ONS Response to "Are UK Regional Productivity Disparities Really Narrowing? An Investigation into Recent Productivity Data Revisions"

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Abstract

Understanding the relative convergence or divergence pathways of regional productivity in the United Kingdom is an important topic for regional economic policy. As such, ONS welcomes that the authors have examined this topic based on our published regional and sub-regional productivity data and appreciate the opportunity to comment on the article.

The article notes the apparent shift away from divergence in productivity between UK ITL1 regions towards convergence within the most recent data (particularly for the period 2019-2022). The authors are clearly sceptical of this result and present a number of arguments concerning the data that they see as potentially giving rise for caution on this result. They then conclude that it will be necessary to observe a few more years of data before we are able to draw strong conclusions on the issue.

It is worth noting that the methods used by ONS to produce regional and sub-regional productivity data are based on a top-down approach from national accounts data down to regions. As such, revisions to the currently published data for 2019-2022 remain a possibility when the data is updated in future annual Regional and Sub-regional Productivity publications. Perhaps most importantly, those updates will include data for more recent years that will be less impacted by the economic effects of the covid period. As such, we agree with the author's overall conclusion that it would be wise to wait until we have some further years of data available before reaching a definitive viewpoint on the issue of UK regional productivity convergence and

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divergence. However, whilst we note the arguments presented in the paper about the 2019-2022 productivity data, our response below discusses these in light of aspects of the data that we think are helpful to users and that may help explain the trends seen in the published data.

Revisions in 2023

One aspect of the article we feel is important to review is the emphasis the paper places on the revisions made in the Regional and Sub-regional productivity output, 2022 (published in April 2024) versus the previous Sub-regional Productivity output published in June 2023 (with data up to 2021). Our rationale for this is that in June 2023 statistical systems were still recovering from the impacts and delays to statistics caused by the pandemic. By contrast, in April 2024, the availability of input data was much improved. So, we expect our more recent output to be of higher quality and as such, do not view the June 2023 version of the data as necessarily the best basis for comparison.

We would argue a better way to consider the data is by comparison of the latest data to a pre-covid period. The authors also use this approach frequently when they focus on comparisons between 2019 and 2022. The rest of our response will follow this approach and focus on discussing the issues raised when it compares the 2019 and 2022 data.

Note that in summer 2025, ONS plan to publish a Quality and Methodology Information (QMI) report to accompany the "Regional and Subregional Productivity" annual publication. This QMI will include further detail on how and why revisions are made to the data, alongside a discussion of the data sources and the methodology behind the final data. We hope this will prove to be a useful resource.

Growth in London's Hours Worked, but a Decline in London's GVA

One result drawn out in the article is that the data shows some ITL1 regions having growth in GVA but a decline in hours worked over the 2019-2022 period, while London shows the opposite (a decline in GVA but an increase in hours worked). The authors note that this would infer a negative production function for London and are doubtful of the economic sense of this.

To examine the data in more detail we have looked at the data for the 2019 to 2022 period by ITL2 region. (This can be seen in Fig 4 in the ONS Regional and Subregional Productivity, April 2024 release). Comparing the 5 London ITL 2 regions to other UK ITL2 regions, the data highlights that it is the GVA data in a couple of the London ITL2 regions that is more atypical when compared with other regions rather than the labour input data. In particular 'Outer London West and North West' ITL 2 region had seen large GVA declines while hours worked stayed broadly constant.

Examining London's GVA performance over this period highlights the impact of the transport sector on the recent data. GVA in 'transport and storage' was one of the few industrial sectors still significantly underperforming pre-covid levels in 2022. GVA in the sector remained 35 per cent

below 2019 levels in real terms in London (compared with a 9 per cent decrease for the United Kingdom excluding London), with the biggest impact in 'air transport' (down 67 per cent in London).

Employment in both air transport and the wider transport and storage sector would have been similar to pre-pandemic levels by 2022. This means there was a large drop in productivity in this sector in London in 2022 relative to 2019. This supports the observed ITL2 productivity data, where 'Outer London West and North West', home of Heathrow airport, has the largest productivity decline over the 2019 to 2022 period.

In contrast to this sector, as the authors note, many other industrial sectors in London were probably doing well during the 2019 to 2022 period.

> "[L]arge cities with higher shares of tertiary-educated white-collar workers who were better able to adapt to new technologies such as Zoom, Teams, GoogleMeet, typically passed through the pandemic relatively unscathed in comparison to smaller places with relatively more blue-collar workers"

Therefore, the overall productivity growth rate for London is the combination of these different sectors with different performances: some continuing to expand with both increases in GVA and hours worked, whilst a few industries, most notably air transport and the wider transport sector, had a notable decline in GVA. Overall, in such circumstances, it is perfectly reasonable that the overall impact might be for hours worked in London to have risen over the period but GVA declined, particularly given the share of Outer London which falls within these industries.

It is also reasonable to expect that there are other regions where the opposite happened with some industrial sectors having very strong productivity growth enabling the region overall to have had rising GVA despite declining hours worked. For example, the ITL 2 regions with the strongest productivity growth over the period were East Yorkshire and Northern Lincolnshire, and Lancashire. These areas had particularly strong GVA growth in the manufacture of food products, and/or the manufacture of transport equipment.

A key point to note here is that the productivity calculations are calculated using gross value added as the numerator, and not total output. GVA can be impacted by intermediate costs as well as by changes in output. For example, when comparing 2022 with 2019, the UK air transport industry was also having to deal with significantly higher energy prices. While demand for air travel had largely recovered from the pandemic period by 2022, it would not have been sufficiently high to allow the industry to pass these higher costs onto consumers via higher air fares; therefore the ratio of total output to GVA would have changed.

For the period 2019-2022, therefore, the data (as published in the April 2024 version of Regional and Subregional Productivity) shows the transport sector as having been a significant drag on London's overall productivity growth levels. Looking ahead, as we obtain further years of data, changes to the GVA and productivity performance of different UK industrial sectors will continue to have an impact on the regional produc-

tivity data. For example, if the GVA and productivity of the UK air transport sector were to substantially improve from 2022 levels, then this would likely help raise London's overall productivity level relative to other regions. This is one of the reasons why we agree it is worth waiting for further data before reaching a strong conclusion on the divergence/convergence issue.

Population Change

A secondary criticism made in the article concerns the growth data for productivity jobs and hours and how this compares to population change data across ITL regions. The inference being that there should be a correlation between changes in population and changes in productivity jobs and productivity hours.

Views on how strong such a correlation should be will vary. However, we will note that these are very different measures and there are a number of reasons why we should not expect them to directly correlate. Firstly, population includes everyone including children, retirees and working age people not in employment. By contrast, measures of productivity jobs and hours are only including the subset of the population who are in employment.

A second important factor is that population is a 'residence' based measure while 'productivity jobs and hours' are 'workplace' based measures. The missing link between the two is commuting. So, a change in the amount of commuting between regions can directly lead to differences between the growth rate of 'population' and the growth rate of 'productivity jobs or hours'. In London, between 2019 to 2022, the authors themselves note the key development that occurred to population over this period. In section 4 of their article they note that

> "[O]ne of the features of the pandemic era was the so-called 'donut effect', whereby across OECD countries many people relocated away from large city centres to suburbs, smaller towns or rural areas (Bond-Smith and McCann, 2024), and the population data suggests that indeed London was alone amongst ITL1 regions in experiencing population decline during 2019-2022, after which it recovered beyond its pre-2019 population levels."

While many people relocated away (reducing London population) during the 2019 to 2022 period, a large number of those movers will have nevertheless retained their London based employment. As such, we would have expected that London's reduction in population over the period might have been greater than the reduction in hours or jobs within London (including people working at home with London located jobs) and indeed that is what the data shows.

More generally, while some people do respond to changes in regional labour demand by moving, it is much more common for hours to be adjusted instead. Changes in hours worked, either in the intensive margin (individuals working more or fewer hours) or the extensive margin (firing and hiring of people) are typically short term responses to changes in labour demand, while relocating tends to be a much more

long term response. Therefore, to the extent that one might expect a relationship between the two, it would be a long term relationship rather than seeing a relation hold in each individual year. And even that long-term relationship might be impacted by some of the factors mentioned above such as changes to commuting flows, or the share of working age residents.

Overall, the factors mentioned here underscore why we strongly recommend analysts examining productivity data via GVA per hour worked, or GVA per job filled metrics, rather than focusing on GVA per head which can often be a misleading metric of regional productivity due to the influence of commuting flows and changes to population demographics.