Inherited wealth over the path of development: Sweden, 1810–2010

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Presentation at SEEK, 16 May 2014

Outline

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- Inherited wealth as a share of total wealth in Sweden
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Introduction

Equality of opportunity

Wealth mobility – intergenerational and intragenerational

Two ways to become wealthy:

- Savings out of one's income – new wealth
- Transfers from others – old wealth

Differences over time and space

The inheritance flow in Sweden

- **Economic inheritance flow (*main specification*)**
  - B = Flow of inherited wealth at current market-values (estimated)
  - Y = National income
  - W = Private wealth
  - β = Wealth-income ratio (W/Y)
  - m = Population mortality
  - μ = Ratio of average wealth of deceased to average wealth of living
  - μ* = μ corrected for *inter vivos* gifts (+5–20%)

The inheritance-income ratio defined as (Piketty, 2011):

$$b_Y = B/Y = m \cdot \mu^* \cdot \beta$$

- **Fiscal inheritance flow**
  - Observed estates at death, usually from estate tax returns
  - Only observed for a few years between 1873 and 2005

m

- The population mortality rate is defined as the number of adult (18+) deaths, *M*, divided by the adult living population, *N*, as follows:

$$m = M/N$$

- Data on mortality come from the Human Mortality Database (www.mortality.org).

μ* (1)

- We use historical information about age-wealth distributions and age-specific mortality rates in age classes a for the living (l) and deceased (d) populations:

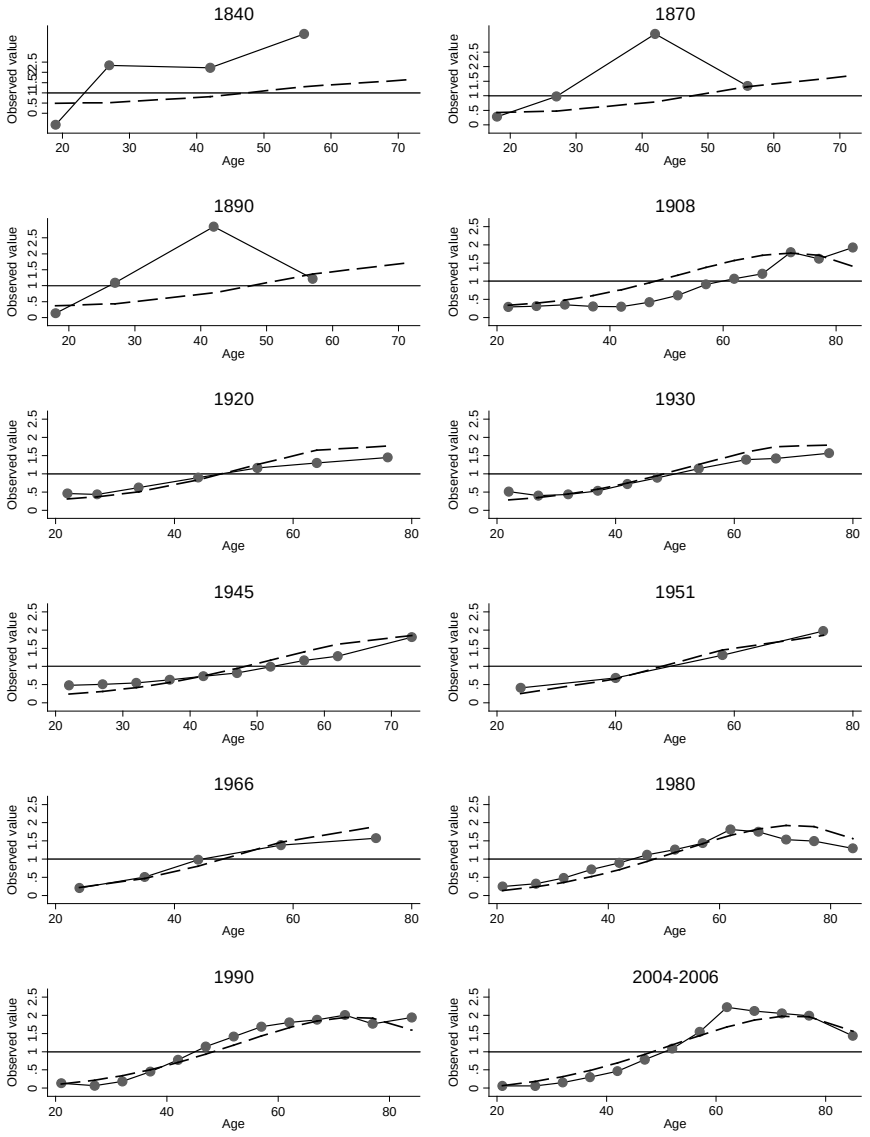
$$\mu = \frac{\bar{W}_d}{\bar{W}_l} = \sum_a \frac{\bar{W}_{l,a} \cdot M_a/M}{\bar{W}_{l,a}} = \sum_a \frac{M_a/M}{\bar{W}_{l,a}/\bar{W}_l}$$

- We observe $(\bar{W}_{l,a}/\bar{W}_l)$ from age-wealth distributions of the living reported by Censuses and a few previous Swedish studies of probate records (Lindgren 2002; Perlinge, 2005).

- We observe M_a in Human Mortality Database

Estimated μ

- We estimate annual $(\bar{W}_{l,a}/\bar{W}_l)_t$ using **simulation approach.**
- Run regressions of observed historical data onto age and year polynomials:
- $$\left(\frac{\bar{W}_{l,a}}{\bar{W}_l}\right)_t = a + b\sum Age_a + cYear + e_t$$
- Then fit annual age-wealth distributions for 1810–2010



Attaining μ*

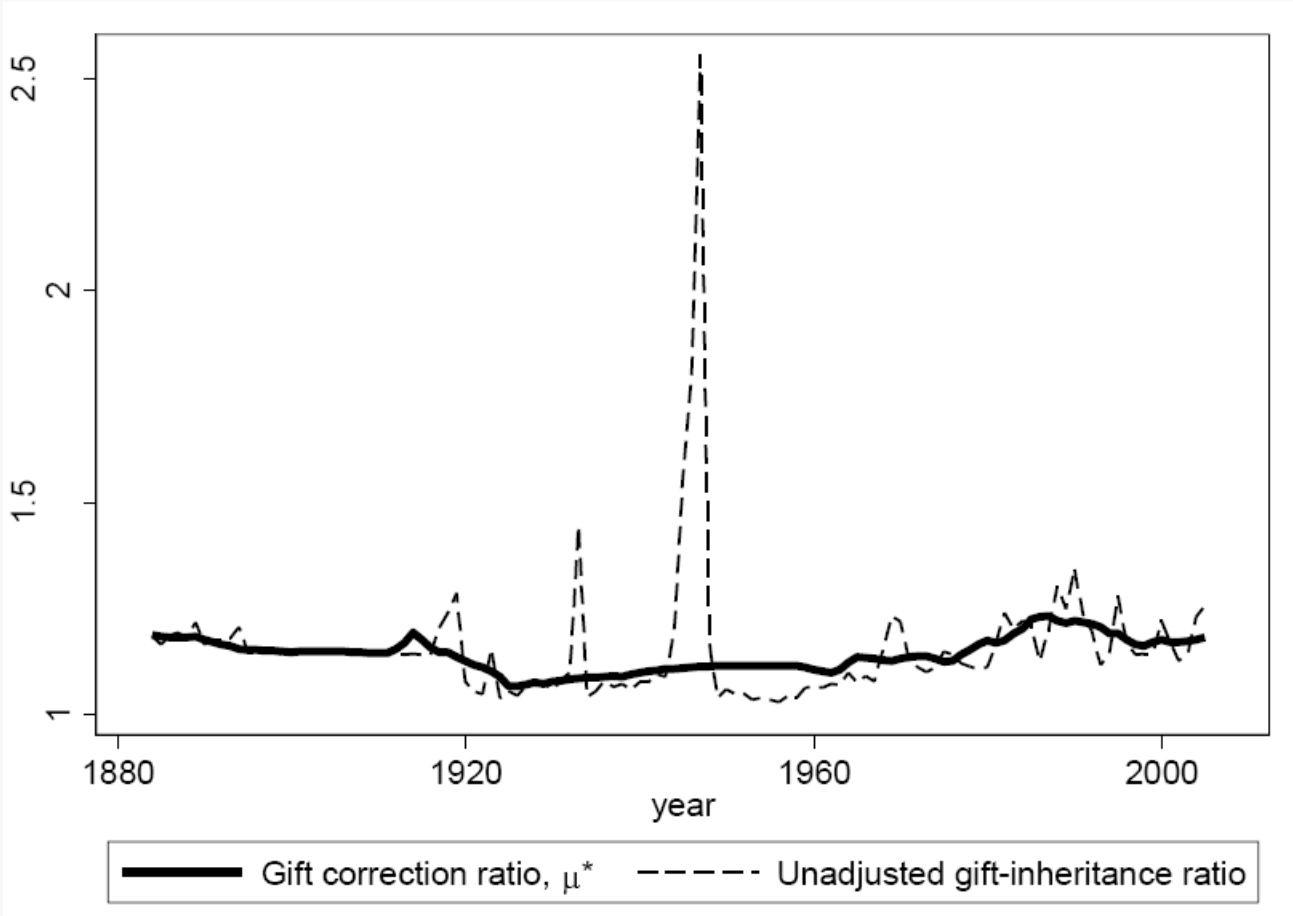
- Next, multiply $\widehat{\bar{W}_{l,a}/\bar{W}_l}$ with age-specific mortality M_a
- Divide by population mortality M to get:

$$\sum_a \frac{M_a/M}{\widehat{\bar{W}_{l,a}/\bar{W}_l}} = \frac{\widehat{\bar{\bar{W}}_d}}{\bar{W}_l} = \hat{\mu}$$

- Social differentials in mortality, the wealthy live longer

Gift-correction: from μ to μ^*

- Finally, correct for gifts passed on before death: μ → μ*
  - Gift tax revenues (1884-) and inheritance tax revenues'
  - Smoothed moving average, adds 5-20%



β (Wealth-income ratio)

- General lack of historical aggregate balance sheet data
- Some scattered estimates of household balance sheets exist
- Waldenström and Ohlsson (2013) creates a new database over private wealth **W**:
  - Annual aggregate stocks of non-financial and financial assets and liabilities for 1810-2010
- Sources: Tax assessments, Banking statistics, Financial accounts, previous research and public investigations

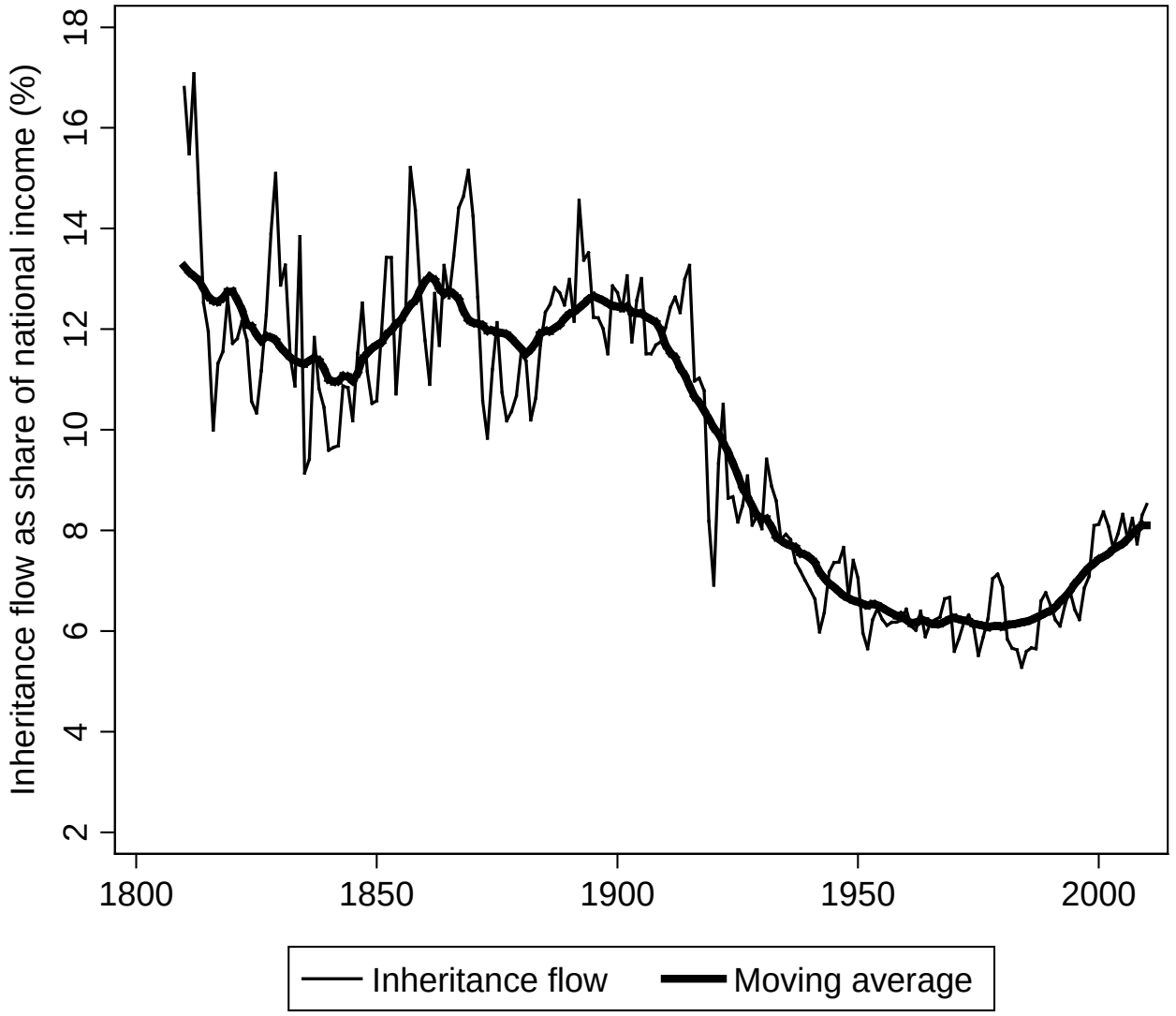
Y

- We use **net national income** as income denominator:

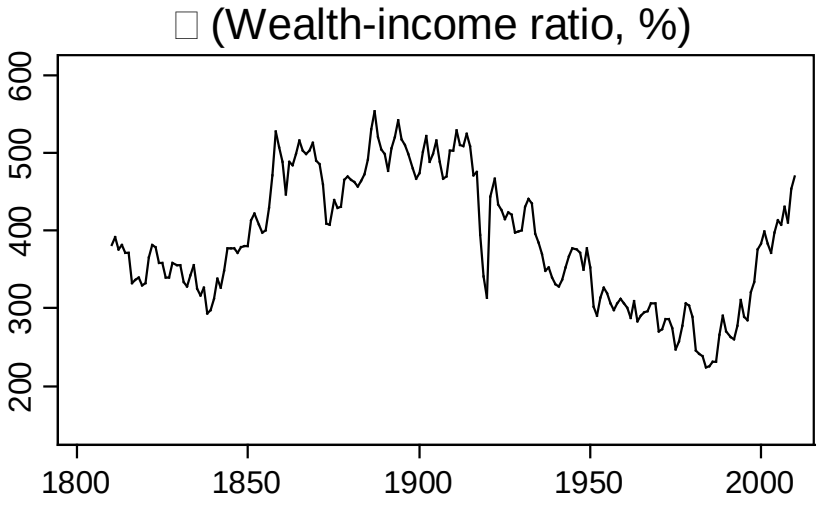
Net national income = GDP – Depreciation + Net foreign income

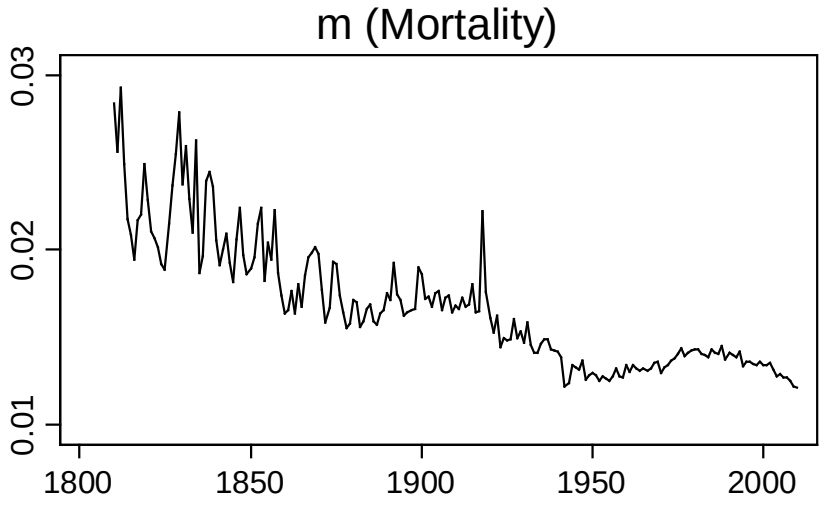
- Data sources:
  - GDP from Swedish historical national accounts (Edvinsson, 2005, 2012, 2014; Krantz & Schön, 2007, 2012)
  - Depreciation from Edvinsson (2005), Net foreign income (Statistics Sweden, own estimates)

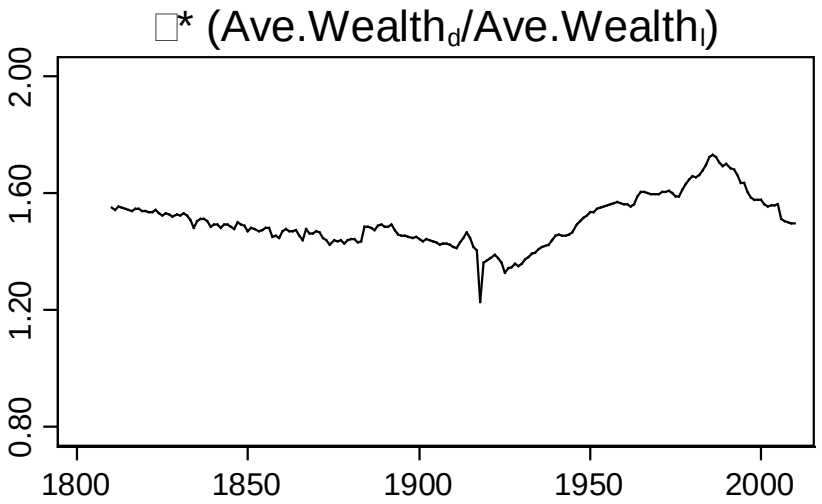
The economic inheritance flow in Sweden

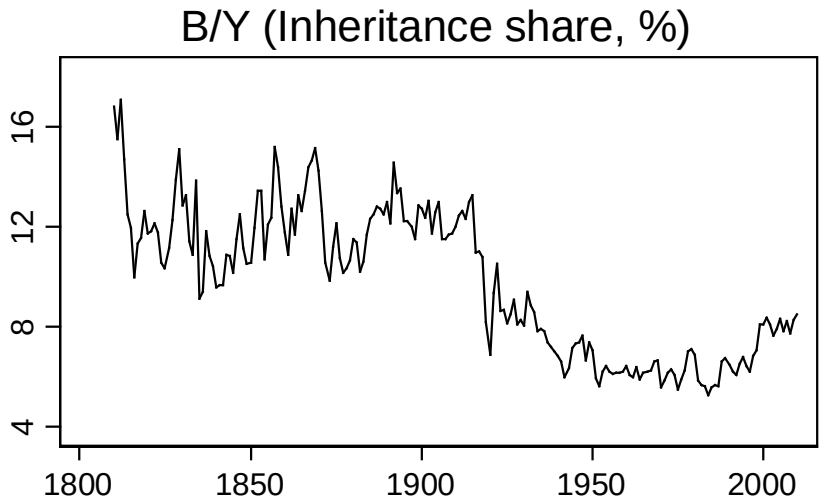


Components of the inheritance flow

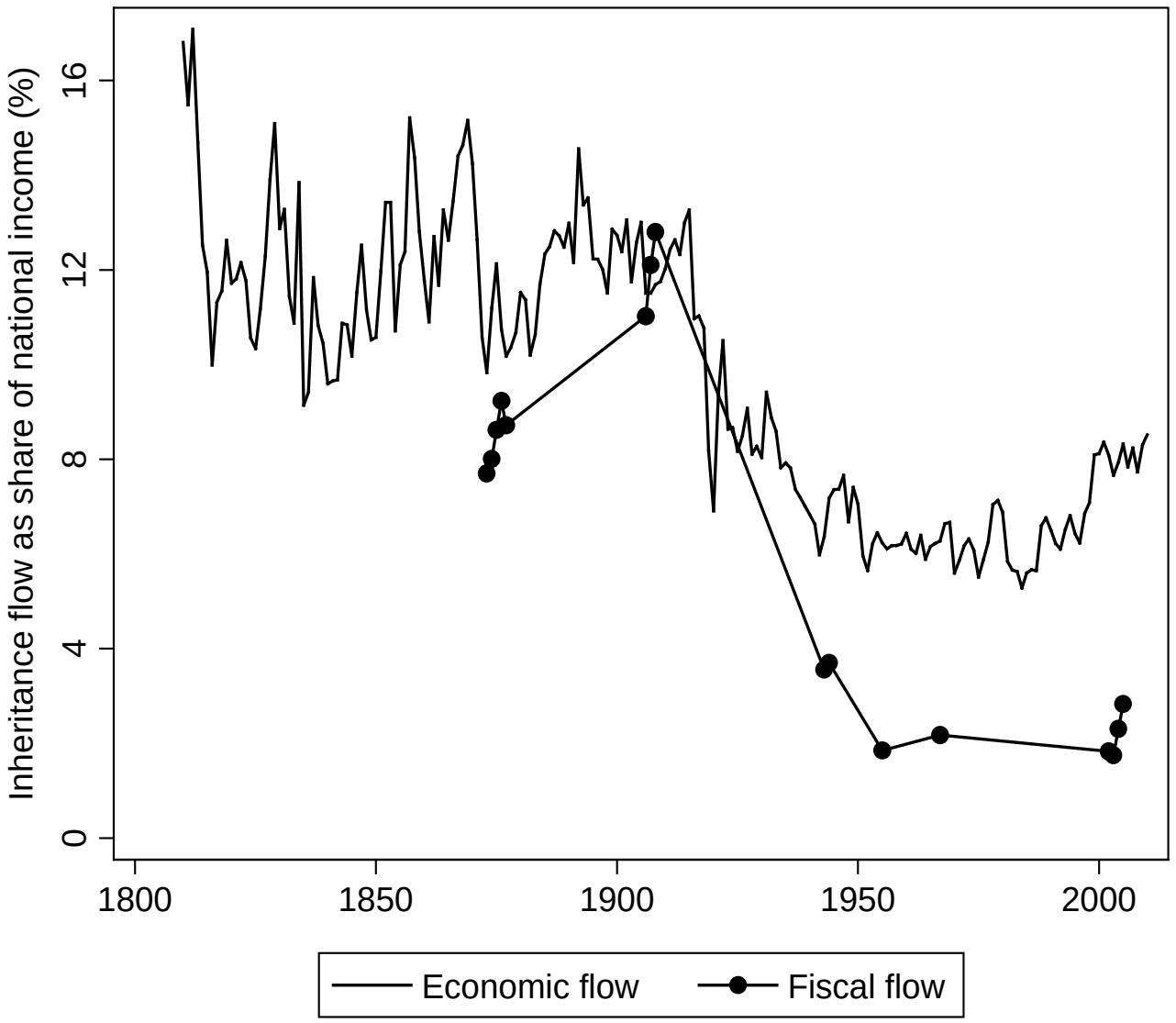






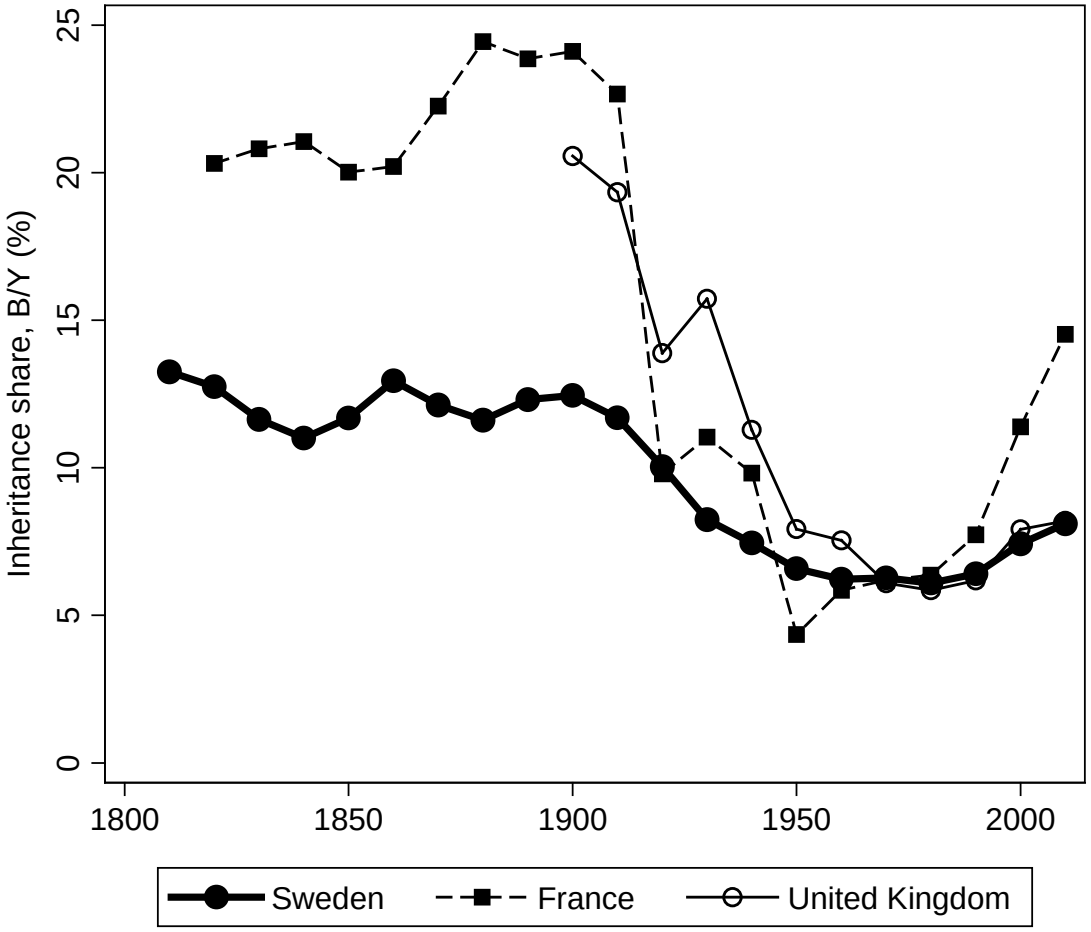


The fiscal inheritance flow in Sweden

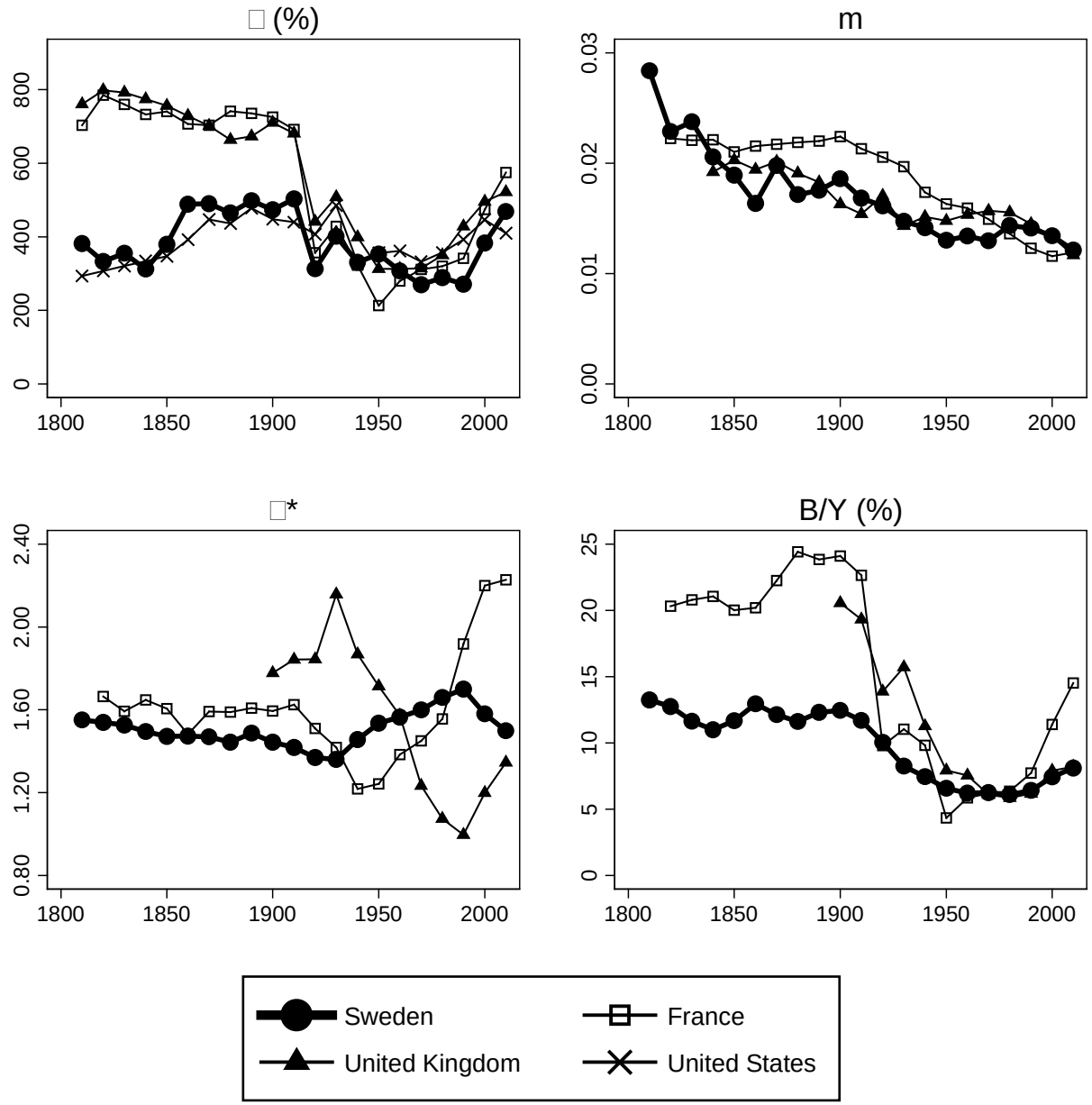


International comparisons

- France: Piketty (2011); UK: Atkinson (2012)



Role of components across countries



Inherited wealth as a share of total wealth in Sweden

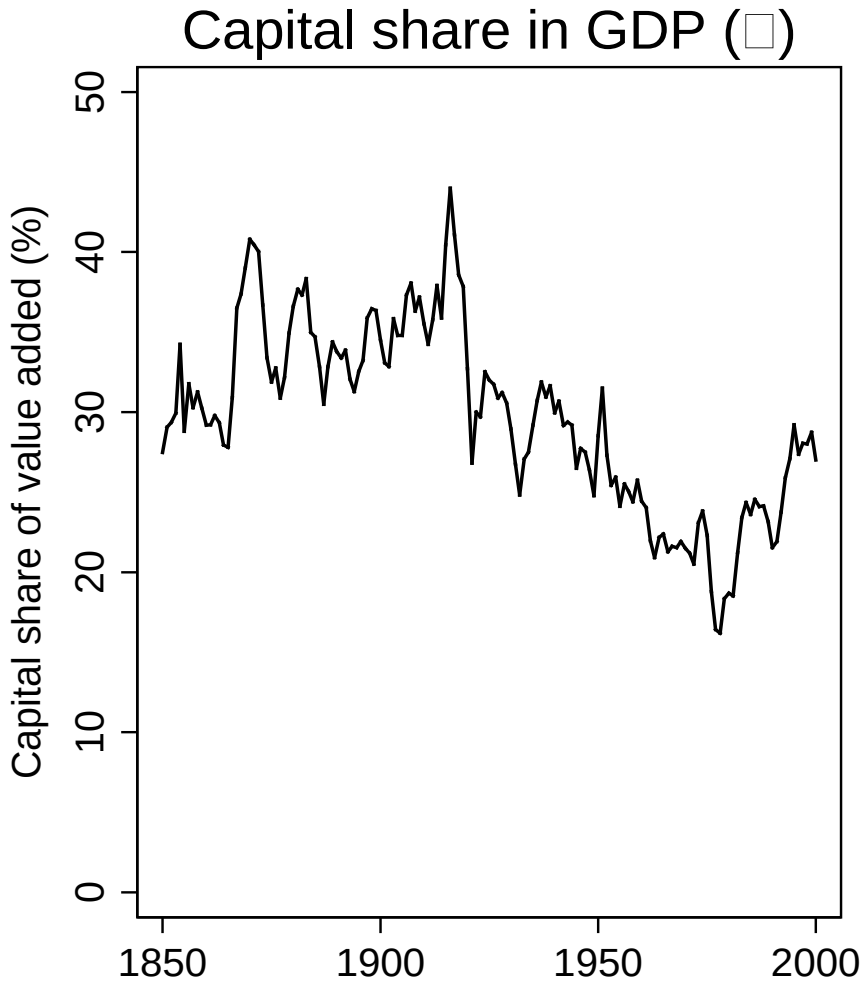
Inherited wealth as share of total wealth is approximated as (Piketty & Zucman, 2014):

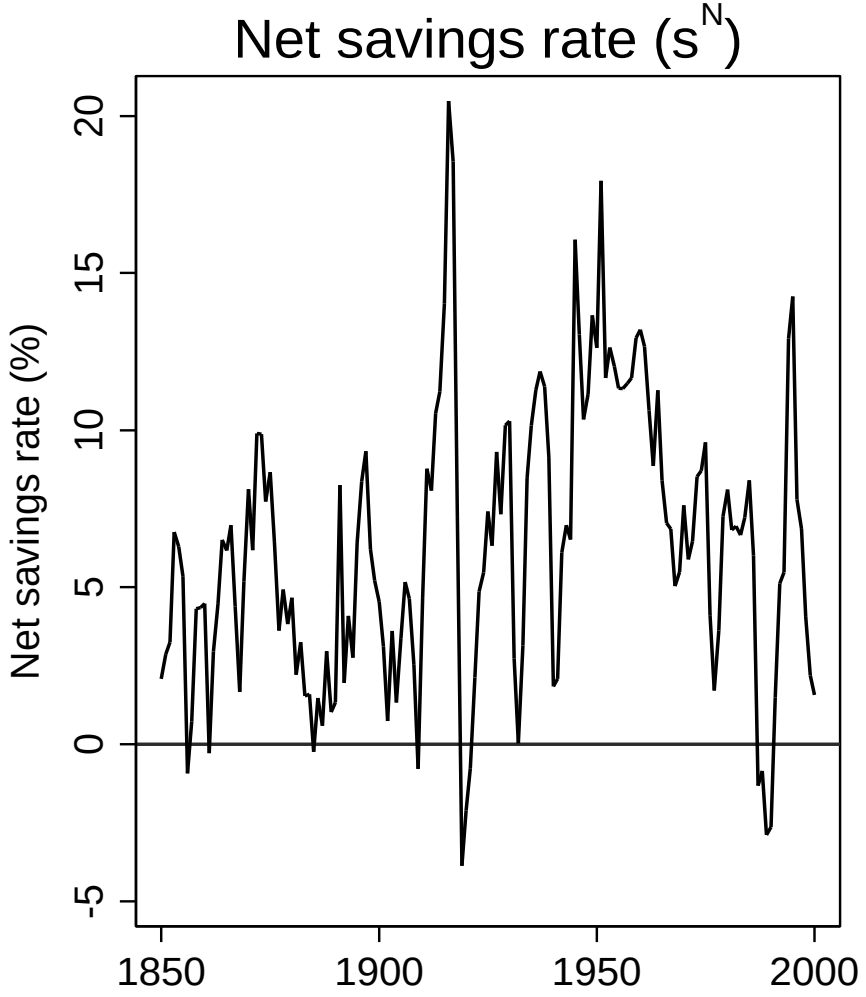
$$\varphi = \frac{b_Y}{b_Y + (1-\alpha)s}$$

where

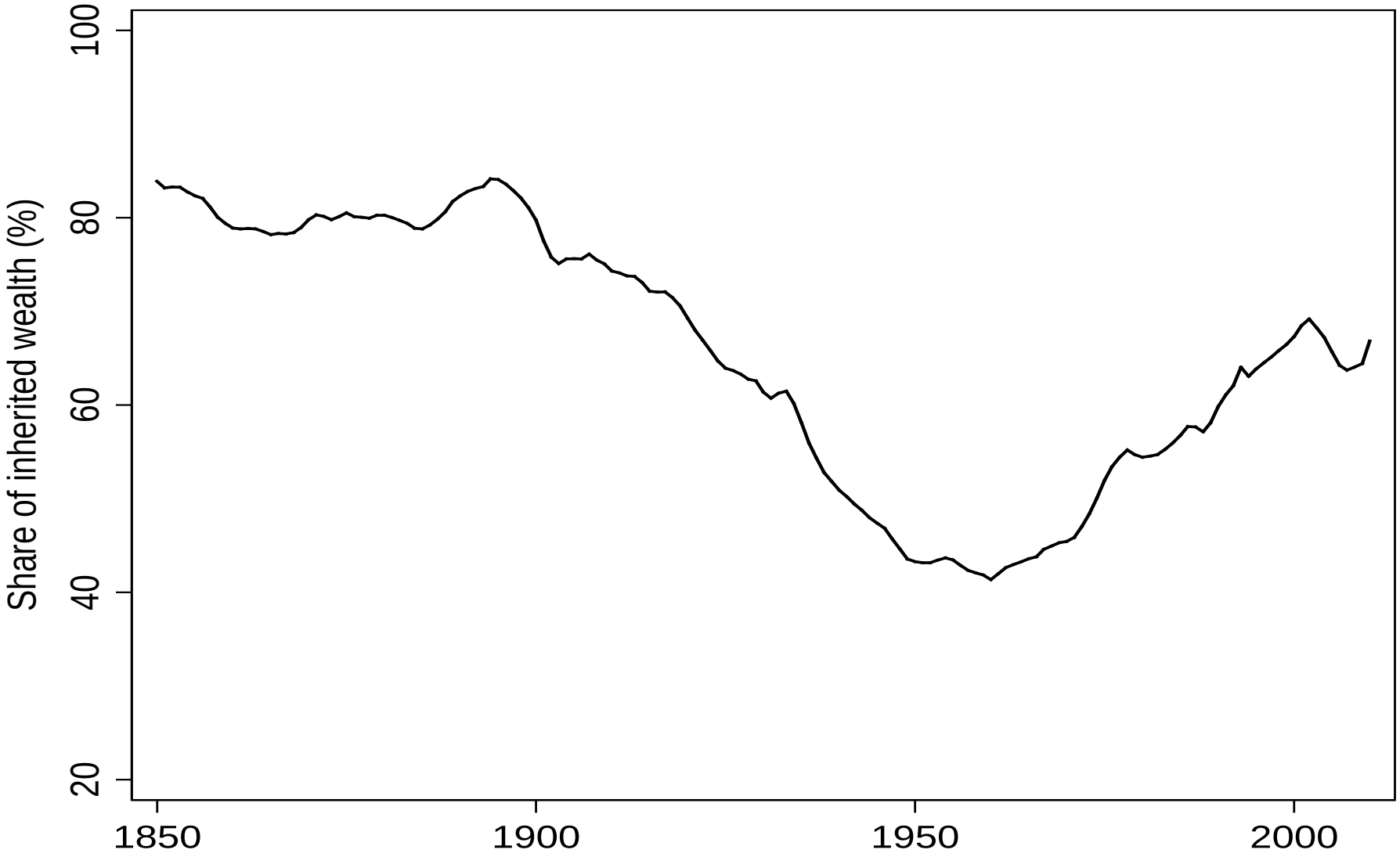
- φ = Inherited wealth as share of total wealth
- b_Y = Inheritance flow as share of national income
- α = Capital share of national income
- s = Net savings rate

Capital share and savings rate





φ calculated using 30 year moving averages



Laitner & Ohlsson, 1997, unpublished

Present value of inheritances / Household wealth
3 percent real interest rate

- Sweden 1981, 3 waves of LLS $\varphi = 0.51$
- The U.S. 1984, 1 wave of PSID $\varphi = 0.19$

Conclusions

Inheritance

- was important during the 1800s
- became less and less important during the first half of the 1900s
- has rebounded from the mid 1900s