

Discussion of Guvenen, Kuruscu, and Ozkan's "Taxation of Human Capital and Wage Inequality: A Cross-Country Analysis"

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GHO (Guvenen-Kuruscu-Ozkan) summary

- GHO:

- ▶ Does taxation affect human capital accumulation?
- ▶ Countries differ in before-tax inequality. How much is driven by taxation?

- Stylized facts

- ▶ Taxes are more progressive in Continental Europe and Scandinavia than in UK and US
- ▶ Before-tax inequality is higher in US and UK than in Continental Europe and Scandinavia
- ▶ 1975-2000: Before-tax earnings inequality increased substantially in the US but less so in Europe
- ▶ 1975-2000: Return to education increased in the US but did not increase much in Europe

Summary (cont.)

- Consider a Ben-Porath human capital accumulation function:

$$y = Ph(1 - i)n$$

$$h' = h + A^j(hin)^\alpha$$

- Trade off time spent on generating income, $(1 - i)$, and time spent accumulating human capital, i
 - Progressive taxation lowers human capital accumulation.
 - Flat taxes lowers accumulation if labor supply is endogenous.
 - GHO add heterogeneity in return on human capital (more precisely, heterogeneity in learning ability) A^j
- ⇒ Agents with high A^j will accumulate more h .
Distribution of h fans out
- ⇒ Taxation will mute the resulting dispersion in h

GHO's exercise

- Build a life-cycle model of human capital accumulation and taxation
- Calibrate model to US
- Compute tax schedules and transfers for eight countries (impressive!)
- Experiment:
 - ▶ Assume distribution of learning ability is identical across countries
 - ▶ Impose tax-transfer system for each country
 - ▶ Can model explain differences across countries?
 - ▶ Decompose effects of various taxes
 - ★ Progressivity drive 2/3 of results

Evidence on human capital accumulation:

- Success I: Cross section: Can account for most of cross-country variation in before-tax earnings inequality
- Success II: Time series (extension to two-factor human capital). Assume skill-biased technical change. It interacts with the tax schedule: more progressive taxes means less human-capital response and a muted increase in human-capital dispersion
- Political economy:
 - ▶ Fact: more (before-tax) unequal societies have slightly less redistribution
 - ▶ Simple median voter: more redistribution when median voter is relatively poor
 - ▶ Possible theory (Benabou): the political power of the rich increase in their relative wealth
 - ▶ GKO offer an alternative explanation: human capital accumulation with heterogeneity in returns

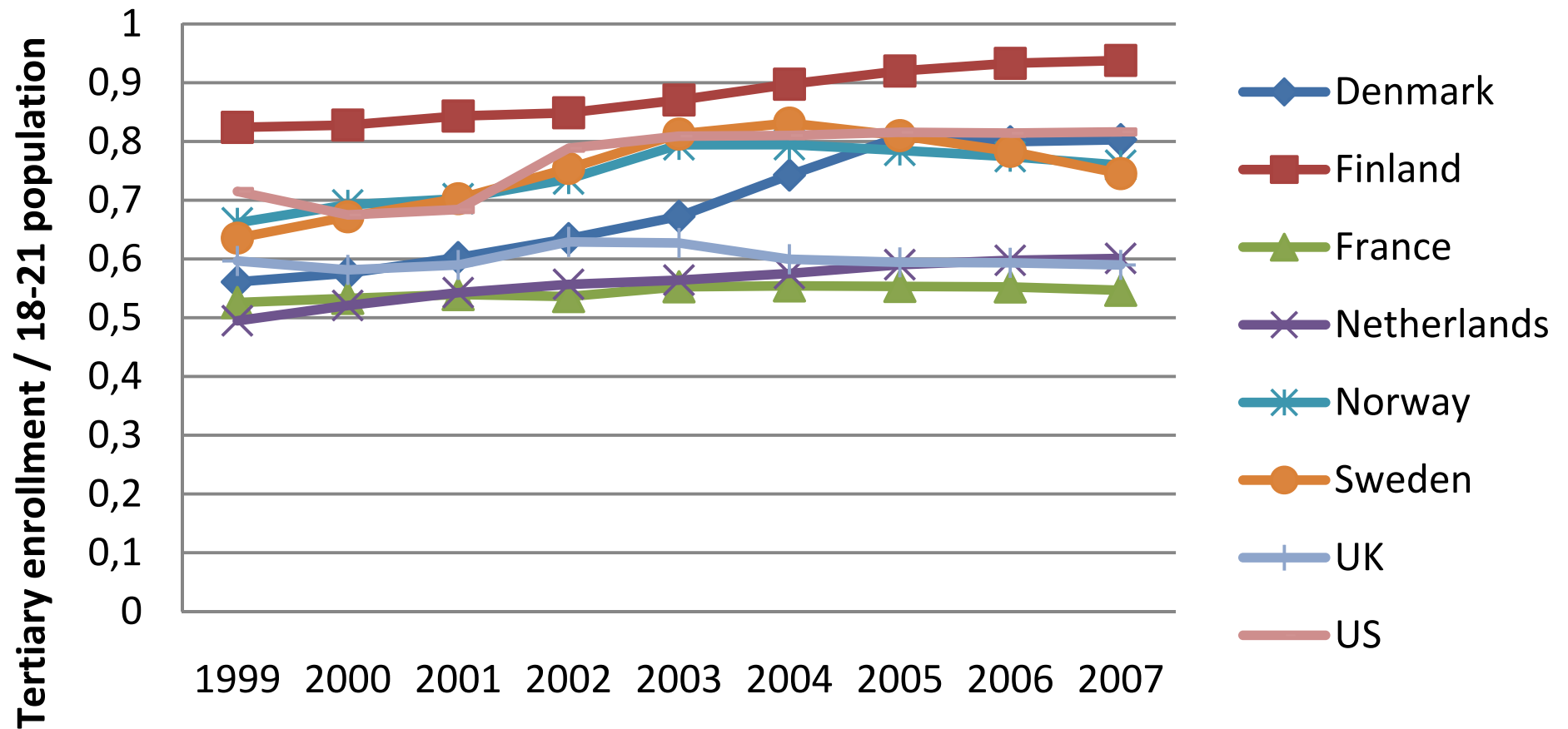
Inspecting the mechanism

- Prediction I:
Less human capital accumulation when taxes are more progressive
- Prediction II:
Dispersion in human capital accumulation is smaller when taxes are more progressive
- Guvenen et al. (2009) examine Prediction II
- What about I? Problem: measurement.

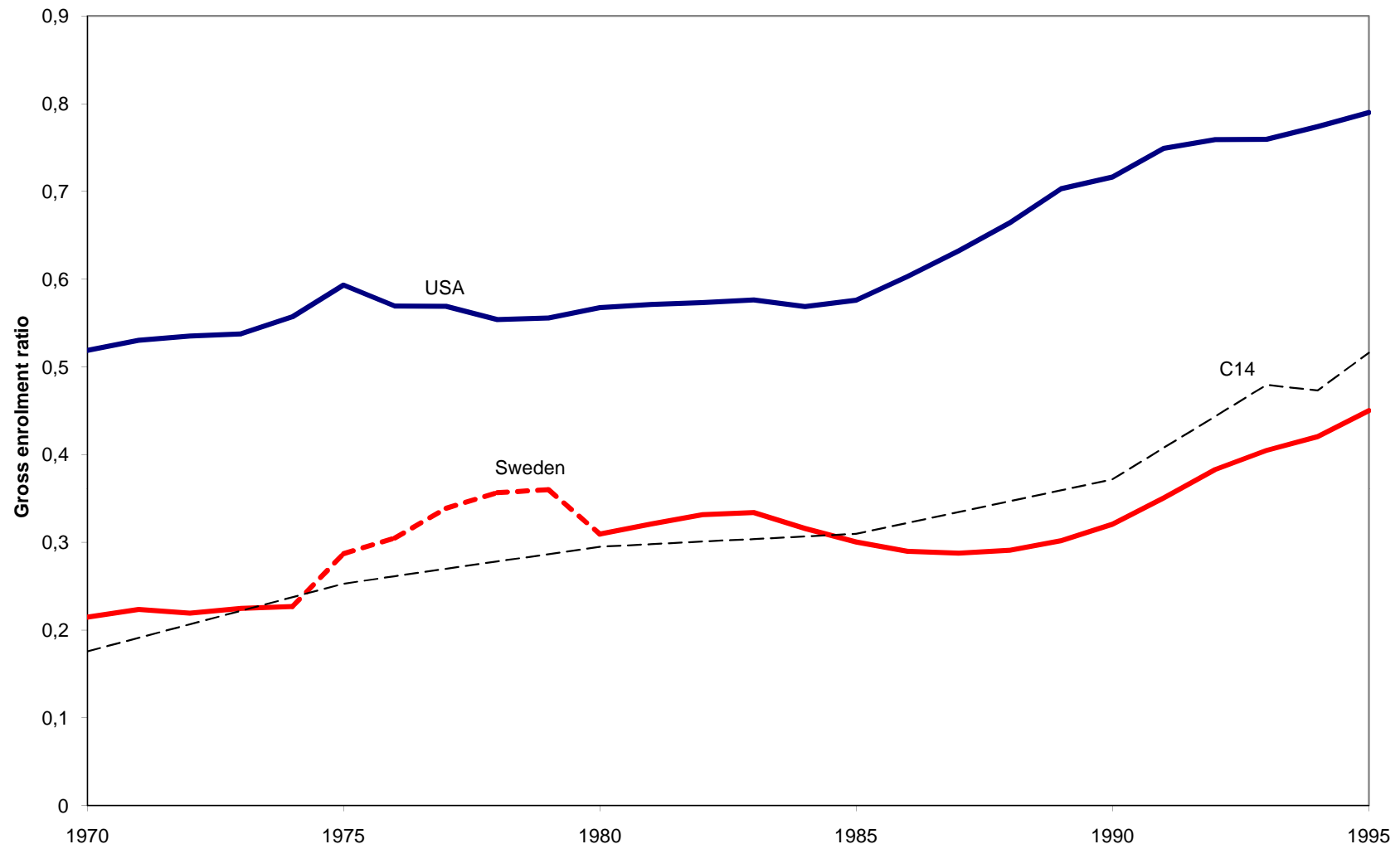
Evidence on human capital accumulation:

- Tertiary education
- Enrollment rate = tertiary students / size of population in tertiary education age
- Finding (1999-2007 UNESCO data): US enrollment rates slightly higher than Germany. US enrollment rates about the same or lower than in Scandinavia US enrollment rates are significantly higher than in UK and France

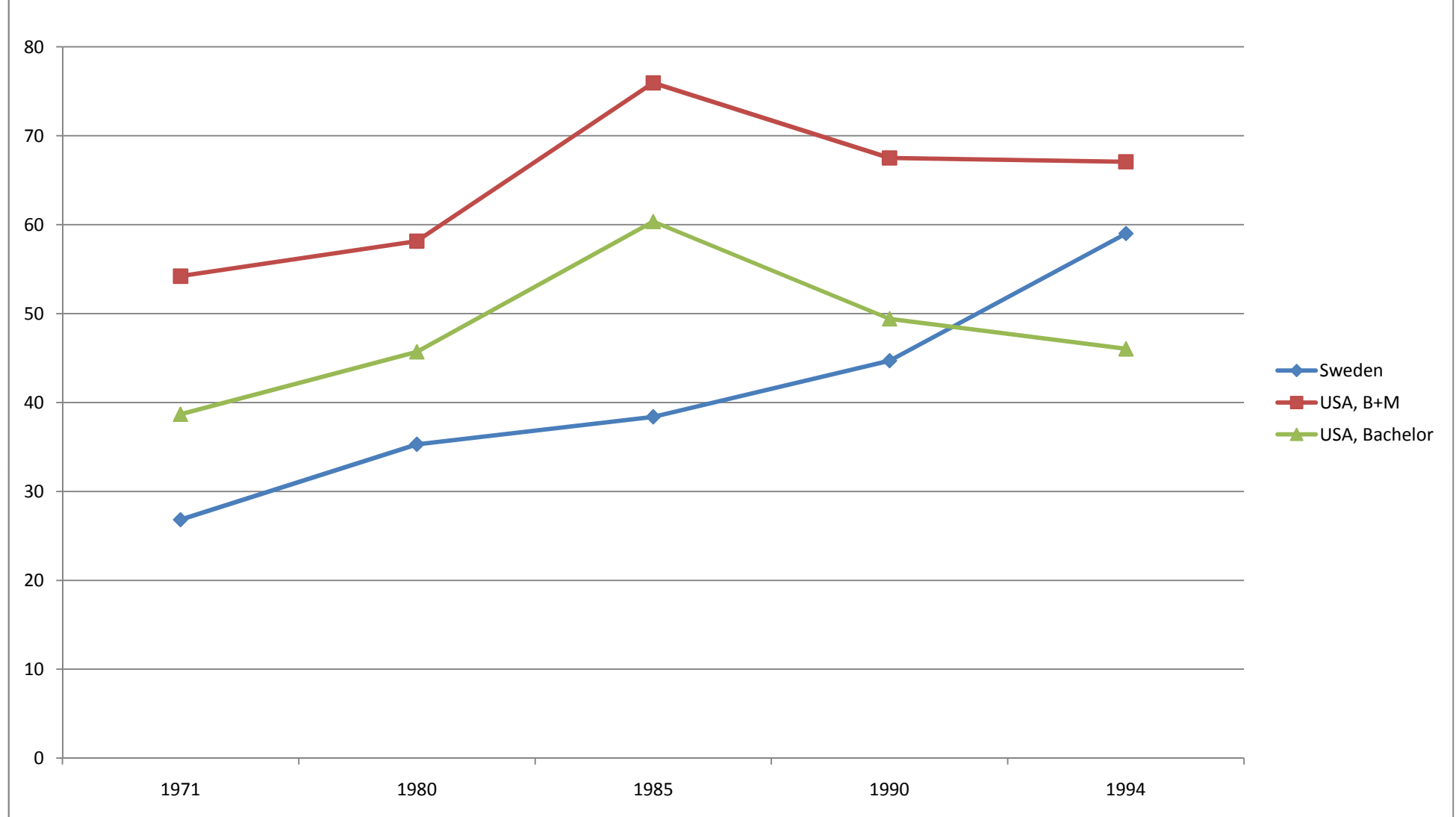
Tertiary Enrollment Rates



Gross enrollment ratio for tertiary education (Barro-Lee'93 & UNESCO)



Engineers pr 100,000



Evidence on human capital accumulation

- On-the-job training

- ▶ Becker: With competitive labor markets firms never finance workers' accumulation of general skills
- ▶ Acemoglu and Pischke (EJ, 1999): Wage compression make it worthwhile for firms to finance workers' accumulation of general skills

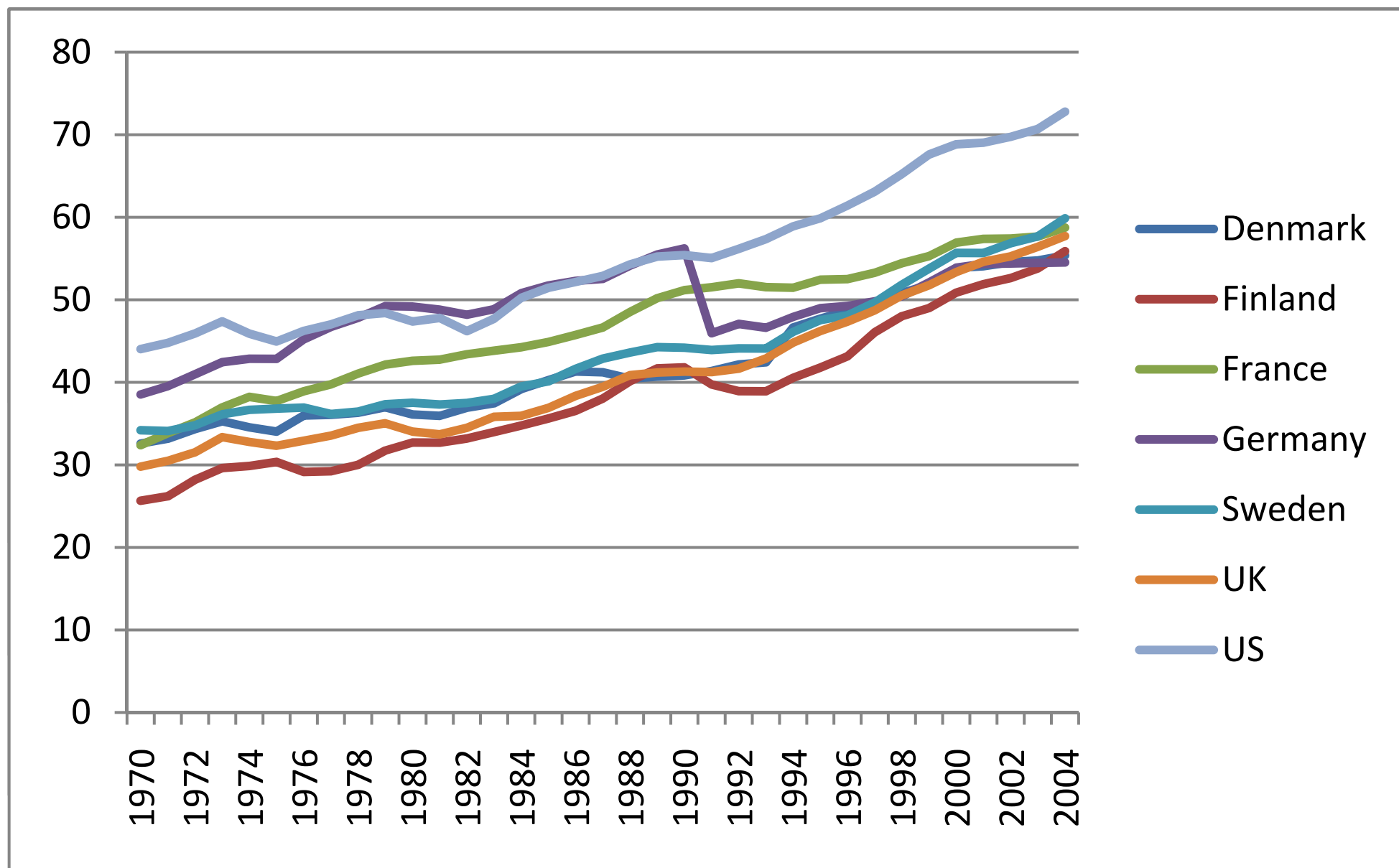
In line with the predictions of non-competitive theories, the incidence of company-provided formal training appears to be higher in Europe and Japan than in the United States

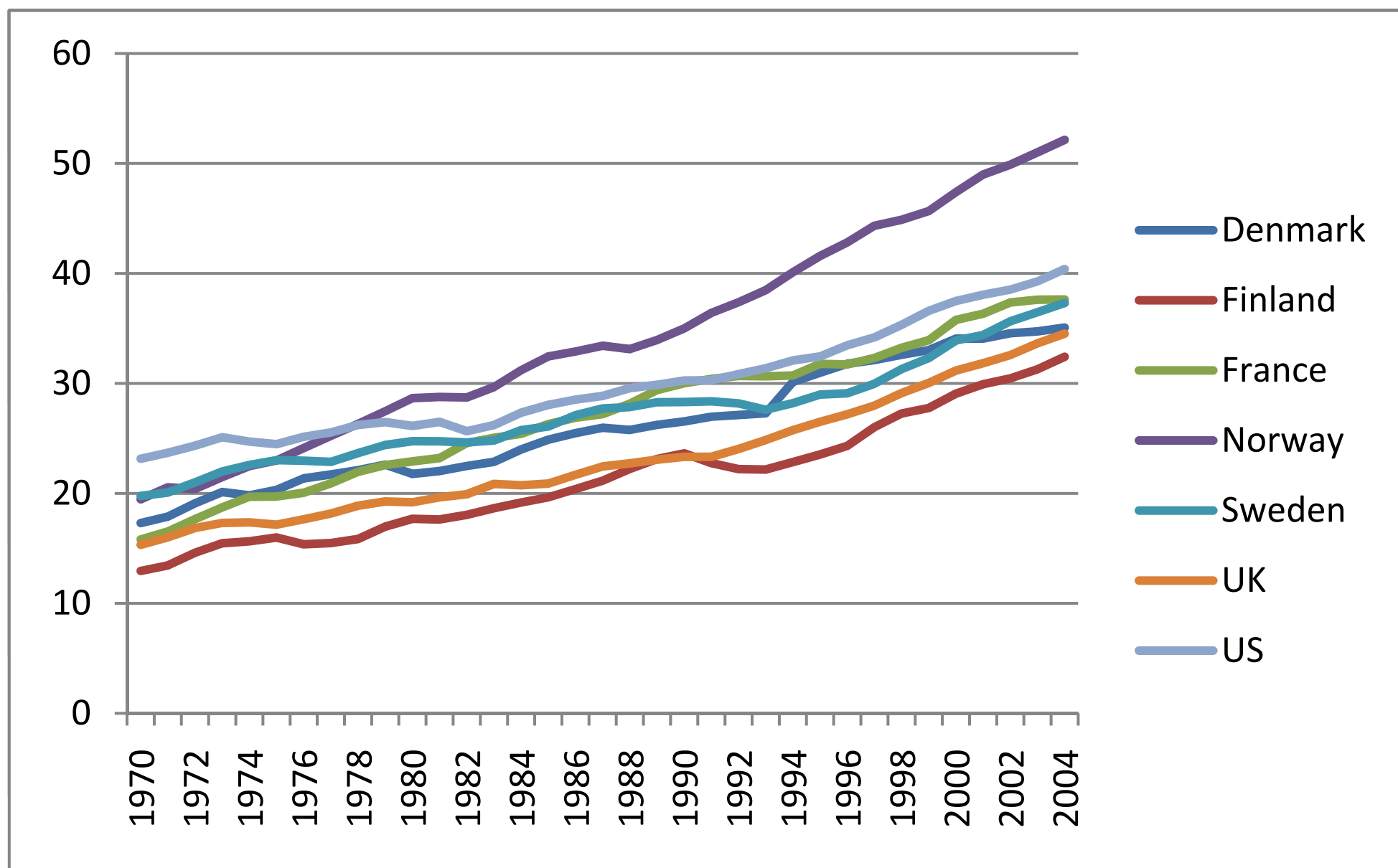
- ▶ Share of young workers receiving formal training

France	Germany	Japan	US
24%	72%	67%	10%

Evidence on human capital accumulation

- Aggregate data:
- Suppose all countries have the same Cobb-Douglas production function, the same TFP level and the same capital taxation
 - ▶ All differences in labor productivity is driven by differences in human capital
 - ▶ GKO 1: Countries with relatively progressive taxes should have lower human capital and hence lower labor productivity
 - ▶ GKO 2: Countries that increased tax progressivity should fall behind in human capital and hence in labor productivity





Conclusion

- GHO: Ambitious exercise comparing tax systems in a rich macro model
- Key success: model consistent with BEFORE-tax earnings inequality rising more in the US than in continental Europe.
- Mechanism: Progressive taxation lowers return to human capital accumulation \Rightarrow more accumulation and larger heterogeneity in human capital in US
- No support in data for the implication that human capital is substantially higher in the US than in e.g. Scandinavia.
- No evidence that human capital in the US is growing faster than in Europe
- Is it the right model of human capital accumulation and inequality?
- Need a mechanism that keeps average human-capital accumulation high in Europe
 - ▶ Example: Subsidized education plus wage compression
 - ▶ Message: progressive taxation does not hurt growth as long as it is complemented with wage compression and free college

Alternative story?

- Krusell, Ohanian, Rios-Rull and Violante (2000):
1970's: Rising supply of skilled labor suppressed the skill premium
1980's: Capital-skill complementarity + falling equipment prices =
rising skill premium
... despite continued increase in supply of skilled
- Lindquist (2005):
 - ▶ Repeat KORV's exercise for Sweden (detailed data from manufacturing).
 - ▶ Accounts for flat college premium in Sweden after 1980.
 - ▶ Mechanism: Sweden saw much bigger increase in supply of college-educated workers