Piketty's *Capital in the 21st Century*: a New Zealand perspective

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Concentration of wealth and power in the hands of a dynastic elite is the historical norm for non-capitalist systems wherever there is an economic surplus to be appropriated

- Ancient city states
- Roman Empire
- Feudalism
- North Korea
- etc

Is capitalism different?

- **Adam Smith** optimistic: invisible hand, laisser-faire policies, and growth driven by rapid technical progress would continually undermine the position of an unproductive elite as newly-created wealth was in the hands of a rising entrepreneurial group that was open to talent.
- **David Ricardo** pessimistic: ownership of the crucial scarce factor, land, by an unproductive hereditary aristocracy would enable that group to appropriate for itself a growing share of the economic product in the form of rent, leading eventually to a stifling of capitalist accumulation and growth
- **Marx** extremely pessimistic: capitalist production relations just a mask for the age-old practice of exploitation
- **Early neoclassicals** optimistic: a "just" primary distribution determined by marginal product under competitive condition should hold inequality in check, and the actual distribution of incomes can be adjusted by taxes and transfers => the welfare state
- **Later neoclassicals** (trending towards neoliberalism) ideologically optimistic: suspicious of the welfare state, insistent on the role of the rich in creating growth and jobs, tending to blame the poor for poverty itself as well as their own condition, forgetful of the adding-up problem
- **Piketty** pessimistic: absent the redistributive apparatus of the welfare state (or some equivalent countervailing institutional setup), the equations that describe the underlying dynamics of capitalism lead to the emergence and entrenchment of the familiar pattern of dynastic elites holding a commanding share of the economy's wealth and collecting a substantial rental share of the product. I.e. capitalism is not different.

Piketty in three sentences

1. The economic logic of a capitalist market system with private wealth plus inheritance leads to a highly unequal, but <u>stable</u>, social order with a patrimonial rentier class at the top.

2. Whether this social order is compatible with democracy depends on what a democratic society is prepared to tolerate.

3. If the capitalist distributional equilibrium does not lie within the boundaries of democratic tolerance, one or other has to give.

His conclusion:

P.573: “If we are to regain control of capitalism, we must bet everything on democracy”.

So

- Have “we” lost control of capitalism?
- How does “democracy” come to bear?
- Are there policy or institutional fixes?

Some key ideas and definitions

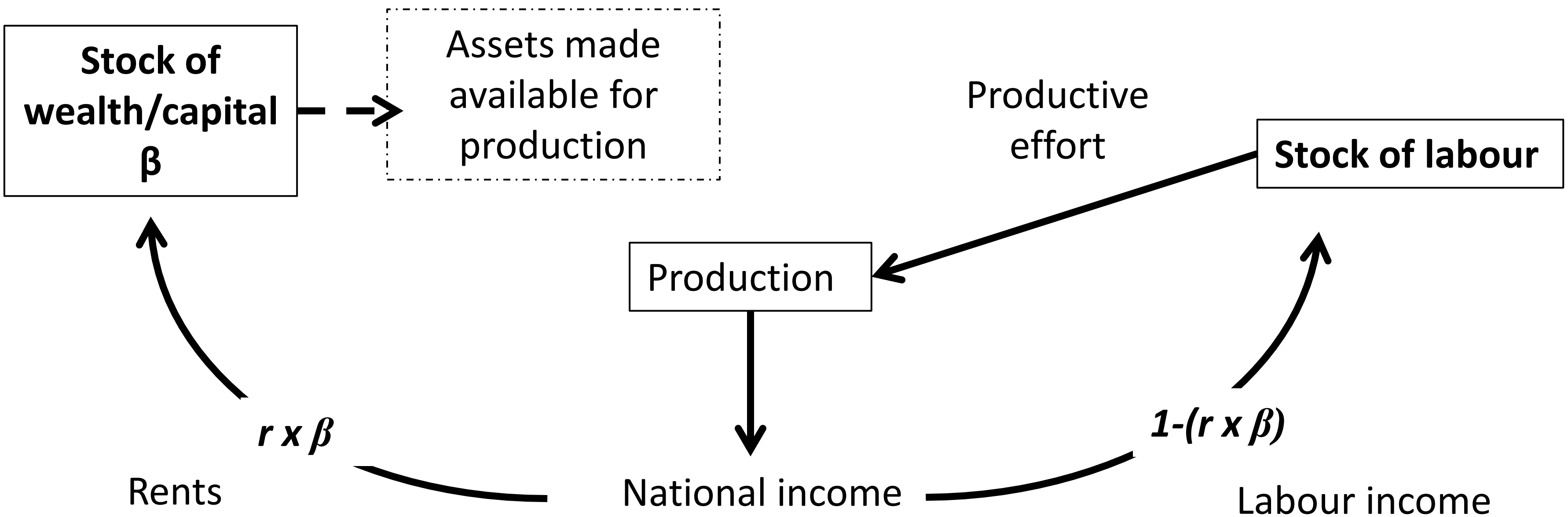
- When Piketty speaks of "capital" he means all assets that yield income <u>as a right of ownership, however the assets were acquired</u>
- This is much broader than the mainstream (neoclassical) economist's notion of capital as just a factor of production - an assemblage of machines, buildings, blueprints etc
- At any point in time, part of the total stock of wealth (capital) will have been accumulated by the productive hard work and entrepreneurship of the current owners; but
  - another part of the wealth stock will have accrued from capital gains and other windfalls; and
  - the <u>long run</u> tendency is for wealth owners to be rentiers whose incomes derive from asset ownership *per se*, not from direct productive effort
- Private property rights, and the right of inheritance, are fundamental to the secure long-run private appropriation of rents => capital is ultimately a social relation embedded in law

Production versus appropriation

- All individuals/groups/classes stand in some relation to the product on two dimenions:
  - <u>Production</u>: participation or non-participation in the productive process via direct effort or contributed resources
  - <u>Appropriation</u>: the exercise of a right to receive, and consume or save, a share of the product

- <u>This distinction is fundamental to Piketty though he never really spells it out</u>

Piketty’s distribution model



Asset owners collect rent as their payoff for <u>not withholding</u> assets from production

Owners of wealth (capital) appropriate to themselves a share of society's total product (income) by <u>right</u>. Appropriation is separated from production and is driven simply by the rent claim $\boldsymbol{r \times \beta}$

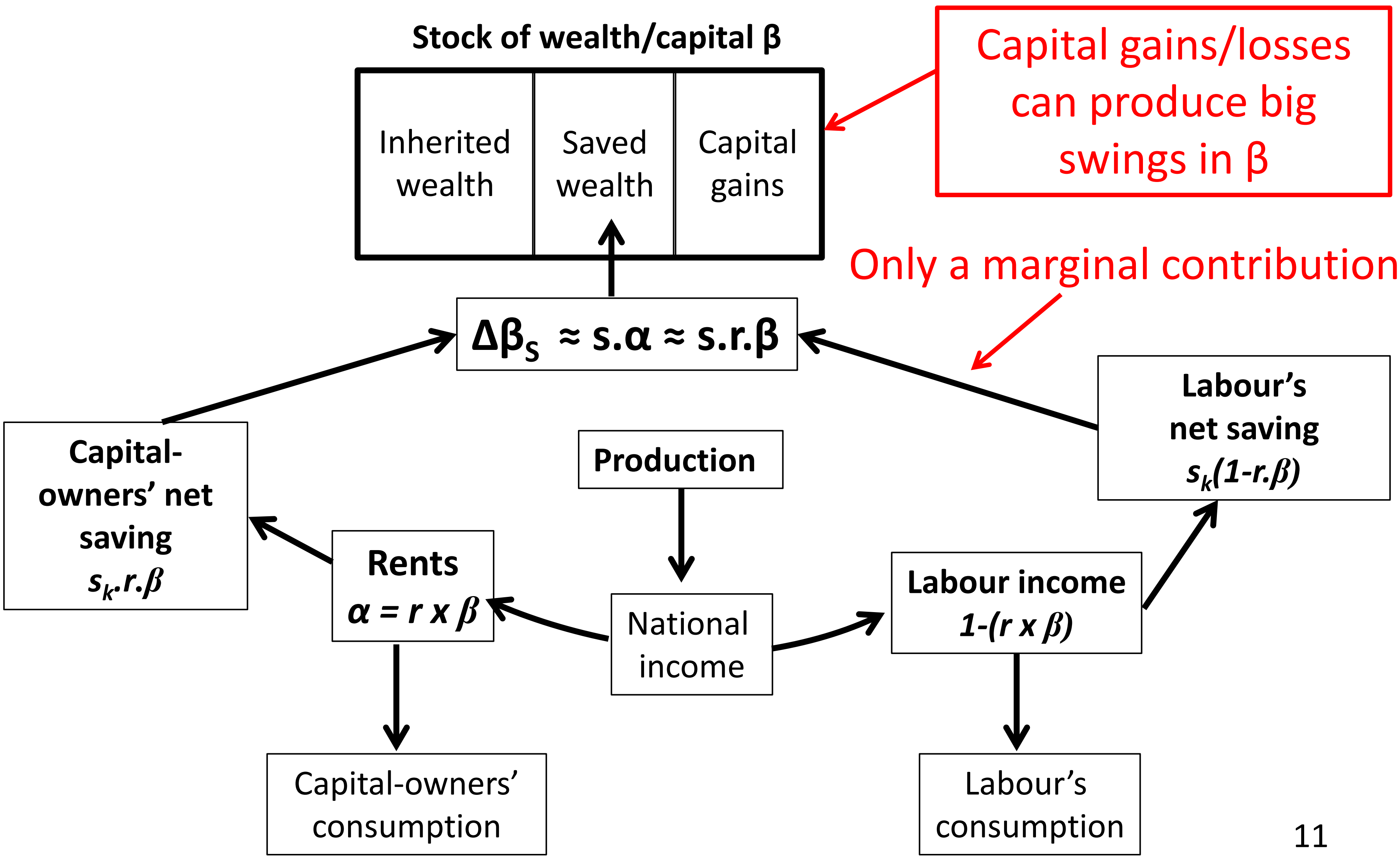
- Piketty uses a generalised economist's conception of the category "rent"
  - Not just the return on land (or scarce natural resources)
  - Rent is the "unearned increment" that accrues to the owner of <u>anything</u> that is scarce, simply by virtue of that scarcity => society can be held hostage with rent as the ransom
- All actual human effort in the production process Piketty classes as labour – including CEOs

Moral arguments about whether rentiers/the rich are "deserving" or not are beside the point

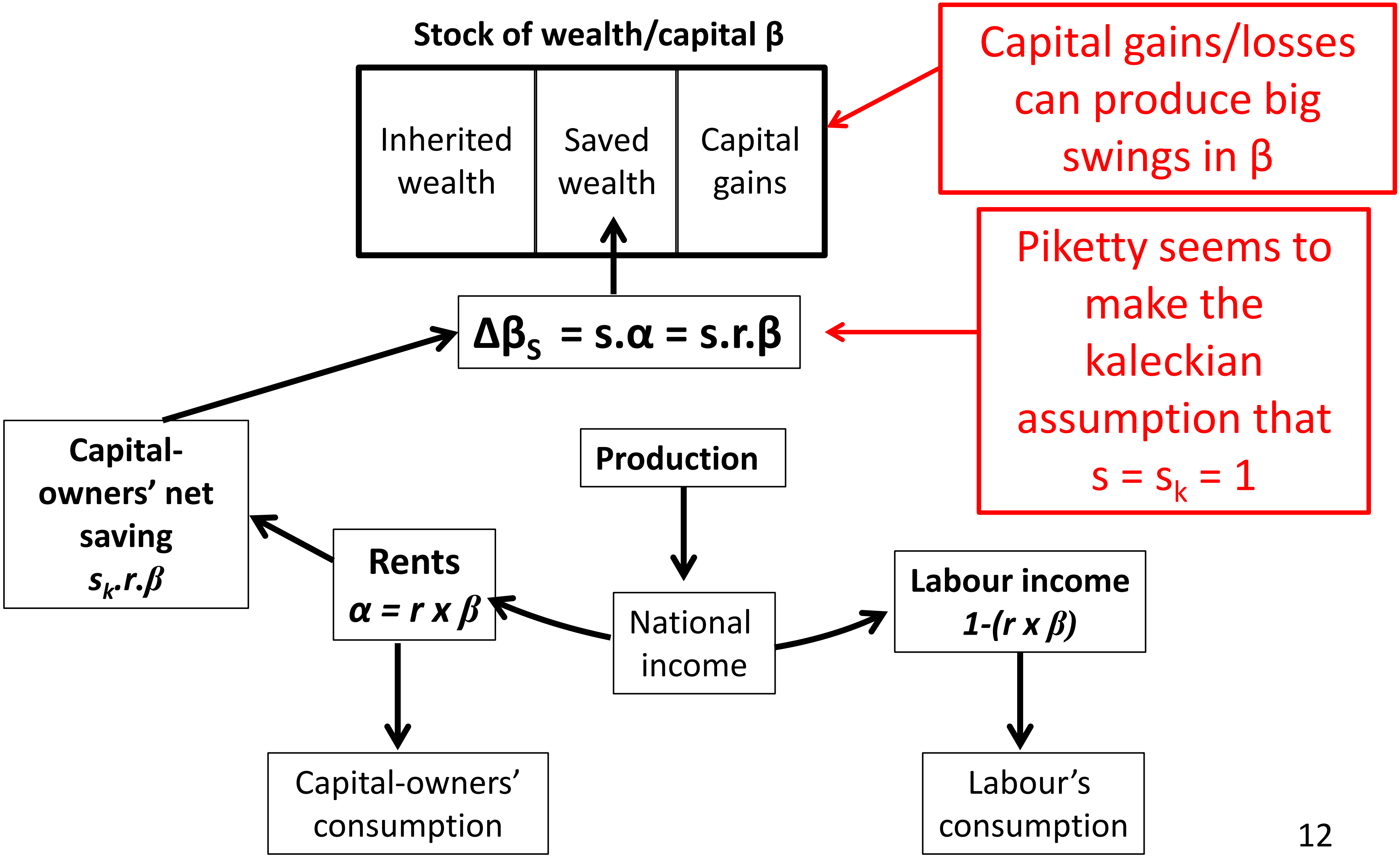
- 'Deservingness' erodes with time – even successful entrepreneurs morph into rentiers as they age

- Heirs receive their wealth without having to undertake productive effort.

Piketty's wealth accumulation model



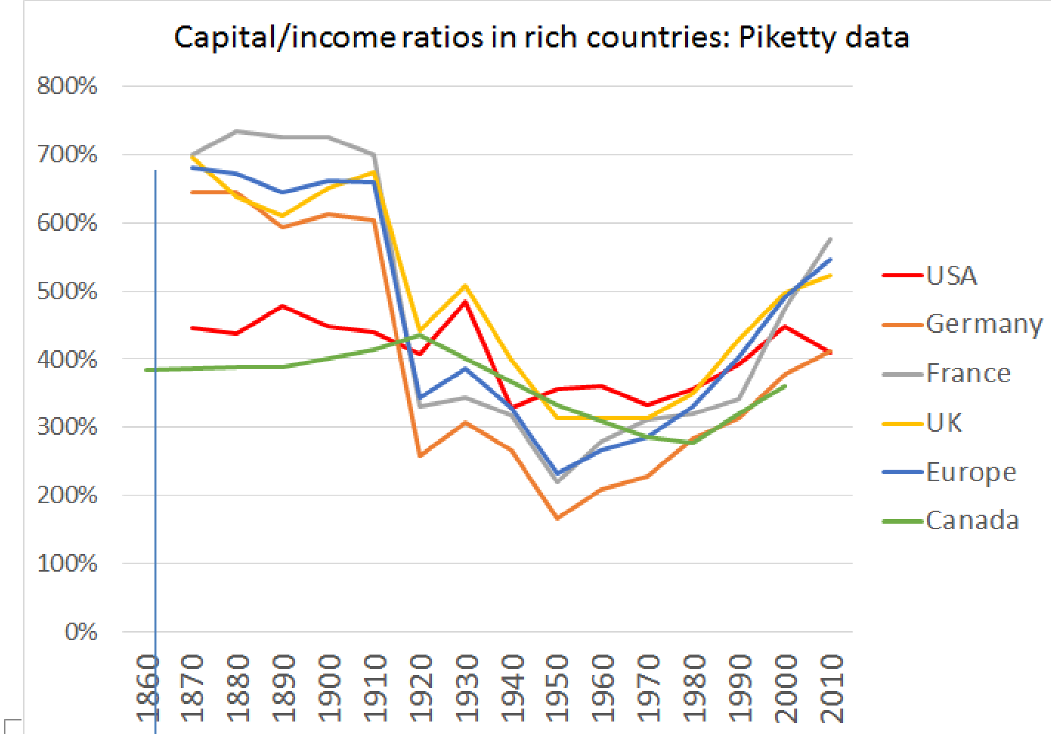
Piketty's wealth accumulation model assuming no savings from labour income



The separation of wealth (capital) and its income stream from productive activity breaks a key link in the neoclassical justification for income distribution

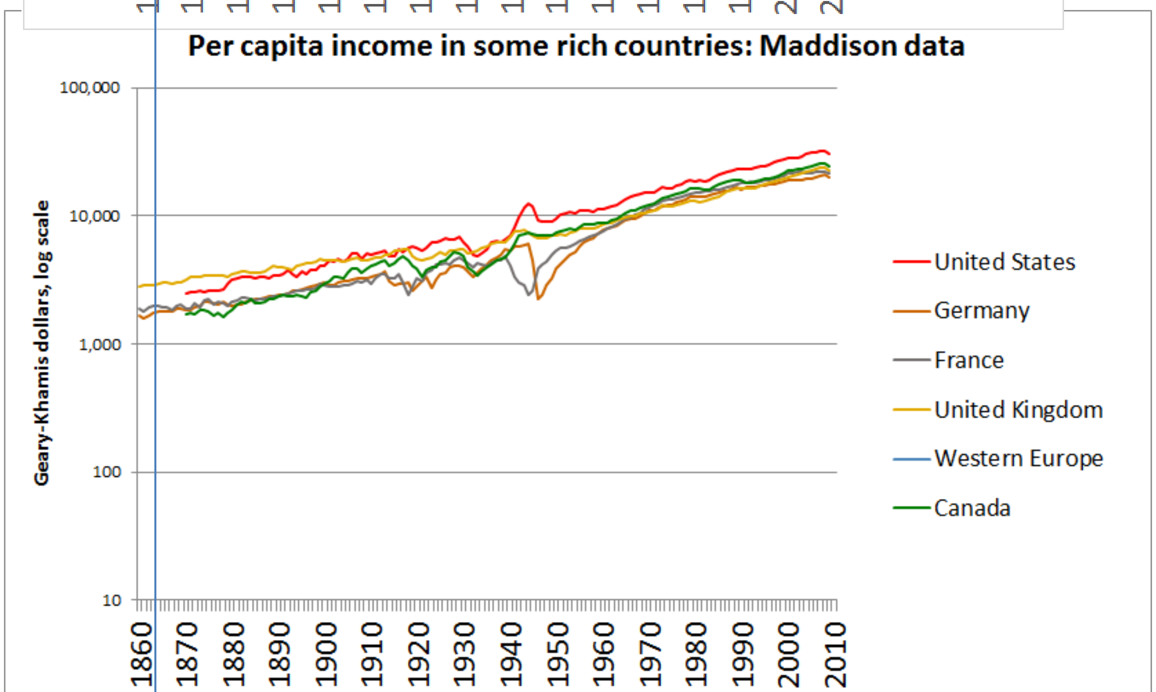
- In the neoclassical model, changes in "capital" and the profit rate are tied directly to the growth of income

- But putting Piketty's capital data against Maddison's growth data shows that the link doesn't work well



The huge swings in β do not correlate well with long-term growth paths

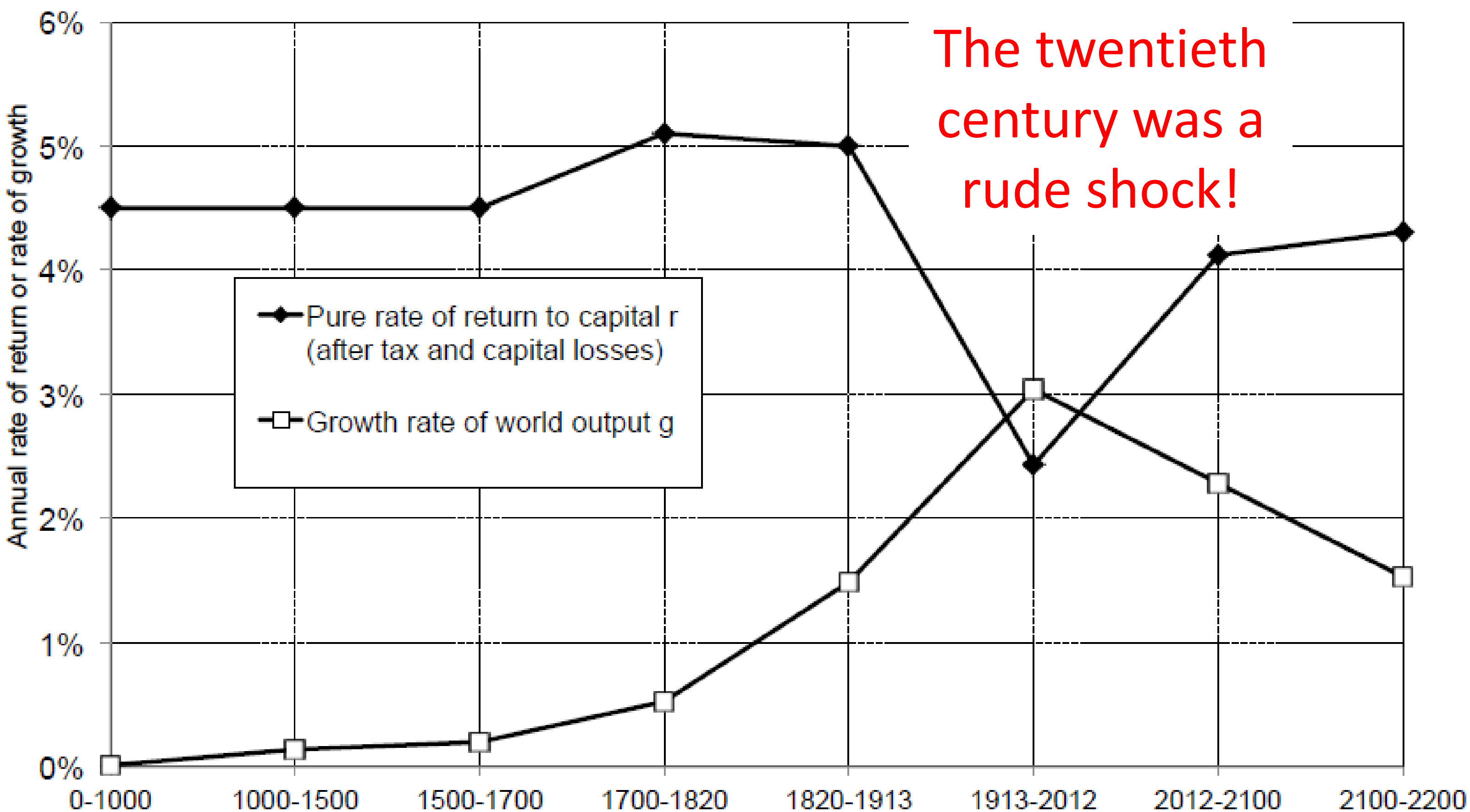
Piketty argues that an equilibrium β existed until about 1910 but was then disturbed by political and institutional innovations



The long-run growth rate of income is pretty stable, accounted for by population growth and technical progress . Piketty settles for g≈2% p.a. as his ‘production function’

Piketty's big stylised facts: $r > g$ is the long-run norm and r is 4-5% over the long run; g for the next century looks like 1-2%

Figure 10.11. After tax rate of return vs. growth rate at the world level, from Antiquity until 2200



The rate of return to capital (after tax and capital losses) fell below the growth rate during the 20th century, and might again surpass it in the 21st century. Sources and series: see piketty.pse.ens.fr/capital21c

Now two questions follow:

- Can an equilibrium β be <u>theoretically</u> established, and if so what is it likely to be?
  - Piketty's answer is yes, and it's likely to be around 5-6 times income, with an associated wealth-owners claim to appropriate rent without participating in production

- Why might the equilibrium of β and *r* have been so disturbed in the twentieth century?
  - Piketty's answer is partly war and depression, but more fundamentally new political forces: universal suffrage and the welfare state
  - The neoliberal assault on progressive taxation and welfare-state constraints on the exercise of market power open the way for the free-market equilibrium to reassert itself

Piketty's theoretical accumulation equilibrium

- Preliminaries:
  - The unit of account for each year is the current money value of that year's output.
  - The monetary value of capital (wealth), rents, and output itself are all divided by that value of income and therefore measured in 'output years', avoiding deflators and exchange rates
  - The capital/income ratio $\boldsymbol{\beta}$ is a number of output-years (always >1)
  - We abstract from capital gains and losses and assume that the only source of wealth accumulation is saving (this obviously means that the pure model is not a complete story for the real world!)

Determining the capital/income ratio β

- Harrod's growth equation with fixed capital/output ratio: $g = \frac{s}{\beta}$
  can be rearranged to get (Solow 1956, Phelps 1961):
  $$\beta = \frac{s}{g}$$
- Taking *s* and *g* as exogenous, this gives Piketty's long-run equilibrium value for β (the wealth/income ratio).

- If *g=2%* and *s=12%* then in the steady-state growth equilibrium $\boldsymbol{\beta}$ = 6 years of income

That equilibrium is stable

That is, in the long run, an untaxed, unregulated competitive capitalist economy with 2% structural growth and a 12% saving rate will accumulate wealth up to, but not beyond, the level at which the wealth/income ratio is 6. Here is Piketty's major claim to a Nobel prize in economics.

An important implication is that the equilibrium share of total national income appropriated by rentiers is similarly determined by the accumulation equations – not by productive contribution

Capital's share of income is given by $\alpha = r \times \beta$.

(If wealth is five years' income then the rent share is 5 x 5 = 25%)

In the long run $\beta = s/g$, so $\alpha = (s \times r)/g$.

This means that the stock of wealth, and the rent share of income (hence capital/labour inequality)

- are higher for higher *s*
- are higher for larger *r*
- are higher for smaller *g*

Rapid growth with a low rate of return is equalising

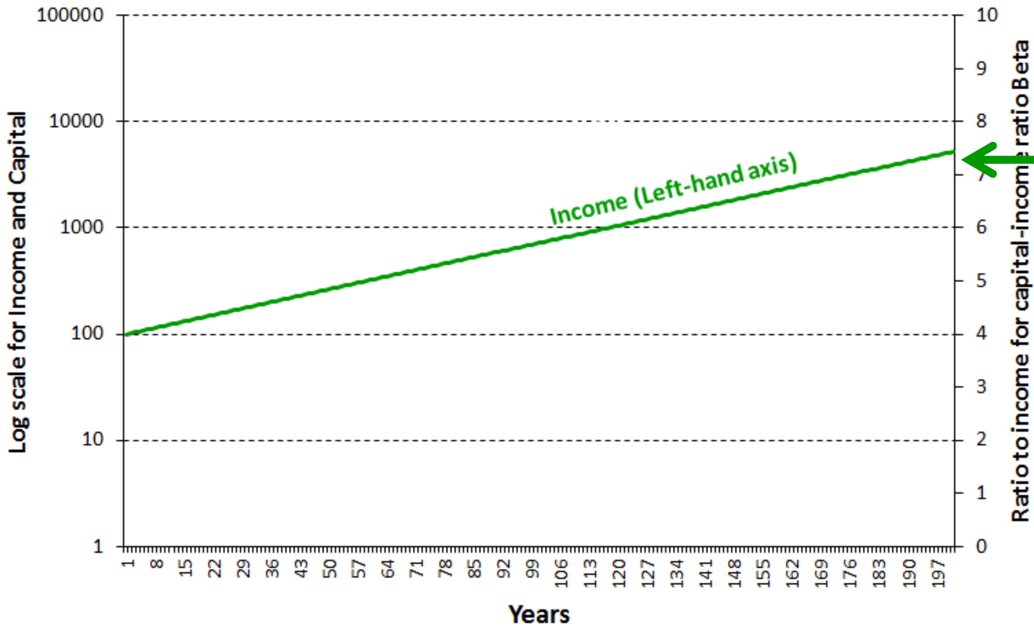
The neoclassical expectation has been that in the long run $r = g$

- Diminishing marginal product of capital-as-a-factor-of-production tends to push down r
- Then capital accumulation and capital/labour inequality are checked well short of Piketty's predicted β values
- $\alpha = (s \times r)/g$ reduces to $\alpha = s$
- Piketty agrees this is theoretically possible – "too much capital kills capital" and agrees that his stylised fact $r >$ g can hold in practice only if capital accumulation pushes labour out of productive employment, rather than forcing down the marginal product of capital
- This is a matter of the elasticity of substitution of capital for labour being greater than 1

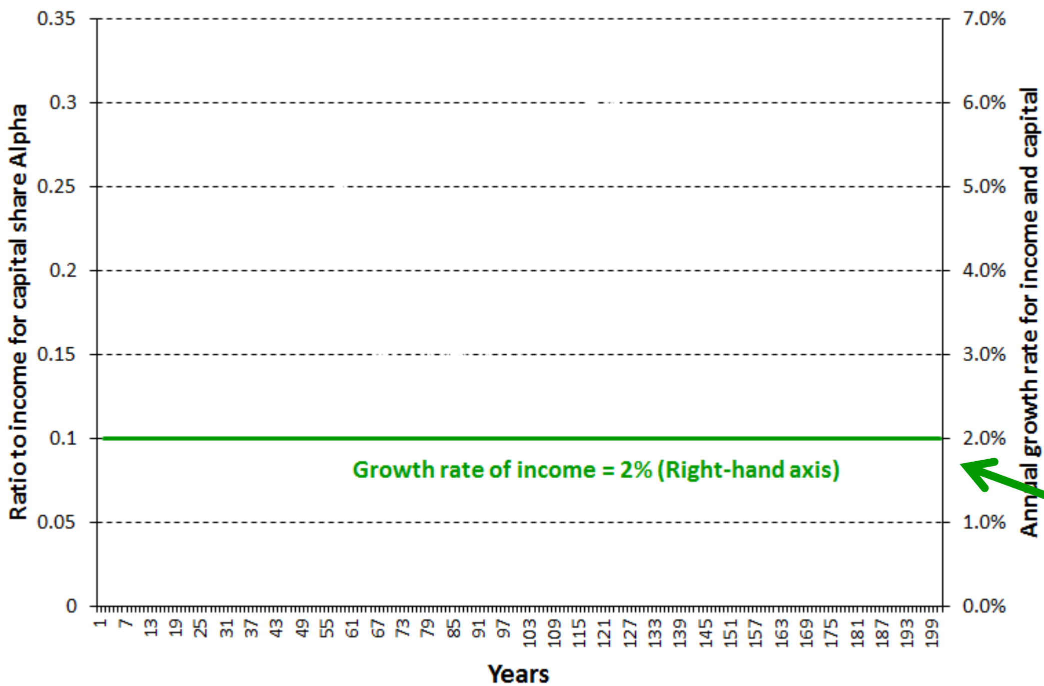
The equations can be put into a simple Excel model

- Just to illustrate, set some parameter values:
  - g = 2%
  - s = 12%
  - r = 5%
  - *Time horizon = 200 years*

Piketty's model for g=2%, s=12%, r=5%



Income grows steadily at 2% p.a.



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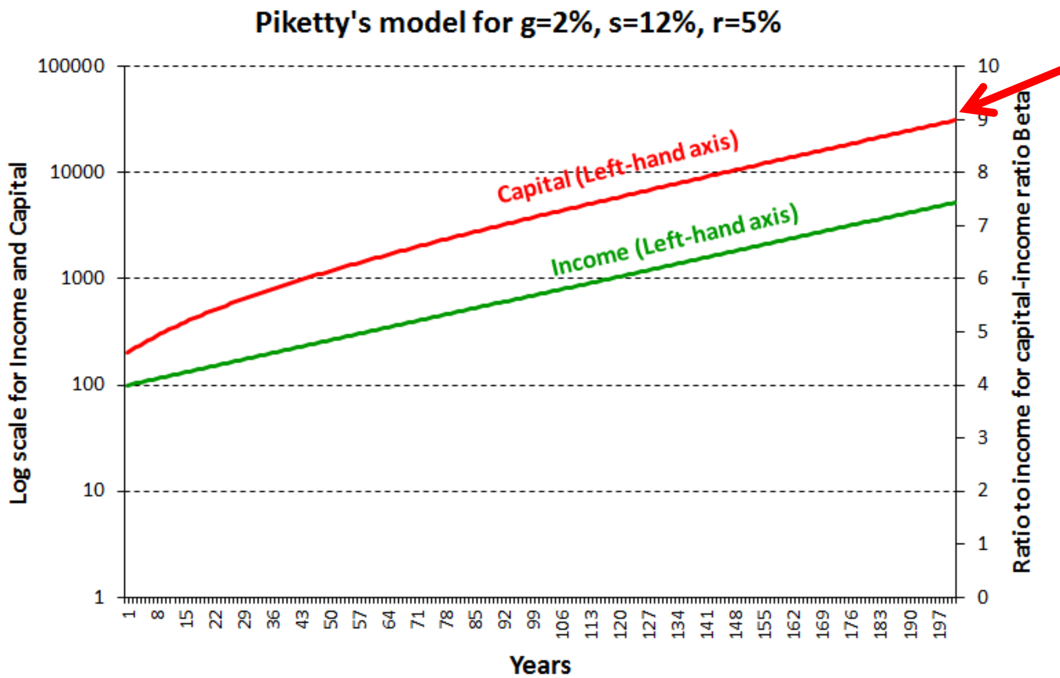
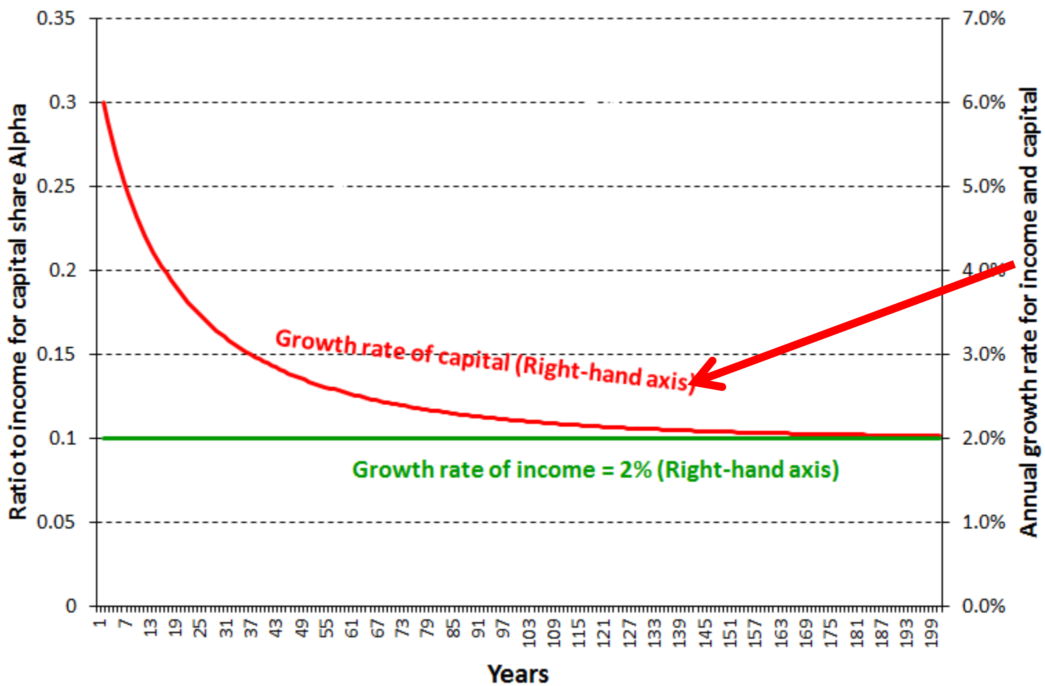


Capital grows, but at a falling rate which eventually will drop to 2%, equal to the income growth rate *g*



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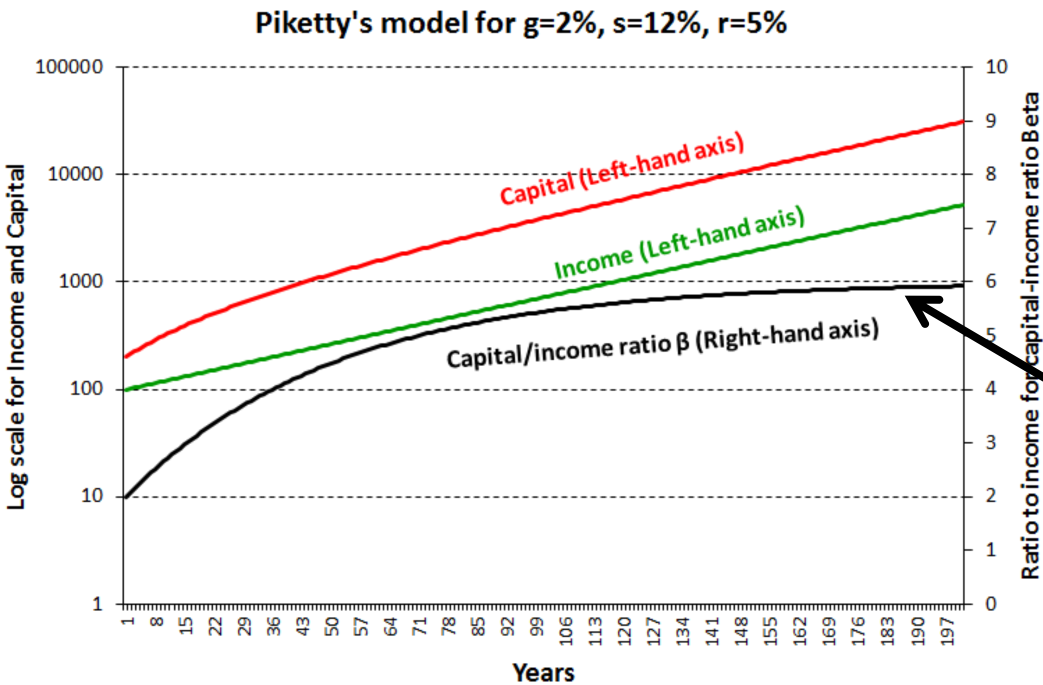
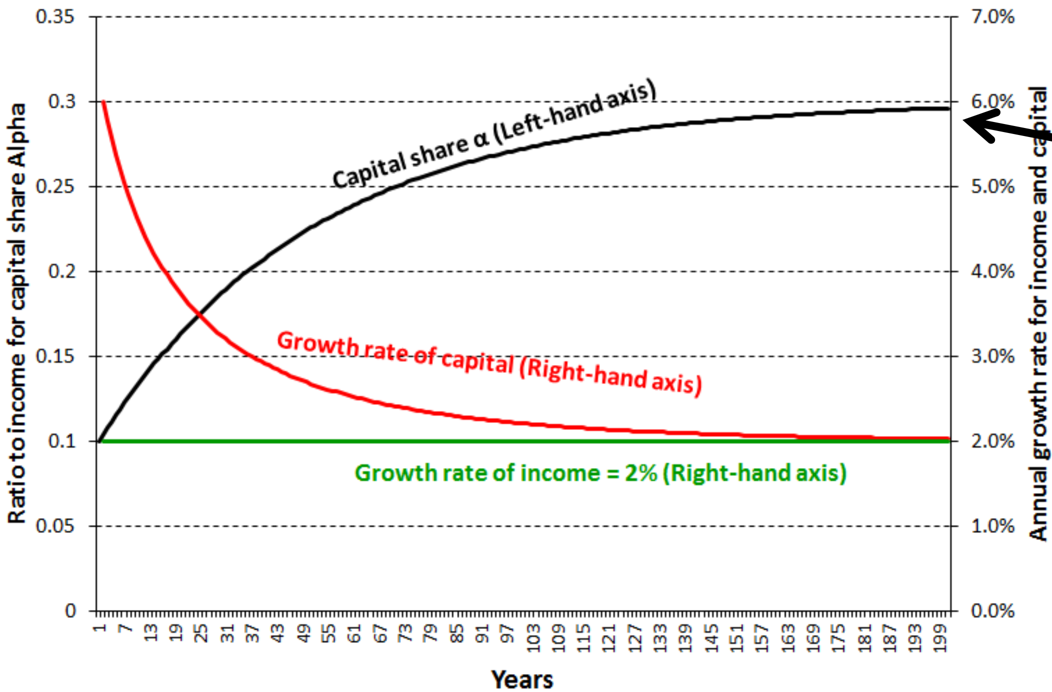


The capital-income ratio rises towards its eventual value of 6



Capital's share of output rises towards its eventual value of 30%

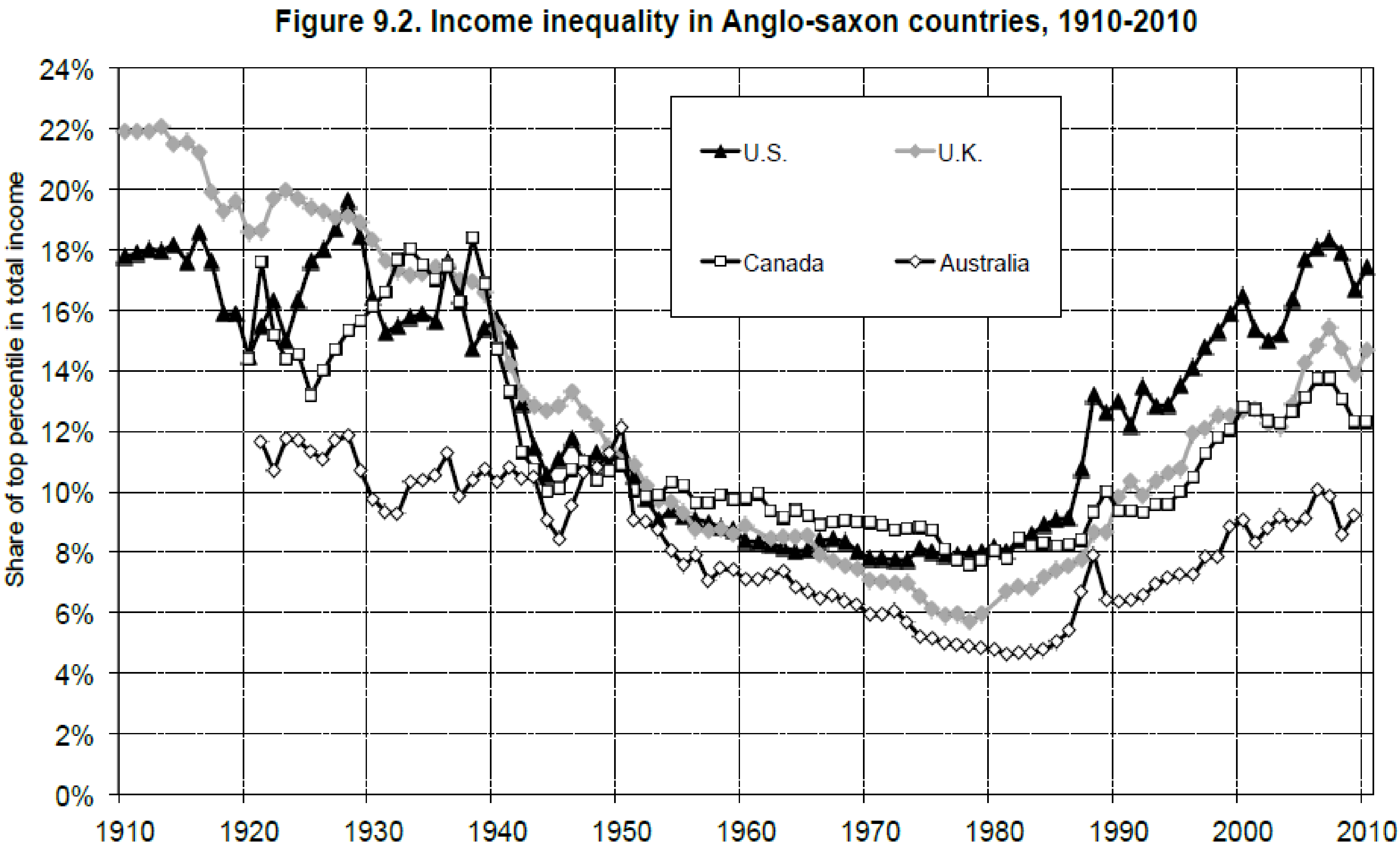
So far, so good. BUT what does this all mean for inequality across <u>people</u>?

- If all wealth assets are owned collectively (the early socialist ideal) then all share equally in the economy's rents – or alternatively, rents can be abolished (set $r = 0$) and all income can then be appropriated directly by productive labour
- If wealth is privately owned but equally distributed (Margaret Thatcher's "share-owning democracy") then again all individuals get equal shares in rents, plus whatever they earn from productive endeavour
- If wealth is privately held by a subset of the population, then this group constitute a rentier class and income inequality follows

Concentration of private wealth in Piketty

- Piketty's model of the equilibrium β doesn't tell us how wealth ownership is distributed
- But Piketty argues that there are dynamic forces in the market economy that will tend to concentrate wealth holdings, just as happened in ancient, slave and feudal societies:
  - Economies of scale in managing wealth portfolios
  - Special advantages of having large collateral when borrowing to acquire new assets
  - Economies of scope in wealth: larger portfolios can be more diversified
- He has only limited direct data to test this: US college endowment funds
- But for an indirect test, he goes to the income distribution data and focuses on the income shares of the very top end of the income distribution: the 1% (and the 0.1%, the 5% and the 10%)
- If wealth is equally distributed, then high income shares would not rise closely in tandem with β

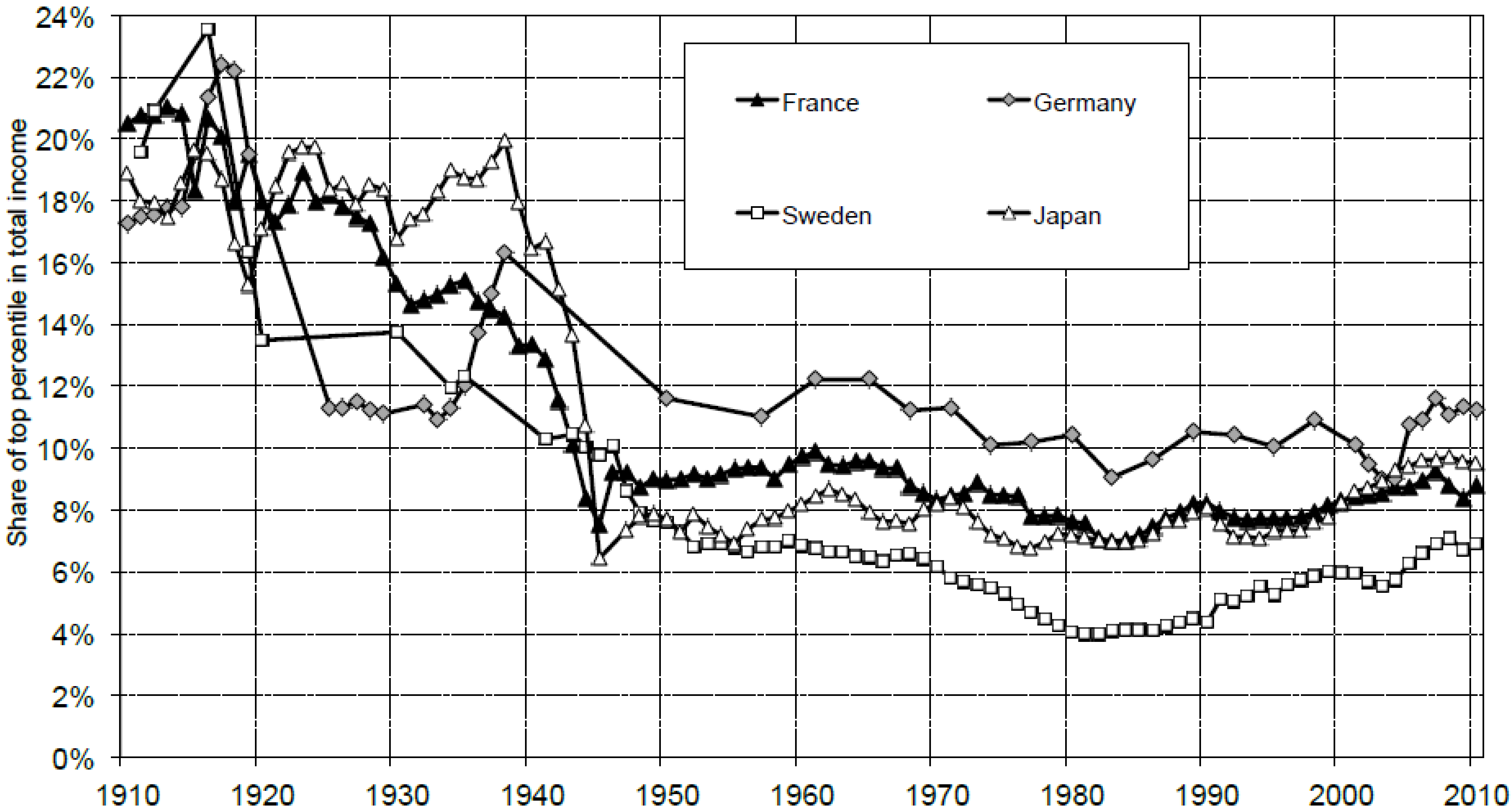
Top 1% share



The share of top percentile in total income rose since the 1970s in all Anglo-saxon countries, but with different magnitudes. Sources and series: see piketty.pse.ens.fr/capital21c.

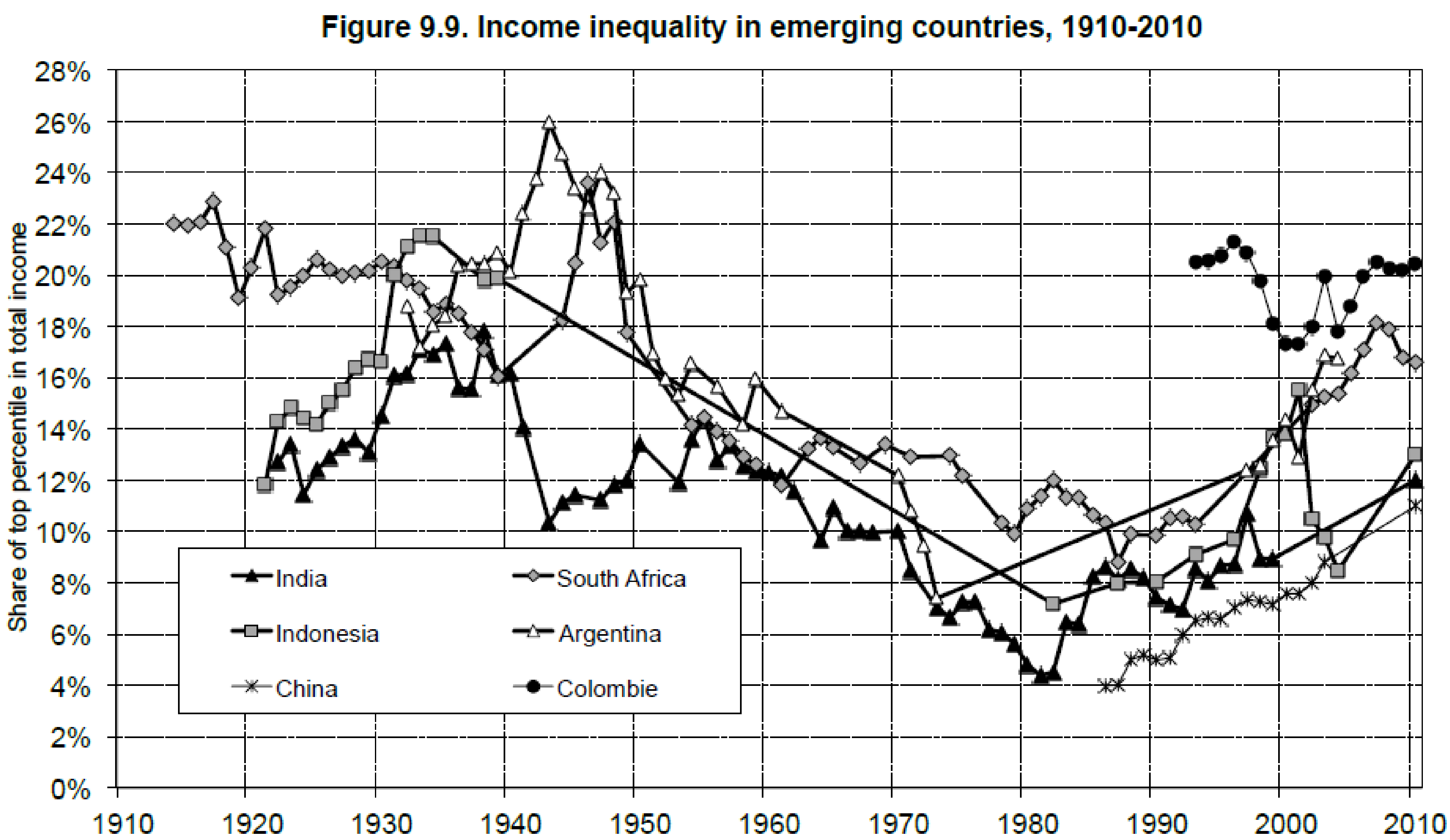
‘Continental’ countries show much less dramatic turnaround

Figure 9.3. Income inequality: Continental Europe and Japan, 1910-2010



As compared to Anglo-saxon countries, the share of top percentile barely increased since the 1970s in Continental Europe and Japan. Sources and series: see piketty.pse.ens.fr/capital21c.

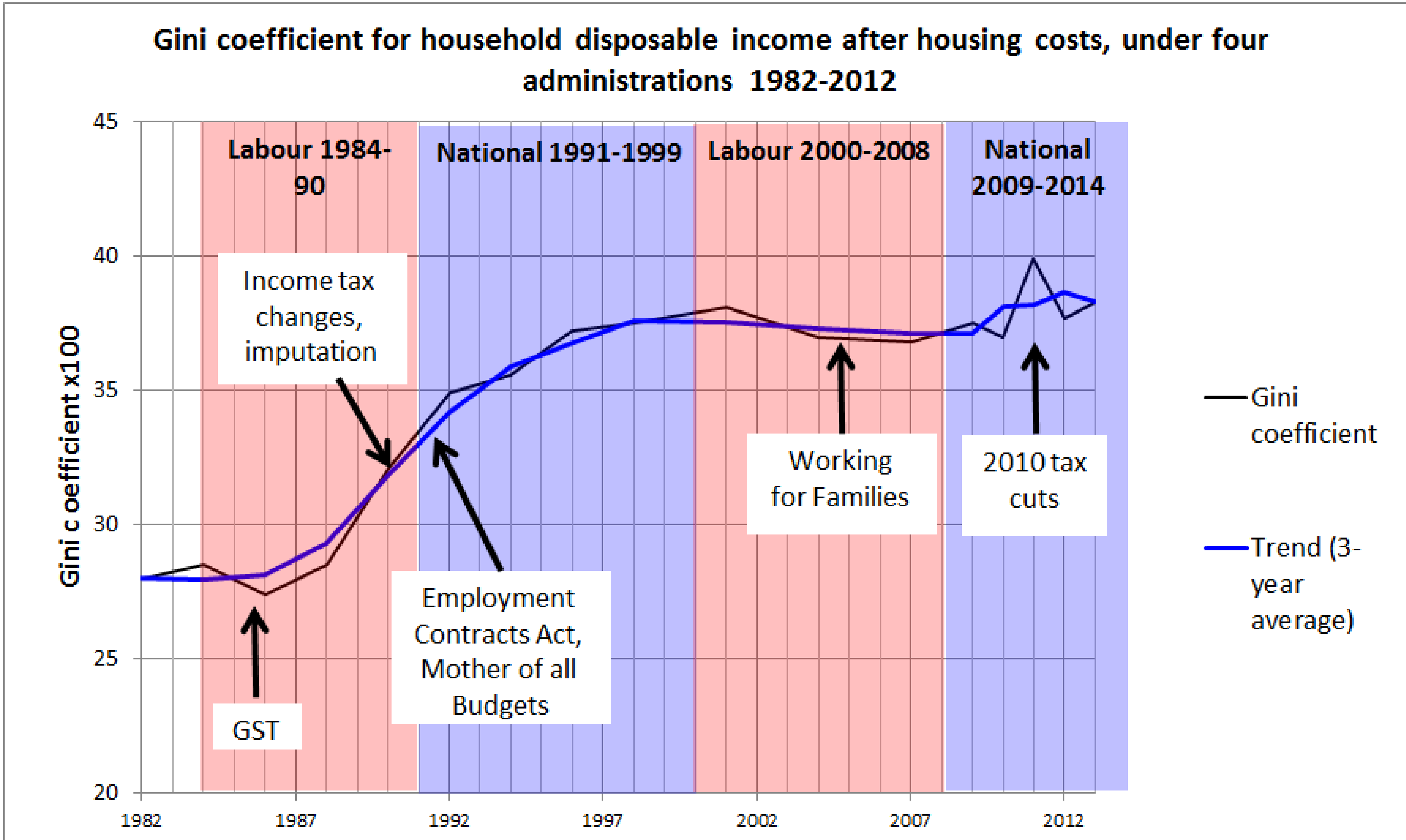
Emerging economies are like Anglos except for Colombia



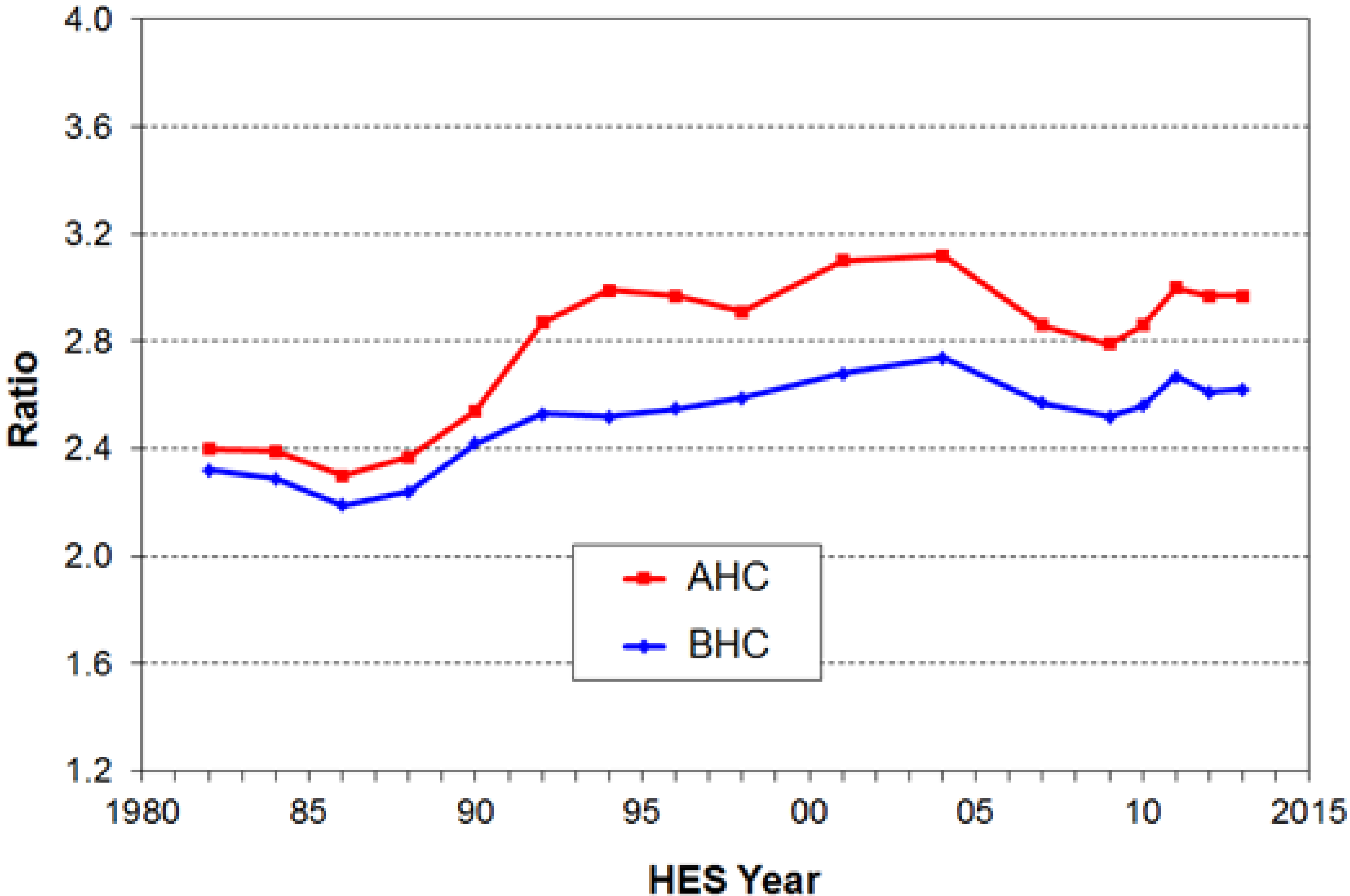
Measured by the top percentile income share, income inequality rose in emerging countries since the 1980s, but ranks below U.S. level in 2000-2010. Sources and series: see piketty.pse.ens.fr/capital21c.

Now consider recent developments in New Zealand

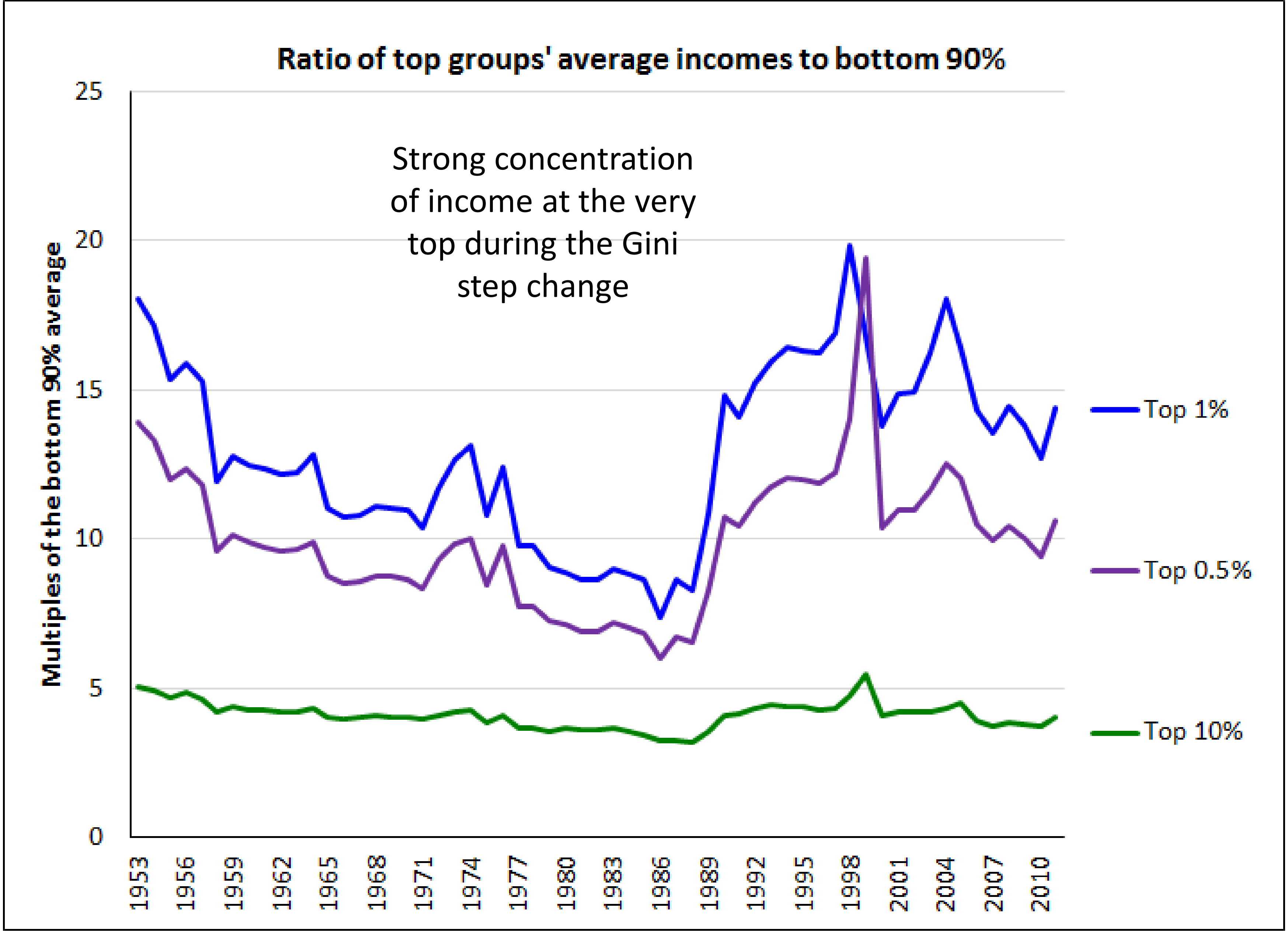
Step-change in income inequality 1987-1994; then minor variations to 2013



P80/P20 ratio



Bryan Perry *Household incomes in New Zealand:Trends in indicators of inequality and hardship 1982 to 2013*, Wellington: Ministry of Social Development, July 2014, 2014 Figure D.11 and Table D.7 and D.8

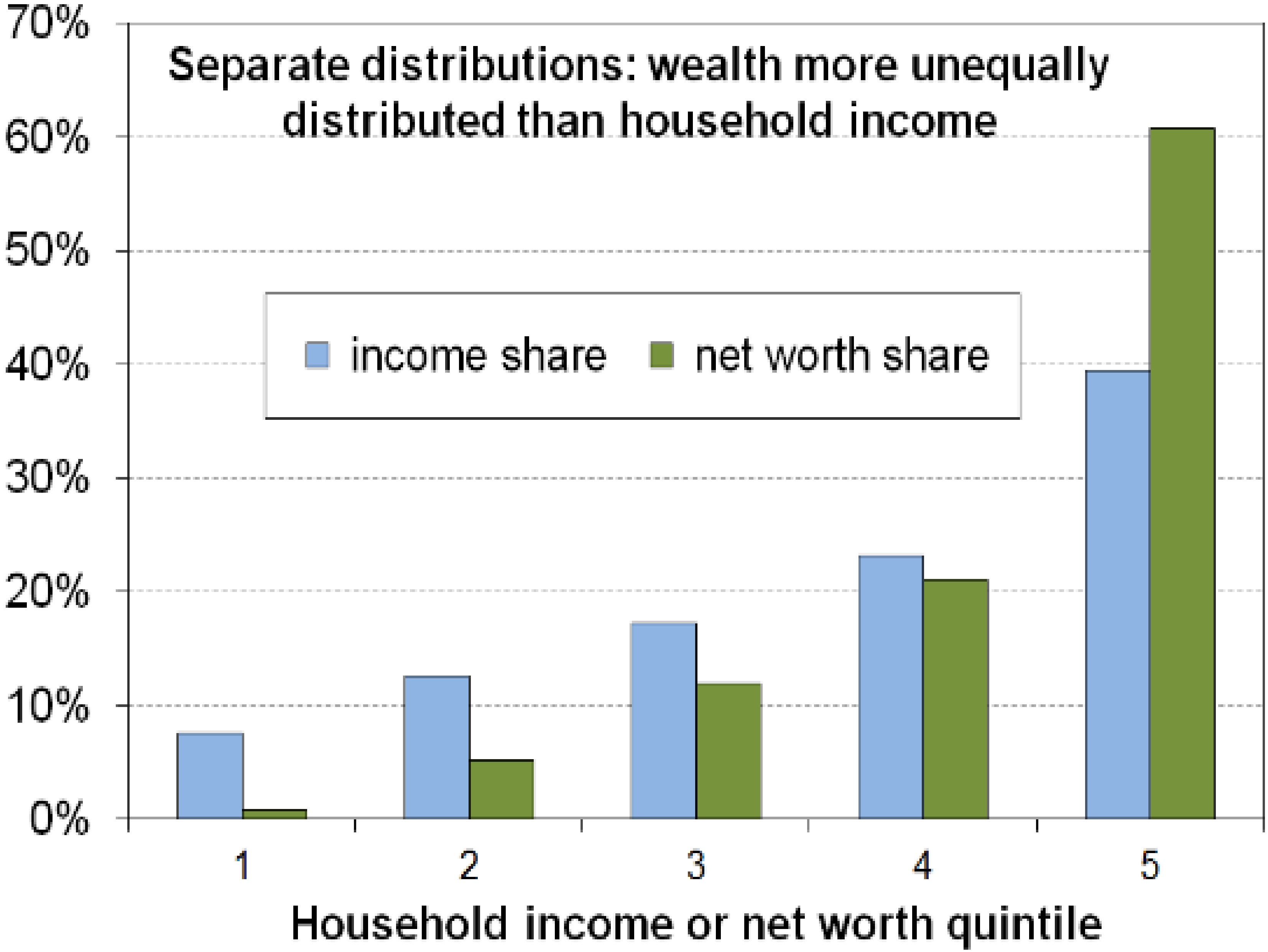


http://union.org.nz/sites/union.org.nz/files/CTU_income_gap.pdf , based on data from http://topincomes.g-mond.parisschoolofeconomics.eu/#Database :

Direct data on wealth is scarce but points to rising inequality

- Wealth Gini scores are typically two to three times those for income.
- In New Zealand, those in the top income decile receive close to 25% of gross income, while those in the top wealth decile hold 50% of the total wealth.
- The limited data available on wealth mobility points strongly to low mobility / high immobility for those with very high wealth.

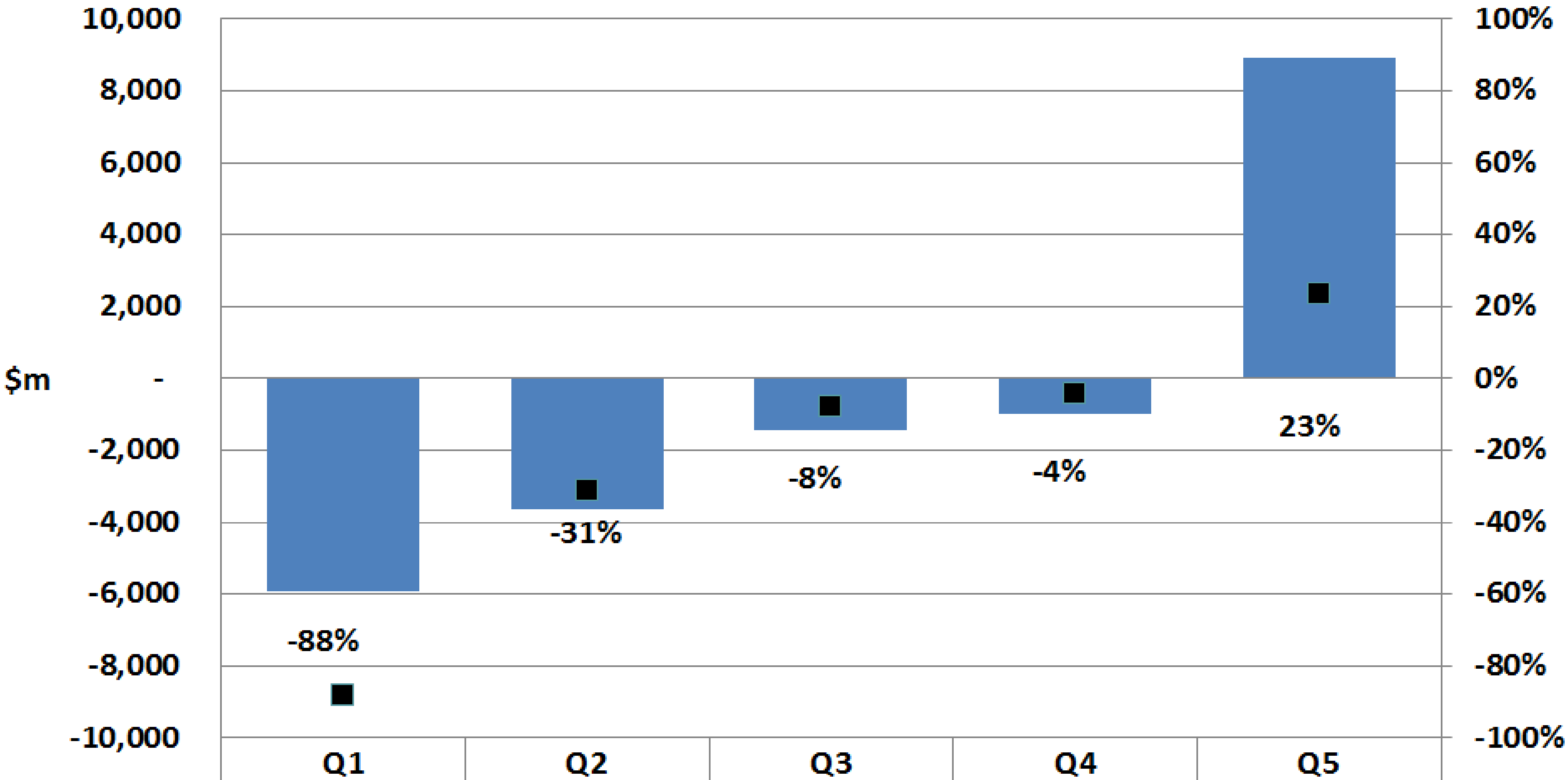
Bryan Perry, *Household incomes in New Zealand: Trends in indicators of inequality and hardship 1982 to 2013* Ministry of Social Development July 2014 p.20., https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/monitoring/household-incomes/index.html



Bryan Perry, *Household incomes in New Zealand: Trends in indicators of inequality and hardship 1982 to 2013* Ministry of Social Development July 2014 p.20, https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/monitoring/household-incomes/index.html

The great disequalising of 1989-94 pushed low-income groups into dis-saving. As of 2007 we see:

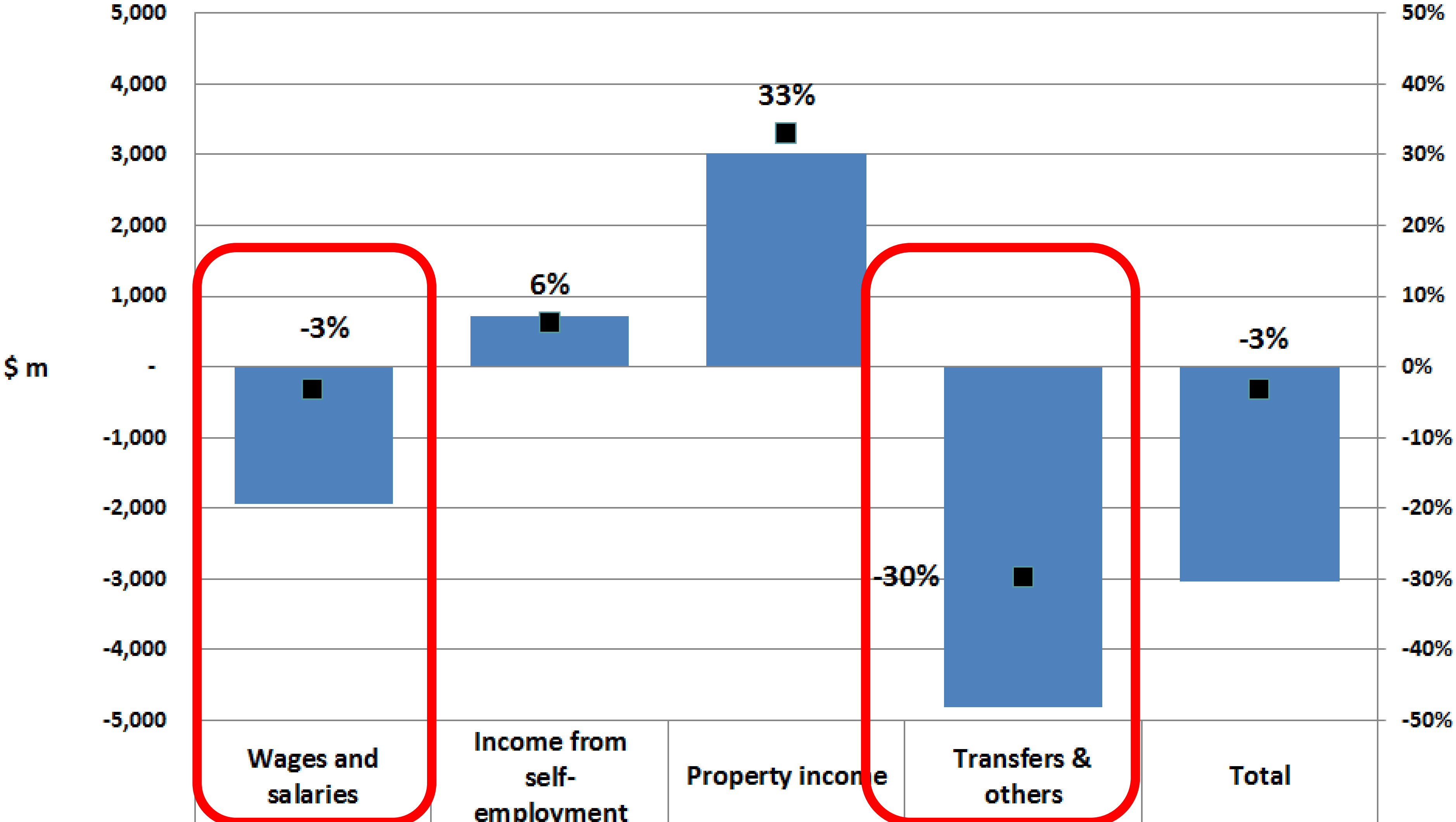
HH Gross Saving (LH scale) and Saving rate (RH scale) by Quintile



	Q1	Q2	Q3	Q4	Q5
Saving	-5,917	-3,634	-1,421	-977	8,910
Saving rate	-88%	-31%	-8%	-4%	23%

Jeff Cope (Principal Economic Statistician, Statistics NZ), *Measuring Household Distributions within a National Accounts Framework* , May 2013

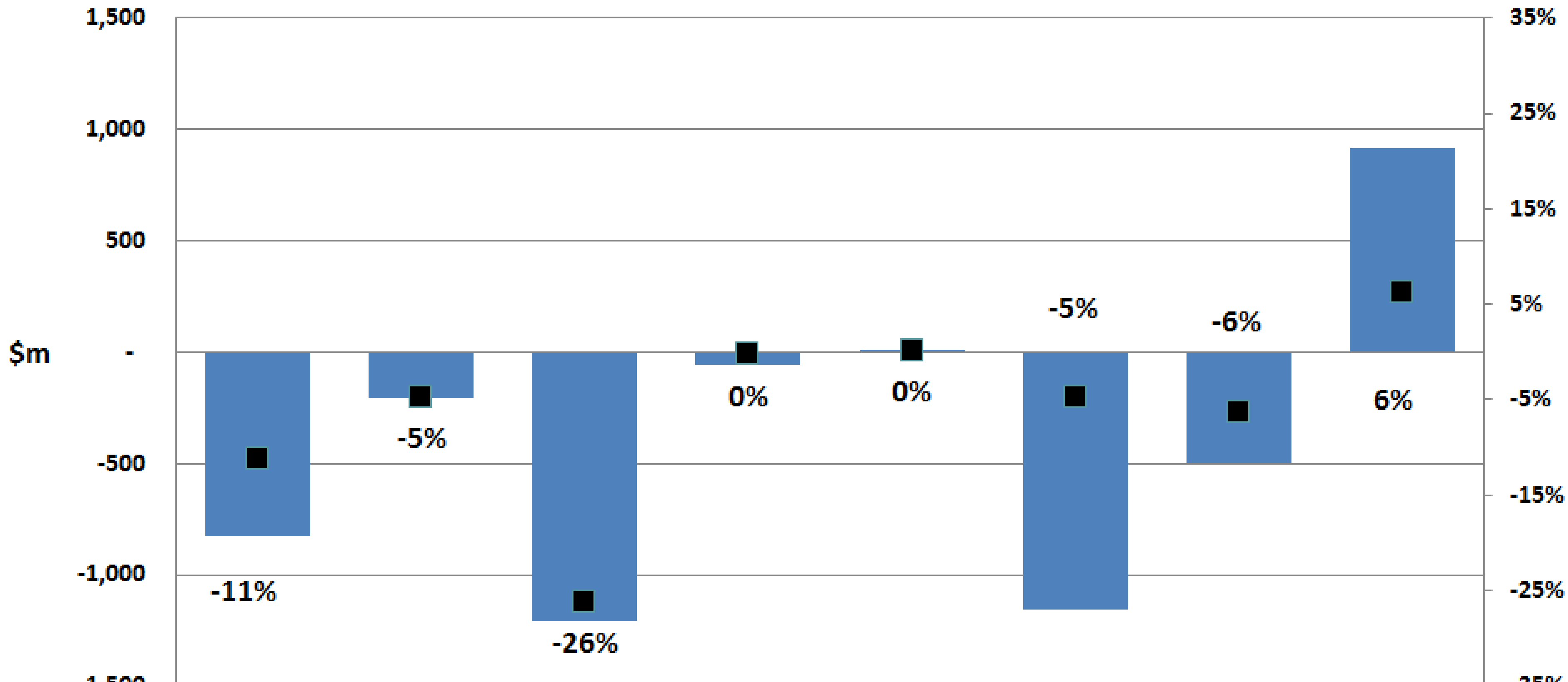
Gross Saving (LH scale) and Saving Rate (RH scale) by Main Income Source



	Wages and salaries	Income from self-employment	Property income	Transfers & others	Total
Saving	-1,945	711	3,018	-4,825	-3,040
Saving Rate	-3%	6%	33%	-30%	-3%

Jeff Cope (Principal Economic Statistician, Statistics NZ),
Measuring Household Distributions within a National Accounts Framework , May 2013

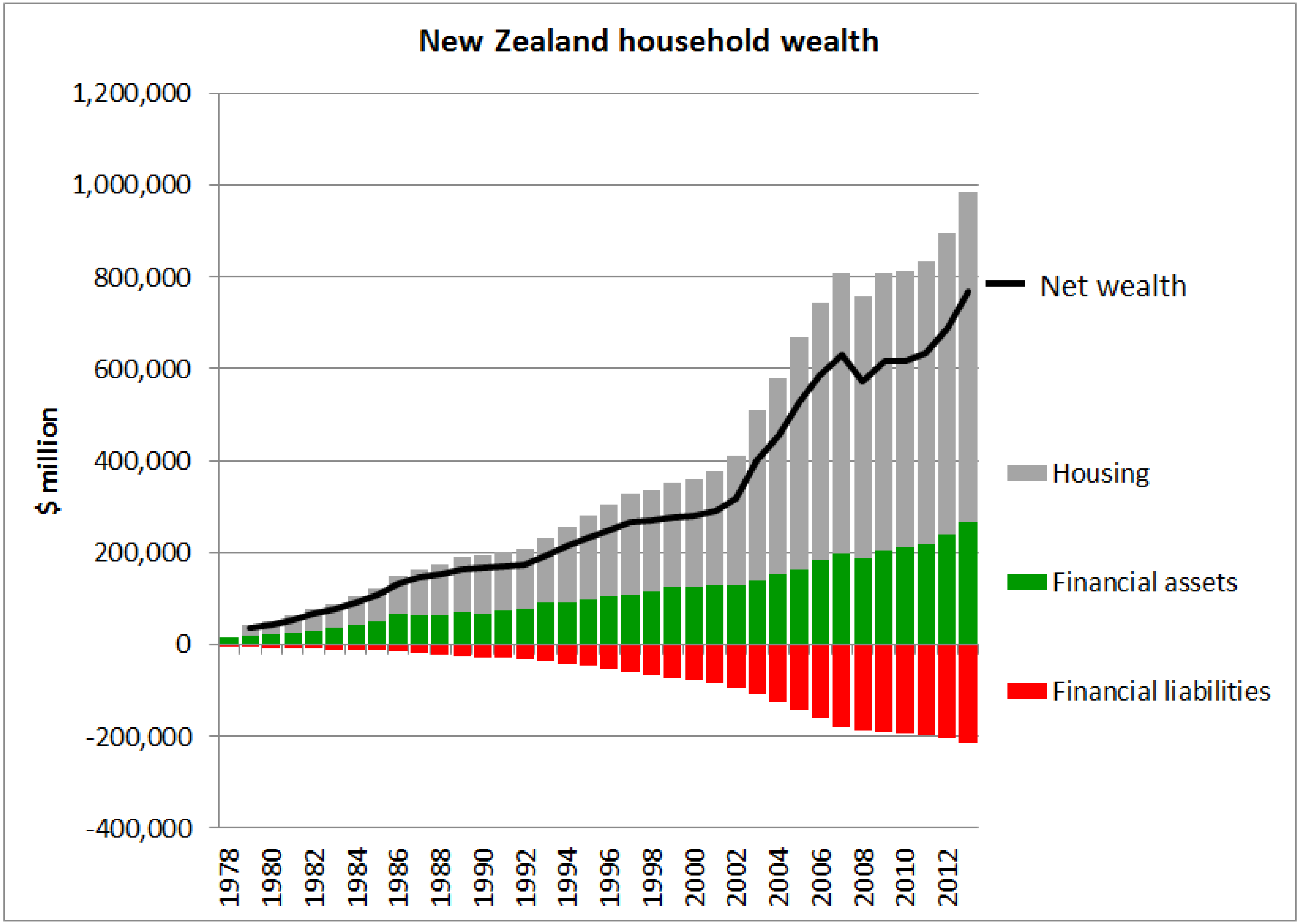
Gross Saving and Saving rate by HH type



	Single less 65	Single 65 and older	Single with children living at home	Two adults less 65 no child living at home	Two adults at least one 65 and older no child living at home	Two adults with less than 3 children living at home	Two adults with at least 3 children living at home	Others
Saving	-831	-209	-1,213	-60	12	-1,153	-498	912
Saving rate	-11%	-5%	-26%	0%	0%	-5%	-6%	6%

Jeff Cope (Principal Economic Statistician, Statistics NZ),
Measuring Household Distributions
within a National Accounts Framework , May 2013

Bottom line: poor non-property-owning households have seen their balance sheets weakening for over two decades



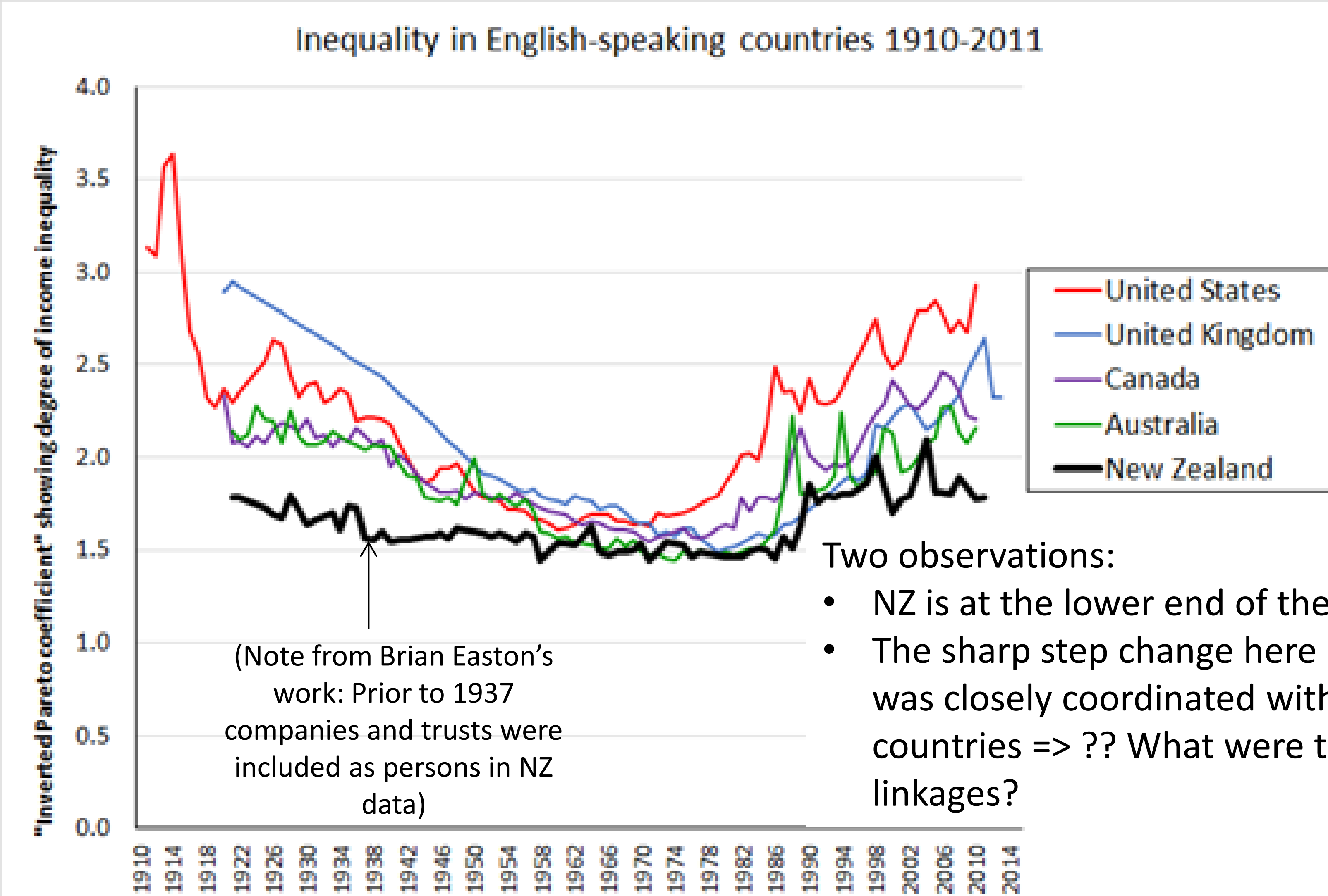
Source for data: http://www.rbnz.govt.nz/statistics/tables/c18/hc18.xls

All that local story feels as though it was all driven by <u>local</u> policies and changes

- It’s good for the national ego and the self-importance of policy wonks to run all the rising-inequality narrative as if we were a closed economy

- In fact, however
  – we’re about as open as you can get
  – we can see wealth, people and ideas pouring in and out across our borders; and
  – The data says cross-country convergence is for real:

Putting New Zealand into the international context: Pareto coefficients



Two observations:

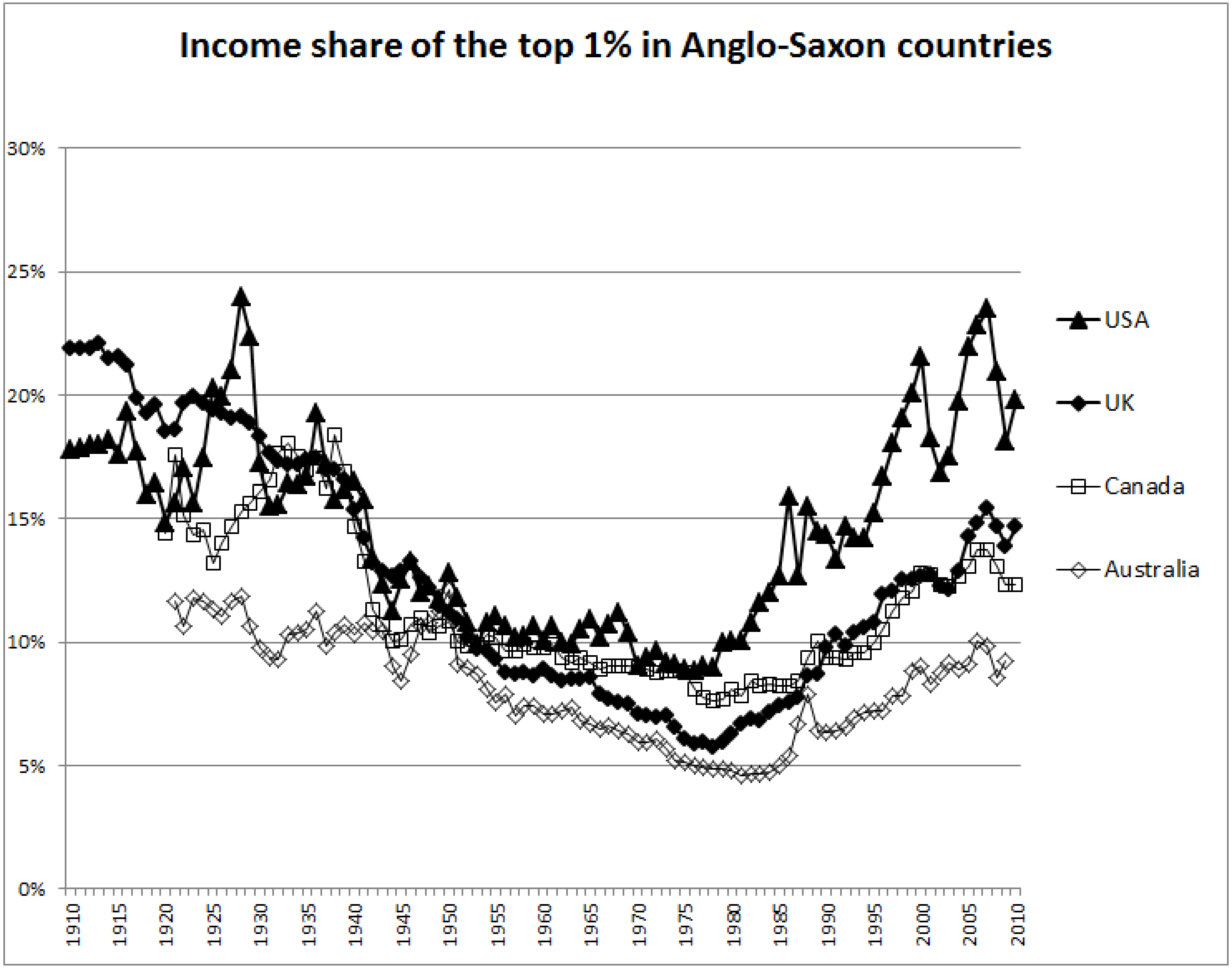
- NZ is at the lower end of the anglos
- The sharp step change here 1987-94 was closely coordinated with other countries => ?? What were the linkages?

Source: http://topincomes.g-mond.parisschoolofeconomics.eu/#Database accessed May 2014

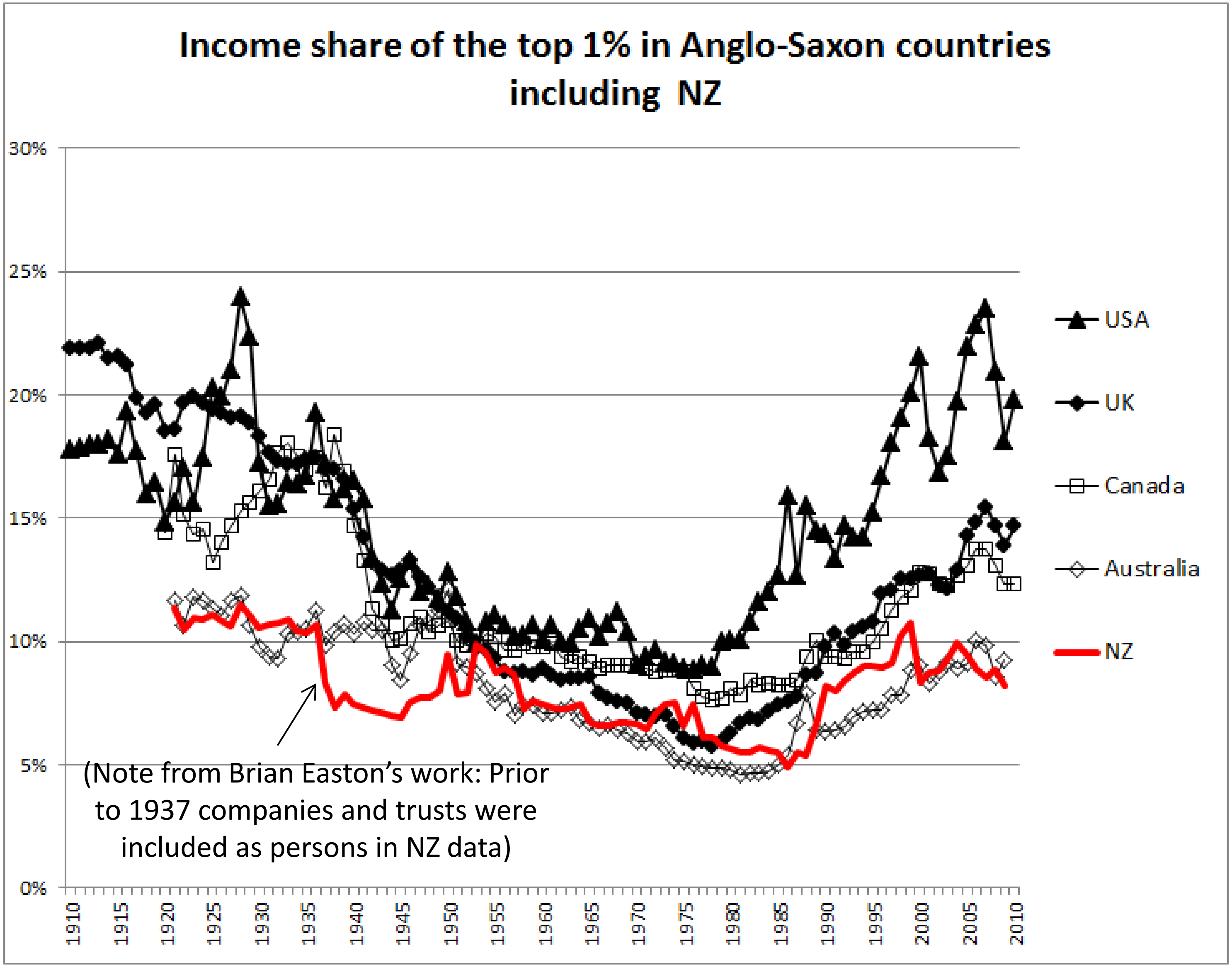
Think of the forces driving inequality in wealth ownership, hence personal income concentration - the top 1% story

- Culture, institutions, policy approaches and policy settings of key parameters such as tax rates have a tendency to converge across countries but especially across cultural convergence clubs such as the anglos
- The richest people are the most internationally mobile
- There is a lively transnational managerial culture covering both business and government
- So one could perhaps expect the top 1% fraction to converge?

and we get….

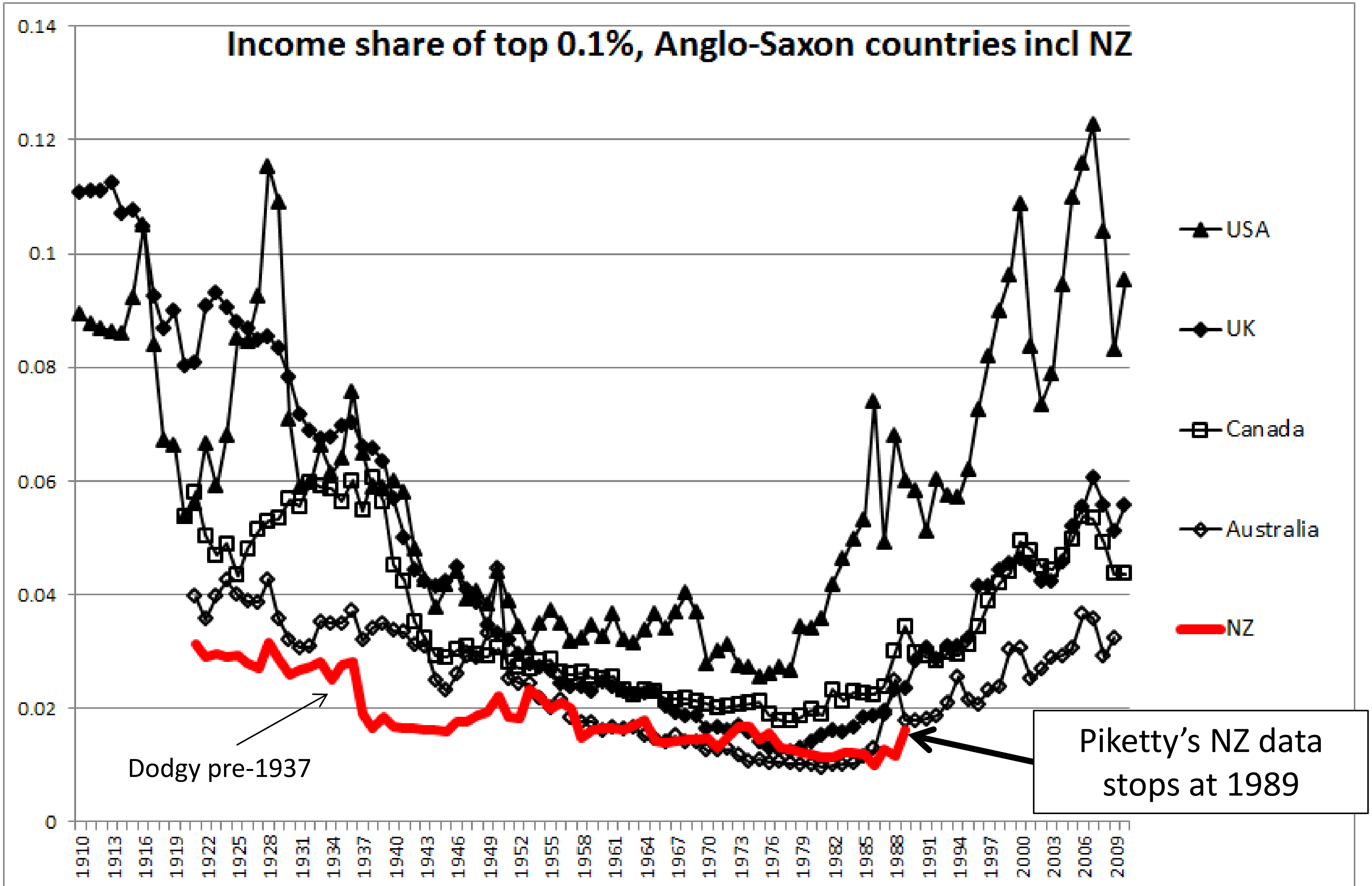

Income share of the top 1% in Anglo-Saxon countries
30%
25%
20%
15%
10%
5%
0%
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
USA
UK
Canada
Australia

and we get….



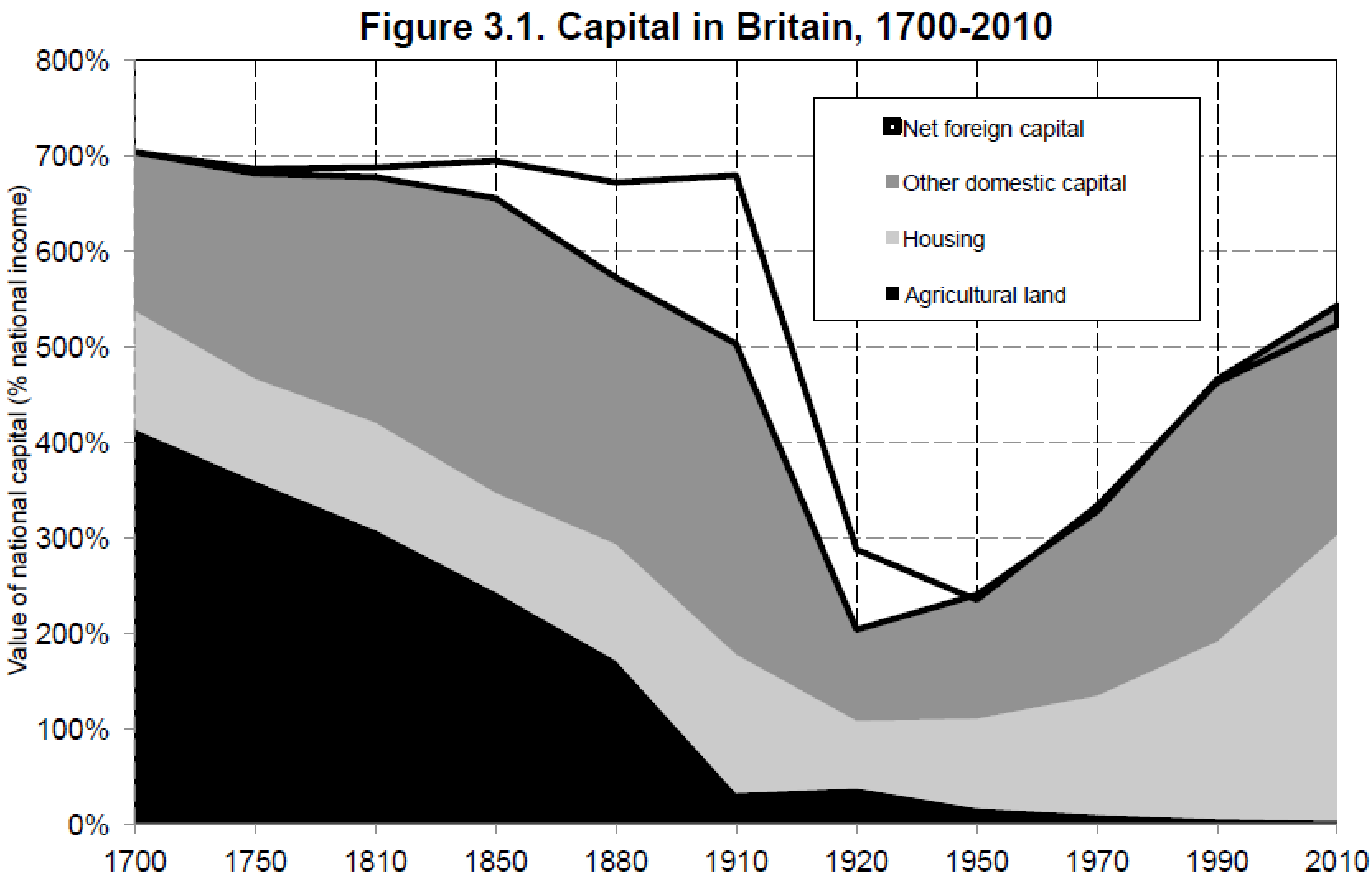
Income share of the top 1% in Anglo-Saxon countries including NZ
30%
25%
20%
15%
10%
5%
0%
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
USA
UK
Canada
Australia
NZ
(Note from Brian Easton's work: Prior to 1937 companies and trusts were included as persons in NZ data)

And the 0.1% shares:



Turn now to the wealth stock

- Piketty's work has focused on large rich countries over a couple of centuries
- Piketty and Zucman 2013 produced wealth stock data for Australia from 1960 to 2011
- For New Zealand I have located at this stage only limited data:
  - Capital stock from 1950
  - Household wealth from 1979
  - International investment position from 1978 but thorough data only from 1989
  - Government net worth from mid-1990s
- Recall the patterns Piketty found elsewhere:



National capital is worth about 7 years of national income in Britain in 1700 (including 4 in agricultural land).

Sources and series: see piketty.pse.ens.fr/capital21c.

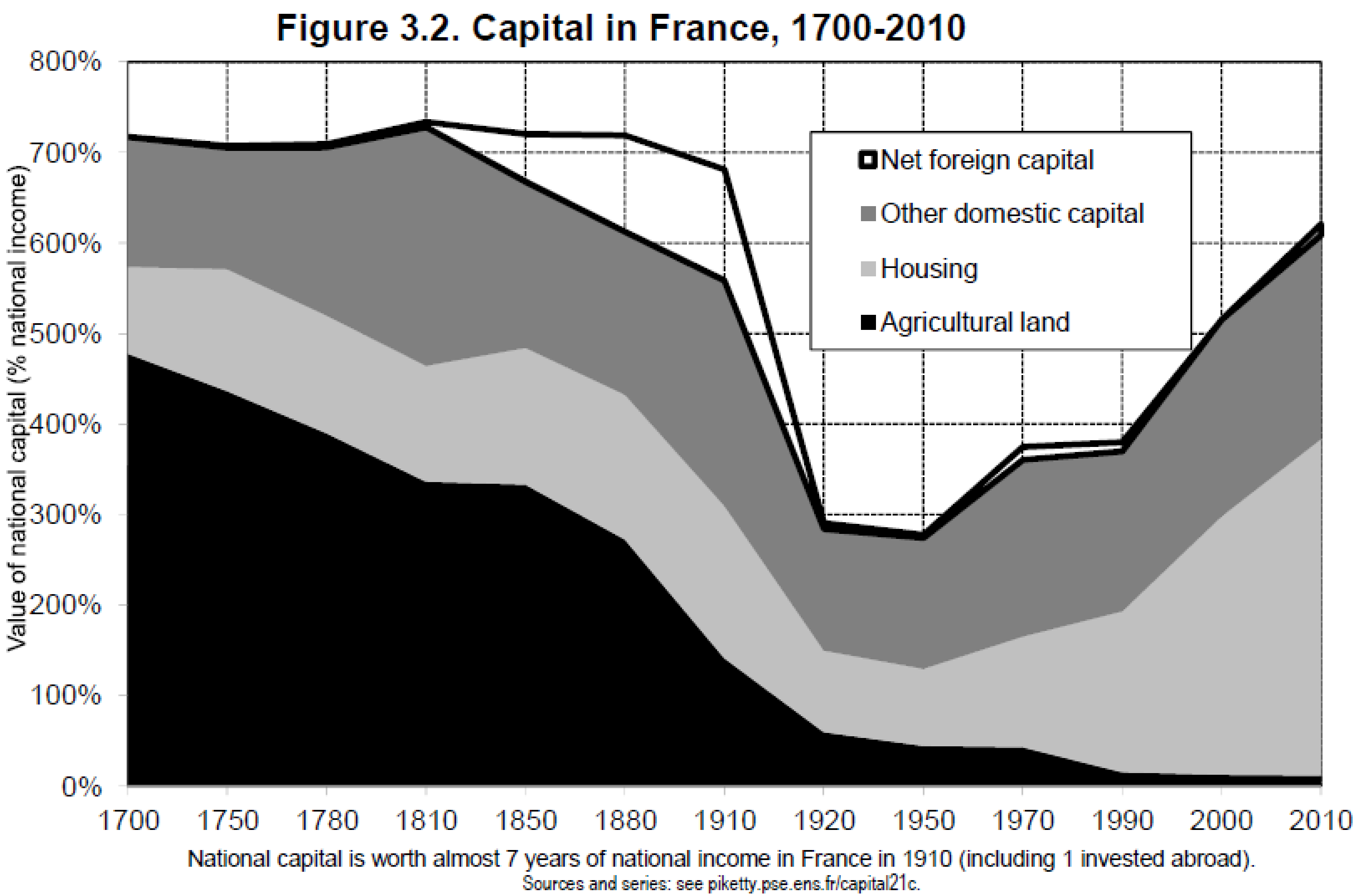
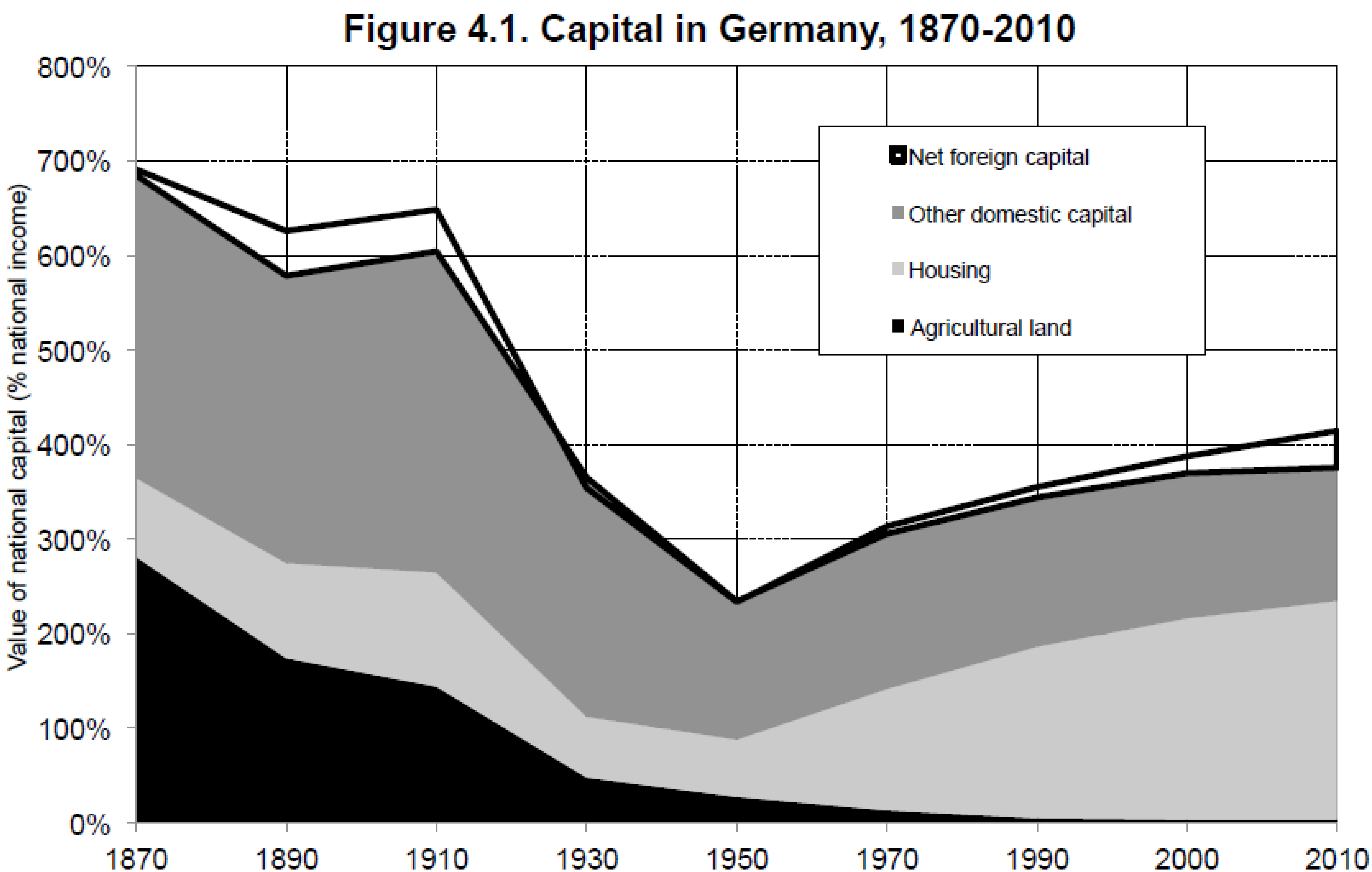
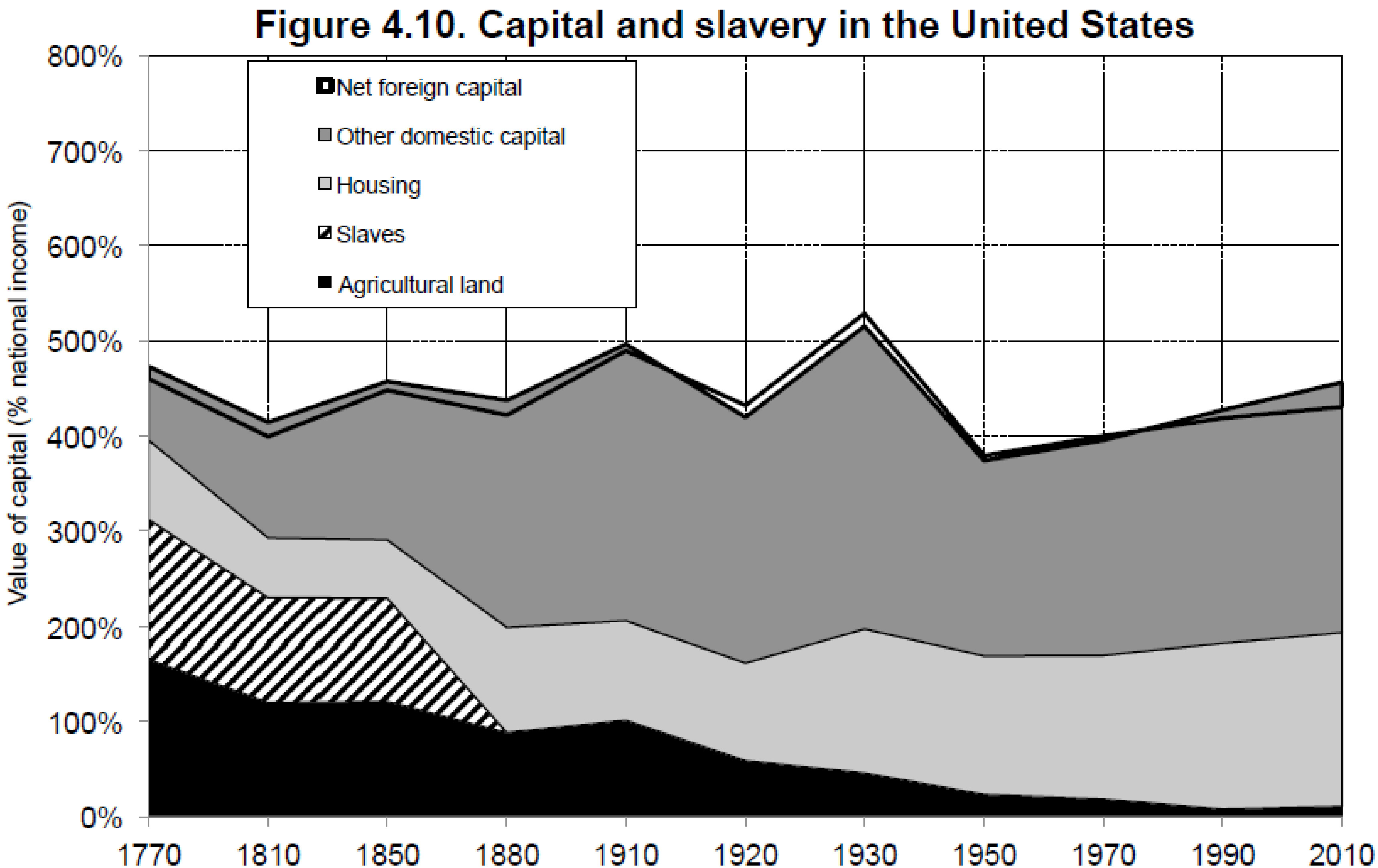


Figure 3.2. Capital in France, 1700-2010
800%
700%
600%
500%
400%
300%
200%
100%
0%
Value of national capital (% national income)
1700
1750
1780
1810
1850
1880
1910
1920
1950
1970
1990
2000
2010
Net foreign capital
Other domestic capital
Housing
Agricultural land
National capital is worth almost 7 years of national income in France in 1910 (including 1 invested abroad).
Sources and series: see piketty.pse.ens.fr/capital21c.

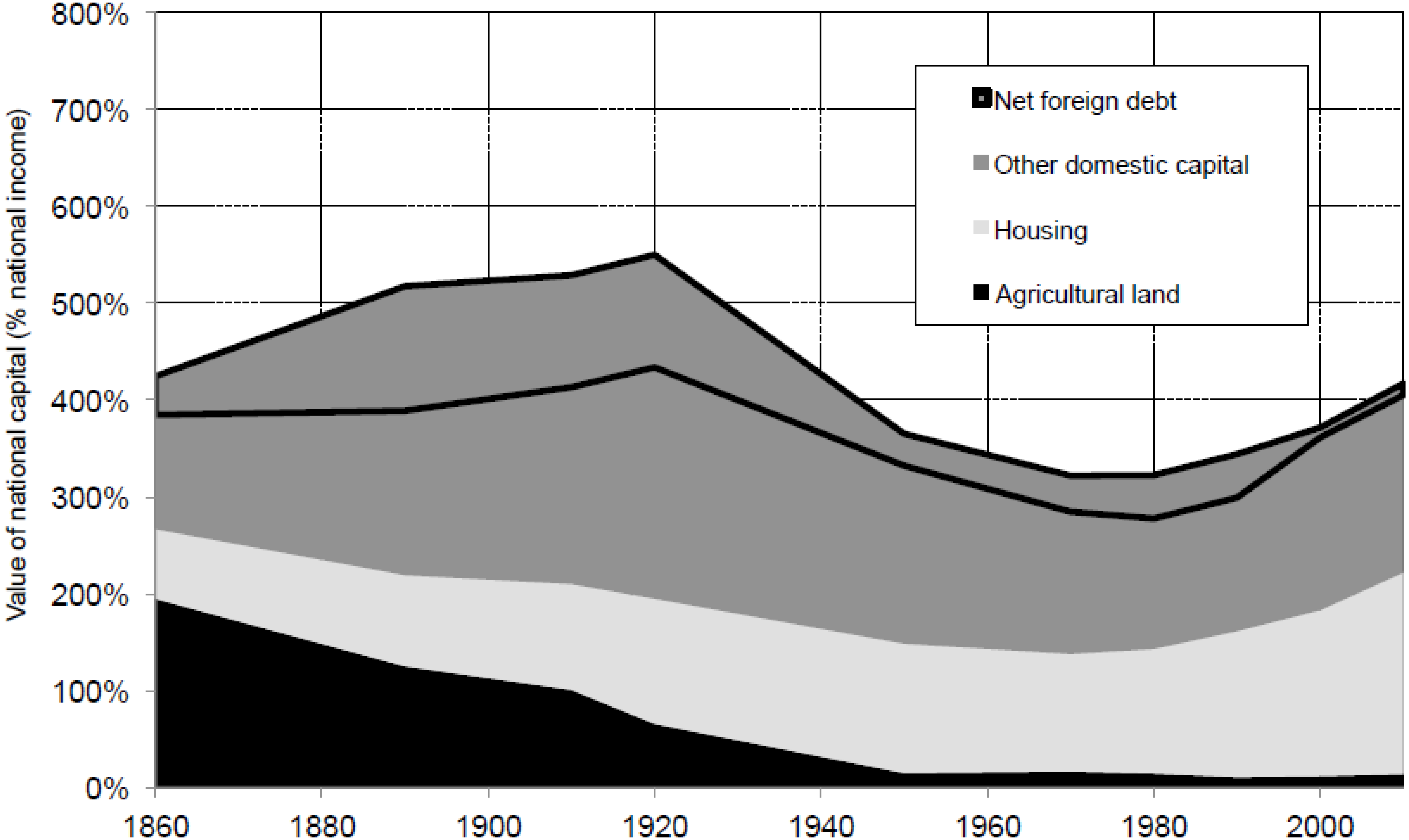


National capital is worth 6.5 years of national income in Germany in 1910 (incl. about 0.5 year invested abroad). Sources and series: see piketty.pse.ens.fr/capital21c.



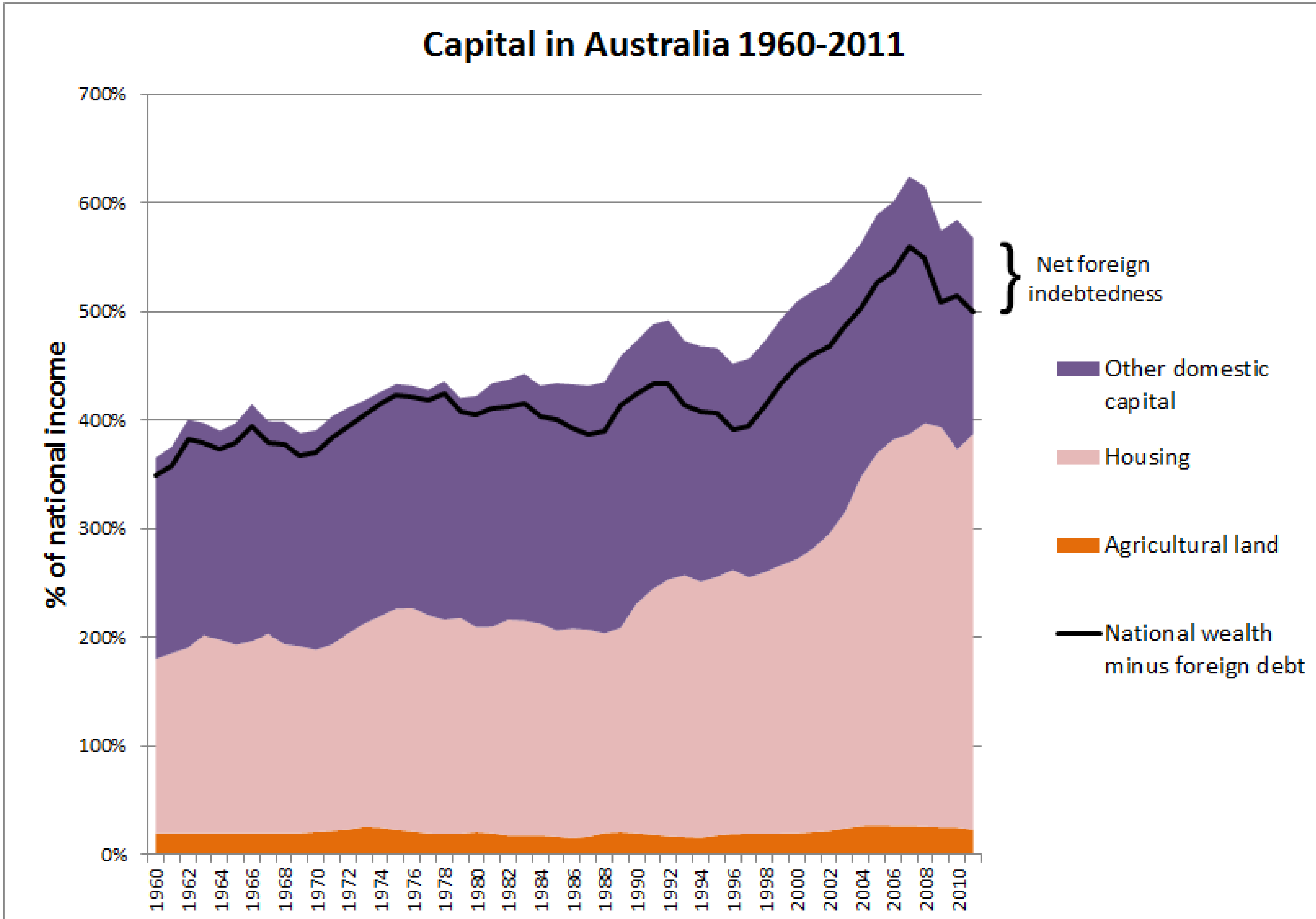
The market value of slaves was about 1.5 years of U.S. national income around 1770 (as mush as land).
Sources and series: see piketty.pse.ens.fr/capital21c.

Figure 4.9. Capital in Canada, 1860-2010



In Canada, a substantial part of domestic capital has always been helf by the rest of the world, so that national capital has always been less than domsetic capital. Sources and series: see piketty.pse.ens.fr/capital21c

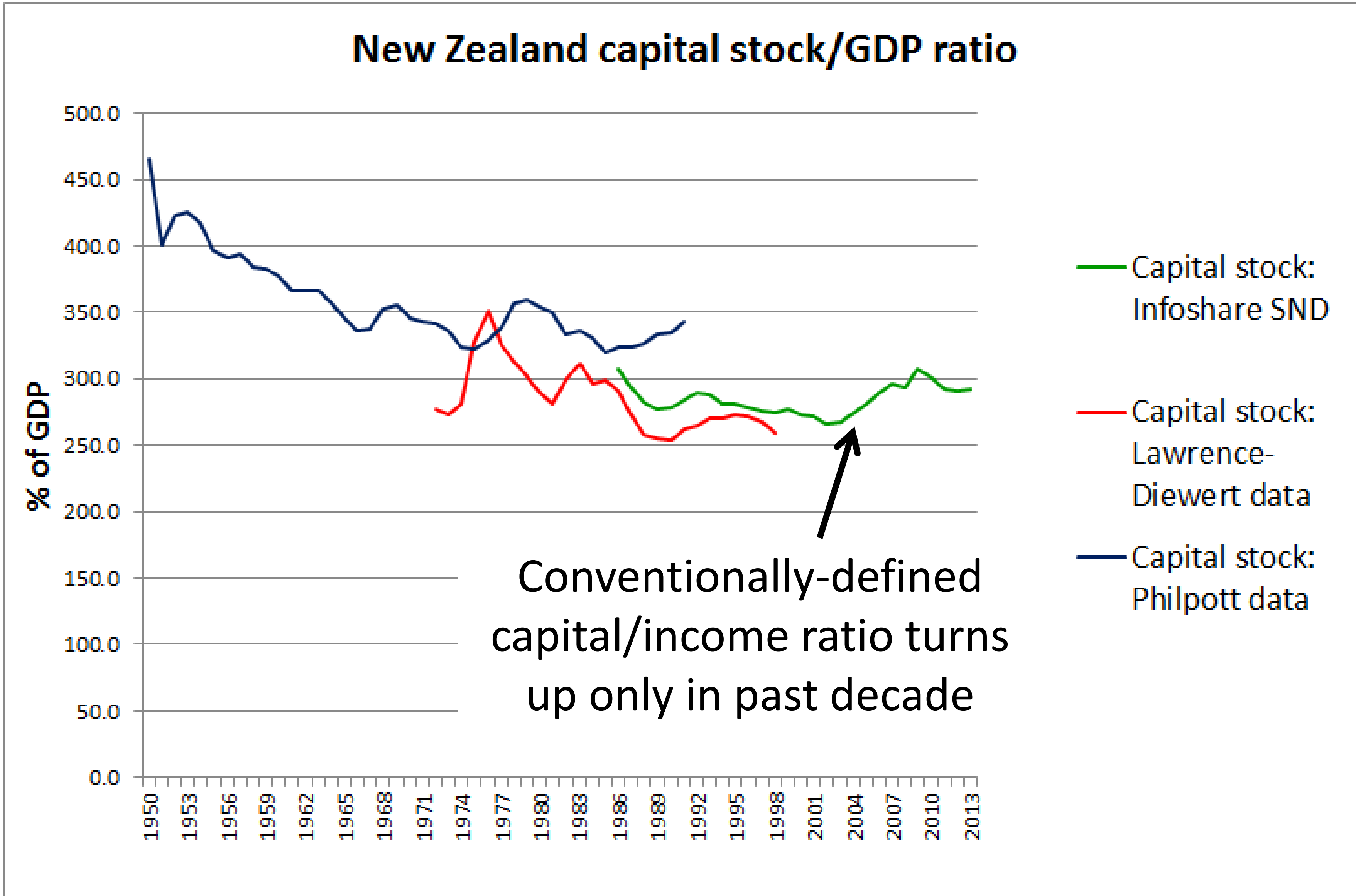
Piketty and Zucman's Australia data for just the last half-century



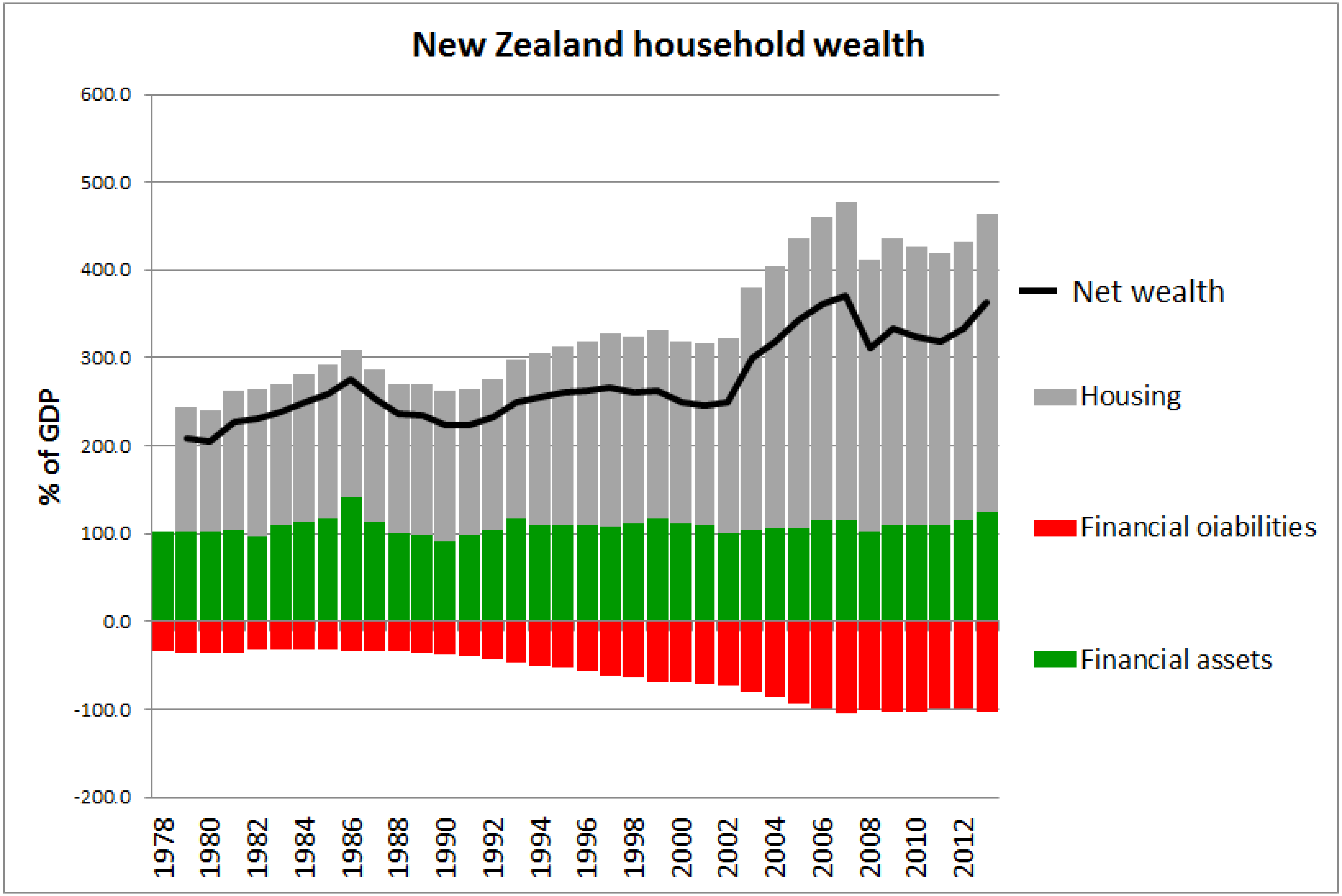
http://piketty.pse.ens.fr/files/capitalisback/Australia.xl s accessed September2014

How about NZ?

Take first the conventional narrow capital measure

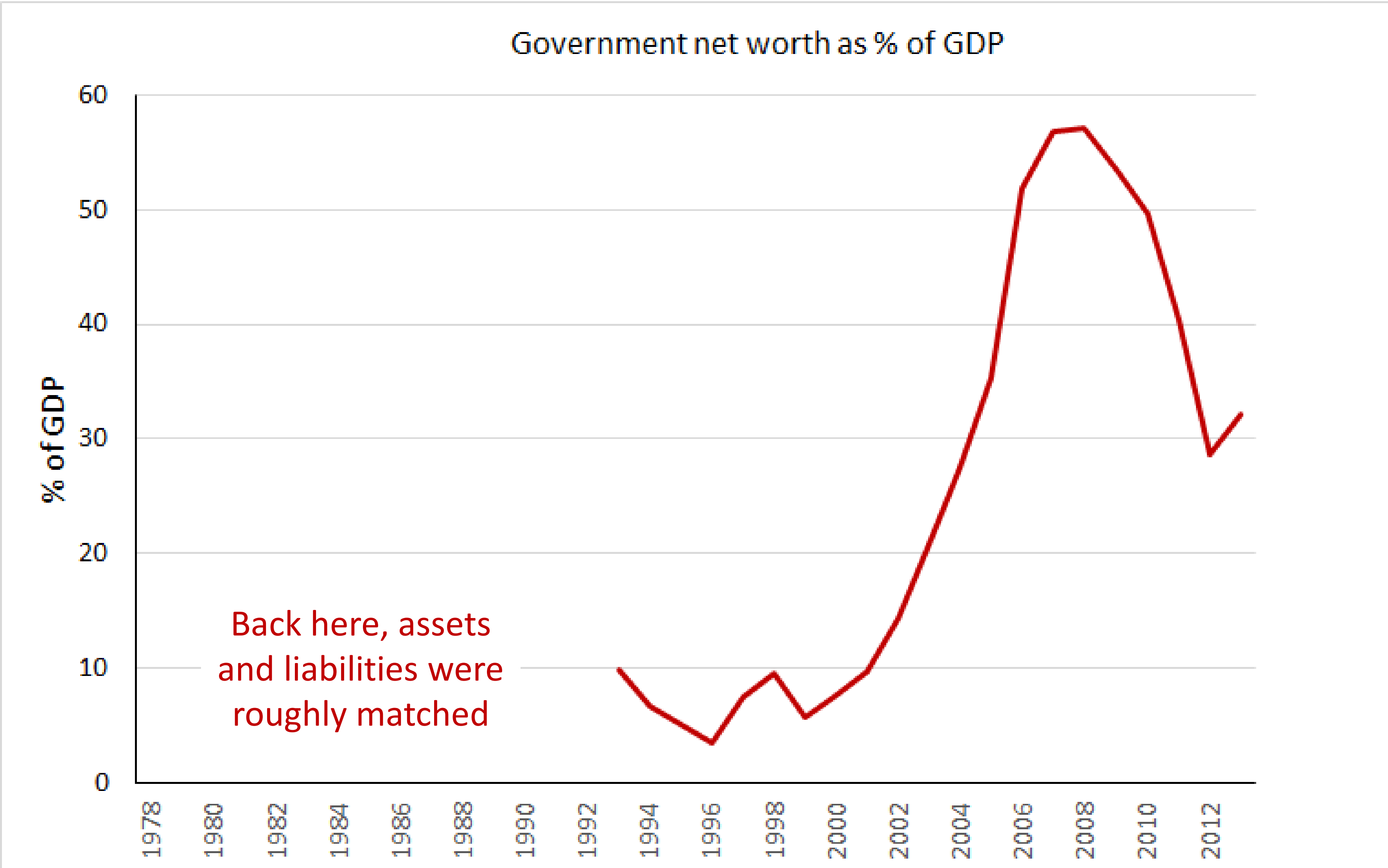


Now widen the focus to Piketty's broader wealth version

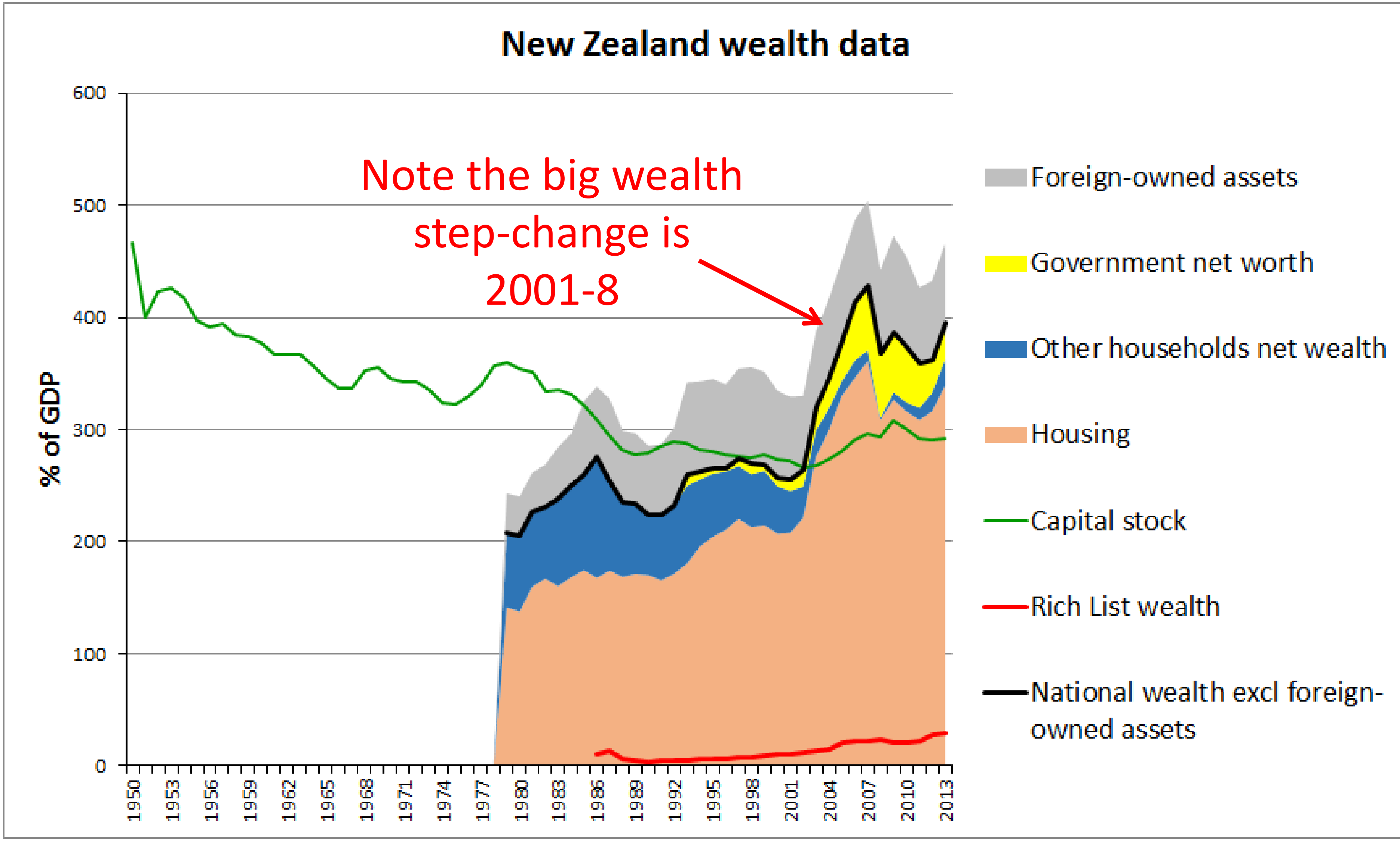


Source for data: http://www.rbnz.govt.nz/statistics/tables/c18/hc18.xls

Government net worth from 1992 (no data before that at this stage)



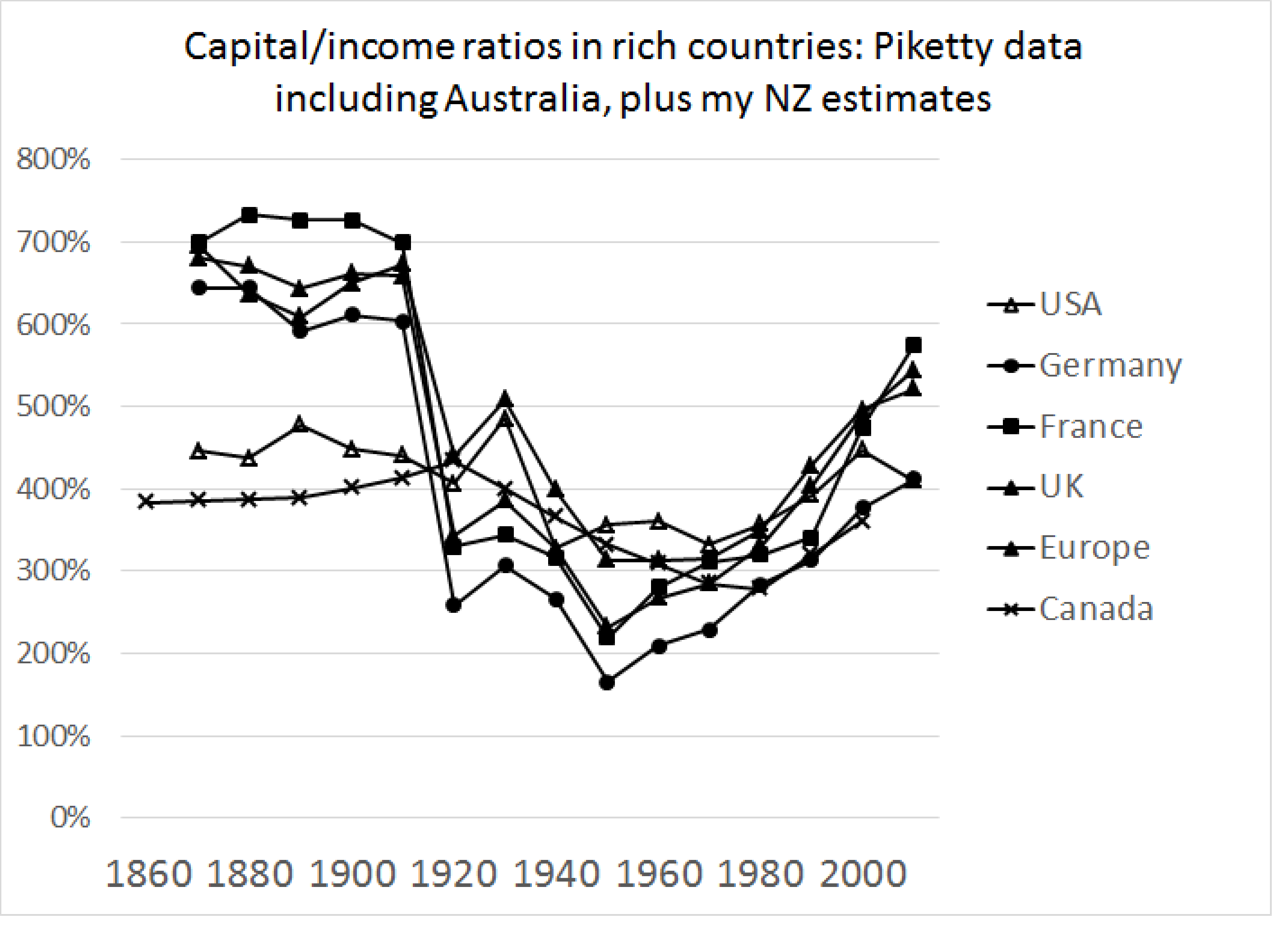
Source: Government financial statements


New Zealand wealth data
% of GDP
600
500
400
300
200
100
0
1950
1953
1956
1959
1962
1965
1968
1971
1974
1977
1980
1983
1986
1989
1992
1995
1998
2001
2004
2007
2010
2013
Note the big wealth step-change is 2001-8
Foreign-owned assets
Government net worth
Other households net wealth
Housing
Capital stock
Rich List wealth
National wealth excl foreign-owned assets

Putting our small open economy into the global picture

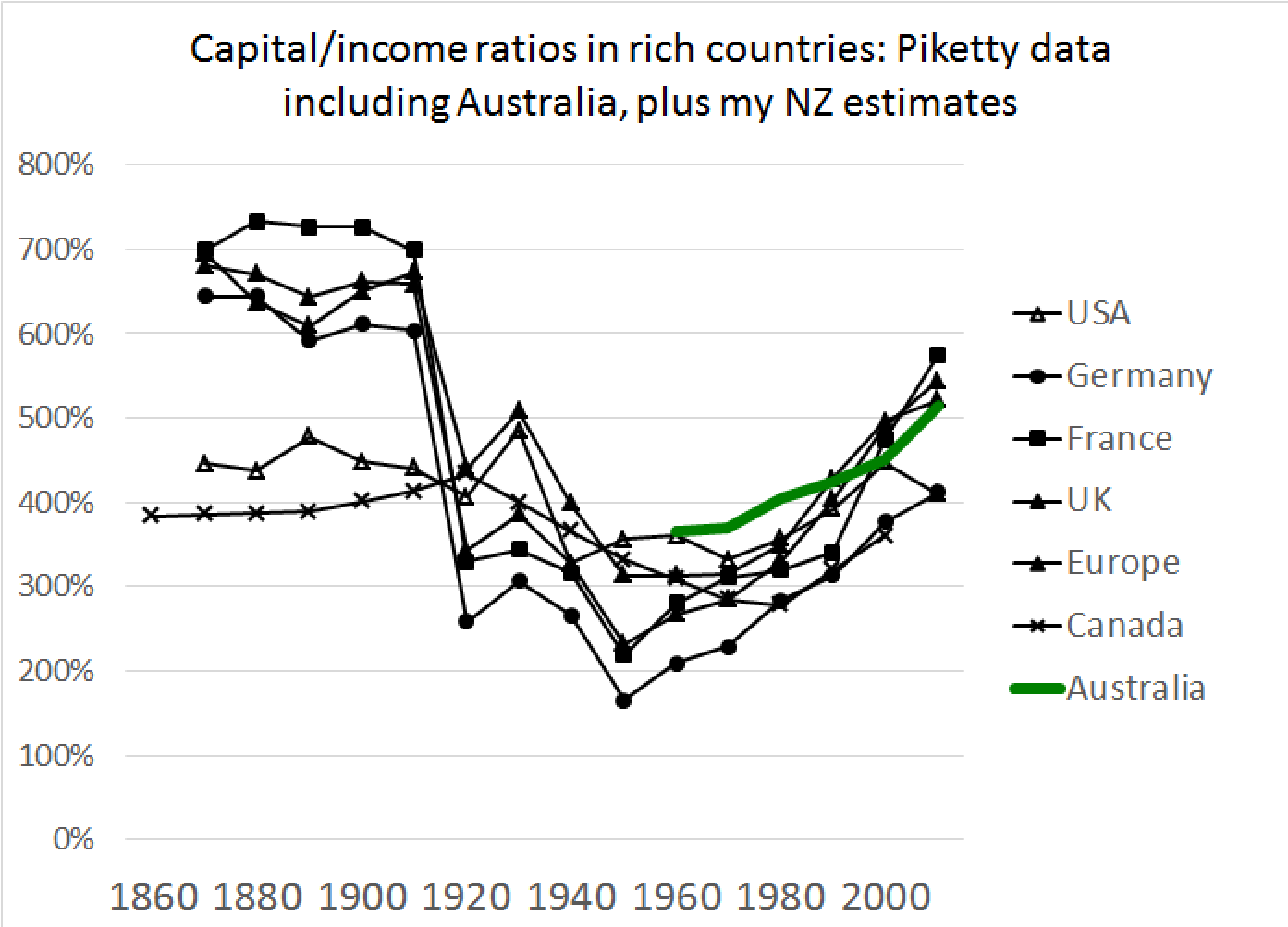
- New Zealand is in a rich convergence club where the pace is set by the big anglos
- The three key variables determining β are *s*, *i*, and *g*
- There is free cross-country movement of funds and skilled people, which tends to equalise *r* across the club
- There is a tendency for *g* to be common across countries (because technology diffuses and population growth rates are pretty similar)
- Cross-country variations in domestic *s* are smoothed out by international capital flows
- So if we believe Piketty we would be looking for evidence of convergence in β

and we get….



Capital/income ratios in rich countries: Piketty data including Australia, plus my NZ estimates
800%
700%
600%
500%
400%
300%
200%
100%
0%
1860
1880
1900
1920
1940
1960
1980
2000
USA
Germany
France
UK
Europe
Canada

and we get….



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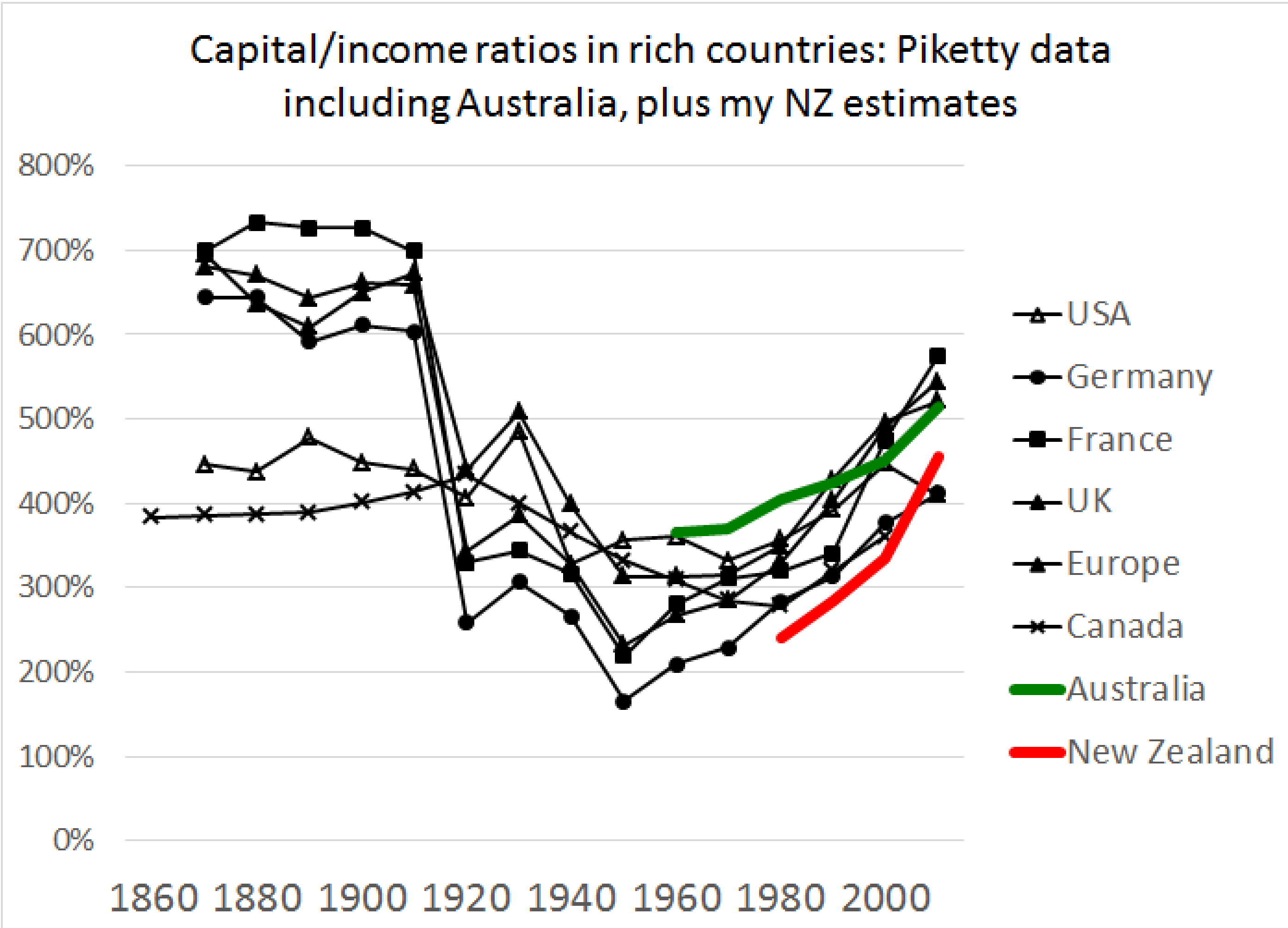
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1960
1980
2000
USA
Germany
France
UK
Europe
Canada
Australia
New Zealand

Concluding thoughts:

- The big forces are global;
- The detailed differences are local
- Institutions and policies do matter – but they are countervailing forces in the open economy, not prime drivers

- To break out of the convergence club probably requires restricting one or more of the linkage channels – i.e. flows of capital, people, information and political ideas