



The Office for National Statistics (ONS) recently released its latest UK labour productivity statistics, which show that output produced per-hour-worked continued to flat line. Many commentators consider that productivity growth will be the key challenge for the UK economy over the next five years.

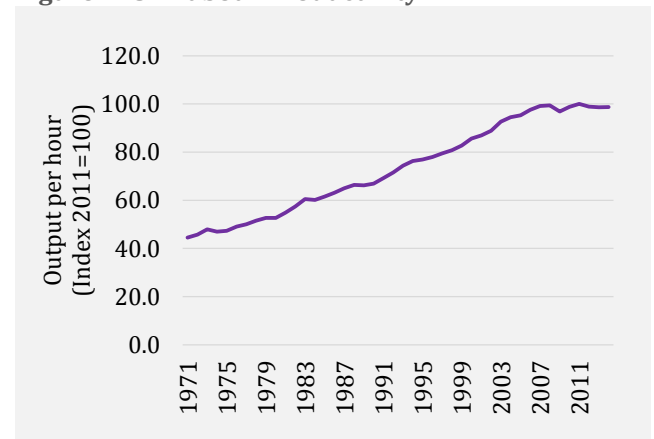
However, the headline statistic masks considerable variation in productivity growth between different sectors of the economy. This Insight argues that understanding the causes of these differences could provide the answer to unlocking productivity growth in the UK. Relatedly it and suggests methods that firms could use to benchmark and improve their own productivity and in doing so, their competitive advantage.

The productivity flat line

The standard measure of labour productivity is output produced per-hour-worked. The chart below, which is based on the latest data from the ONS, highlights what all of the fuss is about.

It shows that labour productivity for the UK economy as a whole has barely increased since 2007. The fact that labour productivity has not increased for a period of time is not particularly unusual – the chart shows that it has fallen or flattened in the past. What is unusual is the duration of the flat line, which is longer than those experienced in both the late 1980s and early 1990s and in the mid to late 1970s.

Figure 1: UK Labour Productivity



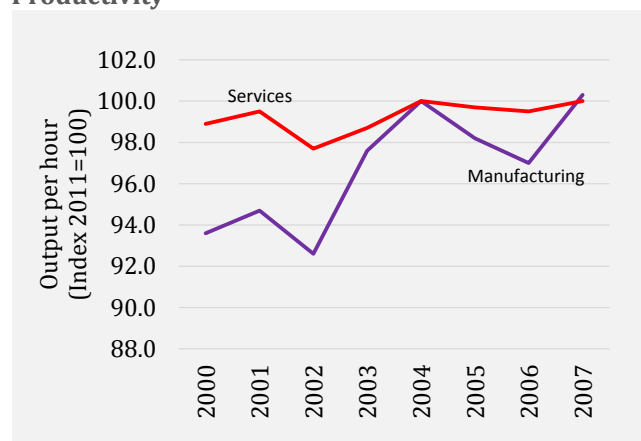
Source: Office for National Statistics (series DJ4M).

Various possible explanations for this trend have been put forward by commentators. For example, some believe that the UK's flexible labour market has meant that the recession resulted in wage reductions (tempering unemployment) and as such, low wages can encourage low productivity. More generally, the pool of flexible low wage workers combined with uncertainty over the future of the economy, may have encouraged businesses to hold back on productivity-enhancing capital investments and instead hire more staff. Other explanations, such as limited SME access to finance in order to fund such investments, have also been cited.

The difficulty with focusing on the headline statistics is that they mask considerable variation between sectors of the economy in terms of productivity growth. To illustrate this point, the chart below compares the labour productivity growth in the manufacturing and service sectors. It shows that, overall, service sector productivity has been more

resilient than in manufacturing. (And interestingly with the above theory in mind has, at least since 2011, experienced a higher rate of growth in jobs than manufacturing).

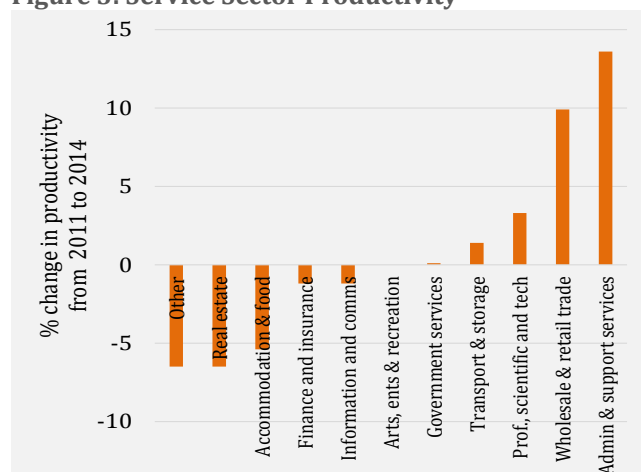
Figure 2: Manufacturing and Service Sector Labour Productivity



Source: Office for National Statistics (series DJK6 and DJP9).

The variation within these sectors is even more masked. The chart below shows the percentage change in the service sector productivity between 2011 and 2014. For example, the data shows that labour productivity in 'Admin and support services' was 13.6% higher in 2014 than it was in 2011. In contrast, productivity in 'Real estate activities' fell by around 6.5% from 2011 to 2014.

Figure 3: Service Sector Productivity



Source: Office for National Statistics (Table 6 of Q4 2014 productivity publication).

Productivity growth from the ground up

No doubt there are many explanations for the productivity differences between sectors, including where they each are in their own 'life-cycle' and their dependency or otherwise on capital investments to enhance productivity.

But we think that one plausible reason for the differences between sectors is that some businesses are better able to deliver productivity improvements than others. That is to say, for a given productivity opportunity or gap, one business might be better able to exploit it or fill it than another.

Economists have analysed business-level productivity for a long time. The measurement of business-level productivity and efficiency occurs frequently in the context of markets subject to economic regulation. Here, one of the jobs of an economic regulator is to ensure that consumers pay a fair price for services that are supplied by businesses without competitors. To do this, economic regulators try to estimate the efficient costs of providing a particular service and 'challenge' the businesses to reduce their costs by increasing their productivity.

The results of this type of analysis reveal quite how large productivity and efficiency gaps could be overall – and even within different parts of the same firm – as the two examples below illustrate.

- » By comparing Network Rail to other rail network owners internationally, the Office of Rail Regulation (ORR) found that Network Rail had the potential to reduce its costs by between 13% and 24% in 2010.
- » By making comparisons between Royal Mail's most efficient delivery offices and mail centres to the others in its estate, Postcomm (the economic regulator for postal services until Ofcom took over responsibility in 2010) found that Royal Mail could save around 11% of its delivery centre costs and around 14% of its mail centre costs in 2007.

But how can businesses identify, measure and exploit such differences in practice? As discussed below, at the heart of measuring business-level productivity and efficiency, is doing a like-for-like comparison – that is, is one business (or business unit) producing less than another with the same cost base? If so, is this difference caused by factors that are in or outside of the control of the business?

Celebrating our differences

The methods firms can use to work out whether they are being as productive and efficient as they could be, can be split into 'bottom-up' and 'top-down' cost assessments.

- » **Bottom-up cost assessments**, such as 'activity based costing' models, involve a highly granular assessment of both: (a) how many units of a given input (e.g. minutes of time) should go into producing a given output; which is then multiplied by (b) an estimate of the efficient cost per unit.
- » **Top-down cost assessments** involve making high-level comparisons between the costs incurred by different firms or business units (e.g. different retail stores) producing 'similar' outputs.

There are various pros and cons of the different methods. Perhaps the main practical advantages of the top-down cost assessments are:

- first, they can typically be undertaken using data already held by a firm or readily available from external sources; and
- they reduce the need to rely on (possibly contentious) assumptions / judgements to determine the appropriate levels of (a) and (b) noted above.

For these reasons, we advocate the use of top-down cost assessments over bottom-up cost assessments where they are feasible.

Top-down cost assessments can be further split into three categories: *unit cost analysis*; *econometric analysis*; and *linear programming techniques*.

- » **Unit cost analysis** involves calculating the cost per unit of output – for example, the cost per customer served or the cost per kg of antibiotics. The advantages of this type of analysis are that: (i) it is straightforward to undertake and interpret; and (ii) it is often possible to make comparisons between firms' unit costs using publically available information published in annual reports and accounts.
- » **Econometric analysis and linear programming techniques**. The advantage of these techniques is that they help address a key weakness of unit cost analysis: they help distinguish between cost differences that arise due to efficiency / productivity differences; and those that arise due to other factors.

Take, for example, a national restaurant chain. Its 'cost per customer served' is likely to be higher in London than in Belfast due to differences in labour market conditions. Equally, it is possible that restaurant goers are more demanding in Manchester than they are in Liverpool, resulting in a higher level of staffing per customer served in the former. Without 'controlling' for these differences in the analysis, one might wrongly conclude that the restaurants in London and Manchester are less efficient than those in

Belfast and Liverpool. This is what econometric analysis and linear programming techniques help to address.

The primary output of these analyses is either: an estimate of how much lower a business (or business unit) costs could be if it eliminated the efficiency or productivity gap; or, similarly, how much higher its output could be if it properly utilised all the resources available to it. The secondary outputs include estimates of how much costs vary with different drivers and, in some cases, how long it takes to cut costs.

Used appropriately, these outputs are highly valuable diagnostic and decision making tools – they can be used to: (i) help identify areas of 'productivity best practice' within a firm; (ii) set credible cost saving targets; challenge or vindicate rules-of-thumb and working assumptions; and (iii) test whether the effort and costs incurred to increase productivity and efficiency have paid back.

Despite their value, our experience suggests businesses have not adopted these analyses to the extent one might expect given the productivity challenge facing the UK and this possibly represents an opportunity.

Conclusion

The UK productivity story is not as clear cut as the headlines suggest. The evidence shows that labour productivity growth has varied considerably between sectors of the economy and firms in recent years. Understanding and measuring these differences can help identify and size productivity-related opportunities – and in doing this will help UK firms secure a competitive-edge over their national and international rivals.

Economic Insight advises UK businesses on how to measure and improve their efficiency.

Further information please contact

James Harvey

e: james.harvey@economic-insight.com
t: +44 (0) 207 100 37 46
m: +44 (0) 7807 571 441

Economic Insight Limited

88 Wood Street
London
EC2V 7RS
www.economic-insight.com

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