Discussion: The Impact of Covid-19 on Productivity

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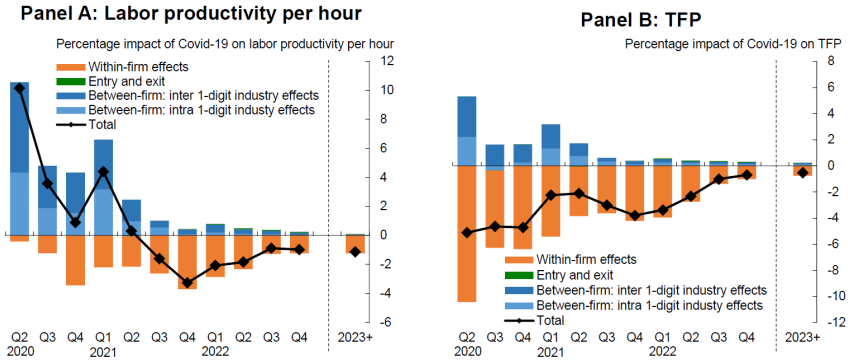
Overview

- Slowdown in productivity growth rates in the pre-pandemic decade in the UK, US and the EU (average growth rates of less than 1%)
- The paper proposes a novel firm level accounting framework to estimate TFP from survey data.
- Decomposes the effect of Covid-19 on labor productivity and total factor productivity (TFP) into:
  - WITHIN FIRM COMPONENT: how surviving firms change their use of resources (labor, capital, knowledge).
  - BETWEEN FIRM COMPONENT: reallocation of economic activity between surviving firms.
  - NET ENTRY: contribution of new firms and exiting firms to aggregate productivity.

Main Finding: Covid-19 lowered TFP in the UK by up to 6%



- Large reductions in productivity WITHIN firms: increase in intermediate costs.
- Small positive BETWEEN firm effects: the least productive firms (and sectors) were disproportionately affected $\rightarrow$ make smaller contribution to aggregate.
- Firms' forecasts suggest no lasting impact in the medium term.

Two Major Contributions

- Close to real time information (administrative data comes with a one or two-year lag) and forward looking!!
- Novel accounting framework to derive productivity estimates out of survey data. Responses on CHANGES in factors of production and sales DUE TO Covid-19.

Major Comments

1. Decomposition Methodology
2. The role of net entry
3. Valuation effects and alternative shocks
4. Timing

Comment I: Decomposition Methodology

- Bailey, Hulten, and Campbell (1992) shift share decomposition gives greater weight to the within-firm changes of initially larger firms:

$$\Delta\Phi = \underbrace{\sum_{i \in Surv} \bar{s}_i \Delta\varphi_{it}}_{Within} + \underbrace{\sum_{i \in Surv} \Delta s_{it}(\bar{\varphi}_i - \Phi)}_{Reallocation(Between)} + Entry + Exit \quad (1)$$

- In other approaches like the Olley-Pakes and Melitz-Polanec, the within component is the unweighted mean of within-firm changes.

$$\Delta\Phi = \underbrace{\Delta\bar{\varphi}_s}_{Within} + \underbrace{\Delta cov_s}_{Reallocation} + Entry + Exit \quad (2)$$

  - The contribution of surviving firms:
    - shift in the distribution of firm productivity (the unweighted mean change in the productivity of surviving firms),
    - market share reallocation (change between market share and productivity for surviving firms)

Comment I: Decomposition Methodology

- Is the within-firm negative contribution primarily driven by larger firms?
- Sample of large firms (average of 100 employees or more). Are we missing the dynamics of small firms? Important for aggregate employment.

Comment II: The Role of Net Entry

- Decker and Haltiwanger (2022) "Business entry and exit in the Covid-19 pandemic: A preliminary look at official data"
- Official entry and exit data comes with a lag:
  - Data on the entry and exit of establishments are released by the BLS with a lag of about three quarters.
  - Data on the entry and exit of firms are released by the Census Bureau with a lag measured in years.
- Business Formation Statistics (BFS) - Census: Timely weekly and monthly statistics on new business applications by industry and location, including transitions of these applications to actual new employer businesses over 4 and 8 quarters.

Comment II: The Role of Net Entry

- Net result of pandemic birth/exit patterns;
- The number of establishments grew roughly 3 percent between March of 2020 and March of 2021 then jumped 6 percent in the following year, a historically strong pace.

Note: DHS growth rate of total establishments, March versus year earlier.
Source: BLS QCEW.

Comment III: Valuation effects and alternative shocks

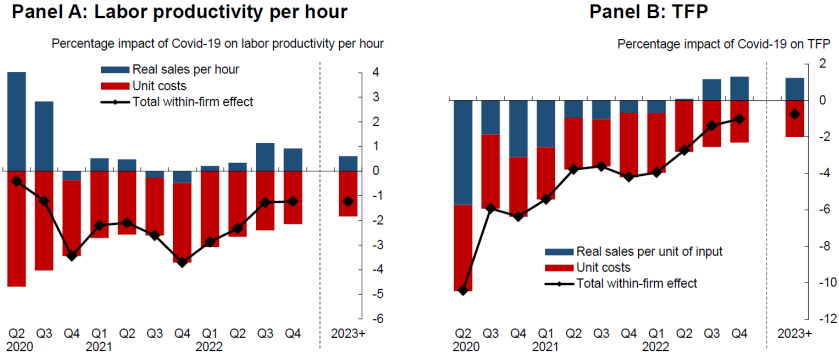
- The impact of Covid-19 on value-added total factor productivity (da):

$$da = dy - \frac{s_M dm_u}{(1 - s_M)} - \alpha dk - \beta dl$$

  - dy: proportional impact of Covid-19 at the firm level on real final sales.
  - where unit costs are defined as $M_u = M/Y$ and the impact on intermediate inputs $dm = dm_u + dy$ where dm_u is the change in unit cost.
  - s_M: share of materials in final sales.

- Valuation effects also a concern in this approach (effects of output prices and input prices).

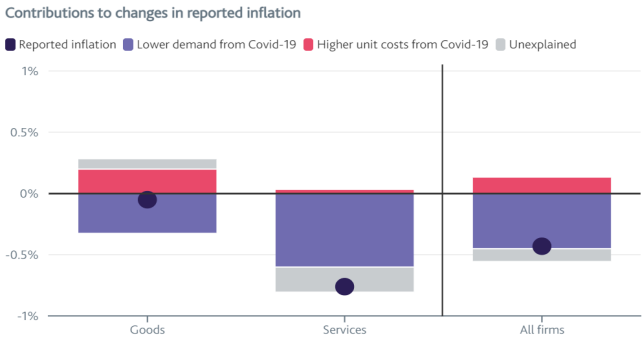
Comment III: Valuation effects and alternative shocks



- Is it only Covid-19 or the combined effect with Brexit?
- Lyon and Dhingra (2021) "The impacts of Covid-19 and Brexit on the UK economy: early evidence in 2021" – 33% of firms say Brexit has had an impact on their costs or prices (delays, customs, regulatory checks, transport).

Bunn, Wah and Shadbolt (2021) How has Covid affected firms' costs and prices? Bank of England

2019 Q4 and March to December 2020

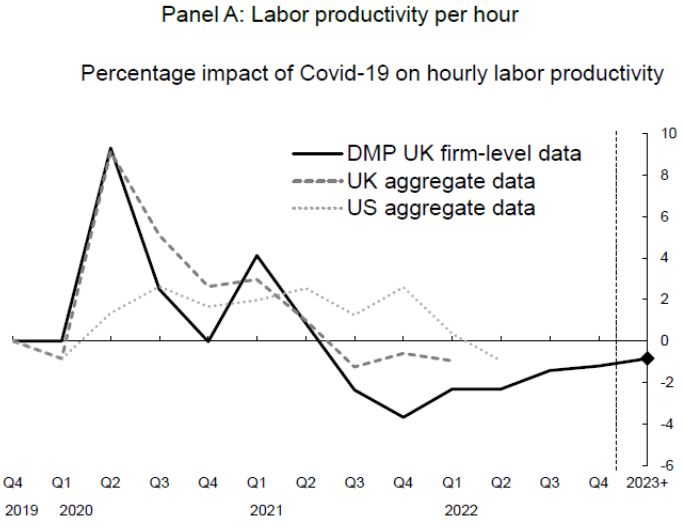


Sources: DMP Survey and Bank calculations.

- Can we use data from the DMP Survey to separate the perceived effect of Covid-19 from Brexit?
- Are the within productivity results stronger for exporters/importers?

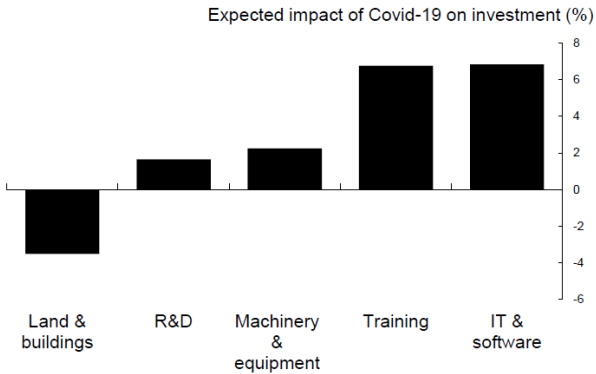
Comment IV: Timing

- Response Bias? Do respondents tend to be over-pessimistic after major lock downs?



Comment IV: Timing

- Too early to evaluate the long-term consequences? the paper acknowledges and we can think for example, on ambiguous effects on innovation and technology adoption:
  - CEO time directed to deal with Covid-19 (less time to devote to long-term investment plans (including innovation))
  - Changing environment requires innovative solutions



Taking Stock

- Important contribution on how to use firm level survey data to provide informative real time analysis.
- Very careful treatment of the data.
- Most of the effect through costs and we think in TFP as technology improving: too soon to evaluate?

Summary of Major Comments

- Main driver WITHIN firm changes but:
  - Are we underestimating the between component in the decomposition methodology?
  - Is the data suitable to study entry/exit?
- Valuation Effects and Alternative Shocks
  - Information on output and input prices
  - Simultenous shocks: Brexi, Ukraine War...
- Timing:
  - Is there a negative response bias after "extreme bad" events?
  - Is is too soon to evaluate the impact on innovation and technology adoption?