Office for National Statistics

Article

Productivity economic commentary, UK: October to December 2020

The main findings from official statistics and analysis of UK productivity, presenting a summary of recent developments.

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1 . Main points

Labour productivity

- In Quarter 4 (Oct to Dec) 2020, labour productivity in the UK, measured by output per hour, decreased by 0.7% compared with the same quarter a year ago. See Section 5
- Output per worker fell by 5.9% compared with the same quarter a year ago, reflecting workers remaining employed though the Coronavirus Job Retention Scheme (CJRS, otherwise known as furlough), while not working. Section 5
- Output per hour worked grew 0.4% in 2020 compared with 2019, although there was substantial volatility during the year; this contrasts with a slow and steady decline in productivity during the 2008-09 economic downturn. See Section 2

Multi-factor productivity

- Multi-factor productivity (MFP) in Quarter 4 2020 is estimated to have decreased by 0.2% compared with the same quarter a year ago. See Section 6
- This fall is based on estimates of how capital has been utilised throughout the pandemic, given government restrictions on economic activity.

Public service productivity

- Public service productivity decreased 13.0% in Quarter 4 2020 compared with the same quarter a year ago. See Section 7
- This fall in public service productivity was caused by a record growth in inputs of 14.1% and a fall in output of 0.7%, compared with the same quarter a year ago. See Section 7
- Public service output continues to recover during the coronavirus (COVID-19) pandemic, growing 6.5% in Quarter 4 2020 compared with Quarter 3 (July to Sept) 2020. See Section 7

Unit labour costs

- Unit labour costs (ULCs) increased by 7.2% compared with the same quarter a year ago; labour costs used to calculate ULCs exclude wage subsidies such as furlough payments. See Section 8

Productivity estimates use the Labour Force Survey (LFS), among other sources. LFS responses are weighted to official 2018-based population projections on demographic trends that pre-date the coronavirus pandemic. In our Coronavirus and the impact on payroll employment article we analyse the population totals used in the LFS weighting process and state our intention to make adjustments. Rates published from the LFS remain robust; however, levels and changes in levels should be used with caution. Any adjustments are likely to lead to small upward revisions to productivity growth in 2020.

2 . Latest statistics at a glance

Table 1: Annual and quarterly productivity statistics for 2020 and Quarter 4 (Oct to Dec) 2020
Percentage change

Series	Status	2020 compared with 2019	2020 Quarter 4 Quarter on same quarter a year ago	2020 Quarter 4 Quarter on quarter
Labour productivity				
· **Output per hour**	National Statistics	0.4	-0.7	-4.3
· **Output per worker**	National Statistics	-9.5	-5.9	1.6
· **Output per job**	National Statistics	-9.5	-5.8	1.5
Multi-factor productivity	Experimental Statistics	-0.2	-0.6	-5.1
Public service productivity	Experimental Statistics	-15.4	-13	4.7
Unit labour costs	National Statistics	7.6	7.2	2.4

Source: Office for National Statistics

Notes

1. Output per hour is the headline measure of labour productivity in the UK. It is preferable to use quarter on same quarter a year ago comparisons as productivity is a structural feature of economies and quarter on quarter data can be distorted by short-run volatility and transition costs.

2. Public Service Productivity annual estimates for 2019 and 2020 are annualised versions of our experimental quarterly statistic and are not adjusted for quality. Our quality adjusted series, up to 2018, is published with a two-year time lag.

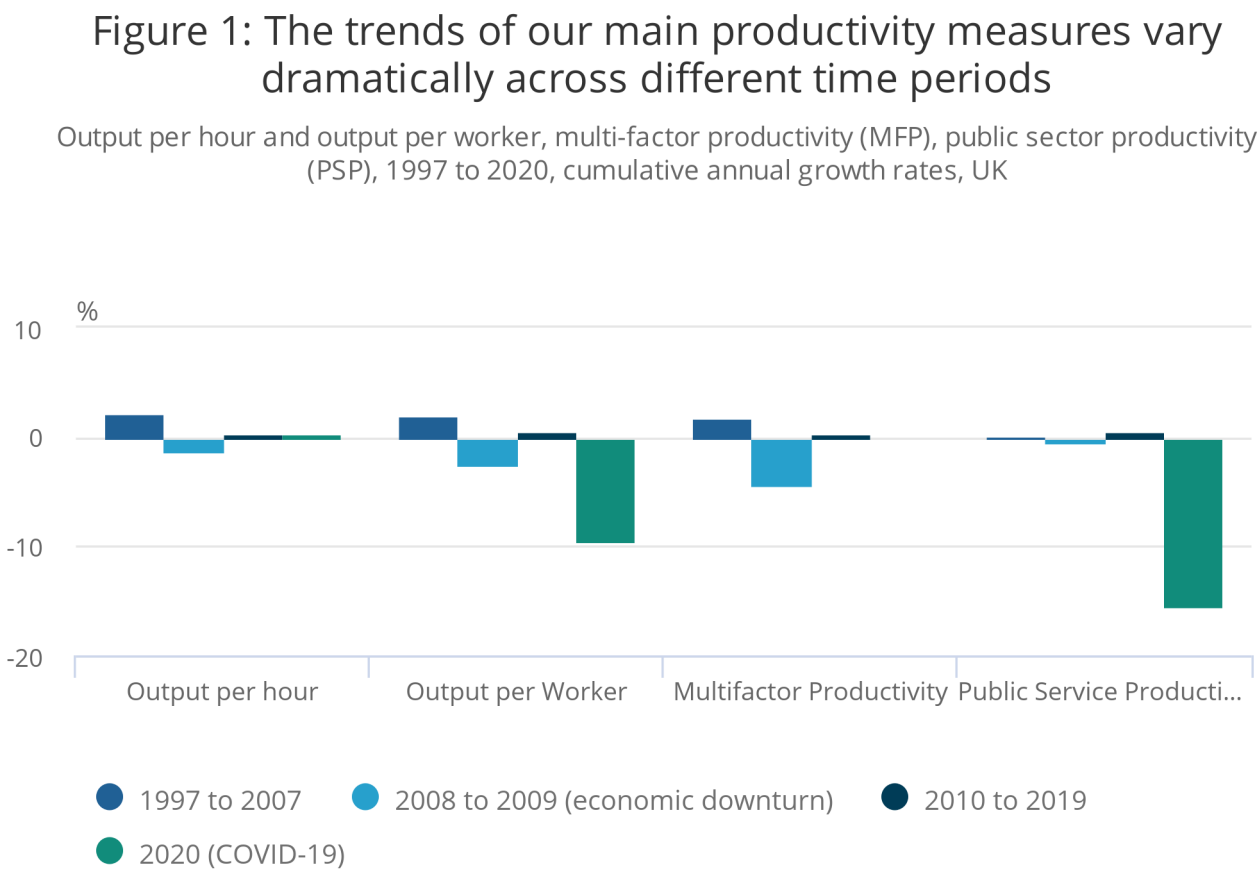
Productivity represents the relationships between inputs and outputs in the production process. Productivity is defined as the ratio between outputs and inputs. Increasing productivity means greater efficiency in producing output of goods and services from labour, capital, materials, and any other necessary inputs. As a practical concept, productivity helps define both the scope for raising living standards and the competitiveness of an economy. Therefore productivity has an important role in formulating and assessing government policy.

The UK government’s response to the coronavirus (COVID-19) pandemic began to affect the UK economy at the end of Quarter 1 (Jan to Mar) 2020. The data in this bulletin runs until Quarter 4 (Oct to Dec) 2020, when there was a tightening of restrictions and a second lockdown in many parts of the UK.

Figure 1 shows how the different measures of productivity have grown in different time periods: before, during and after the 2008 economic downturn, and during 2020.

Figure 1: The trends of our main productivity measures vary dramatically across different time periods

Output per hour and output per worker, multi-factor productivity (MFP), public sector productivity (PSP), 1997 to 2020, cumulative annual growth rates, UK



Source: Office for National Statistics - Productivity economic commentary, UK

Notes:

1. These growth rates are calculated as cumulative annual growth rates.

Output per hour grew by an average annual growth rate of 2.2% in the 10-year period prior to the 2008 economic downturn (1997 to 2007). During the downturn (2008 to 2009), output per hour fell by an average of 1.2%. In the subsequent nine years (2010 to 2019), output per hour growth was positive but lower than previously, instead growing by 0.4%. This phenomenon is widely known as the productivity puzzle.

In 2020, output per hour has continued to grow at 0.4%, leaving it seemingly unaffected by the coronavirus (COVID-19) pandemic. A change in the distribution of economic activity between industries is the primary reason we have not seen a similar drop to the 2008-09 downturn, see section 4 for more detailed analysis.

A similar pattern can be observed for output per worker prior to 2020. Output per hour and output per worker differ because of the effects of the coronavirus pandemic, with the latter falling by 9.5%. This is largely because of the effects of furlough; for more detailed analysis, see Section 5. The average growth rate for multi-factor productivity (MFP) in the 10 years prior to the financial crisis was 1.7%. Multi-factor productivity reflects the growth in productivity that is not attributable to either changes in labour or capital inputs. As a result, pre-downturn MFP growth could be due to several factors, but can generally be thought of as improvements in how resources are used across and within individual companies.

The economic downturn saw a 4.3% drop in MFP as companies adjusted to the situation, yet MFP growth has not returned to its previous level, increasing by 0.3% on a compound basis from 2010 to 2019. This lower growth rate has contributed to the productivity puzzle.

MFP fell during 2020 by 0.1%, which is far less than during the 2008 downturn. As with labour productivity, this can be attributed to changes in the distribution of economic activity between industries.

Public service productivity (PSP) growth in these two economic crises tells a different story. In the decade leading up to the economic downturn PSP saw low average growth whilst output per hour and MFP average growth was high. However, during the downturn from 2008 to 2009, PSP was largely unaffected in contrast to output per hour and MFP. This is because the impact of the crisis was not felt in public services, which remained open and functional during this period. Conversely, the coronavirus pandemic has had a larger impact on the public services than on the whole economy. During 2020, public services have been hit by the forced closure of schools and the cancellation of non-essential healthcare activities. This, combined with exceptionally high government spending on measures to combat the coronavirus pandemic, has resulted in large falls in output and increases in inputs, resulting in a record drop in PSP.

Please consider that there are important differences between labour productivity, multi-factor productivity and public service productivity, as explained in this article.

3 . Differing effects of coronavirus and the 2008 to 2009 economic downturn on productivity

Productivity measures have been impacted more sharply by the coronavirus pandemic than they were by the 2008 to 2009 economic downturn. Figure 2 shows how a range of productivity measures and related statistics were impacted immediately after the onset of the 2008 downturn and the 2020 downturn.

Figure 2: Productivity measures and inputs throughout the coronavirus pandemic and the 2008 to 2009 economic downturn

Output per hour, multifactor productivity, public service productivity, COVID-19 vs 2008 economic downturn

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All three measures of productivity (labour productivity, multi-factor productivity, and public service productivity) declined in Quarter 1 (Jan to March) 2020, the first period from the beginning of the coronavirus pandemic. For output per hour (labour productivity) and multi-factor productivity (MFP), this decline continued into the second period, Quarter 2 (Apr to June) 2020, before a sharp recovery in the third period, Quarter 3 (Jul to Sept) 2020. This trend in output per hour is caused by gross value added (GVA) falling more than hours worked in Quarter 2 2020 but recovering faster in Quarter 3 2020. The MFP trend could be due to several factors including businesses adapting to the new situation and the shifting distribution of industries that continued to produce during lockdown. It was also impacted by a fall in capital utilisation, which accounted for much of the fall in GVA, due to workers being furloughed or working from home instead of in offices. Some of these factors unwound in Quarter 3 leading to a strong rise in MFP.

While public service productivity (PSP) recovered in Quarter 3 2020, it remained below its 2019 level unlike output per hour and MFP. This was principally caused by large increases in government spending on services such as healthcare during the coronavirus pandemic, as well as large falls in output in services such as healthcare and education because of school closures and the cancellation of non-emergency medical treatments.

Output per hour and MFP both declined into Quarter 4 (Oct to Dec) 2020 from the continuing effects and resulting restrictions on economic activity of the coronavirus pandemic. The output per hour decline was due to GVA recovering at a slower rate than total hours worked. The productivity of the labour force and, notably, capital utilisation provided positive contributions to GVA growth in this period. MFP, which makes up the residual between these elements and changes to GVA, was likely driven by further shifts between the economic activity of different industries in the economy. The changes seen in all these estimates is in contrast to the long and slow fall and recovery experienced following the economic downturn in 2008.

It is clear from Figure 2 that for PSP the immediate fall in productivity following the lockdowns to combat the coronavirus pandemic was much more severe than the corresponding decrease following the economic downturn in 2008. It was not until a year later in Quarter 1 2009 that there was a notable decrease in public service productivity. This was because there were no impacts to the provision of public services immediately following the economic downturn.

It is not yet clear what the long-term recovery of productivity will look like. In time, the impact of the economic crash caused by the coronavirus restrictions will become clearer.

4 . The effect of industries on aggregate productivity

The role of industry composition on aggregate productivity

One reason that output per hour growth has been surprisingly resilient in 2020 is a large positive allocation effect. Growth in whole economy output per hour can be decomposed into two components:

- A direct contribution from each industry's productivity growth – that is, organic productivity growth within an industry driven by an improvement in the performance of its firms, driven by technology, skills, efficiency, and so on.
- An allocation effect - that is, changes in the mix of activities in the economy between firms or industries that have different levels of productivity - might be characterised by resources moving from low to high productivity industries (a positive allocation effect) or from high to low productivity industries (a negative allocation effect).

Government restrictions to reduce the spread of the coronavirus (COVID-19) led some industries to close while others could remain open, leading to large shifts in the relative sizes of different industries. Figure 3 shows the industries with the largest changes (both positive and negative) in their share of hours worked in the economy between 2020 and 2019, and their productivity level in 2019. For this period these changes are larger than usual.

Figure 3: Industries saw large changes in their share of hours worked in the economy between 2019 and 2020

Percentage point change in hours worked share between Quarter 2 to Quarter 4 2019 and Quarter 2 to Quarter 4 2020 for the top 5 and bottom 5 changing industries, UK

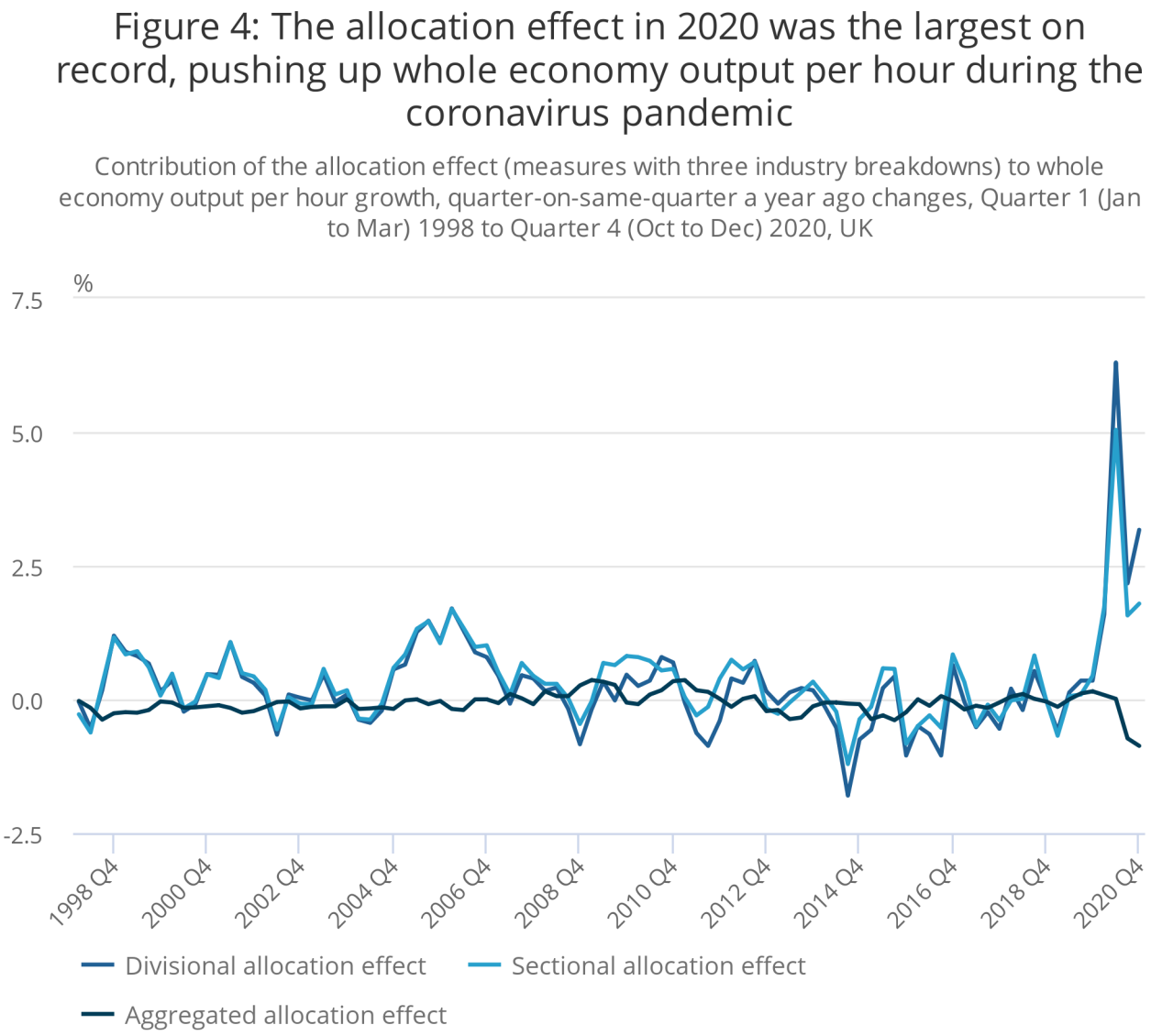
Download the data

Industries that saw a fall in their relative share of hours worked tended to be lower productivity industries. Compared with a whole economy average productivity level of about £36.00 per hour worked in 2019, the food and beverage services industry (I56) was about 54% less productive. By contrast, industries with an increased share of hours worked tended to be high productivity industries. The legal and accounting (M69) and computer services (J62) industries had productivity levels of £41.40 and £38.20 per hour worked in 2019 respectively, 15% and 6% above the whole economy average. Other industries increasing in size, such as the human health and public administration industries, are not easily compared with the rest of the economy because of the way output is measured.

As a result, the allocation effect was strongly positive in 2020 (Figure 4). This was particularly true in Quarter 2 (April to June) 2020 when the most stringent restrictions were in place and hence the largest changes in the share of hours worked within each industry was observed. The allocation effect was the largest on record in Quarter 2 2020. The size of the allocation effect receded in the second half of 2020 as industries began to reopen but remained strongly positive in Quarter 3 and Quarter 4 2020 compared to the same quarters of 2019.

Figure 4: The allocation effect in 2020 was the largest on record, pushing up whole economy output per hour during the coronavirus pandemic

Contribution of the allocation effect (measures with three industry breakdowns) to whole economy output per hour growth, quarter-on-same-quarter a year ago changes, Quarter 1 (Jan to Mar) 1998 to Quarter 4 (Oct to Dec) 2020, UK



Source: Office for National Statistics - Productivity economic commentary, UK

Notes:

1. Divisional refers to the division breakdown that can be found in the UK SIC 2007.
2. Sectional refers to the sectional breakdown found in UK SIC 2007. However, here we group together OPQ and STU.
3. Aggregate refers to the following breakdown: ABDE, C, F, K and G-U (all non-financial market services).

Figure 4 has alternative measures of the allocation effect, which are based on different degrees of industry decomposition. More detailed industry breakdowns allow for a larger allocation effect since changes between more detailed industries can be observed, although that is not always the case. For instance, the most aggregated breakdown in Figure 4 groups all non-financial market services together, which encompasses a wide range of economic activities. The more detailed sectional and divisional breakdowns split up non-financial market services into more parts. We have introduced divisional contributions to productivity growth, including allocation effect, in our divisional productivity dataset with this release.

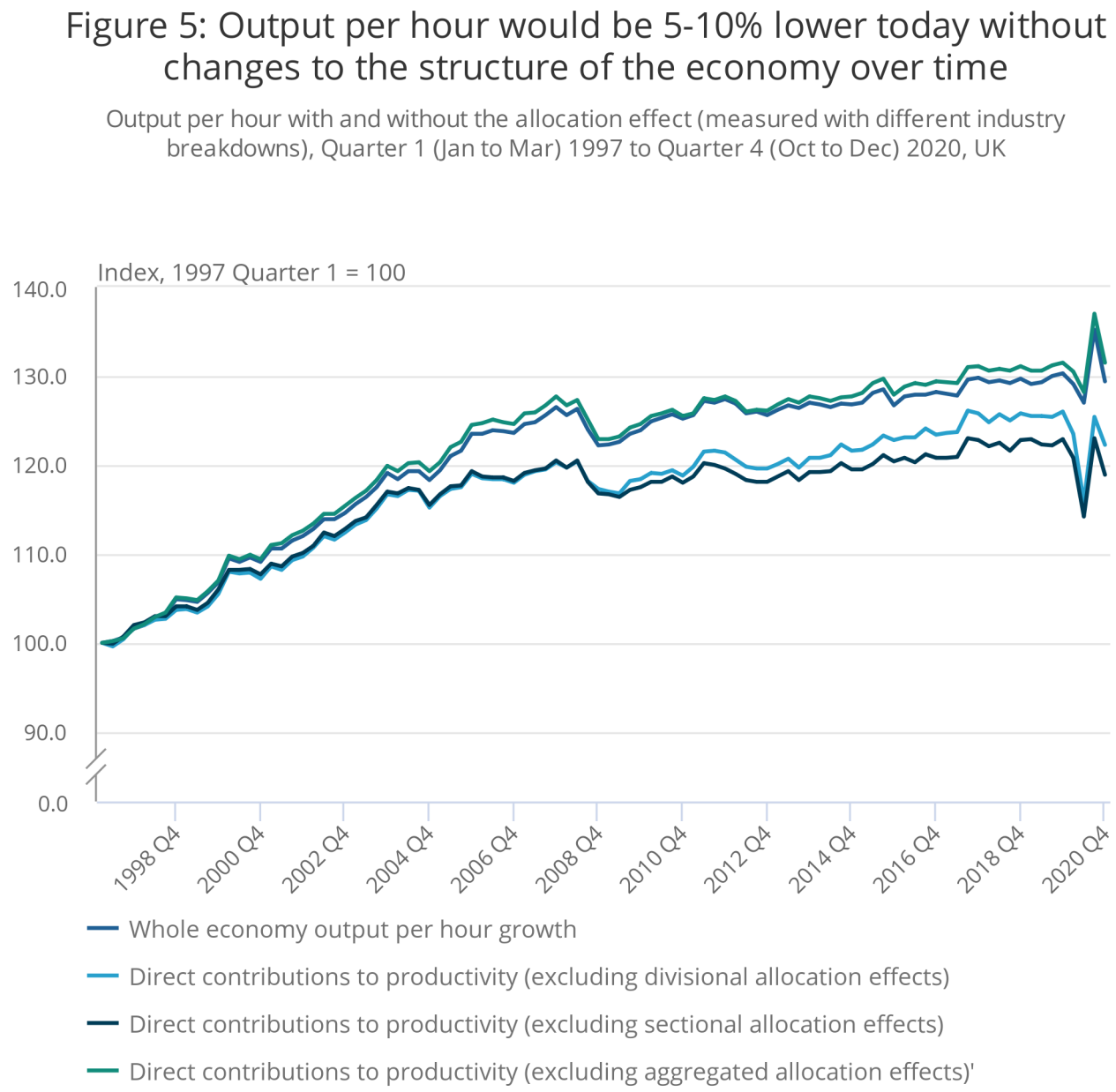
The 2008 to 2009 economic downturn did not have a similarly large allocation effect since the share of hours worked in each industry did not shift as dramatically as in 2020. The decline in hours worked in 2008 was broad-based and shallow, leading to little change in the relative size of industries.

The period from the start of 2005 to the end of 2006 also had higher than usual allocation effects. This is primarily because of shifts between services industries. The real estate industry (a high productivity industry because of the inclusion of imputed rental in the output measure) and the computer services industry (a high productivity industry) expanded rapidly at this time. By contrast the retail and motor trades industries (relatively low productivity industries) saw a declining hours share in 2005 and 2006.

Figure 5 shows output per hour growth with and without accounting for the allocation effect (measured with different industry breakdowns). The series without the allocation effect measure only the direct contribution to productivity growth, that is productivity growth within industries, holding the relative size of industries constant. If the economy had the same structure as in 1997, whole economy output per hour would be around 5% to 10% lower than it actually is today. This is largely because of changes in size between more detailed industries (within the non-financial market services sector), rather than higher-level changes (such as between manufacturing and services).

Figure 5: Output per hour would be 5-10% lower today without changes to the structure of the economy over time

Output per hour with and without the allocation effect (measured with different industry breakdowns), Quarter 1 (Jan to Mar) 1997 to Quarter 4 (Oct to Dec) 2020, UK



Source: Office for National Statistics - Productivity economic commentary, UK

Notes:

1. Divisional refers to the division breakdown that can be found in the UK SIC 2007.

2. Sectional refers to the sectional breakdown found in UK SIC 2007. However, here we group together OPQ and STU.

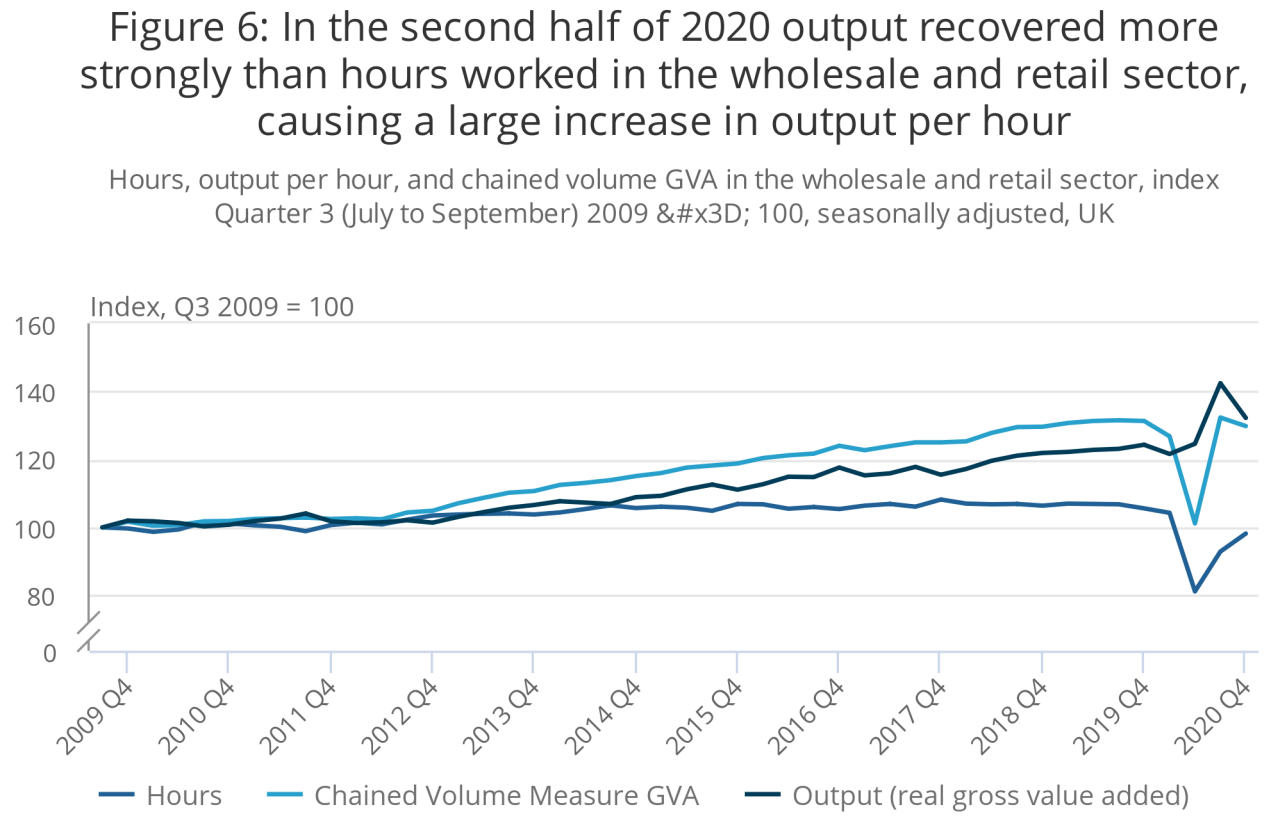
3. Aggregate refers to the following breakdown: ABDE, C, F, K and G-U (all non-financial market services).

Industry highlight: wholesale, retail and motor trades (SIC07 section G)

Along with changes at the whole-economy level, the coronavirus pandemic has led to interesting changes within industries. The wholesale, retail and motor trades industry (SIC07 section G) has seen a large divergence between growth in gross value added (GVA) and in hours worked which may be linked to structural changes within the industry.

Figure 6: In the second half of 2020 output recovered more strongly than hours worked in the wholesale and retail sector, causing a large increase in output per hour

Hours, output per hour, and chained volume GVA in the wholesale and retail sector, index Quarter 3 (July to September) 2009 = 100, seasonally adjusted, UK



Source: Office for National Statistics - Productivity economic commentary, UK

In the second half of 2020, output per hour in the wholesale and retail industry saw a large increase, caused by the slow recovery in hours combined with a strong recovery in gross value added (GVA).

In Quarter 2 (Apr to Jun) 2020, GVA and hours worked both fell more than 20%, because restrictions to reduce the spread of coronavirus required physical outlets to close. When restrictions were eased in Quarter 3 (Jul to Sep) 2020, GVA recovered to 2019 levels, while hours worked remained below 2019 levels. In Quarter 4 (Oct to Dec) 2020, GVA remained relatively stable while hours worked partially recovered to 7% below the 2019 average.

A shift from physical outlets to online retail, which is likely to be less labour-intensive, could explain why hours worked remained low even though GVA recovered. This trend towards e-commerce has been happening for some time, evidenced by the steady growth in GVA alongside little growth in hours worked in the industry since 2012.

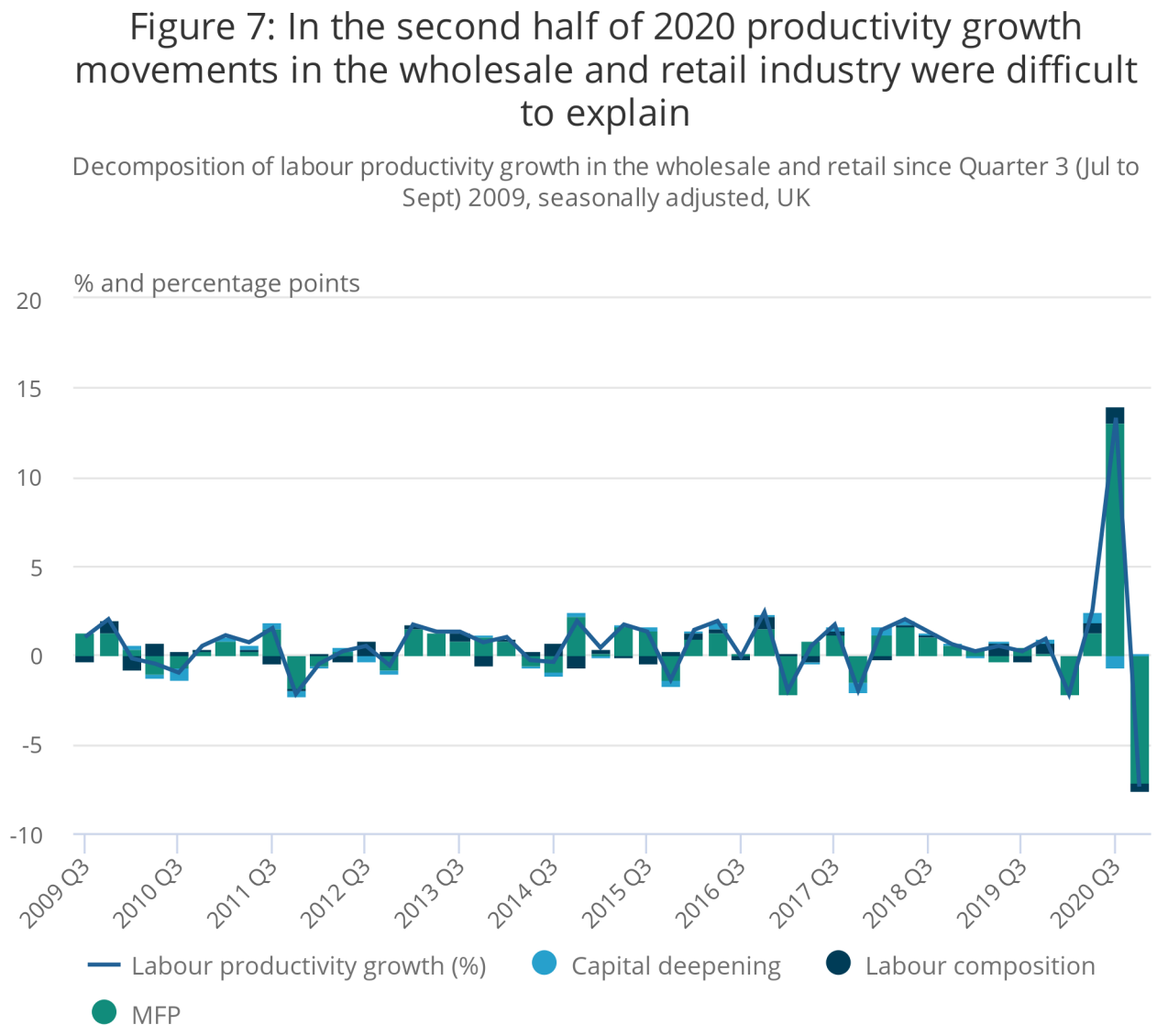
Another possibility is from economies of scale – the cost advantages enterprises gain from their scale of operation. The shops that were allowed to stay open, such as supermarkets, tend to be larger than average. If larger shops are on average more productive, the re-weighting of the industry towards larger shops would increase average productivity.

Growth in output per hour from both these reasons would be picked up multi-factor productivity (MFP). When we decompose the movements of productivity growth in each quarter, we discover the measured inputs (labour and capital) do not display large enough changes to explain the 2020 increase in labour productivity in the industry. When compared to 2019, the quality of the workforce (labour composition) and the availability of capital per hour worked (capital deepening) increased respectively by 1.6 and 1 percent, against an MFP growth of 4.6 percent.

It is likely the shift from low-productivity physical shops to high-productivity online retail led to an allocation effect within the industry of wholesale and retail. Nonetheless, this could be just part of the explanation for the higher MFP growth, and there could be other factors we have not considered.

Figure 7: In the second half of 2020 productivity growth movements in the wholesale and retail industry were difficult to explain

Decomposition of labour productivity growth in the wholesale and retail since Quarter 3 (Jul to Sept) 2009, seasonally adjusted, UK



Source: Office for National Statistics - Productivity economic commentary, UK

5 . Labour productivity

Whole economy

Our preferred measure of productivity is output per hour growth compared with the same quarter in the previous year, which has fallen by 0.7%. Quarter-on-year comparisons provide a more reliable indicator of longer-term productivity trends compared with quarter-on-quarter comparisons, which are impacted by short-run volatility and transition costs.

Output per hour and output per worker previously had similar growth rates, but the Coronavirus Job Retention Scheme (CJRS, otherwise known as furlough) has caused a divergence. To qualify for furlough, workers must work zero or reduced hours. This means that their total hours worked will fall, but they are still counted as workers, so the number of workers does not fall. The way that labour productivity is measured means that if total hours worked falls, but the number of workers does not, growth in output per hour will be higher than growth in output per worker.

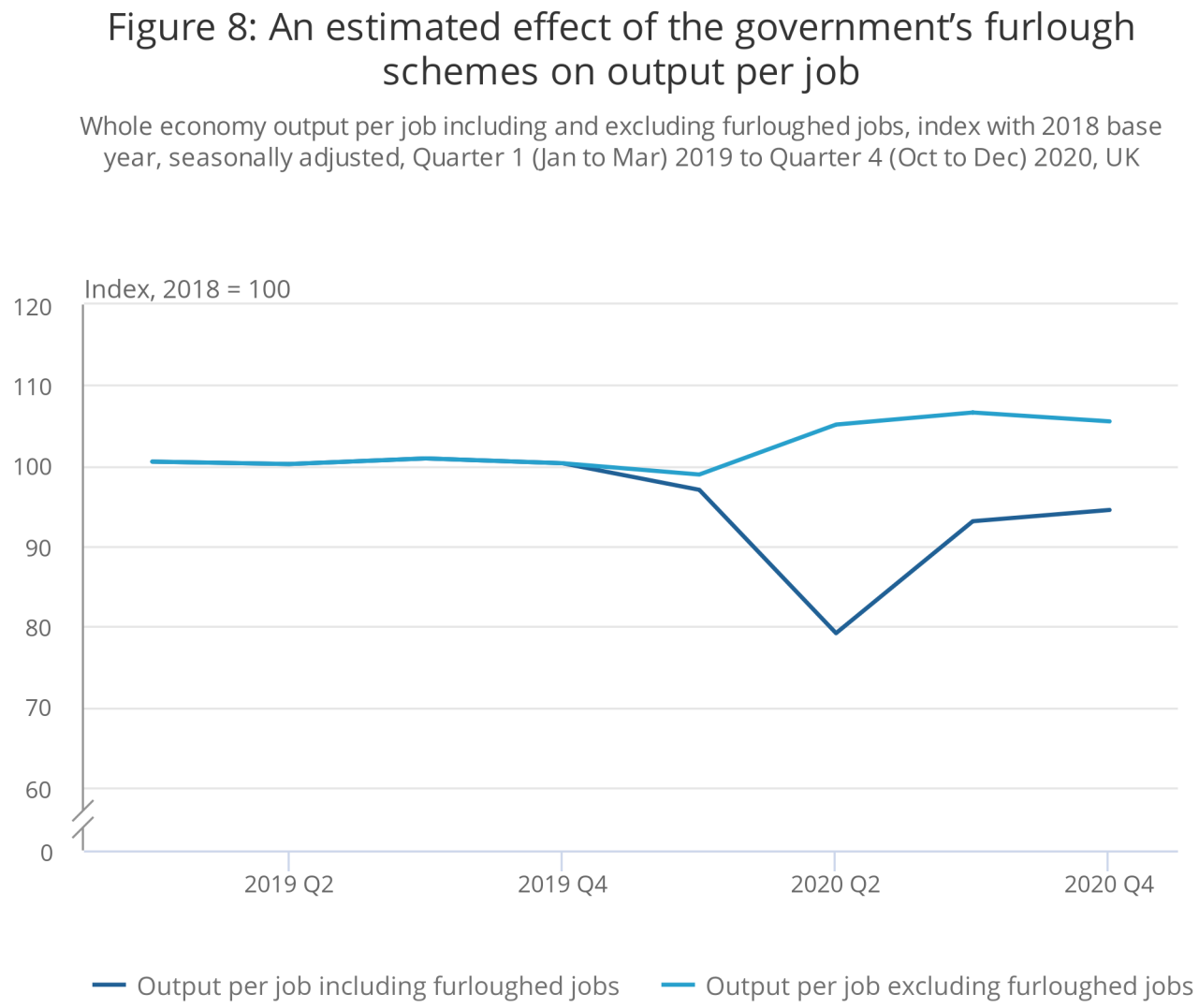
The CJRS has allowed firms to furlough their workers instead of making them redundant, leading to a 1.6% decrease in employment. This is comparatively small compared with the 6.8% decrease in the total number of hours worked. The 5.2 percentage point difference between total hours worked and employment explains the disparity between the two productivity measures. Alongside these changes, we have seen gross value added (GVA) fall by 7.5% compared with the same quarter a year ago. Output per hour fell by 0.7% compared with the same quarter a year ago, whereas output per worker fell by 5.9% over the same period.

The effects of the Coronavirus Job Retention Scheme on labour productivity

We continue to compile Experimental Statistics to demonstrate the effect of the government's furlough scheme on labour productivity using Her Majesty's Revenue and Customs (HMRC) employment data, equivalent to jobs. Figure 8 shows labour productivity (measured by output per job) including and excluding furlough workers.

Figure 8: An estimated effect of the government's furlough schemes on output per job

Whole economy output per job including and excluding furloughed jobs, index with 2018 base year, seasonally adjusted, Quarter 1 (Jan to Mar) 2019 to Quarter 4 (Oct to Dec) 2020, UK



Source: Office for National Statistics - Productivity economic commentary, UK

Notes:

1. Furloughed jobs are estimated using a mean average of HMRC's daily furloughed "employments" data. For days before the furloughed schemes were introduced a zero has been used in the average.

In Quarter 4 (Oct to Dec) 2020, output per job excluding furloughed workers decreased by 1.0% when compared with the previous quarter. When furloughed workers are included, we see a rise of 1.5% in output per job over the same period.

The level of output per job was 11.7% higher in Quarter 4 2020 when furloughed workers are excluded, similar to the 14.6% difference in Quarter 3 (July to Sep) 2020. This continues to indicate that the furlough scheme is predominately being used in industries with lower levels of productivity.

In Quarter 4 2020, the UK experienced a tightening of restrictions and a second national lockdown. Sectors such as Government Services and Transportation and Storage experienced a growth in output per job (both when including and excluding furloughed workers) when compared with the previous quarter, whereas the Accommodation and Food Services Sectors experienced some of the largest declines.

6 . Multifactor productivity

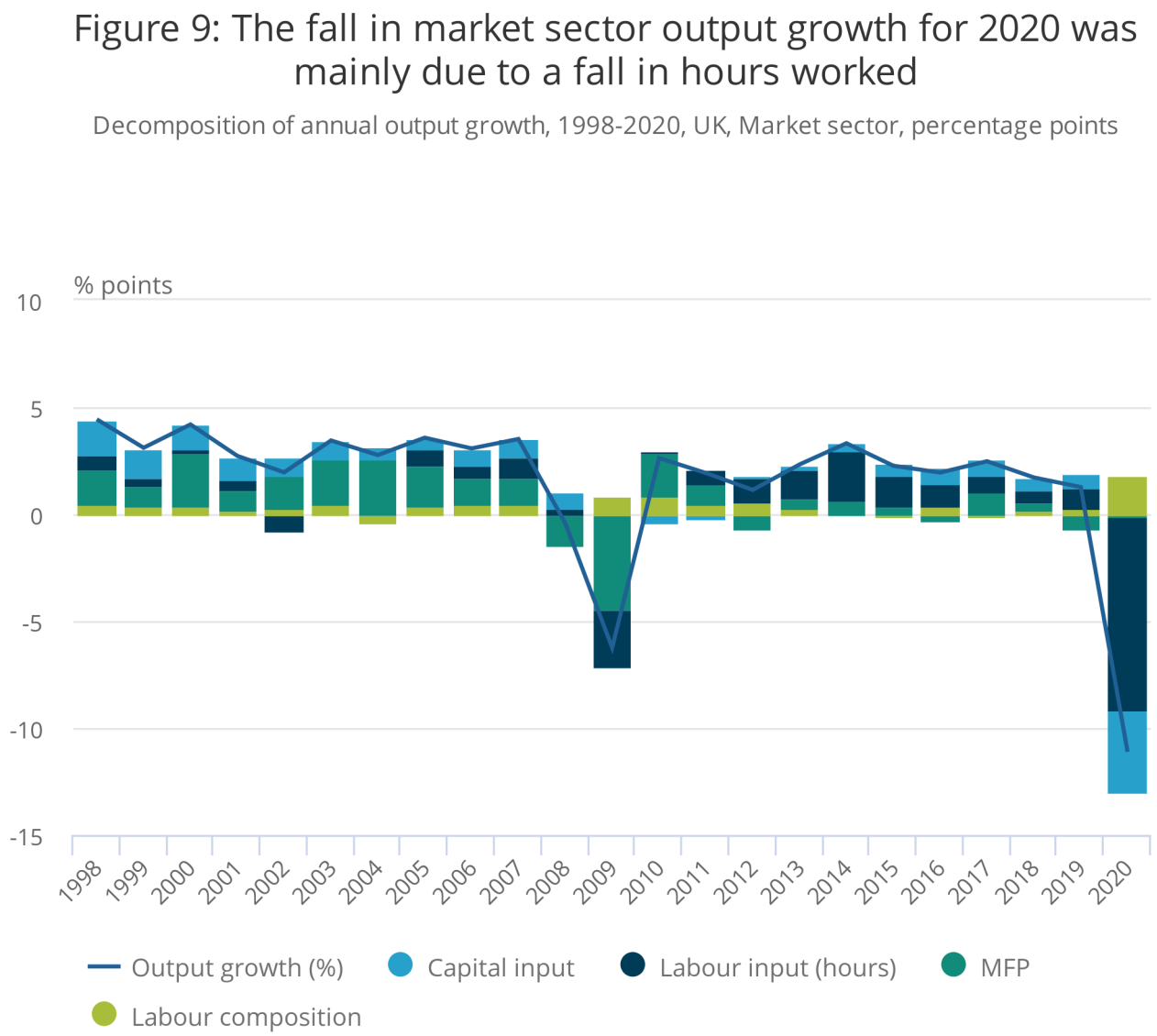
Estimates of multi-factor productivity (MFP) provide a more nuanced view, controlling for the changes in the various inputs used to create economic output and how these inputs are combined to deliver output. These inputs include changes to capital services (such as machinery and software), changes to the composition of the labour market (for example, the number of workers with university degrees) and changes to labour input in terms of hours worked. This is explained in a simple guide to multi-factor productivity. MFP only covers the market sector and excludes the public sector and other similar parts of the economy.

The fall in hours worked in the market sector in 2020 contributed 9 percentage points towards the 11.1% decrease in market sector GVA. This impact is shown in Figure 9. Further to this, many existing capital assets, including buildings and machinery and equipment, stood idle during the lockdowns used to combat the pandemic in 2020. When accounting for how much capital was utilised in the period, capital services contributed 3.8 percentage points to the fall in GVA in the period. This left the effect of changes to MFP providing a small negative contribution throughout the year.

Labour composition, which reflects the mix of skills held by workers employed in economic production in the economy, provided a driver to output growth. This was due to many productive workers being able to continue working throughout the pandemic while their less skilled counterparts were furloughed or otherwise unable to work. This pulled up the average labour composition measure by 2.9% in 2020.

Figure 9: The fall in market sector output growth for 2020 was mainly due to a fall in hours worked

Decomposition of annual output growth, 1998-2020, UK, Market sector, percentage points

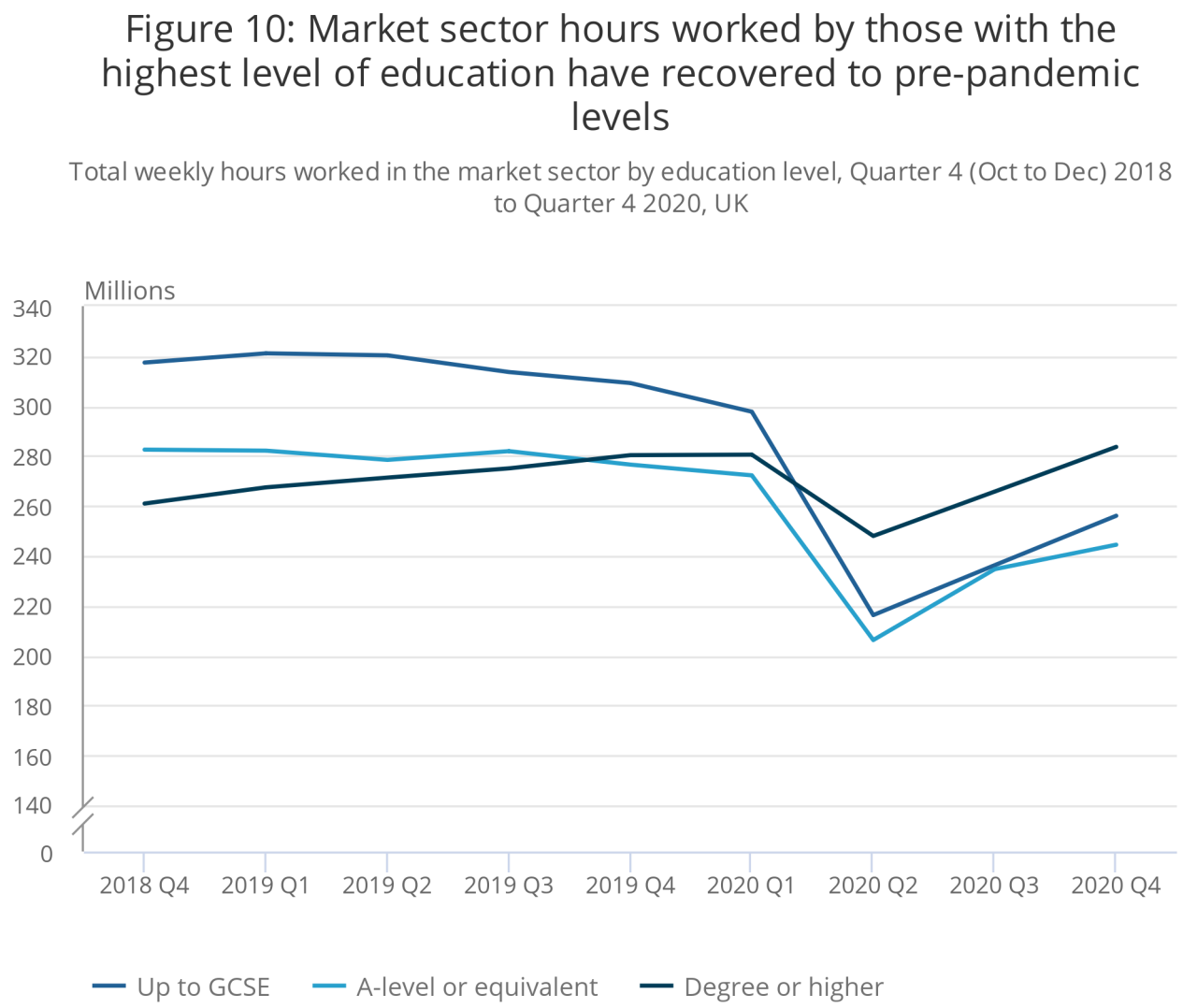


Source: Office for National Statistics - Productivity economic commentary, UK

The shift seen in labour composition in 2020 can be broken down into hours worked in the market sector by education levels in figure 10. When looking at these changes across the four quarters it is clear that less educated workers saw the largest dips in their hours in Quarter 2 (Apr to June) 2020, yet the recovery throughout the rest of the year was in line with more educated workers.

Figure 10: Market sector hours worked by those with the highest level of education have recovered to pre-pandemic levels

Total weekly hours worked in the market sector by education level, Quarter 4 (Oct to Dec) 2018 to Quarter 4 2020, UK



Source: Office for National Statistics - Productivity economic commentary, UK

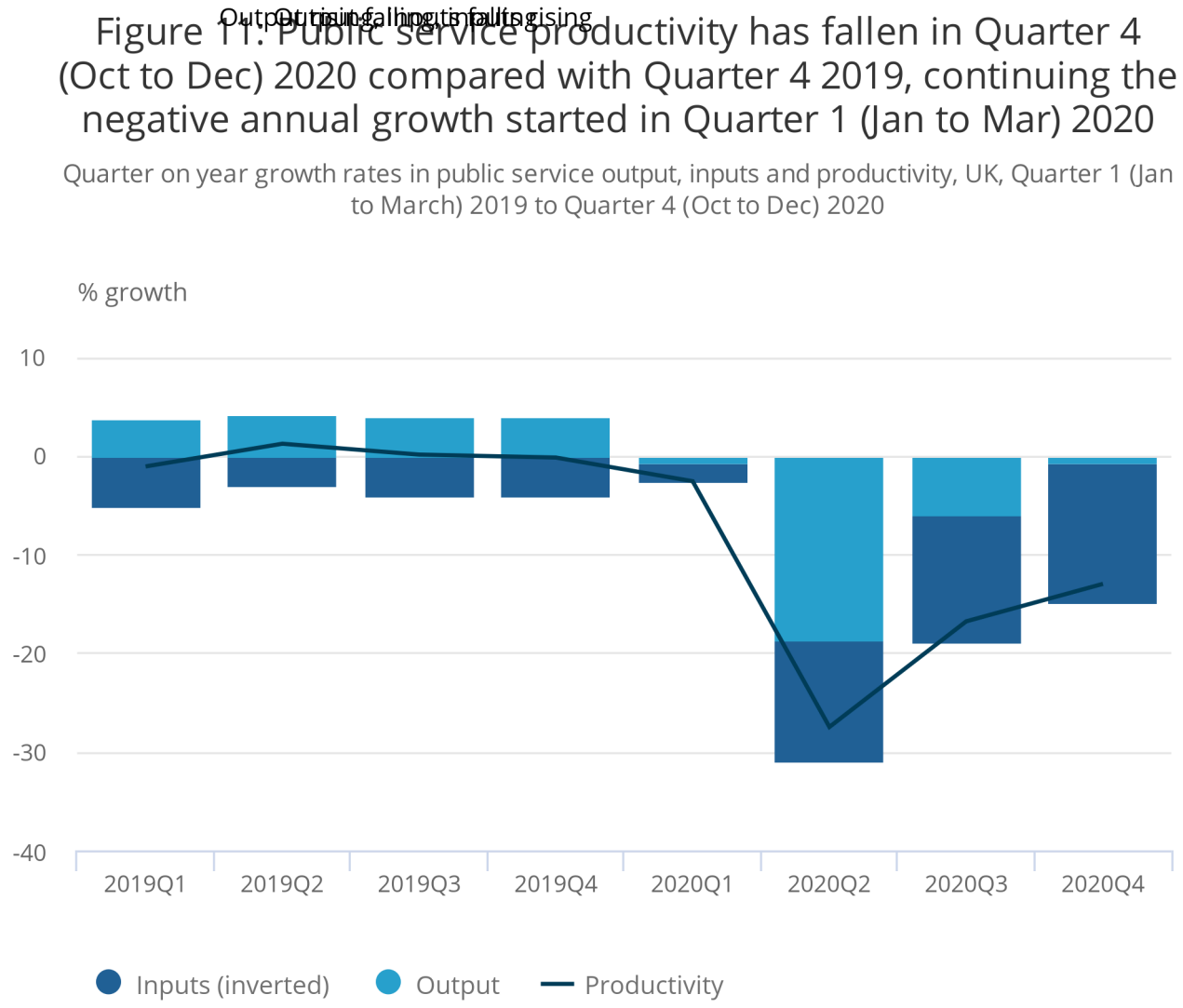
These shifts contributed to a 2.3% increase in labour composition in Quarter 2 2020, which was sustained for the second half of the year.

7 . Public service productivity

Alongside the annual estimate of public service productivity (1997 to 2018), which is badged as a National Statistic, and other measures of productivity, we also publish quarterly experimental measures of total public service productivity. The quarterly series offers a timelier measure, as the annual series has a significant time lag, but does not include changes to quality adjustments , which are only made annually. Inputs and output of experimental quarterly estimates of productivity are indirectly seasonally adjusted.

Figure 11: Public service productivity has fallen in Quarter 4 (Oct to Dec) 2020 compared with Quarter 4 2019, continuing the negative annual growth started in Quarter 1 (Jan to Mar) 2020

Quarter on year growth rates in public service output, inputs and productivity, UK, Quarter 1 (Jan to March) 2019 to Quarter 4 (Oct to Dec) 2020



Source: Office for National Statistics

Notes:

1. Growth rates for total inputs are inverted to reflect the negative impact inputs have on productivity.

2. In this article we use the percentage change in total inputs, output and productivity, while previous experimental releases have measured the percentage log changes. This is consistent with the estimates found in the other sections of this article.

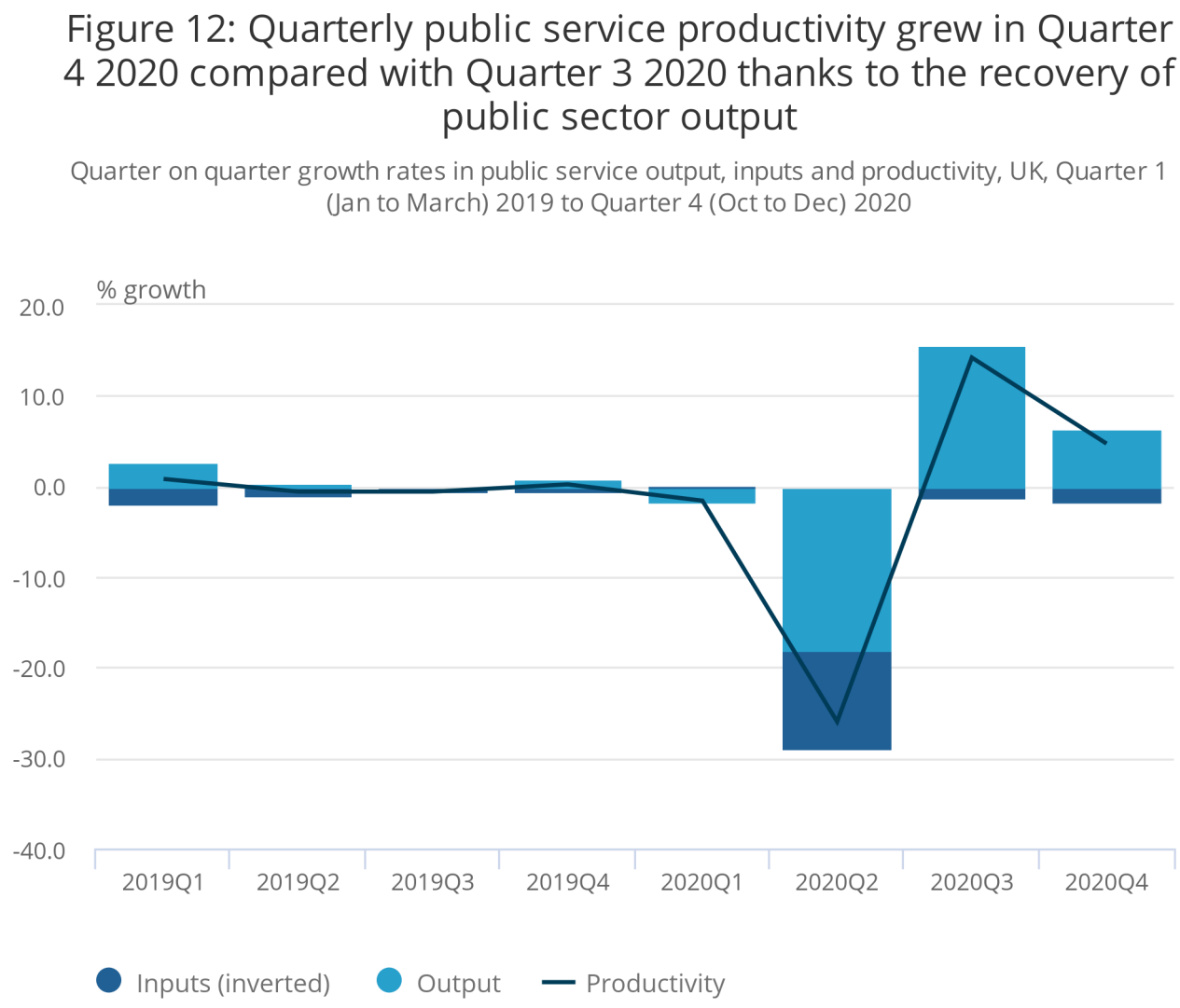
Compared with the same quarter in the previous year, public service productivity fell by 13.0% in Quarter 4 (Oct to Dec) 2020, as shown in Figure 11. This was largely due to a 14.1% increase in public service inputs, which is the highest increase in quarterly inputs on record. Public service outputs fell 0.7% compared with the same quarter in the previous year, meaning that in Quarter 2020 the volume of public service output had nearly returned to the level it was at before the pandemic.

The increase in total inputs is largely caused by large increases in government expenditure on healthcare since the start of the coronavirus (COVID-19) pandemic. This increase reflects expenditure on the Test and Trace scheme and the continued procurement of personal protective equipment (PPE).

Figure 12 compares the current quarter with the previous quarter. In Quarter 4 2020, productivity grew by 4.7% when compared with Quarter 3 (July to Sept) 2020.

Figure 12: Quarterly public service productivity grew in Quarter 4 2020 compared with Quarter 3 2020 thanks to the recovery of public sector output

Quarter on quarter growth rates in public service output, inputs and productivity, UK, Quarter 1 (Jan to March) 2019 to Quarter 4 (Oct to Dec) 2020



Source: Office for National Statistics

As discussed previously, there has been a relatively small fall in public service output compared to the previous year. However, following a record quarterly fall of 18.0% in Quarter 2 (Apr to June) 2020, during the coronavirus pandemic public service outputs recorded strong quarterly growth of 15.7% and 6.5% in Quarter 3 and Quarter 4 2020 respectively. This growth is largely due to improving activities data in healthcare and education. However, it is not clear if output growth in this quarter has been dampened by the various lockdowns that took place across the devolved nations of the UK in the autumn and winter of 2020.

The growth in healthcare activity reflects the continued recovery in areas such as elective surgery and GP appointments. In other areas such as dental and ophthalmic surgery, the volume of activity remains subdued due to reduced patient capacity in response to coronavirus safety protocols.

Adjustments, informed by the available in-year spending data for Test and Trace, have been added to our indices from Quarter 2 2020 for the first time to account for this new service. As discussed in our healthcare blog, we are undertaking further work to capture activities such as the Test and Trace scheme and vaccine distribution in our output volumes.

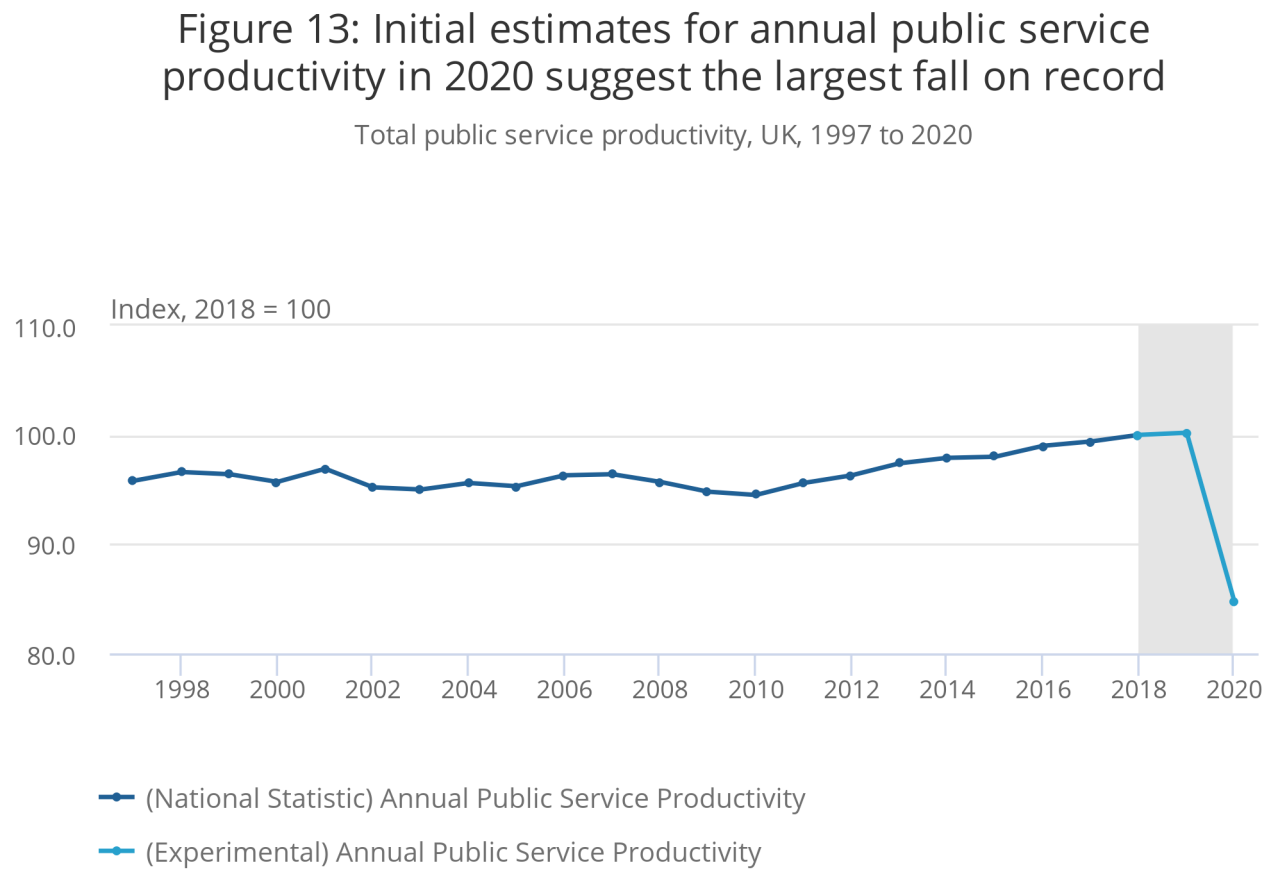
Activity volumes in education increased as schools re-opened from September 2020, with schools remaining open throughout the various national lockdowns up to December 2020 in all four parts of the UK. Although the attendance rate in this period was lower than normal, it was much higher than during the first period of national lockdown from March to July 2020. As such, the activity volumes in education were lower in Quarter 4 2020 than in 2019, but higher than they were in the previous quarters affected by coronavirus restrictions.

Changes in how we measure education activity volumes have improved the consistency of the measurement of remote learning during 2020. They have reduced our estimate of the amount of education provided by remote learning during the coronavirus pandemic. As such, the impact of school closures during the first national lockdown was higher than first estimated. Detailed information on our approach to measuring education output during the coronavirus pandemic can be found in our recent article.

In this release we can show for the first time an estimate of public service productivity for 2020 as a whole (Figure 13)

Figure 13: Initial estimates for annual public service productivity in 2020 suggest the largest fall on record

Total public service productivity, UK, 1997 to 2020



Source: Office for National Statistics - Productivity economic commentary, UK

Notes:

1. Annual estimates from 2019 to 2020 are based on the experimental quarterly estimates in this article.

The strong fall in the quarterly estimates since the beginning of the pandemic led to a large decrease in our estimate for annual public service productivity in 2020. As shown in Figure 13, Public service productivity is estimated to fall by 15.4% in 2020 compared with 2019.

More accurate estimates at an annual level for 2020 will be published in 2023 in our annual public service productivity estimate, which is badged as a National Statistic. This annual estimate will include quality adjustment factors to better reflect the value users have drawn from the public services delivered. Despite the changes in methodology and data between the experimental and annual articles, our estimates for annual public service productivity are likely to continue to fall in 2020. Indeed, the annual change observed in the quality adjustments has never reached a level equivalent to the fall shown in Figure 13. This suggests that it is extremely unlikely that the changes in quality will fully compensate for this fall.

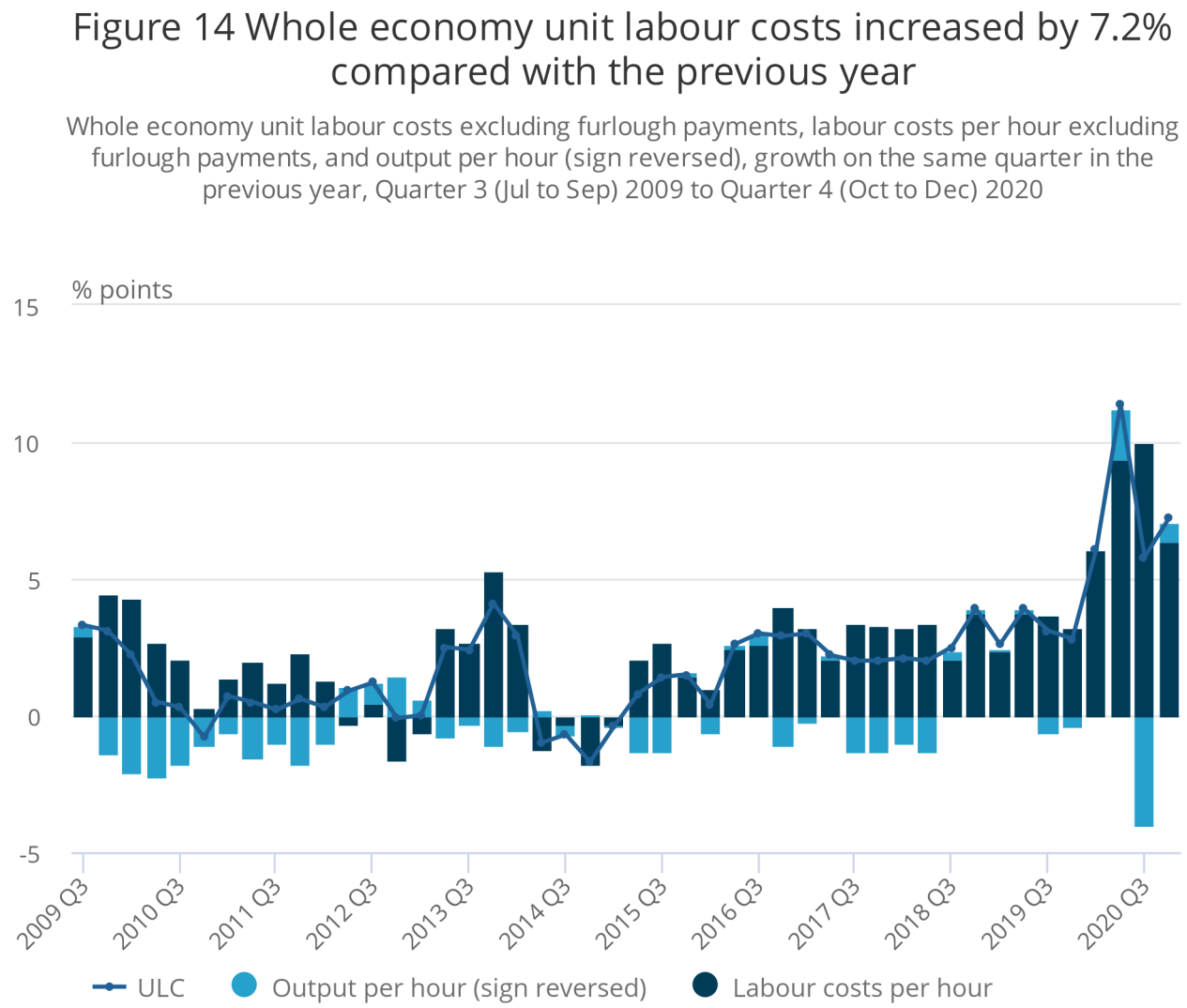
Due to the lack of the availability of some data during the coronavirus pandemic, it is possible that there will be further revisions to our estimates for recent quarters, such as the incorporation of new unit costs and activities data for the NHS Test and Trace service. The way we seasonally adjust public service inputs and outputs is also being reviewed as we get a clearer picture of the impact of the coronavirus pandemic on public services. As such, we are constantly working with our data suppliers to ensure the provision of future data and will document any impact that revision might have on our estimates.

8 . Unit labour costs

Unit labour costs (ULCs) capture the costs of labour incurred in the production of a single unit of economic output. They reflect the relationship between the cost of labour and the value of the corresponding output. If increases in labour costs are not reflected in the volume of output, meaning that ULCs increase, this can put upward pressure on the prices of goods and services. ULCs can therefore be viewed as an indicator of inflationary pressure as labour costs are the most important contributor to the costs of production. We produce nominal ULCs, which are expressed as a ratio between total labour costs per hour in current prices, and output per hour worked in constant prices. Wage subsidies such as the government's furlough schemes are deducted from the total labour costs, meaning ULCs reflect the costs actually incurred by employers.

Figure 14 Whole economy unit labour costs increased by 7.2% compared with the previous year

Whole economy unit labour costs excluding furlough payments, labour costs per hour excluding furlough payments, and output per hour (sign reversed), growth on the same quarter in the previous year, Quarter 3 (Jul to Sep) 2009 to Quarter 4 (Oct to Dec) 2020



Source: Office for National Statistics - Productivity economic commentary, UK

In Quarter 4 (Oct to Dec) 2020, ULCs increased by 7.2% compared with the same quarter in the previous year. The increase in ULCs was driven almost entirely by a 6.4% increase in labour costs per hour, and to a much lesser extent by a 0.7% decrease in output per hour. The last four quarters of volatility follows a period of stable ULCs growth, which has occurred since Quarter 2 (Apr to June) 2016. Prior to this, ULCs growth had been volatile within a moderate range around zero.

We also publish nominal unit wage costs (UWCs), which are identical to ULCs except that they exclude employers' pension contributions and employers' social contributions, such as employers' National Insurance payments. In this publication, for the first time, employment subsidies (including furlough payments) have been excluded from UWCs in the same way as for ULCs. This applies to both whole economy UWCs and manufacturing UWCs.

We are continuing to develop our Sectional Unit Labour Cost methodology, since we suspended their publication in April 2020. In doing so we are considering the relationship between unit labour costs and other statistics at ONS, including the Index of Labour Costs per Hour. We intend to publish more details in due course, and welcome user input to productivity@ons.gov.uk.

9 . Productivity economic commentary data

Labour Productivity Tables 1 to 8 and R1
Dataset LPROD01 | Released 19 January 2021
Estimates of main productivity metrics, corresponding to tables from the PDF version of the statistical bulletin

Productivity jobs, productivity hours, market sector workers, market sector hours
Dataset LPROD02 | Released 19 January 2021
Underlying labour inputs behind the labour productivity estimates by industry and industrial sector as defined by the Standard Industrial Classification (SIC). Contains statistics on productivity jobs, productivity hours and market sector workers. These statistics are the main intermediates in producing output per worker and output per hour statistics.

Breakdown of contributions, whole economy and sectors
Dataset PRODCONTS | Released 19 January 2021
Provides estimates of contributions to labour productivity (measured as output per hour) using the "Generalised Exactly Additive Decomposition" (GEAD) methodology as described in Tang and Wang (2004), UK. Contains data on total worked hours, gross value added (GVA) estimates, output per hour series and prices deflators. Includes data disaggregated by sector. Also contains quarter on quarter, quarter-on-same-quarter a year ago and annual formats for selected outputs.

Multi-factor productivity estimates
Dataset MFP01 | Released 19 January 2021
Indices and log changes for gross value added (GVA), multi-factor productivity, implied factor prices, hours worked, labour composition, capital services and GVA per hour worked.

Public service productivity, quarterly
Dataset | Released 19 January 2021
Includes quarterly, annual and revisions tabs to see the picture for UK public service productivity and also to see how much has changed in the data.

Unit labour costs
Dataset | Released 19 January 2021
Unit labour costs and revisions from previously published estimates, UK.

10 . Glossary

Labour productivity

Labour productivity measures how many units of labour input is needed to produce a unit of output, and is calculated by dividing output by labour input.

Labour inputs

The preferred measure of labour input is hours worked (“productivity hours”), but workers and jobs (“productivity jobs”) are also used.

Output

Output refers to gross value added (GVA), which is an estimate of the volume of goods and services produced by an industry, and in aggregate for the UK.

Multi-factor productivity

For any given change in output, multi-factor productivity (MFP) measures the amount that cannot be accounted for by changes in inputs of quality-adjusted labour and capital.

Public service productivity

Productivity of public services is estimated by comparing growth in the total amount of output with growth in the total amount of inputs used. Growth rates of output and inputs for individual service areas are aggregated by their relative share of total government expenditure (expenditure weight) to produce estimates of total public service output, inputs and productivity. Service areas are defined by Classification of the Functions of Government (COFOG).

Unit labour costs

Unit labour costs (ULCs) capture the full costs of labour incurred in the production of a unit of economic output. They are usually expressed as a ratio of total labour compensation per hour worked in current prices, to output per hour worked in constant prices.

11 . Measuring the data

The measure of output used in these statistics is the chained volume (real) measure of gross value added (GVA) at basic prices.

Multi-factor productivity (MFP) estimates are compiled using the growth accounting framework, which decomposes changes in economic output, in this case GVA of the UK market sector, into contributions from changes in measured inputs: labour, capital and a residual element known as MFP. For more information, see our simple guide to MFP and our MFP QMI.

Information on data used in public service productivity can be found in our previous release and in Sources and methods for public service productivity estimates.

This release reflects revisions to gross value added and income data resulting from quarterly national accounts, affecting time periods since 2018. Revisions to the current data also reflect revisions to jobs data resulting from an annual benchmarking to the Business Register and Employment Survey, and other revisions to workforce jobs estimates primarily affecting periods since 2018. Revisions resulting from seasonal adjustment affect all periods.

12 . Notices

End of EU exit Transition period

As the UK enters into a new Trade and Co-operation Agreement with the EU, the UK statistical system will continue to produce and publish our wide range of economic and social statistics and analysis. We are committed to continued alignment with the highest international statistical standards, enabling comparability both over time and internationally, and ensuring the general public, statistical users and decision makers have the data they need to be informed.

As the shape of the UK's future statistical relationship with the EU becomes clearer over the coming period, the ONS is making preparations to assume responsibilities that as part of our membership of the EU, and during the transition period, were delegated to the statistical office of the EU, Eurostat. This includes responsibilities relating to international comparability of economic statistics, deciding what international statistical guidance to apply in the UK context and to provide further scrutiny of our statistics and sector classification decisions.

In applying international statistical standards and best practice to UK economic statistics, we will draw on the technical advice of experts in the UK and internationally, and our work will be underpinned by the UK's well-established and robust framework for independent official statistics, set out in the Statistics and Registration Service Act 2007. Further information on our proposals will be made available early this year.

Changes to our articles

The ONS is publishing more data and analysis than ever before. We are constantly reviewing our publications based on your feedback to make sure that we continue to meet the needs of our users. As a result, we may temporarily reduce the detail in future productivity releases. Thank you for your continued support and we value your feedback.

13 . We want to hear from you

We have launched a stakeholder survey to gather feedback on how we can further develop and improve our productivity statistics.

We are seeking the views of anyone who uses ONS productivity statistics for analysis, research, policy-making or other purposes.

If you would like to give us your views, please respond here by Friday 30 April 2021. The survey should take around 10 minutes to complete.

Any information you provide will be analysed with other responses and used anonymously to help us set the priorities for our development work.

14 . Strengths and limitations

All data in this release were collected during the lockdown that was imposed because of the coronavirus (COVID-19). During this period there have been additional challenges to collecting labour market data and estimating gross domestic product (GDP). As a result, the estimates are subject to increased uncertainty and there is an increased likelihood of larger revisions than usual in future releases of these measures.

More information on the strengths and limitations of the data, as well as the quality and accuracy of the data, is available in the Labour productivity QMI for the labour productivity estimates; the Multi-factor productivity (MFP) QMI for the MFP estimates; and in the Public service productivity: total, UK QMI for the PSP estimates with further information available in Sources and methods for public service productivity estimates.

15 . Related Links

GDP quarterly national accounts, UK: October to December 2020
Bulletin | Released 31 March 2021
Revised quarterly estimate of gross domestic product (GDP) for the UK. Uses additional data to provide a more precise indication of economic growth than the first estimate.

Labour market overview, UK: March 202
Bulletin | Released 23 March 2021
Estimates of employment, unemployment, economic inactivity and other employment-related statistics for the UK.

Sub regional productivity in the UK: February 2020
Article | Released 28 February 2020
The article provides estimates for sub regional labour productivity measured as gross value added (GVA) per hour worked and GVA per filled job.

Public service productivity: total, UK, 2018
Article | Released 14 April 2021
Updated measures of output, inputs and productivity for public services in the UK between 1997 and 2017. Includes service area breakdown, as well as impact of quality adjustment and latest revisions.

1 Labour productivity key measures
United Kingdom

Seasonally adjusted (2018=100)

	Whole economy			Production		Manufacturing		Services	
	Output per worker	Output per job	Output per hour	Output per job	Output per hour	Output per job	Output per hour	Output per job	Output per hour
Section	A-U	A-U	A-U	B-E	B-E	C	C	G-U	G-U
Indices									
	A4YM	LNNN	LZVB	DJ4M	DJK3	DJ4P	DJK6	DJE3	DJP9
2017	99.8	99.8	99.5	100.9	100.0	100.2	99.2	99.6	99.4
2018	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2019	100.5	100.5	100.2	99.8	99.5	99.0	98.2	100.4	99.9
2020	90.9	90.9	100.6	93.7	103.4	91.6	101.5	91.6	100.8
2017 Q1	99.6	99.6	98.9	102.0	101.0†	101.1	99.8†	99.3†	98.6
Q2	99.6	99.6	98.7	100.5	99.1	99.9	98.3	99.5	98.7
Q3	100.1	100.0	100.2	100.3	99.7	99.3	98.6	99.8	100.3
Q4	100.1	100.1	100.3	100.7	100.3	100.4	100.1	99.8	100.0
2018 Q1	99.6	99.6	99.9	100.5	100.6	100.3	100.2	99.6	99.7
Q2	99.8	99.9	100.1	99.9	99.8	100.0	100.2	99.9	100.1†
Q3	100.4	100.4	99.8	100.0	99.8	99.8†	100.2	100.2	99.7
Q4	100.2	100.2	100.2	99.6	99.8	99.9	99.5	100.4	100.5
2019 Q1	100.4	100.5	99.7	101.4	99.4	101.7	99.3	100.5	99.8
Q2	100.2	100.2	99.9	99.6	99.2	98.6	97.8	100.1	99.6
Q3	100.9	100.9	100.4	99.0	98.6	98.0	96.9	100.8	100.1
Q4	100.4	100.3	100.7	99.1†	100.6	97.8	98.8	100.3	100.2
2020 Q1	97.3†	97.0†	99.8†	97.0	100.0	95.9	98.8	97.1	99.5
Q2	79.1	79.2	98.1	82.6	101.6	77.5	96.8	80.9	99.0
Q3	92.9	93.1	104.5	96.6	108.8	94.7	107.9	93.8	104.3
Q4	94.4	94.5	100.0	98.8	103.2	98.2	102.7	94.8	100.3
Per cent change on quarter a year ago									
	A4YN	LNNP	LZVD	DJ4O	DJK5	DJ4R	DJK8	DJE5	DJQ3
2017 Q1	0.5	0.6	0.2	2.6	3.4†	2.3	3.7†	0.1	–0.3
Q2	0.7	0.7	–0.1	–0.7	–1.3	0.4	0.2	0.9	–
Q3	1.1	1.2	1.3	–0.5	–0.2	0.2	0.9	1.4†	1.7
Q4	0.7	0.7	1.3	–0.8†	0.4	0.1	1.7	0.7	1.1
2018 Q1	–	–	1.0	–1.5	–0.4	–0.8	0.4	0.2	1.1
Q2	0.2	0.3	1.3	–0.6	0.8	0.2	1.9	0.4	1.4†
Q3	0.3	0.3	–0.3	–0.2	0.1	0.6	1.6	0.4	–0.5
Q4	–	0.2	–0.1	–1.1	–0.5	–0.6	–0.6	0.6	0.5
2019 Q1	0.8	0.9	–0.1	1.0	–1.1	1.5	–0.9	0.9	0.2
Q2	0.4	0.4	–0.1	–0.3	–0.6	–1.4	–2.3	0.3	–0.5
Q3	0.5	0.5	0.6	–1.1	–1.3	–1.8	–3.2	0.6	0.4
Q4	0.2	0.1	0.4	–0.6	0.9	–2.1	–0.7	–	–0.3
2020 Q1	–3.1†	–3.4†	–†	–4.4	0.6	–5.7†	–0.5	–3.4	–0.4
Q2	–21.1	–21.0	–1.8	–17.1	2.4	–21.4	–1.0	–19.3	–0.6
Q3	–7.9	–7.8	4.0	–2.4	10.4	–3.4	11.3	–7.0	4.2
Q4	–5.9	–5.8	–0.7	–0.2	2.5	0.4	3.9	–5.5	0.2
Per cent change on previous quarter									
	A4YO	DMWR	TXBB	DJ4N	DJK4	DJ4Q	DJK7	DJE4	DJQ2
2017 Q1	0.2	0.2	–0.2	0.6	1.1†	0.7	1.4	0.2	–0.3
Q2	–	–	–0.1	–1.5	–1.9	–1.2	–1.5	0.1	0.1†
Q3	0.5	0.4	1.5	–0.2	0.7	–0.6	0.3†	0.4	1.6
Q4	0.1	–	0.1	0.4	0.5	1.2	1.5	–	–0.3
2018 Q1	–0.5	–0.5	–0.4	–0.2	0.3	–0.2	0.1	–0.2	–0.3
Q2	0.2	0.3	0.2	–0.6	–0.7	–0.2	–	0.3†	0.5
Q3	0.5	0.5	–0.2	0.2†	–	–0.2	–	0.3	–0.4
Q4	–0.2	–0.2	0.4	–0.4	–0.1	–	–0.7	0.2	0.7
2019 Q1	0.3	0.3	–0.5	1.8	–0.3	1.9	–0.2	0.1	–0.6
Q2	–0.2	–0.3	0.2	–1.8	–0.3	–3.0†	–1.4	–0.4	–0.2
Q3	0.7	0.7	0.5	–0.6	–0.6	–0.6	–1.0	0.7	0.5
Q4	–0.5	–0.6	0.2	0.1	2.1	–0.3	2.0	–0.4	–
2020 Q1	–3.1†	–3.2†	–0.9†	–2.1	–0.6	–1.9	–0.1	–3.3	–0.7
Q2	–18.7	–18.4	–1.7	–14.8	1.6	–19.2	–1.9	–16.7	–0.4
Q3	17.6	17.5	6.5	17.0	7.1	22.1	11.4	16.0	5.3
Q4	1.6	1.5	–4.3	2.3	–5.2	3.7	–4.8	1.2	–3.8

†indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised

2 Output per job: Manufacturing subsections
United Kingdom

Seasonally adjusted (2018=100)

	Food, beverages & tobacco	Textiles, wearing apparel & leather	Wood & paper products, & printing	Chemicals, Pharmaceutic-als	Rubber, plastics & non-metallic minerals	Basic metals & metal products	Computer etc products, Electrical equipment	Machinery & equipment	Transport equipment	Coke & refined petroleum, Other manufacturing
Divisions	10-12	13-15	16-18	20-21	22-23	24-25	26-27	28	29-30	19,31-33
Level (£k)										
2018	64.9	62.4	51.9	161.7	49.8	52.3	85.7	76.5	96.4	65.7
Indices										
	DJ54	DJ57	DJ5F	DJ5I	DJ5L	DJB2	DJB7	DJC2	DJC5	DJD3
2017	98.2	99.9	101.7	102.2	102.2	104.7	91.6	98.6	104.3	99.8
2018	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2019	100.5	95.5	103.5	102.1	99.6	103.1	101.8	92.1	93.6	95.6
2020	96.5	77.7	97.4	109.5	93.3	101.8	92.9	78.4	73.5	82.9
2017 Q1	98.4	97.7	103.7	101.9	106.3	105.2	93.2	101.4	101.5	103.6
Q2	97.7	99.0	100.3	104.7	103.3	103.6	91.4	97.3	103.2	99.6
Q3	98.1	99.7	102.5†	101.2	99.5	102.8	90.0	96.9†	106.3	96.0
Q4	98.5	103.2	100.3	100.8	99.5	107.2	91.8	98.8	106.2	99.8
2018 Q1	98.3	94.0†	99.2	98.3	98.0	104.9	100.0	100.8	104.0	100.1
Q2	100.4	100.2	99.7	98.6	99.3	99.9	100.1	99.3	102.2	99.1
Q3	100.6	101.5	98.6	97.1	101.3	100.0	99.9	100.5	99.0	100.8†
Q4	100.7†	104.2	102.6	106.0	101.4	95.2	100.0	99.4	94.8	100.0
2019 Q1	102.2	98.6	106.0	110.2	104.3	101.2	104.6	96.3	95.3	98.1
Q2	99.4	94.7	104.4	99.9	98.8	100.4	103.7	92.7	91.6	98.6
Q3	100.3	92.5	100.2	101.3	97.4	103.9	99.8	89.9	94.7	94.0
Q4	100.0	96.2	103.5	97.1	98.1	106.9	99.3	89.4	92.9	91.4
2020 Q1	99.6	80.1	101.2	104.7†	95.6†	108.7†	94.7†	82.9	86.3†	90.0
Q2	90.7	51.3	80.5	111.1	71.1	87.9	83.6	62.2	43.3	71.0
Q3	98.6	87.0	104.1	111.5	100.3	102.2	95.9	80.3	76.8	84.3
Q4	97.2	92.4	103.7	110.6	106.0	108.2	97.6	88.3	87.8	86.1
Per cent change on quarter a year ago										
	DJ56	DJ5E	DJ5H	DJ5K	DJ5N	DJB6	DJB9	DJC4	DJD2	DJD7
2017 Q1	–	–8.4†	6.9†	–6.8	–2.8	–1.8	4.4	9.0†	7.1	9.6
Q2	–1.0	2.9	1.4	–8.2	–6.7	–2.6	–1.0	3.7	5.2	7.6
Q3	0.3	5.0	3.6	–7.9	–7.4	–4.1	–1.6	–2.1	13.3	–0.9†
Q4	1.1	10.2	0.9	–9.5	–8.5	–0.3	–3.7	–0.2	9.0	2.5
2018 Q1	–0.1	–3.8	–4.4	–3.6	–7.9	–0.2	7.3	–0.6	2.5	–3.4
Q2	2.8	1.2	–0.6	–5.8	–3.8	–3.5	9.5	2.1	–1.0	–0.5
Q3	2.5	1.8	–3.9	–4.0	1.8	–2.8	11.0	3.7	–6.9	5.0
Q4	2.2†	1.0	2.3	5.1	1.9	–11.2	9.0	0.5	–10.8	0.2
2019 Q1	3.9	4.8	6.8	12.1	6.4	–3.5	4.5	–4.5	–8.4	–2.0
Q2	–1.0	–5.5	4.7	1.2†	–0.5	0.5	3.7	–6.7	–10.4	–0.5
Q3	–0.3	–8.9	1.7	4.4	–3.9	3.9	–0.1	–10.6	–4.4	–6.7
Q4	–0.7	–7.7	0.9	–8.4	–3.3	12.3	–0.7	–10.0	–2.0	–8.5
2020 Q1	–2.5	–18.8	–4.6	–5.0	–8.3†	7.4†	–9.5†	–13.9	–9.4†	–8.3
Q2	–8.8	–45.8	–22.9	11.2	–28.0	–12.4	–19.4	–32.9	–52.7	–28.0
Q3	–1.7	–5.9	3.9	10.0	3.0	–1.6	–3.8	–10.6	–18.9	–10.4
Q4	–2.7	–4.0	0.2	13.9	8.1	1.3	–1.7	–1.2	–5.5	–5.8
Per cent change on previous quarter										
	DJ55	DJ58	DJ5G	DJ5J	DJ5M	DJB3	DJB8	DJC3	DJC6	DJD4
2017 Q1	1.0	4.3	4.4†	–8.5	–2.2	–2.1	–2.2	2.3†	4.1	6.5†
Q2	–0.7	1.4	–3.3	2.8	–2.9	–1.5	–2.0	–4.1	1.7	–3.9
Q3	0.4	0.7	2.2	–3.4	–3.6	–0.7	–1.5	–0.3	3.0	–3.7
Q4	0.4	3.5	–2.2	–0.3	–	4.2	2.0	2.0	–0.1	3.9
2018 Q1	–0.2	–8.9	–1.0	–2.6	–1.5	–2.1	9.0	2.0	–2.1	0.3
Q2	2.1	6.5	0.4	0.4	1.4	–4.8	–	–1.4	–1.8	–1.0
Q3	0.2	1.4†	–1.1	–1.5	2.0	0.1	–0.2	1.2	–3.1	1.7
Q4	0.1†	2.7	4.1	9.1	0.1	–4.8	0.2	–1.1	–4.3	–0.8
2019 Q1	1.5	–5.5	3.3	4.0	2.8	6.4	4.5	–3.1	0.6	–1.8
Q2	–2.7	–4.0	–1.5	–9.4	–5.2	–0.8	–0.8	–3.7	–3.9	0.5
Q3	0.9	–2.3	–3.9	1.5	–1.5	3.5	–3.8	–3.0	3.3	–4.7
Q4	–0.4	4.0	3.3	–4.2	0.7	2.9	–0.4	–0.6	–1.9	–2.8
2020 Q1	–0.3	–16.8	–2.3	7.8†	–2.5†	1.7†	–4.7†	–7.3	–7.1†	–1.5
Q2	–8.9	–35.9	–20.5	6.1	–25.6	–19.1	–11.7	–24.9	–49.8	–21.1
Q3	8.7	69.6	29.4	0.4	41.0	16.2	14.8	29.1	77.1	18.7
Q4	–1.4	6.2	–0.4	–0.8	5.7	5.9	1.7	10.0	14.3	2.2

†indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

3 Output per hour worked: Manufacturing subsections
United Kingdom

Seasonally adjusted (2018=100)

	Food, beverages & tobacco	Textiles, wearing apparel & leather	Wood & paper products, & printing	Chemicals, Pharmaceutic-als	Rubber, plastics & non-metallic minerals	Basic metals & metal products	Computer etc products, Electrical equipment	Machinery & equipment	Transport equipment	Coke & refined petroleum, Other manufacturing
Divisions	10-12	13-15	16-18	20-21	22-23	24-25	26-27	28	29-30	19,31-33
Level (£)										
2018	36.5	35.4	28.2	89.9	26.3	28.7	47.6	41.5	51.3	34.5
Indices										
	DJK9	DJL4	DJL7	DJM4	DJM7	DJN4	DJN7	DJO5	DJO8	DJP3
2017 Q1	98.8†	96.2†	100.9†	96.2†	105.5†	111.1†	89.6†	99.4	97.6†	99.3†
Q2	101.0	98.1	97.9	96.9	100.0	103.7	91.1	96.8†	98.0	95.6
Q3	99.8	96.9	100.3	101.3	95.1	106.3	90.6	97.0	102.3	93.6
Q4	98.6	100.8	101.3	98.9	94.2	110.9	94.5	99.3	104.3	97.5
2018 Q1	100.2	96.0	98.0	99.0	95.6	103.5	101.5	101.7	103.4	99.6
Q2	99.0	97.8	101.5	102.8	103.6	99.5	97.2	97.5	100.6	101.1
Q3	100.1	104.2	99.0	96.4	100.9	100.1	100.9	98.7	101.5	101.4
Q4	100.7	101.9	101.5	101.8	99.9	96.9	100.4	102.1	94.4	97.8
2019 Q1	99.6	95.7	104.9	104.2	99.7	102.3	101.2	95.0	92.7	93.9
Q2	96.7	98.7	106.5	97.3	95.6	102.2	102.8	92.2	90.3	97.0
Q3	96.9	95.1	102.6	95.9	99.2	103.6	99.8	87.4	91.2	93.4
Q4	105.6	92.1	105.5	93.7	103.1	108.4	99.9	87.3	89.4	93.0
2020 Q1	104.4	86.1	105.9	106.6	99.7	114.9	95.7	82.4	85.5	90.7
Q2	105.8	68.1	113.5	108.8	98.6	112.6	100.7	76.4	54.2	91.8
Q3	107.2	120.9	133.4	115.9	115.8	124.3	97.8	84.3	89.8	94.0
Q4	101.8	111.9	115.3	110.0	101.8	119.8	103.6	90.7	87.5	88.3
Per cent change on quarter a year ago										
	DJL3	DJL6	DJM3	DJM6	DJM9	DJN6	DJN9	DJO7	DJP2	DJP5
2017 Q1	2.8†	–7.0†	8.4†	–9.9†	–1.4†	5.0†	3.0†	7.5†	6.1†	10.3†
Q2	5.6	0.1	0.5	–10.8	–9.5	–5.3	2.4	6.6	0.6	7.0
Q3	1.2	0.7	–1.4	–2.2	–11.9	–2.0	2.3	2.3	12.6	3.5
Q4	0.8	6.9	2.7	–6.2	–15.0	4.0	4.5	0.9	11.5	6.6
2018 Q1	1.5	–0.2	–2.9	2.9	–9.4	–6.8	13.3	2.3	6.0	0.4
Q2	–1.9	–0.3	3.7	6.1	3.6	–4.1	6.7	0.7	2.7	5.7
Q3	0.3	7.5	–1.3	–4.8	6.1	–5.8	11.4	1.8	–0.8	8.4
Q4	2.2	1.1	0.3	2.9	6.0	–12.6	6.2	2.8	–9.5	0.3
2019 Q1	–0.6	–0.4	7.0	5.2	4.3	–1.1	–0.3	–6.6	–10.3	–5.8
Q2	–2.3	0.9	4.9	–5.4	–7.7	2.7	5.7	–5.5	–10.2	–4.1
Q3	–3.2	–8.8	3.6	–0.5	–1.7	3.5	–1.1	–11.4	–10.1	–7.9
Q4	4.9	–9.6	3.9	–7.9	3.2	11.9	–0.4	–14.5	–5.3	–5.0
2020 Q1	4.8	–10.0	1.0	2.3	–	12.3	–5.4	–13.3	–7.8	–3.4
Q2	9.4	–31.0	6.6	11.8	3.1	10.2	–2.1	–17.2	–40.0	–5.4
Q3	10.6	27.2	30.0	20.9	16.7	20.1	–2.0	–3.6	–1.5	0.6
Q4	–3.6	21.4	9.3	17.4	–1.3	10.4	3.7	4.0	–2.1	–5.0
Per cent change on previous quarter										
	DJL2	DJL5	DJM2	DJM5	DJM8	DJN5	DJN8	DJO6	DJO9	DJP4
2017 Q1	0.9†	2.0†	2.3	–8.8†	–4.8†	4.1†	–0.9†	1.1†	4.3	8.6†
Q2	2.2	1.9	–3.0†	0.8	–5.2	–6.6	1.7	–2.6	0.5†	–3.7
Q3	–1.2	–1.2	2.5	4.4	–4.9	2.5	–0.6	0.2	4.4	–2.1
Q4	–1.2	4.1	0.9	–2.3	–1.0	4.3	4.3	2.3	2.0	4.2
2018 Q1	1.6	–4.8	–3.2	0.1	1.4	–6.7	7.4	2.4	–0.9	2.2
Q2	–1.2	1.9	3.6	3.9	8.5	–3.9	–4.2	–4.1	–2.7	1.5
Q3	1.1	6.5	–2.5	–6.3	–2.6	0.6	3.7	1.2	0.9	0.3
Q4	0.6	–2.2	2.6	5.6	–1.0	–3.2	–0.5	3.4	–7.0	–3.6
2019 Q1	–1.1	–6.1	3.3	2.3	–0.2	5.6	0.9	–6.9	–1.8	–4.1
Q2	–2.9	3.1	1.6	–6.6	–4.0	–0.2	1.6	–3.0	–2.6	3.4
Q3	0.2	–3.6	–3.7	–1.5	3.8	1.4	–2.9	–5.1	1.0	–3.7
Q4	9.0	–3.1	2.8	–2.3	3.9	4.7	0.1	–0.2	–2.0	–0.5
2020 Q1	–1.1	–6.6	0.4	13.7	–3.3	6.0	–4.2	–5.6	–4.4	–2.4
Q2	1.3	–20.9	7.2	2.1	–1.1	–2.0	5.1	–7.3	–36.6	1.2
Q3	1.3	77.5	17.5	6.5	17.4	10.5	–2.9	10.4	65.7	2.4
Q4	–5.0	–7.5	–13.6	–5.1	–12.1	–3.7	6.0	7.6	–2.6	–6.1

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

4 Output per job: Services sections

United Kingdom

Seasonally adjusted (2018=100)

	Wholesale & retail trade, motor vehicle repair	Transport & storage	Accommo-dation & food services	Information & commu-nication	Finance & insurance	Real estate activities	Profes-sional, scientific & technical activities	Admin & support services	Government services	Arts, enter-tainment & recreation	Other services
Section	G	H	I	J	K	L	M	N	O-Q	R	S-U
Level (£k)											
2018	39.1	47.9	23.5	84.7	116.6	449.8	53.2	34.0	40.0	31.4	40.5
Indices											
	DJE6	DJE9	DJF4	DJF7	DJG5	DJH4	DJH7	DJI2	DJI5	DJJ3	DJJ6
2017	97.6	100.3	100.6	95.9	101.8	104.1	97.6	97.3	100.6	102.2	97.5
2018	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2019	102.8	97.3	99.9	106.9	96.8	98.8	97.5	102.1	101.2	98.9	97.4
2020	96.4	82.5	58.7	100.5	91.1	88.2	92.0	87.9	92.0	74.2	74.0
2017 Q1	96.8	100.4	100.5†	95.3	103.1	103.6	95.3	97.0†	100.8	100.4	96.4†
Q2	97.1†	99.1	100.6	95.5	102.2	106.3	96.9	96.7	100.2	105.8	97.1
Q3	98.5	100.4	101.2	95.6	101.6†	104.3	98.7	97.4	100.8	101.4†	97.4
Q4	97.9	101.1	100.1	97.4	100.3	102.1	99.6	98.3	100.6	101.2	99.0
2018 Q1	97.8	100.9	99.7	97.2†	100.2	98.5	100.4	99.2	99.9	100.1	99.5
Q2	99.7	100.2	99.7	99.5	100.3	100.8	100.8	100.5	99.5	99.5	99.7
Q3	101.1	99.7	100.0	100.7	100.1	101.4	99.9	99.6	100.1	99.9	101.0
Q4	101.4	99.2	100.7	102.5	99.4	99.3	98.9	100.8	100.5	100.5	99.8
2019 Q1	102.1	98.3	101.1	106.4	98.3	101.7	97.0	102.2	100.8	99.2	98.0
Q2	102.9	95.9	100.3	107.2	96.6	101.1	96.0	101.5	100.9	99.0	95.1
Q3	103.3	97.5	99.7	107.7	97.0	96.4	98.0	102.5	101.5	98.9	99.4
Q4	102.8	97.6	98.5	106.2	95.1	95.9	98.9†	102.2	101.6	98.5	97.1
2020 Q1	99.2	92.3†	86.9	103.5	93.7	90.4†	97.0	98.5	97.9†	91.9	90.1
Q2	79.3	68.3	15.0	95.1	90.0	87.2	84.1	74.3	79.9	55.5	52.7
Q3	104.2	82.1	78.4	101.1	89.7	88.7	91.9	88.5	92.7	75.6	78.6
Q4	102.9	87.2	54.3	102.5	91.1	86.6	95.1	90.3	97.6	73.9	74.5
Per cent change on quarter a year ago											
	DJE8	DJF3	DJF6	DJF9	DJG8	DJH6	DJH9	DJI4	DJI7	DJJ5	DJJ8
2017 Q1	2.0	–1.3	–2.1†	–0.4	3.8	–2.9	1.9	1.2†	0.1	–6.7†	–2.0
Q2	1.9	–0.2	–0.9	1.3	2.0	–0.6	4.2	2.6	0.5	3.5	–1.1
Q3	3.1	3.5	1.4	–0.8	–0.3†	–3.1	6.6	2.0	1.0	0.1	3.4†
Q4	0.2	4.4	0.3	–0.3	–2.1	–5.6	6.7	2.0	0.2	1.8	2.0
2018 Q1	1.0	0.5	–0.8	2.1	–2.9	–4.9	5.3	2.2	–0.9	–0.2	3.2
Q2	2.7	1.1	–0.9	4.2	–1.9	–5.1	4.0†	3.9	–0.7†	–6.0	2.6
Q3	2.6	–0.7	–1.2	5.4	–1.4	–2.8	1.2	2.3	–0.7	–1.5	3.8
Q4	3.6	–1.9	0.5	5.3	–0.9	–2.8	–0.7	2.5	–0.1	–0.7	0.8
2019 Q1	4.4	–2.6	1.4	9.4	–1.8	3.3	–3.4	3.0	0.9	–0.9	–1.5
Q2	3.1	–4.3	0.6	7.7†	–3.7	0.2	–4.8	1.1	1.4	–0.5	–4.6
Q3	2.2†	–2.2	–0.3	6.9	–3.1	–4.9	–1.9	2.9	1.4	–1.0	–1.6
Q4	1.4	–1.6	–2.1	3.6	–4.3	–3.4	–	1.5	1.1	–2.0	–2.7
2020 Q1	–2.8	–6.1†	–14.0	–2.8	–4.7	–11.2†	0.1	–3.6	–2.8	–7.3	–8.1
Q2	–22.9	–28.8	–85.1	–11.3	–6.9	–13.7	–12.4	–26.9	–20.8	–44.0	–44.6
Q3	0.9	–15.9	–21.3	–6.1	–7.6	–8.0	–6.2	–13.7	–8.7	–23.6	–20.9
Q4	0.1	–10.7	–44.9	–3.4	–4.2	–9.7	–3.9	–11.6	–3.9	–25.0	–23.3
Per cent change on previous quarter											
2017 Q1	2.0	–1.3	–2.1†	–0.4	3.8	–2.9	1.9	1.2†	0.1	–6.7†	–2.0
Q2	1.9	–0.2	–0.9	1.3	2.0	–0.6	4.2	2.6	0.5	3.5	–1.1
Q3	3.1	3.5	1.4	–0.8	–0.3†	–3.1	6.6	2.0	1.0	0.1	3.4†
Q4	0.2	4.4	0.3	–0.3	–2.1	–5.6	6.7	2.0	0.2	1.8	2.0
2018 Q1	1.0	0.5	–0.8	2.1	–2.9	–4.9	5.3	2.2	–0.9	–0.2	3.2
Q2	2.7	1.1	–0.9	4.2	–1.9	–5.1	4.0†	3.9	–0.7†	–6.0	2.6
Q3	2.6	–0.7	–1.2	5.4	–1.4	–2.8	1.2	2.3	–0.7	–1.5	3.8
Q4	3.6	–1.9	0.5	5.3	–0.9	–2.8	–0.7	2.5	–0.1	–0.7	0.8
2019 Q1	4.4	–2.6	1.4	9.4	–1.8	3.3	–3.4	3.0	0.9	–0.9	–1.5
Q2	3.1	–4.3	0.6	7.7†	–3.7	0.2	–4.8	1.1	1.4	–0.5	–4.6
Q3	2.2†	–2.2	–0.3	6.9	–3.1	–4.9	–1.9	2.9	1.4	–1.0	–1.6
Q4	1.4	–1.6	–2.1	3.6	–4.3	–3.4	–	1.5	1.1	–2.0	–2.7
2020 Q1	–2.8	–6.1†	–14.0	–2.8	–4.7	–11.2†	0.1	–3.6	–2.8	–7.3	–8.1
Q2	–22.9	–28.8	–85.1	–11.3	–6.9	–13.7	–12.4	–26.9	–20.8	–44.0	–44.6
Q3	0.9	–15.9	–21.3	–6.1	–7.6	–8.0	–6.2	–13.7	–8.7	–23.6	–20.9
Q4	0.1	–10.7	–44.9	–3.4	–4.2	–9.7	–3.9	–11.6	–3.9	–25.0	–23.3

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

5 Output per hour worked: Services sections
United Kingdom

Seasonally adjusted (2018=100)

	Wholesale & retail trade, motor vehicle repair	Transport & storage	Accommo-dation & food services	Information & commu-nication	Finance & insurance	Real estate activities	Profes-sional, scientific & technical activities	Admin & support services	Government services	Arts, enter-tainment & recreation	Other services
Section	G	H	I	J	K	L	M	N	O-Q	R	S-U
Level (£)											
2018	25.3	26.6	17.2	45.7	65.5	289.7	30.8	21.7	27.9	23.3	26.4
Indices											
	DJQ4	DJQ7	DJR2	DJR5	DJS3	DJS6	DJS9	DJT7	DJU2	DJV6	DJV9
2017	96.8	101.1	98.4	95.2	103.0	102.2†	98.8	97.5	100.3	101.1	98.3
2018	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2019	102.6	96.3	97.0	105.9	97.3	98.9	98.0	103.1	100.2	98.7	97.3
2020	108.5	92.0	80.4	103.5	91.8	95.5	97.8	100.6	94.6	94.6	89.5
2017 Q1	96.2†	100.2†	97.8†	92.7	104.1†	100.3†	95.4†	96.3†	99.8†	100.7†	99.0†
Q2	96.6	100.1	97.2	92.9†	103.2	102.5	96.4	96.5	99.4	105.6	98.1
Q3	98.2	102.0	99.6	96.1	102.7	104.3	102.3	97.8	101.1	98.0	97.8
Q4	96.3	102.1	98.9	99.1	101.8	101.8	101.2	99.5	100.9	100.2	98.4
2018 Q1	97.7	99.7	100.5	97.5	101.2	100.8	100.0	99.5	100.0	99.6	99.3
Q2	99.7	101.1	101.8	99.5	100.8	101.5	101.2	99.8	99.6	98.1	100.6
Q3	101.0	99.9	98.4	100.6	99.7	96.9	99.6	100.2	99.3	100.1	100.1
Q4	101.6	99.3	99.3	102.4	98.4	100.8	99.2	100.6	101.0	102.2	100.0
2019 Q1	101.9	96.8	96.1	105.2	97.9	103.5	96.8	103.3	100.4	98.2	98.0
Q2	102.4	95.5	96.8	106.7	96.7	99.0	96.6	103.6	99.8	99.0	95.8
Q3	102.7	97.6	97.1	106.4	98.8	95.0	99.0	103.3	99.8	99.0	99.5
Q4	103.6	95.6	98.1	105.2	96.0	98.0	99.4	102.2	101.0	98.6	96.1
2020 Q1	101.4	93.7	93.1	106.3	94.7	93.1	100.4	100.3	99.2	94.9	95.2
Q2	103.9	86.3	31.5	101.9	90.5	101.6	95.2	96.8	87.5	88.0	82.2
Q3	118.7	96.2	118.6	103.4	90.3	95.1	98.6	107.1	94.6	104.6	95.5
Q4	110.2	91.7	78.2	102.5	91.9	92.4	97.0	98.1	97.3	90.9	85.1
Per cent change on quarter a year ago											
	DJQ6	DJQ9	DJR4	DJR7	DJS5	DJS8	DJT6	DJT9	DJU7	DJV8	DJW3
2017 Q1	2.3†	–1.8†	–2.8†	–3.5†	5.8†	–5.9†	3.2†	–0.7	–0.1†	–8.0†	–2.8†
Q2	0.9	0.6	–1.4	–2.1	3.5	1.8	2.3	4.8†	–1.3	–1.4	–1.4
Q3	2.6	4.7	1.8	1.4	2.2	–2.6	10.3	2.7	1.2	–7.0	–1.7
Q4	–1.8	5.0	1.3	3.3	–0.2	1.2	9.6	2.8	0.6	–3.0	–1.8
2018 Q1	1.6	–0.6	2.7	5.2	–2.8	0.5	4.9	3.3	0.2	–1.1	0.3
Q2	3.2	1.0	4.7	7.1	–2.3	–1.0	4.9	3.4	0.2	–7.1	2.6
Q3	2.8	–2.0	–1.2	4.7	–2.9	–7.1	–2.7	2.4	–1.7	2.1	2.4
Q4	5.5	–2.7	0.4	3.3	–3.4	–1.0	–2.0	1.1	0.1	2.0	1.6
2019 Q1	4.3	–2.9	–4.3	7.9	–3.3	2.7	–3.3	3.8	0.4	–1.4	–1.3
Q2	2.7	–5.5	–4.9	7.3	–4.1	–2.5	–4.5	3.8	0.1	1.0	–4.8
Q3	1.7	–2.3	–1.4	5.7	–0.9	–2.0	–0.5	3.1	0.5	–1.1	–0.7
Q4	2.0	–3.8	–1.2	2.7	–2.4	–2.8	0.2	1.6	–	–3.5	–3.9
2020 Q1	–0.5	–3.2	–3.2	1.0	–3.2	–10.1	3.8	–2.8	–1.2	–3.4	–2.9
Q2	1.4	–9.6	–67.5	–4.5	–6.4	2.6	–1.5	–6.6	–12.3	–11.2	–14.3
Q3	15.6	–1.5	22.2	–2.8	–8.6	–	–0.4	3.6	–5.2	5.6	–4.0
Q4	6.4	–4.0	–20.2	–2.5	–4.3	–5.7	–2.4	–4.0	–3.7	–7.8	–11.4
Per cent change on previous quarter											
	DJQ5	DJQ8	DJR3	DJR6	DJS4	DJS7	DJT2	DJT8	DJU6	DJV7	DJW2
2017 Q1	–1.9†	3.1†	0.2†	–3.4†	2.0†	–0.2†	3.3†	–0.5†	–0.6†	–2.6	–1.2†
Q2	0.5	–0.1	–0.6	0.2	–0.9	2.1	1.1	0.2	–0.4	4.9†	–0.9
Q3	1.7	1.9	2.5	3.5	–0.5	1.8	6.1	1.4	1.7	–7.2	–0.3
Q4	–2.0	–	–0.8	3.2	–0.9	–2.4	–1.0	1.7	–0.2	2.3	0.6
2018 Q1	1.4	–2.4	1.6	–1.7	–0.6	–1.0	–1.2	–	–0.9	–0.6	0.9
Q2	2.1	1.4	1.3	2.0	–0.4	0.7	1.1	0.3	–0.4	–1.6	1.3
Q3	1.3	–1.1	–3.3	1.1	–1.1	–4.5	–1.6	0.5	–0.3	2.0	–0.5
Q4	0.6	–0.6	0.9	1.8	–1.3	3.9	–0.4	0.4	1.7	2.2	–0.1
2019 Q1	0.2	–2.6	–3.2	2.7	–0.5	2.8	–2.4	2.7	–0.7	–3.9	–1.9
Q2	0.5	–1.3	0.7	1.4	–1.2	–4.4	–0.2	0.3	–0.6	0.8	–2.3
Q3	0.2	2.3	0.2	–0.3	2.2	–4.0	2.5	–0.3	–	–	3.8
Q4	0.9	–2.1	1.0	–1.1	–2.8	3.1	0.4	–1.1	1.3	–0.4	–3.4
2020 Q1	–2.2	–2.0	–5.1	1.1	–1.4	–4.9	1.0	–1.8	–1.9	–3.7	–0.8
Q2	2.5	–7.9	–66.2	–4.1	–4.5	9.1	–5.2	–3.5	–11.8	–7.4	–13.7
Q3	14.3	11.5	276.8	1.5	–0.2	–6.4	3.6	10.6	8.1	18.9	16.2
Q4	–7.2	–4.6	–34.0	–0.8	1.8	–2.8	–1.6	–8.4	2.8	–13.1	–10.8

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

6 Market Sector productivity
United Kingdom

Seasonally adjusted (2018=100)

	Output per worker			Output per hour worked		
	Index	Per cent change on quarter a year ago	Per cent change on previous quarter	Index	Per cent change on quarter a year ago	Per cent change on previous quarter
	GYY4	GYY5	GYY6	GYY7	GYY8	GYY9
2017	99.6	..	..	99.2	..	..
2018	100.0	..	..	100.0	..	..
2019	100.2	..	..	99.9	..	..
2020	90.5	..	..	101.7	..	..
2017 Q1	99.2†	1.1	0.3	98.3	0.7†	–0.2†
Q2	99.4	1.2	0.1	98.2	0.5	–0.1
Q3	99.8	1.7†	0.5†	99.9	2.0	1.7
Q4	100.1	1.1	0.3	100.5	2.1	0.7
2018 Q1	99.6	0.3	–0.5	99.8†	1.6	–0.7
Q2	100.1	0.7	0.5	100.1	1.9	0.3
Q3	100.3	0.5	0.2	99.9	–	–0.2
Q4	100.1	–	–0.2	100.1	–0.4	0.3
2019 Q1	100.6	1.0	0.5	99.7	–0.1	–0.4
Q2	100.0	–0.1	–0.6	99.5	–0.6	–0.2
Q3	100.5	0.2	0.5	100.0	0.2	0.5
Q4	99.8	–0.3	–0.7	100.2	–	0.1
2020 Q1	96.9	–3.7	–2.9	99.9	0.2	–0.3
Q2	77.7	–22.3	–19.9	98.7	–0.8	–1.2
Q3	93.3	–7.2	20.1	106.7	6.7	8.1
Q4	94.2	–5.6	1.0	101.4	1.2	–5.0

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

7 Output per job and hour worked: Other industries
United Kingdom

Seasonally adjusted (2018=100)

	Agriculture, forestry and fishing		Construction	
	Output per job	Output per hour worked	Output per job	Output per hour worked
Section	A	A	F	F
Level (£)				
2018	29 737.3	13.6	54 216.6	27.8
Indices				
	DJ4K	DJJ9	DJD8	DJP6
2004	102.5	101.1†	99.6	100.0†
2005	103.8†	108.1	94.4	95.4
2006	99.0	101.6	93.9	94.9
2007	95.9	100.5	93.0	94.2
2008	99.0	103.4	90.2	92.3
2009	92.1	87.5	81.4	84.1
2010	86.1	81.3	93.1	95.2
2011	96.0	94.0	94.5	98.4
2012	87.7	89.8	88.4	91.5
2013	96.4	96.2	89.7	90.8
2014	94.9	94.8	95.8	94.5
2015	103.5	106.4	97.4	97.0
2016	98.5	98.3	98.7	98.5
2017	101.2	100.7	100.6	100.5
2018	100.0	100.0	100.0	100.0
2019	109.0	108.7	100.6	101.8
2020	97.9	101.6	88.9	104.2
Per cent change on previous year				
	DJ4L	DJK2	DJE2	DJP8
2004	–4.6	–6.1†	2.7	3.0†
2005	1.3	6.9	–5.3	–4.6
2006	–4.7	–5.9	–0.5	–0.5
2007	–3.1	–1.2	–1.0	–0.8
2008	3.3	2.9	–3.1	–1.9
2009	–7.0	–15.3	–9.7	–8.9
2010	–6.6	–7.2	14.4	13.2
2011	11.5	15.7	1.5	3.4
2012	–8.6	–4.4	–6.5	–7.1
2013	9.9†	7.1	1.5	–0.8
2014	–1.5	–1.4	6.7	4.1
2015	9.0	12.2	1.7	2.6
2016	–4.8	–7.5	1.4	1.6
2017	2.7	2.4	1.9	2.0
2018	–1.2	–0.7	–0.6	–0.5
2019	9.0	8.7	0.6	1.8
2020	–10.2	–6.5	–11.6	2.3

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

8 Labour input indices: Workers, productivity jobs and productivity hours

United Kingdom

Seasonally adjusted (2018=100)

	Whole economy				Production		Manufacturing		Services	
	Workers	Jobs	Hours	Ratio of jobs to workers	Productivity jobs	Productivity hours	Productivity jobs	Productivity hours	Productivity jobs	Productivity hours
Section	A-U	A-U	A-U	A-U	B-E	B-E	C	C	G-U	G-U
Indices										
	TXEL	LNNM	LZVA	TXET	DJW6	DK3S	DJW9	DK3V	DK2G	DK56
2017	98.8	98.9	99.2	100.0	98.2	99.1	98.7	99.7	98.8	99.1
2018	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2019	101.1	101.1	101.4	100.0	99.0	99.3	99.2	100.0	101.4	101.9
2020	100.6	100.6	91.0	100.0	97.0	88.0	97.1	87.5	101.1	92.0
2017 Q1	98.5	98.5	99.2	100.0	96.6	97.6†	97.1	98.4	98.5	99.3
Q2	98.8	98.9	99.7	100.0	97.9†	99.3	98.3	99.9†	98.9	99.6
Q3	98.8	98.9	98.7	100.0	99.0	99.5	99.6	100.3	98.9	98.5
Q4	99.1	99.2	99.0	100.1	99.4	99.9	99.8	100.2	99.1	98.9
2018 Q1	99.7	99.8	99.5	100.1	99.9	99.8	100.1	100.2	99.6	99.5
Q2	99.8	99.8	99.6	100.0	100.2	100.3	100.3	100.1	99.7†	99.5†
Q3	100.0	100.0	100.5	100.0	100.4	100.6	100.4†	100.0	100.1	100.6
Q4	100.5	100.5	100.4	100.0	99.5	99.3	99.2	99.6	100.5	100.5
2019 Q1	100.8	100.7	101.5	99.9	98.9	100.9	98.9	101.4	100.8	101.4
Q2	101.1	101.1	101.5	100.0	99.3	99.7	99.4	100.2	101.4	101.9
Q3	101.0	101.0	101.5	100.0	99.2	99.6	99.4	100.5	101.3	102.0
Q4	101.5	101.6	101.2	100.1	98.8	97.3	99.1	98.0	102.0	102.2
2020 Q1	101.7	102.0	99.2	100.2	98.9	95.9	99.1	96.3	102.5	100.0
Q2	100.7	100.5	81.1	99.8	97.0	78.8	96.9	77.6	100.9	82.4
Q3	100.2	100.1	89.2	99.9	96.1	85.3	96.3	84.5	100.6	90.4
Q4	99.9	99.8	94.3	100.0	95.9	91.9	96.0	91.8	100.5	95.0
Per cent change on quarter a year ago										
	DIW9	LNNO	LZVC		DJW8	DK3U	DJX3	DK44	DK2I	DK58
2017 Q1	1.2	1.1	1.5		0.4	–0.5	0.4	–0.9†	0.9	1.3†
Q2	1.0	0.9	1.8		0.8	1.4†	0.6	0.7	0.6	1.5
Q3	0.8	0.7	0.6		2.4	2.1	2.4	1.7	0.2	–0.2
Q4	1.0	1.0	0.4		2.9	1.8	2.9	1.3	0.6	0.2
2018 Q1	1.2	1.3	0.3		3.4	2.3	3.1	1.9	1.1	0.2
Q2	1.0	1.0	–0.1		2.4	1.0	2.0	0.2	0.9	–0.2
Q3	1.1	1.1	1.8		1.4	1.0	0.7	–0.3	1.2	2.1
Q4	1.4	1.3	1.5		0.1	–0.5	–0.5	–0.5	1.4	1.5
2019 Q1	1.1	1.0	2.0		–1.0†	1.0	–1.2	1.2	1.1	1.9
Q2	1.3	1.3	1.8		–1.0	–0.6	–0.8	0.1	1.7	2.5
Q3	1.0	1.0	1.0		–1.2	–1.0	–1.0	0.4	1.2†	1.4
Q4	1.0	1.1	0.8		–0.7	–2.1	–0.2	–1.6	1.4	1.7
2020 Q1	0.9	1.2	–2.3		–	–4.9	0.2	–5.1	1.7	–1.4
Q2	–0.4	–0.6	–20.0		–2.3	–20.9	–2.5	–22.6	–0.5	–19.1
Q3	–0.8	–0.9	–12.1		–3.1	–14.3	–3.1†	–15.9	–0.7	–11.3
Q4	–1.6	–1.7	–6.8		–3.0	–5.6	–3.1	–6.3	–1.4	–7.0
Per cent change on previous quarter										
	DIW8	TXAJ	TXBU		DJW7	DK3T	DJX2	DK3Y	DK2H	DK57
2017 Q1	0.3	0.3	0.6		0.1	–0.5†	0.1	–0.5	–	0.5
Q2	0.4	0.4	0.5		1.3	1.7	1.3	1.6	0.3†	0.3
Q3	–	–	–1.0		1.1†	0.3	1.3	0.4†	–	–1.2†
Q4	0.3	0.3	0.2		0.5	0.3	0.2	–0.2	0.2	0.5
2018 Q1	0.6	0.6	0.5		0.5	–	0.3	–	0.5	0.6
Q2	0.1	0.1	0.2		0.3	0.4	0.2	–0.1	0.1	–0.1
Q3	0.1	0.2	0.9		0.1	0.3	0.1	–0.1	0.4	1.1
Q4	0.5	0.5	–0.1		–0.9	–1.2	–1.1	–0.4	0.4	–0.1
2019 Q1	0.3	0.3	1.1		–0.6	1.5	–0.3	1.8	0.2	1.0
Q2	0.3	0.4	–		0.4	–1.2	0.5	–1.1	0.6	0.5
Q3	–0.2	–0.2	–		–0.1	–0.1	–0.1	0.2	–0.1	0.1
Q4	0.6	0.6	–0.2		–0.4	–2.3	–0.3	–2.5	0.6	0.2
2020 Q1	0.2	0.4	–2.0		0.1	–1.4	–	–1.8	0.5	–2.1
Q2	–1.0	–1.5	–18.2		–1.9	–17.8	–2.2	–19.4	–1.5	–17.6
Q3	–0.5	–0.4	9.9		–0.9	8.2	–0.7†	8.9	–0.3	9.8
Q4	–0.4	–0.2	5.8		–0.3	7.6	–0.3	8.6	–0.1	5.0

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

R1 REVISIONS ANALYSIS
Revisions since previously published estimates

	Whole economy					
	Output per worker		Output per job		Output per hour worked	
	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter
	A4YN	A4YO	LNNP	DMWR	LZVD	TXBB
2016 Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2017 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2018 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2019 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2020 Q1	0.2	0.1	0.2	0.2	0.1	0.2
Q2	–0.6	–0.8	–0.7	–0.8	–0.8	–1.0
Q3	–	1.0	–	1.0	–	0.9

	Manufacturing			
	Output per job		Output per hour worked	
	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter
	DJ4R	DJ4Q	DJK8	DJK7
2016 Q2	0.1	–	–0.1	–0.2
Q3	–	–	–	–
Q4	–	–	–	0.1
2017 Q1	–	–	–0.1	–
Q2	–	–	0.1	–
Q3	–	–	–0.1	–0.2
Q4	–	–	–	0.1
2018 Q1	–	–	0.1	0.1
Q2	–	–	–	–0.1
Q3	–	–	–0.1	–0.3
Q4	–	–	–0.1	0.1
2019 Q1	–	–	0.1	0.3
Q2	–	0.1	0.1	–0.1
Q3	–	–	–	–0.5
Q4	–	–	–0.1	0.2
2020 Q1	0.1	0.1	0.4	0.7
Q2	–0.1	–0.2	–0.3	–0.7
Q3	1.9	2.5	1.7	1.7

	Services			
	Output per job		Output per hour worked	
	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter
	DJE5	DJE4	DJQ3	DJQ2
2016 Q2	–	–	–	–
Q3	–	–0.1	–	–
Q4	–	–	–	–0.1
2017 Q1	–	–	–	–
Q2	–	–	–	–0.1
Q3	0.1	–	–	0.1
Q4	–	–	–	–
2018 Q1	–0.1	–	–	–
Q2	–	0.1	–0.1	–
Q3	0.1	–	–	0.1
Q4	–	–0.1	–	–
2019 Q1	–0.1	–0.1	–	–
Q2	–	0.1	–	–
Q3	–	–	–	0.1
Q4	–	–0.1	–	–
2020 Q1	0.2	0.1	0.2	0.2
Q2	0.3	0.3	0.4	0.2