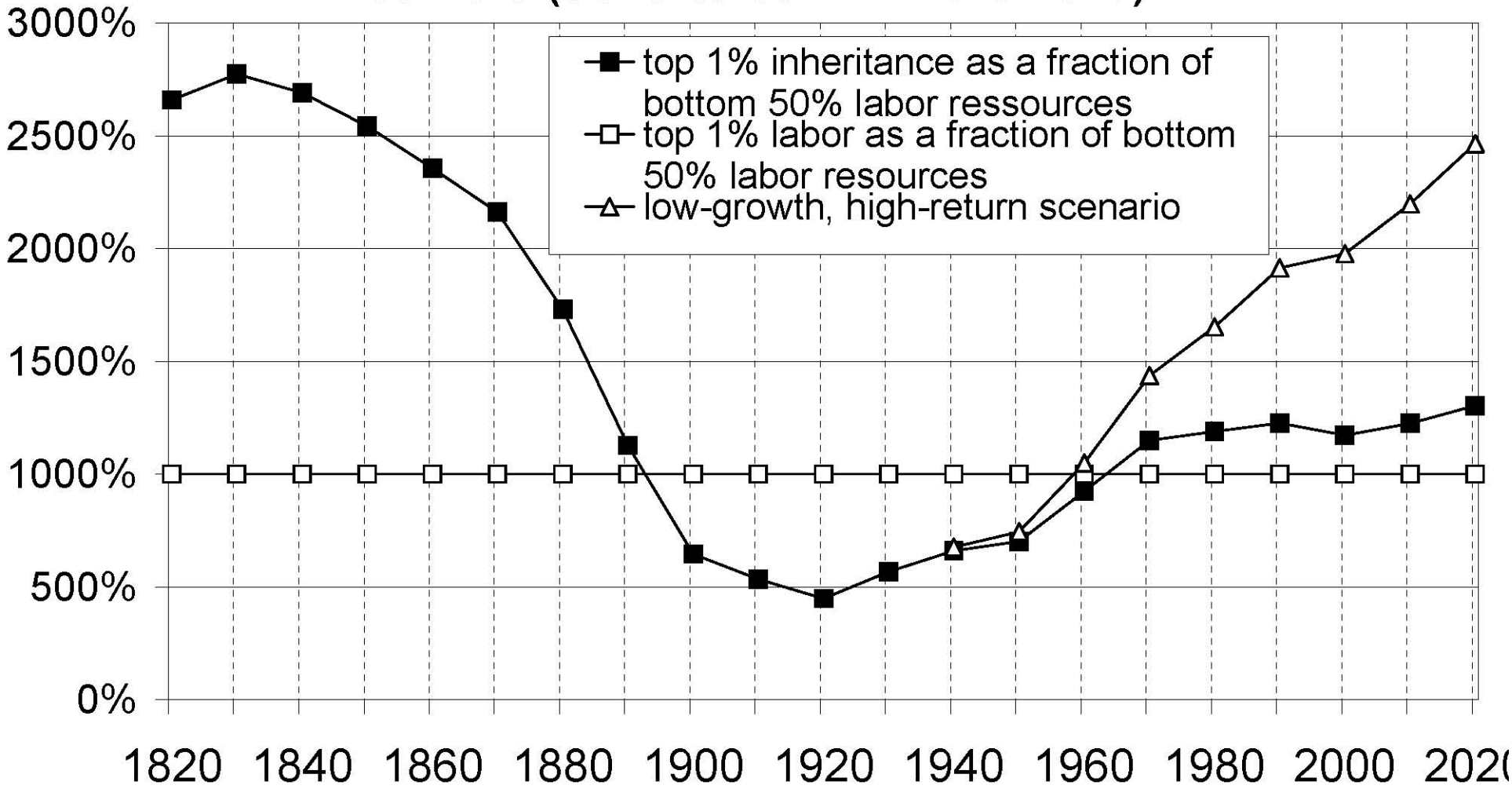


Figure 15: Top 10% successors vs top 10% labor income earners (cohorts born in 1820-2020)

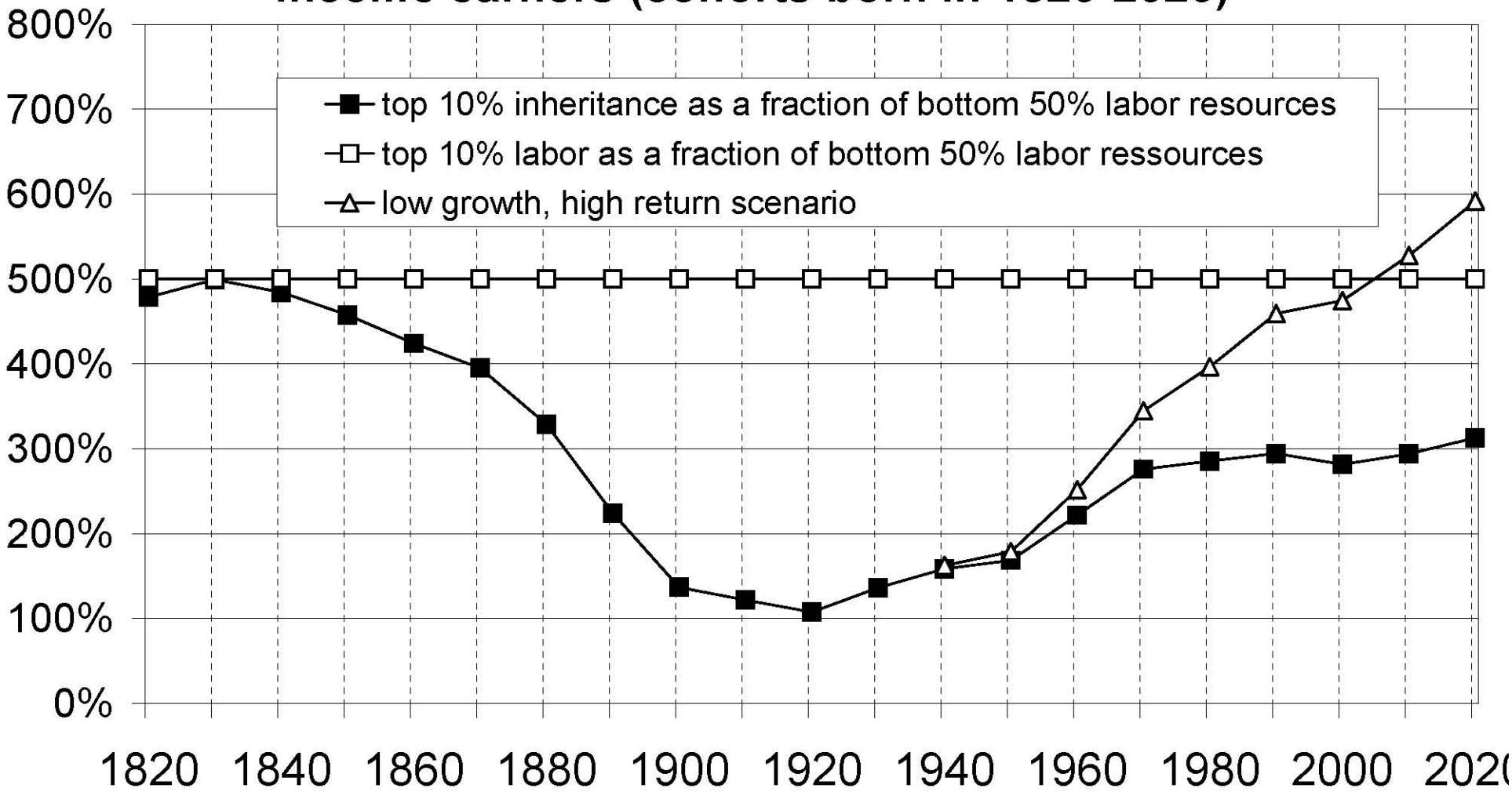


Table 4: Lifetime inequality: illustration with cohorts born in the 1970s

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

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; otherwise the future looks gloom

Supplementary slides

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

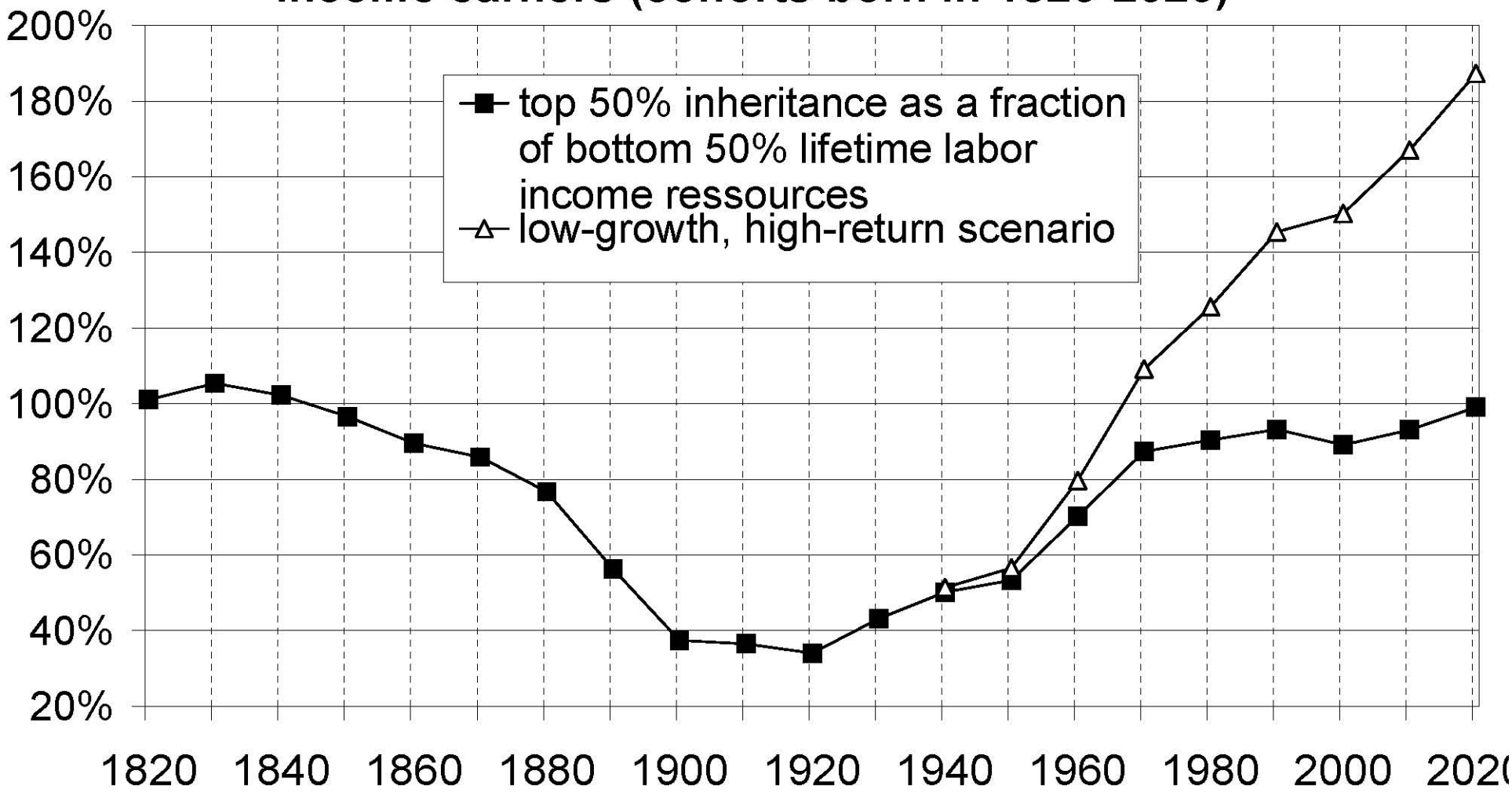
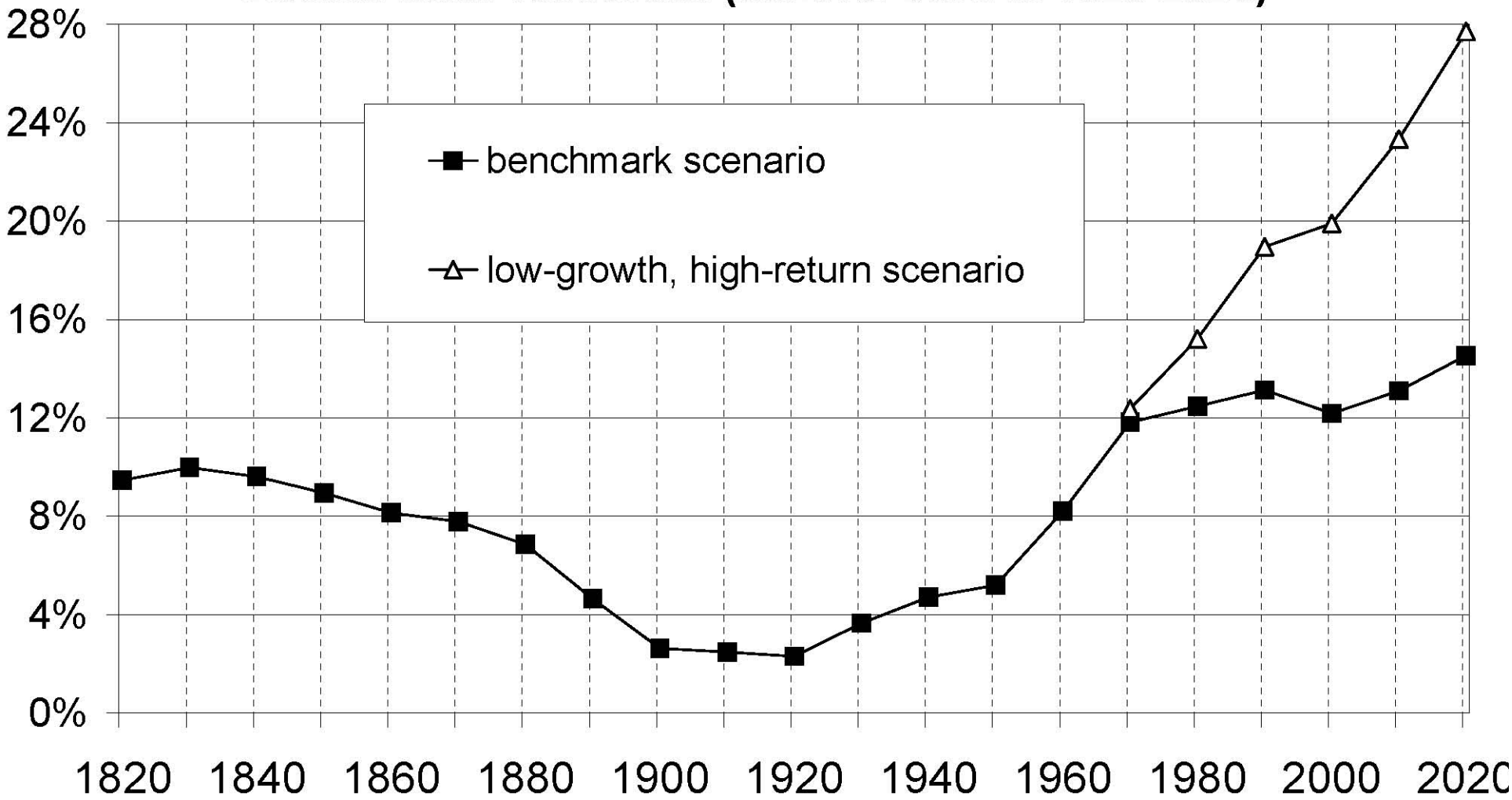


Figure 17: Cohort fraction inheriting more than bottom 50% lifetime labor resources (cohorts born in 1820-2020)



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
- μ_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

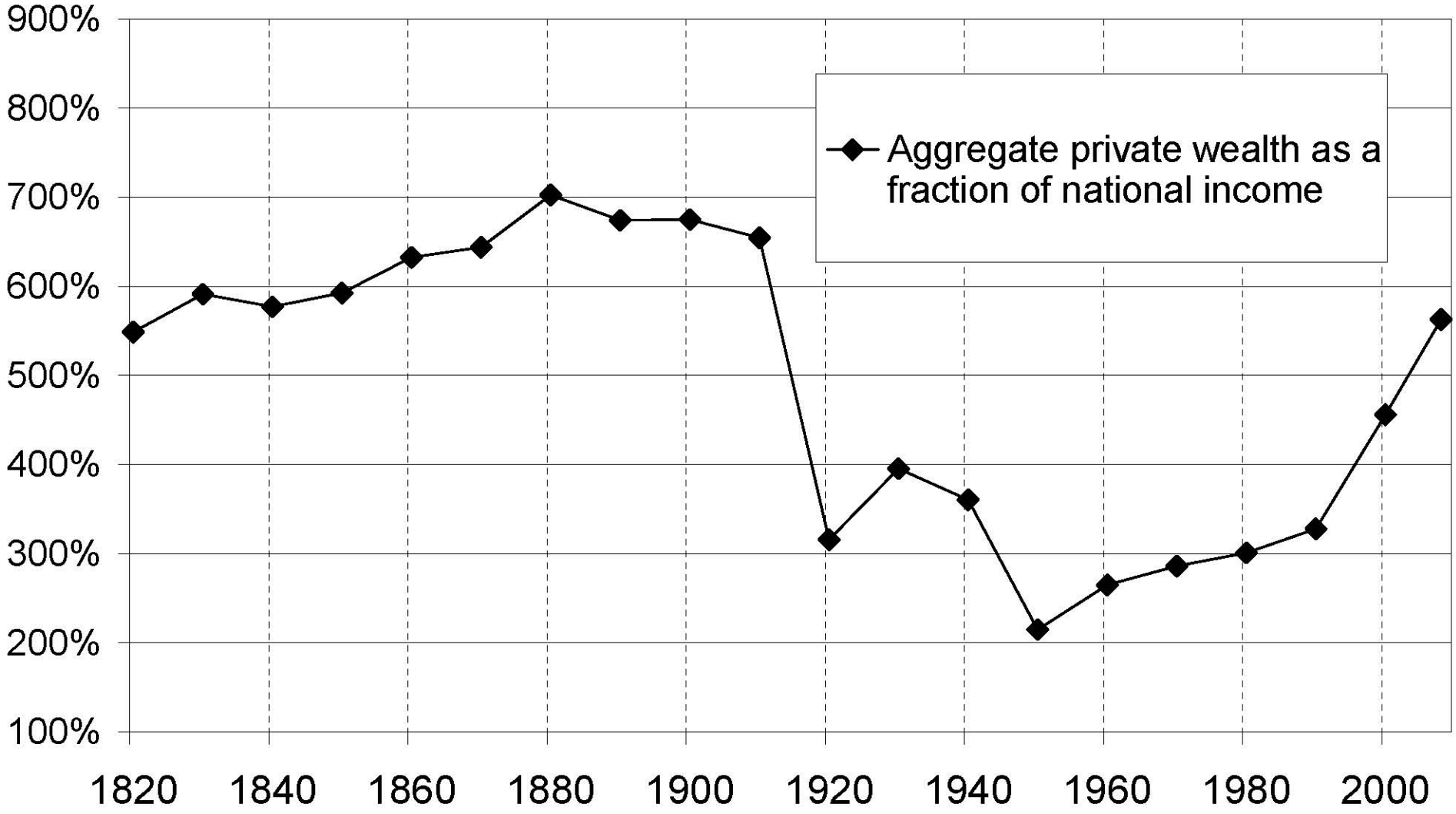


Table 1: Accumulation of private wealth in France, 1820-2009

	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	*Memo: Consumer price inflation* *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

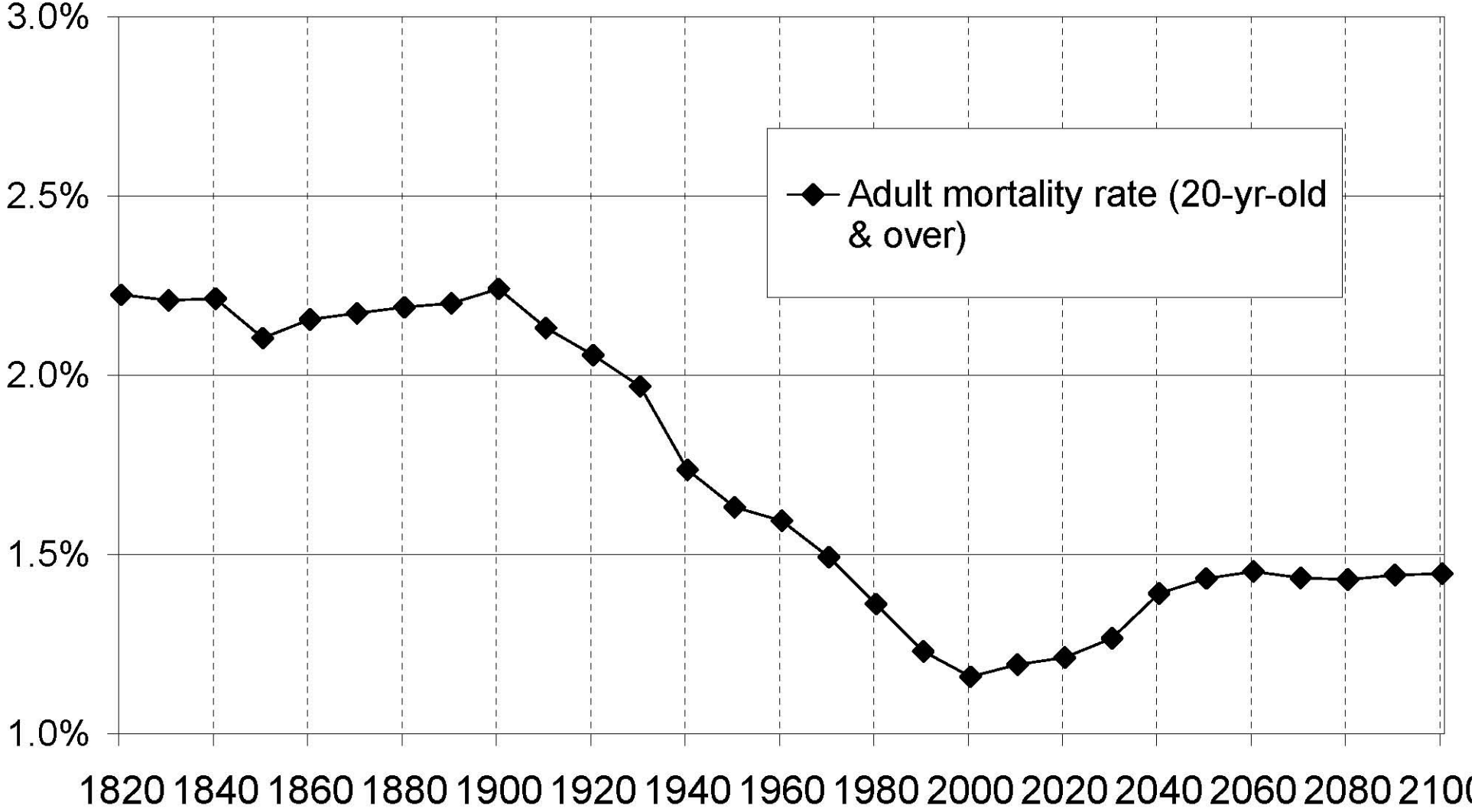


Figure 4: The ratio between average wealth of decedents and average wealth of the living France 1820-2008

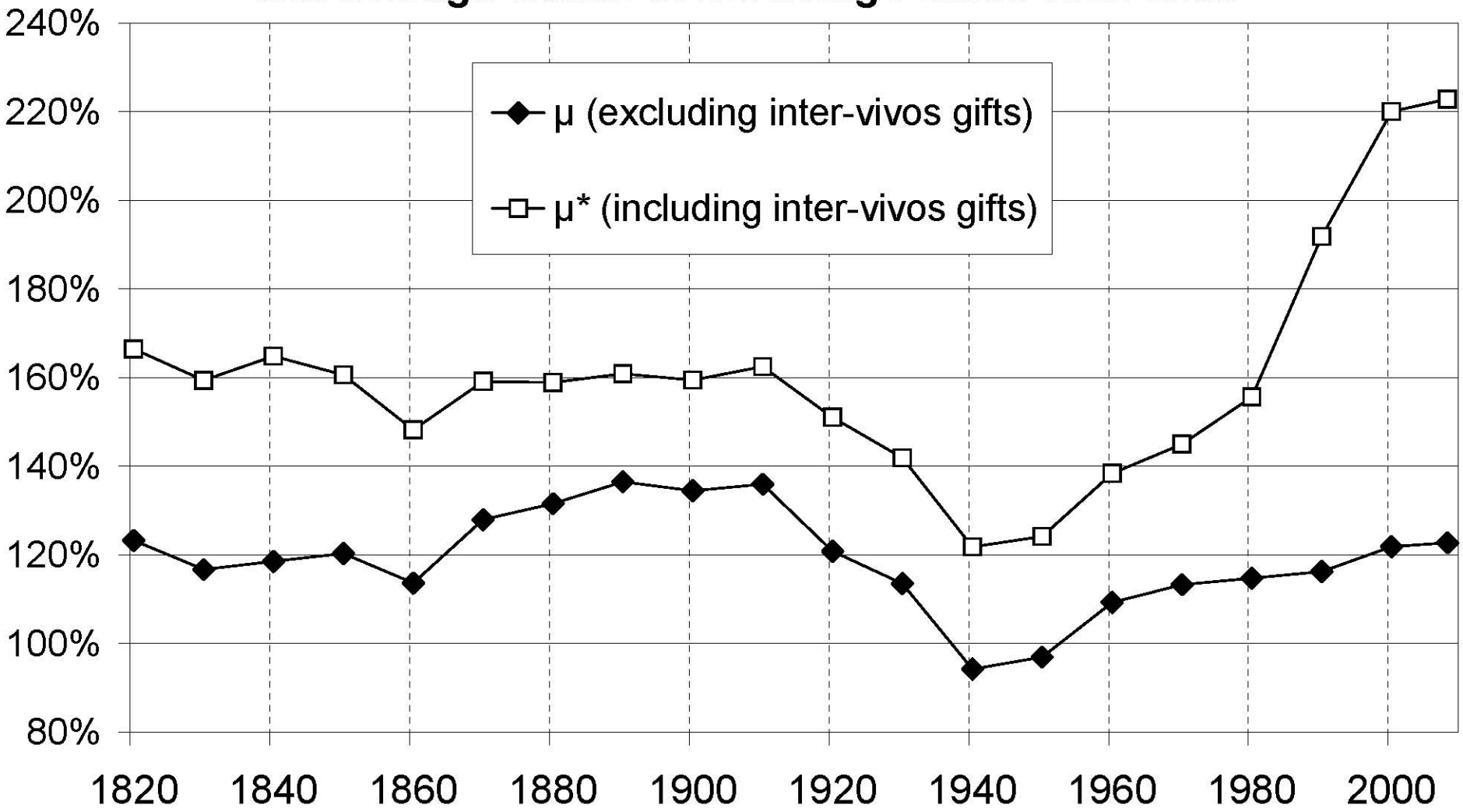
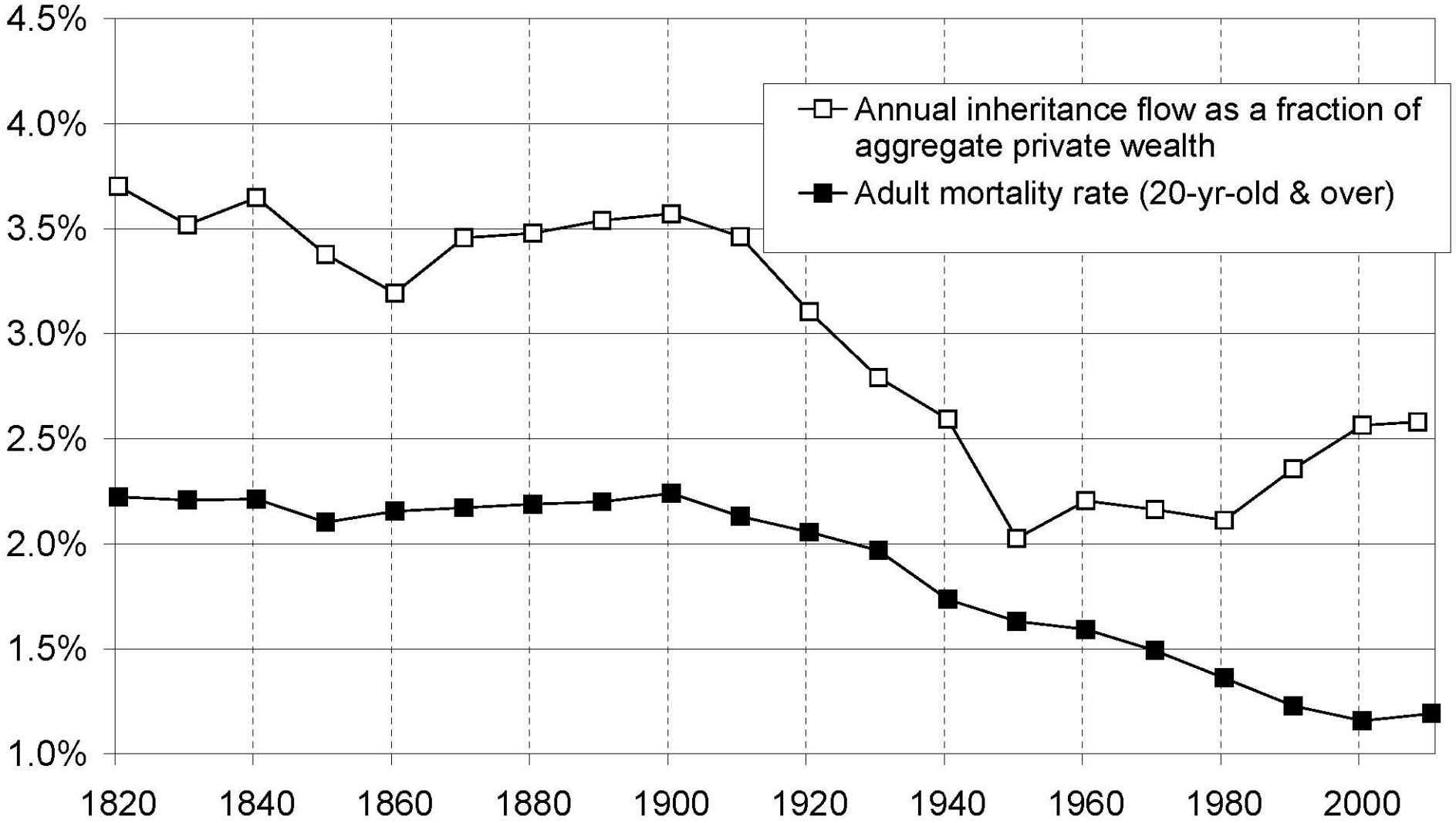


Figure 5: Inheritance flow vs mortality rate in France, 1820-2008



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)

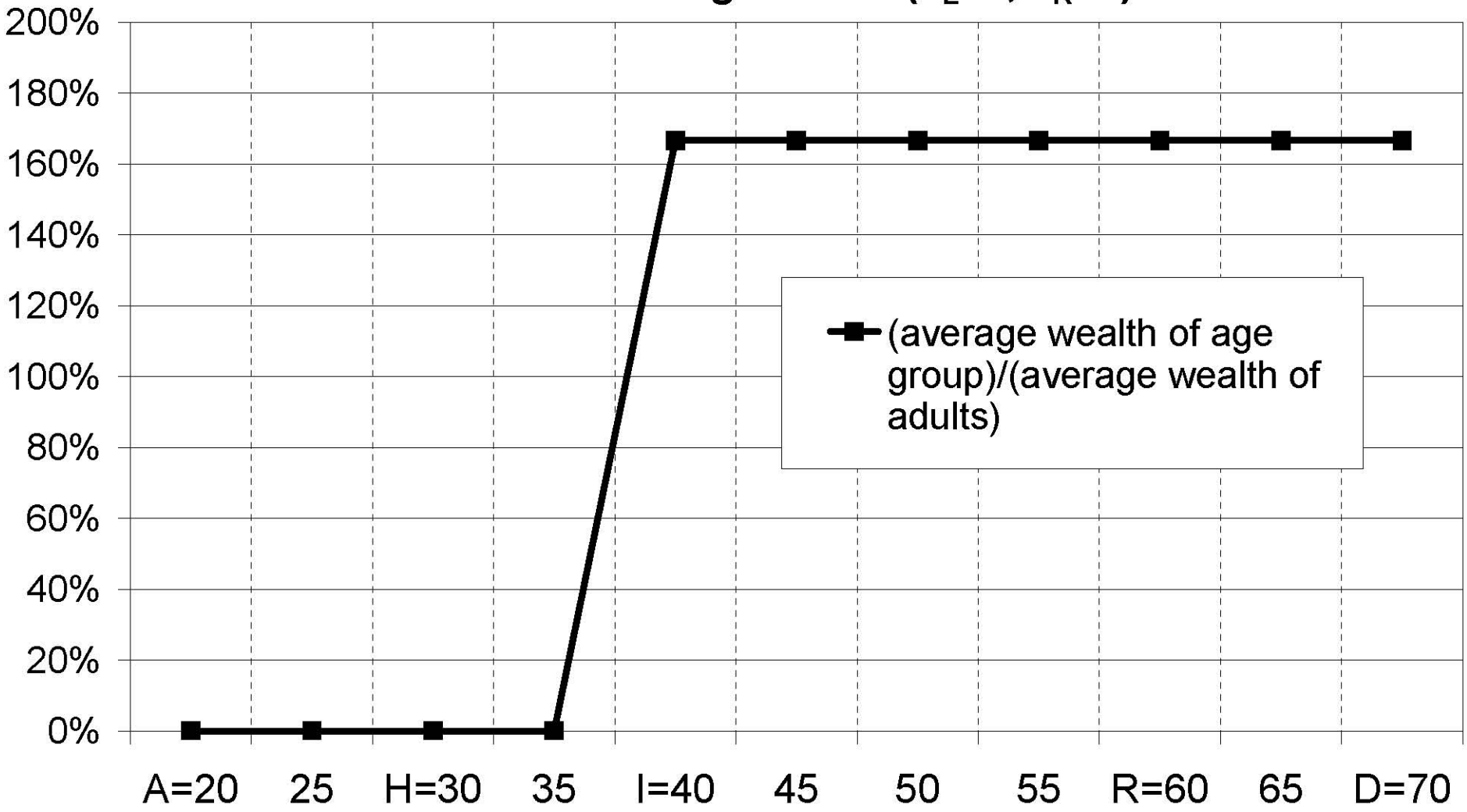


Figure 7: Steady-state cross-sectional age-wealth profile in the class savings model with demographic noise

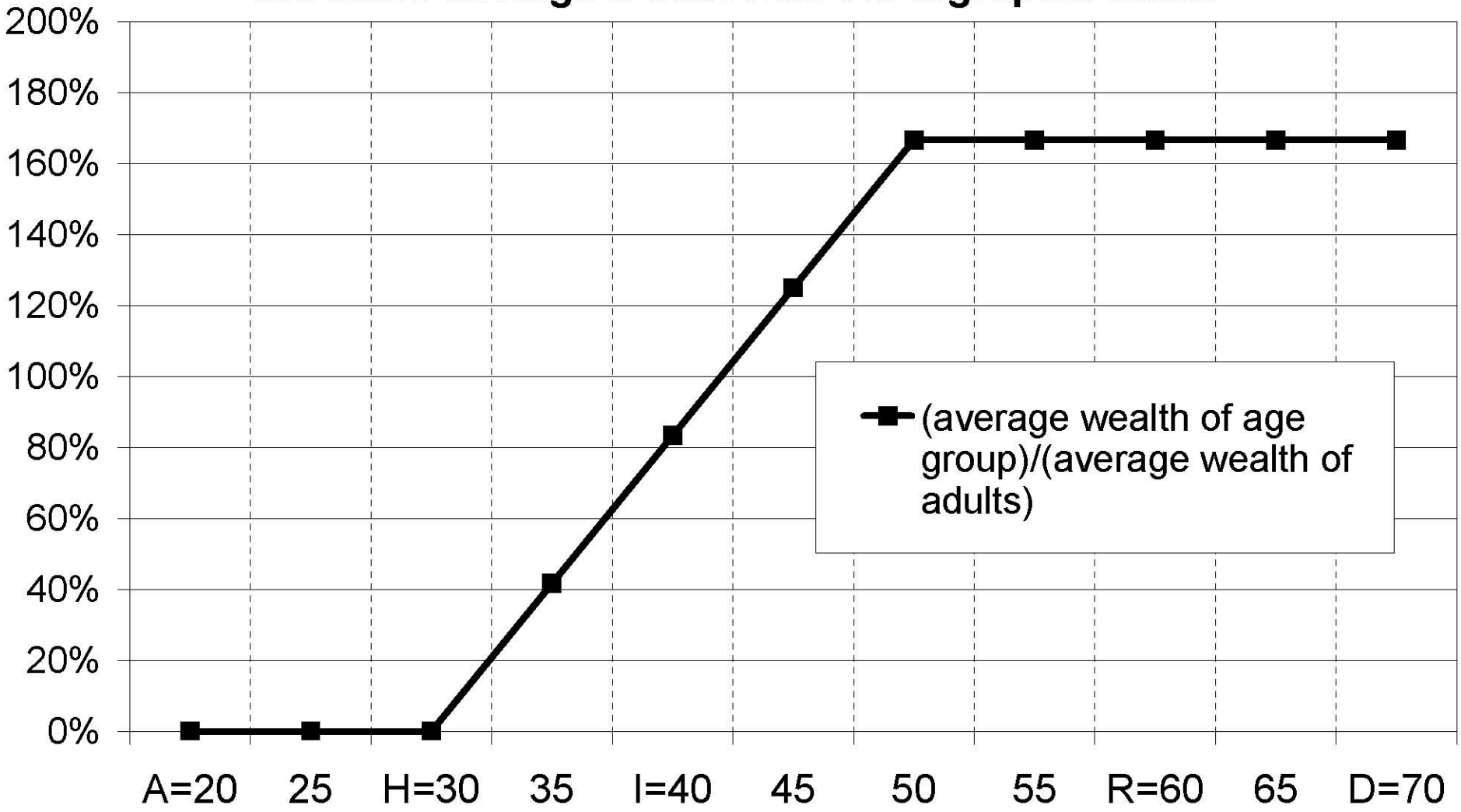


Figure 8: Private savings rate in France 1820-2008

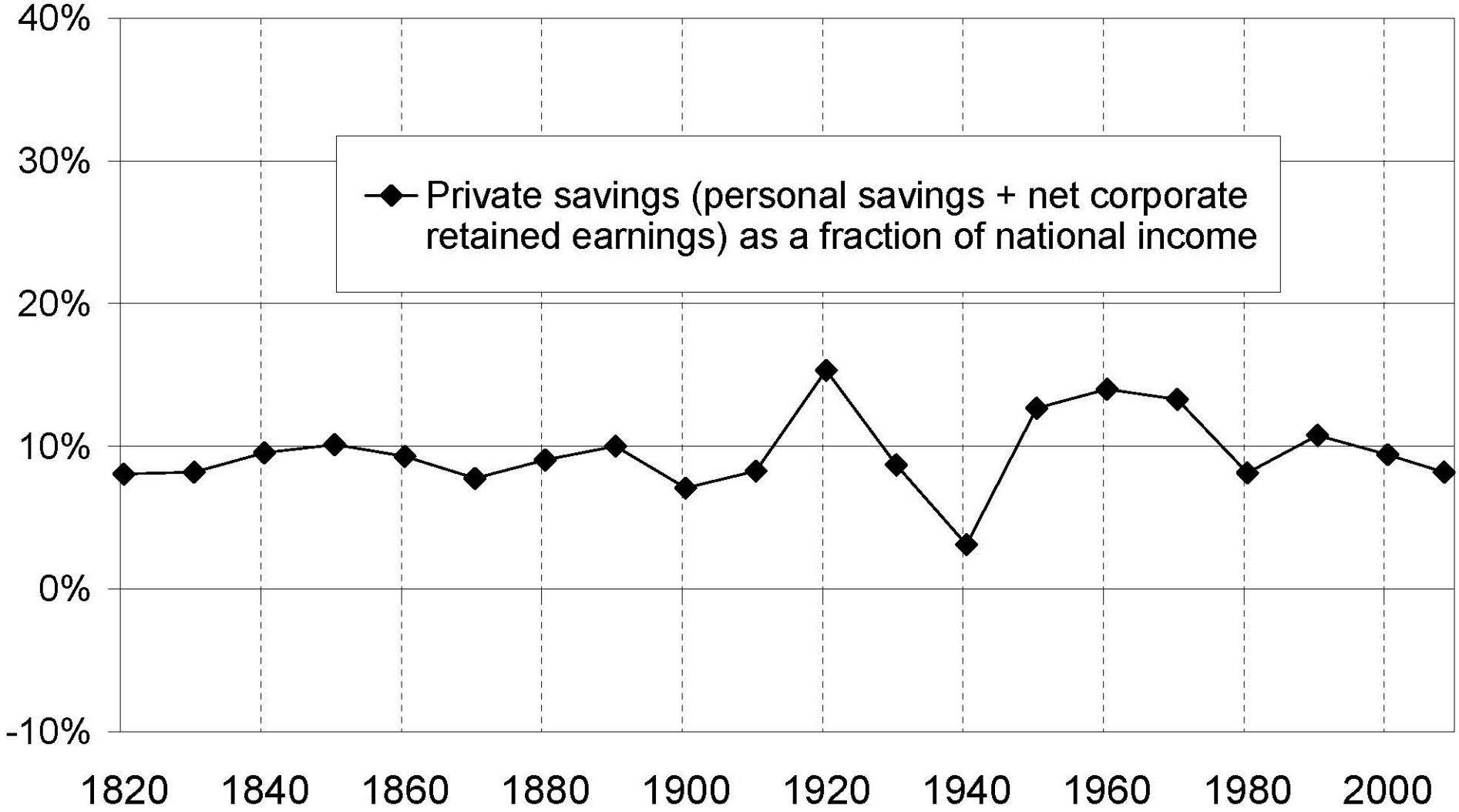


Figure 10: Labor & capital shares in national income, France 1820-2008

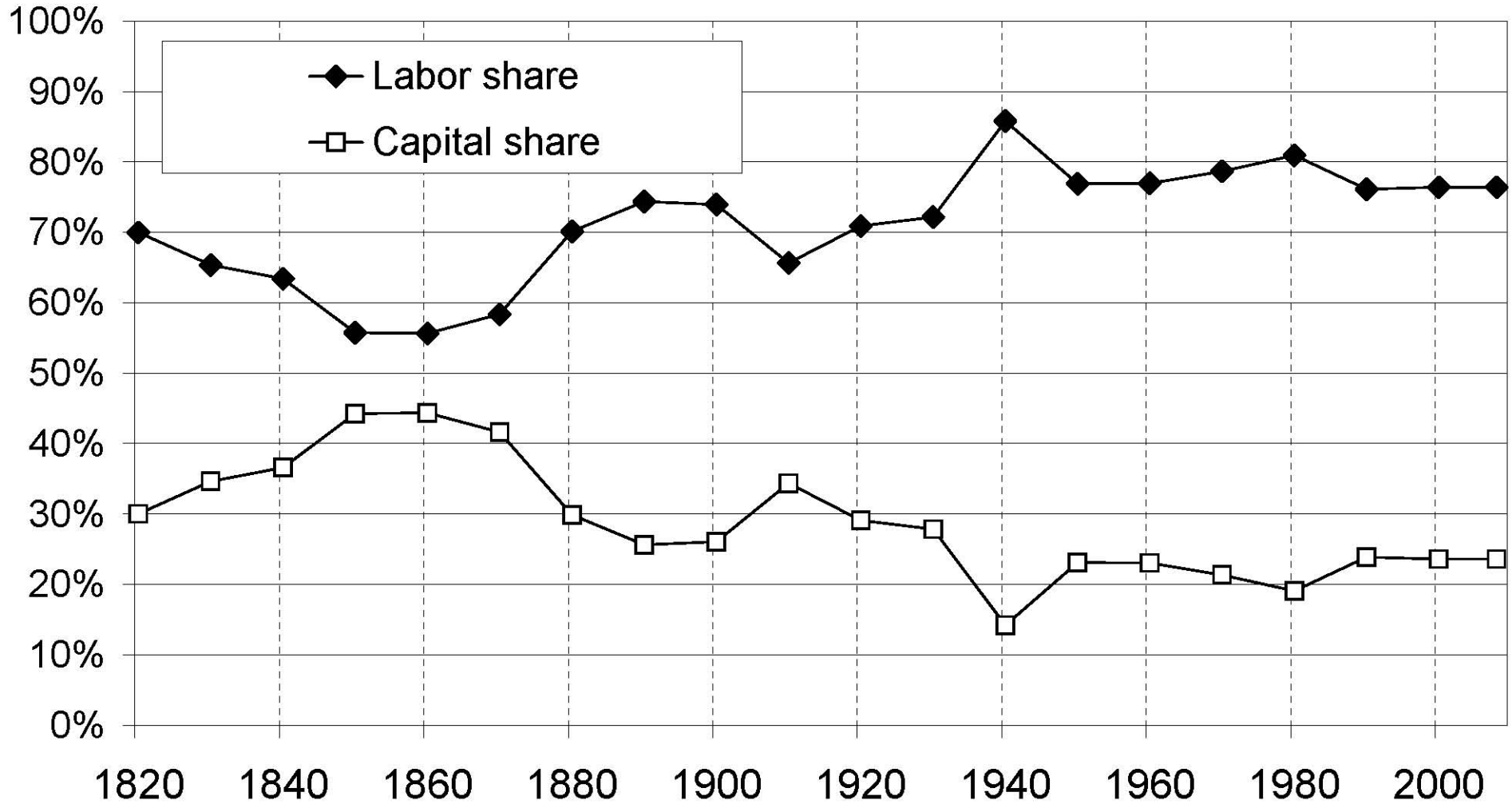


Figure 11: Rate of return vs growth rate France 1820-1913

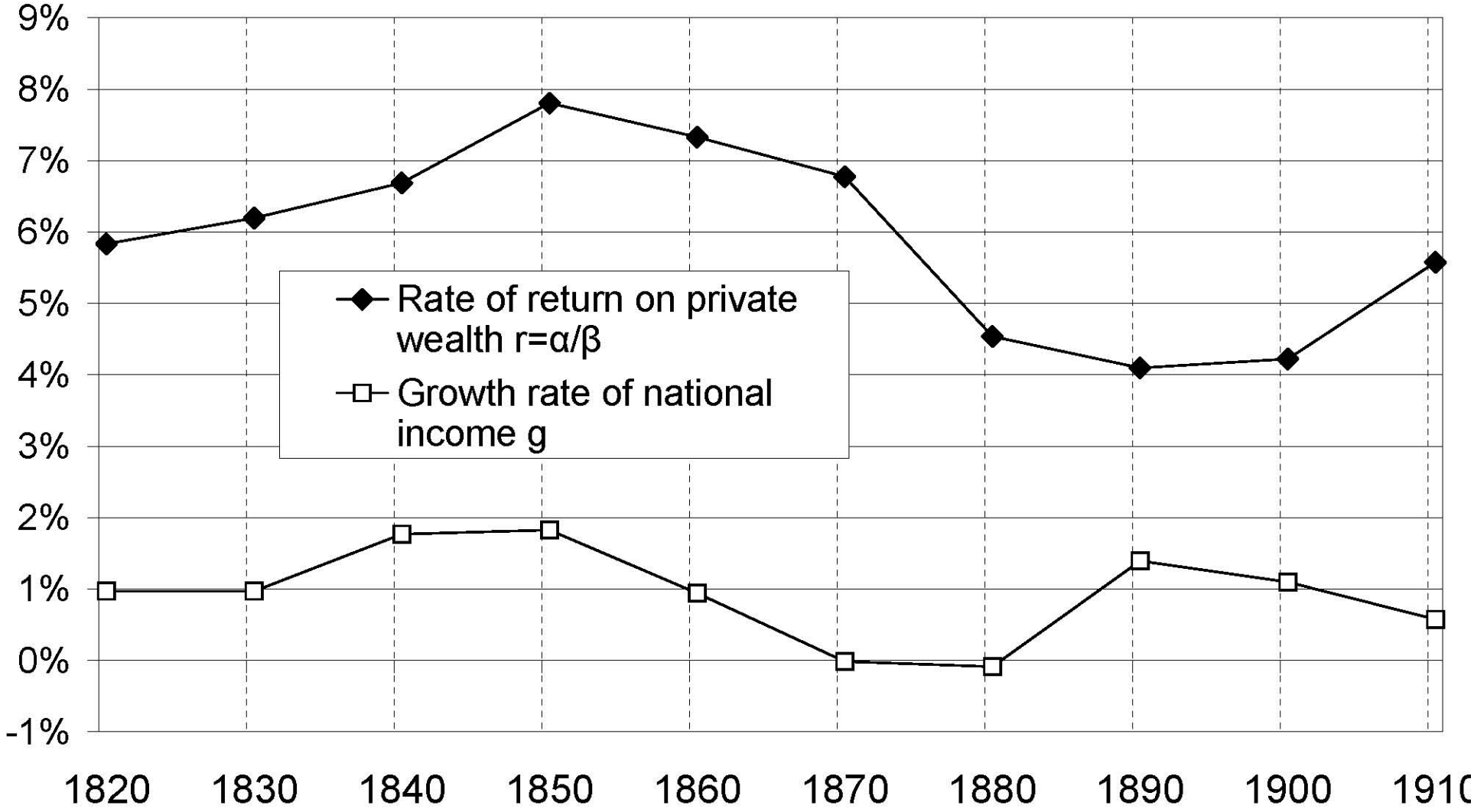


Figure 12: Capital share vs savings rate France 1820-1913

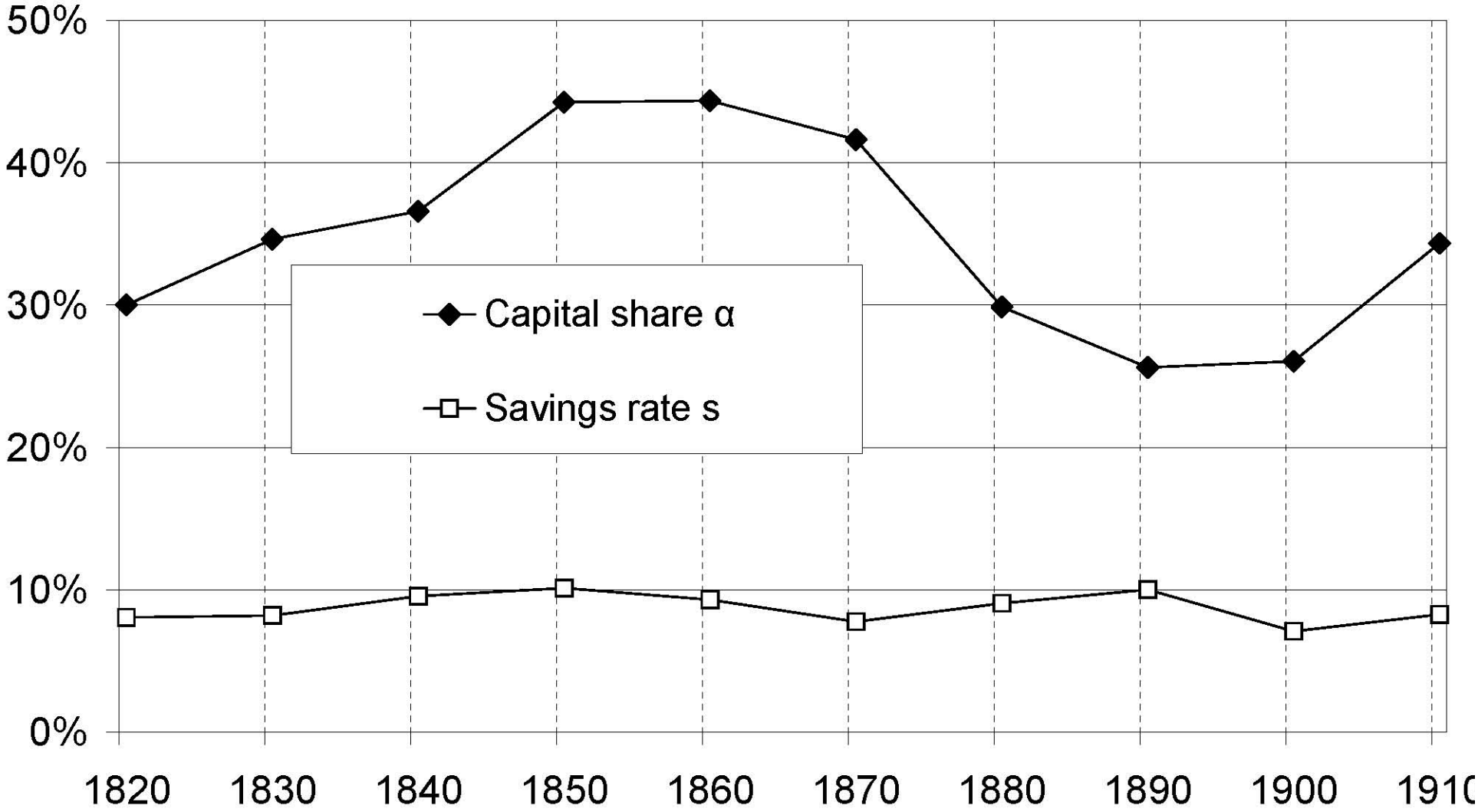


Figure 18: The share of non-capitalized inheritance in aggregate wealth accumulation , France 1850-2100

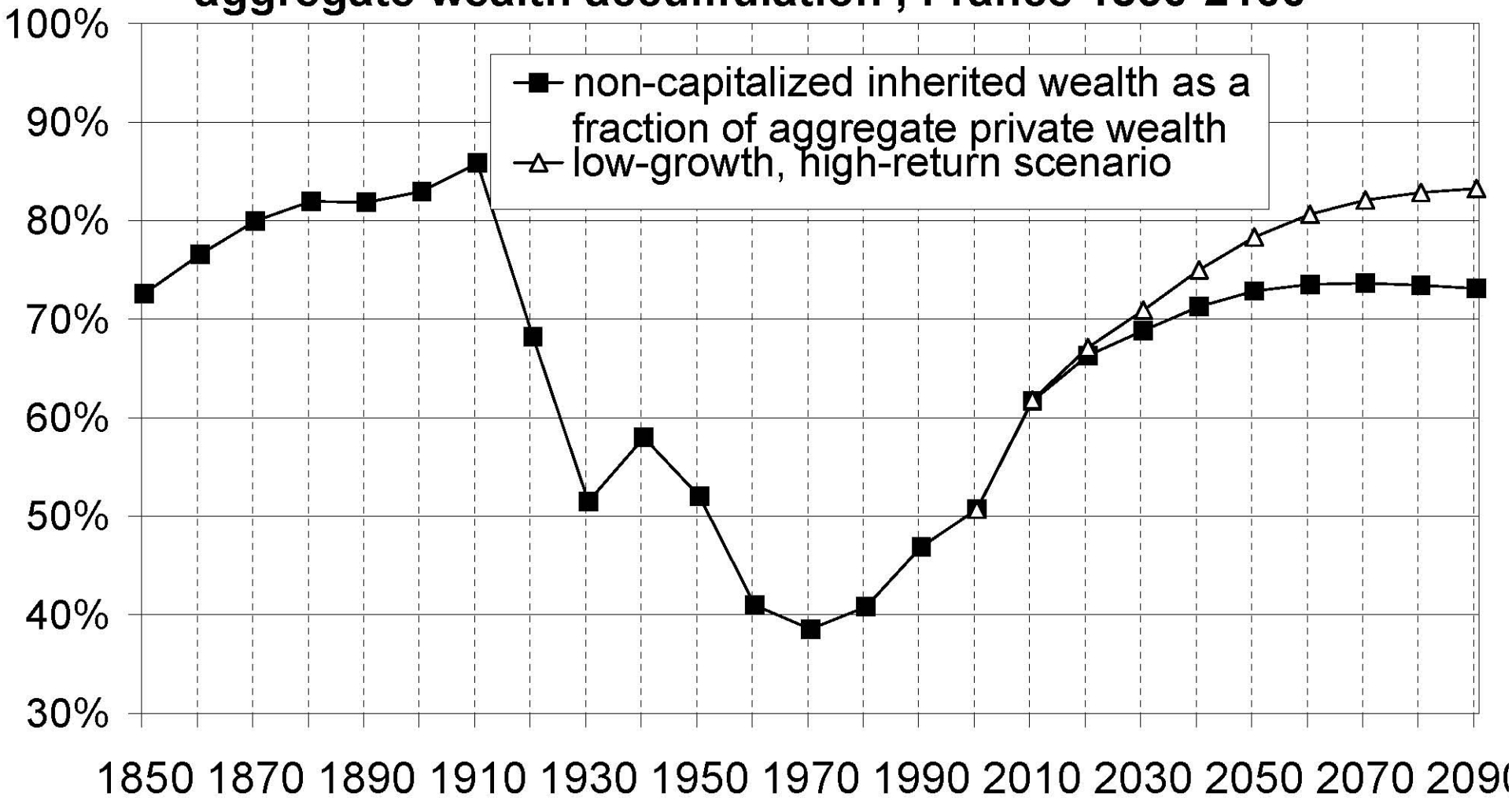


Figure 19: The share of capitalized inheritance in aggregate wealth accumulation , France 1900-2100

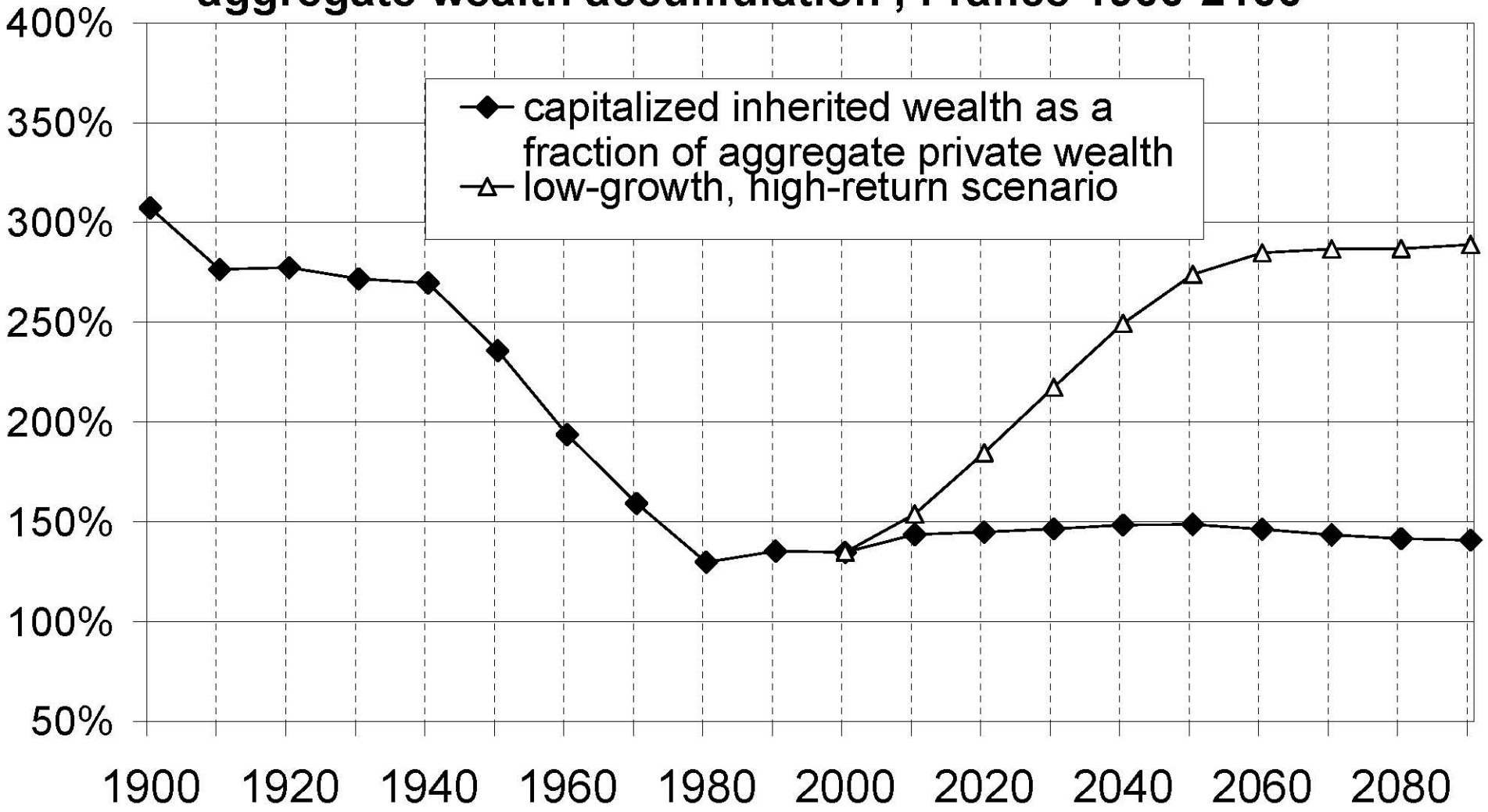


Table 2: Rates of return vs growth rates in France, 1820-2009

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