

# The Pre-Great-Recession Slowdown in Productivity Growth\*

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**John G. Fernald**

Federal Reserve Bank of San Francisco

**Gilbert Cette and Benoit Mojon**

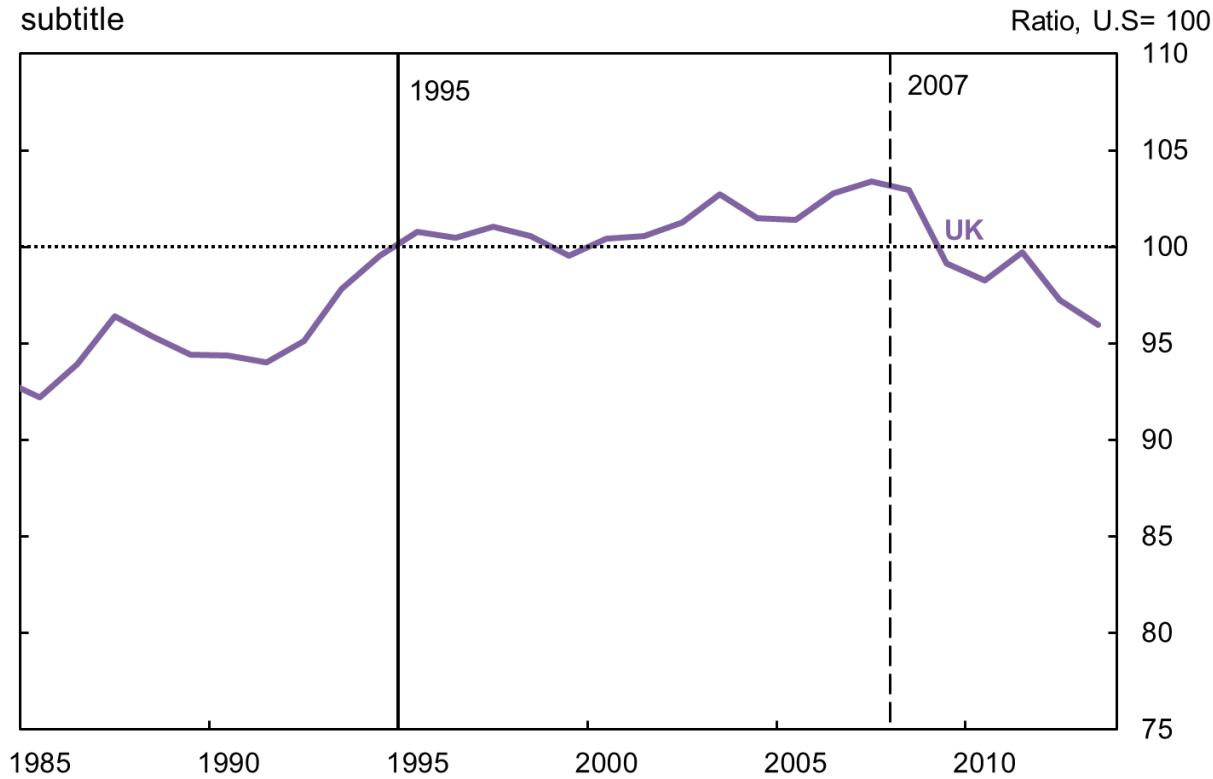
Banque de France

\* The views expressed here are our own and do not necessarily reflect the views of the Federal Reserve Bank of San Francisco, the Banque de France, or anyone else associated with these institutions

# Diverging TFP performance 1995-2007

## TFP levels relative to the United States

subtitle



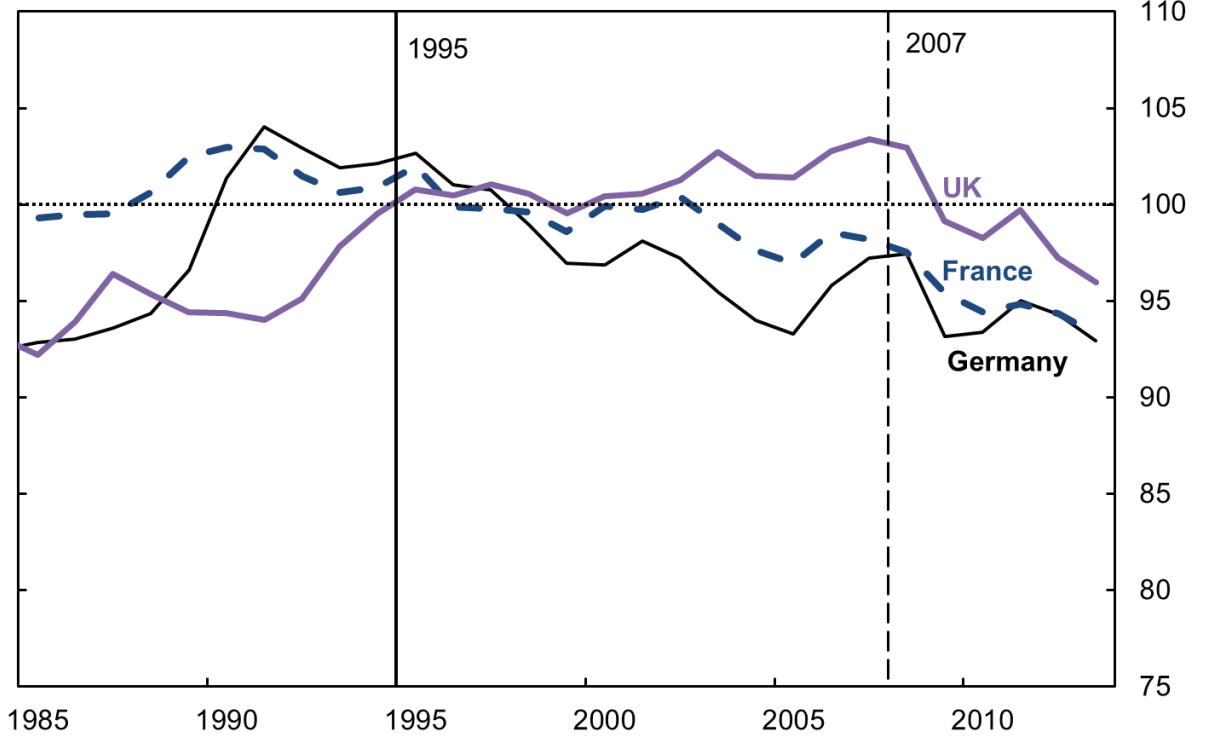
Source: Bergeaud, Cette, and Lecat 2015

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Ratio, U.S.= 100



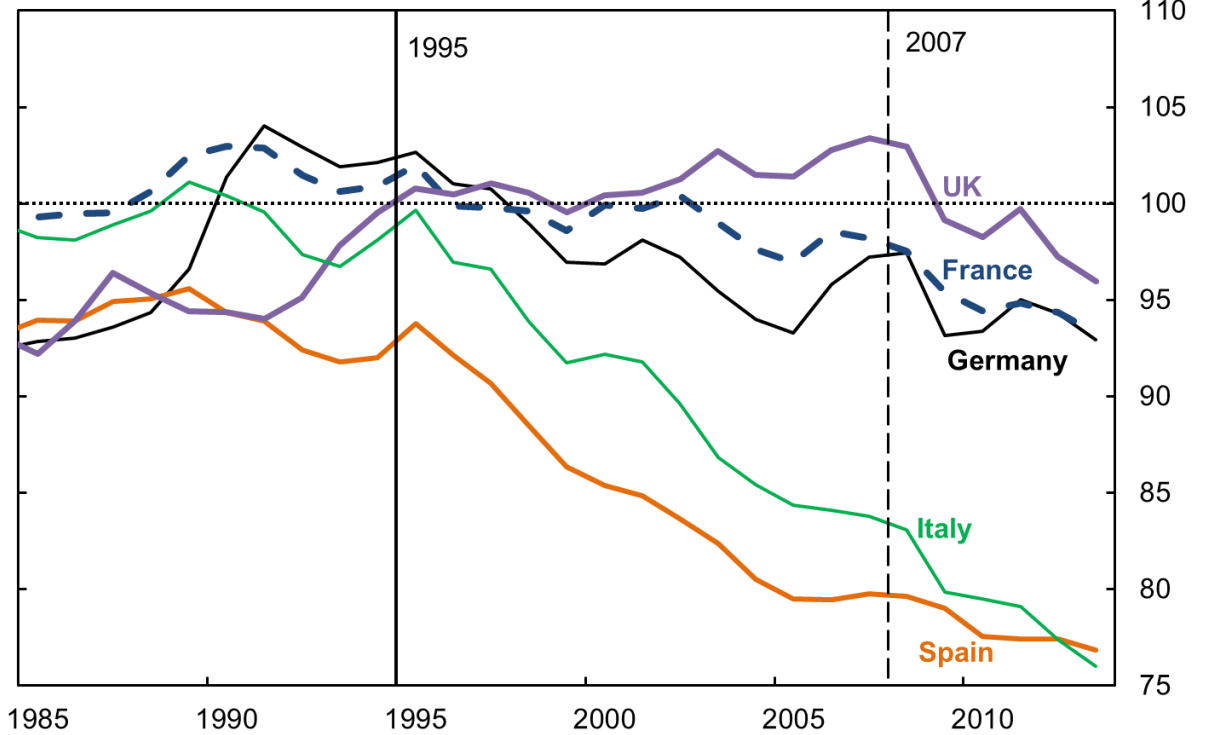
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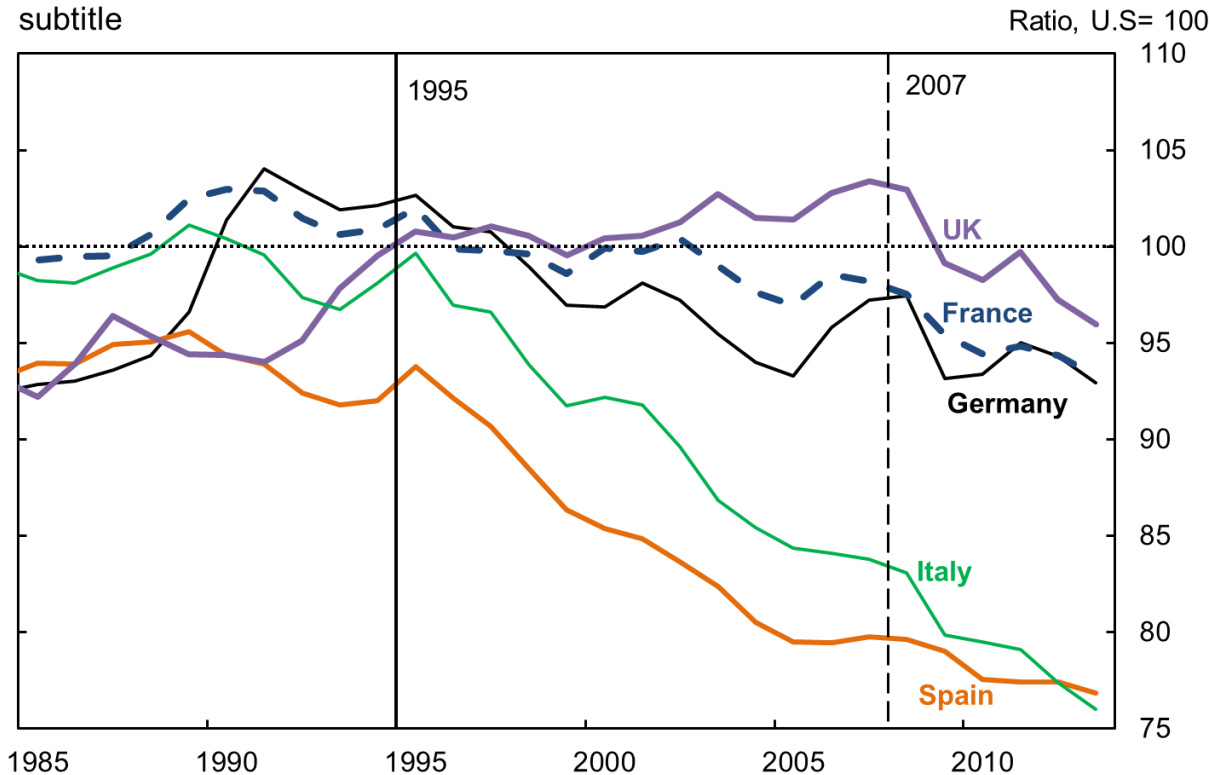


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- **TOP DOWN/INDUSTRY PERSPECTIVE**
- U.S. Exceptional IT-fueled 1995-2004
- France/Germany Structural rigidities
- Italy, Spain Rising misallocation from capital inflows

# Should same IT story apply equally everywhere?

- Not necessarily: Ideas flow across borders but have to be implemented locally
  - Timing of “intangible investments” (e.g., reorganizations associated with IT) can differ
    - Theory: Basu, Fernald, Oulton, Srinivasan (2003)
    - Evidence: Corrado, Haskel, Jona-Lasinio, Iommi (2012)

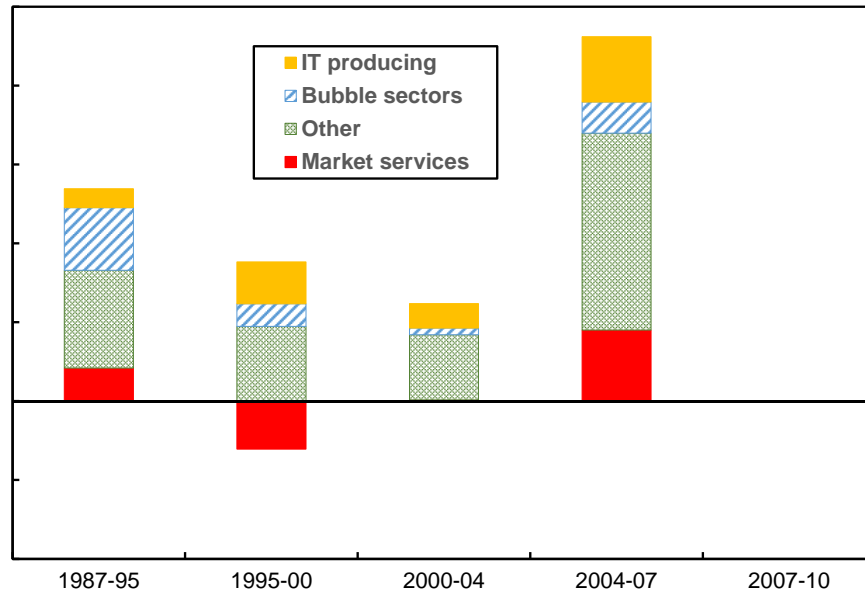
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- Industry data from EU-KLEMS

# Core Europe never got same market services boost

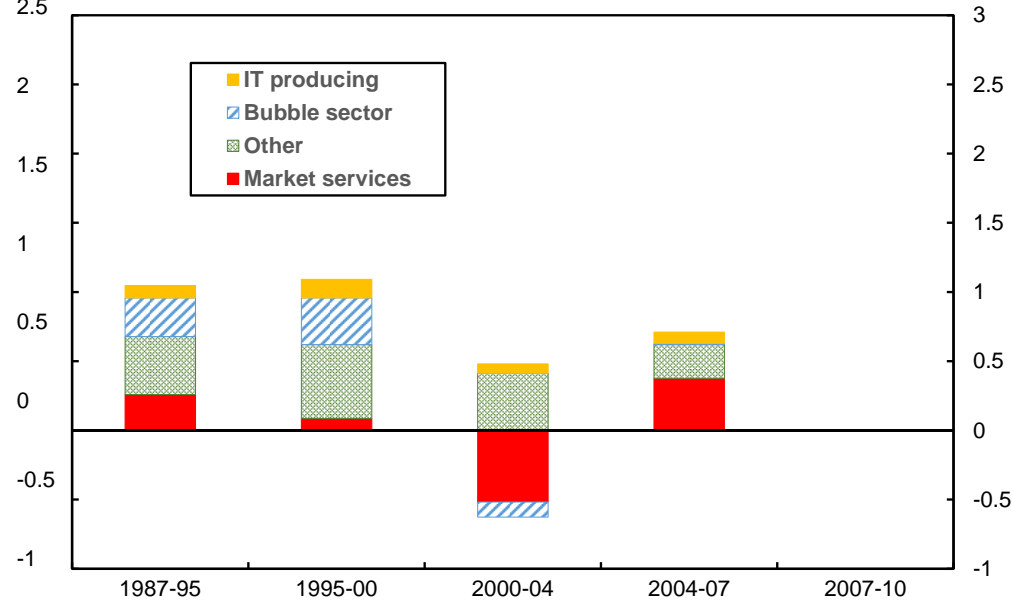
## TFP growth, Germany

Contribution by industry subgroup, annual percentage points



## TFP growth, France

Contribution by industry subgroup, annual percentage points



Notes: Data from EU KLEMS

- “Bubble sectors”: finance, construction, mining/ag, and petrol. refining.
- “Market services”: wholesale and retail trade, transportation, information (except publishing, which includes software), and business services.
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# Institutional barriers hold back continental Europe

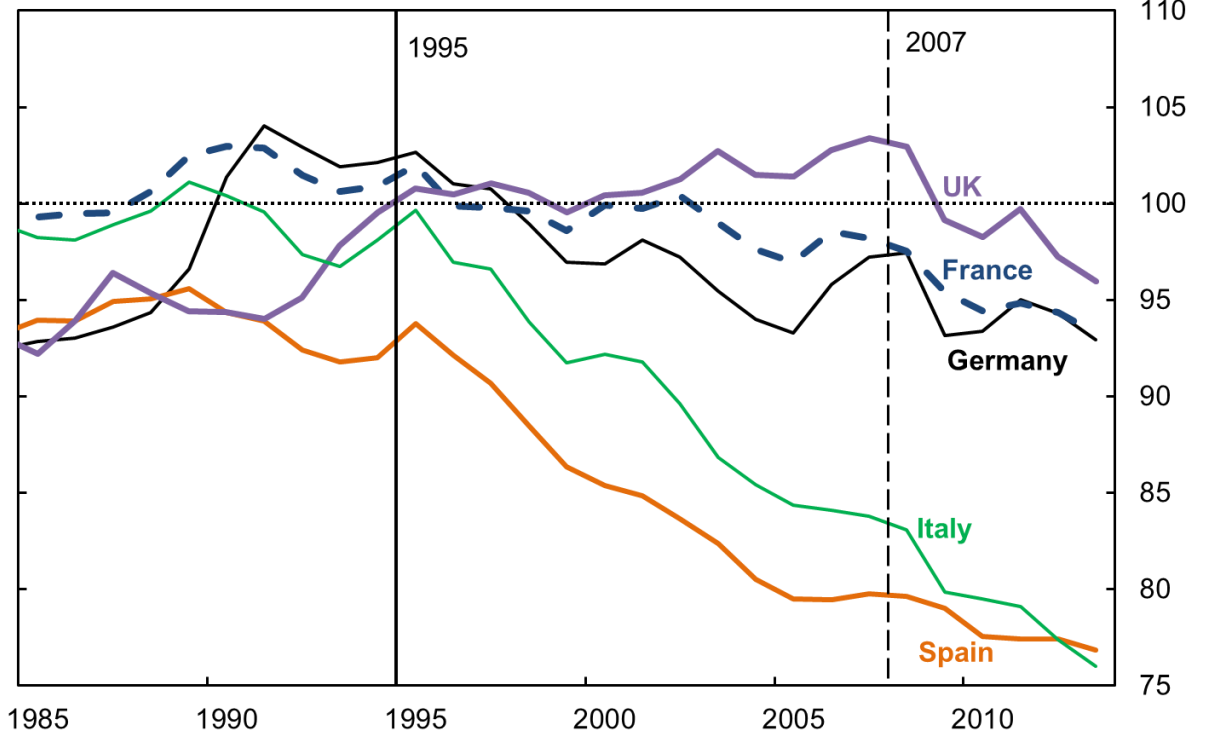
- “Reallocations” and reorganizations that didn’t happen because of labor and product market rigidities
  - E.g., Van Reenen et al (2010), Bourlès, Cette, Lopez, Mairesse, and Nicoletti (2013), Cette, Lopez, and Mairesse (2013)...

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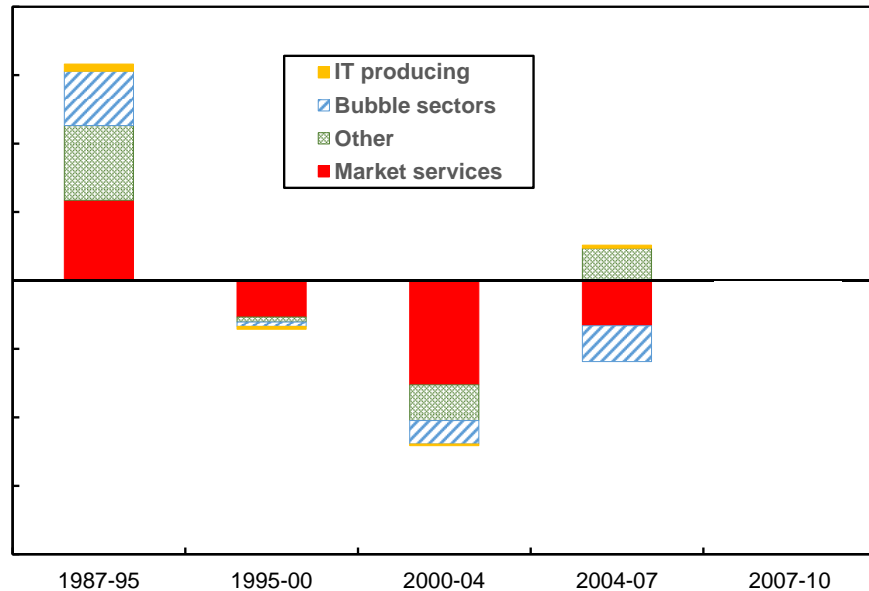


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# “Great unlearning” in Spain and Italy

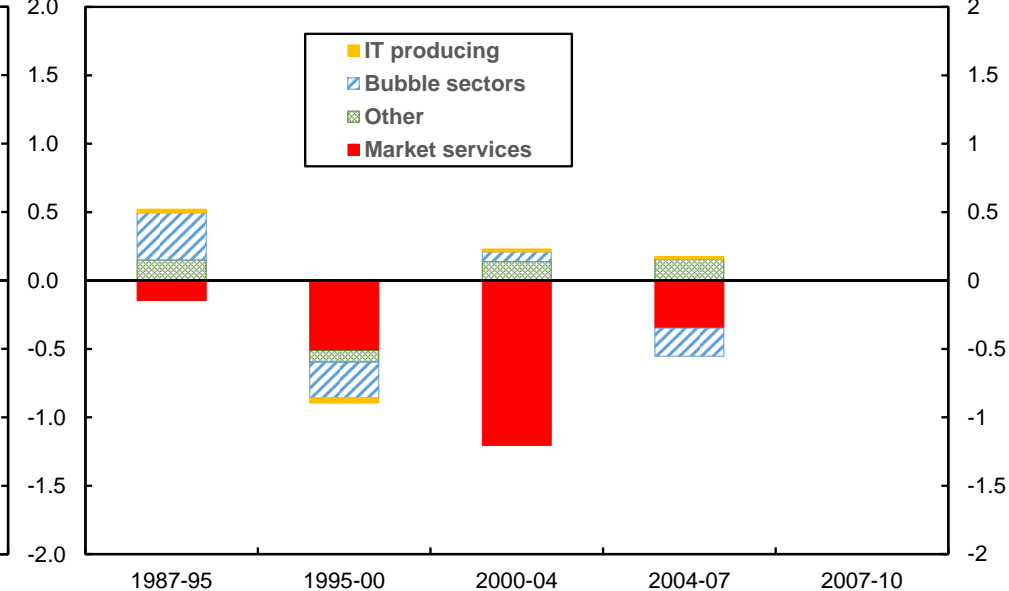
## TFP growth, Italy

Contribution by industry subgroup, annual percentage points



## TFP growth, Spain

%Contribution by industry subgroup, annual percentage points



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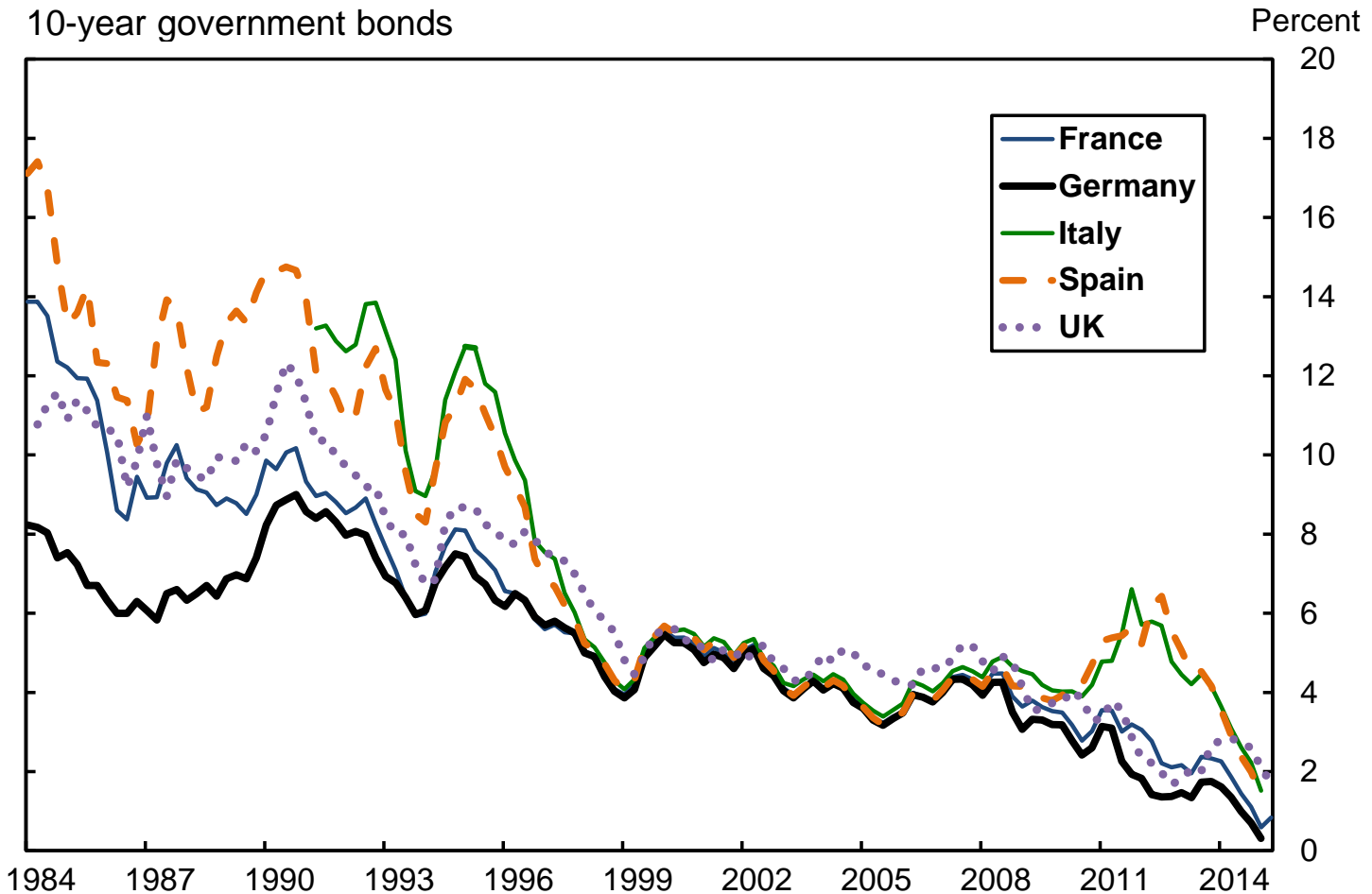
# Why did TFP in Southern Europe collapse?

- Rising misallocation in peripheral Europe
  - E.g., Gopinath et al. (2015), Calligaris (2015), Garcia-Santana et. al. (2015)

# Convergence of Euro nominal interest rates

## Nominal interest rates

10-year government bonds

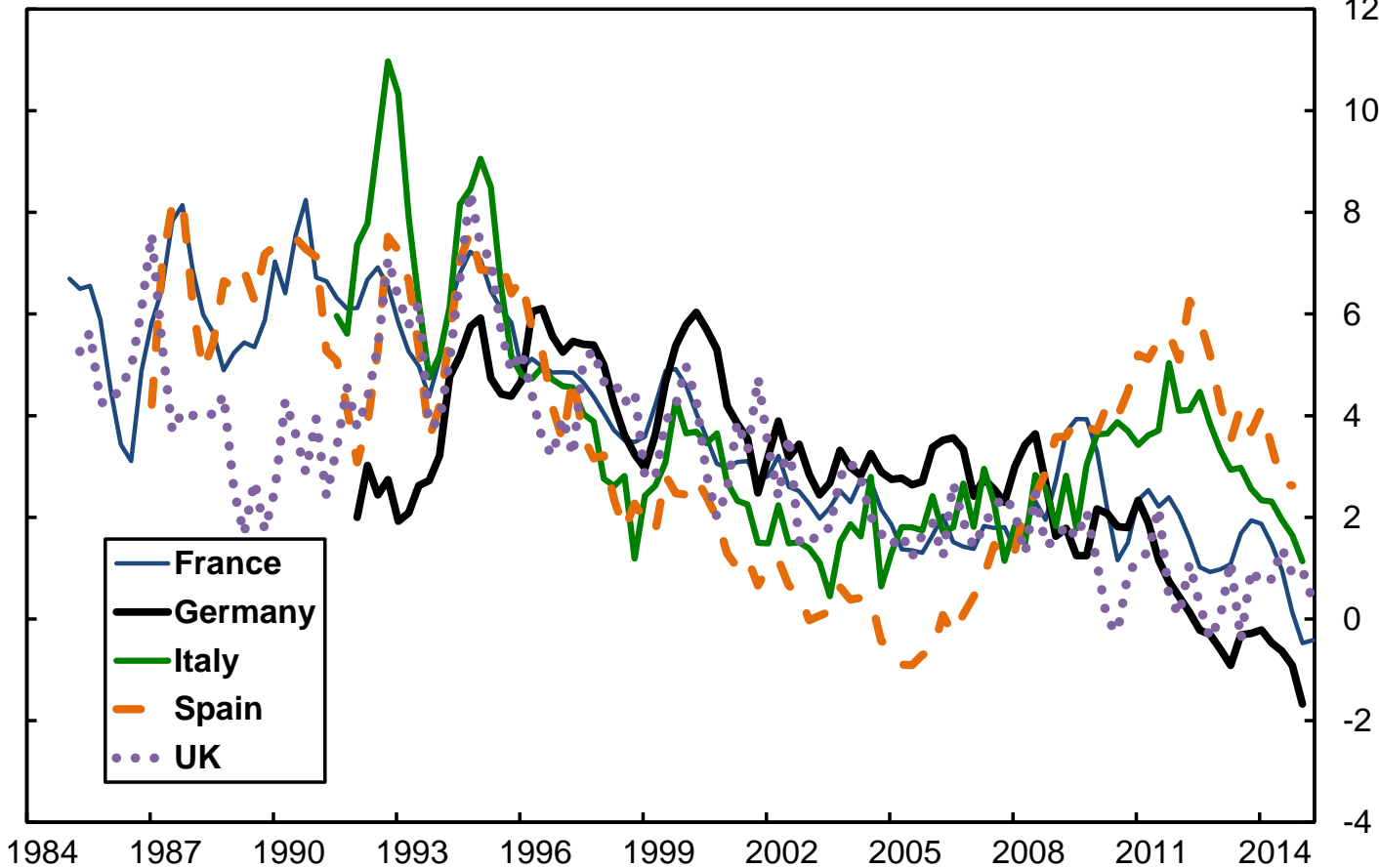


# Convergence of Euro real interest rates

## Real interest rates

10-year gov. bond rate less 4-quarter percent change in GDP deflator

Percent

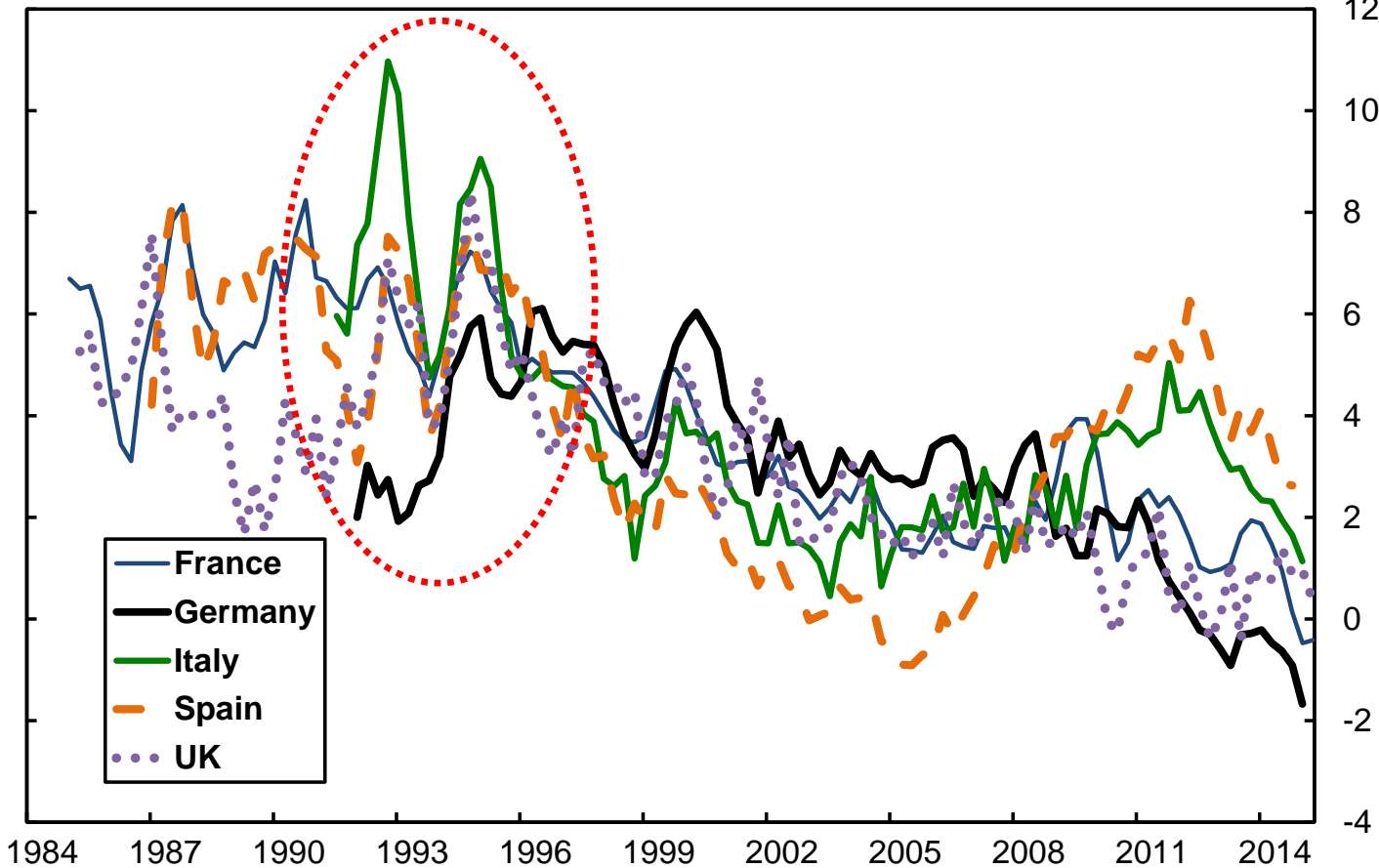


# Real interest rates fell more in periphery

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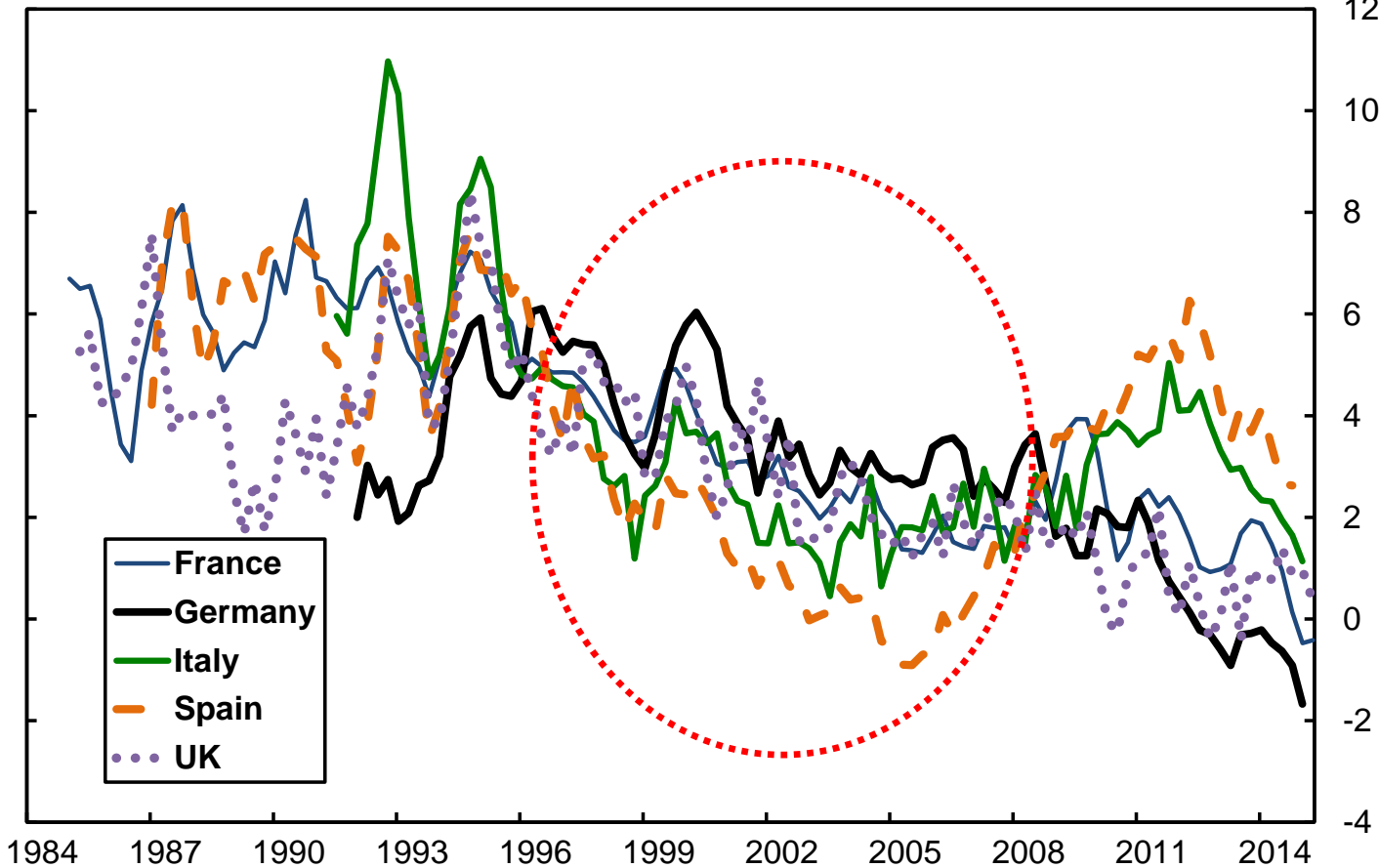


# Real interest rates fell more in southern Europe

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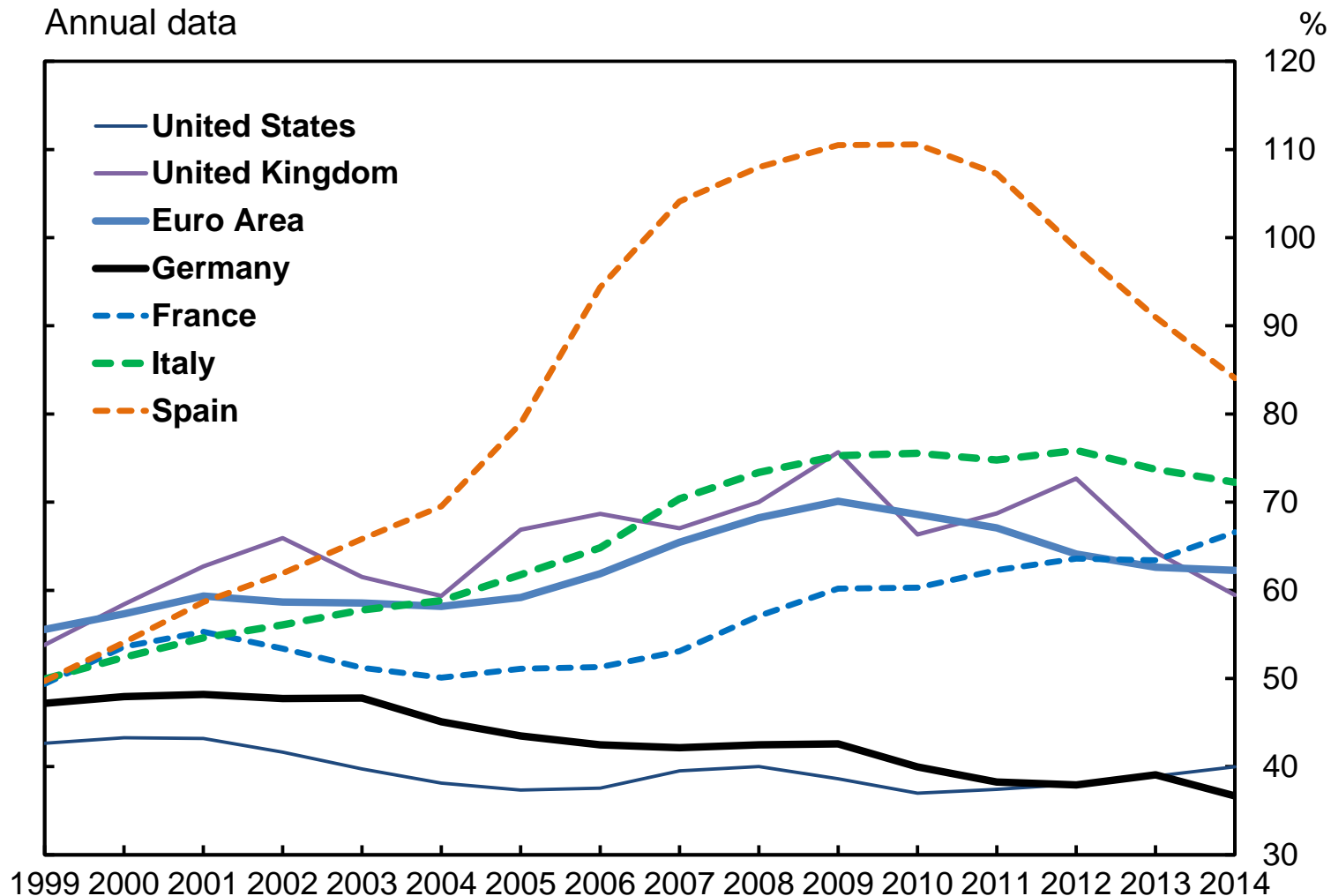




# Non-fin. corporate debt rose rapidly in Spain and Italy

## Non-Financial Companies' Debt as a Share of GDP

Annual data



Source:

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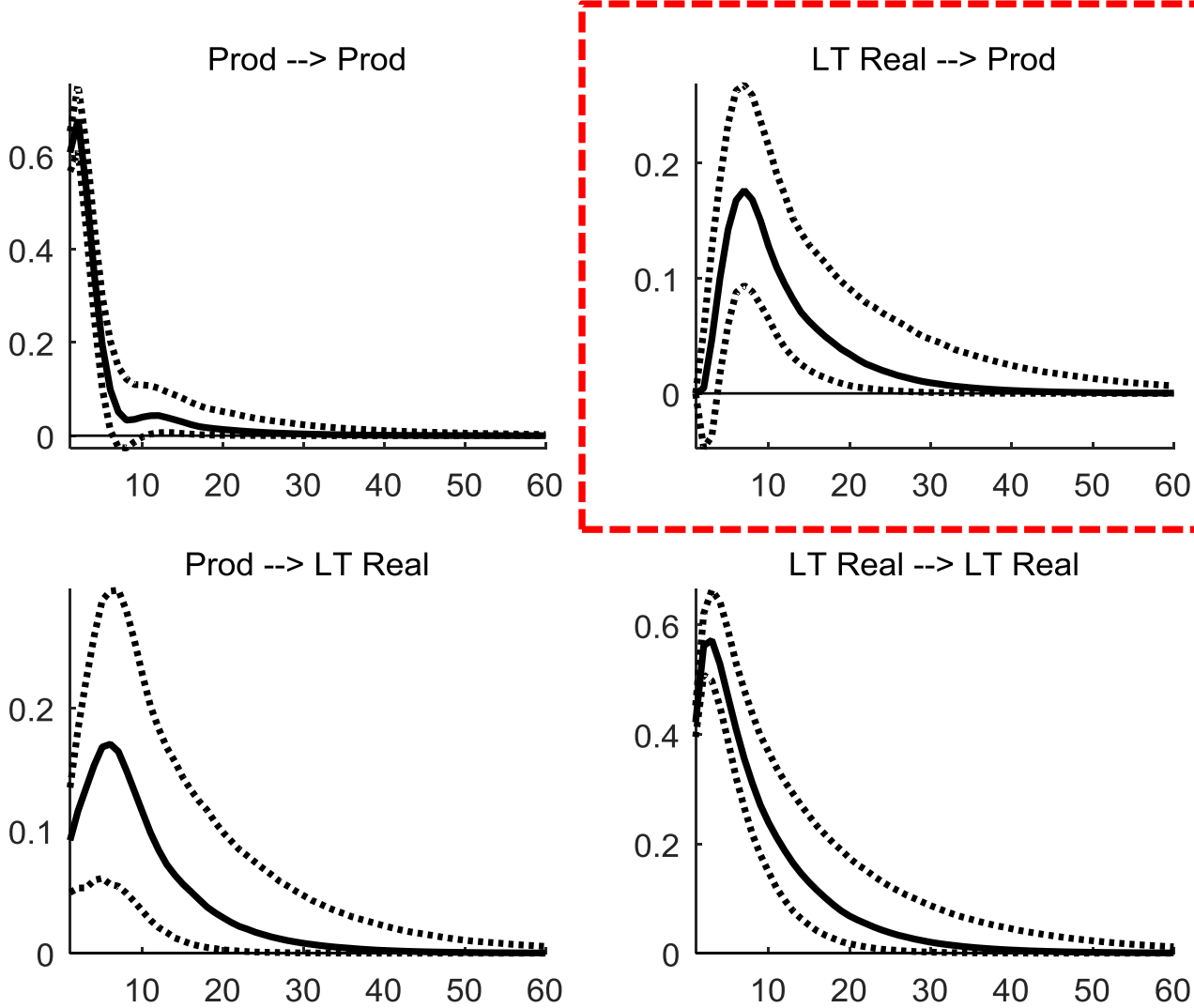
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- Reis (2013), Gopinath et al. (2015), model capital inflows interacting with financial frictions
  - Funds flow to less productive projects
    - E.g., large borrowers rather than productive ones
  - Increasing misallocation
- Macro implication: Exogenous decline in real interest rates leads to low productivity growth
  - Channel: Low-productivity firms get financed. Average productivity of firms falls.

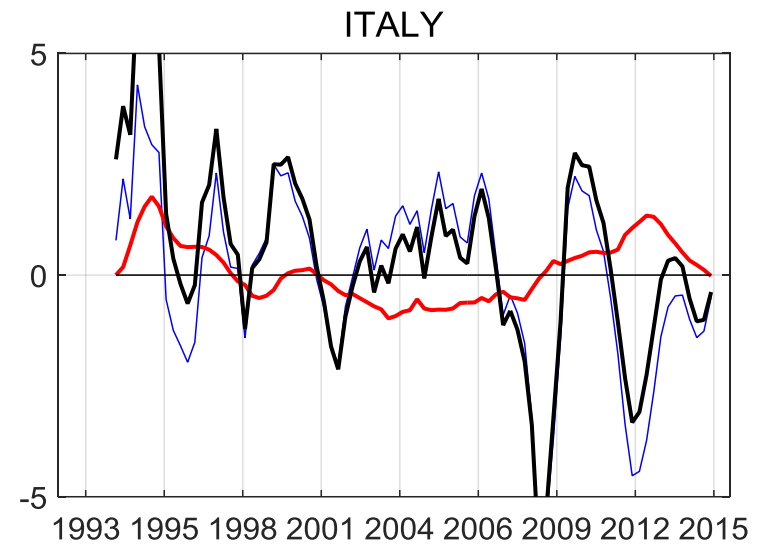
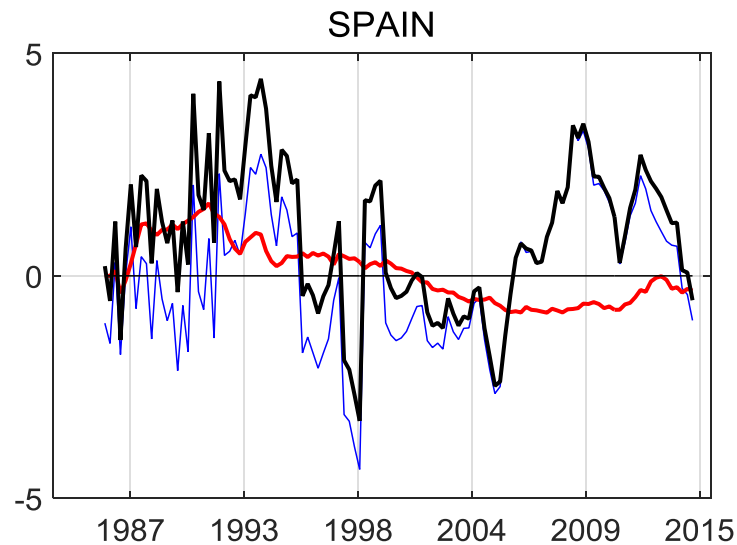
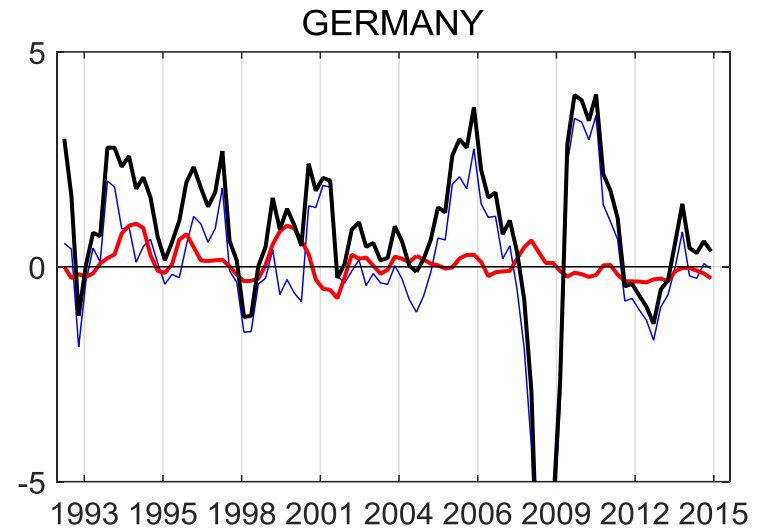
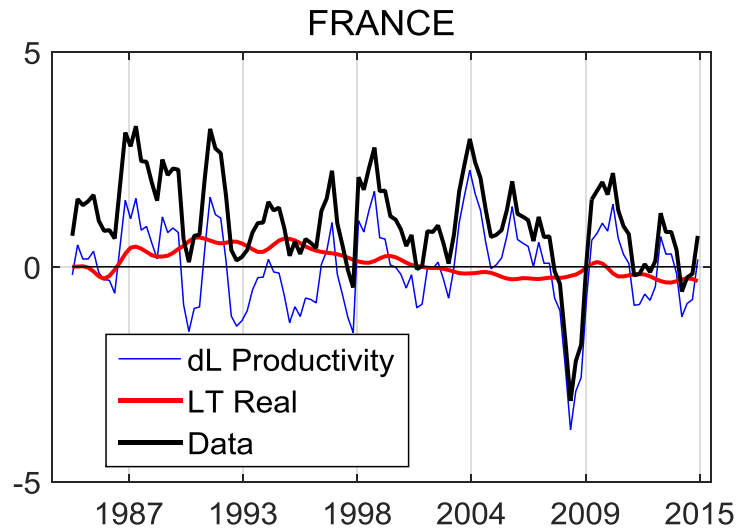
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- $\Rightarrow$  VAR with labor productivity (or TFP growth) and real interest rates
  - Choleski identification with real interest rate last

# Real interest rate “shock” raises labor productivity (Euro area)



# Historical decomposition: “Explains” some low periphery lab. prod. growth



# Takeaways

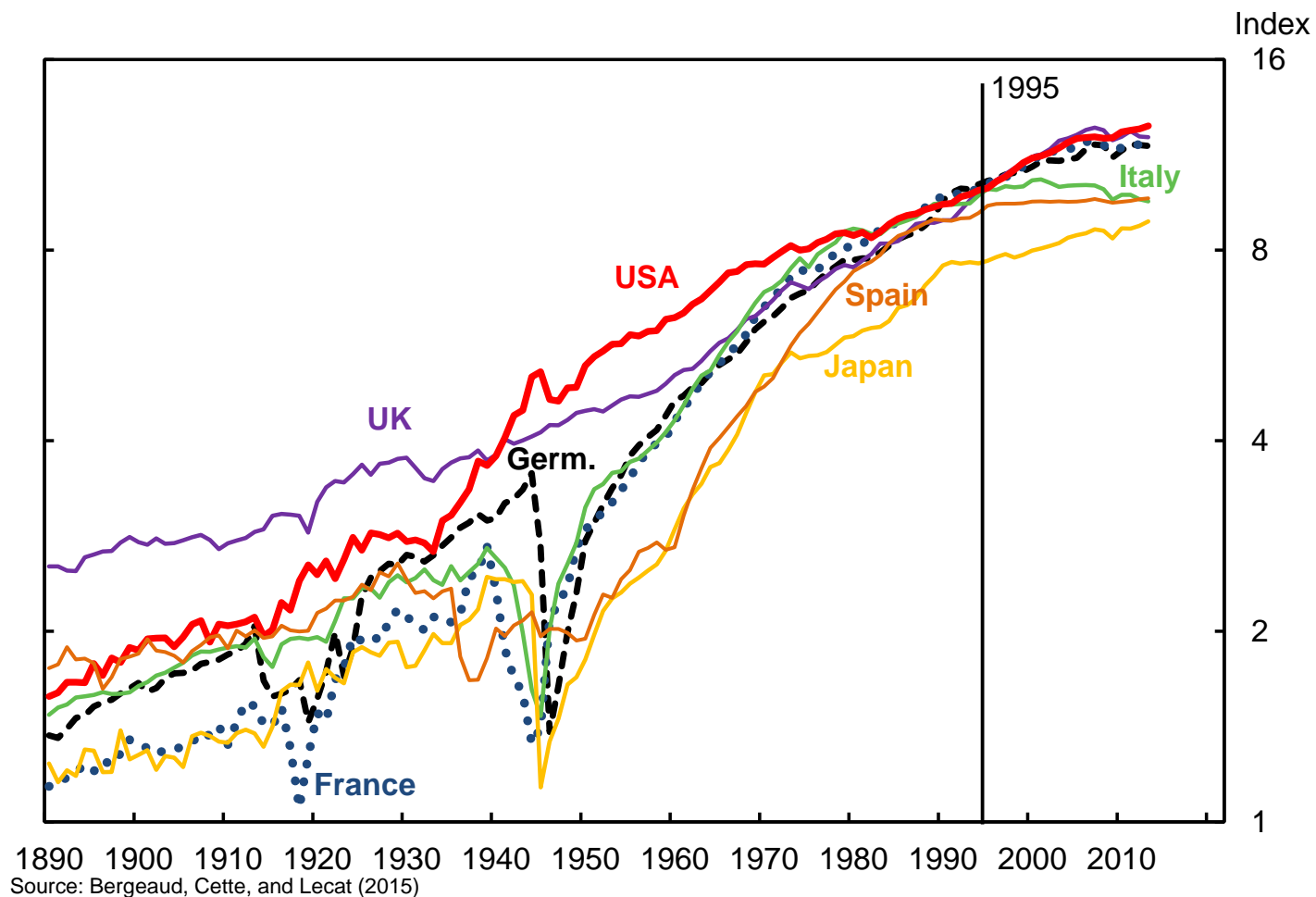
- TFP growth in many advanced economies slowed prior to Global Financial Crisis
  - *Negative* TFP growth in periphery
- Factors: Technology, structural rigidities, and capital flows
  - Challenge: Reforms work with long, uncertain lags
- Future is highly uncertain.
  - Flexibility needed to advance/keep up with frontier
  - Strong safety net needed to deal with individual risks





# TFP: Long view on frontier and distance to the frontier

## TFP levels in major economies



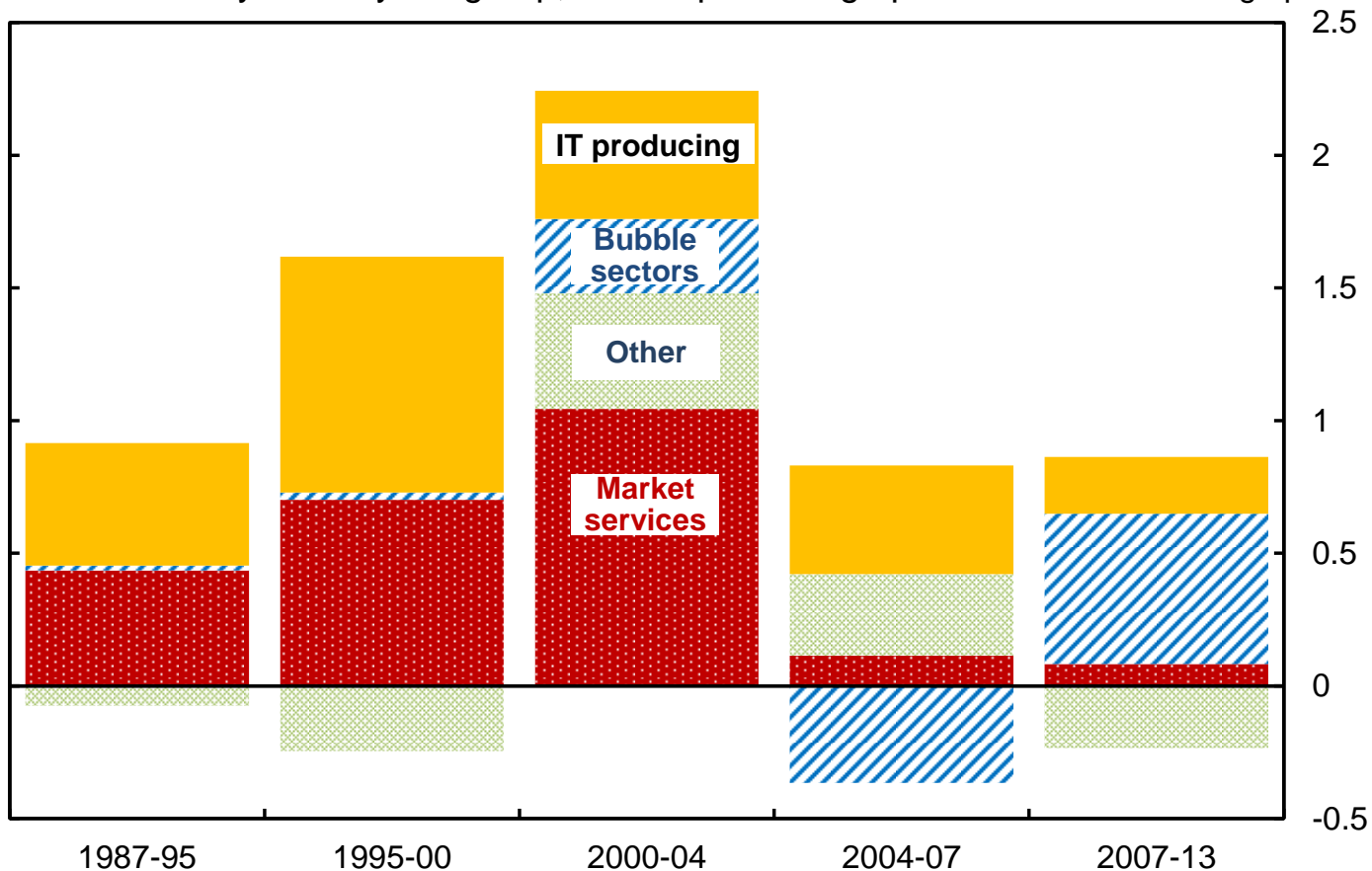
United States: The exceptional 1995-03 period

# Rise and fall of TFP growth in IT-intensive market services

## Business-sector TFP growth, United States

Contribution by industry subgroup, annual percentage points

Percentage points



Notes: Data from BLS

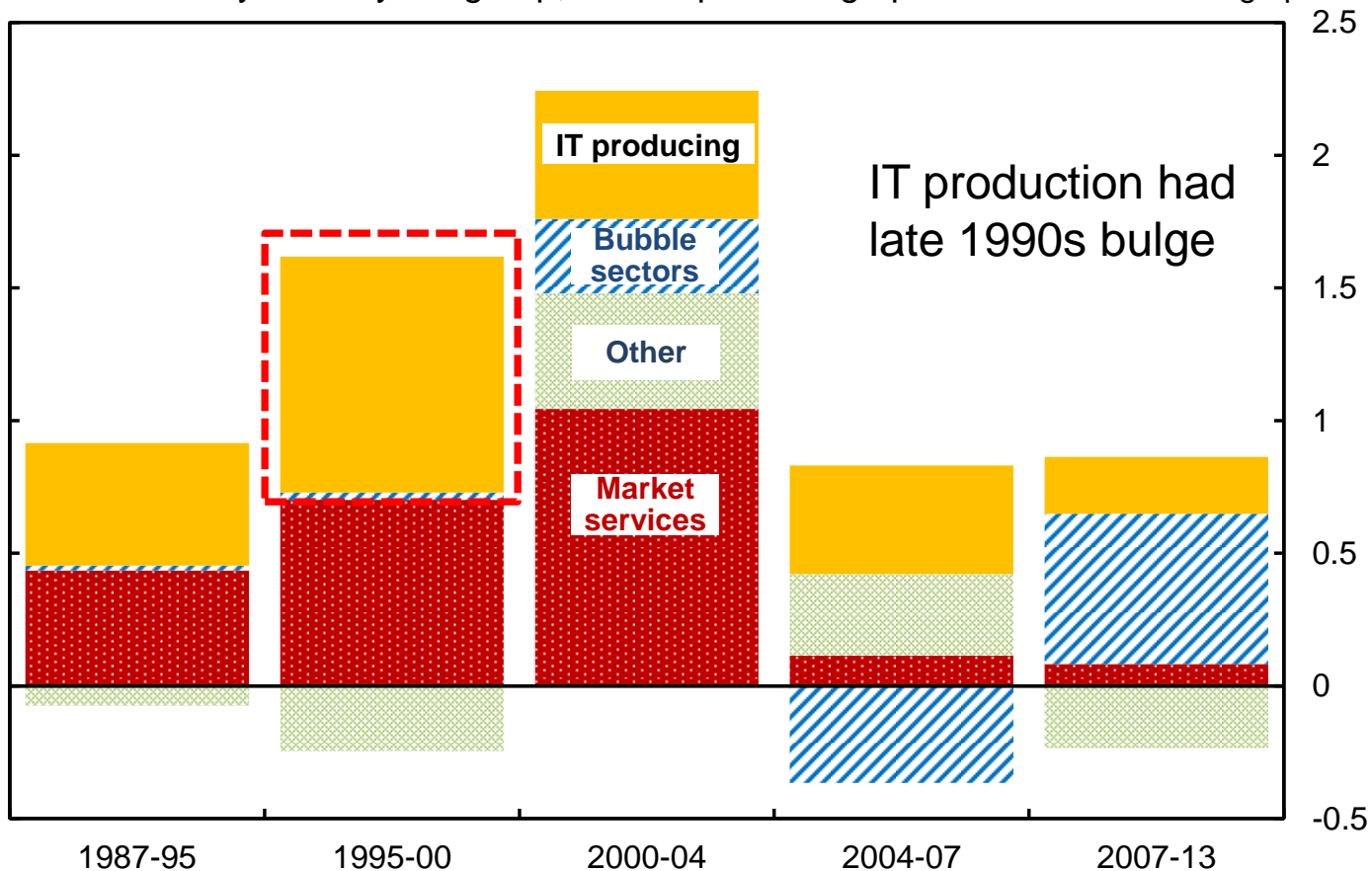
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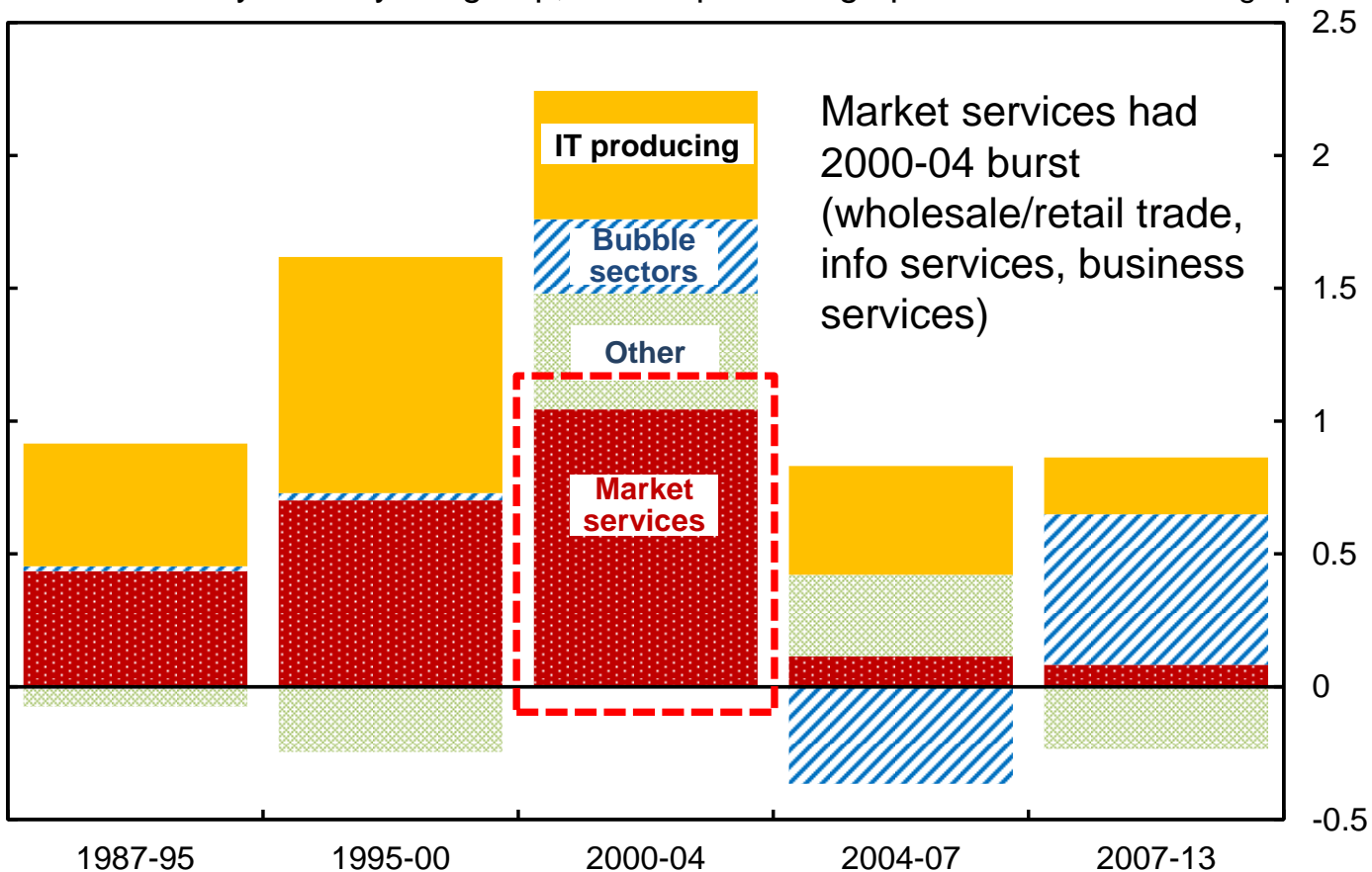
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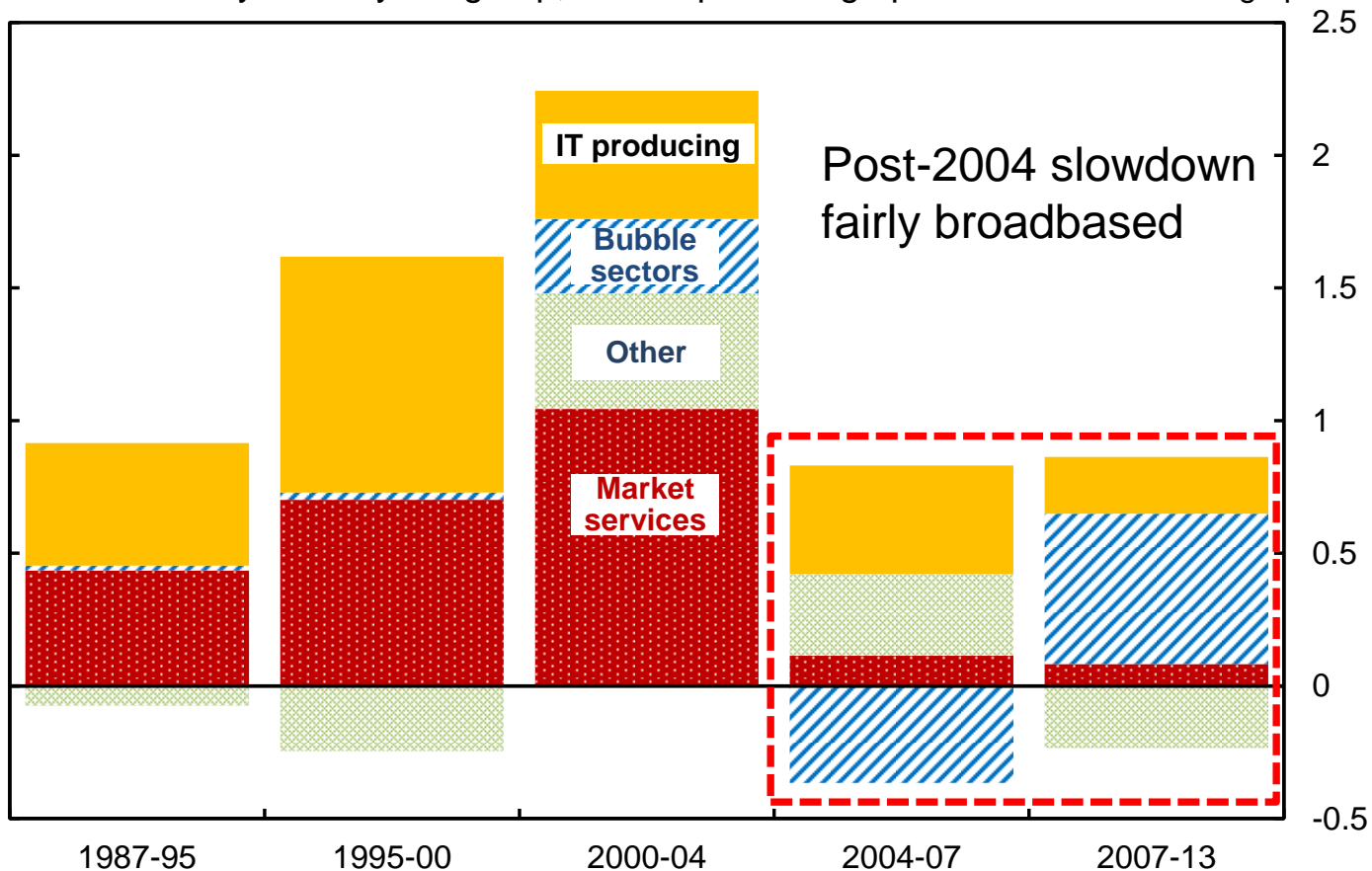
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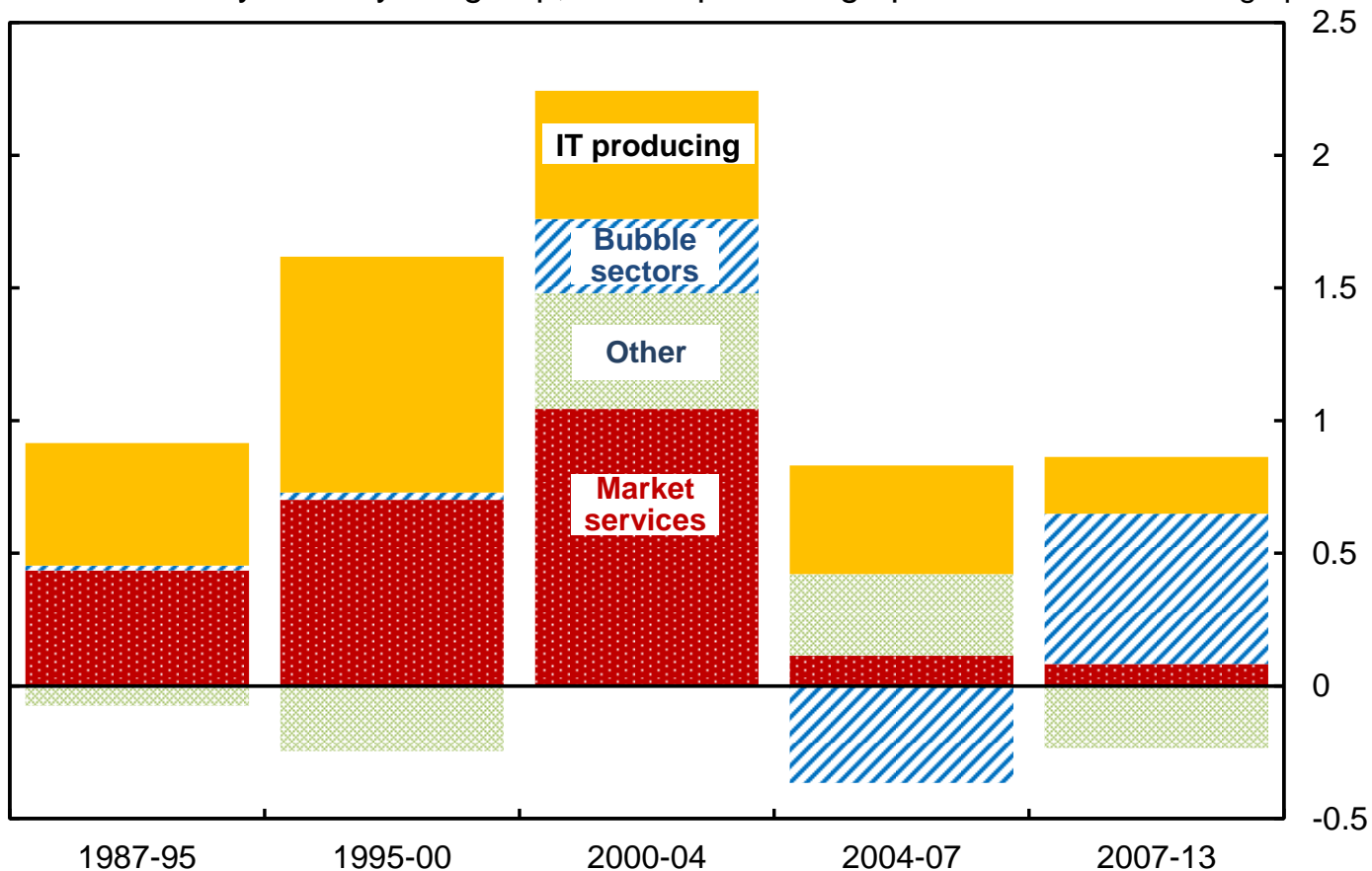
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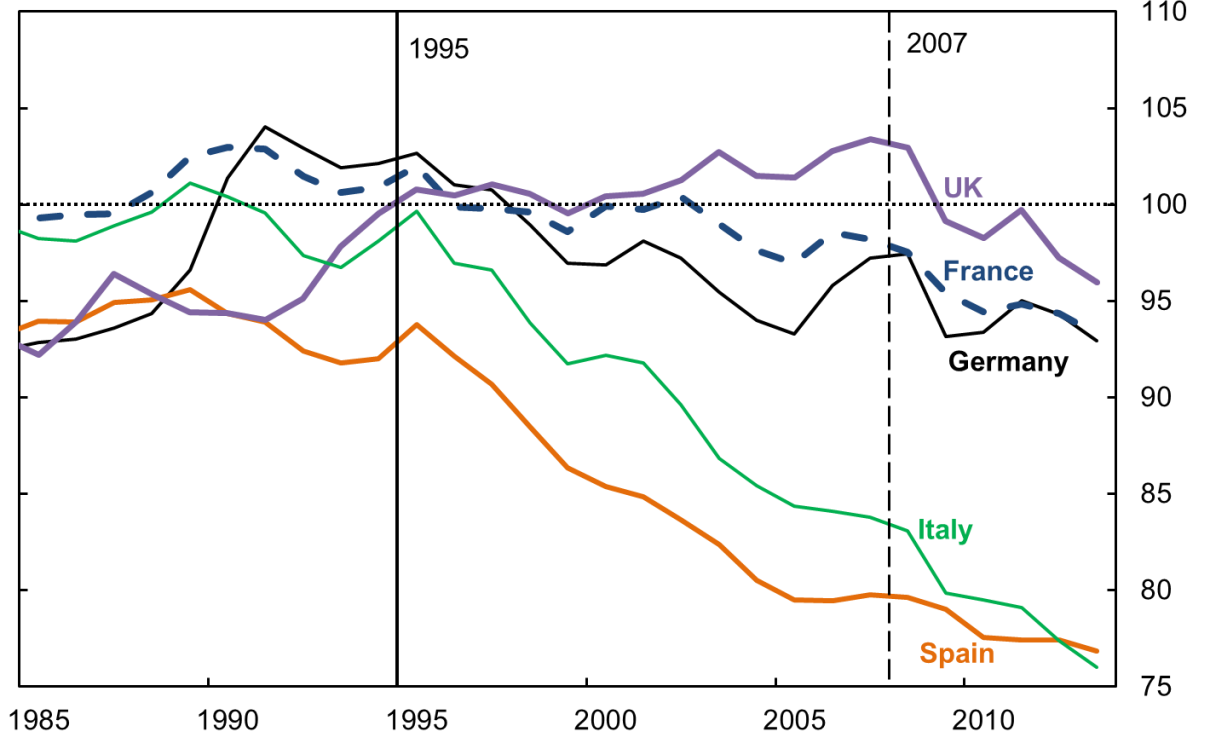
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