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The UK Productivity Problem: Some Standards Solutions

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- Question: Can standards reduce the UK productivity problems?
- Academic/policy answer: we know some of the ways it might, but no robust evidence exists as to if it does?
- Lens: a research collaboration between academia-BSI-business to answer that question
- For you: is our approach on the right lines, what are we missing



- Productivity Outcomes of Workplace Practice, Engagement and Learning (PROPEL): £1.9 million over 3 years, beginning January 2020
- Collaboration between Strathclyde, Nottingham, Aston, Sheffield, East Anglia, Ulster, Cardiff Universities
- Non-academic partners: BSI, CIPD, LEPs etc.



- PROPEL Hub's vision is:
 - Knowledge exchange (academia, BSI, LEPs, local business networks, policy bodies, Be the Business, etc.)
 - Randomised Control Trials (RCTs) can answer accurately what the effects of standards on productivity are





Productivity Problems

UK has multiple productivity problems:

1. Lower productivity than major competitors
2. Regional differences in productivity

The UK lost its top spot in European productivity in the 1960s

GDP* per hour worked (\$, at constant 2017 prices)



*At purchasing power parity, Germany = West Germany pre-1991
Source: The Conference Board
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You get out what you put in?

Gross Value Added per hour worked in UK city regions in 2014, as a % of UK average

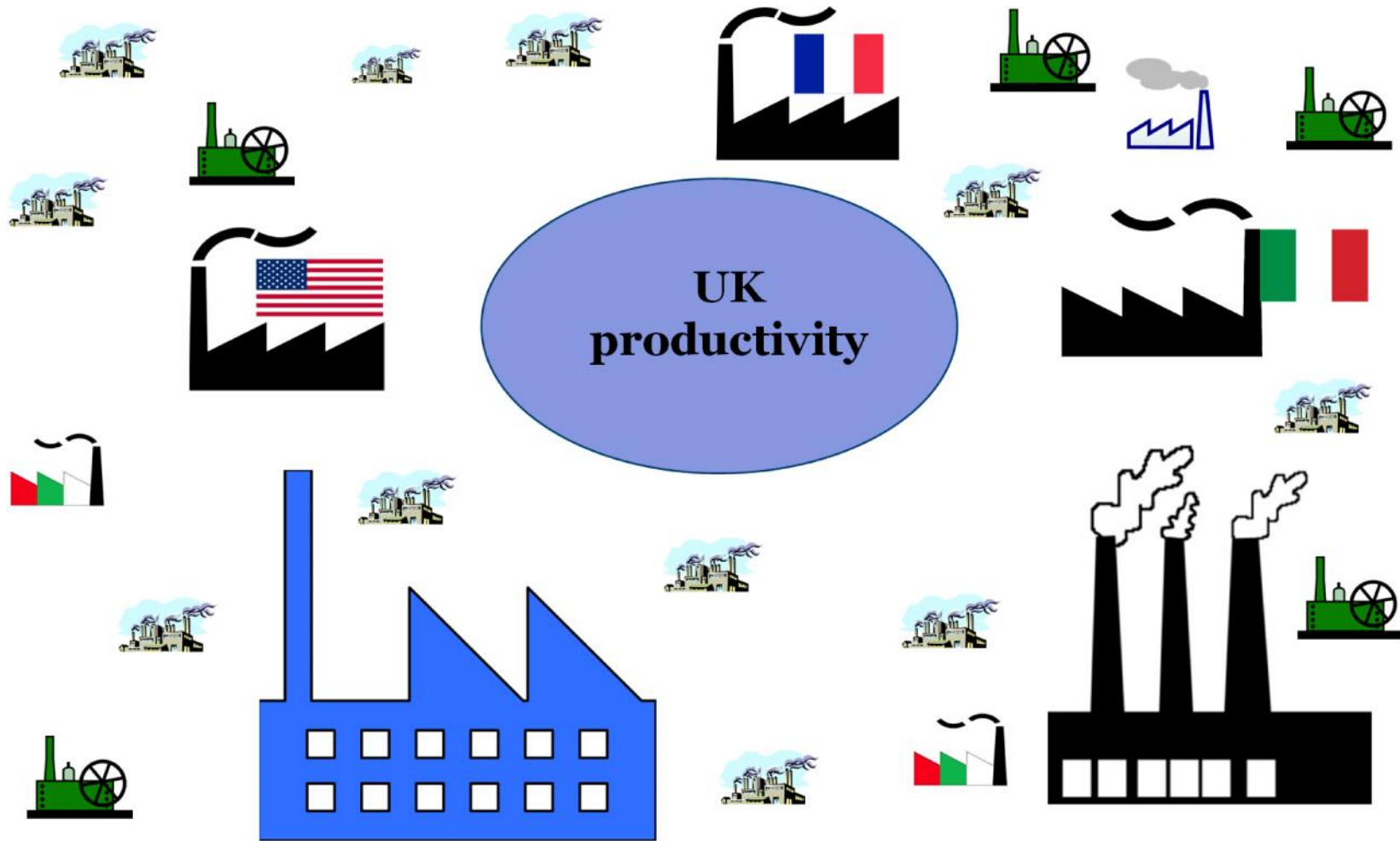


Source: ONS, Sub-Regional Productivity: March 2016, Fig. 3



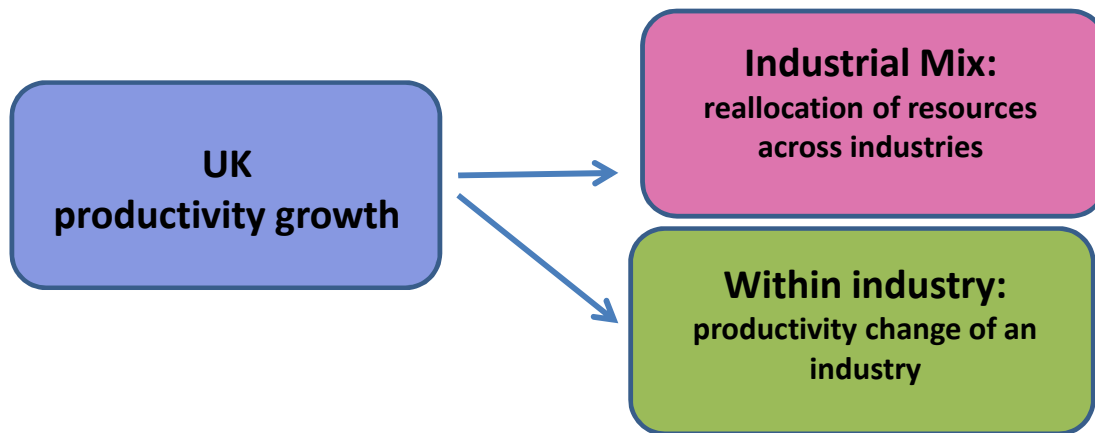


Micro to Macro





3 Broad Explanations



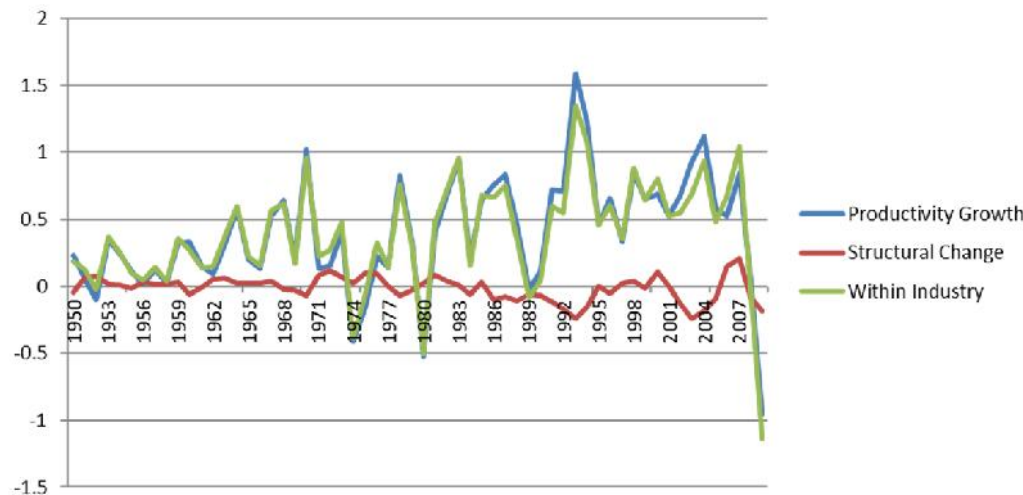
3 explanations

1. We don't have the right Industries
2. Our firms are not productive
3. Our productive firms are too small



The Wrong Sectors?

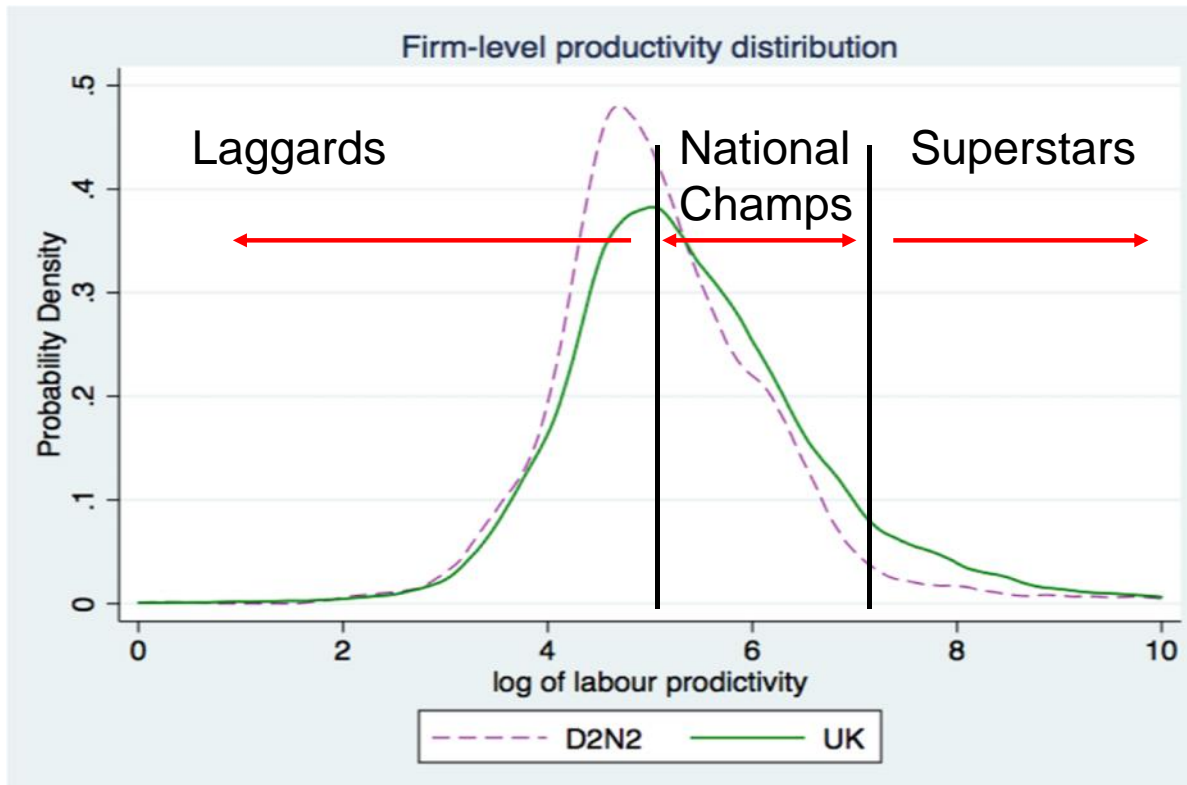
	GVA per emp	England emp share
Agri.	16,468	0.6
Manuf.	47,108	10.0
Whole&Ret	29,822	18.7
Transp.	27,868	9.2
FIRE	61,521	16.6
Gov	24,249	29.7



- Can be important (e.g. London, Aberdeen)
- But structural change takes a long time to appear
- Almost all productivity growth occurs within industries



Productivity Dispersion



- Productivity differences between businesses are big!
- *Superstars*: often MNEs, R&D intensive, strong management, skill intensive
- *National Champs*: Import-export, technology adopters, sound management
- *Laggards*: serve domestic market, weak management, late adopters of technology



Productivity Policy

Firms More Productive

- Creation and adoption of new technologies
- Management Practice and Organisation
- Efficient use of these technologies

Productive Firms Grow

- Reallocation of market shares to better firms
- That better firms have opportunity & finance to survive and grow
- Entry of better firms

Treasury Plan

We will invest in five strategic priorities:

Business Support and Access to Finance

Innovation

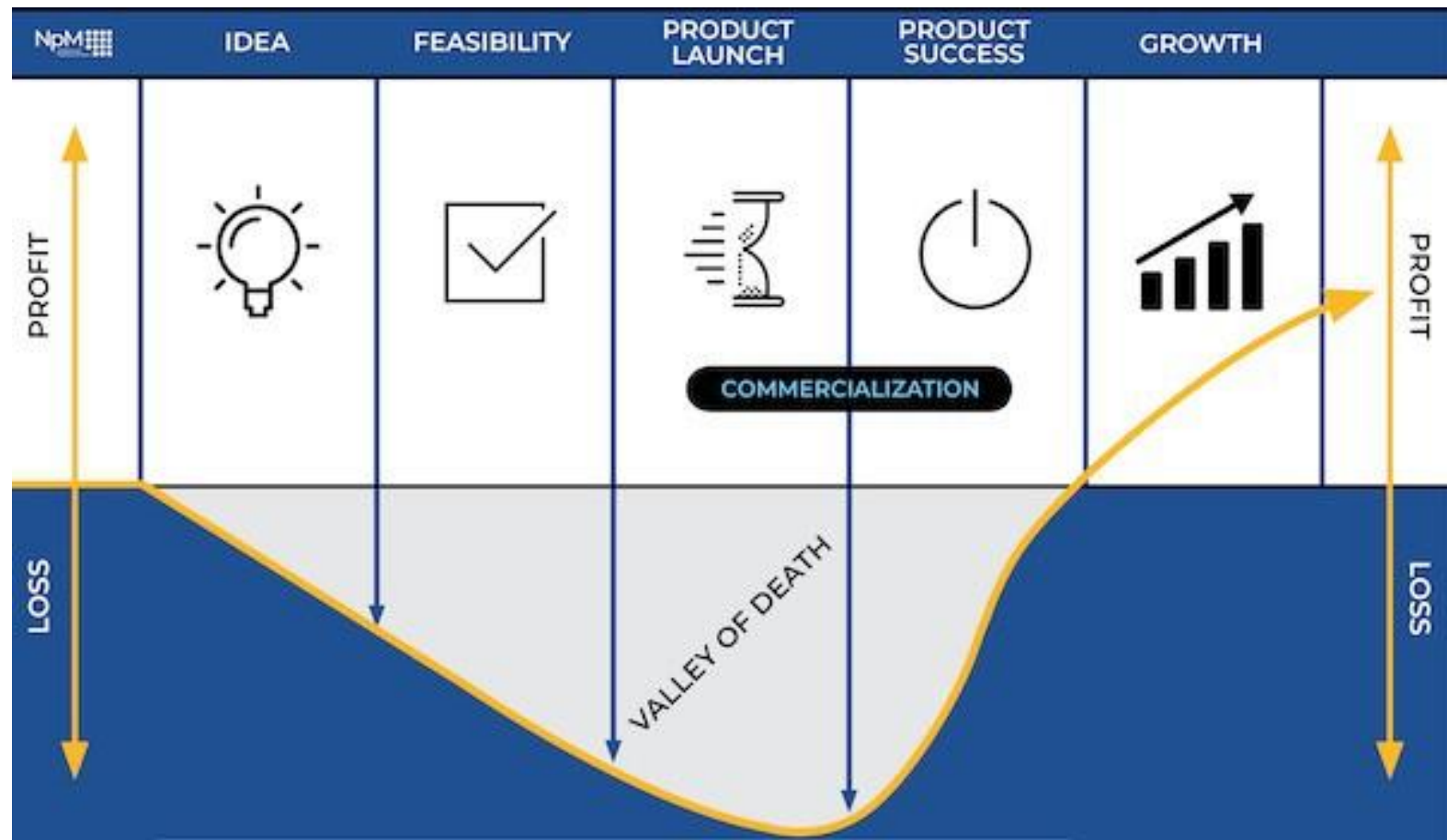
Employment and Skills

Infrastructure for Economic growth



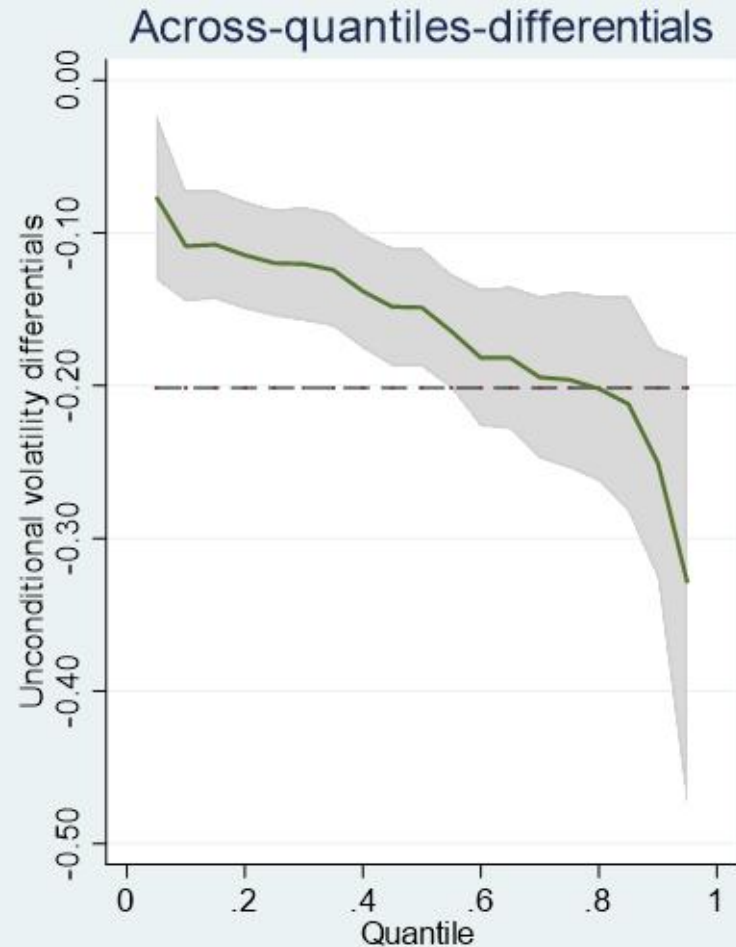
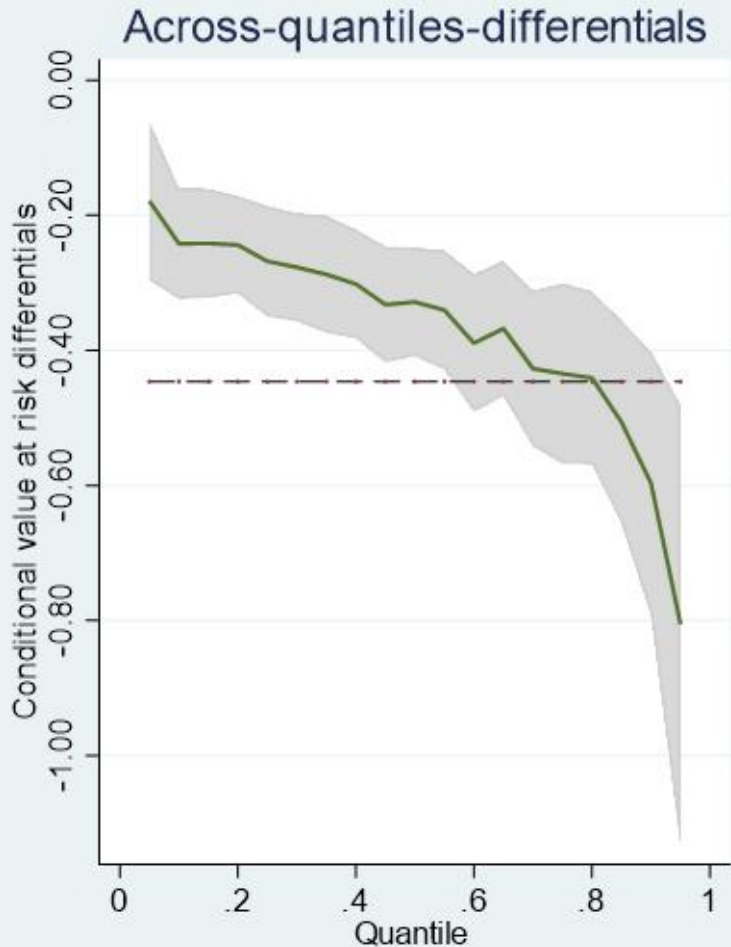
Technical Standards: Risk-reduction, Productivity, Growth

➤ From basic science and research to commercialisation:
Role of **infratechnology** in crossing the “valley of death”





Participation in 190 SDOs & Business Risks (VaR, Volatility)



Companies that participate in developing ICT standards (as members of SDOs) have substantially lower risks for investors (measured by value at risk/VaR or returns volatility).

Source: Girma and Li (2020) The Causal Impact of ICT Standards Development and Business Risks: Evidence from Top 2000 Global R&D Performers



Standards and Productivity

- Standards and Industrial Revolutions: 1st, 2nd, 3rd, 4th
- Modularity and complex technology systems
- Enabling efficiency in a range of functions: calibration of equipment, material characterization, harmonisation of data interfaces, consummation of transactions
- Supply side: specialisation and distributed R&D in high-tech global supply chains
- Demand side: economies of scale and scope; efficiency gains; scaling up product markets
- **Infra-technology** embodied in standards (Link and Tasseey, 2012)



Productivity Policy: Role of Standards

Firms More Productive

- Creation and adoption of new technologies
- Management Practice and Organisation
- Efficient use of these technologies



We will
invest in five
strategic
priorities:

Business
Support and
Access to
Finance

Innovation

Employment
and Skills

Infrastructure
for Economic
growth

A new productivity-growth strategy: investments in productivity-enhancing assets and technology infrastructure; integration-based economic infrastructure



Rebound Post Covid-19: Global GDP Growth Recovery Scenarios: V, U, W, L, Swoosh

V-shaped recovery

Global GDP growth, actual (2019) and forecasts (2020 and after) by N

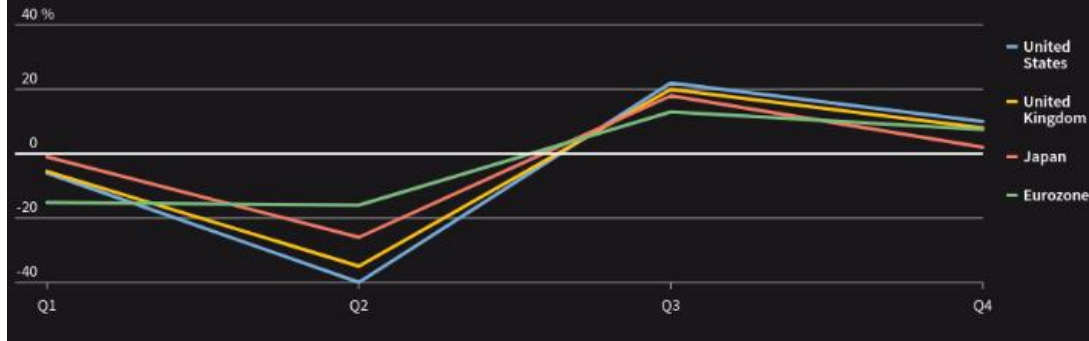
QUARTER ON QUARTER

Non-annualized



"U"-shaped recovery

2020 real GDP growth forecasts for a "base case" scenario by ING, QoQ% annualised



"L"-shaped recovery

2020 and 2021 real GDP growth forecasts for a "worst-case" scenario by IWS, QoQ% annualised

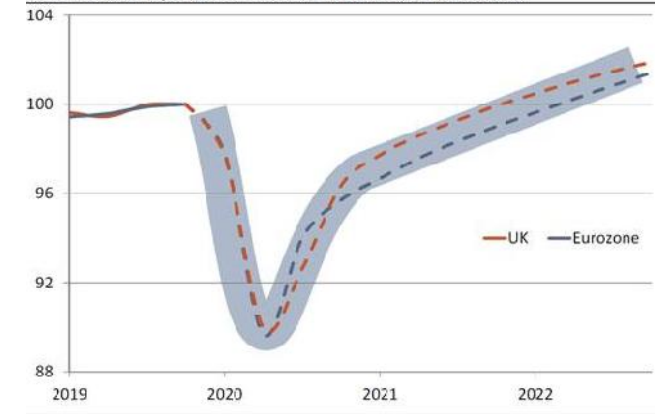


"W" shape, or "double-dip" recovery

U.S. real GDP growth forecasts by AGN/MRO, QoQ% annualised



chart 1: The tick-shape rebound – real GDP (dotted lines show forecast)



4 2019 = 100. Quarterly data. Source: Berenberg, Eurostat, ONS



“In the midst of every crisis, lies great opportunity”

- The future isn't what it used to be: need a new plan to deliver growth and productivity
- Re-allocation of resources to more productive use is key to recovery (low opportunity costs)
- Intertemporal substitution: how to recoup lost output
- A unique opportunity to adapt the set of rules to achieve productivity gains:
 - ❖ **Catalyst for ICT adoption**: costs lowered for doing business in some areas
 - ❖ **Rethinking management practices**: WFH (less susceptible to inefficiencies/disruption/system failure in transport infrastructure; improving work-life balance; reducing office fixed costs)
 - ❖ Bloom et al. (2015): experiment at Ctrip (largest travel agency in China): c.a. 20-30% productivity gains from WFH
 - ❖ **Managerial maturity & digital adoption**



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Thank you!

Getting involved with PROPEL Hub

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- The role of standards in restoring and enhancing productivity: what's the next normal?
- Barriers to standards adoption: management standards vs. technology/interface standards
- Evaluation problem: performance measures, metrics