Can innovation and the recent technological revolution generate inclusive growth?

Reasons why not

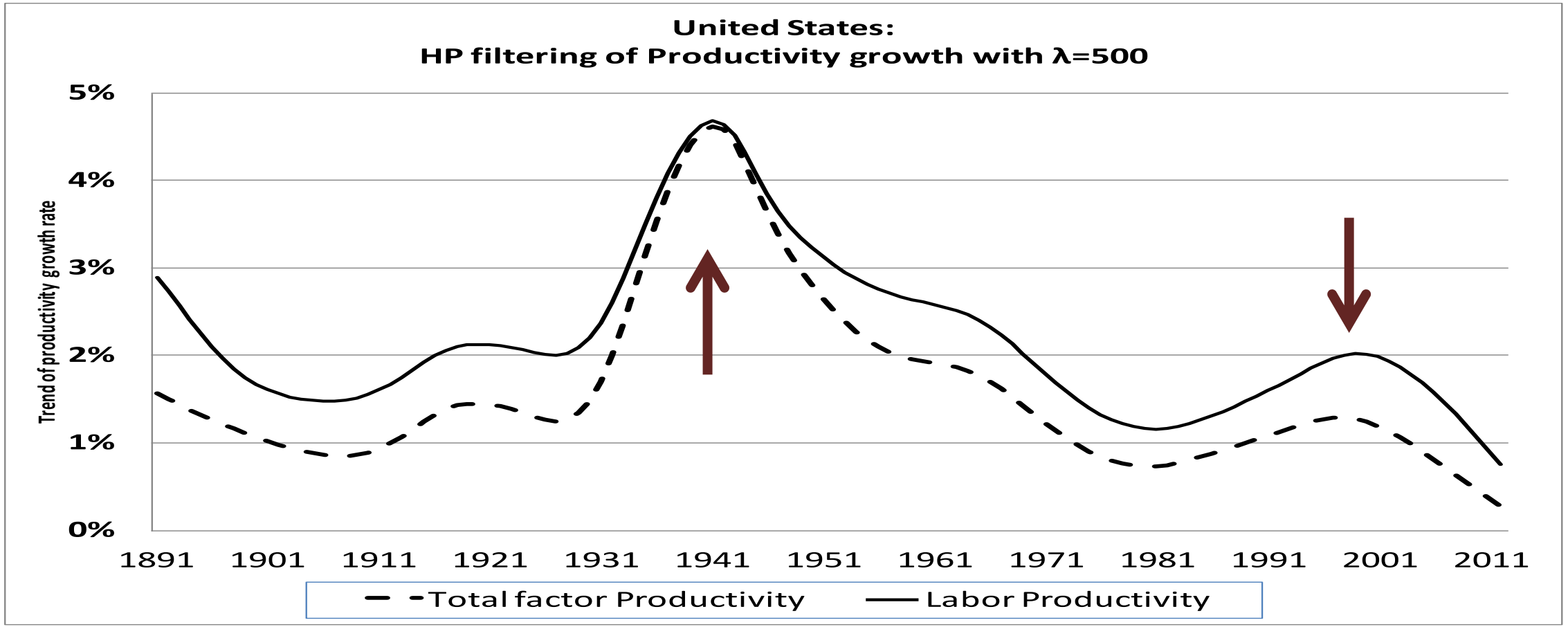
- Gordon’s fruit-bearing tree theory
- Innovation and digital revolution destroy existing jobs
- Digital revolution is skill biased, therefore increases inequality between skilled and unskilled, also magnifies the rents to successful innovators

However….

- Gordon may be too pessimistic
- Previous technological revolutions have generated same fears on job destruction….yet history have proved them wrong!
- Some countries have managed to implement the technological revolution without undergoing significant increase in broad inequality or significant reduction in social mobility

Secular stagnation?

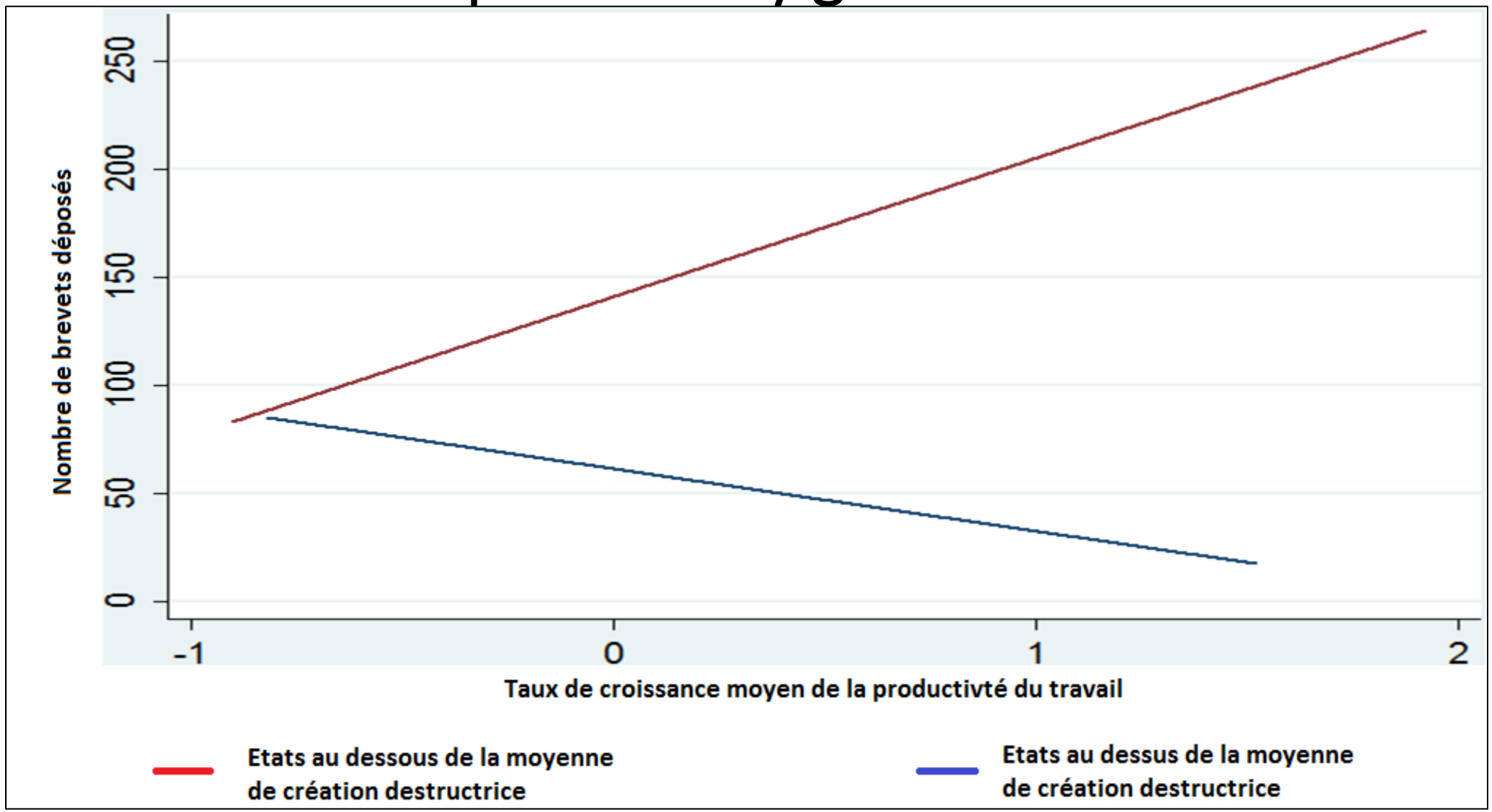
Two productivity growth waves



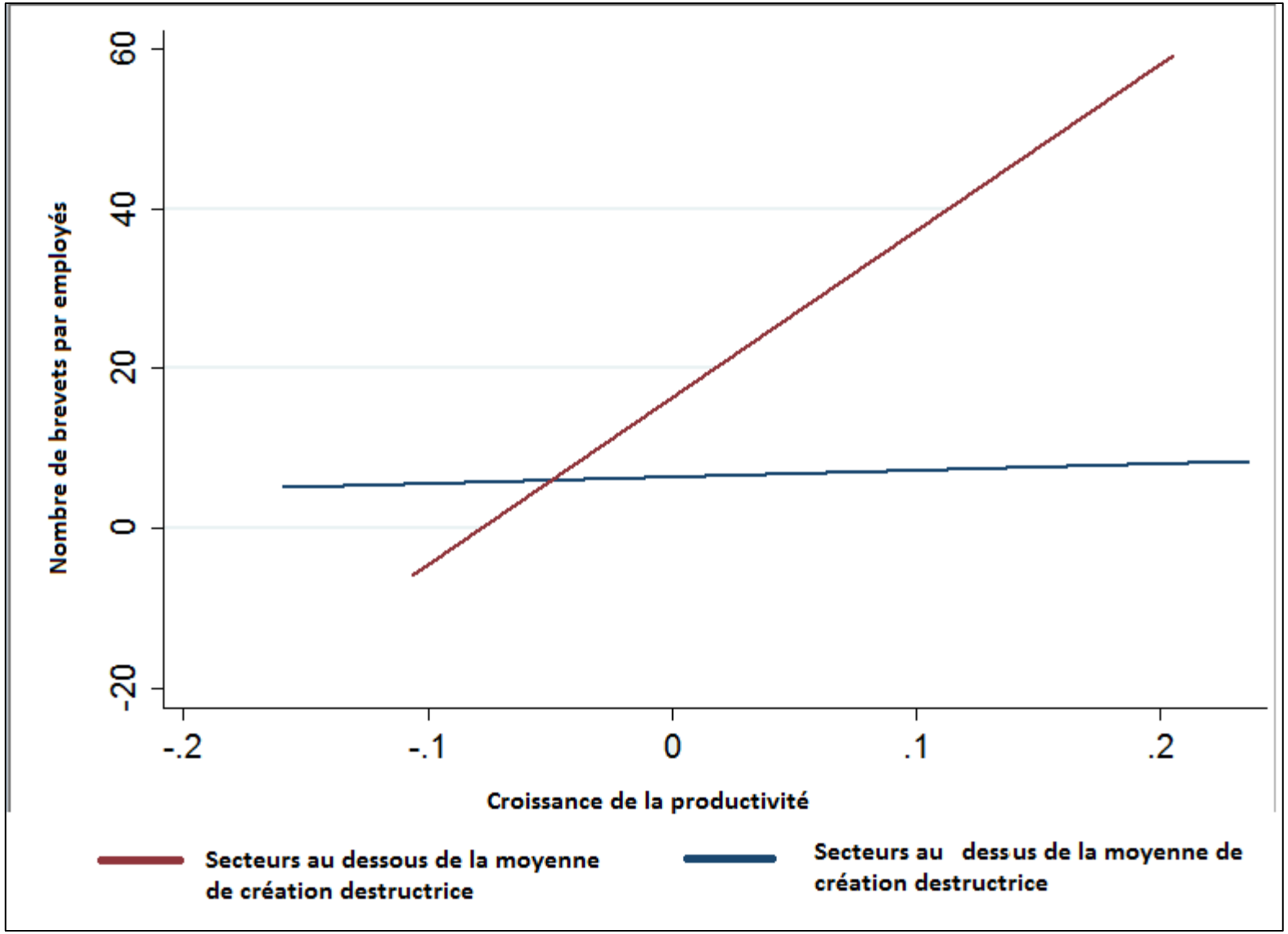
Secular stagnation?

- Dale Jorgenson
- Missing Growth
- Europe

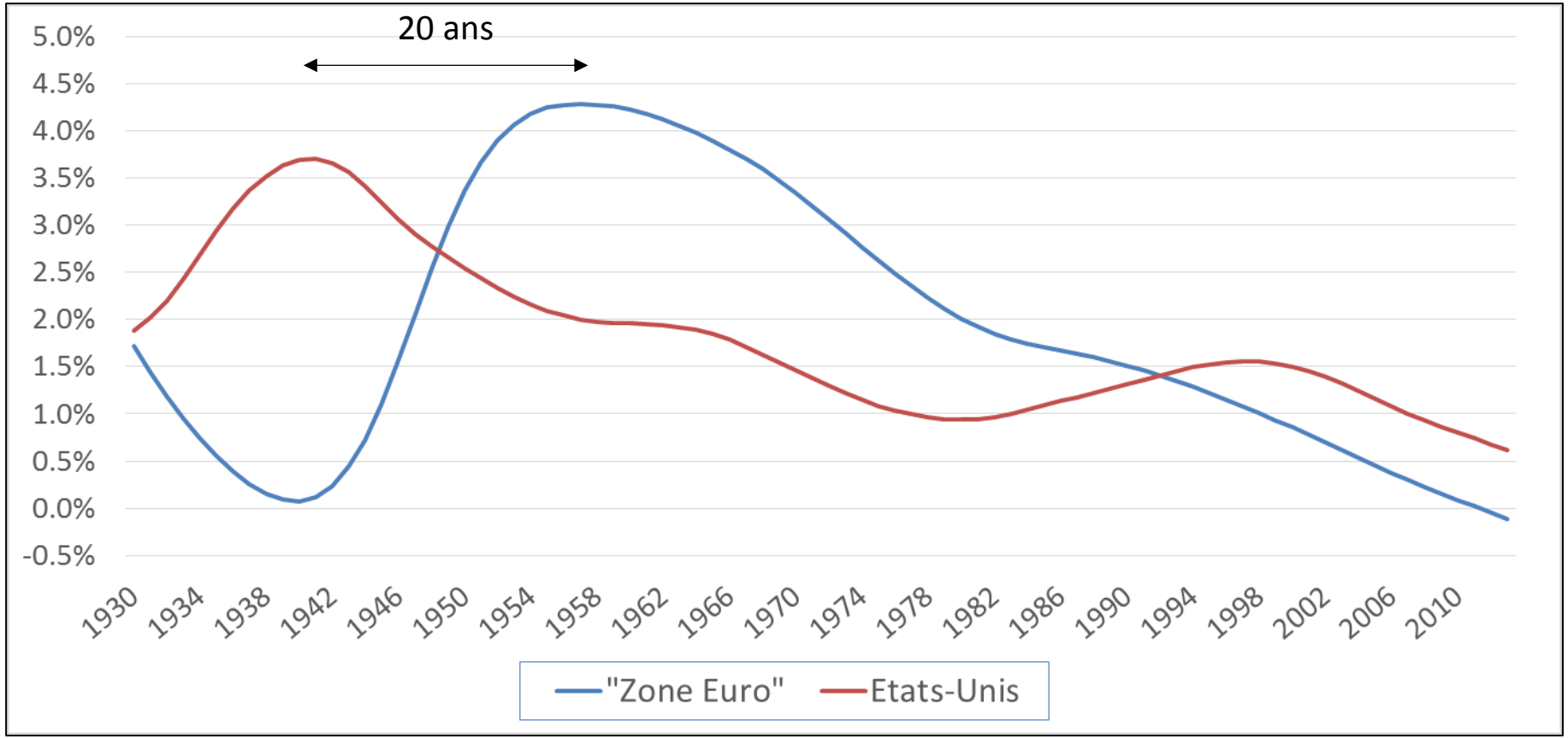
Correlation between patenting and labor productivity growth



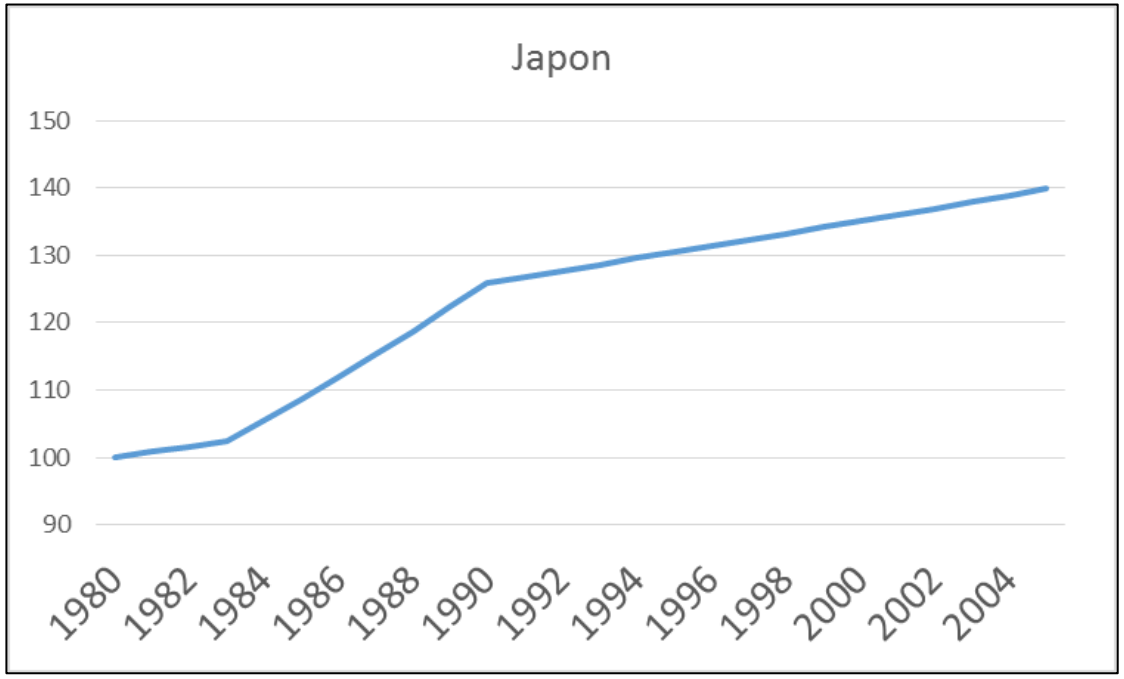
Correlation between patenting and labor productivity growth

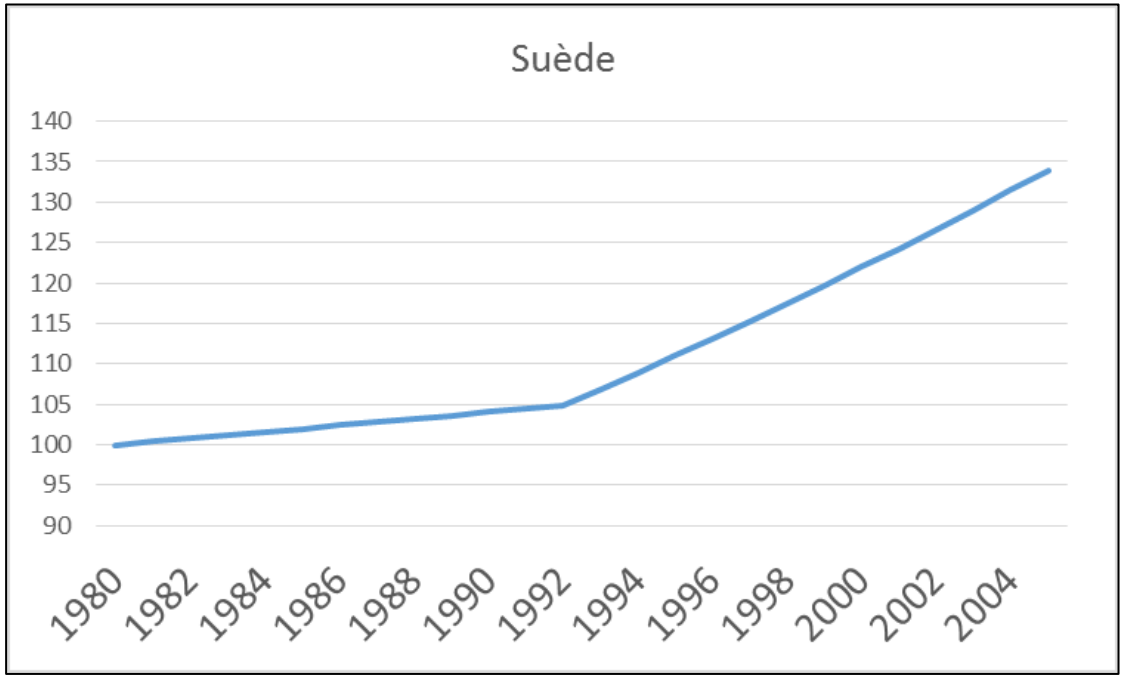


Productivity waves



Sweden versus Japan





Country-specific productivity breaks

- **Reformers**
  - **Netherlands:** Wassenaard agreement, 1982
    - TFP growth : 1977-1983 0,5 %, 1983-2002 1,5 %
  - **Canada**, reforms initiated in early 1990s
    - TFP growth: 1974-1990 0,3 %, 1990-2000 1,1 %
  - **Australia**, reforms initiated in early 1990s
    - TFP growth: 1971-1990 0,4 %, 1990-2002 1,4 %
  - **Sweden**, reforms initiated in early 1990s
    - TFP growth: 1976-1992 0,4 %, 1992-2008 1,9 %

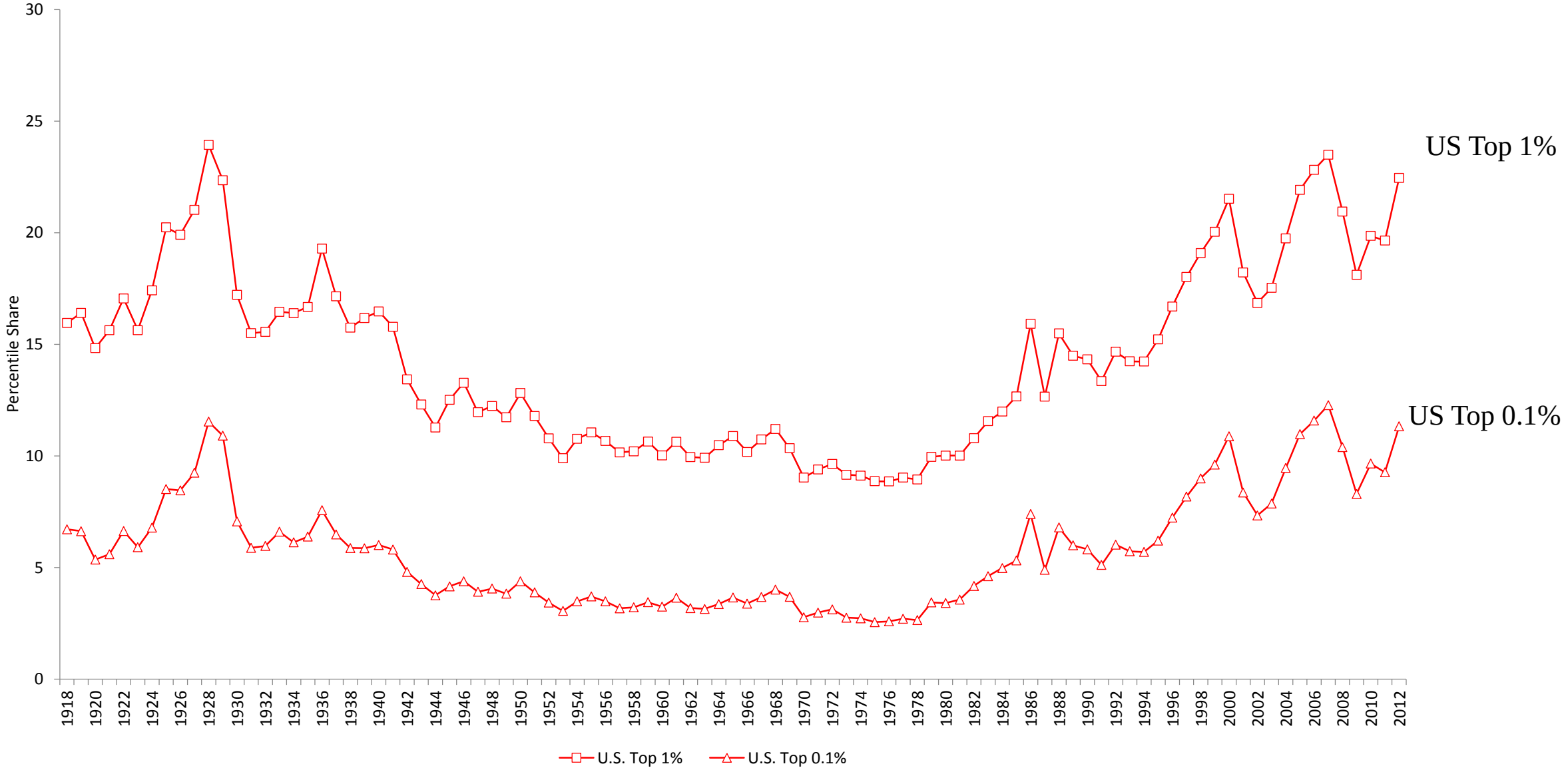
Innovation, job destruction, and job creation

Innovation, job destruction and job creation

- Luddism, Keynes
- But innovation and technological revolutions create new lines
- Hemous, Acemoglu-Restrepo

Innovation and inequality

Income shares at the very top over last 100 years: US top 1% increases from 9% in 1978 to 22% in 2012



Source: Atkinson, Piketty & Saez; High Income Database

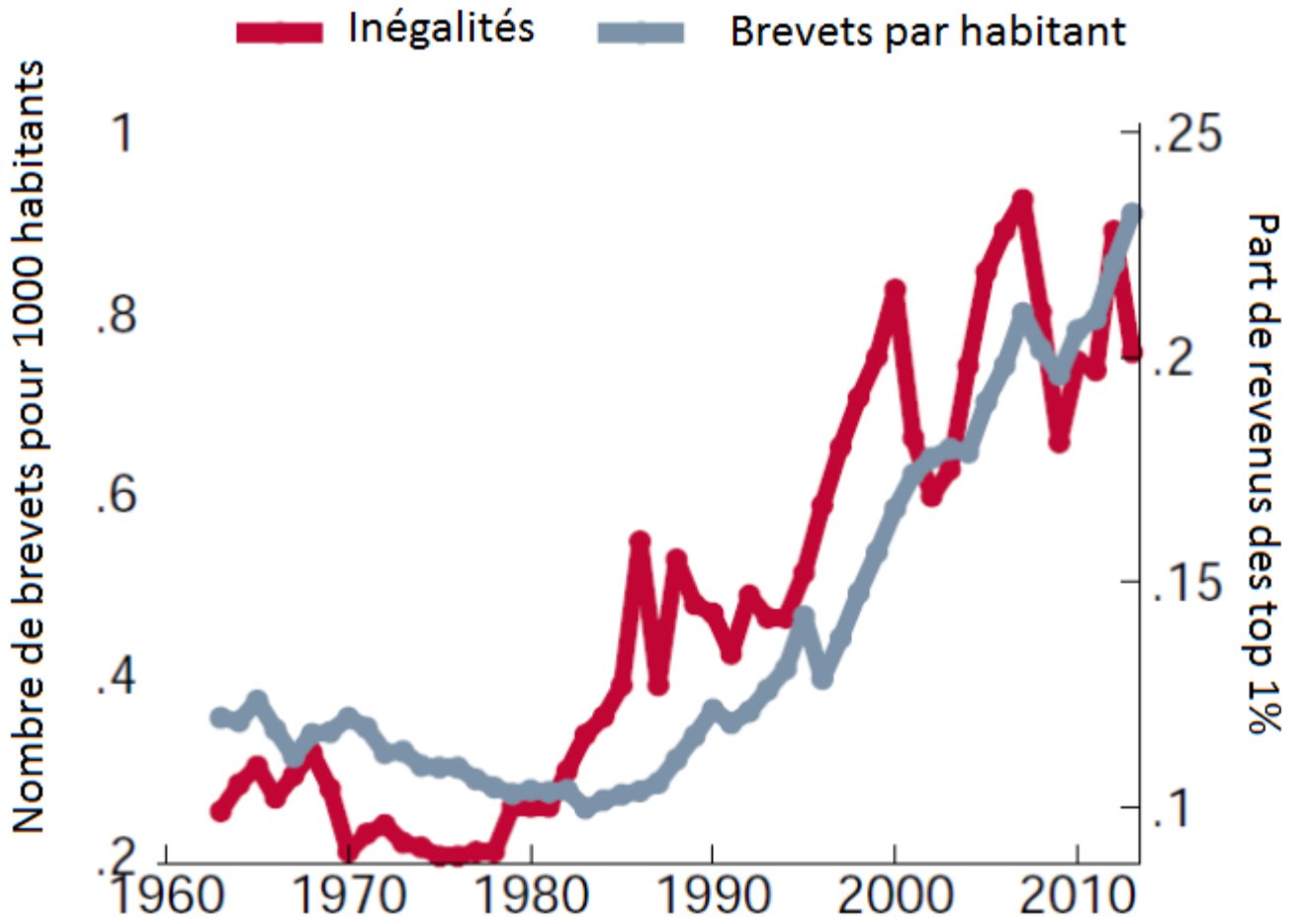
Two main ideas

- Different measures of inequality which must be looked at differently
  - Top income inequality, “Gini”, social mobility
- Innovation is a source of top income inequality which differs from other sources (entry barriers,..)
  - *Steve Jobs* versus *Carlos Slim*

Why innovation differs from other sources of top 1% increase?

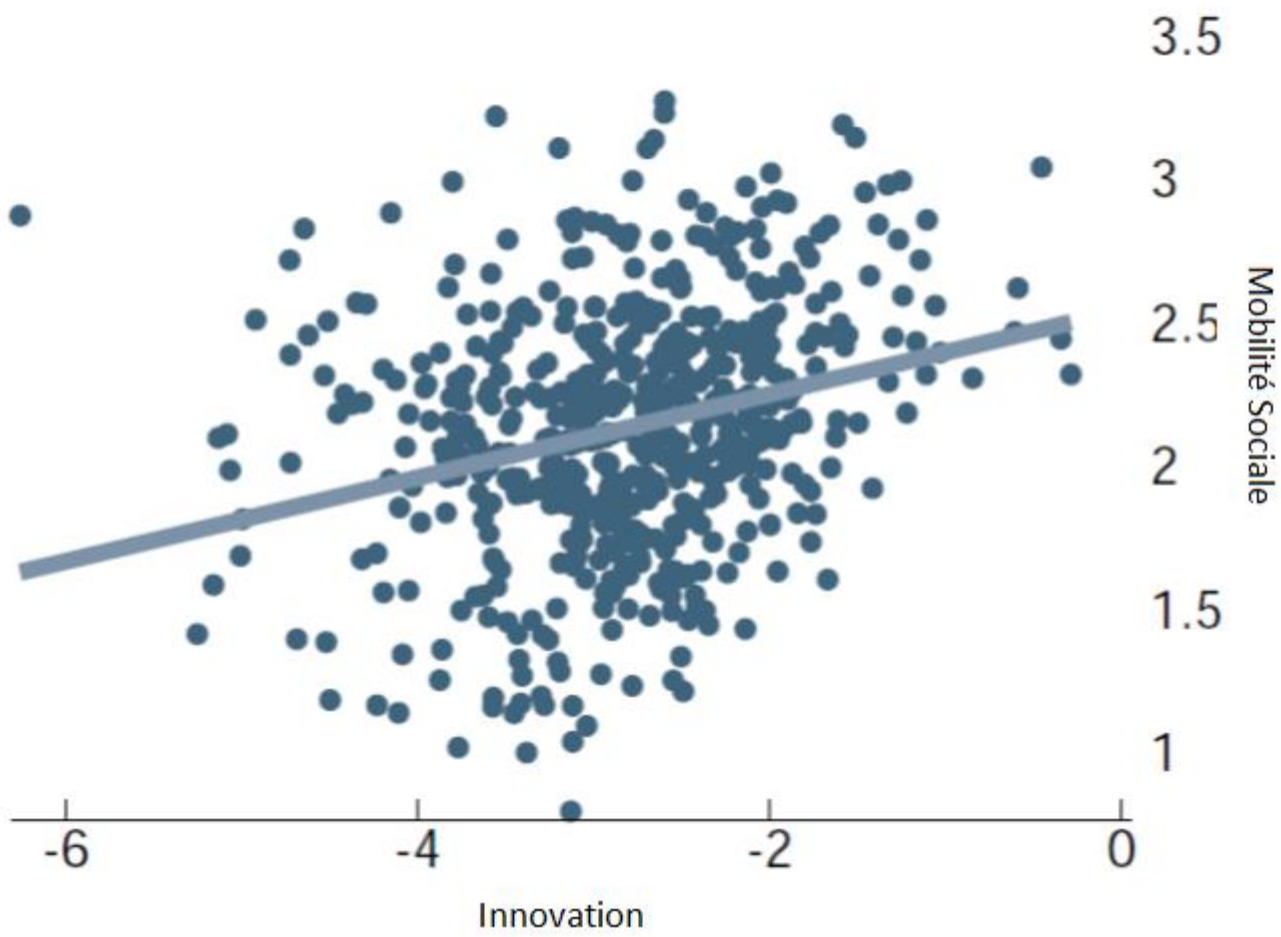
- Generates growth (we know)
- But in addition, we will show that:
  - Innovation generates temporary rents (imitation and creative destruction)
  - Innovation enhances social mobility (creative destruction)
  - Innovation does not increase broad inequality

Inégalités et innovation



Source: Aghion et. al. (2015).

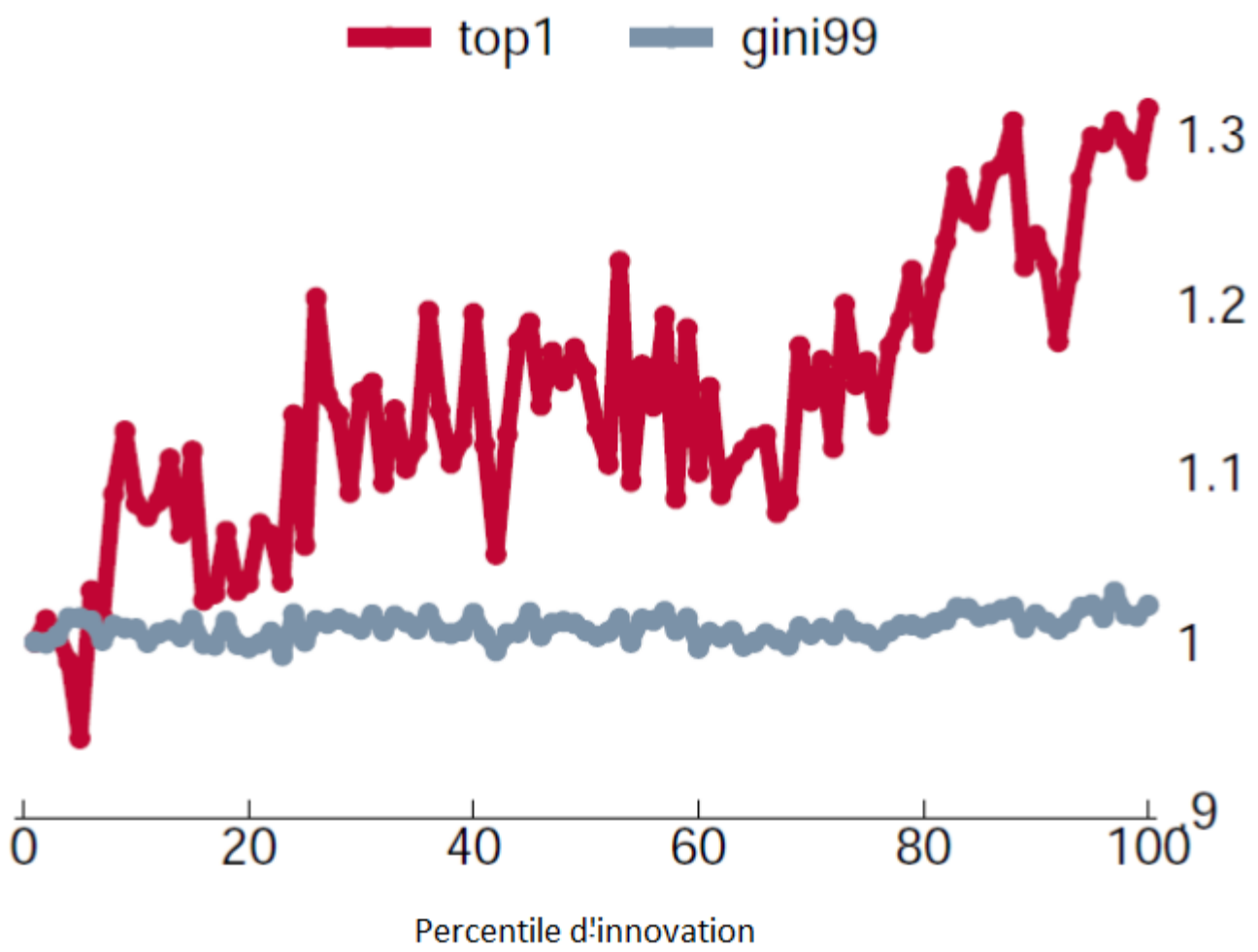
Innovation et mobilité sociale



Source: Aghion et. al. (2015).

Innovation et inégalités

Part de revenu des 1% les plus riches et Gini des 99% restants

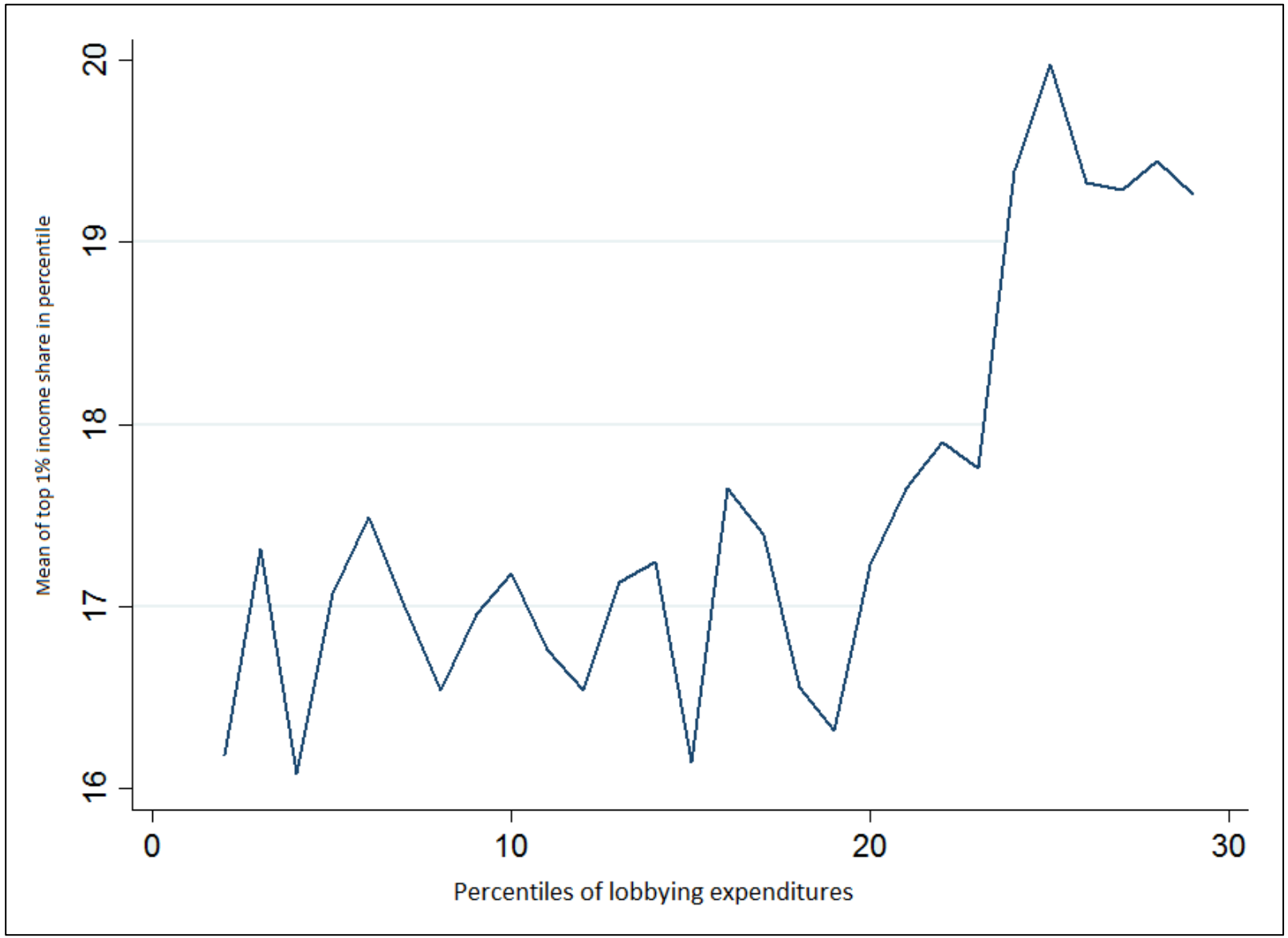


Source: Aghion et. al. (2015).

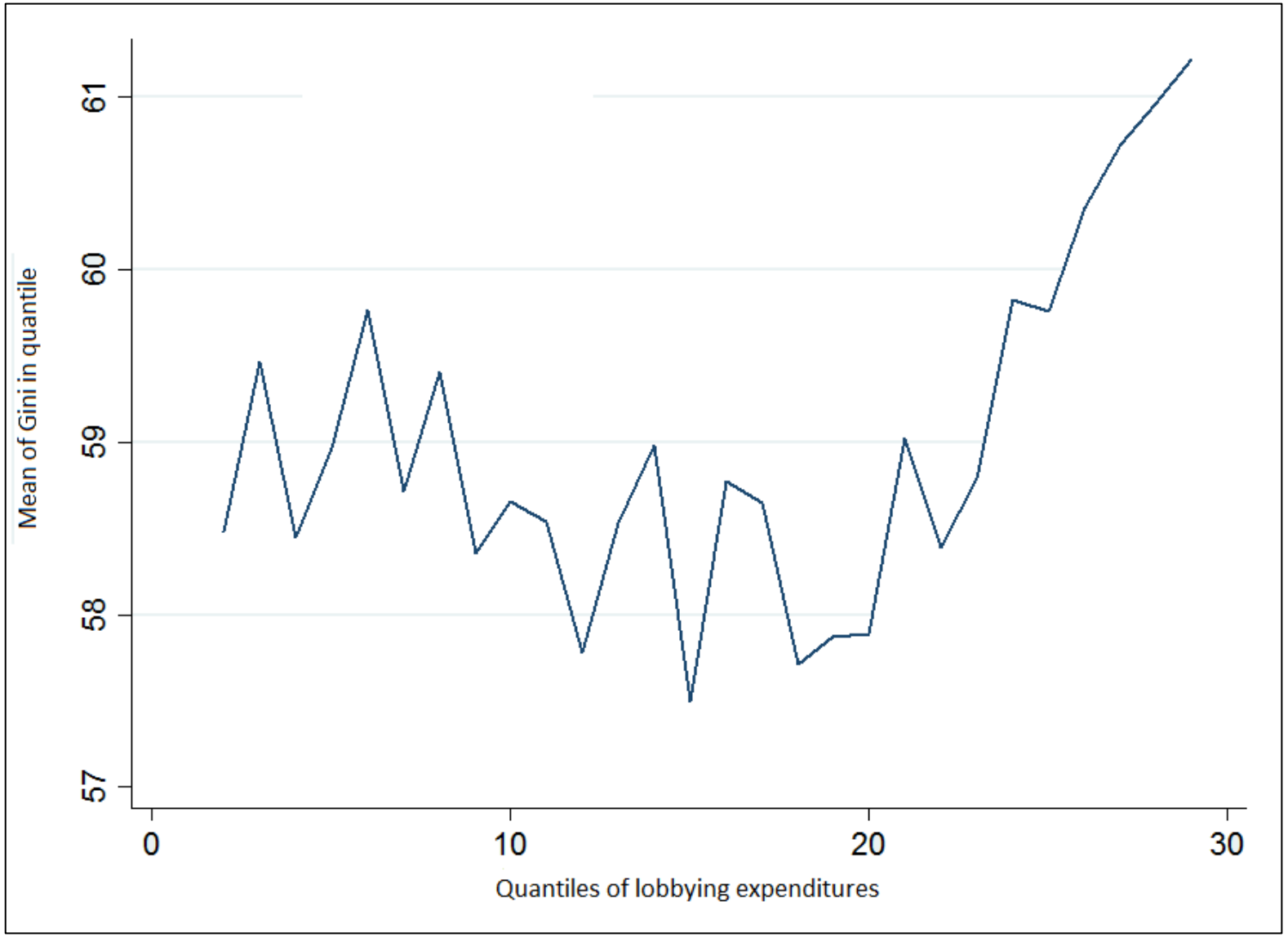
By contrast, lobbying…

- Increases top income inequality
- Increases inequality at large
- Reduces social mobility
- Does not enhance growth

Lobbying VS Top1% (USA)



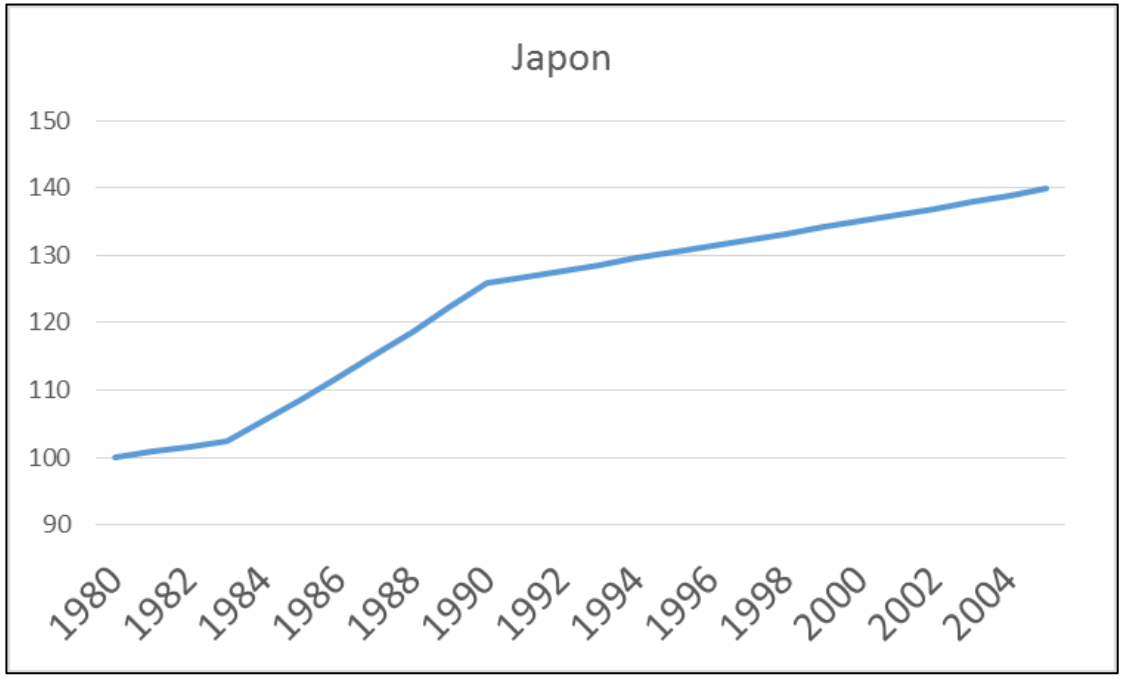
Lobbying VS GINI (USA)

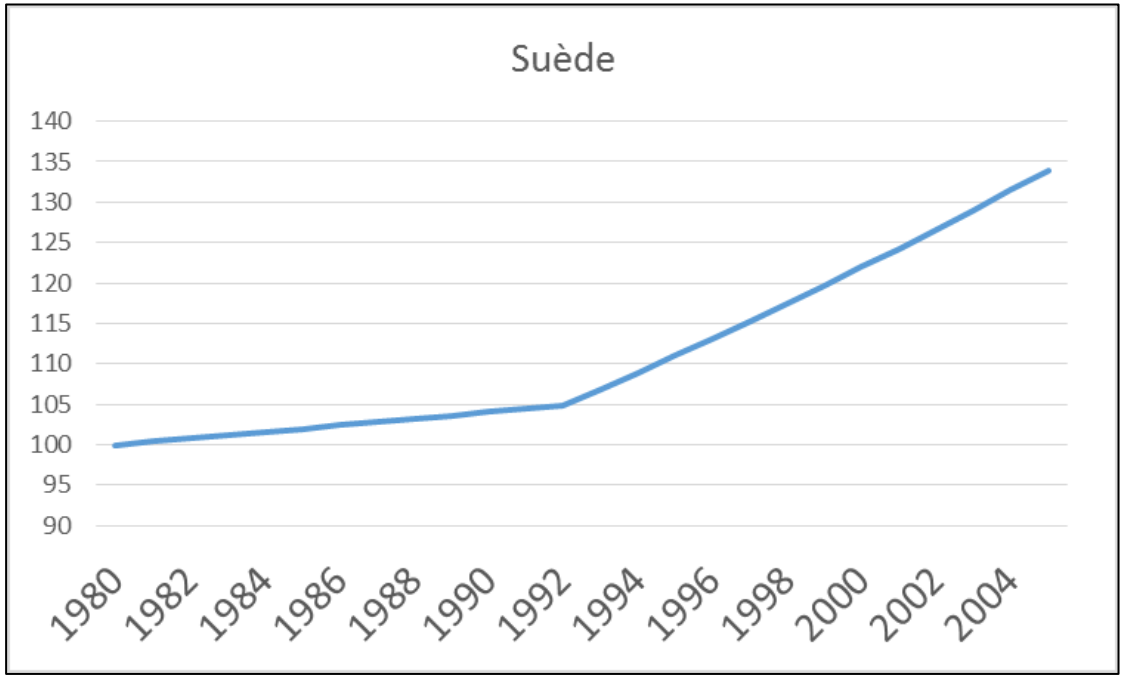


Sweden over past twenty five years

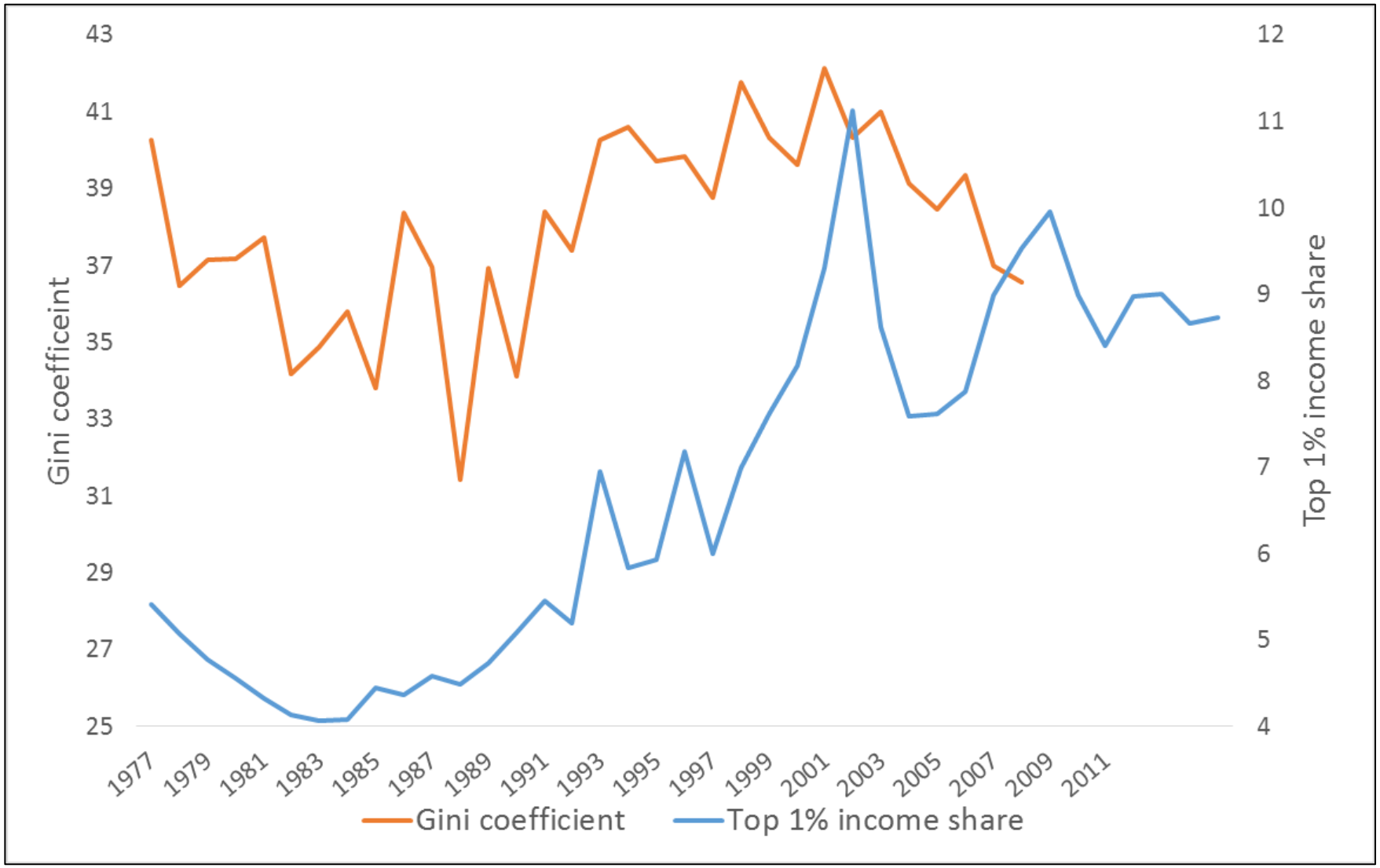
- Innovation and productivity growth have accelerated
- Top income inequality has increased
- Gini has not increased
- Social mobility has not gone down

Tendance de la productivité en Suède et au Japon

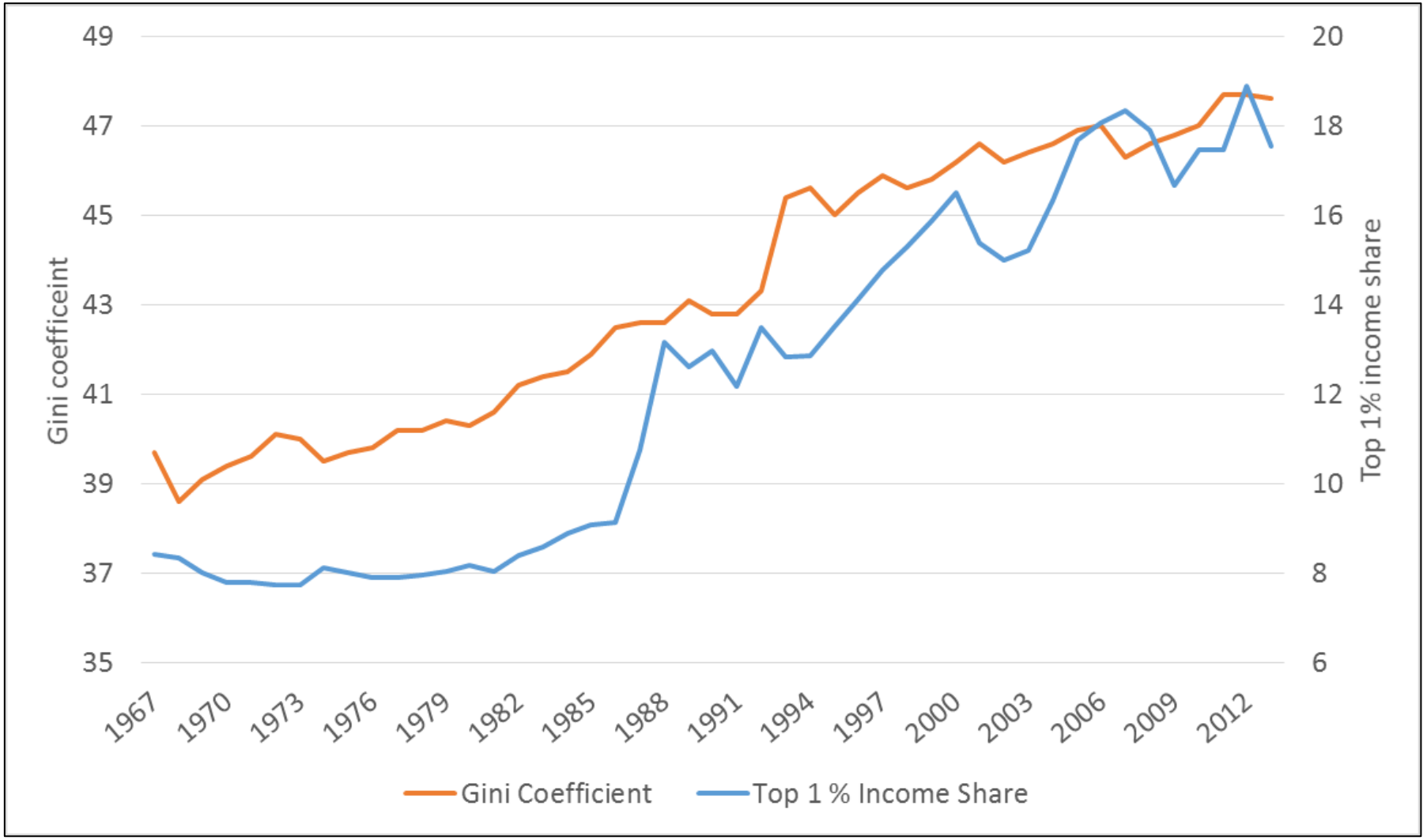




SWEDEN


Gini coefficeint
Top 1% income share
43
41
39
37
35
33
31
29
27
25
12
11
10
9
8
7
6
5
4
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
Gini coefficient
Top 1% income share

USA


49
47
45
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41
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37
35
Gini coefficeint
20
18
16
14
12
10
8
6
Top 1% income share
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997
2000
2003
2006
2009
2012
Gini Coefficient
Top 1 % Income Share

Should we not worry at all about top income inequality?

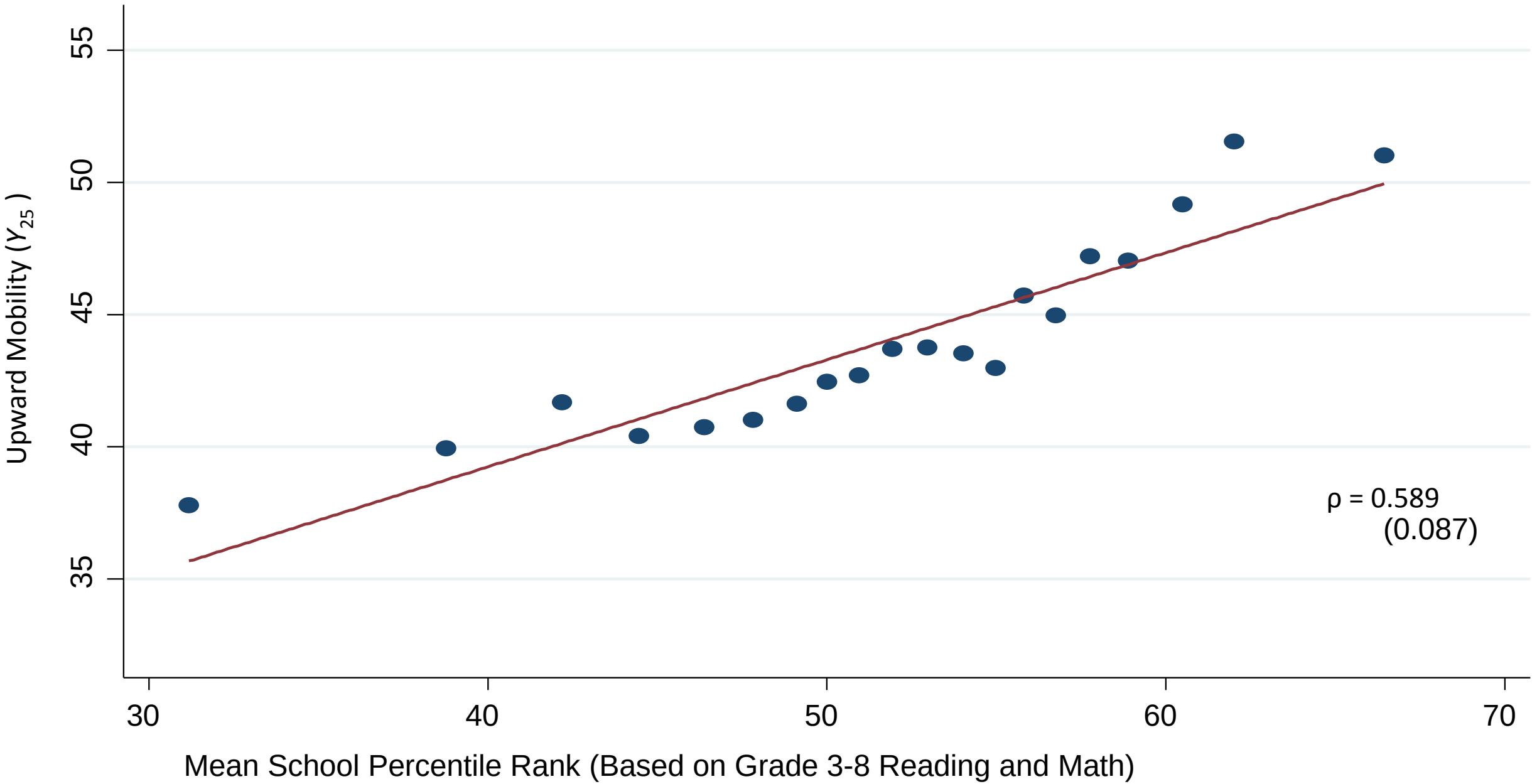
- Need to avoid exclusion from society for the top of the income distribution
- Need to avoid that the rich use their wealth to prevent competition
- Need to avoid that the rich buy out the political system
- ….back to Schumpeter!!

How to promote inclusive growth in developed economies

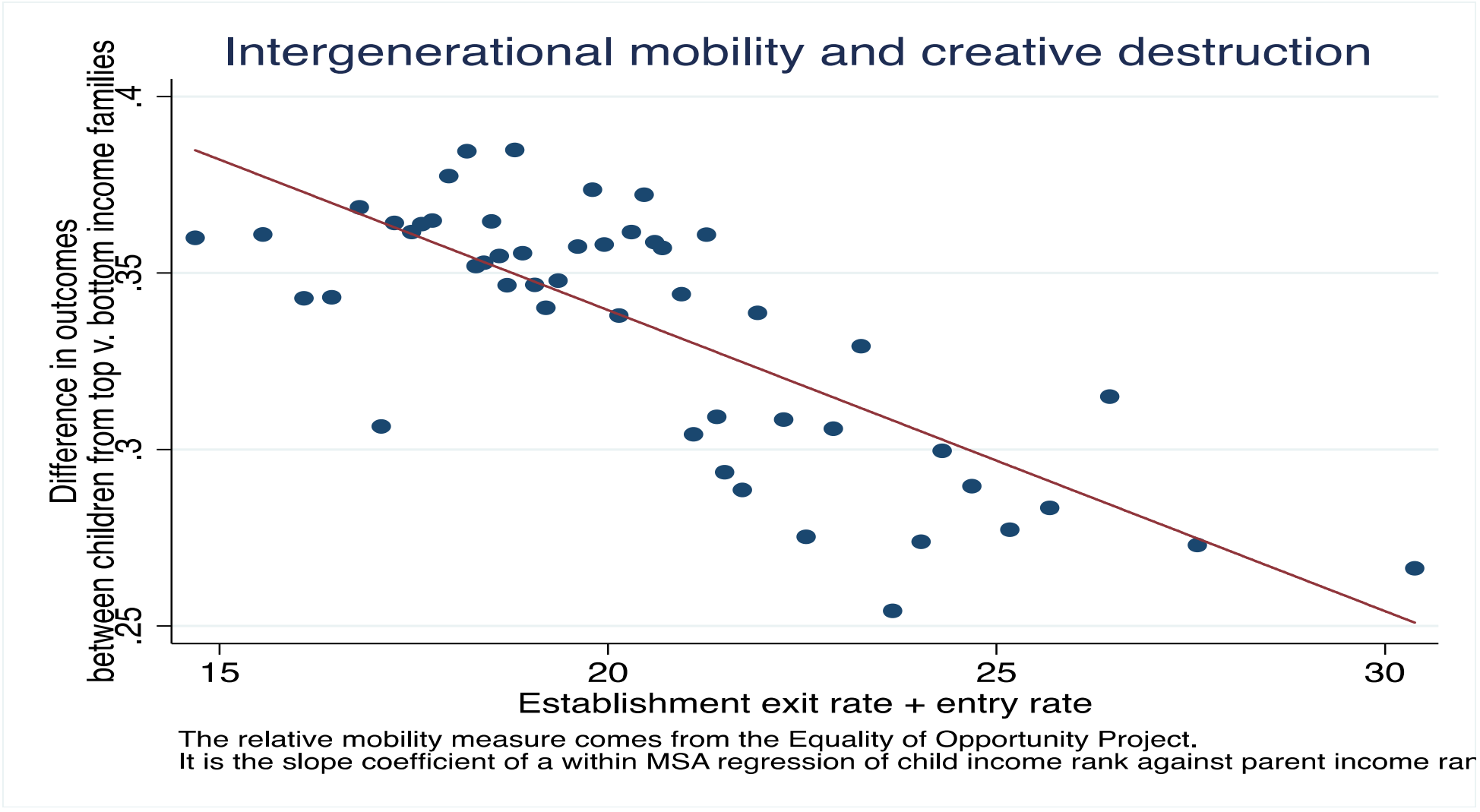
- Look at main drivers of innovation-based growth
  - Education
  - Product market competition
  - Labor market flexibility
  - Countercyclical macropolicies
- Then look at how each of these affects the various measures of inequality, especially social mobility

Enhancing social mobility: schooling

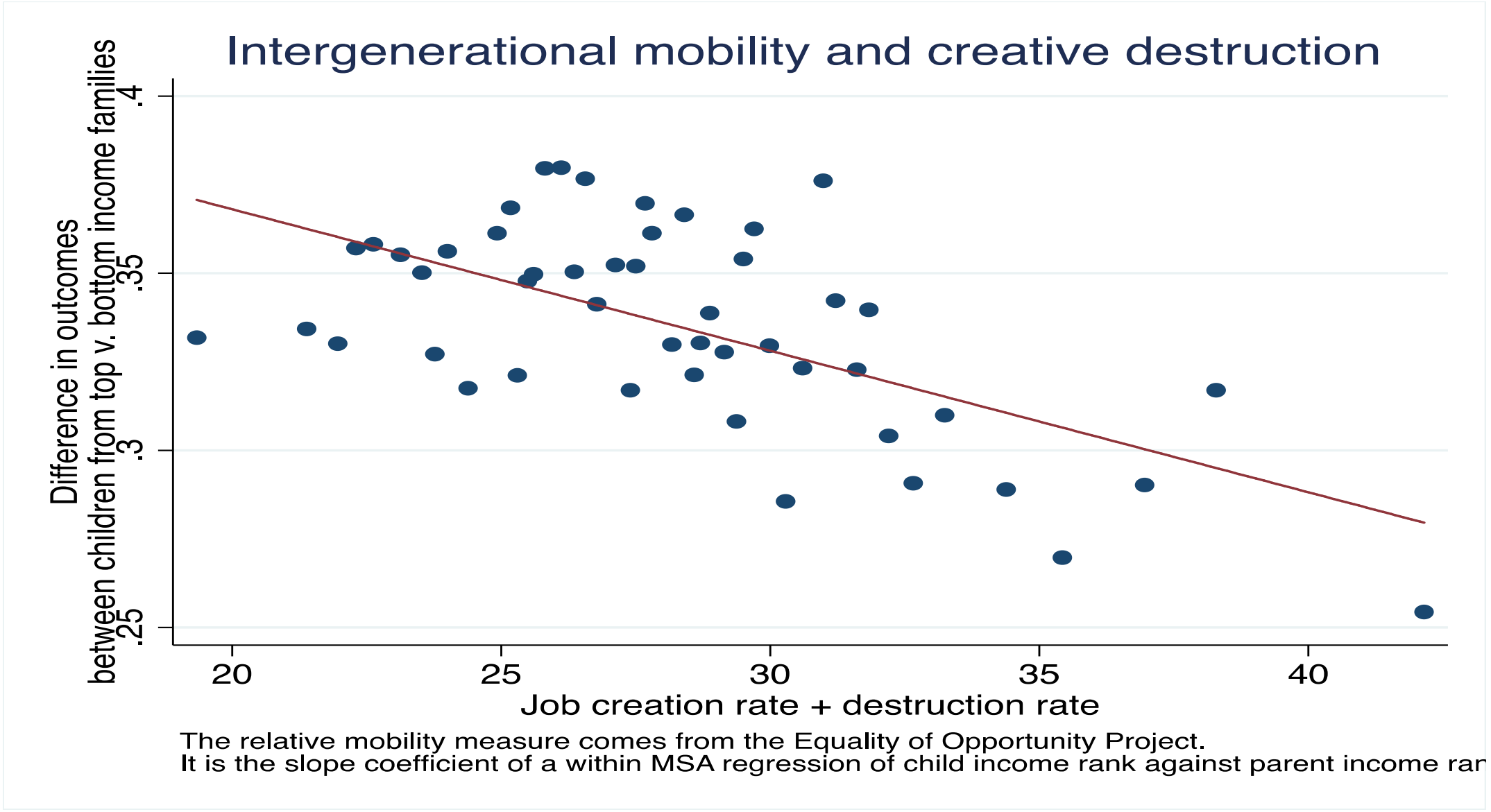
Factor #3: Upward Mobility vs. Test Scores



Enhancing social mobility: competition


Intergenerational mobility and creative destruction
Difference in outcomes between children from top v. bottom income families
.25
.3
.35
.4
15
20
25
30
Establishment exit rate + entry rate
The relative mobility measure comes from the Equality of Opportunity Project.
It is the slope coefficient of a within MSA regression of child income rank against parent income rar

Enhancing social mobility: Flexsecurity on labor market


Intergenerational mobility and creative destruction
Difference in outcomes between children from top v. bottom income families
.25
.3
.35
.4
20
25
30
35
40
Job creation rate + destruction rate
The relative mobility measure comes from the Equality of Opportunity Project.
It is the slope coefficient of a within MSA regression of child income rank against parent income ran

Conclusion

- Large scope for innovation and technological revolution to generate long-lasting growth
  - But need to invest in knowledge economy and in structural reforms
- The growth generated by innovation and technological revolution has the potential of being inclusive
  - But need to invest in education, training, active labor market policy

Conclusion

- Need adequate structure of government spending and adequate fiscal systems
- Neither the old welfare state nor the minimal state