



AN OECD AGENDA ON ISSUES IN PRODUCTIVITY MEASUREMENT

Paul Schreyer OECD Statistics Directorate

2016 World KLEMS Conference
Madrid, May 23-24 2016



This talk

- The basics
- New topics
 - Productivity measurement in a digitalised economy
 - Productivity – inequality nexus



The basics





...Efforts towards data development...

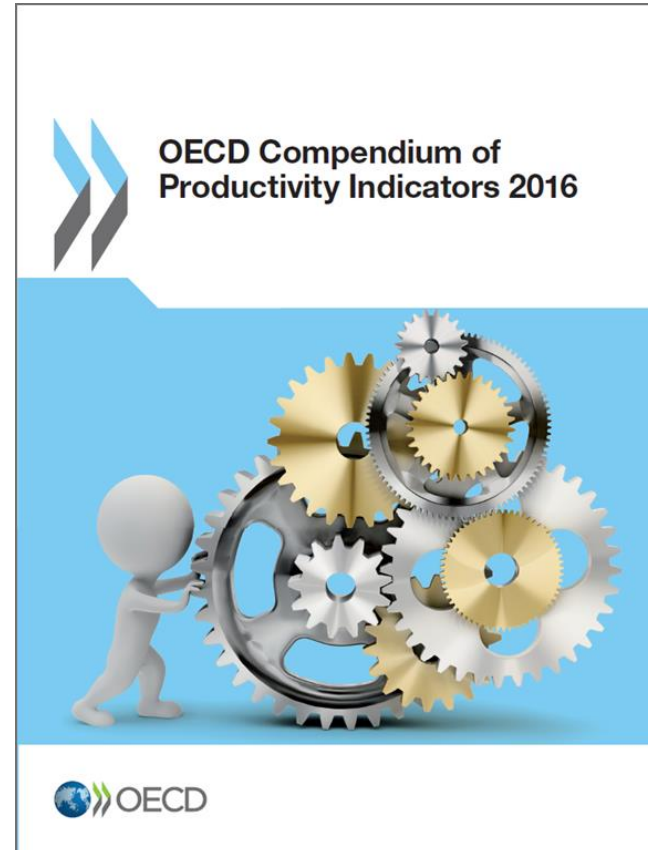
- **Reinforcing industry-level data**
 - timely but less detailed and shorter time series: ANA (STD)
 - industry-investment matrices by asset type
 - less timely but more details and long series STAN (STI)
- **Expanding capital services data: R&D, subsoil assets**
- **Extended SuTs**
 - Concerted effort with countries



...an annual Compendium...

What is new?

- The productivity paradox
- Productivity in emerging economies
- The role of business dynamism
- Productivity by firm size
- Current challenges in measuring productivity



OECD (2016), *OECD Compendium of Productivity Indicators 2016*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/pdtvy-2016-en>



New topics (1):
GDP (and productivity) measurement in a
digitalised economy



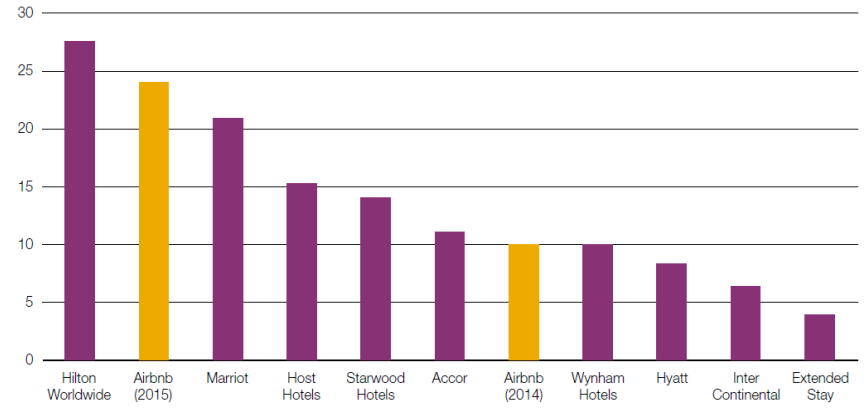
Digitalisation is a pervasive phenomenon...

Increased prevalence of 'new' transformative (digital) technologies

Alongside....

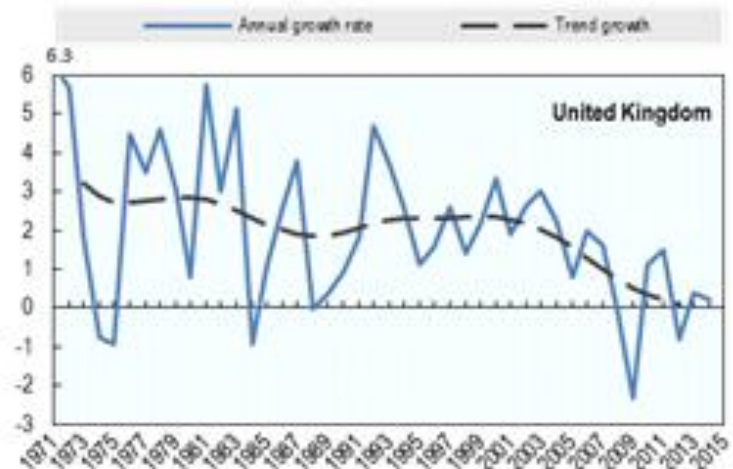
.... Declining productivity

Market capitalisation of AirBnB (£ Billions)



Source: Davidson, L., (2015). 'Airbnb boss calls the UK the "centre of the sharing economy"', *The Telegraph*.

Trend labour productivity growth





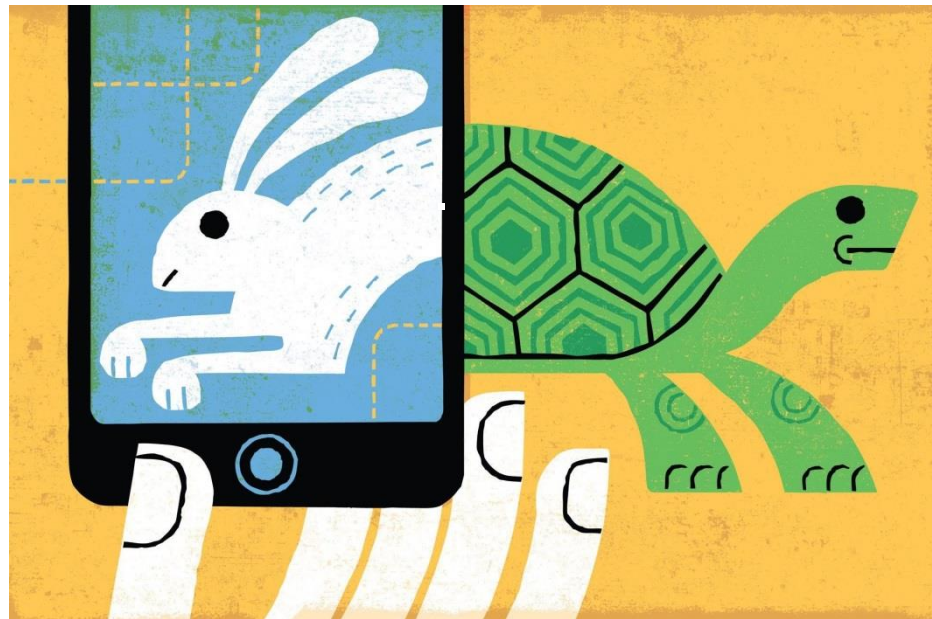
...and has given rise to the mis-measurement hypothesis (MMH)

Charles Hulten: Valuing the Net and the wide range of applications... is challenging.... and their omission or undervaluation surely affects GDP."

Charlie Bean: "statistics have failed to keep pace with the impact of digital technology"

Diane Coyle: The pace of change in OECD countries is making the existing statistical framework decreasingly appropriate for measuring the economy

THE WALL STREET JOURNAL.
Silicon Valley Doesn't Believe U.S. Productivity
The U.S. Underestimates Growth



FINANCIAL TIMES
The internet and the productivity slump

ComputerWeekly.com
Why we're measuring the digital economy in the wrong way

The Economist

Some optimists argue instead that the problem is one of measurement. Technological progress often raises productivity in ways that statistical agencies struggle to detect



...but systematic work to assess the MMH is scarce and has been less visible...

And despite some notable responses:

- *Challenges to Mismeasurement Explanations for the U.S. Productivity Slowdown, Chad Syverson: NBER Working Paper No. 21974, February 2016*
- *Does the United States have a productivity slowdown or a measurement problem? Byrne, D., J.Fernald and M. Reinsdorf; Brookings Papers on Economic Activity, Spring 2016.*

There remain more questions than answers..

...and calls for action:

Independent Review of UK Economic Statistics

Professor Sir Charles Bean





...the ill-defined nature of the issue has not helped...

- Conceptual vs. Empirical issues
- Production vs. Consumer Surplus vs. Welfare
- Volumes vs. prices

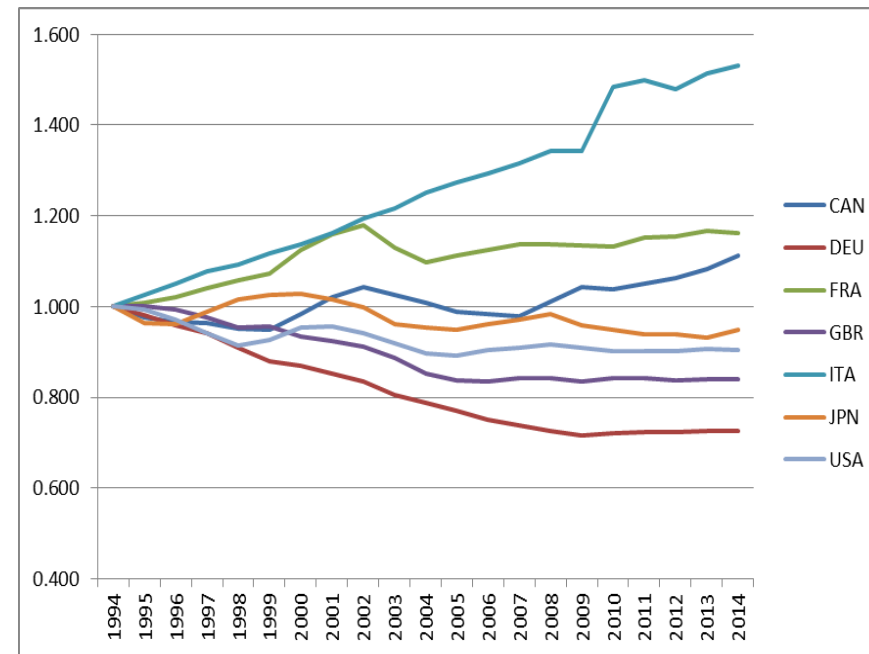
- **Work has started at the OECD**
 - Ahmad and Schreyer (2016) “GDP in a Digitalised Economy”
 - Sets out parameters, delineates conceptual and empirical issues by ‘type’ (Digital intermediaries, household production of services for own-consumption, free media etc.)



Paper suggests that the conceptual framework is robust

- **But measurement in some areas may require improvement**
 - The occasionally self-employed
 - International transactions in IPPs
 - **And Prices**

Price indices for software investment



- **Survey of country practices** in various domains
- **Quantitative assessment where possible to establish overall order of magnitude**
- Example: Nakamura and Soloveichik (2015) on Valuing “Free” Media Across Countries in GDP
- Example: Byrne and Corrado on semiconductor prices
- **Guidelines for compilers**



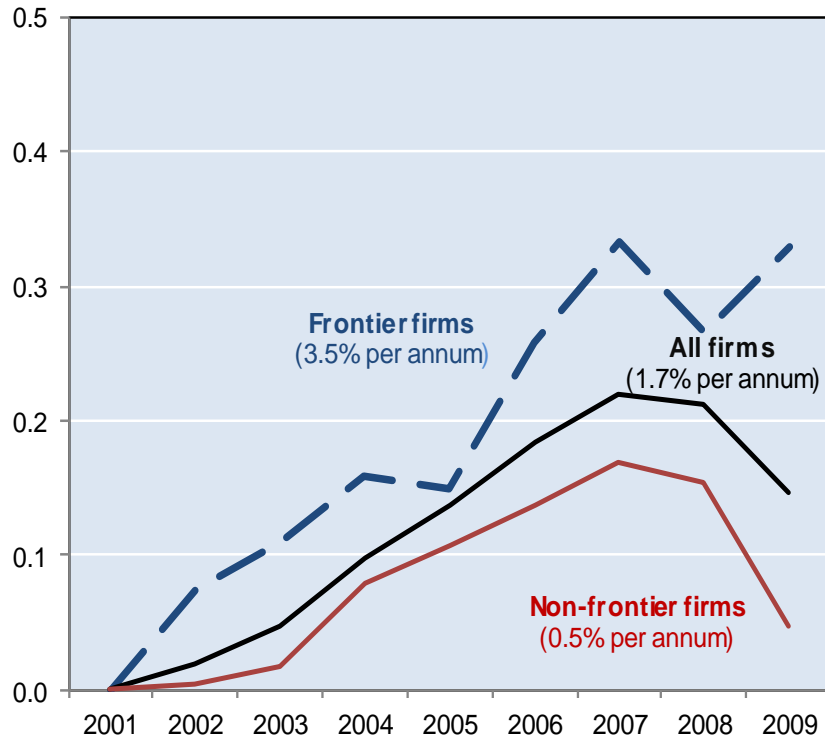
New topics (2): Productivity and inequality nexus



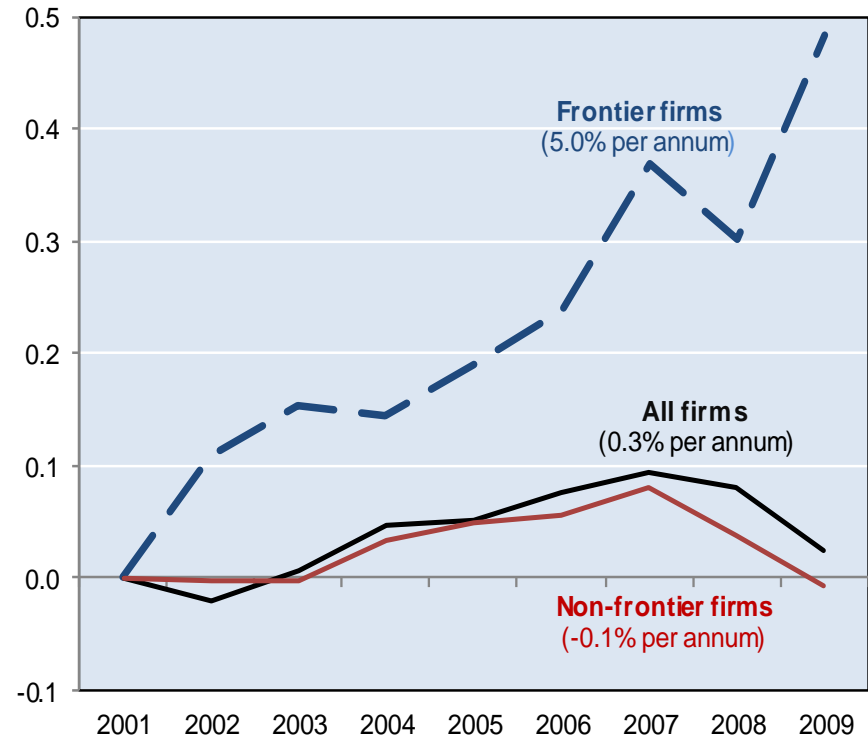
Underlying trend (1): Weaker *diffusion* of frontier productivity

Solid growth at the global productivity frontier but spillovers disappointed
Labour productivity; index 2001=0

Manufacturing Sector



Services Sector



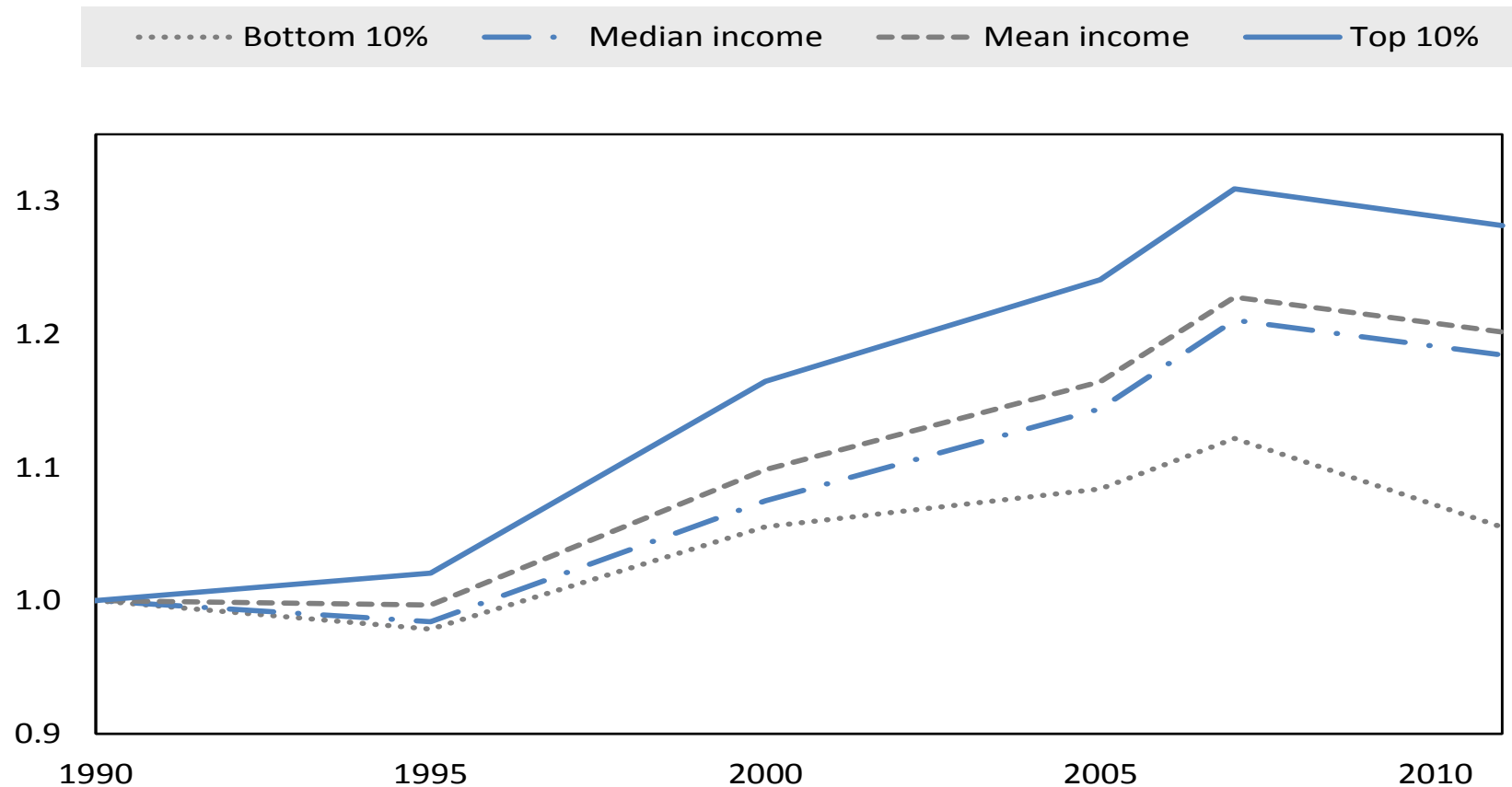
“Frontier firms” corresponds to the average labour productivity of the 100 globally most productive firms in each 2-digit sector. “Non-frontier firms” is the average of all other firms. “All firms” is the sector total. The average annual growth rate is shown in parentheses.

Source: *The Future of Productivity* <http://www.oecd.org/eco/the-future-of-productivity.htm>



Underlying trend (2): disposable income inequality widened over the past three decades

Household disposable income, un-weighted average over 17 OECD countries
Income Distribution Database



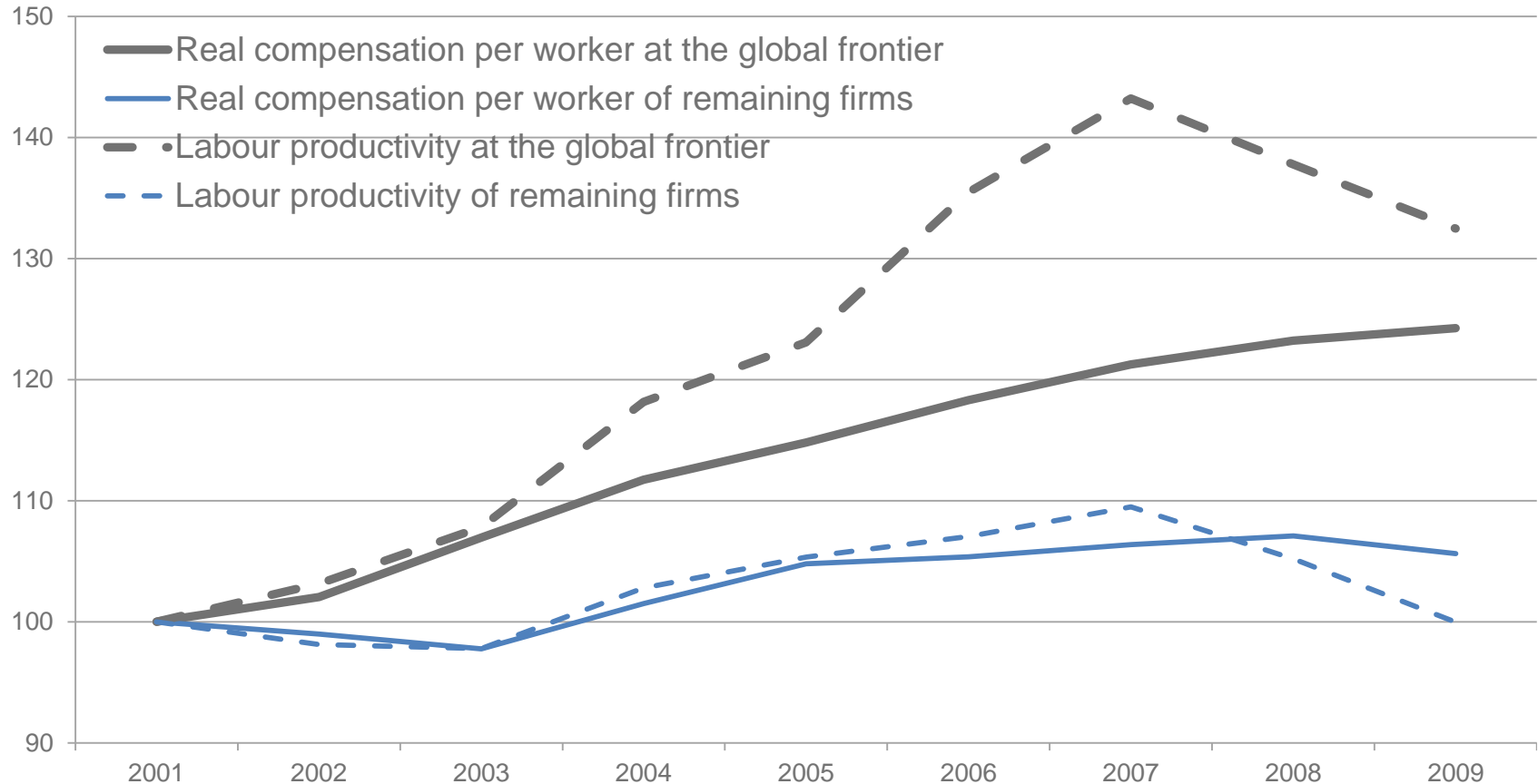
Substantial differences in the growth rate across the income distribution, even after redistribution



Productivity-Inequality Nexus

*Growing dispersion in productivity
between frontier and lagging firms also observed in wages*

Index (2001=100)



Source: OECD estimations based on ORBIS data, preliminary results.



Exploring the productivity – inequality nexus

- Raises interesting analytical and policy questions
- Requires much better data:
 - At industry level
 - For KBC: comprehensive/regular up-date needed
 - At micro-level: detailed linked employer-employee data to assess link between wage and productivity dispersions
 - Skills data
 - Need to distinguish between deflated revenues (including rents) and productivity in the sense of technical change
- *Forthcoming Ministerial Report on Productivity-Equality Nexus
Release June 2, 2016*



**So... much exciting work
ahead!**

Thank you!

