

Discussion of:

“The Economics of Technical Change  
and Employment: A Reappraisal of Chris  
Freeman’s Intuitions”

Andrea Roventini  
[a.roventini@sssup.it](mailto:a.roventini@sssup.it)

# Innovation and employment

- Does technological progress create or destroy jobs?
- How come technological unemployment has not occurred since the Industrial Revolution?

# The compensation theory

1. new machines
2. lower prices
3. new investment
4. lower wages
5. higher income
6. new products, industry and markets

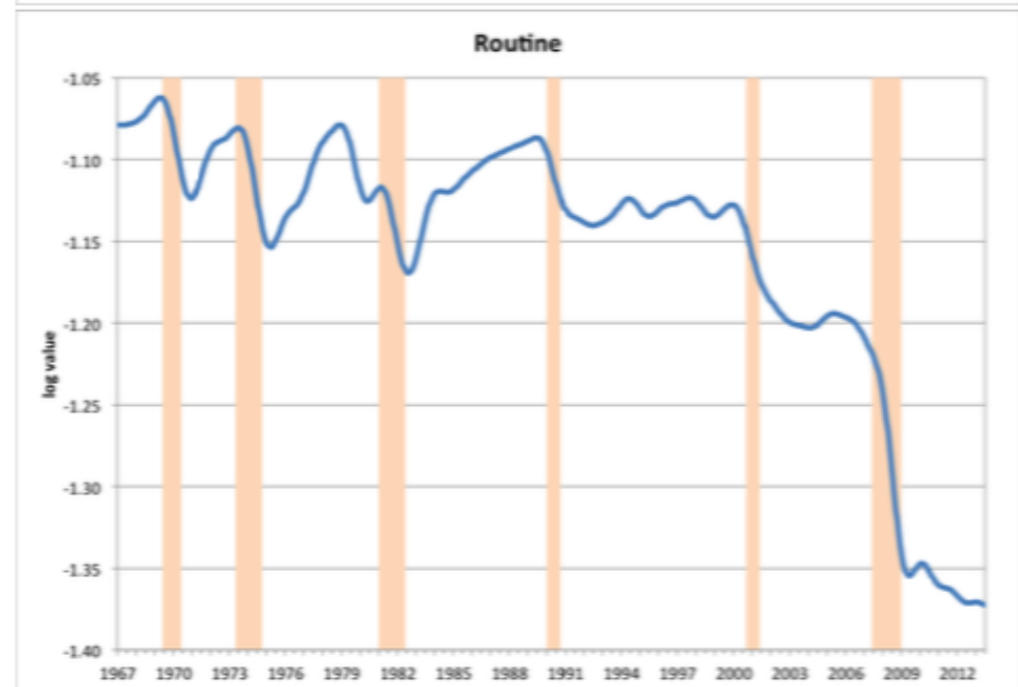
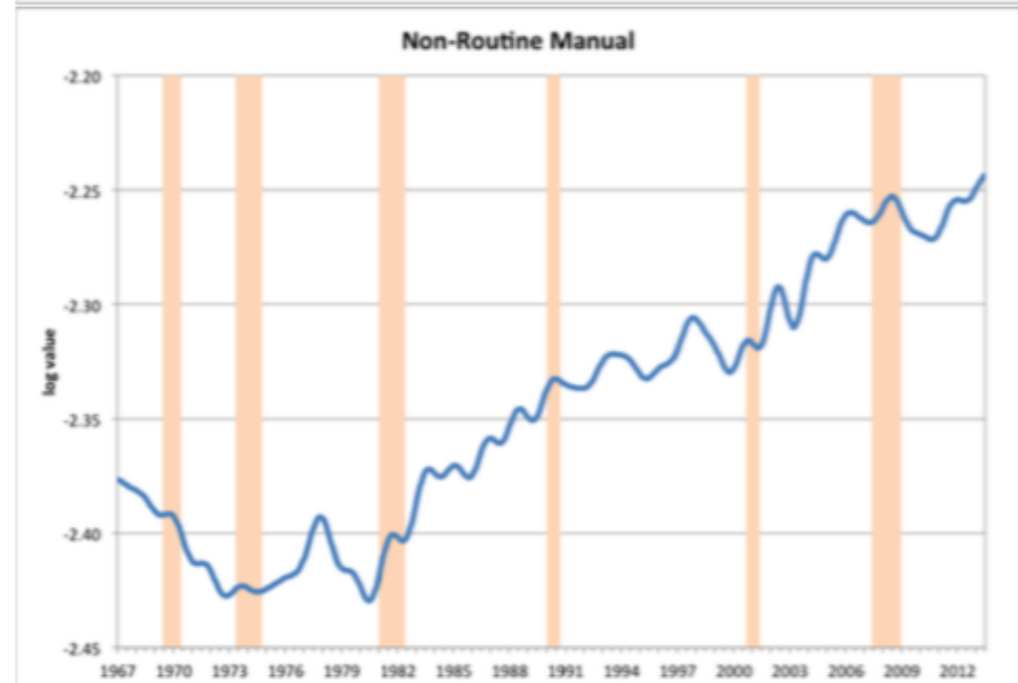
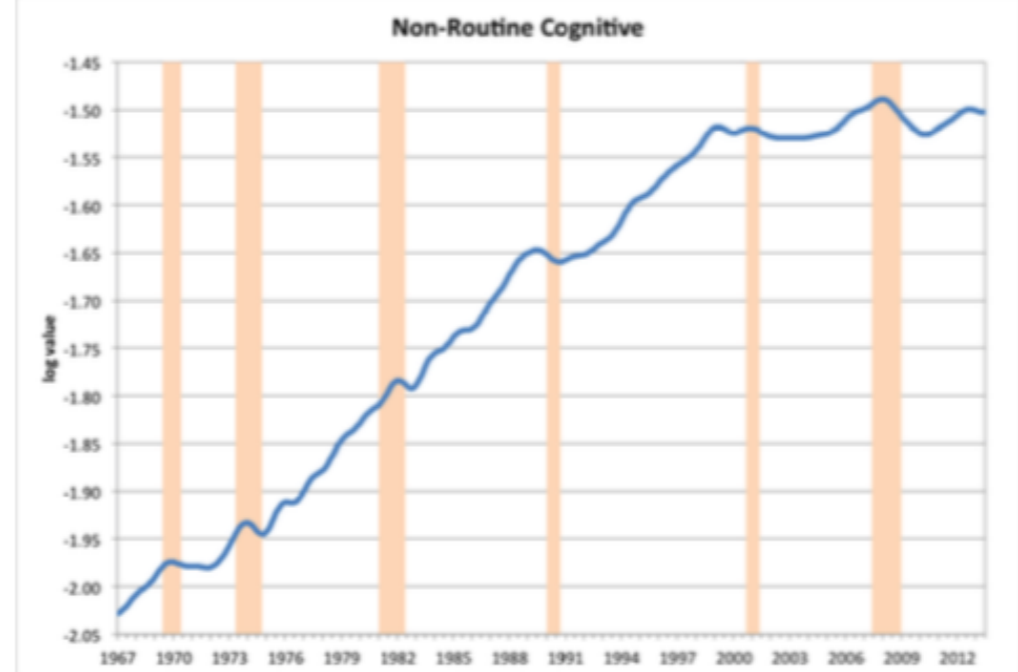
# Empirical evidence:

- Macroeconomic studies: some evidence of (lower) price and (higher) income effects
- Sectoral studies: product innovation increases employment
- Microeconomic studies: positive link between R&D and product innovation and employment (especially in high-tech industry)

# The impact of ICT and robots

- Product innovation has been creating jobs until now, but will it be still the case with the ICT and robot revolution?
- Jobless recoveries and job polarization
- Hysteresis and the long-term effects of unemployment

# Employment in three occupational groups 1967-2012

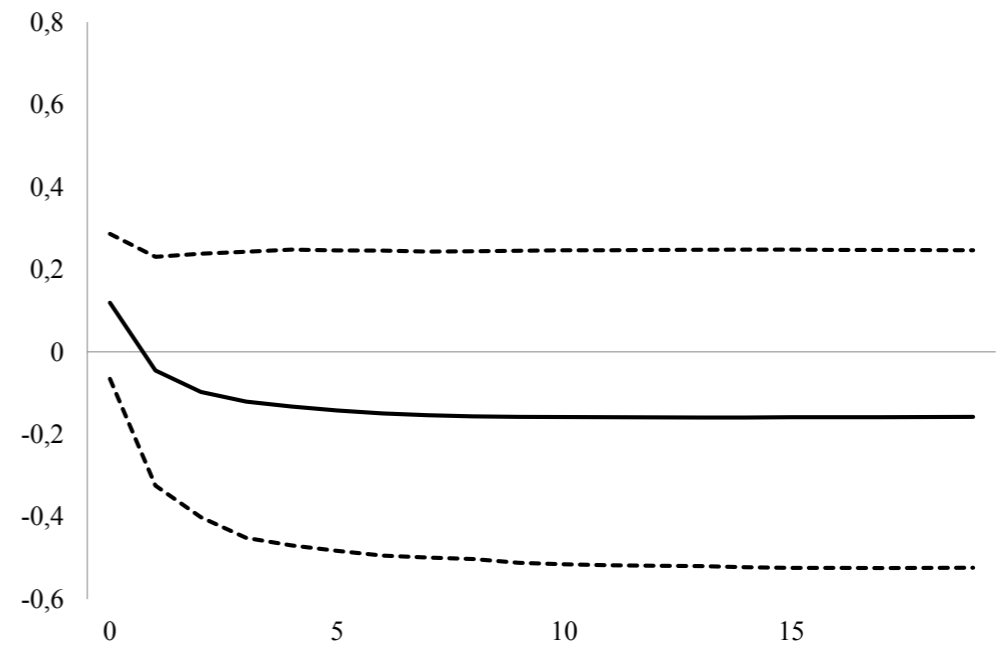
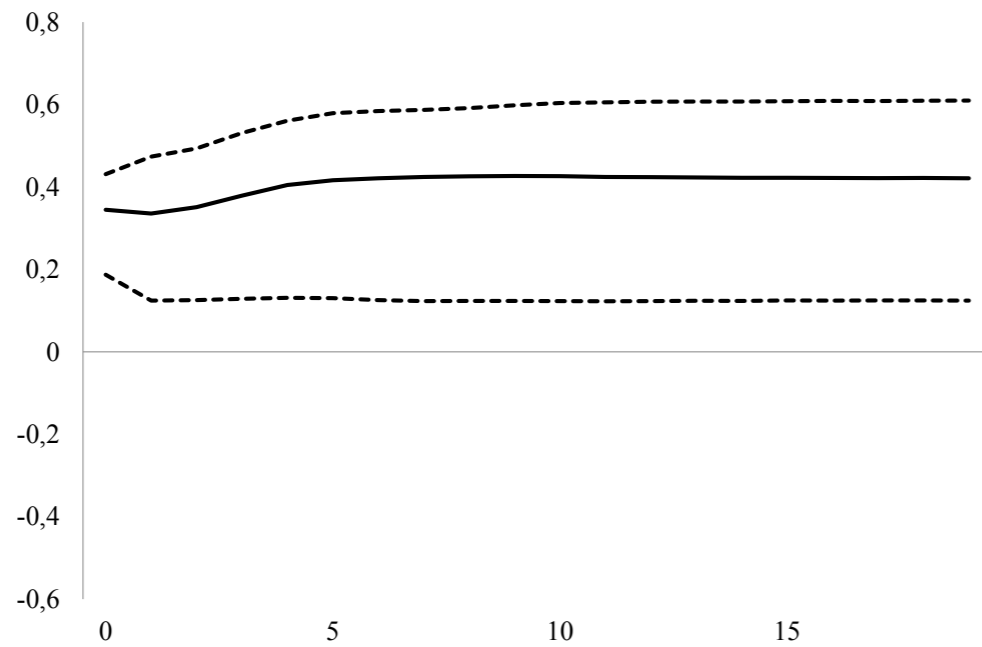


# Technology shocks and employment

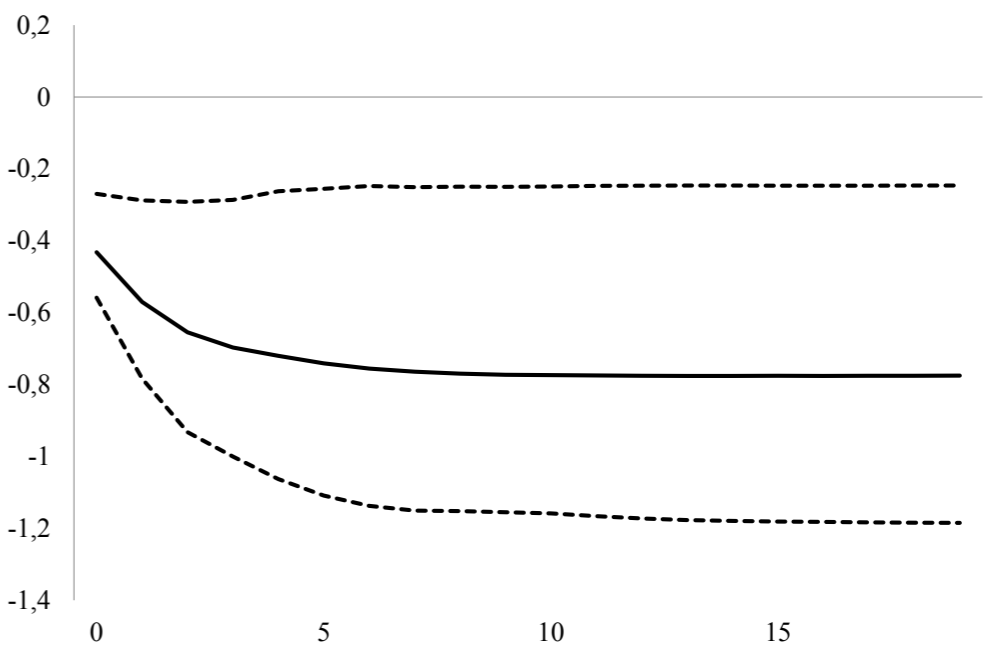
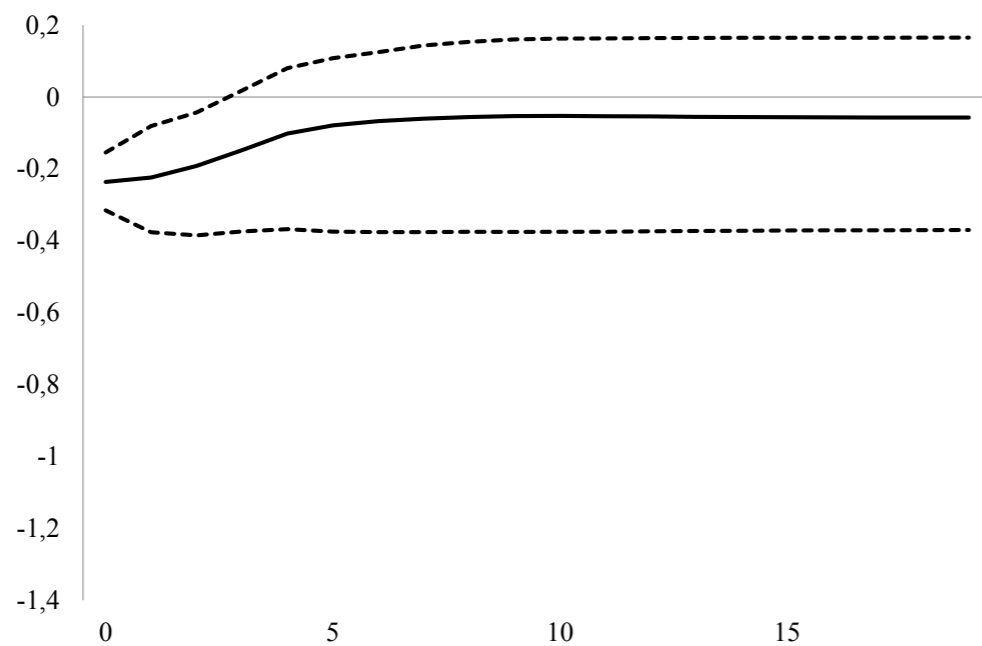
- Galì (1999) and Basu et al. (2006) find that technology shocks negatively affect hours worked, at least in the short-run
- Milder effects of technology shocks on hours worked starting from the mid 80s
- Do the effects of technology shocks on employment change according to the state of the economy?
  - TVAR model with productivity, GDP, hours worked
  - GIRFs depending on the state of the economy (expansions vs. recessions)

# Technology shocks, employment and GDP (1957 - 1979)

GDP



hours



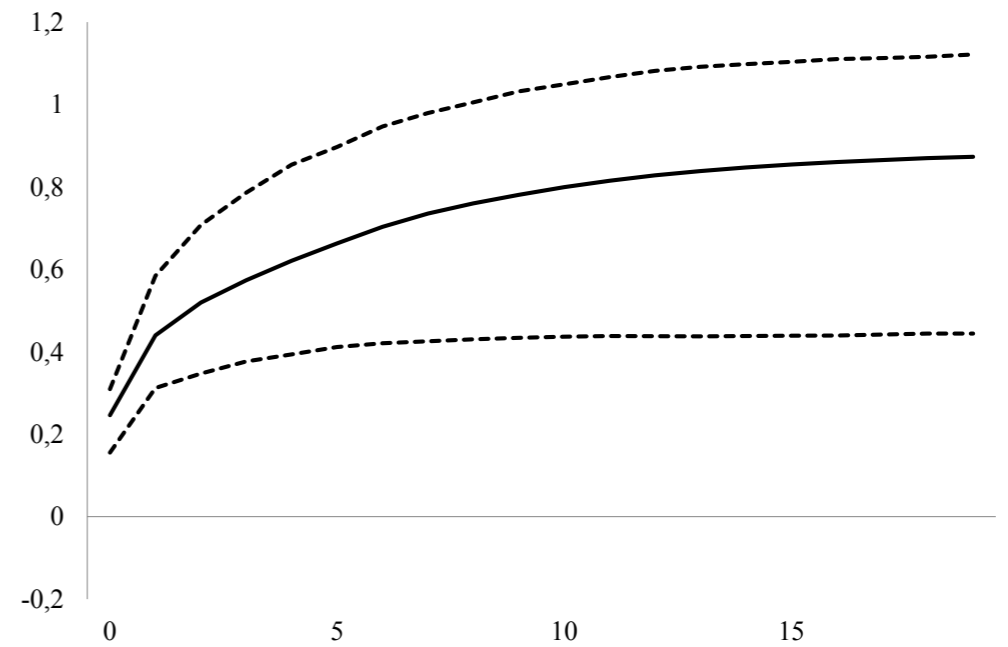
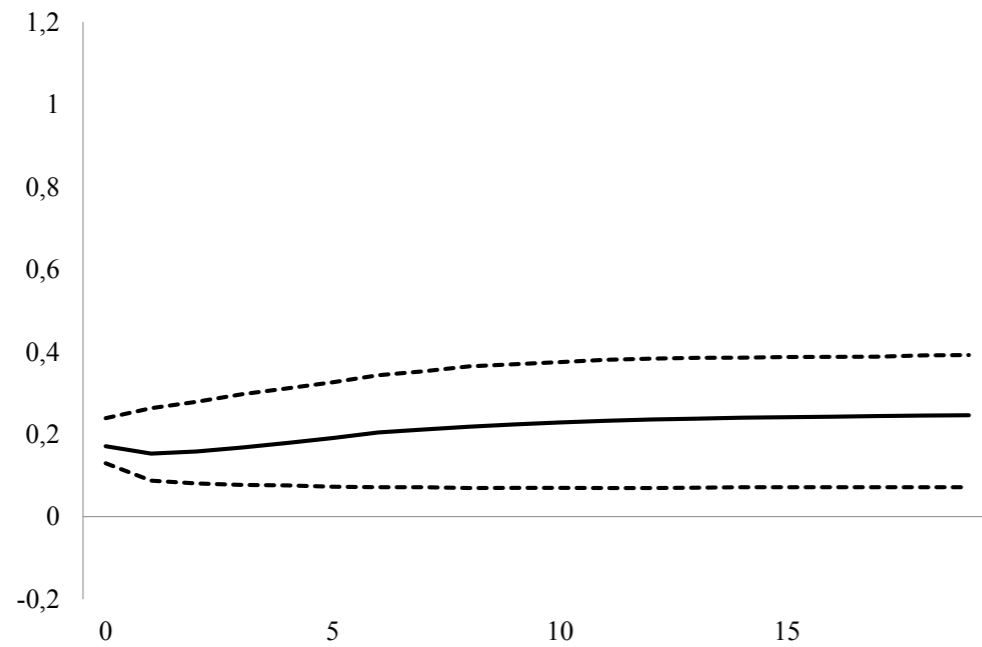
expansions

recessions

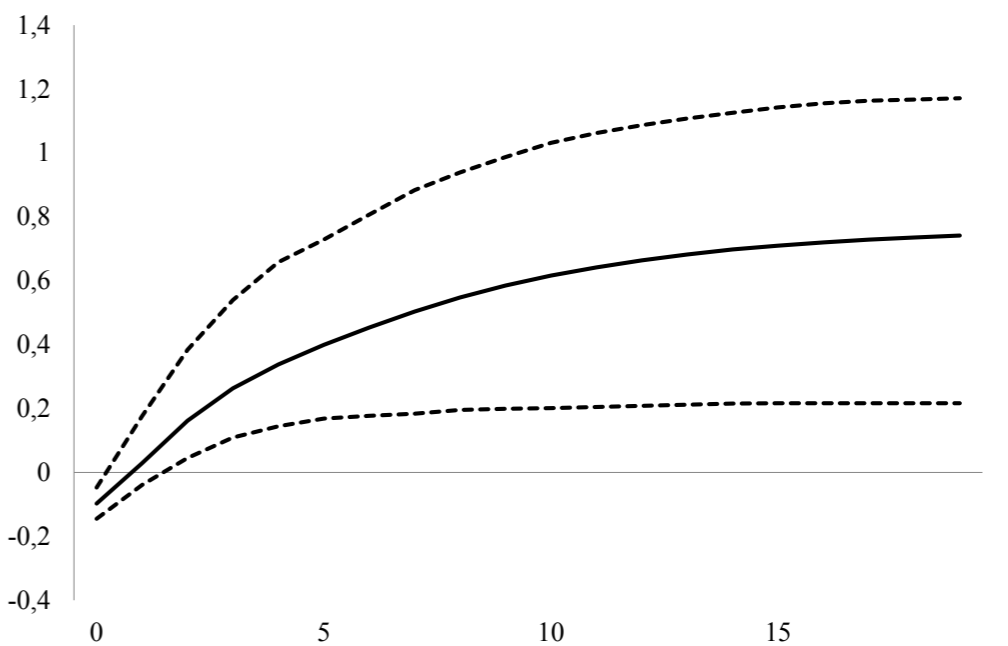
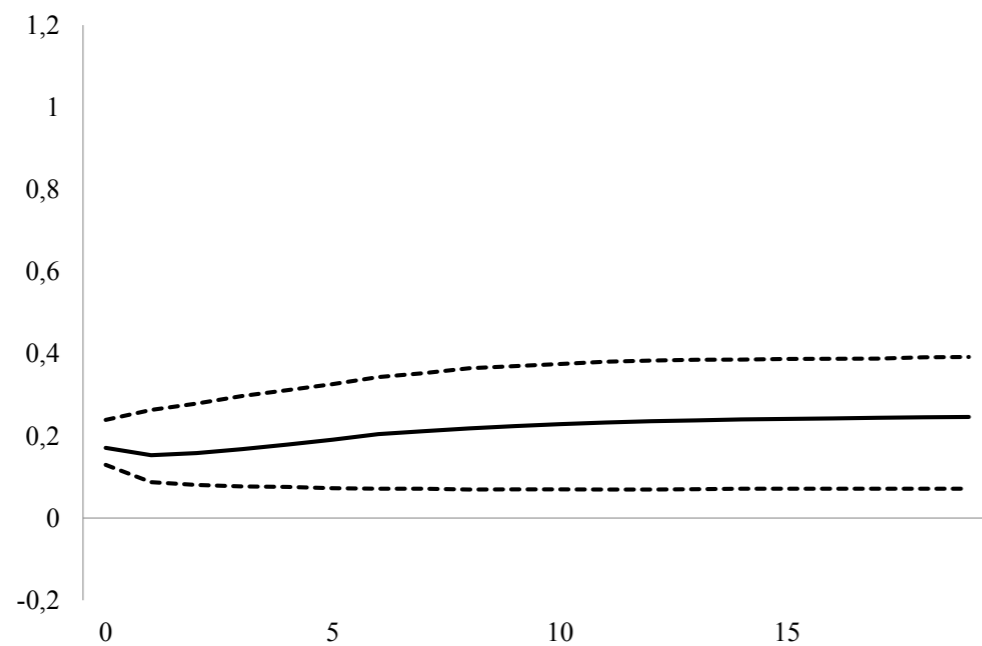


# Technology shocks, employment and GDP (1984 - 2011)

GDP



hours



expansions

recessions

# The importance of the institutional setup

- In the last decades real wage has been stagnant and working time has stop falling
- Reduction of working time as a possible solution of technological unemployment (from Keynes, 1930 to Pasinetti, 1981 and the 35 / 30 hours experiments)
- Real wage and employment dynamics in the “Fordist” regime
- Inequality is better explained by minimum wage, union power and tax system than by skill-biased technical change