The impact of Technology on the economy

Fintech and the Future of Retail banking

Brussels, December 9 2016

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Chief econmist
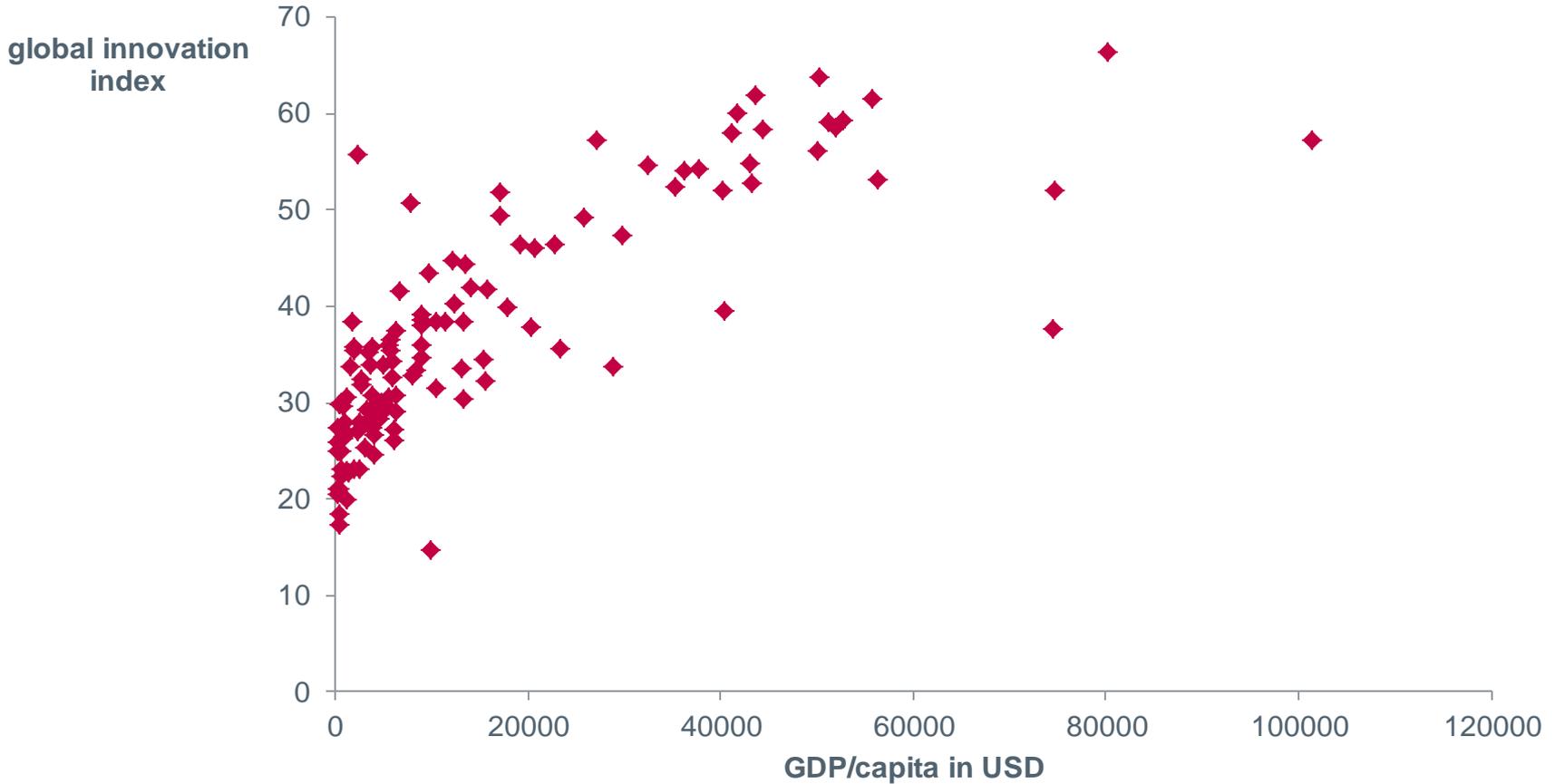
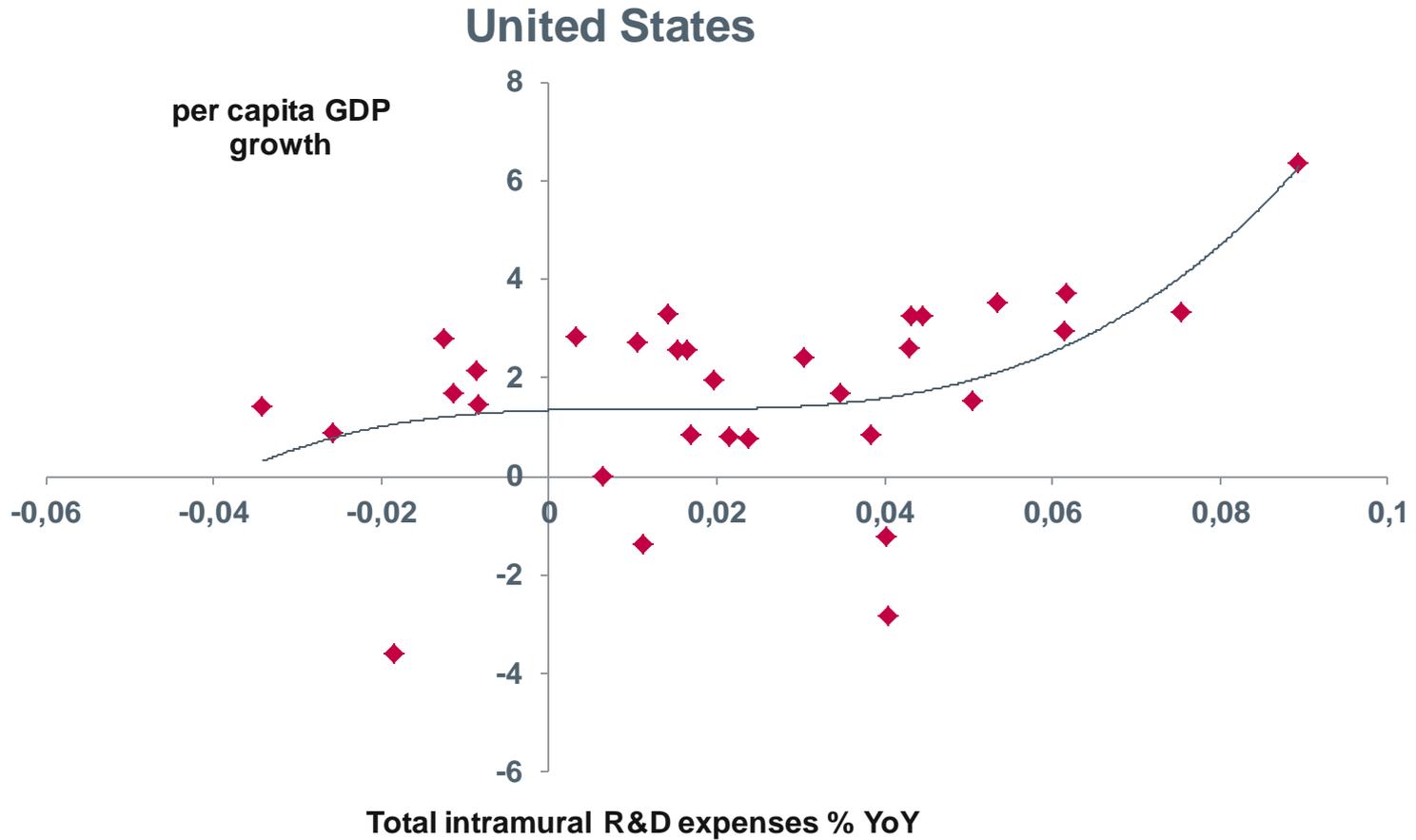**Belfius**

Agenda

- Technology and growth
- Technology and consumer surplus
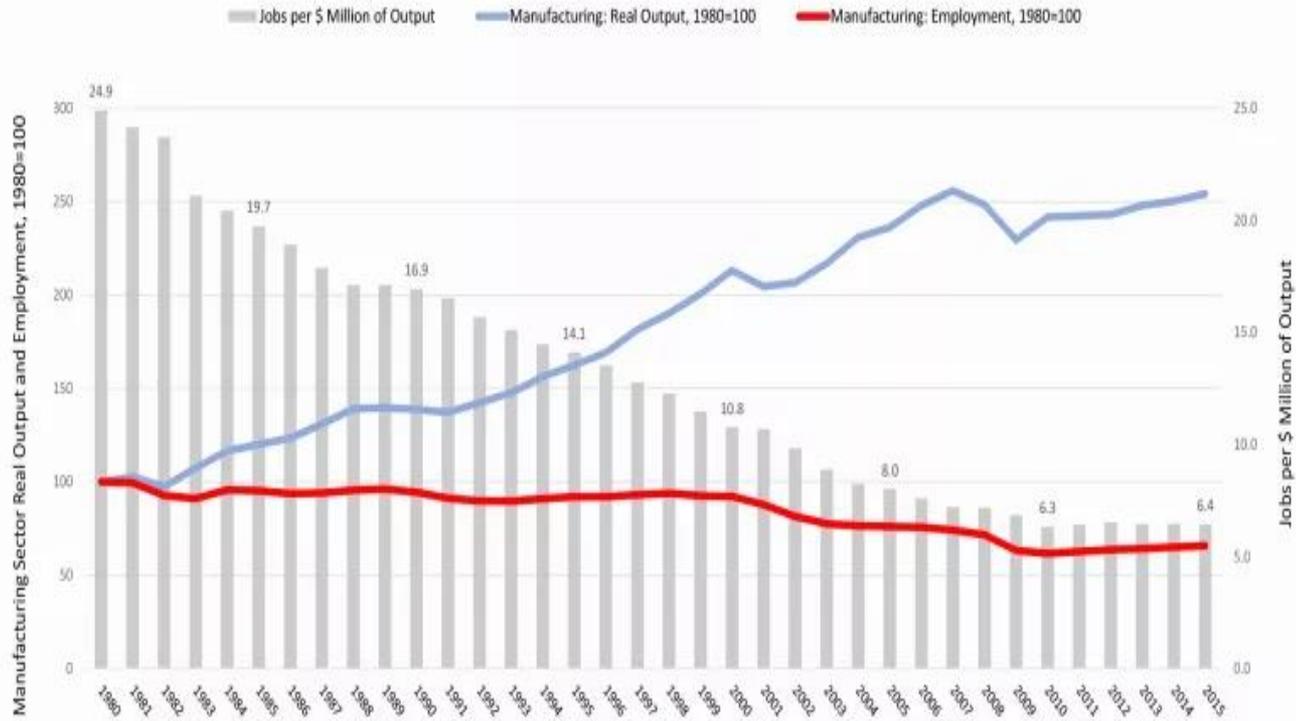- Technology and employment

Technology and growth

global innovation index vs GDP/capita in USD scatter plot

source: Global Innovation Index (2016), Worldbank, Belfius

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Technology and growth: causality?

United States

per capita GDP growth

Total intramural R&D expenses % YoY

source: Eurostat, Worldbank, Belfius

Technology and growth: productivity?

Manufacturing sector inflation-adjusted output and employment, 1980 to 2015

source: Brookings
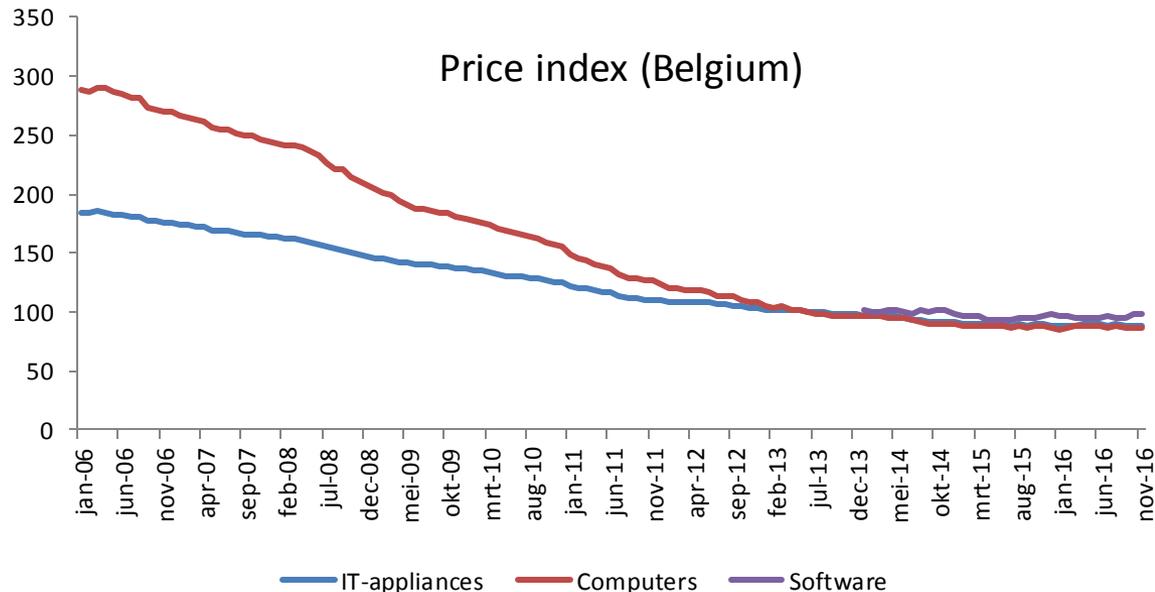
Technology and growth

- Adoption (cross section differences)
  - Extensive margin
  - Intensive margin

- Causality? (time series data)
  - Macro level
  - Measurement issues?
  - Enterprise / sector level

- Channels
  - Productivity
  - Creation of goods
  - Comparative advantages and International trade

Technology and consumer surplus

- Increased choice; love of variety
    - US: : **3**% of GDP (Broda & Weinstein, 2006)
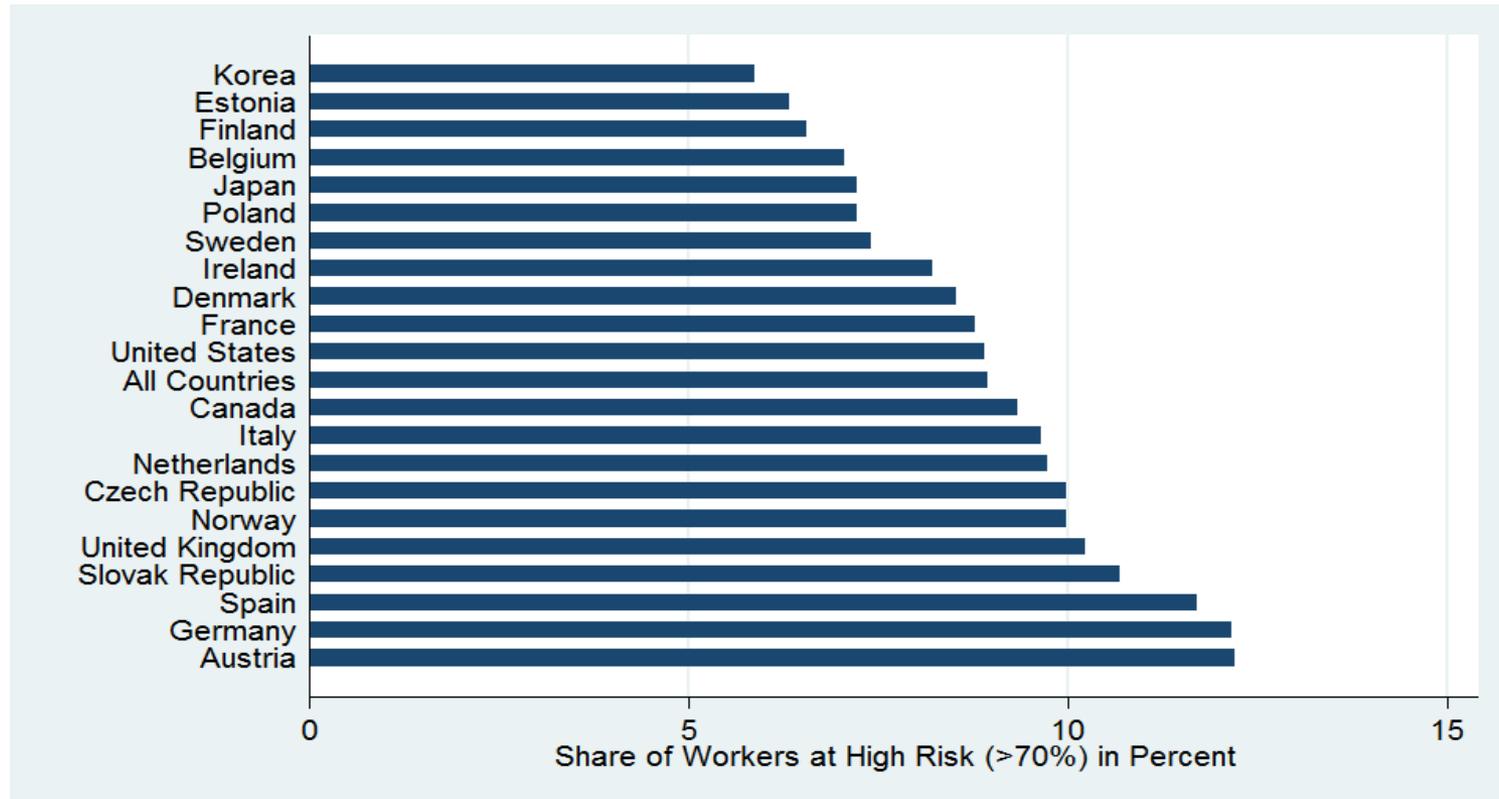   - EU: : **0,5% -2,8**% of GDP (Mohler & Seitz, 2010)

- Lower Prices

Price index (Belgium)

Legend: IT-appliances — Computers — Software

source: FOD economie

Technology and employment

- Technological unemployment (Frey & Osborne, 2013)

Share of workers with high risk of automisation
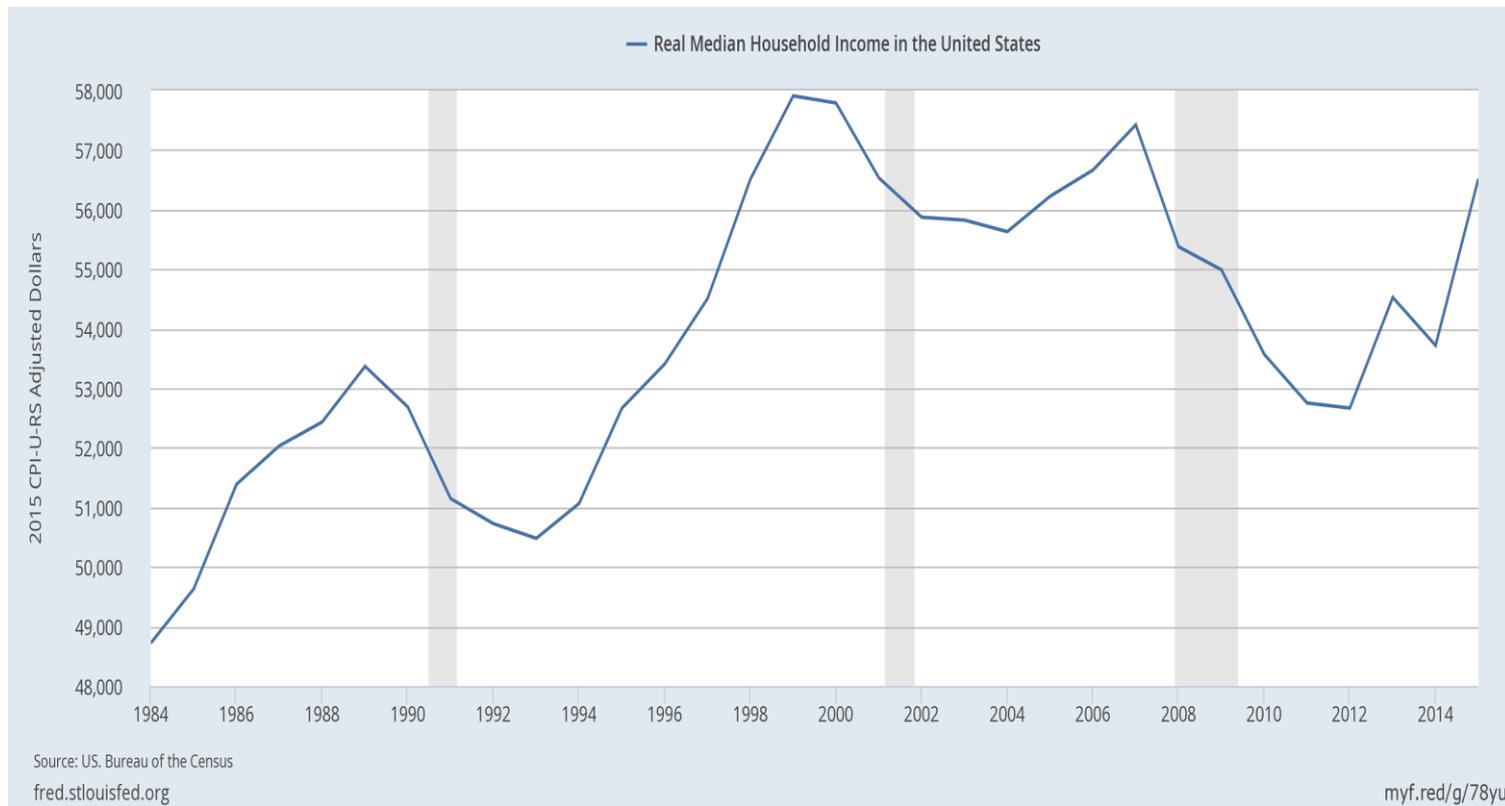
source: OECD

Technology and employment

- This view is exaggerated

  - Biased view: one knows what one can lose, one cannot imagine what will be created
    - either because of new sorts of jobs (f.i. app programming)
    - either because of increased demand for existing products

  - However it will generate shifts between occupations and industries.
  - Conditions:
    - Labour & other markets sufficiently flexible
    - Institutional change
    - Permanent schooling

source: OECD

Technology and employment

- Increased inequality

Real Median Household Income in the United States
Source: U.S. Bureau of the Census
fred.stlouisfed.org
myf.red/g/78yu

source: FRED, Fed Res of St Louis

Conclusion

- Technology contributes to growth & consumer well being
  - but it needs to be embedded in a "fertile system"

- It is not a Pareto improvement
  - Mitigation via demand and supply side measures needed

- The benefits outweigh the disadvantages