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

United States:
HP filtering of Productivity growth with $\lambda=500$

Trend of productivity growth rate

Total factor Productivity
Labor Productivity
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
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 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
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

Upward Mobility ($Y_{25}$)

Mean School Percentile Rank (Based on Grade 3-8 Reading and Math)

$\rho = 0.589$

(0.087)
Enhancing social mobility: competition
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 rank.
Enhancing social mobility: Flexsecurity on labor market
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 rank.
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