

Final Report

Persistent low productivity Cornwall and the Isles of Scilly



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Ash Futures

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Executive Summary

Low productivity has been a persistent feature of the Cornwall and Isles of Scilly (CloS) economy for many years. This is the result of many complex and interconnected factors. Nor is it unique to CloS, as most regions outside London and the South East have struggled to improve productivity significantly.

Strikingly, the gap between most measures of productivity in CloS and the UK average has only narrowed a little despite the major investments of EU funding over 20 years or more. However, there have been some signs of higher relative growth in labour productivity over the past decade.

This report highlights several important factors that are causing persistently low productivity within the CloS economy.

In the UK, the gap between the best performing businesses in productivity terms, and the rest of the business population is stark, leading to a 'long-tail' of less productive businesses. In general, businesses within the 'long tail' have struggled with the appropriate skills to best manage labour, utilise new technologies and invest consistently. This is also the case in Cornwall and the Isles of Scilly.

We have found evidence which questions the established view that poor productivity in CloS is the result of its particular sector mix. It suggests that *90% of the productivity gap with the UK average is explained by the differences within sectors, rather than the sector mix per se.* This is not to say that the industrial make up within the economy is not important - as *clearly some sectors such as agriculture, retail and tourism tend to experience lower productivity.*

Other possible explanations of productivity weakness in the CloS business community include *lower levels of exporting, fewer foreign owned companies, the age of businesses and the quality of management within many businesses.* There is also an argument that *the greater availability of public support in CloS (much of it EU funded) has reduced the normal 'churn' within the economy* - the process by which less competitive and poorly performing businesses tend to stop trading.

A number of measures could be looked at to address the poor productivity performance in CloS.

- Ensure joined up delivery at national and local level;
- Further support to improve the management skills within businesses, including the use of peer support and mentors;
- Support the diffusion of innovation from the best performing firms to the 'long tail';
- Attract globally competitive businesses which tend to drive best practice through the supply chain;
- Cluster activity and support around the significant economic assets;
- Focus of commercialising innovation;
- Simplify the delivery landscape;
- Make strong linkages to other areas outside CloS, especially larger urban areas;
- Build up better and resilient connectivity to other areas and within CloS, especially digital.

This report sets out the findings of research completed to better understand the causes of, and possible mitigation of, persistent low productivity in Cornwall and the Isle of Scilly (CloS). The report is designed to help inform both policy and decisions around the allocation of remaining EU funding. The findings of this report will also support thinking around the longer-term policy formation with CloS.

The research was undertaken during the early part of 2020 and completed at the end of March – certainly before the full implications of the economic impact of the Covid-19 pandemic was known. Clearly, the ongoing impact of the restrictions associated with Covid-19 are quickly evolving and certainly not fully known at this time. The early indications are that they are having a fundamental impact on many businesses, with the full impact probably not known until the withdrawal/tapering of the Government support that is currently in place. At this stage, we can point to a recent report¹ carried out by Creative Kernow in July 2020 which, although not focused on productivity, provides a good insight on the pandemic's immediate impact on creative and cultural businesses, organisations and freelancers in Cornwall and Isles of Scilly.

The world and local economy will look very different when compared to when this research was undertaken – pre-lockdown. Certainly, we recognise that the priorities of businesses and local economic development community will be different. The emphasis on improving productivity – which previously had a strong emphasis in national and local economic policy – may be lessened.

However, it is important to stress that, ultimately, improving productivity remains a fundamental pre-requisite to improved long-term competitiveness of businesses and economies over the long-term. It is our expectation that those businesses and economies which are more productive will recover more quickly in the post Covid-19 environment. Whilst short term priorities may focus on economic recovery – including addressing the prospect of many more people being out of work – the focus on improved productivity over the longer-term should remain an important consideration. This will sit alongside other issues which have been identified as important within Cornwall, such as improved wellbeing and effective response to climate change.

With that changed context in mind, the main findings of the research are shown below:

Context

- It is fundamental to note that this research does not provide 'the answer' to solving CloS's own productivity puzzle. Unfortunately, it is not as simple as that, and there is no one single answer. Different productivity performance is a result of a range of complex factors, most of which are interconnected. However, this research has been designed and undertaken to provide a series of pragmatic observations, conclusions and recommendations which we feel will be important for the CloS policy community to consider.
- There remains a persistent gap in most measures of productivity between Cornwall and Isles of Scilly (CloS) and the UK average, which has not narrowed significantly despite 20 years of EU programme support and considerable investment.
- This problem is not unique to CloS. Many other areas in the UK (especially outside London and the South East) have performed poorly against these productivity measures. Indeed, the UK is judged one of the most 'unequal' countries in the developed world on several measures, including productivity.
- Over the last 10-15 years, productivity growth has been muted across much of the developed world. This has been often called the 'productivity puzzle' or 'productivity conundrum' by many commentators. Whilst vast amounts of research and policy focus has been devoted to this economic phenomenon, it is worthwhile noting that this broad context shows no strong sign of improving. The overriding message is that there is no 'magic bullet' to address either the overall muted levels of productivity growth, or the unequal distribution of productivity growth. The impact of Covid-19 will now complicate and/or present further barriers.

¹ <https://baseline.creativekernow.org.uk/>

Key Findings

- There is evidence that reductions in Total Factor Productivity (TFP) (how efficiently labour and capital inputs are combined i.e. technology) can explain the largest reduction in overall productivity growth. The data suggests that there has been also been a reduction in 'capital deepening' i.e. business investment over the past 10-15 years. The reduction in TFP begins to provide initial insight into where issues may reside. For example, skills and management quality are closely associated with how effectively labour inputs can exploit the available capital (i.e. technology, machines etc.). There are wider questions about whether the effective utilisation/exploitation of technology has declined over recent years.
- What has been striking in a UK context is the gap between the best performing businesses in productivity terms, and the rest of the business population. This has led to a 'long-tail' of less productive businesses, with only very few businesses significantly above average firm-level productivity. The evidence suggests that the gap between the 'best' and the 'worst' is widening. This profile of the 'long-tail' of less productive businesses is broadly consistent across all UK regions, although slightly less marked in London and the South East.
- The growing disparity between the 'best' and 'worst' businesses is starkly illustrated by the evidence that suggests that labour productivity in the 10% least productive businesses only reached 2002 levels by 2012. That is, the impact of the financial crisis and subsequent recession appears to have impacted the least productive businesses very severely in terms of their productivity performance. This situation may have been more marked in certain areas.
- Between 2004 and 2014 in 99% of the business population in the South West, average annual productivity growth equated to only 1%. In comparison, the most productive 1% of businesses experienced average annual growth of 12% over the same period. We would expect that a similar outcome would be found in CloS and clearly highlights a key conclusion that much of the underlying problem of persistent low productivity lies within the long tail of businesses.
- In broad terms, productivity growth has been stronger in manufacturing and production (mining etc.) than in service industries.
- The widening gap in productivity performance and wider economic growth has led some commentators to comment that UK regions are 'decoupling, dislocating and disconnecting' from each other. Spill over effects, or the cascading of benefits, is not working. This argument can be extended within regions, with a greater polarisation of economic conditions at even very small spatial areas.
- Recent evidence and analysis has questioned previously long-held views that differences in overall productivity between areas can be explained by differences in industrial mix. CloS still performs poorly even when accounting for its own industrial mix, suggesting that differences in productivity performance relate to something more than simply industrial structure.
- However, from a CloS perspective, the latest data from the ONS does indicate that CloS has actually experienced relatively robust growth in labour productivity since 2010. This suggests that the productivity story in CloS over the past decade has not been quite so bleak as some previous analysis suggests. However, this recent cause for some optimism does not necessarily mean that there are not deep-rooted structural issues which impacts on persistent low productivity. The recent 'stabilisation' in performance has still come from a low base.
- Some factors that affect productivity are difficult to address. For example, as would be expected, there is a relatively strong association between connectivity and productivity. For example, previous analysis estimated that if CloS had similar levels of physical connectivity to the HotSW (assuming a centre point of both areas) its productivity would increase by c10%.
- An important issue highlighted in some datasets and analysis is that the variance of productivity within industries is much greater than the variance across industries. Analysis from the Office of

National Statistics has shown that it is the differences between average firms' productivity within industries that has the most significant effect on aggregate regional productivity differences.

- The ONS indicates that, looking specifically at CloS, of the c40% differential between CloS productivity and the national average, approximately 34 percentage points is due to differences in firm-level productivity, whilst c3.5 percentage points can be explained by its industry mix. This is one of the key findings of this study, that according to ONS analysis it is suggested that 90% of the difference between CloS firm-level productivity and the national average can be explained by lower average productivity in its businesses, rather than its industry/sectoral mix. This factor is found within most broad industry groups within CloS i.e. manufacturing, construction, services and others.
- However, sector composition still matters. Productivity does differ across sectors, it's just that productivity levels tend to be much more similar within sectors across the UK. However, if an area has a higher proportion of its economic activity in lower productivity sectors, then this will impact on aggregate productivity. CloS is over-represented in terms of share of employment in lower productivity sectors, such as the agriculture, retail and tourism-driven sectors such as accommodation and food services.
- The evidence seems to indicate that firm size is not necessarily a strong determinant of firm-level productivity. There is some evidence that shows that productivity in micro businesses tends to be lower, given that the focus tends to be on revenue growth rather than efficiency at that stage of business development. However, perhaps contrary to opinion, CloS does not necessarily have a higher proportion of micro business when compared to other areas. We could find no strong correlation between the proportion of micro businesses and aggregate productivity.
- In terms of business age, there is a slightly higher tendency of older businesses to have lower productivity.
- There is relatively strong evidence that shows a positive association between exporting and foreign-ownership and firm-level productivity. There is a positive and statistically significant relationship. The productivity benefits that external-facing firms bring to an area underscore the importance of promoting trade within an economy. Recent analysis of HMRC trade data by the Economic Growth team at Cornwall Council highlighted that the proportion of the overall economy that relates to exports was c8% in 2017 - compared to an average across the UK of 17%. As a consequence, CloS is amongst the worst performing areas in the UK in terms of export performance.²
- Other research has found a statistically significant link between the quality of firms' management processes and practices and their productivity. And the effect is large. This suggests potentially high returns to policies which improve the quality of management within companies.
- A further interesting argument that has been noted in several papers relates to whether the loose monetary environment over the past decade - in essence, 'cheap money' has impacted negatively on the process of 'creative destruction'. Creative destruction refers to the process where less competitive businesses stop trading. The Bank of England modelling does indicate that the financial crash (in terms of liquidity crunch) and the subsequent recession and recovery (associated with loose monetary policy and cheap finance) has impacted the productivity potential of the UK economy. A key question raised in the context of this work is whether access to EU funding has accentuated this issue in CloS.
- One expected impact of Covid-19 will be an increase in the number of business bankruptcies/insolvencies. However, the full extent of this impact is only in its early stages and certainly not yet fully known. For example, the number of voluntary company dissolutions in the first week in October 20 was about 25% than the corresponding week in 2019. However, the number had been lower through the period since the commencement of lockdown. The extent of liquidations will be better known when the Government support schemes are unwound. As with many factors, the dynamics of 'creative destruction' are expected to be highly volatile over the coming period - with both strong

² <https://www.cornwall.gov.uk/media/38162289/trade-in-goods-and-services-may-2019.pdf>

and weak businesses expected to cease trading. *See Addendum at the end of the report for more analysis of the impact of Covid-19.*

Policy implications

- The productivity puzzle needs to be thought of as a range of interconnected factors, which require a systematic/holistic approach. One of the criticisms of the UK Government response to the productivity problem is that it is dealt with on a departmental basis. Each department has responsibility for specific portfolios which all relate to some of the issues identified (business, employment, education, transport, infrastructure etc.) What is required is cross-departmental policy which represents a major institutional challenge.
- As shown, there is evidence that one of the problems in a UK context has been the slowing 'diffusion' of innovation from the best performing firms to the rest of the business population. R&D activity is heavily concentrated in a small number of firms. There are some suggestions in terms of possible policy approaches, some of which could be applied at a local level:
 - Make innovation diffusion a central theme of the (Local) Industrial Strategy.
 - Set-up innovation diffusion pilots to test different types of on-the-ground support for businesses.
 - Utilise supply chain relationships – work with large businesses to better use their supply chain infrastructure to disseminate knowledge and best practice.
 - Focusing policy back onto technology transfer – encouraging universities to improve the way they undertake technology and knowledge transfer. This may mean further cultural and structural changes in the way that universities work.
 - Supporting how human capital transfers knowledge – one possible way is through business mentoring, but with a focus on technical professionals. This is loosely based on the German Steinbeis system.

We also reviewed the policy framework and initiatives in some other areas within the UK, with the aim of gleaning whether they were doing anything differently. Ultimately, the aim is to challenge whether 'more of the same' is necessarily the right thing for CloS if it wants to fundamentally address its persistent low productivity. The factors that seem to be important are:

- **Having several globally competitive businesses matters.** These businesses act as important drivers of growth, through their own supply chain linkages, ability to pull in skilled workers, and their potential ability to spread best practice amongst the wider business community.
- **Coalescing around significant assets appears important.** Some of the areas we looked at have significant economic assets, around which further activity has clustered. It is clear that replicating this in CloS may not be possible (or palatable). However, there is some indication that in other areas there has been an attempt to coalesce/focus activity around centres.
- **Focus on the commercialisation of innovation.** Some areas have a specific policy focus – backed by programme investment – to support businesses from innovation into commercialisation.
- **Simplified delivery landscape.** The desk-based exercise appears to show that in most other areas the delivery landscape may be simpler than found in CloS. In our view the presence of EU Funding in CloS – and at the scale – has led to a complicated delivery landscape. There are a multitude of organisations delivering against a similar set of objectives and we question whether this has always been in a coordinated manner. Whilst we accept that effort is made to coordinate activity amongst the main economic development actors, we do question whether the landscape remains more 'complicated' than in other areas. The question is whether this stifles efforts to improve productivity.
- **Making links with other areas is seen as important.** It appears from our review that some rural areas have recognised that they need to make a more concerted effort to forge links with larger urban areas.

- **Connectivity.** Transport links are important and are being optimised in comparator areas, to build up strong strategic connectivity.

Introduction

This report sets out the findings of research completed to better understand the causes of, and possible mitigation of, persistent low productivity in Cornwall and the Isle of Scilly (CloS). The report is designed to help inform both policy and decisions around the allocation of remaining EU funding. The findings of this report will also support thinking around the longer-term policy formation with CloS.

In 2019, Ash Futures reviewed the impact of EU investment on the CloS economy. The report found that whilst CloS performed well in terms of employment growth, skills development and the overall economic development – there remain a persistent gap in productivity between CloS and the UK average, which had not narrowed despite 20 years of EU programme support and considerable investment.

This problem is not unique to CloS. Many other areas in the UK (especially outside London and the South East) have performed poorly against productivity measures. Indeed, the UK is judged one of the most ‘unequal’ countries in the developed world on several measures, including productivity. A theme that is reviewed in more detail within this report.

Additionally, over the last 10-15 years, productivity growth has been muted across much of the developed world. This has been called the ‘productivity puzzle’ or ‘productivity conundrum’ by many commentators. Vast amounts of research and policy focus has been devoted to this economic phenomenon, but it is worthwhile noting that this picture shows no strong sign of improving. This report draws on a wide array of evidence to understand the reasons for poor productivity growth and the implications for CloS.

The overriding message is that there is no ‘magic bullet’ to address either the overall muted levels of productivity growth, or the unequal distribution of productivity growth. In terms of the latter, the policy questions that are raised have added emphasis in the context of the current UK Government’s focus on ‘levelling up’.

It is fundamental to note that this report does not provide ‘the answer’ to solving CloS’s own productivity puzzle. Unfortunately, it is not as simple as that, and there is no one single answer. Different productivity performance is as a result of a range of complex factors, most of which are interconnected. However, this research has been designed and undertaken to provide a series of pragmatic observations, conclusions and recommendations which we feel will be important for the CloS policy community to consider.

The intention is to use this report as an opportunity to provide greater clarity and understanding around the whole question of productivity. We finish the report by asking a wider question of whether successful economic development is measured too narrowly by focusing purely on productivity measures. Whilst, clearly critically important, it is not the only measure to consider

As Paul Krugman famously remarked *“Productivity isn’t everything, but, in the long run, it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker”*.

However, saying that productivity matters is not the same as saying that we understand its determinants. The past few years have served to underscore just how partial economists’ understanding of productivity remains. Since the global financial crisis, productivity growth has consistently underperformed relative to expectations (and forecasts from respected institutions).

In its broadest sense, this work has focused on two broad questions:

- To better understand what the available research says about the underlying drivers of this muted productivity performance at a national and international level, and
- Drawing on that learning to better understand how those broad explanatory factors may affect CloS in a particular way – whether some of those factors may be heightened/greater in CloS, which has affected its own under-performance. Therefore, this work considers many factors within CloS, including its economic, demographic, business and institutional structure.

To address those two broad questions, we have undertaken a range of activities, including:

- Reviewed c70 research and policy papers focusing on the issue of muted overall productivity growth, and its unequal distribution within the UK, drawing out findings relevant to CloS. The focus was to highlight findings which were relevant to CloS and to challenge some preconceived ideas.
- Analysed data across Local Authority areas in UK to understand the relationship with area performance and key variables. Using a cluster profiling technique, areas were grouped according to similarities in a range of socioeconomic factors. The clusters have enabled us to create 'typologies'. The characteristics of these typologies have been set against key variables to understand how far differences in economic performance can be explained by the variations across these variables.

These two steps have been combined, drawing out the key explanatory factors of better productivity performance. These steps form the core of this work.

- Using the above two steps, we have also focused on 6 areas which appear to have performed more strongly in terms productivity growth (although on some occasions the differences are quite marginal). We have undertaken a high-level review of the strategies, economic assets and institutional structure within those areas to understand whether there has been some key learning for CloS. It is important to note that this has been a desk-based exercise; our observations have not been corroborated/reinforced by discussions with stakeholders in those areas.
- We also undertook a workshop with a number of organisations responsible for delivering support to businesses within CloS. This workshop presented some interesting observations and views, which we also took into account, with particular reference to how things work 'on the ground'
- We bring the above steps together with our overall observations, focusing on implications for CloS and which of the explanatory factors can be influenced by local decisions.
- We also include growth projections based on scenarios that reflect productivity uplifts if CloS were able to successfully improve its productivity growth, even in marginal terms
- Finally, we conclude with a section on the difficulties of using the current measures of economic/ productivity performance, highlighting their limitations. We extend this to an initial discussion whether those measures are necessarily the 'right' parameters to measure an area's economic performance. This is intended to be an initial introduction to this issue, which may be extended through a wider policy discussion in CloS.

Given the research review work has largely been a meta-analysis, we have not been able to recreate all of the charts/graphics which we feel are useful to highlight in the report. Some are underpinned by complex datasets which we have been unable to access. Consequently, some of the relevant charts/graphics may not be as 'sharply defined' as we would intend. However, because they convey an important finding they are included and referenced accordingly.

Background

The previous work that looked at the Impact of EU Funding on the CloS economy over the past 20 years concluded that positive change had happened in CloS and that EU Programme support had played an important role. However, the report noted that deep-rooted structural issues remained.

The work found that – when compared to similar areas – economic growth in CloS had been relatively robust. The work looked at a range of economic indicators, and the relative performance of CloS against those indicators. This benchmarking exercise indicated that economic growth in CloS had principally been driven by:

- Relatively high population growth
- Relatively high employment growth
- Growth in less productive industries

Importantly, in the context of this work, it also concluded that in productivity terms CloS was not ‘keeping up with the fastest runners’. Despite the significant EU investment, the ‘productivity gap’ between CloS and the UK average had actually widened over time.

This prompted the desire to understand more about why CloS has suffered from persistent low productivity when compared to other areas³. This has led to this separate research exercise.

Context 1 – low productivity in the UK and recent muted productivity

Over the past decade, the gap between the UK’s productivity performance and other OECD countries has been widening. This is due to unusually slow growth rates in productivity since 2010 in spite of rising employment, leading to what has been termed the ‘productivity puzzle’.

The slowdown of productivity growth has clearly been a global phenomenon, not a UK-specific one. From 1950 to 1970, average (median) global productivity growth averaged 1.9% per year. Since 1980, it has averaged 0.3% per year. Therefore, in many respects, **whatever is driving the productivity puzzle, it has global rather than local roots**. However, what has been particularly puzzling is that within this context, the downturn in the UK productivity growth rate has been one of the most marked and wide-ranging.

There are essentially three factors that drive productivity:

- Labour
- Capital
- Improvements which are dependent on how efficiently these two inputs (labour and capital) combine – so-called Total Factor Productivity (TFP).

Chart 1 shows the long run Total Factor Productivity (TFP)⁴ growth for advanced and emerging economies. It clearly illustrates that the average annual growth in productivity has fallen from the 1960s/1970s – when it averaged close to 3% per annum. In the last 20 years, advanced economies have struggled to achieve a 1% improvement in annual productivity growth in real terms.

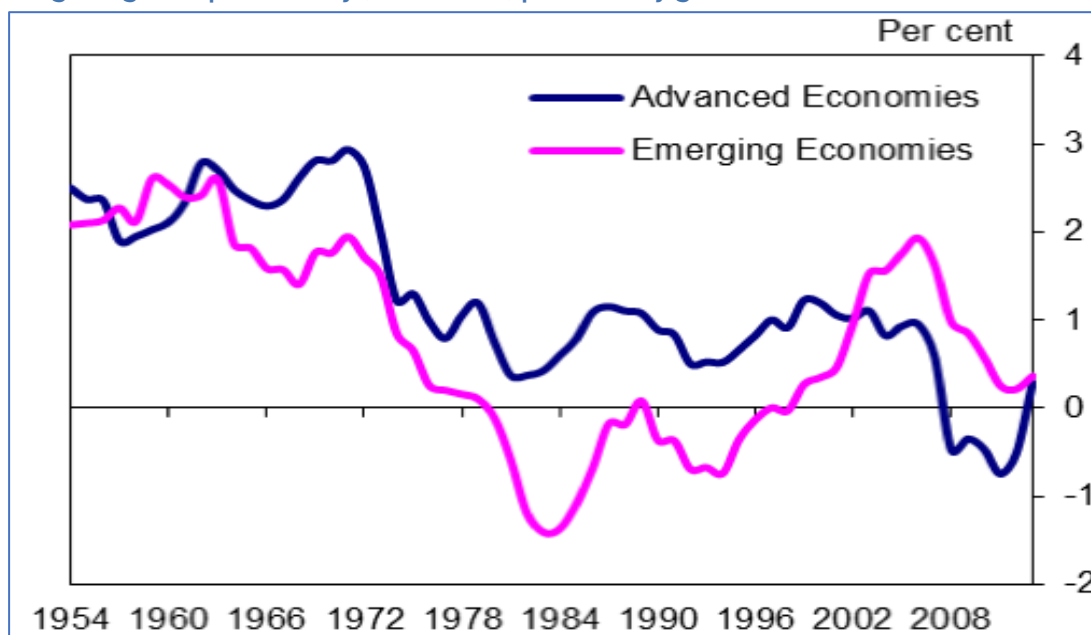
Successive forecasts of UK productivity growth by the Bank of England have regularly been inaccurate, with productivity growing much more slowly than envisaged. This has also occurred at an international level, with the International Monetary Fund (IMF) also consistently overstating expectations of productivity growth across advanced economies over the past 10-15 years.

³ It is important to note that CloS has continued to receive considerable EU support through its status as a ‘Less Developed’ region within the EU. The measurement that entitles it to have received the highest intervention rate available under EU Structural Funds has been Gross Value Added (GVA) per head. However, this is not necessarily the best measure to reflect productivity performance at a regional or sub-regional level. GVA per head captures people not in the workforce (including children, pensioners and others not economically active), as well as reflecting commuter flows. Therefore, GVA per job filled and/or GVA per hour are recommended as the productivity measures.

⁴ TFP combination of labour and capital

This has led some to conjecture that the world may have entered a new epoch of sub-par productivity growth, an era often titled 'secular stagnation'. Various possible causes of this stagnation have been posited (and we discuss them in this report) including adverse demographic trends and diminished rates of innovation.

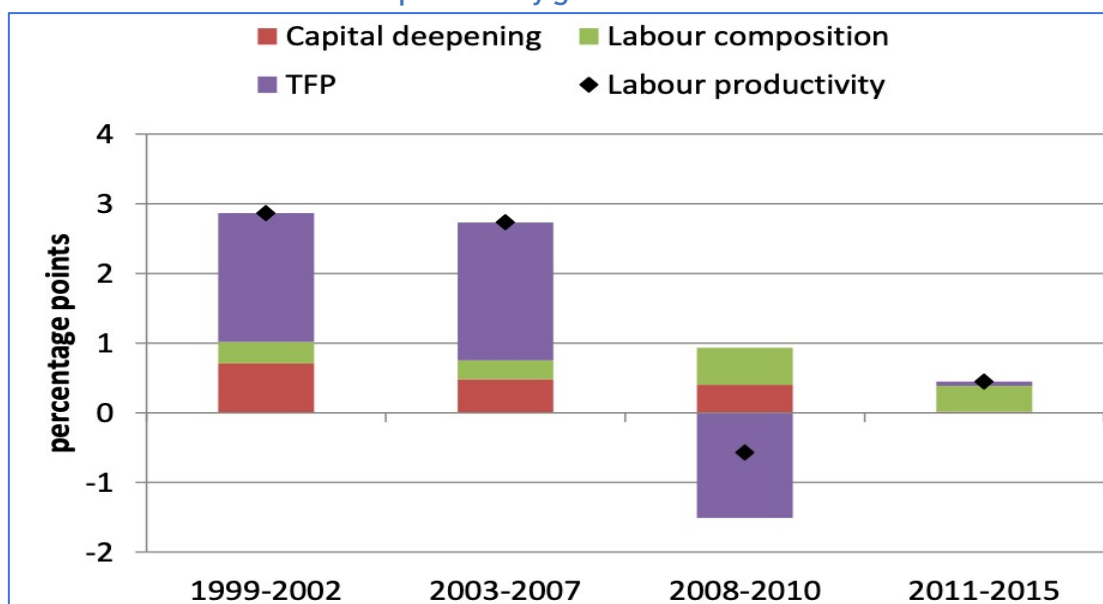
Chart 1: Long run global productivity (total factor) productivity growth



Source: (Penn Worlds Tables database)

Chart 2 below breaks down productivity into its component labour, capital and TFP parts over the past 20 years. The analysis suggests that reductions in TFP (how efficiently labour and capital inputs are combined i.e. technology) can explain the largest reduction in overall productivity growth. Chart 2 also **highlights the significant reduction in contribution from 'capital deepening' i.e. investment** which we discuss this in more detail later. The reduction in TFP begins to provide initial insight into where issues may reside. For example, skills and management quality are closely associated with how effectively labour inputs can exploit the available capital (i.e. technology, machines etc.). The decline in TFP suggests that how effectively technology is utilised/exploited has declined over the recent period in the UK.

Chart 2: Contributions of annual labour productivity growth - UK market sector⁵



Source: ONS and Economics Statistics of Excellence

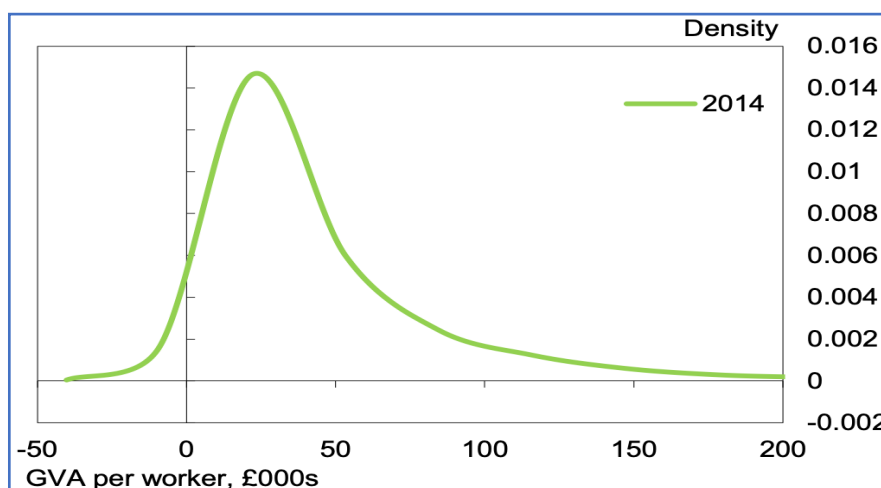
⁵ Excludes public sector employment

At a national and international level there has been much focus on the factors behind weak productivity. The main explanatory factors tend to focus on the following factors. All factors can be applied to a UK context:

- **Mismeasurement:** this is based on a methodological argument that states that weak productivity can be partly explained by the way it is measured. Many national economies – with the UK being a notable example – have experienced a long-term structural shift from manufacturing to services. Productivity in many service activities have been methodologically more difficult to measure than the manufacturing of tangible goods. Therefore, part of the explanation of weaker productivity growth may simply reflect the shift in the economy
- **Weak investment:** since the financial crisis in 2008, investment by businesses has been weak – as demonstrated by the reduction in capital deepening in Chart 2
- **Hysteresis:** there has been a long-term effect of the recession on productivity due to reduced capital accumulation (as above), the ‘scarring effects’ on workers through job losses (with many struggling to return to meaningful permanent employment), and disruptions to economic processes underlying technological process
- **Long tail of low productive firms:** the advent of cheap finance since the recession has led to so-called ‘zombie firms’ (this is discussed in more detail later in this report)
- **Technological and digital diffusion:** the rate of technological uptake has slowed across some industries and businesses. More importantly, the rate of technological and innovation ‘diffusion’ has slowed over the past 20 years (again, discussed in more detail)
- **Reduction in mobility and workforce dynamism:** factors such as significant differences in house prices across the UK has resulted in lower mobility of the workforce. Some areas have struggled to attract sufficiently skilled labour due to the barriers presented by the house price differentials
- **A shift towards less productive sectors:** a combination of demographic change (more aged society) and increased leisure time has resulted in growth in sectors which tend to be more labour-intensive and historically less productive e.g. care, retail and leisure
- **A slowdown in productivity growth in previously highly productive sectors:** this is based on the theory of a slowdown of technological progress when compared to previous decades. This has impacted certain sectors more than others.

What has been striking in a UK context is the gap between the best performing businesses in productivity terms, and the rest of the business population. This is discussed at length throughout this report but is illustrated in Chart 3. This illustrates that productivity tends to be low(er) in the majority of businesses, with only very few significantly above average firm-level productivity. The right-hand (y) axis in Chart 3⁶ is a measure of density, with a higher density of businesses grouped at lower level productivity – as measured by GVA per worker.

Chart 3: Distribution of productivity across UK firms



Source: ONS
Research and Bank
of England

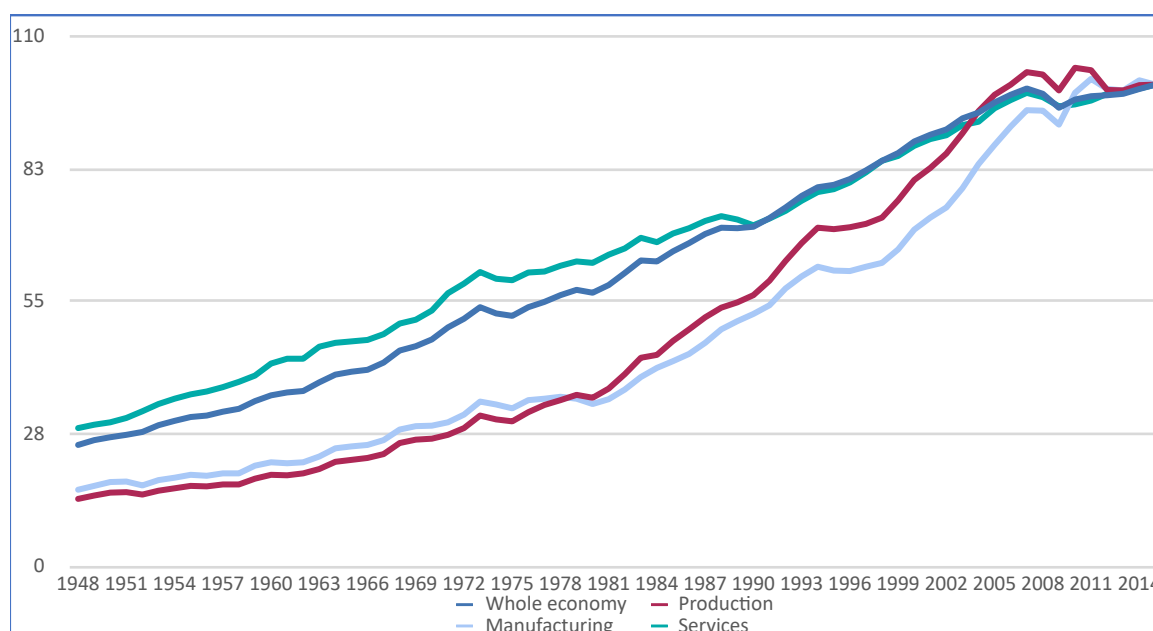
⁶ The density measurement represents a percentage of the UK business population i.e. 0.016 represents 1.6% of the total business stock

This unequal distribution of productivity at firm-level is discussed in more detail later. It shows that the gap between the 'best' and the 'rest' is widening. This is often termed the 'long tail' of less productive businesses.

We feel that this is an important initial point to highlight, with **the inevitable question whether CloS has its fair share of businesses at the upper end of the productivity spectrum**. Having these higher productivity businesses will matter in terms of aggregate productivity i.e. productivity measured across the whole of CloS. We also discuss the importance of having these high achieving businesses (often referred to as 'gazelles') in softer terms. Their ability to spread best practice, innovation, upskill (managerial and technical) can be important to the wider landscape in an area.

Chart 4 illustrates the labour productivity trends in the broad sectors of the UK economy in the post-war period. Chart 4 is indexed data (2015=100). What Chart 4 shows is that labour productivity has grown more strongly in the production (mining, quarrying etc.) and manufacturing sectors – they started from a lower base. In particular, the strength of productivity growth in manufacturing has been marked over the past 20 years, growing strongly since the mid-1990s. In comparison, the service sector has grown more slowly, starting from a higher base.

Chart 4: Long-run labour productivity (2015=100) by sector



Source: ONS

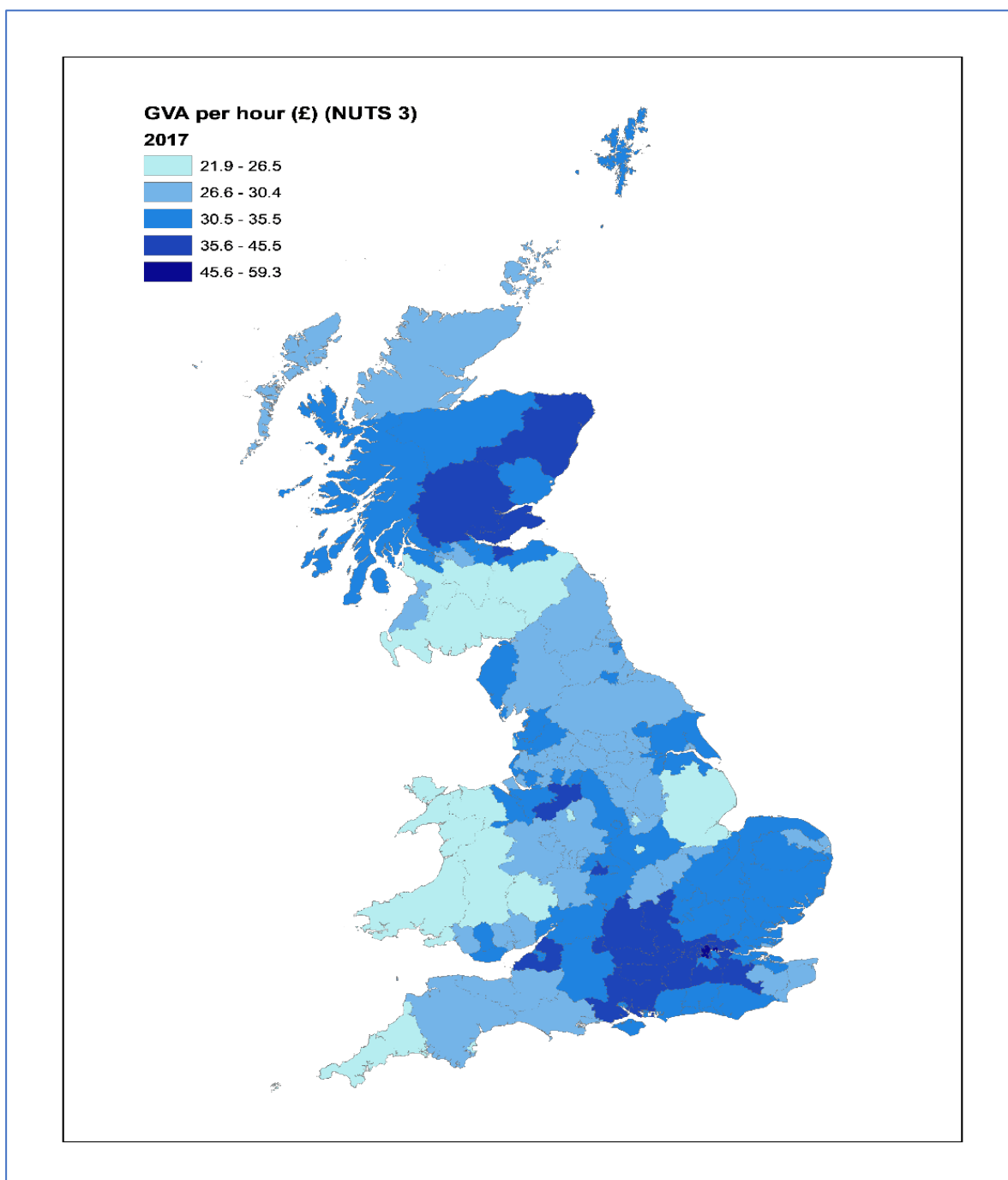
This suggests that the sectoral composition of the economy will impact the rate of productivity growth.

Context 2 - UK regional inequality in productivity measures

Within the UK, there are also vast variations in productivity between regions. These are shown in the map below using GVA per hour, as previously stated one of two most commonly used measures for comparing productivity within and across countries. Here it is shown in its nominal form for 2017 for NUTS3 regions in Great Britain (GB).

The map clearly illustrates the productivity differentials between regions, with London, most of the South East and a small number of large cities in England and Scotland shown as having the highest productivity on this measure. It illustrates the lower productivity in CloS, alongside other largely peripheral areas such as West Wales and the Valleys.

Map 1: Distribution of GVA per hour - GB (2017)

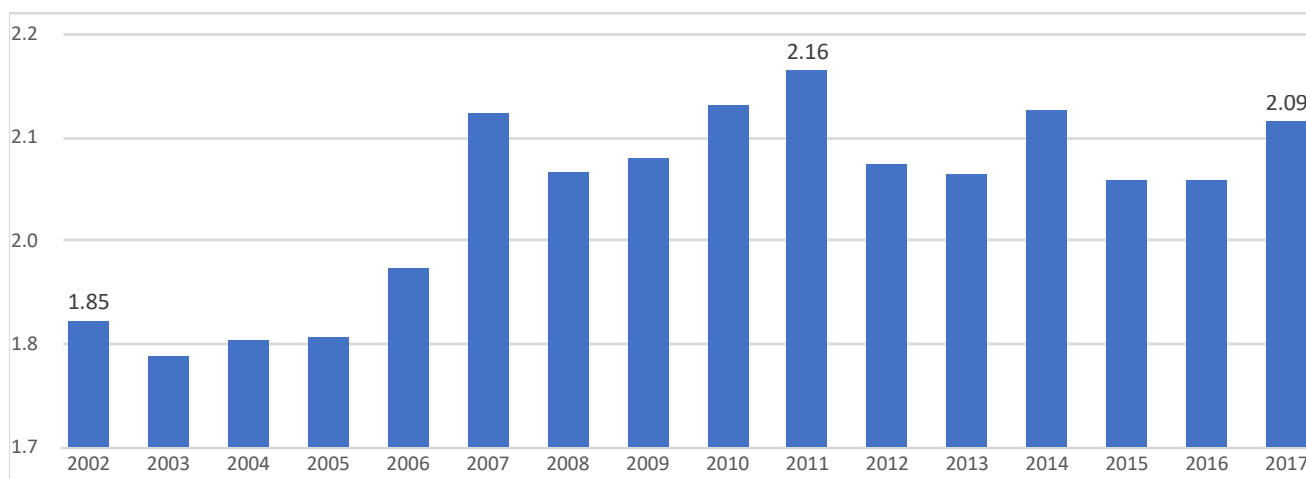


Source: ONS

The gap between those areas which have the highest productivity and those with the lowest certainly shows no signing of narrowing. Charts 5 and 6 demonstrate the gap between the regions in the UK remains persistent and has, in fact, grown over time. Chart 5 shows that in 2002 the average worker in the LEP area with the highest productivity was 1.9 times more productive than in the lowest (CloS) - as measured by GVA per job. By 2011 that gap had grown to 2.1 times and remained around that level up to 2017.

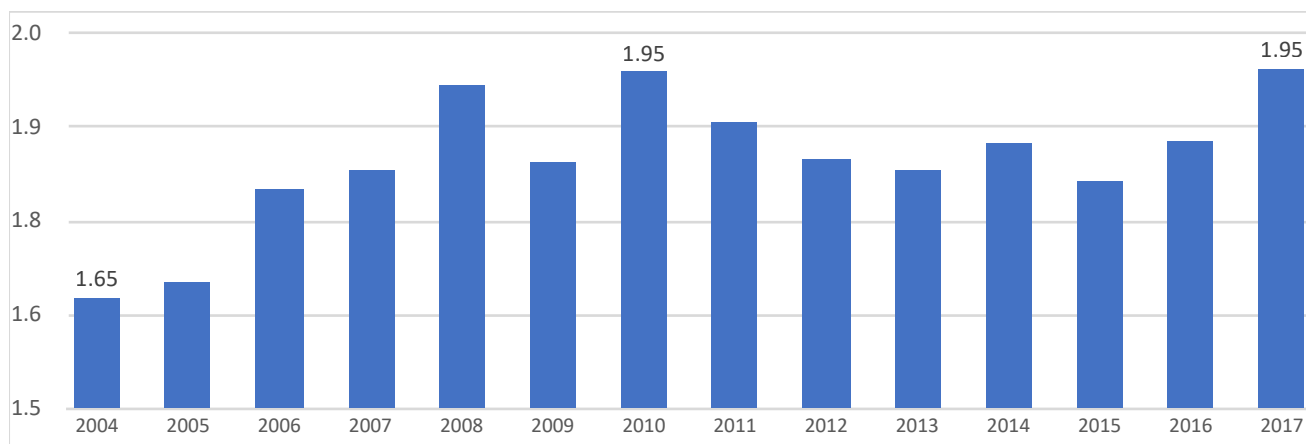
Similarly, when measured on a per hour basis, a similar picture emerges. In 2004, GVA per hour was 1.6x higher in the most productive LEP area than in the lowest. By 2017, this had grown to 2x. It is important to note that this data relates to LEP area, the difference between the 'best' and the 'worst' Local Authority area is even more marked - as illustrated in Chart 7.

Chart 5: Ratio between the highest and lowest productivity based on nominal (unsmoothed) GVA per filled job - Local Enterprise Partnership



Source: Sub-regional productivity - ONS

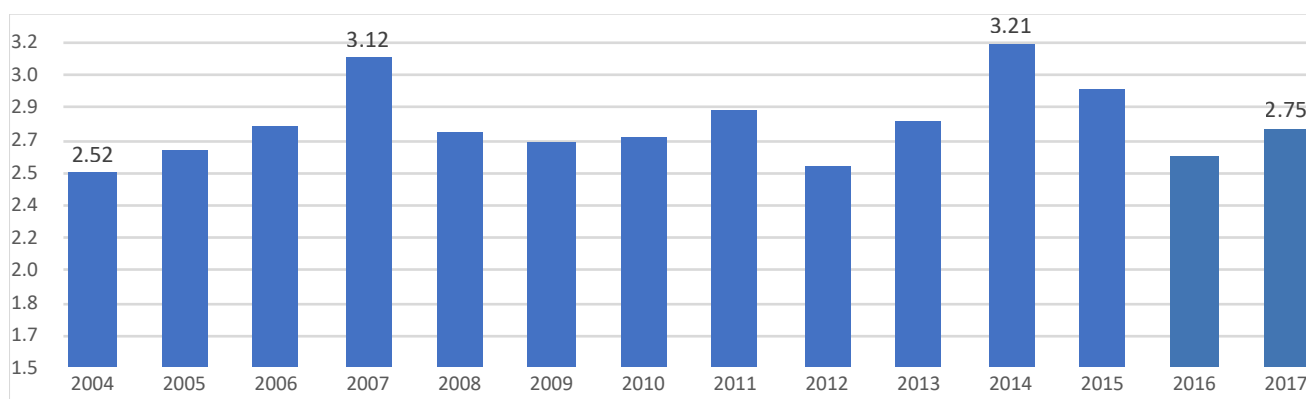
Chart 6: Ratio between the highest and lowest productivity based on nominal (unsmoothed) GVA per hour - Local Enterprise Partnership



Source: Sub-regional productivity - ONS

This data is replicated at a Local Authority level in Chart 7 - illustrating that the gap between the most productive LA area and the lowest, whilst not widening at the same extent as the data at a LEP level, is more significant. Based on the GVA per hour measure, the most productive area has productivity 2.8x the level as within the lowest (2017).

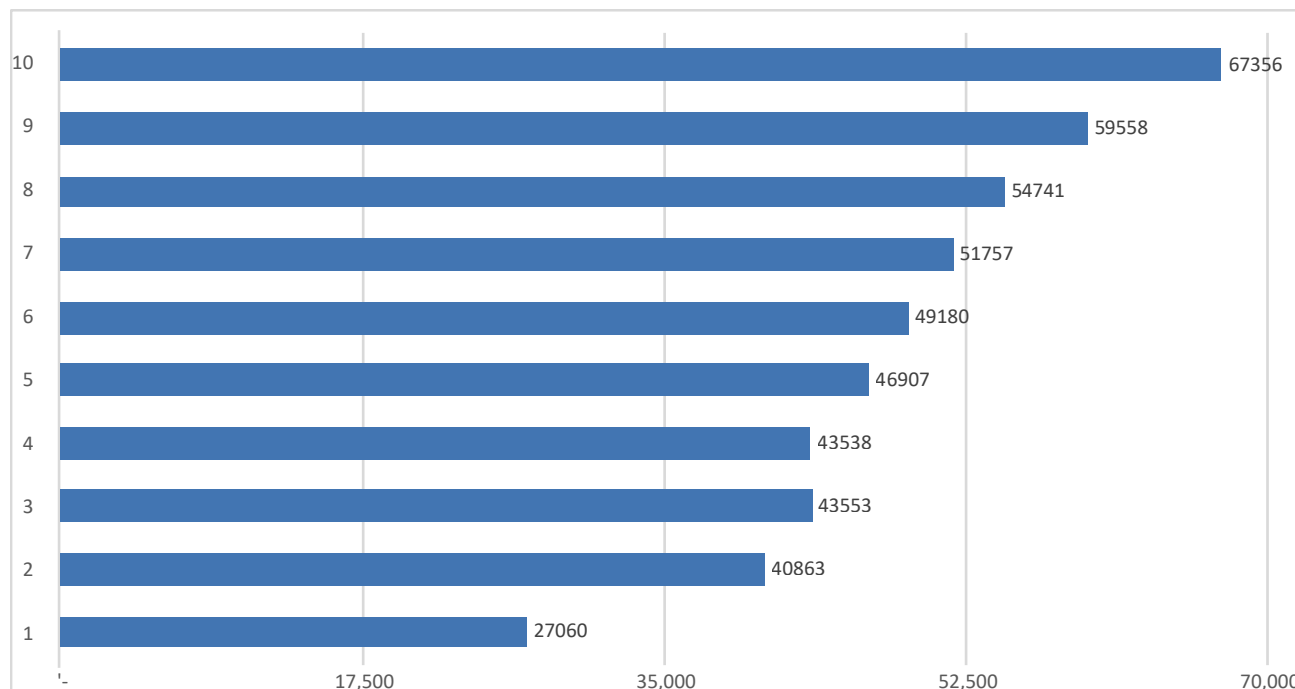
Chart 7: Ratio between the highest and lowest productivity based on nominal (unsmoothed) GVA per hour - Local Authority



Source: Sub-regional productivity - ONS

Similar data is presented in Chart 8. This shows the average productivity (GVA per filled job) when displayed in percentile terms i.e. the local authority areas grouped in percentiles. This again illustrates that average productivity in the 90th percentile (the top 10% areas in terms of this measure) is about 2.5x the average of the 10th percentile.

Chart 8: Range of GVA per filled job (£) by percentile (2018)



Source: ONS

This widening gap in productivity performance and wider economic growth has led some commentators to comment that UK regions are 'decoupling, dislocating and disconnecting' from each other. Spill over effects, or the cascading of benefits, is not working. This argument can be extended within regions, with a greater polarisation of economic conditions at even very small spatial areas.

What is also marked by the characteristic of inter-regional inequality within the UK is that it occurs within a relatively short distance. For example, there is significant inequality within the UK within 2 hours travelling time, whereas in Spain and Italy inter-regional inequality (the gap between the best and the worst) tends to occur over longer time-distance i.e. 7-10 hours⁷.

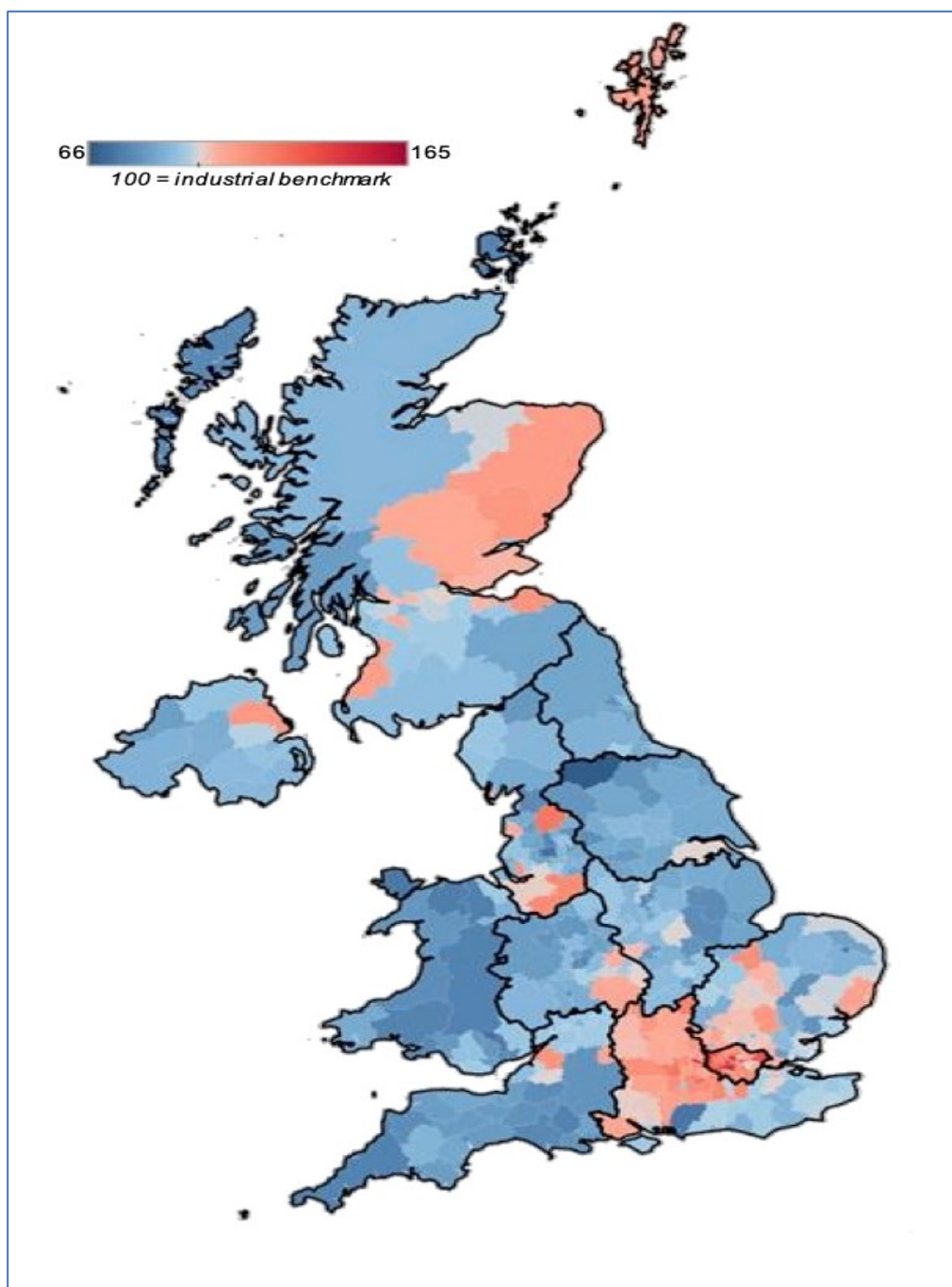
The inter-regional inequality in productivity performance has been looked at in a variety of ways. For example, recent work by Cisco and Oxford Economics produced a 'Productivity Index'⁸. This Productivity Index looked at productivity measures across the UK, but also controlled for each area's industrial mix.

The broad finding – as illustrated in the map taken from the report – is that even after controlling for industrial mix, significant differentials remain. The red-shaded local areas (which score above 100 on the Index) are performing better than their industrial mix would imply, while blue-shaded areas (scoring below 100) are performing 'below par' relative to national industry averages. The map shows that CloS still performs poorly when even accounting for its own industrial mix. This leads to a question which we address later in the report which suggests that differences in productivity performance relate to something more than simply industrial structure.

⁷ 'Perceptions of regional inequality and the geography of discontent: Insight from the UK' – Productivity Insights Network

⁸ 'The Cisco UK Productivity Index – examining local disparities within the UK' – Cisco and Oxford Economics – 2018

Map 2: Local area performance on 2018 Cisco Productivity Index



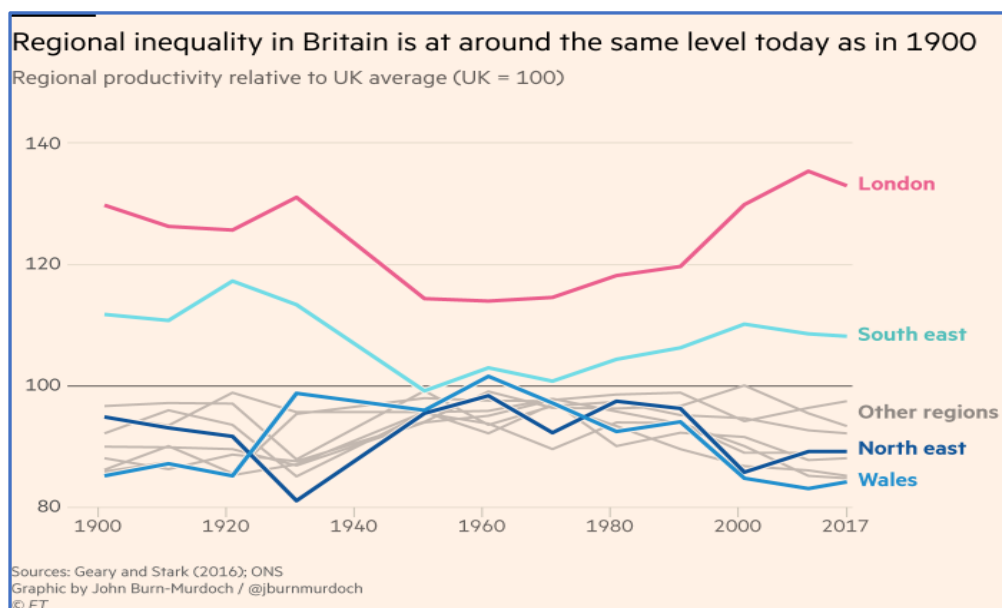
Source: Cisco/Oxford Economics

The Cisco/Oxford Economics paper includes a number of factors which it outlines as determinant factors in explaining inter-regional inequality on productivity performance. This focuses on four broad areas – technology; people; business structure and innovation; and geography and infrastructure. Many of these factors are considered in our research review and data analysis – discussed later in the report.

However, it is important to stress that regional inequality in the UK is not a new phenomenon. Chart 9 illustrates that this is certainly not the case, with significant differences in regional productivity being in place for well over the past Century. This is despite repeated and concerted efforts to narrow those differences. This obviously has relevance to the current Government's intention to 'level up' UK economic performance. There is a deep-rooted and structural imbalance in the UK. Through several measures, the UK, is seen as the most regionally unequal economy in the developed world.⁹

⁹ <https://www.poverty.ac.uk/editorial/more-unequal-country>

Chart 9: Historical regional inequality in productivity (UK=100)

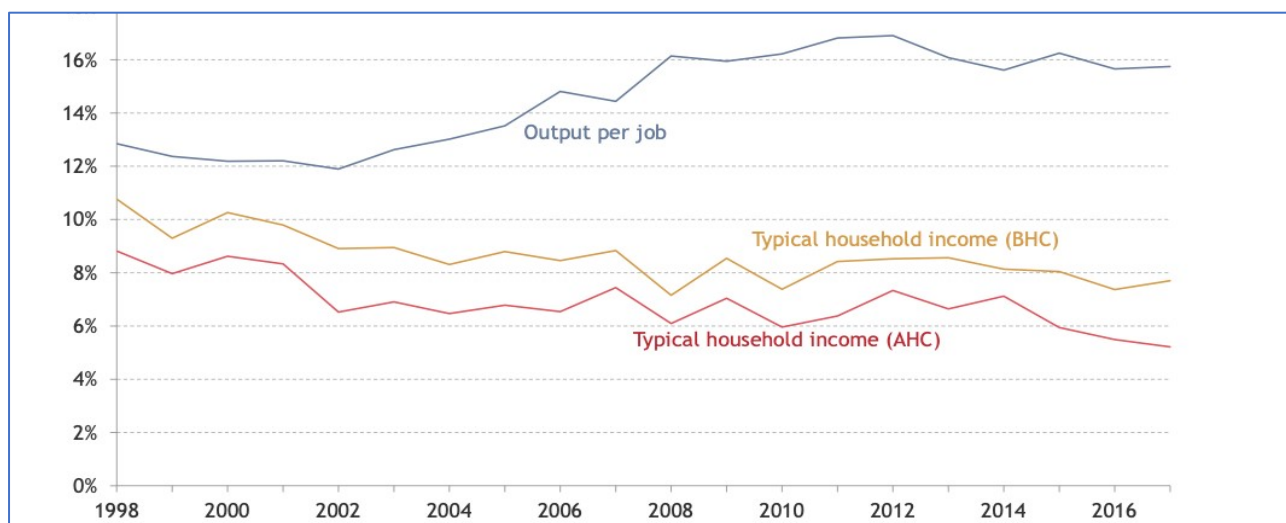


Source: Financial Times

As Chart 9 shows, regional inequality narrowed in the post-war period until the late 1970s. This was accompanied by a narrowing of inequality across the population i.e. not location specific. The post-war period was characterised by a consensus of a managed economy underpinned by the initial establishment of the welfare state. The period from the early 1980s has been characterised by a more deregulated form of 'market capitalism'. Since 1979, studies show that a greater share of the nation's income and wealth has gone from to top income groups, and in particular the very top, than in the period before 1979. Accompanying this shift has been widening inequality from a geographical perspective - as illustrated.

The final interesting factor to observe in this context - and linking to discussion later in the report around the importance of productivity as a measure of economic well-being in an area - is that the evidence suggests that, whilst the productivity differences between regions has been growing, this has not necessarily translated to as big a differentials in household incomes¹⁰. This is illustrated in Chart 10, which shows the coefficient of variation¹¹ of output per job and household income across UK regions. Household income is presented both Before Housing Costs (BHC) and After Housing Costs (AHC).

Chart 10: Regional variation in regional productivity and household income



Source: Resolution Foundation

¹⁰ 'Ageing, fast and slow - when place and demography collide' - Resolution Foundation (2019)

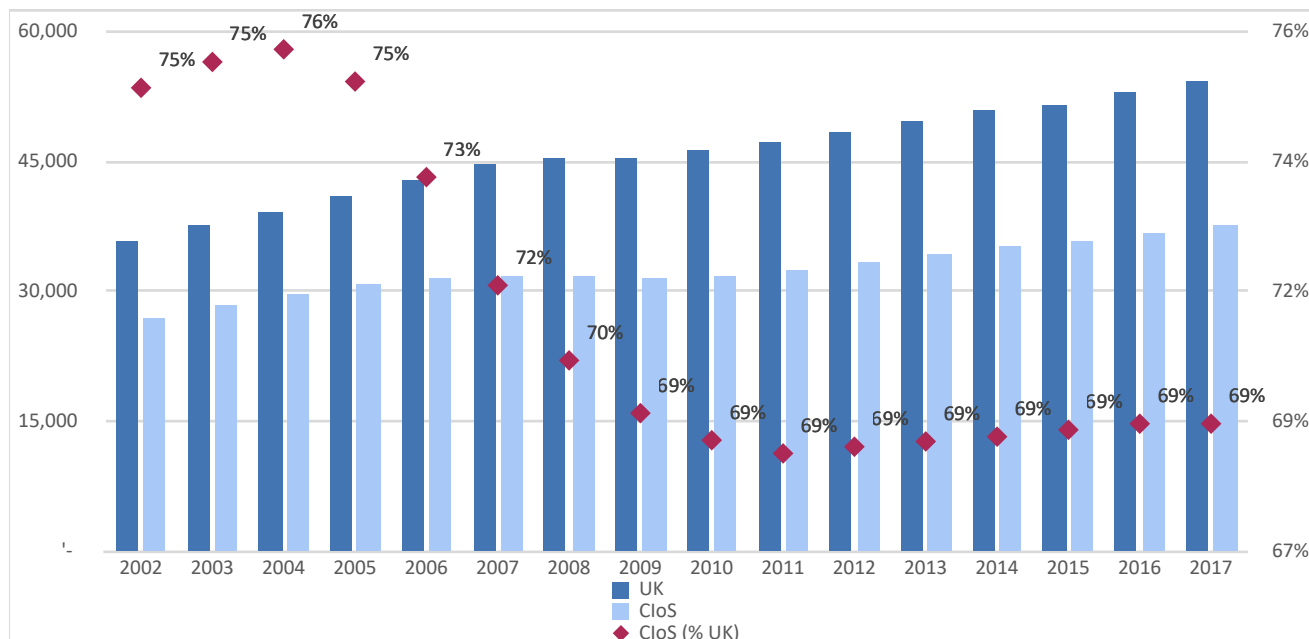
¹¹ The coefficient of variation is the standard deviation of GVA per job and median equivalised household income divided by the mean.

One question that is raised here is whether this suggests that the link between output per job and income is broken or that if we take productivity to include wage costs, that the increase productivity is because wages have increased, but this has been absorbed by increases in cost of living as opposed to a rise in real household income. Some of the regional differentials do also reflect the 'dampening effect' that benefit and pension payments reflect.

Context 3 - low productivity in CloS and the persistent gap

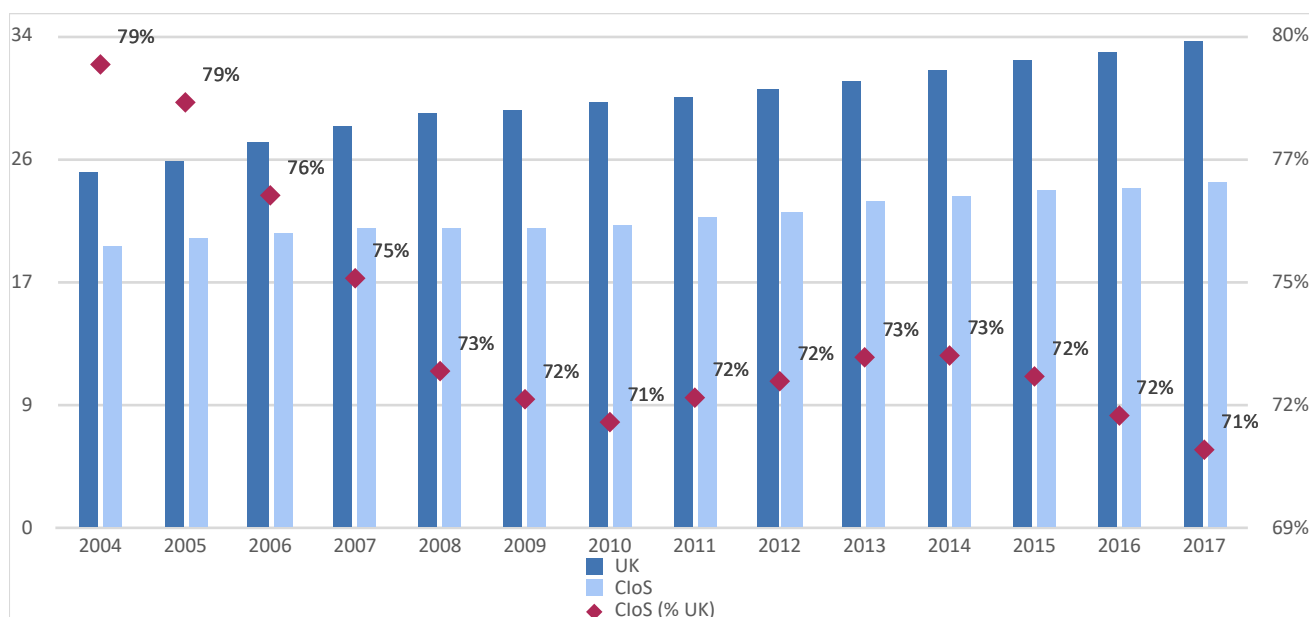
As has been well rehearsed, on most measures of productivity CloS performs relatively less well. This is the factor that underpins this study. Charts 11 and 12 illustrate that **in relative terms, productivity in CloS has fallen against the UK average.**

Chart 11: CloS and UK GVA per job (£ - CloS % UK average)



Source: Sub-regional productivity - ONS

Chart 12: CloS and UK GVA per hour (£ - CloS % UK average)

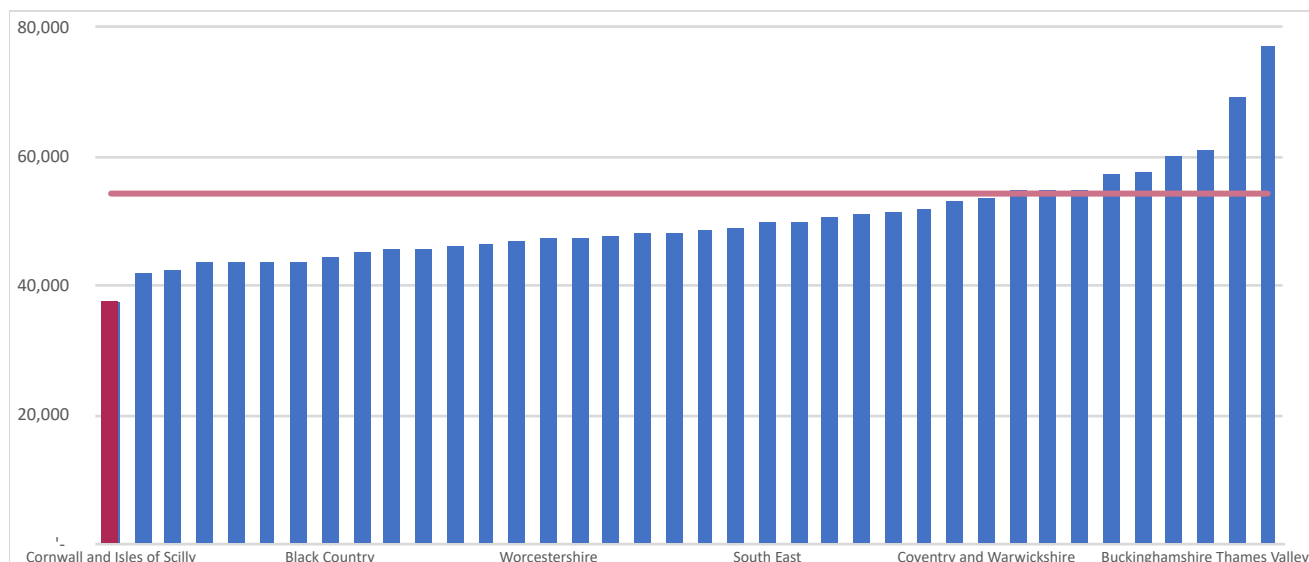


Source: Sub-regional productivity - ONS

In terms of its relative position against other areas (in this case per Local Enterprise Partnership area), Charts 13 and 14 illustrate that based on a 'per filled job' and 'per hour' basis it is measured as having the lowest labour productivity.

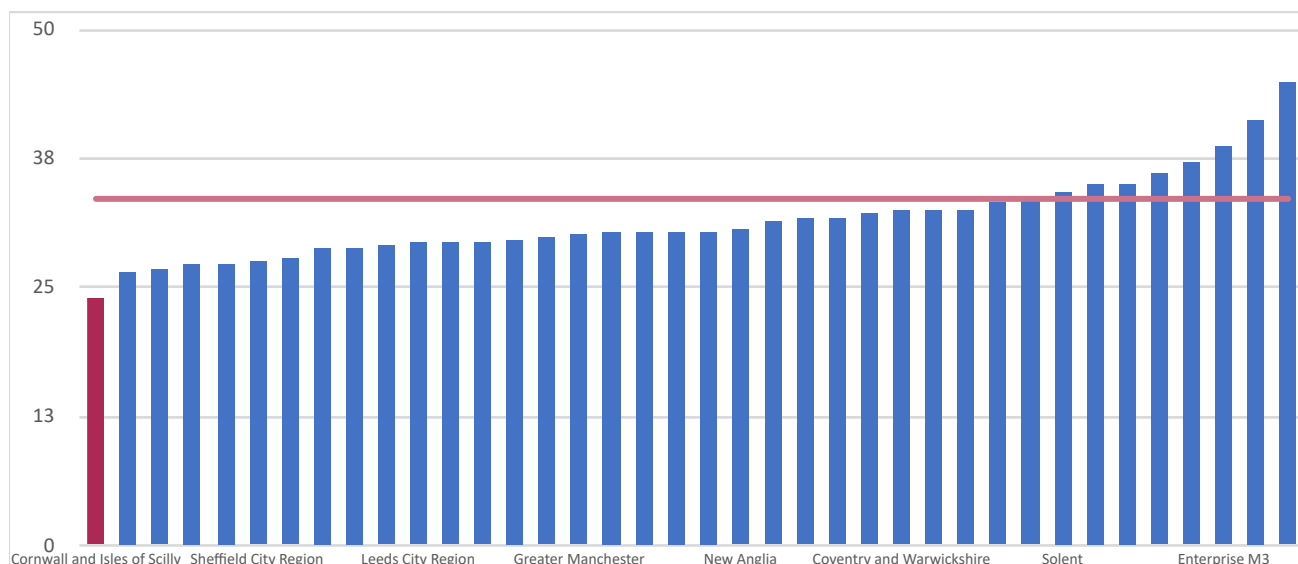
However, what is interesting to note though is that very few LEP areas exceed the UK average on both measures (the orange horizontal line) - illustrating the 'skewed' effect of London and areas within the Greater South East. On the 'per filled' job measure, only 8 LEP areas (out of 38) exceed the UK average, whilst on the 'per hour' basis, 10 LEP areas are above the average.

Chart 13: GVA per filled job (£) - Local Enterprise Partnership areas (2017)



Source: Sub-regional productivity - ONS

Chart 14: GVA per hour (£) - Local Enterprise Partnership areas (2017)



Source: Sub-regional productivity - ONS

It is important to note that CloS's recent apparent decline in relative productivity - as demonstrated in Chart 13 and 14 - has, in part, been influenced by the continuing strength of London and a number of areas in wider South East, which continue to drive the UK average. **Therefore, the 'skewing effect' is becoming stronger - as noted in the previous section that discussed increasing inequality within the UK.**

Looking at the productivity data differently, the latest data from the ONS does indicate that CloS has actually experienced relatively robust growth in labour productivity since 2010. When measured by GVA per hour, whilst the total number of hours grew by 6.5% in the period 2010-2018, CloS experienced a

17.3% growth in real GVA. This is illustrated in Chart 15, which shows that CloS is well above the 45-degree line. This line represents equal GVA growth and hours worked growth, for instance a 5% GVA growth corresponding to a 5% hours growth would result in a 0% change in productivity.

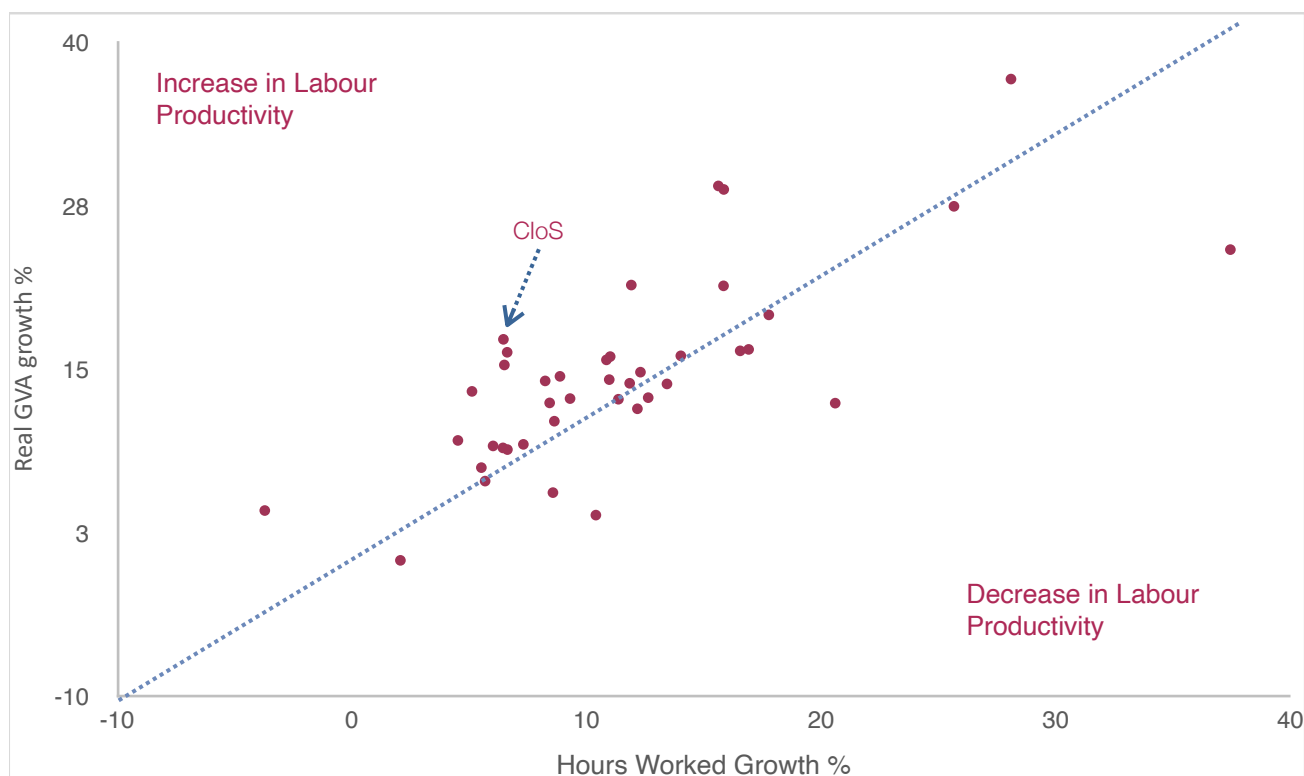
This latest data does provide some cause for optimism, suggesting that the productivity story in CloS over the past decade has not been quite so bleak as some of the previous analysis suggests (including some commentary in this report).

This data perhaps suggests that the focus when discussing CloS productivity should not necessarily be on its relative position – given that London and the South East always ‘run faster’ – but instead focus on its absolute performance. This latest data from the ONS suggests that absolute performance – when measured by GVA per hour – has been satisfactory and not lagging other similar areas.

The decline in its relative position against the UK average is partly an arithmetic outcome, certainly since 2010. Labour productivity has been growing in CloS but given that it is starting from a lower base, it is simply not growing fast enough to narrow the ‘productivity gap’. Indeed, there may even be a ‘perverse’ situation at play in recent years, where it has been amongst one of the better performing areas (when measured by GVA per hour and illustrated by distance above the 45-degree line in Chart 15), but it’s relative position has largely stayed unchanged (as demonstrated in Chart 14).

Looking at Charts 13 and 14, it does suggest that the substantial decline in relative productivity mostly occurred in the period leading up to 2010 and has since stabilised.

Chart 15: Growth in Real GVA compared with total growth in hours worked – NUTS2 (2010-2018)



Source: Sub-regional productivity in the UK

Scatter charts are used throughout this report. A scatter chart (or plot) displays covariation between two variables, and it's useful to understand the degree of association between the two variables. Typically the dots represent a geographic area, with CloS highlighted, and the position of each dot (left/right and up/down) is in relation to each axis.

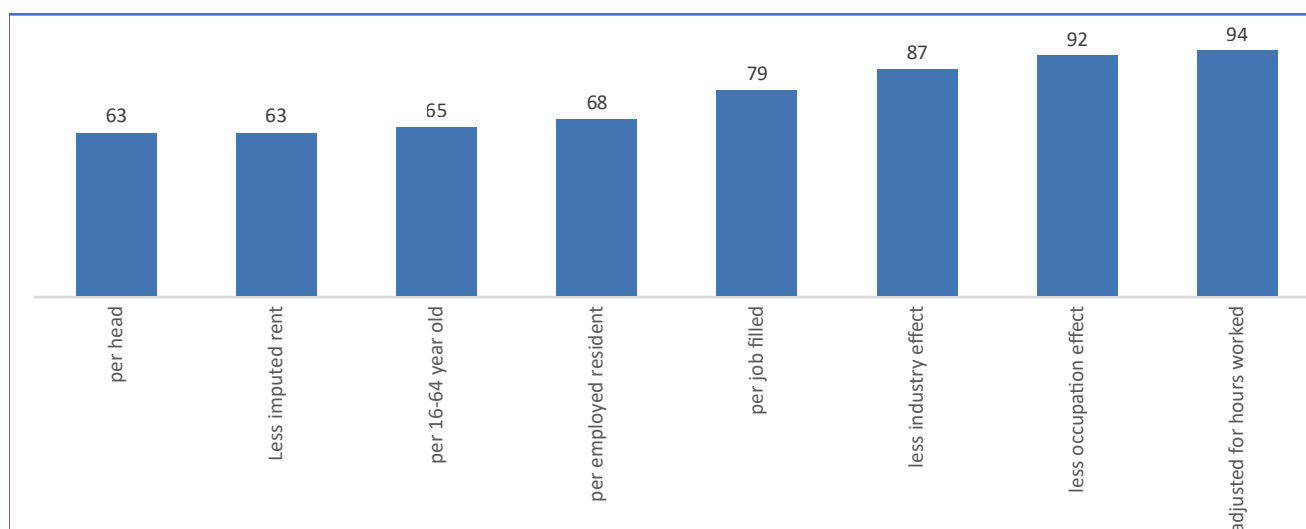
The diagonal line on a scatter chart represents what a positive correlation (or relationship) would look like so the distance away from this line gives a visual indication of the strength of the individual area's relationship.

However, this recent cause for some optimism does not necessarily mean that there are not deep-rooted structural issues which impacts on persistent low productivity. The recent ‘stabilisation’ in performance has still come from a low base.

The structural issues have been illustrated in recent work by Sheffield Hallam University¹². This work disaggregated productivity across UK sub-regions. It adjusts a measure of productivity (in this case GVA per head) for a range of factors including employment rates, commuting, industrial mix and occupational structure. In doing so, its objective is to get to a new measure, which is more reflective of the efficiency of a local economy. This work is interesting because the adjustment for a range of factors essentially narrows the differential between London and many areas in the rest of the UK. For some areas, by adjusting for commuting, lower employment rate etc. it narrows the difference against the UK average. This is illustrated in Chart 16 which shows the West Wales and the Valleys – the only other area in the UK classified as ‘Less Developed’ in the EU Structural Fund programme.

Chart 16 shows that whilst GVA per head in West Wales and the Valleys was 63% of the UK average in 2017, by accounting for ‘adjustment’ of these factors it actually was estimated to have an ‘efficiency factor’ of 93% of UK average – a significant upward adjustment.

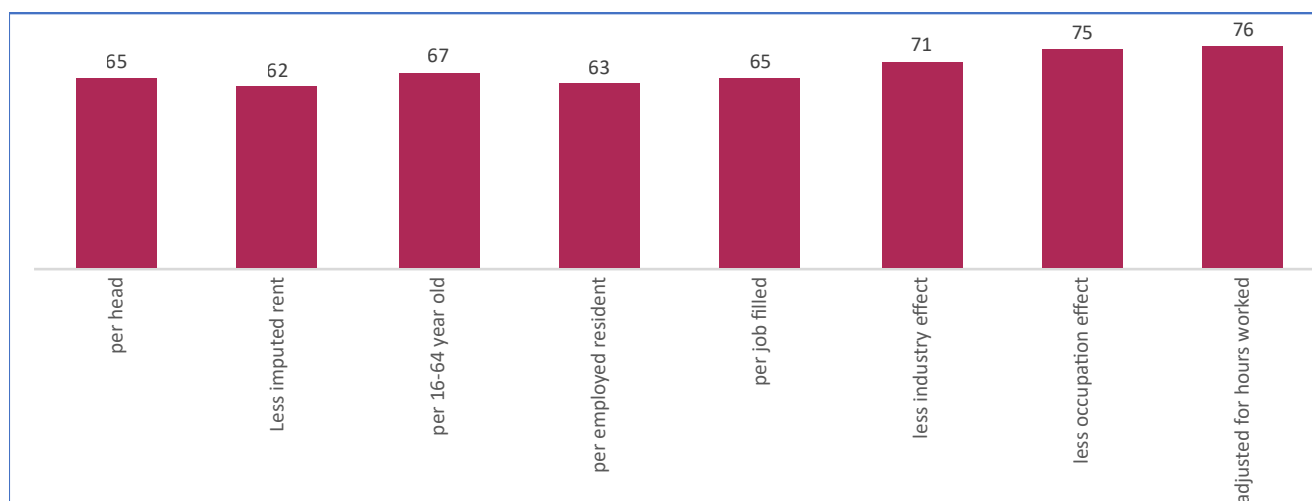
Chart 16: GVA per head (£) and ‘efficiency factor’ (UK=100) – West Wales and the Valleys (2017)



Source: ONS and Sheffield Hallam University

However, in comparison, after adjusting for the same factors, CIOs’ relative position does not narrow as significantly. Measured against the adjusted ‘efficiency factor’ in the Sheffield Hallam work, CIOs still only equates to 76% of the UK average. The differential narrows, but not as significantly when compared to West Wales and the Valleys. This is illustrated in Chart 17.

Chart 17: GVA per head (£) and ‘efficiency factor’ (UK=100) – CIOs (2017)



Source: ONS and Sheffield Hallam University

¹² ‘Local productivity: The real differences across UK cities and regions’ – Sheffield Hallam University (2019)

In many respects, the Sheffield Hallam approach broadly confirms the broad findings of the Cisco/Oxford Economics Productivity Index cited earlier, which also showed that even after adjusting for factors such as industrial mix, CloS remains one of the areas with the lowest productivity.

Chapter conclusions

- Over the last 10-15 years, productivity growth has been muted across much of the developed world. This has been often called the 'productivity puzzle' or 'productivity conundrum' by many commentators. Whilst vast amounts of research and policy focus has been devoted to this economic phenomenon, it is worthwhile noting that this broad context shows no strong sign of improving. The overriding message is that there is no 'magic bullet' to address either the overall muted levels of productivity growth, or the unequal distribution of productivity growth. The impact of Covid-19 will now complicate and/or present further barriers.
- What has been striking in a UK context is the gap between the best performing businesses in productivity terms, and the rest of the business population. This has led to a 'long-tail' of less productive businesses, with only very few businesses significantly above average firm-level productivity. The evidence suggests that the gap between the 'best' and the 'worst' is widening. This profile of the 'long-tail' of less productive businesses is broadly consistent across all UK regions, although slightly less marked in London and the South East.
- The growing disparity between the 'best' and 'worst' businesses is starkly illustrated by the evidence that suggests that labour productivity in the 10% least productive businesses only reached 2002 levels by 2012. That is, the impact of the financial crisis and subsequent recession appears to have impacted the least productive businesses very severely in terms of their productivity performance. This situation may have been more marked in certain areas.
- The widening gap in productivity performance and wider economic growth has led some commentators to comment that UK regions are 'decoupling, dislocating and disconnecting' from each other. Spill over effects, or the cascading of benefits, is not working. This argument can be extended within regions, with a greater polarisation of economic conditions at even very small spatial areas.
- As has been well rehearsed, on most measures of productivity CloS performs relatively less well than compared to the UK average. However, what is interesting to note though is that very few areas exceed the UK average on the typical measures of labour productivity. It is important to note that CloS's recent apparent decline in relative productivity has, in part, been influenced by the continuing strength of London and a number of areas in wider South East, which continue to drive the UK average. Therefore, the 'skewing effect' is becoming stronger, illustrating an inequality within the UK.
- Labour productivity has been growing in CloS but given that it is starting from a lower base, it is simply not growing fast enough to narrow the 'productivity gap'. This suggests that CloS productivity performance should be judged on an absolute – rather than relative – basis.

Clusters Analysis - approach

As part of this work, we also undertook cluster analysis. This effectively means constructing clusters of areas that demonstrate similar characteristics. The first objective of this exercise was to better understand the data that exists around productivity and to identify any common characteristics in those areas that appear to have performed more strongly in productivity terms. The second objective of the work was to develop the approach adopted in the 'Impact of EU Funding' study, producing a further grouping of local authorities against which to benchmark CloS.

A detailed explanation of the process to identify and construct clusters of areas within similar characteristics is contained in Appendix A.

In broad terms we ran a k-means test - using SPSS Statistics - to test the strength of the statistical relationship across local authorities in England, Wales and Scotland. There were two reasons for this clustering exercise

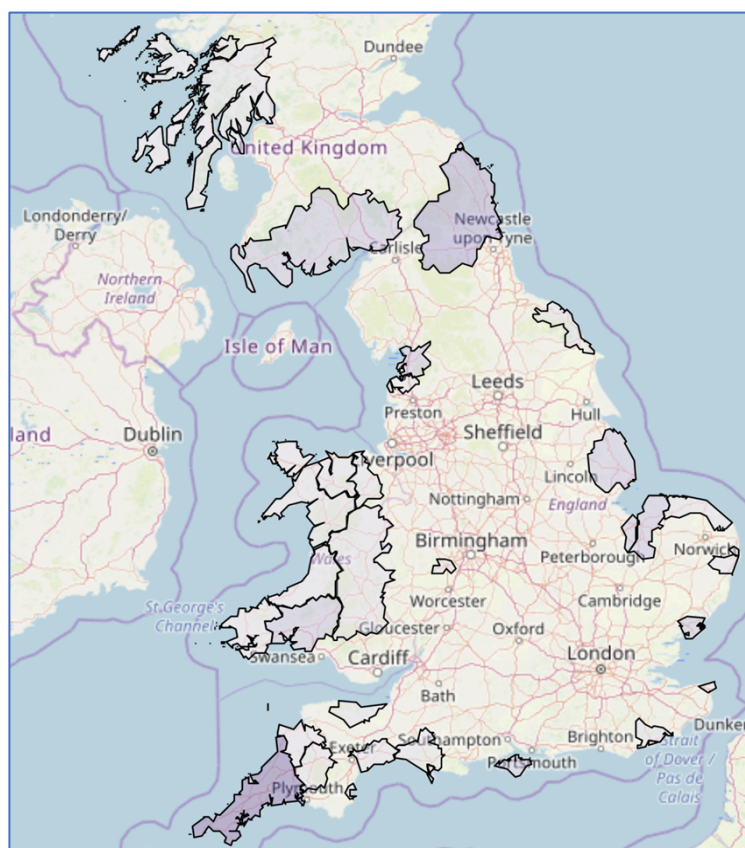
Importantly, we did not use productivity measures as an input to this exercise (e.g. GVA per filled job or GVA per hour). By omitting these variables, it would therefore suggest that if areas are 'clustered' it fits with other factors. The aim was to investigate whether these other factors caused, or were as a result of, a stronger productivity picture. Our intention was to then explore some of these factors.

Overall, we focused on 12 clusters - which we titled as below. The full description of the local authorities is contained in Appendix B. CloS was found to be similar to the other local authority areas within the 'Western Fringes and Coastal' cluster. As the table shows, the number of local authorities in each cluster is certainly not uniform. In particular, areas of London are tightly defined and meant that they formed small clusters of their own, reflecting their own specific characteristics.

Cluster typology
'Central London West Thames' (5)
'North South Urban Belt' (55)
'East London' (4)
'Rural & Islands' (29)
'City Hinterlands' (50)
'Former Industrial' (66)
'Rural Fringe' (54)
'Medium/Large Cities' (19)
'S & NW London' (16)
'Western Fringes and Coastal' (32)
'Historic Cities' (20)
'Southern Heartlands' (38)

Typically, the local authorities within the 'Western Fringes and Coastal' cluster had lower population increase over the past 7-8 years, have a much higher proportion of its population aged 60+, and with that part of society ageing more quickly elsewhere, they tend to have lower wages, and have a lower proportion of its workforce employed in professional occupations. Some of these factors applied more to CloS than others.

Map 3: 'Western Fringes and Coastal' cluster - local authority areas



The analysis has focused on 'testing' a number of themes/issues that arose from the research review. We were keen to understand whether some of those issues were reflected in differences in characteristics between the clusters, with a focus on differences between those clusters which have higher productivity and the clusters that do not i.e. the 'Western Fringes and Coastal' cluster in which CloS resides. We focused on eight factors which emerged from our research review (and which are discussed in the following section):

1. **The role of net in migration of younger people (20-24)** - often referred to as the 'sorting' process, where the young and talented are grouped in more productive areas
2. **Middle-age being adopters of innovation** - related to some evidence that young/middle aged (<50) are more likely to adopt new practices, innovations etc. and are therefore more productive
3. **More aged demographics** - the argument in some of the literature suggesting that the greater the proportion of the population more aged drives some of the sectoral composition i.e. health, care etc. which tend to be less productive
4. **Connectivity** - that time: distance to markets matter
5. **Proportion of micro businesses** - the evidence suggests that productivity amongst micro businesses tends to be lower, during the early stage of lifecycle businesses 'grow at all costs'
6. **Innovation intensity** - innovation is an important factor in productivity and a higher representation of R&D intensive sectors reflects a greater productivity potential
7. **Sectoral composition** - a higher representation in less productive industries suggests that it will affect aggregate productivity in an area
8. **Exporting** - there is a close correlation between exporting and firm-level productivity

Consequently, the outcome of the cluster analysis is used in the following sections where relevant i.e. where the analysis broadly corroborates to the issues we highlight from our research review. It is important to understand that this certainly does not reflect the full extent of the analysis undertaken. Much of the analysis was inconclusive, or weak, on several explanatory factors we investigated. Where relevant, we do highlight some examples of where our analysis does not necessarily confirm/corroborate the wider point being made.

Research Review and Clusters Analysis – results and findings

The review of research relating to the modern characteristic of muted productivity growth, and unequal growth within the UK has been extensive. We have reviewed c70 research and policy papers. In many respects, given the significant policy focus on this issue at an international level, this exercise could have been expanded further. However, this exercise needed to be focused – taking place within the expected timetable and available resources. It is also our view that as we progressed through the exercise, similar consistent issues were beginning to arise. The exercise also needed to reflect a relevance to CloS. It was certainly the case that some sources were more useful/insightful than others for the purposes of this work.

The findings of the research review exercise are set out below. This reflects what we consider to be the main key messages/explanatory factors in explaining muted productivity growth.

Some of the major explanatory factors are outlined and discussed in turn.

Connectivity and Infrastructure

The evidence suggests that places with poor quality transport are disadvantaged in comparison to places with better quality transport. Linking to this evidence suggests that accessibility improvements can lead to places attracting more firms. Access to cities has also been found as influential due to the benefit of high jobs density for knowledge sharing and new learning.

Previous work has established a link between better connectivity and productivity. However, whilst physical connectivity is important, virtual connectivity is also becoming a growing factor. By reducing the physical or virtual distance between firms, businesses are able to better collaborate with suppliers, access bigger and more diverse labour pools, and compete in bigger markets with other firms. Recent work by PwC¹³ investigated the relationship between connectivity and productivity. This was based on:

- A short-distance connectivity 'score' which PwC calculated based on an area's access to the economic mass of other regions¹⁴
- The proportion of fixed broadband connections faster than 30 MB/s using data sourced from Ofcom

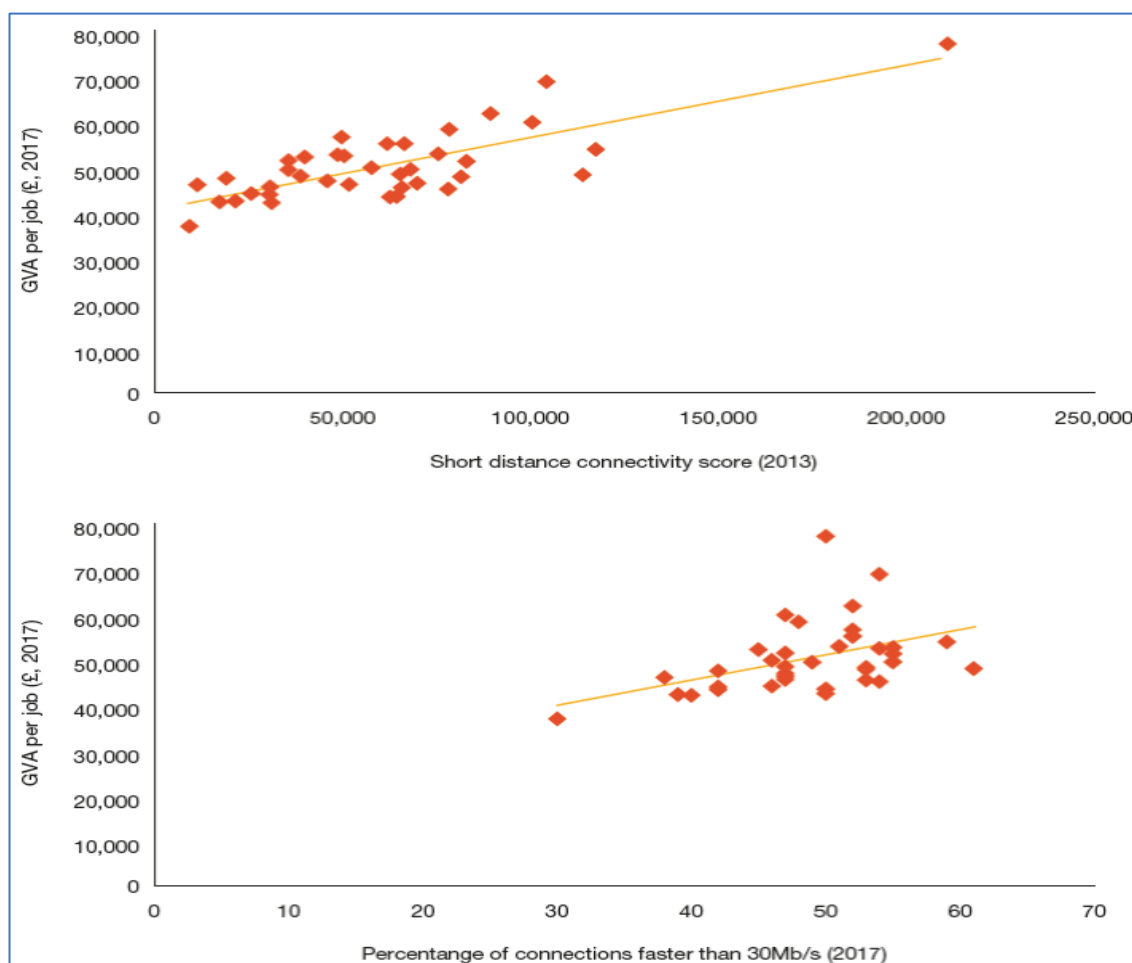
This is illustrated in Chart 18. This seems to illustrate a relatively strong association between connectivity and productivity. The PwC study found that there was a statistically significant association between short-distance physical connectivity and productivity. It concluded that a 1% increase in short distance connectivity boosted productivity by 0.06%. To put this into perspective, **if CloS had similar levels of physical connectivity to the HotSW (assuming a centre point of both areas) its productivity would increase by c10%.**

This confirms discussion elsewhere in this report which focused on time-distance as one of the explanatory variables of lower productivity. There is also an association between digital connectivity and productivity, although it appears less strong based on the PwC analysis.

¹³ 'What drives regional productivity gaps across the UK and how can they be closed?' – UK Economic Outlook – November 2019

¹⁴ This 'score' was developed alongside the London School of Economics

Chart 18 – GVA per job (2017) vs short-distance connectivity (2013) and GVA per job (2017) vs digital connectivity (2017) at the LEP Level



Source: (PwC analysis of ONS data)

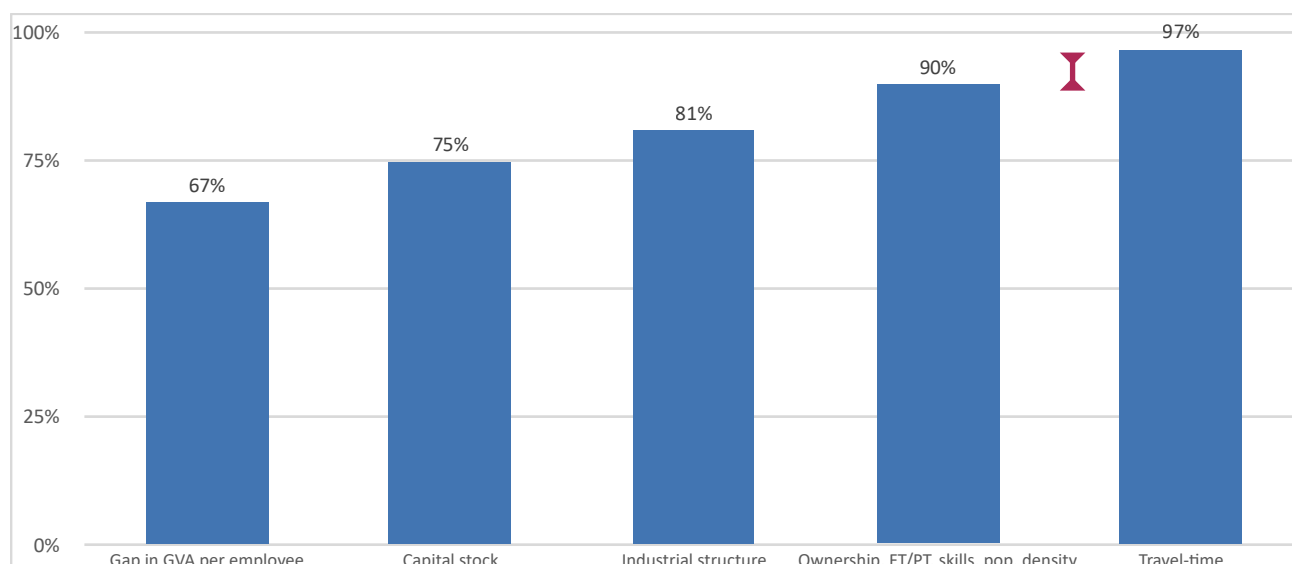
This association has been found in previous research. For example, previous econometric work that looked at explanatory factors in productivity at a South West level¹⁵, also found that time: distance (which effectively acts as a proxy for location/peripherality) is one of the most important factors in lagging productivity.

This econometric work using firm-level data can be viewed in a similar light to the Sheffield Hallam work previously cited – as demonstrated in the below Charts 19 and 20. It shows that when the analysis was undertaken (2006) the South West headline GVA per worker was 67% of the UK average – this was at a regional level. It then outlined the main explanatory variables of that gap – as shown in Chart 19. It shows that 8 percentage points can be explained by lower capital stock in the region, 6 percentage point through its industrial structure etc. This work also evidenced (and these findings were statistically significant) that a significant explanatory was ‘travel-time’. It explained 7 percentage points of the gap between the South West and the UK average.

This work was then extended to look at productivity differentials within the South West – with obvious relevance to CloS. Again, this econometric work showed that travel-time was a statistically significant explanatory factor. This work compared CloS productivity to Bristol rather than the UK average. Chart 20 illustrates that GVA per head in CloS was 72% of the Bristol measure. However, this gap can be explained by a number of factors, not least the relative time-travel to other major urban areas, not least London. The difference between CloS and Bristol was narrowed by 11 percentage points when accounting for the different time-travel between the two areas. Clearly, a significant factor.

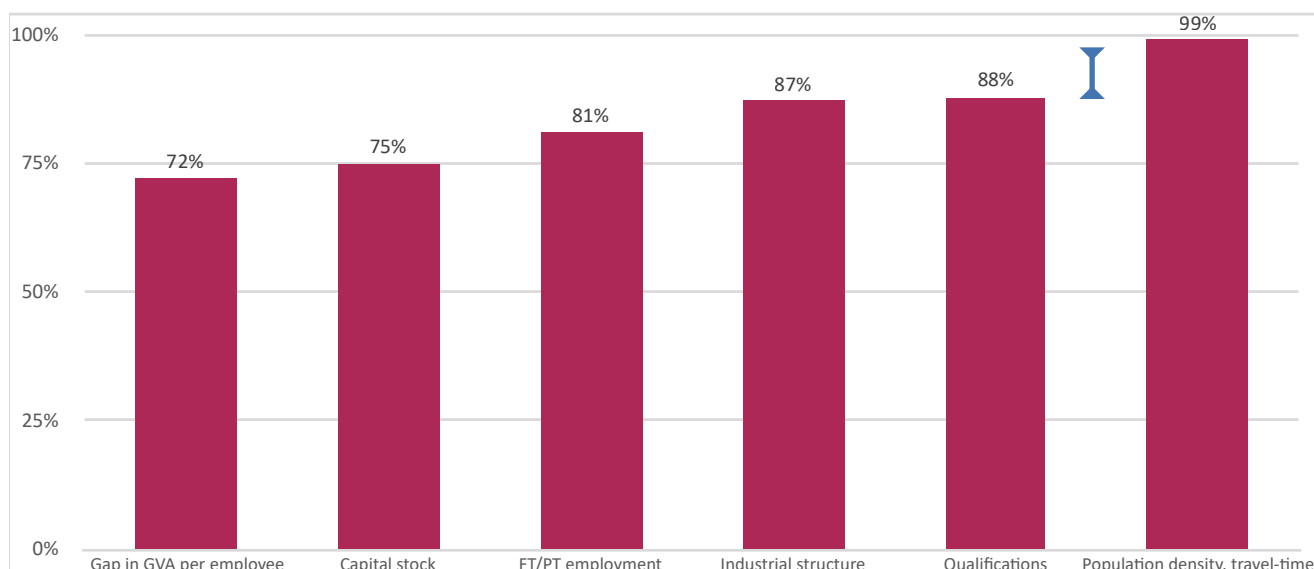
¹⁵ ‘Meeting the productivity challenge’ – University of West of England and University of Bath – 2006

Chart 19: Explanatory factors in firm-level productivity differential (South West vs UK=100) - 2006



Source: Meeting the productivity challenge - UWE and University of Bath

Chart 20: Explanatory factors in firm-level productivity differential (CloS vs Bristol=100) - 2006



Source: Meeting the productivity challenge - UWE and University of Bath

Whilst this research is now relatively old, we still feel it highly relevant. Whilst CloS has invested a great deal in its transport and digital infrastructure, it still remains (and will always remain) a relatively peripheral region. Physical connectivity will always be a barrier when compared to other areas. **The importance of physical connectivity has been evidenced and we feel it still remains one of the most significant explanatory factors in CloS's low relative productivity.**

Skills - utilisation rather than levels?

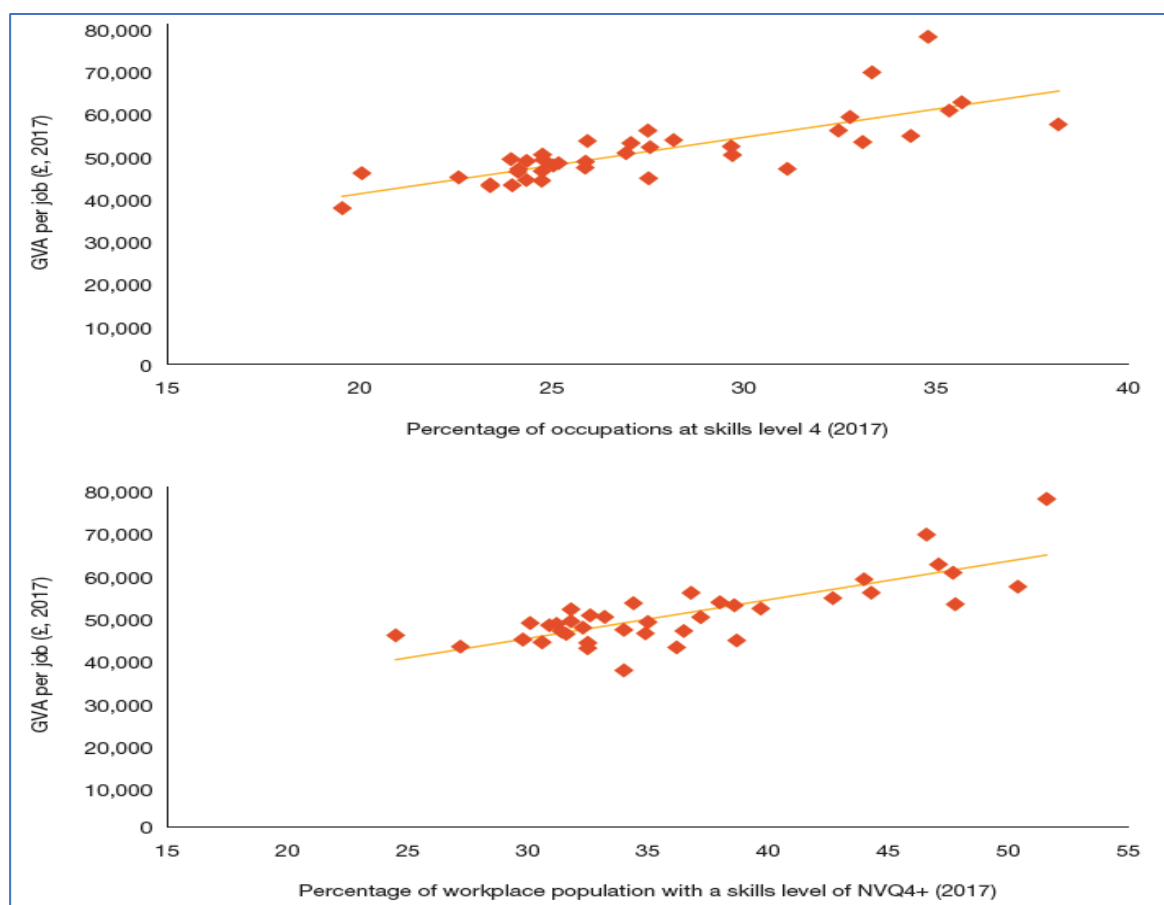
Regional variations in workplace skills and regional variations in demand for skills may partly explain differences in productivity. Higher-skilled workers tend to be more productive and are better able to adapt to the use of new technology, or new production and management techniques that contribute to productivity. Again, recent analysis by PwC looks at the skills question in two different ways, using two measures:

- The proportion of workplace jobs whose skills are equivalent to at least skills level 4 (based on SOC2010)

- The proportion of the residential working-age population whose educational attainment is equivalent to NVQ level 4 or higher

Chart 21 shows a strong positive correlation between skills levels and increased productivity.

Chart 21: GVA per job vs occupational skills levels and GVA per job vs educational qualification at the LEP level (2017)



Source: (PwC analysis of ONS data)

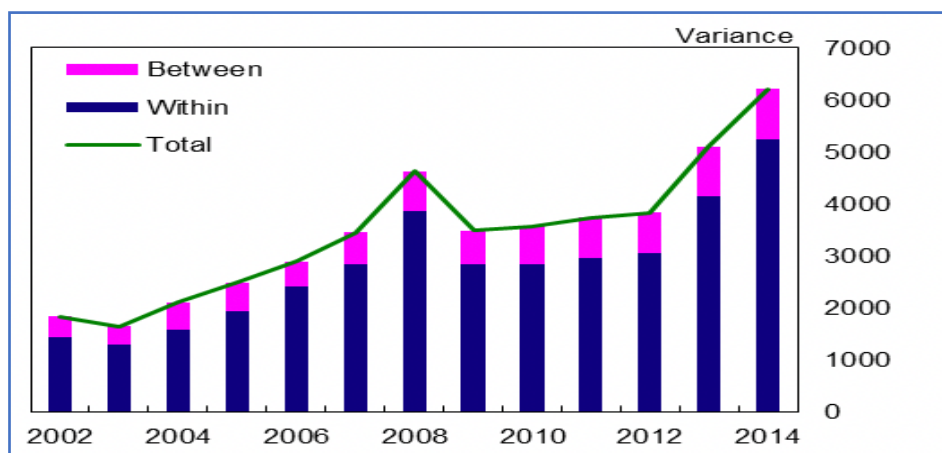
Firm-level differences in productivity:

The dispersion of productivity across sectors is dwarfed by the increase in productivity dispersion within sectors. Chart 22 illustrates this starkly. It shows that the variance of productivity within industries is much greater than the variance across industries. This builds on analysis by the ONS which finds that, with the occasional exceptions, a region's industry structure appears to only play a relatively small role in productivity differences between regions.

Instead, it is the differences between average firms' productivity within industries that has the most significant effect on aggregate regional productivity differences; for example, firms in London have higher median levels of productivity in most industry sectors when compared with other regions and it is these differences that are the larger factor in its higher overall labour productivity.

It is also important to note that the location of head offices also has a 'skewing effect' on how GVA is measured/captured. Profits are often channelled to the region where the head office is, and therefore if an area has a high proportion of head offices – even if the underlying activity took place elsewhere in the UK – it could benefit in GVA terms.

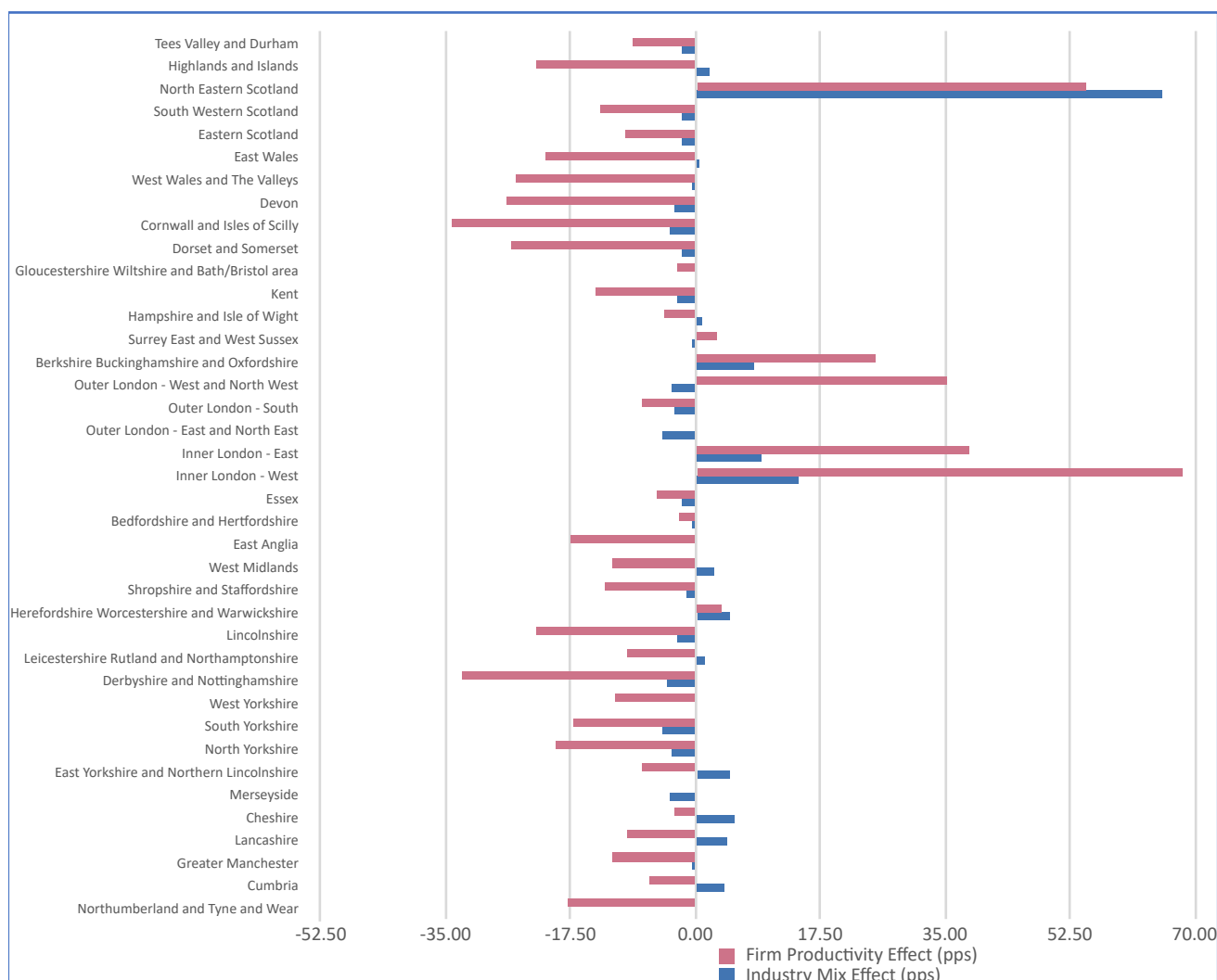
Chart 22: The variance of productivity within and across industries



Source: (ONS Research database and Bank of England calculations)

This decomposition analysis can be expanded by looking at these separate factors at a sub-regional basis. Chart 23 illustrates shows the contribution of average firm productivity in industries and the industry mix to the NUTS2 regions' productivity gap with the national (GB) average. Chart 23 illustrates that **there are only a small number of NUTS2 regions where the industry structure had a more significant impact on aggregate productivity than the firm productivities.**

Chart 23: Firm productivity and industry mix effects on aggregate average productivity, GB NUTS2 subregions (2015)



Source: (ONS)

Focusing specially on CloS, Chart 24 shows that the greatest proportion of the difference in CloS average aggregate productivity when set against the national average can be explained by differences in productivity at the firm-level. The chart illustrates that of the c40% differential between CloS productivity and the national (GB) average, approximately 34 percentage points is due to differences in firm-level productivity, whilst c3.5 percentage points can be explained by its industry mix. **This is one of the key finding of this study, that according to ONS analysis (using micro-data at a firm-level) it is suggested that 90% of the difference between CloS firm-level productivity and the national average can be explained by lower average productivity in its businesses, rather than its industry/sectoral mix.**

Chart 24: Firm productivity and industry mix effects on aggregate average productivity, CloS (2015)

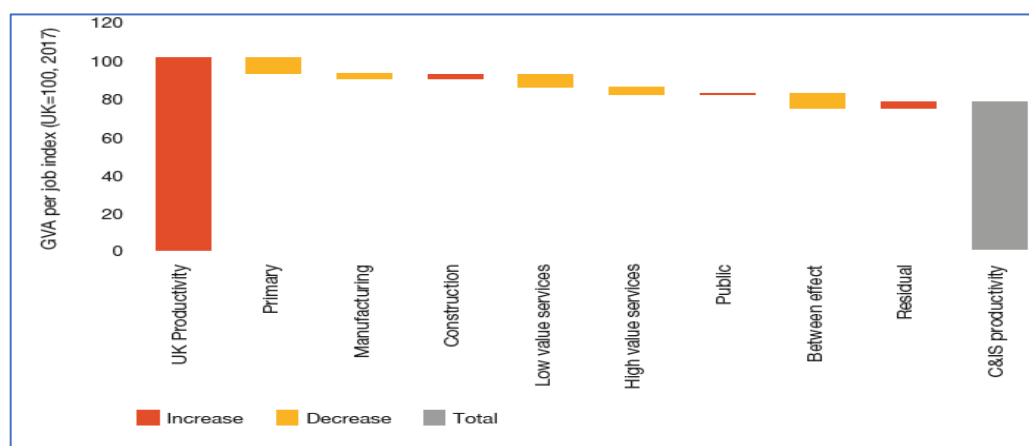


Source: (ONS)

This has been reinforced by further analysis by PwC¹⁶. Chart 25 illustrates a negative contribution to productivity (yellow bar), while an increase indicates a positive contribution to productivity (orange bar). This analysis indicates where the differences in productivity come from: the 'within effect' effect which shows us where productivity differences are as a result of differing productivity levels within a sector and the 'between effect' which gives an indication of the proportion of the productivity differential between two areas that can be attributed to the composition of activity.

Chart 25 shows that most broad sectors – apart from construction and public services – are less productive than the UK average. This reinforces the message in Chart 24. However, the crucial part of the analysis is that the 'within effect' is much more significant than the 'between effect' i.e. the sum of the yellow bars ('within effect') is far larger than the sum of the orange bars ('between effect'). **This reinforces the message that it is largely differentials in firm-level productivity which explains CLOS's persistent low aggregate productivity, rather than sectoral composition per se.**

Chart 25: Decomposition of productivity differences by broad industry sector and productivity – UK vs CloS (2017)¹⁷



This type of Waterfall chart is a useful tool to show the changes from a starting and finishing (sub) total. The colour coding of the smaller bars show whether individual factors have a positive or negative impact in explaining the difference between the start (UK) and finish (Cornwall) values¹.

Source: PwC

¹⁶ 'What drives regional productivity gaps across the UK and how can these be closed?' – UK Economic Outlook - 2019

¹⁷ Primary services include agriculture, mining, energy and utilities; low value services include retail and wholesale, accommodation & food services, transport and storage, administration and business services and arts, entertainment and recreation services; high value services include ICT, financial and insurance services, professional and scientific and other services; public includes public administration, defence, education and health

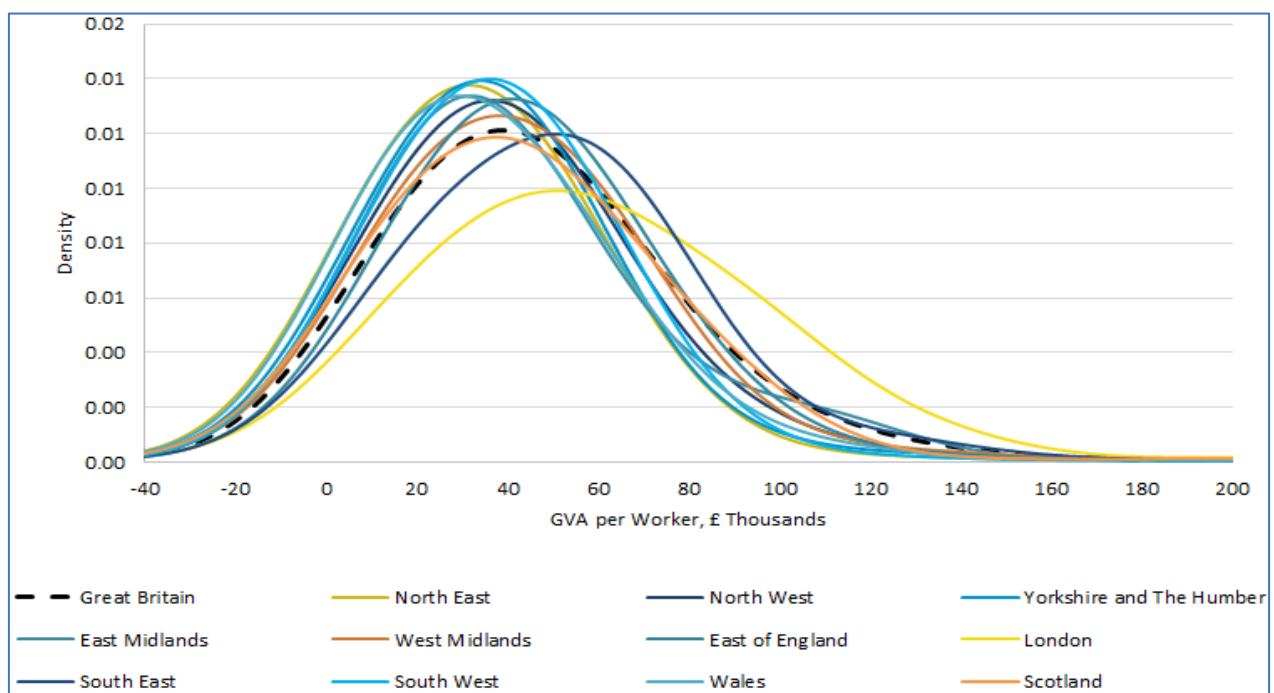
The long tail of less productive businesses:

The empirical evidence suggests that there is a 'long-tail' of businesses with low, slow productivity growth. At the same time, an upper tail of businesses has maintained high and rising levels of productivity. These productivity leaders are pulling ever-further away from the lower tail. Or, put differently, rates of technological diffusion from leaders to laggards have slowed, and perhaps even stalled, recently. This is discussed in more detail elsewhere.

Chart 26 displays the distribution of businesses by their productivity (GVA per worker) for all the regions and countries in Great Britain. In every region there are firms with very low and very high productivity performance. However, the skewed distributions illustrate that there are more firms in all the regions with productivity clustered at lower levels and few with productivity clustered at higher levels. However, in some regions such as London and the South East, the average firms have higher productivity than in other regions and there are more firms at the top tail of the distribution. The clustering of businesses at the lower end of the range is known as the 'long tail'¹⁸.

The notable aspect of what Chart 26 shows that **the profile across most regions are very similar, with the majority of businesses tending to have lower than average productivity in most regions.** The average itself is skewed by relatively few businesses at the top end of the scale. The exception to this broad profile is London and the South East, which has a larger proportion of firms with higher levels of GVA per worker.

Chart 26: Distribution of firm-level productivity (GVA per worker) - GB and regions (2015)



Source: (ONS)

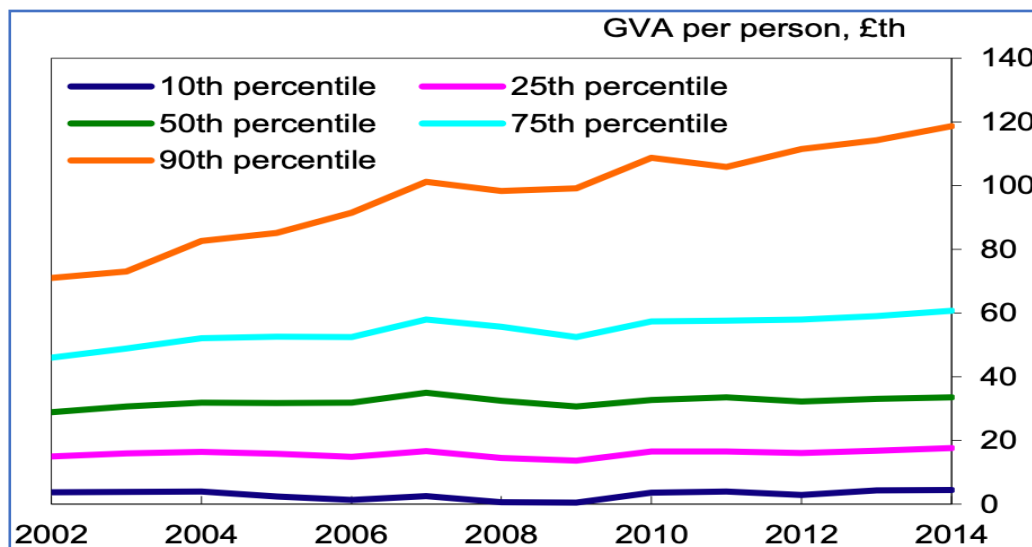
The difference between the most productive businesses and the least productive (the 'long tail') is also growing. Charts 27 and 28 show that the gap between the 90th percentile (the top 10%) and the rest grew considerably over a 10-year period (2002-2014). Chart 27 shows that widening gap in absolute terms (GVA per worker), whilst Chart 28 shows it indexed (2002=100).

Chart 28 also illustrates a striking story with regards to the average productivity of the 10th percentile (the bottom 10%). In fact, its productivity (GVA per worker) only reached 2002 levels beyond 2012. That is, the impact of the financial crisis and subsequent recession appears to have impacted the least productive businesses very severely in terms of their productivity performance. The impact of the financial crisis and subsequent recession can be easily seen in the productivity data. For example, in the pre-crisis period

¹⁸ Some businesses are showing as experiencing negative levels of value added per worker in specific periods when they report larger values of purchases than their total turnover

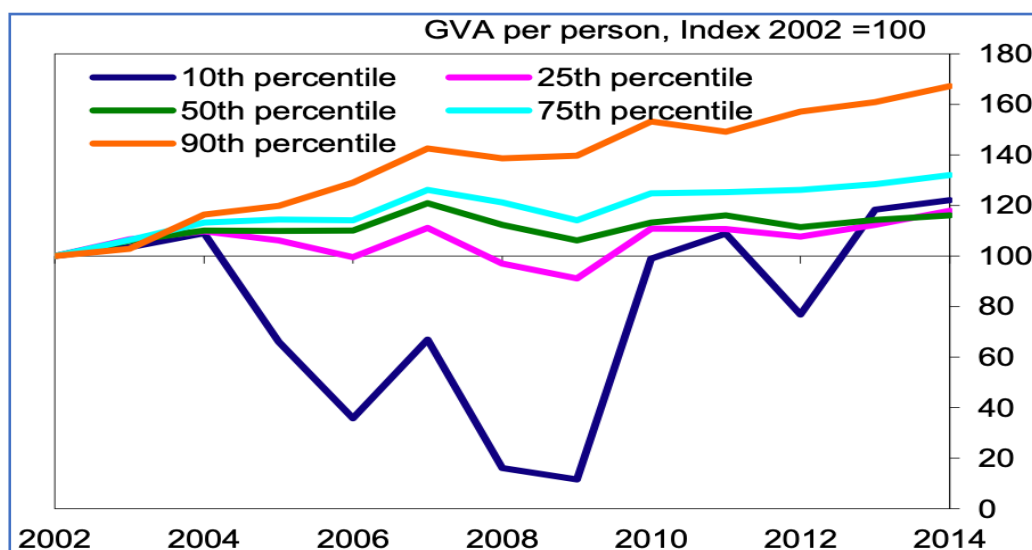
2003-2007 GVA per worker in the UK grew by 4.4% in nominal terms. In CloS it grew nominally by 3.5%. However, in the period 2008-2012 nominal growth fell to 1.6% in the UK and only 0.8% in CloS. In real terms productivity growth was almost negligible, or even negative, during this period.

Chart 27: Firm level productivity distribution over time (GVA per worker - £000)



Source: (ONS Research and Bank of England)

Chart 28: Firm level productivity distribution over time (GVA per worker - £000)



Source: (ONS Research and Bank of England)

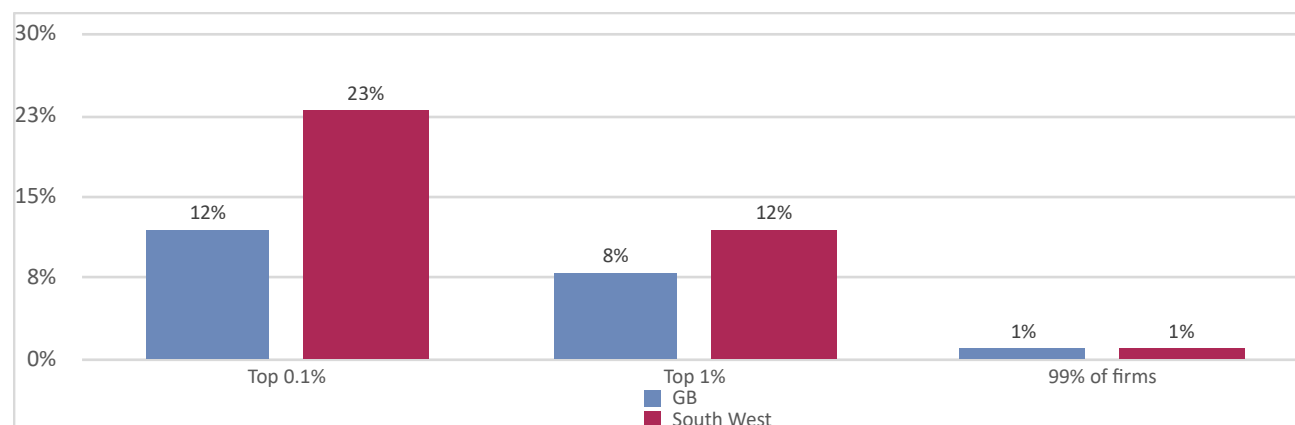
The growth of those most productive businesses can be further elaborated. In fact, contrary to the UK's lagging productivity performance at an aggregate level when compared to international competitors, it does not lack for innovative high-productive businesses. There are more businesses at the top end of the international productivity spectrum than Germany and France. Looking at recent historical performance, the scale of the success for the most productive businesses becomes clearer. On average over the 10 years leading up to the middle of the decade, the 1% most productive businesses experienced average annual productivity growth of 8%. The top 0.1% experienced annual average growth of c12%. As a speech by the Bank of England Chief Economist stated¹⁹, there is no evidence of a lost decade amongst the best performing businesses.

¹⁹ 'The UK's Productivity Problem: Hub no Spokes' – Speech by Andy Haldane – Bank of England (2018)

This picture has also been broken down at a regional level – through combined work by the ONS and Bank of England. This shows that in the South West, the differential between the ‘best’ and the ‘rest’ is even more marked. Firstly, Chart 29 shows that the South West does obviously have businesses which are productive and grown significantly more productive over time – it can be done.

This is shown in Chart 29. It starkly shows that in 99% of the business population in the South West, average annual productivity growth equated to only 1%. In comparison, the most productive 1% of businesses experienced average annual growth of 12% over the same period. **We would expect that a similar outcome would be found in CloS and clearly highlights a key fundamental issue when looked at productivity performance at an aggregate scale. A key conclusion is that much of the underlying problem of persistent low productivity lies within the long tail of businesses.**

Chart 29: Annualised growth in average firm-productivity (2004-2014)

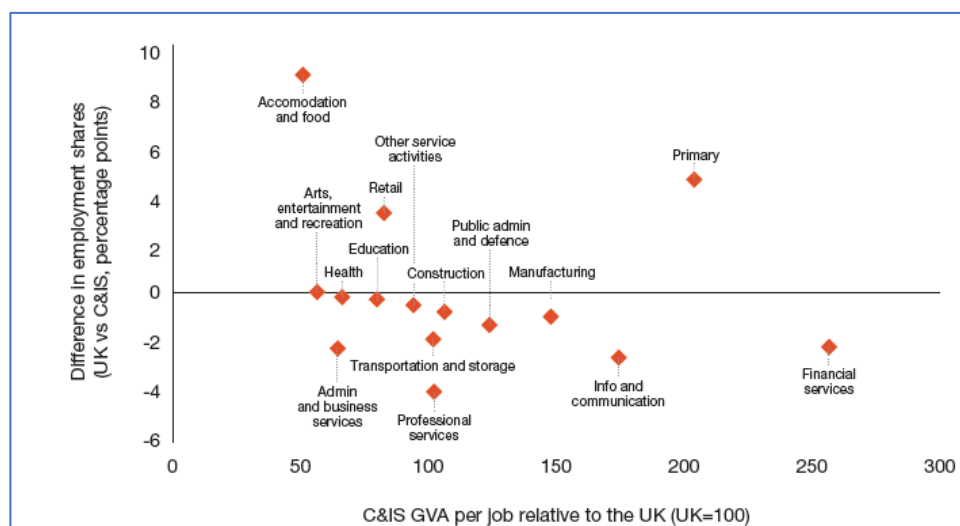


Source: (ONS Research and Bank of England)

But sectoral composition still matters:

However, it is also useful to reiterate the earlier point that sectoral composition still matters. Productivity does differ across sectors (as shown in Chart 25), it's just that productivity levels tend to much more similar within sectors across the UK. However, if an area has a higher proportion of its economic activity in lower productivity sectors, then this will impact of aggregate productivity. This is starkly illustrated in Chart 30 – taken from the PwC report. **This shows that CloS is over-represented in terms of share of employment in lower productivity sectors, such as the agriculture, retail and tourism-driven sectors such as accommodation and food services.** The X-Axis shows productivity in each industry in the UK, relative to the average for the UK economy as a whole. The further to the right the more productive the industry.

Chart 30: Decomposition of employment composition by industry sector and productivity - UK vs CloS (2017)



Source: PwC

Looking at the productivity data by broad industry groups – albeit at regional level – also highlights some further interesting insights. ONS analysis grouped businesses into four typologies:

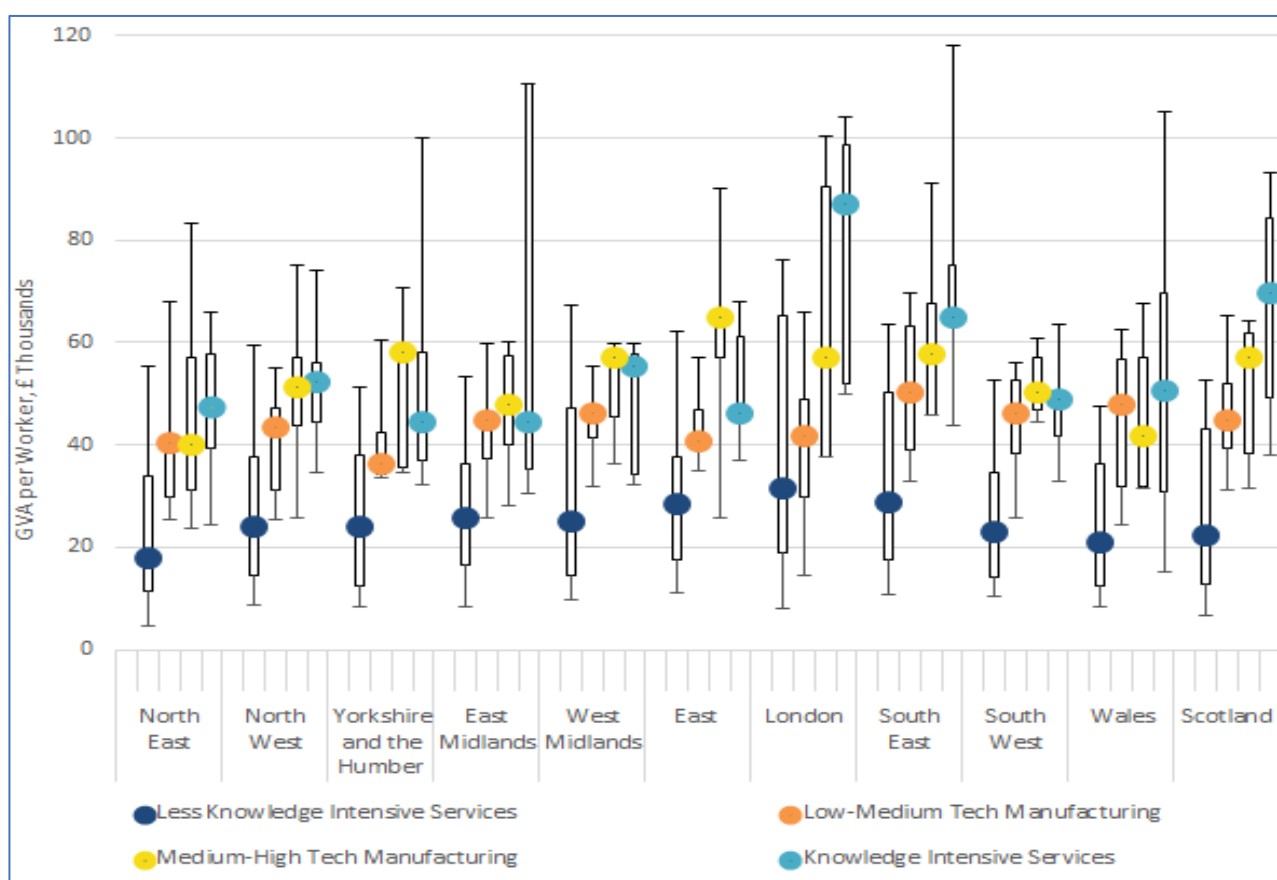
- Less knowledge intensive Services
- Knowledge intensive Services
- Low-Medium Tech Manufacturing
- Medium-High Tech Manufacturing

Chart 31 shows the average (median) level of GVA per worker (the dot) and the inter-quartile range (the bars) and the 10th (the bottom 10%) and 90th (the top 10%) deciles (the lines). Chart 31 illustrates that businesses in manufacturing sectors and knowledge-intensive services sectors have generally higher productivity levels than firms in less-knowledge intensive services sectors throughout all regions. In London, firms generally have higher GVA per worker in all the services sectors compared with their regional counterparts.

A quick scan of the average productivity in each broad industry group (the dots on the chart) shows that across regions they are broadly similar, certainly they are within a fairly narrow range. The exception being the knowledge-intensive sector within London. However, it is the difference in the distribution for the industries (as represented by the length of the lines in the chart) which is the biggest factor. These wide distributions represent the difference in firm-level productivity within sectors/industries.

Again, this emphasises the earlier point made regarding differences in firm-level productivity being the primary driver in regional differences, rather than sector/industry composition.

Chart 31: Distribution of business productivity (GVA per worker) by broad industry groups - GB and regions - 2015



Source: (ONS)

Box and Whisker charts (see also Charts 33, 35 and 38) allow for a more detailed investigation of the distribution of values. The box shows the interquartile range that is the range between quartile 1 and quartile 3 - 50% of the data points. The lines extending from the boxes (are the whiskers) indicating variability outside the upper and lower quartiles. Outliers may be plotted as individual points. The highlighted dot (or in later charts e.g. Chart 33 the highlighted rectangle) typically represents the median value of all data points'.

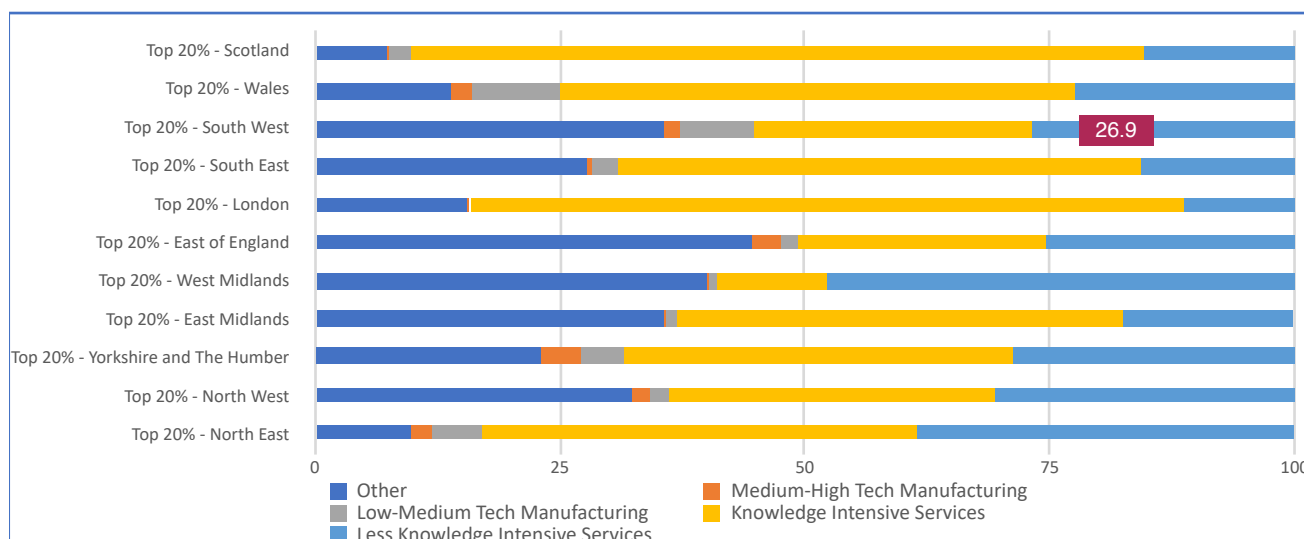
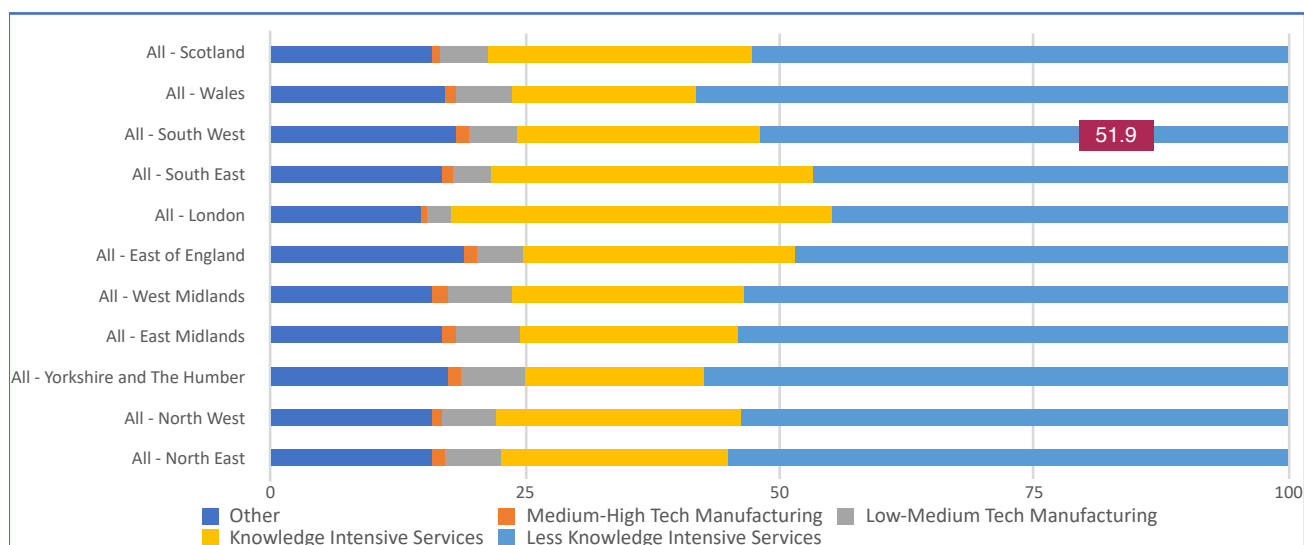
This analysis is then extended to understand what proportion of these broad industry groups are at the top and bottom of the productivity distribution. Chart 32 shows that businesses in the top 20% and bottom 20% of the productivity distribution can be found in a broad range of industry sectors. However, businesses in the less knowledge-intensive services accounted for the majority of firms in the bottom 20%. The top end was generally dominated by local plants in the knowledge-intensive services, manufacturing and non-manufacturing production and construction sectors (shown as other here).

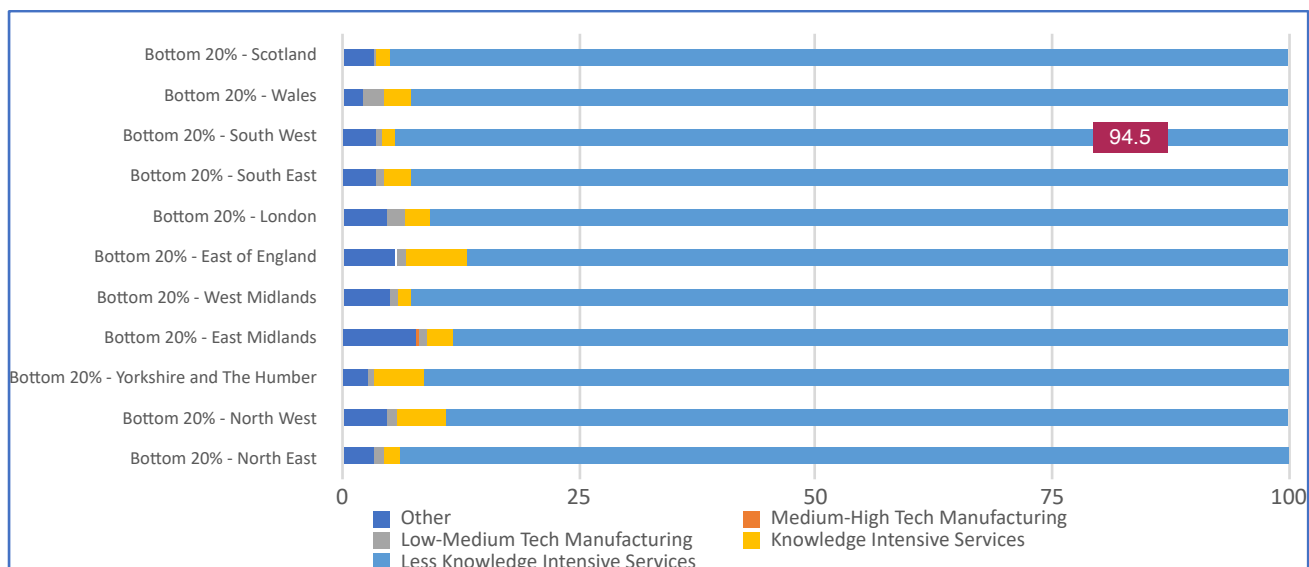
If we focus on the South West, it highlights some interesting observations. It shows that as a proportion of total business stock, those businesses defined as 'Less knowledge intensive services' constitute c52% of the total business stock. However, when looking at the breakdown of businesses in the top 20% of most productive businesses, it represented only c30% of those businesses. Conversely – and most strikingly – within the bottom 20% of productive businesses, it constituted c95% of those lower performing businesses. This is an outcome that appears reasonably similar through most regions. The low proportion of knowledge intensive businesses in the top 20% most productive firms in the SW is also interesting.

The conclusion that can be drawn from these set of charts is that productivity at the lower end of the firm distribution – both nationally and within the South West – tends to be dominated by less knowledge intensive service sector businesses.

Again, when looking at possible interventions to improve aggregate productivity in CloS, this could provide a possible focus.

Chart 32: Industry composition of businesses in the population and in the top 20% and bottom 20% of the productivity distribution – GB regions - 2015



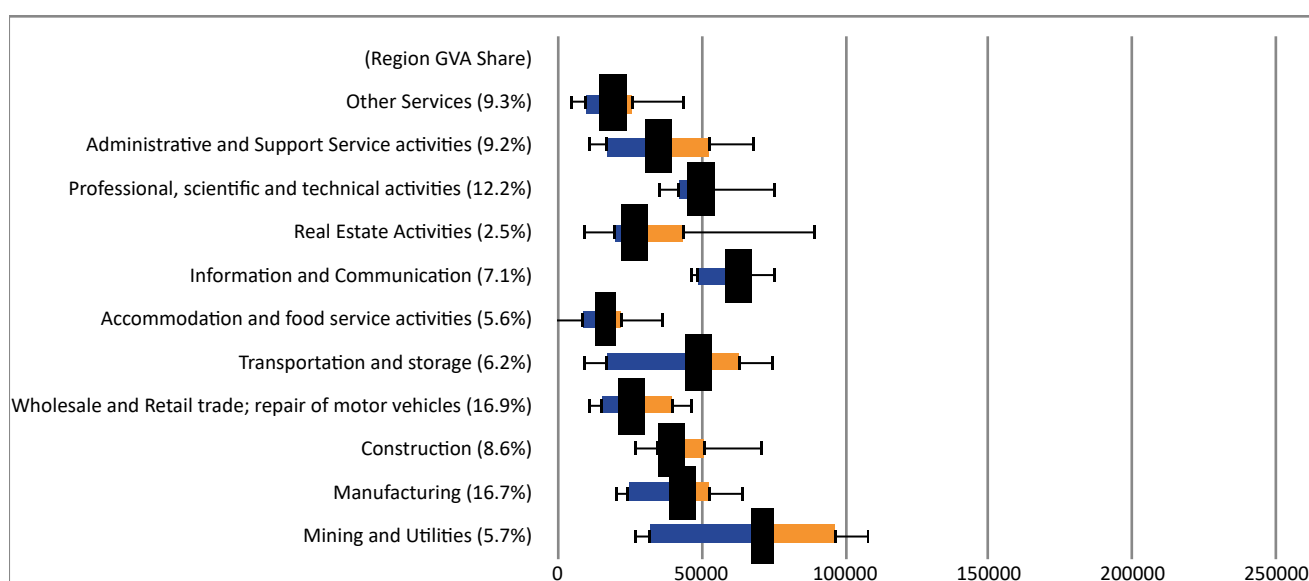


Source: (ONS)

Similar data at a regional level can be highlighted²⁰, this time relating to a tighter definition of industries. Chart 33 shows the range of firm level productivity for broad industry groups within the South West. It shows that form some industries such as mining and utilities and transportation and storage, there is a wide distribution of firm productivity. In other industries, the distribution is much narrower. The average productivity (GVA per worker) is higher in industries such as Information and Communication. It is much lower in industries such as accommodation and food service activities, and to a lesser extent retail. Chart 33 illustrates that even the top 10% most productive businesses in accommodation and food services, have lower productivity levels than the average in most of other broad industry groups.

Given its association and history with those services closely linked to tourism, the lower productivity performance in accommodation and food services suggests that this would have an impact on overall CloS aggregate productivity. Whilst the tourism sector undoubtedly plays a fundamental part in the livelihood of many residents, this data (although at a South West level) suggests that it does play a role in explaining overall weaker CloS productivity performance. Some would argue that it negatively impacts on its overall performance, particularly given the size of the tourism sector within CloS.

Chart 33: Distribution of business productivity (GVA per worker - £000) by narrow industry groups - SW

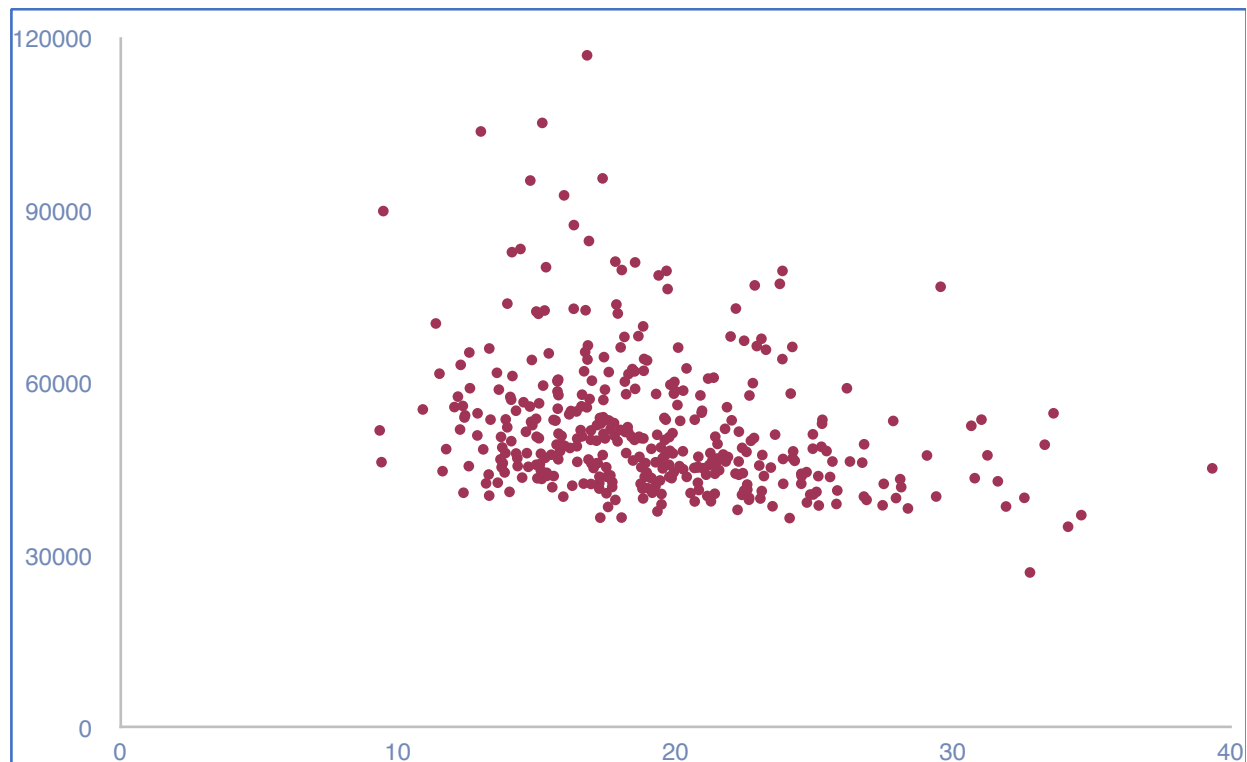


Source: (ONS)

²⁰ 'Regional firm-level productivity for the non-financial business economy' – ONS - 2017

We have also looked at this issue through our data analysis. In this we focused on the proportion of total jobs that are employed in the 10 sectors with the lowest productivity (GVA per hour). We wanted to test whether a higher concentration of activity within these less productive sectors can be associated with productivity at an aggregated level. Chart 34 shows this across all local authorities and demonstrates that there is no close relationship. The x-axis relates to the proportion of total employment in those 10 less productive sectors. CloS is marked as a black dot.

Chart 34: Proportion (%) of employment in 10 least productive sectors vs GVA per filled job



Source: Ash Futures analysis

Firm characteristics

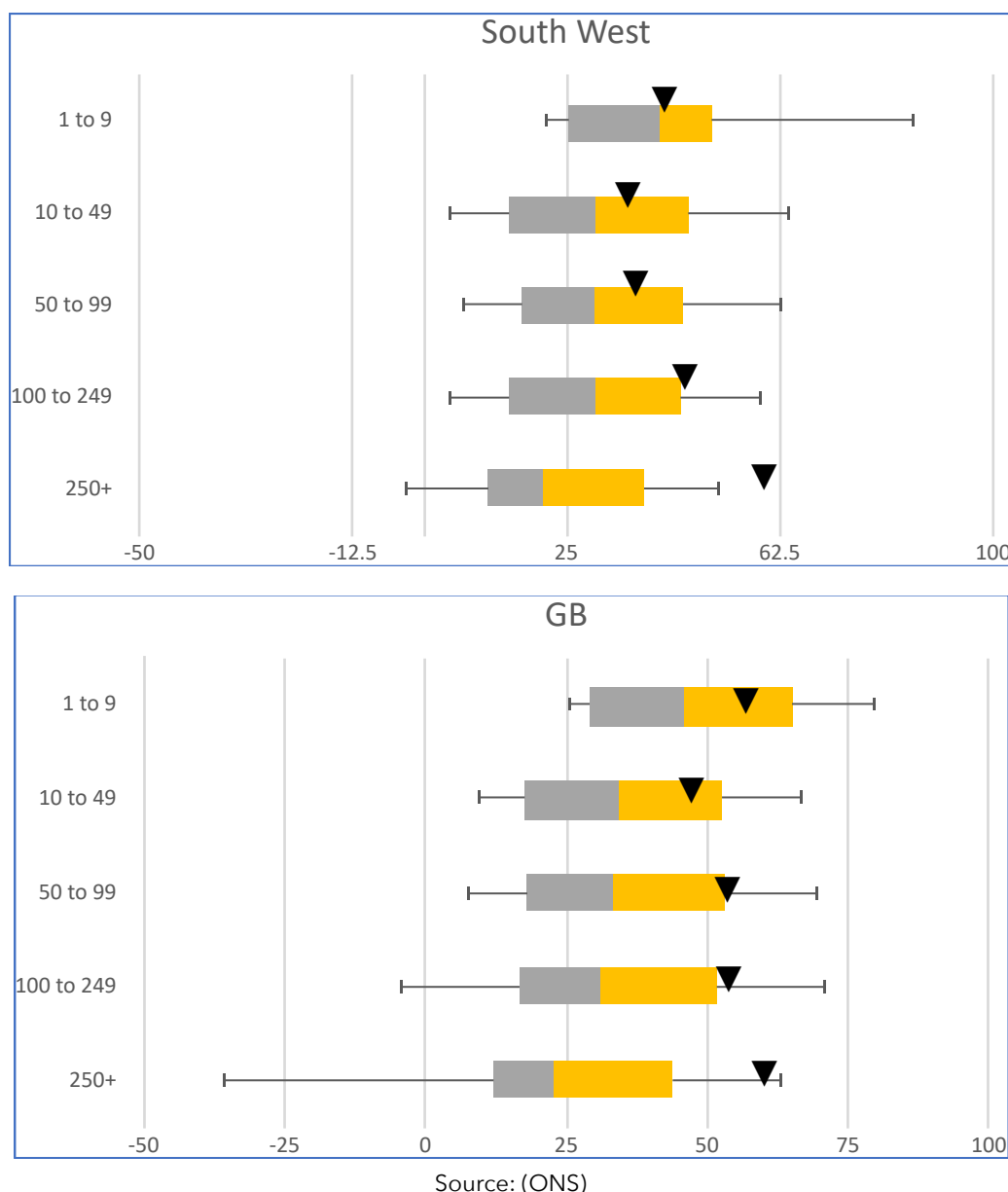
The next stage is to explore the relationship between firm characteristics and productivity. We focus on five factors:

- Business size
- Business age
- Exporting
- Foreign or domestic owned
- Management quality

Does business size matter?

In terms of the first factor, business size Chart 35 shows the distribution of local plant productivity (GVA per worker) by firm size. Chart 35 shows the findings for GB and the South West. It shows that larger firms tend to have higher productivity levels than smaller firms. However, this is based on the mean average and is affected by the 'long tail' at the top of the productivity distribution i.e. influenced by the productivity of few larger businesses. The median average actually shows that typical average productivity is greater in firms of 1 to 9 employees, falling slightly thereafter. **By focusing on the median average, it tends to indicate that firm size is not necessarily a strong determinant of firm-level productivity.**

Chart 35: Distribution of local plant productivity (GVA per worker - £000) by firm size - GB and SW - 2015

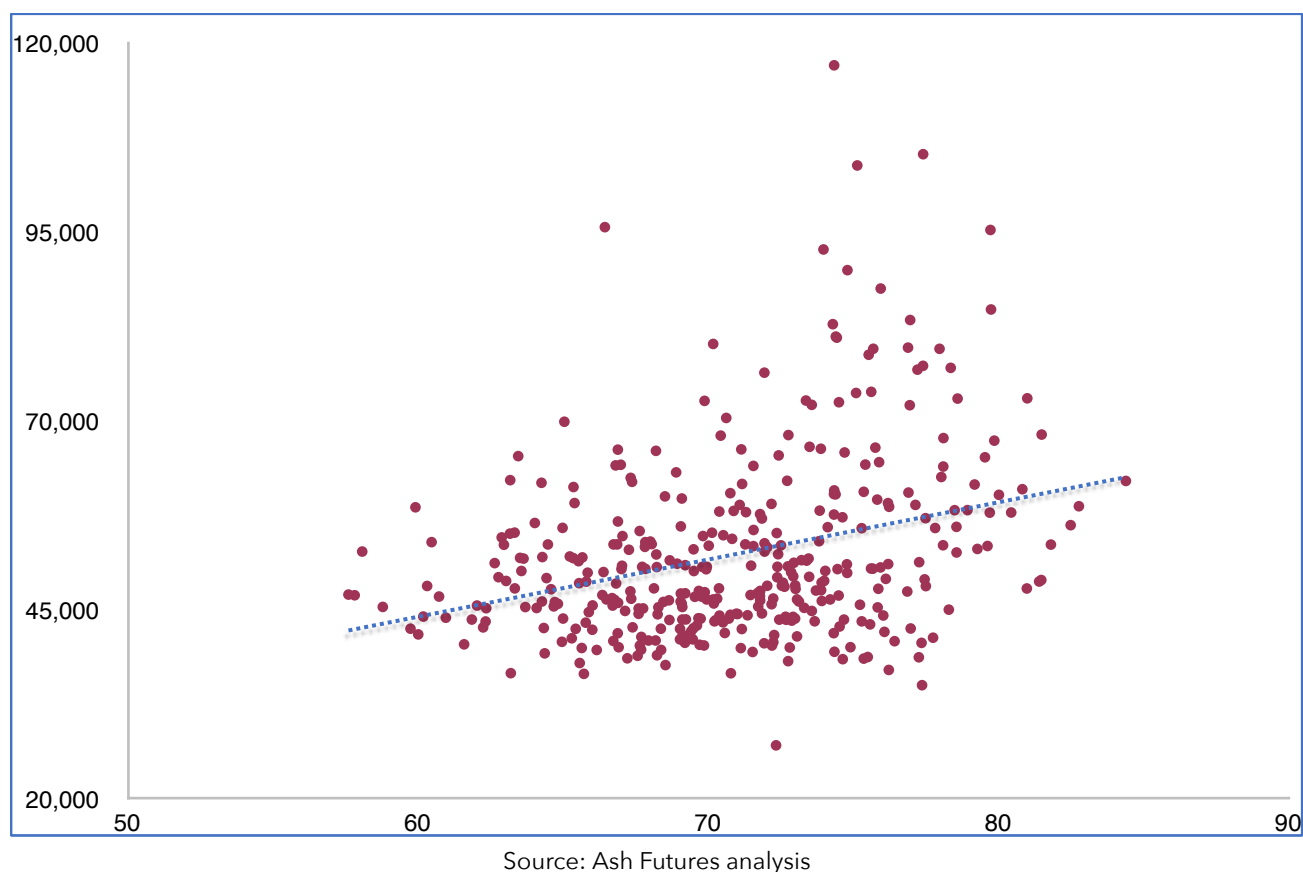


This was one factor that was pursued in our cluster analysis, focusing on whether a higher proportion of micro enterprises acts as a constraint on productivity. Some of the research that we have reviewed suggests that productivity in micro businesses tend to be lower, given that the focus tends to be revenue growth rather than efficiency.

Firstly, the data illustrates that CloS does not necessarily have as significant concentration of micro businesses as is often perceived. For example, some of the urban clusters in our analysis ('East London' and 'S & NW London') have a higher proportion of micro businesses (as total business stock) but are also areas which experience high productivity. The picture is slightly different on a workforce basis; CloS does have a slightly higher proportion of its workforce employed by micro businesses, with fewer employed in large businesses.

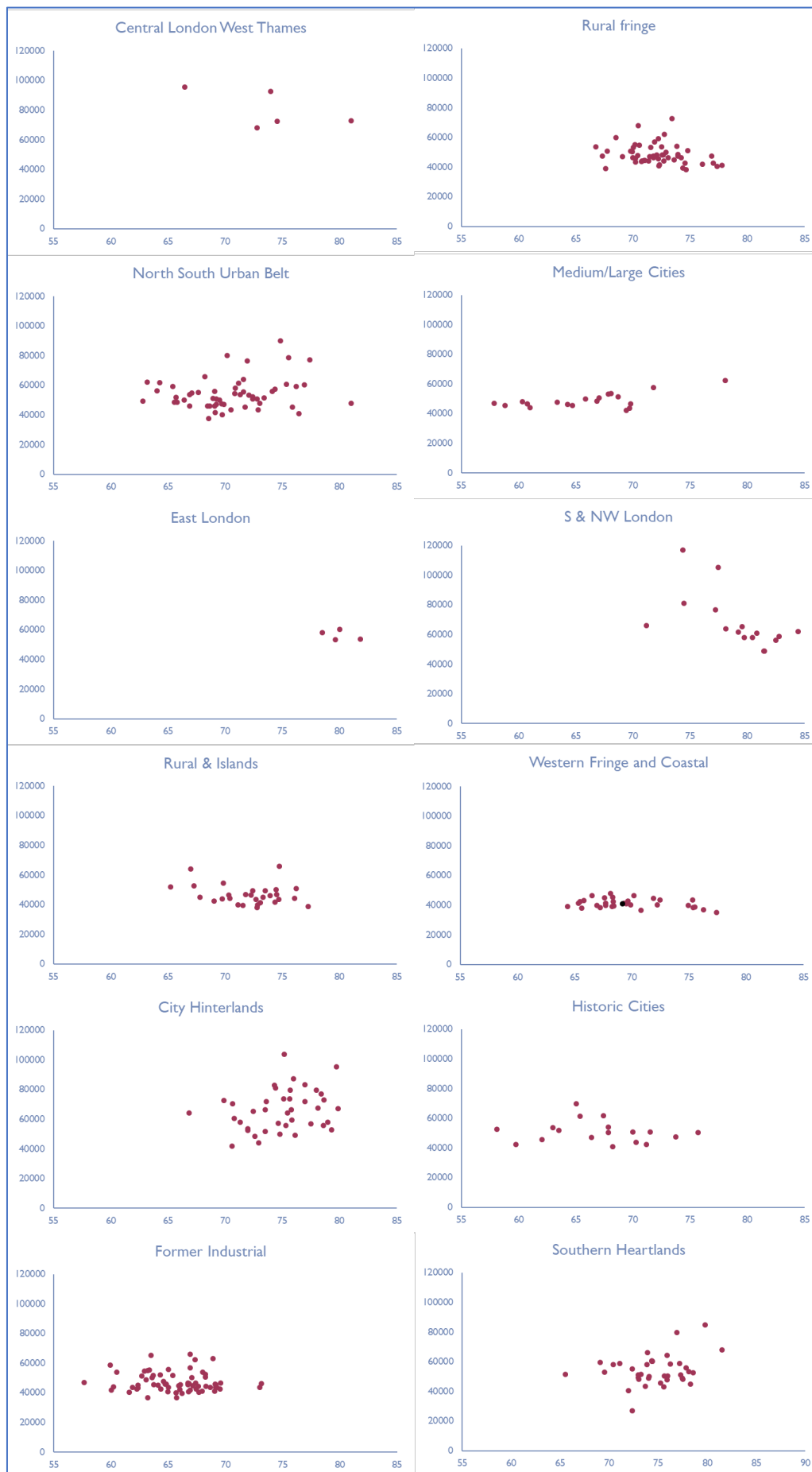
In fact, our separate analysis doesn't find any significant correlation between a high proportion of micro businesses and lower productivity. Indeed, if anything the relationship seems to be the other way - as shown in Chart 36. Each of the red dots represents a local authority area.

Chart 36: % of micro businesses (0-4 employees - 2019) and GVA per filled job (2018)



This is then looked at through a cluster lens. This broadly confirms the above – that, in fact, there seems to be a stronger link between higher levels of micro businesses and higher levels of productivity.

Chart 37: Cluster analysis - % of micro businesses (0-4 employees) and GVA per filled job

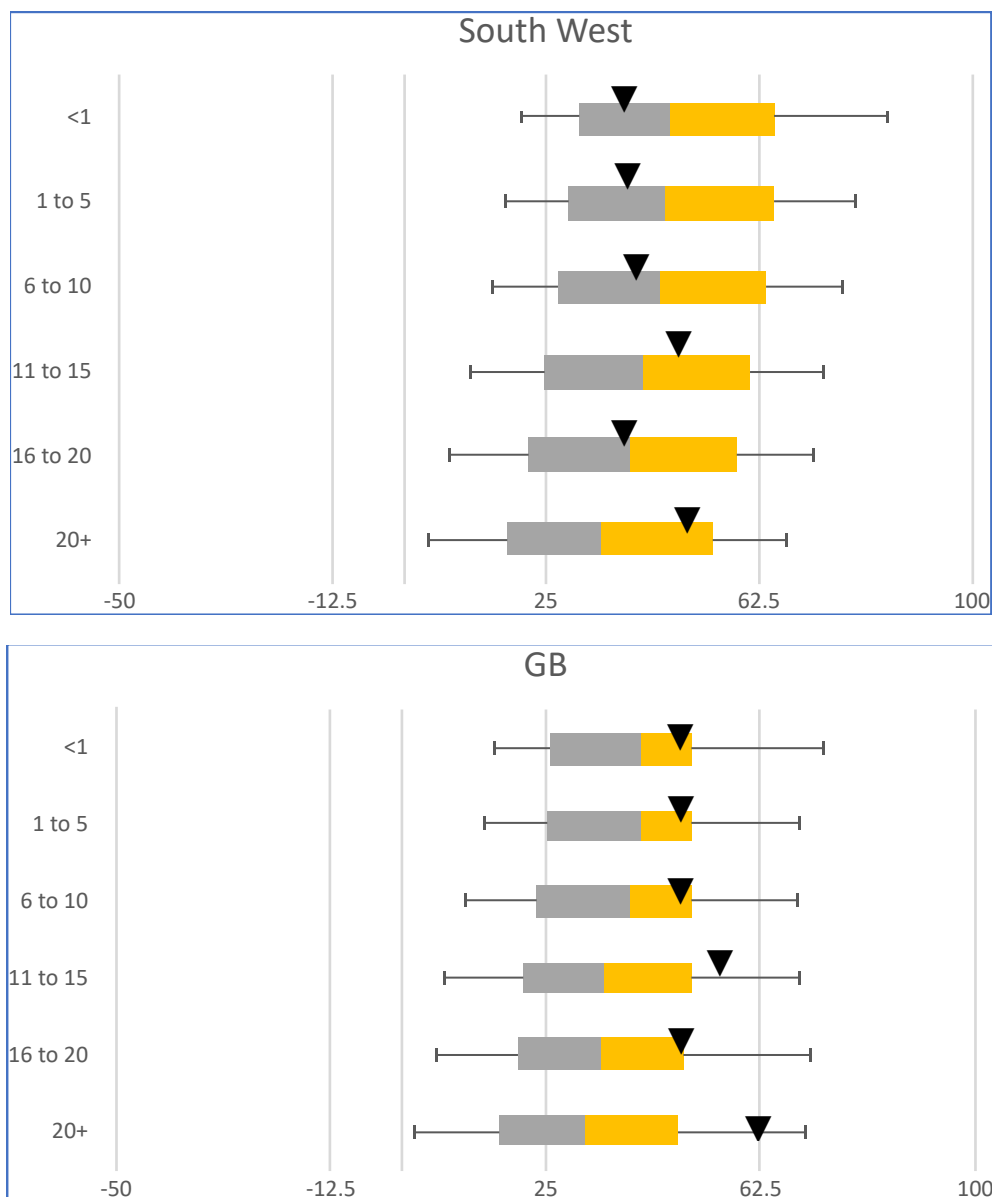


Source: Ash Futures analysis

Business age

Chart 38 shows that median GVA per worker in local plants which are associated with younger enterprises is generally higher than in local plants which are associated with older firms. However, the long top tail of the distributions of the local plants which are attached to enterprises aged 21 years or older makes the (mean) average GVA per worker in this group the highest among the age groups analysed. Again, this is an issue of range of businesses across the productivity distribution.

Chart 38: Distribution of local plant productivity (GVA per worker - £000) by firm age - GB and SW - 2015

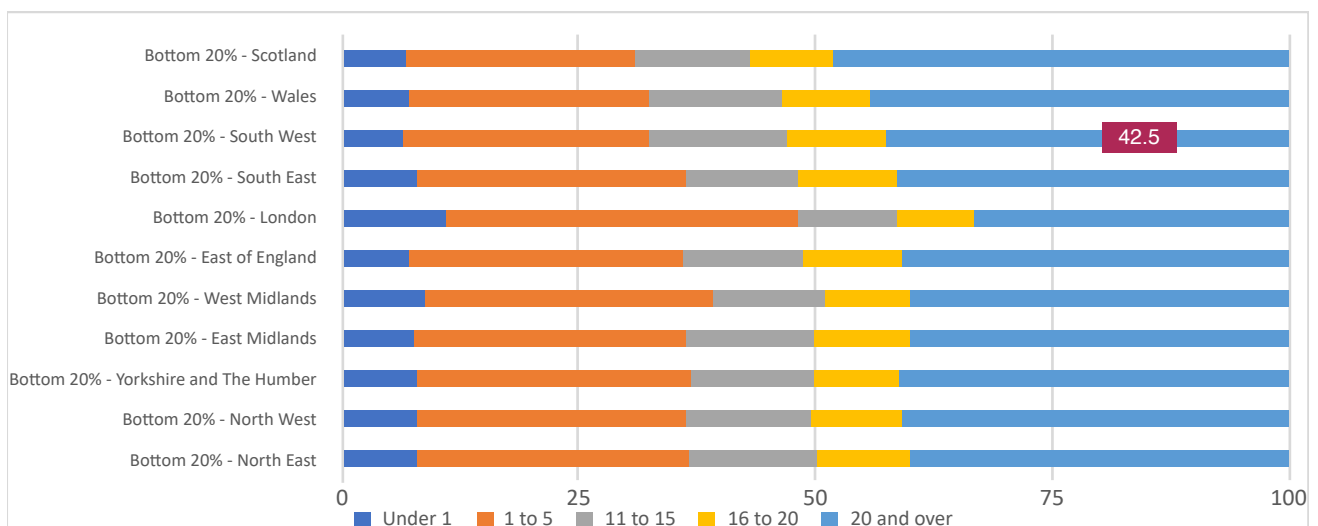
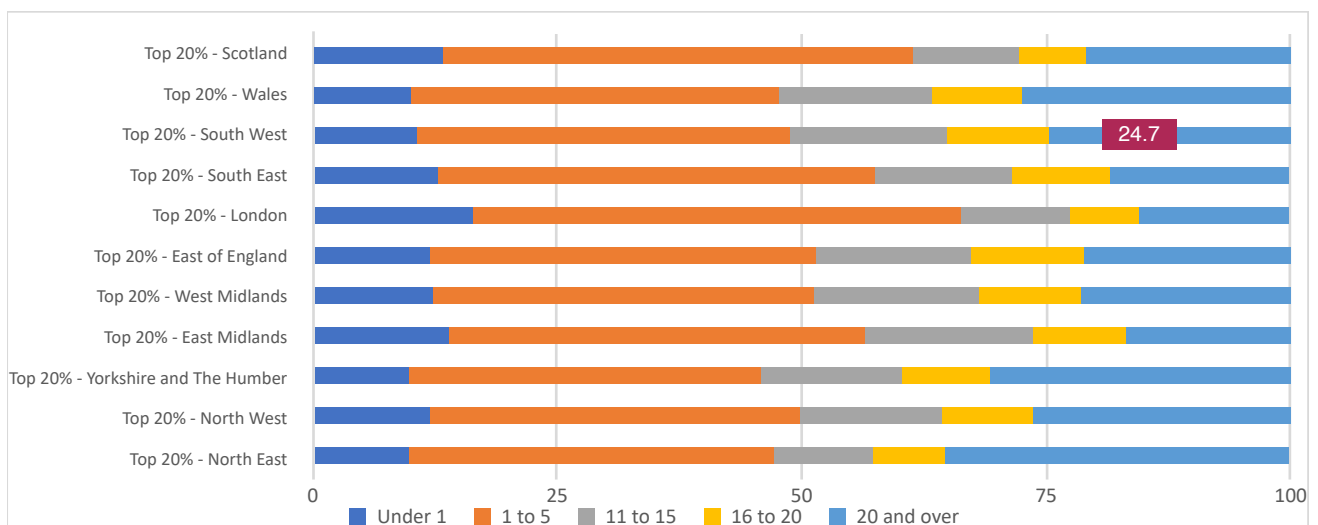
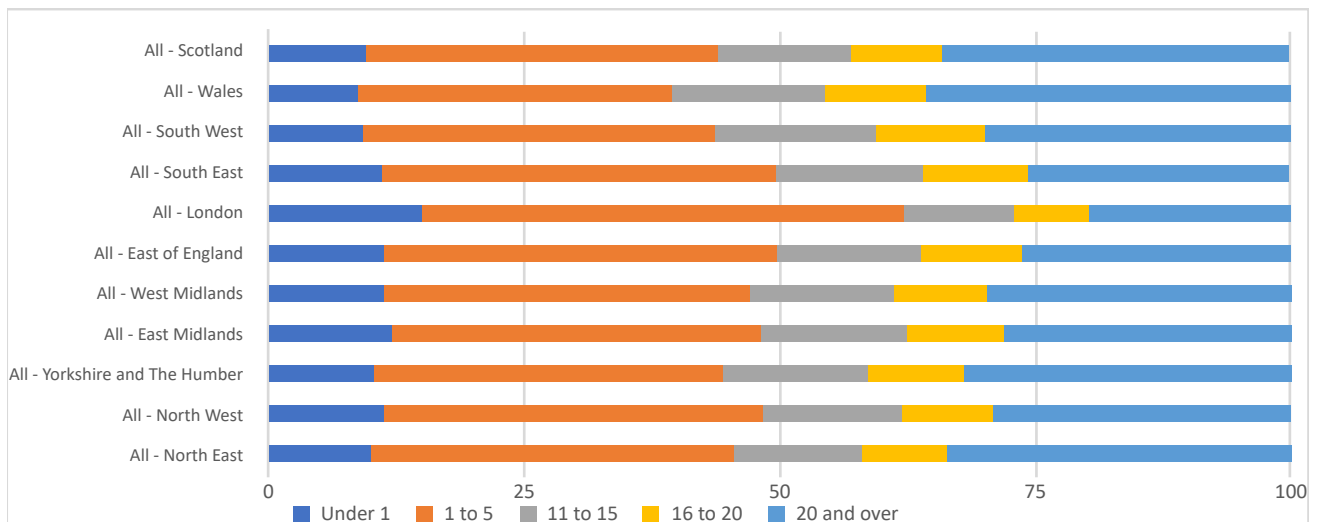


Source: (ONS)

Again, this analysis is then extended to understand what proportion of these businesses by age bands are at the top and bottom of the productivity distribution. Chart 39 shows that businesses in the top 20% and bottom 20% of the productivity distribution can be found across the age distribution of businesses.

Again, if we focus specifically on the South West, it highlights some interesting observations. It shows that as a proportion of total business stock, those businesses that are 20 years or older constitute c30% of the total business stock. However, when looking at the breakdown of businesses in the top 20% of most productive businesses, it represented only c25% of those businesses. Conversely, within the bottom 20% of productive businesses, it constituted c43% of those lower productivity businesses. Again, this is an outcome that appears reasonably similar through most regions.

Chart 39: Composition of businesses by age in the population and in the top 20% and bottom 20% of the productivity distribution - GB regions - 2015



Source: (ONS)

The conclusion that can be drawn from these set of charts is that is a slightly higher tendency of older businesses to have lower productivity - both nationally and within the South West.

It is somewhat difficult to draw unequivocal conclusions from this analysis, but one inference (or question) focuses on whether the forces of 'creative destruction' are working as they should. If not, whether some of

these older businesses could be classified within the 'zombie' business which has been commented on by commentators.

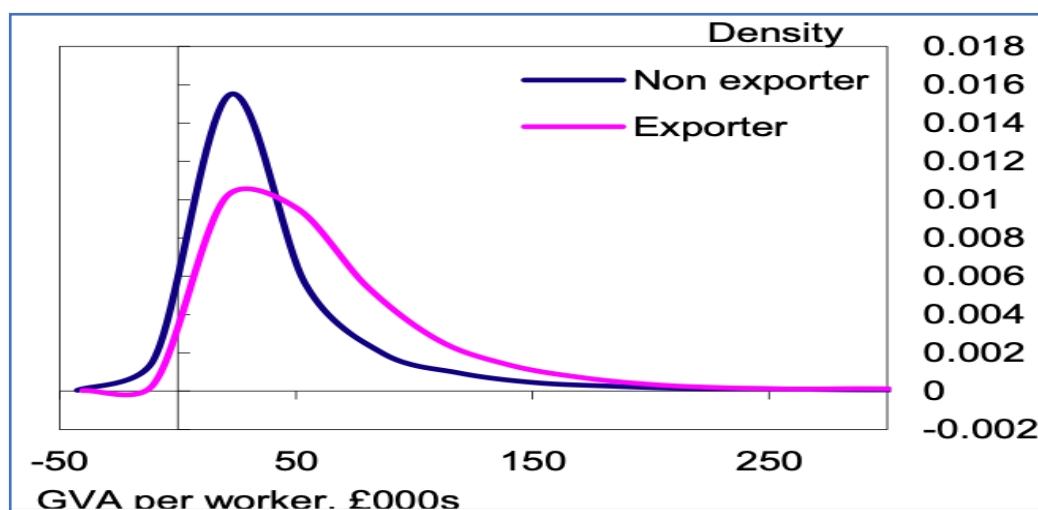
Again, it is important to note that (productivity) growth is certainly not a linear process. Many young businesses fail to sustain growth, and growth tends to be temporal i.e. changes from period to period.

Importance of exporting

It has been found in several economic studies that **firms that export have systematically higher levels of productivity than domestically oriented firms**. On average, firm-level productivity is one-third higher. This is not altogether surprising. Firms that export are likely to be exposed to global competition and many are integrated into global supply chains. This increases incentives to boost efficiencies and to match international best practices. The productivity benefits that external-facing firms bring to an area underscore the importance of promoting trade within an economy. **There is increased likelihood that those areas with a higher proportion of exporting firms will tend to have higher productivity.**

These benefits can be quantified. There is a positive and statistically significant relationship. Every 10-percentage point increase in a company's export share of turnover is, on average, associated with a 3% increase in productivity. While causation could operate in either direction, this illustrates the productivity benefits of businesses which are open to trade and exposed to external competition and innovation. This is illustrated in Chart 40.

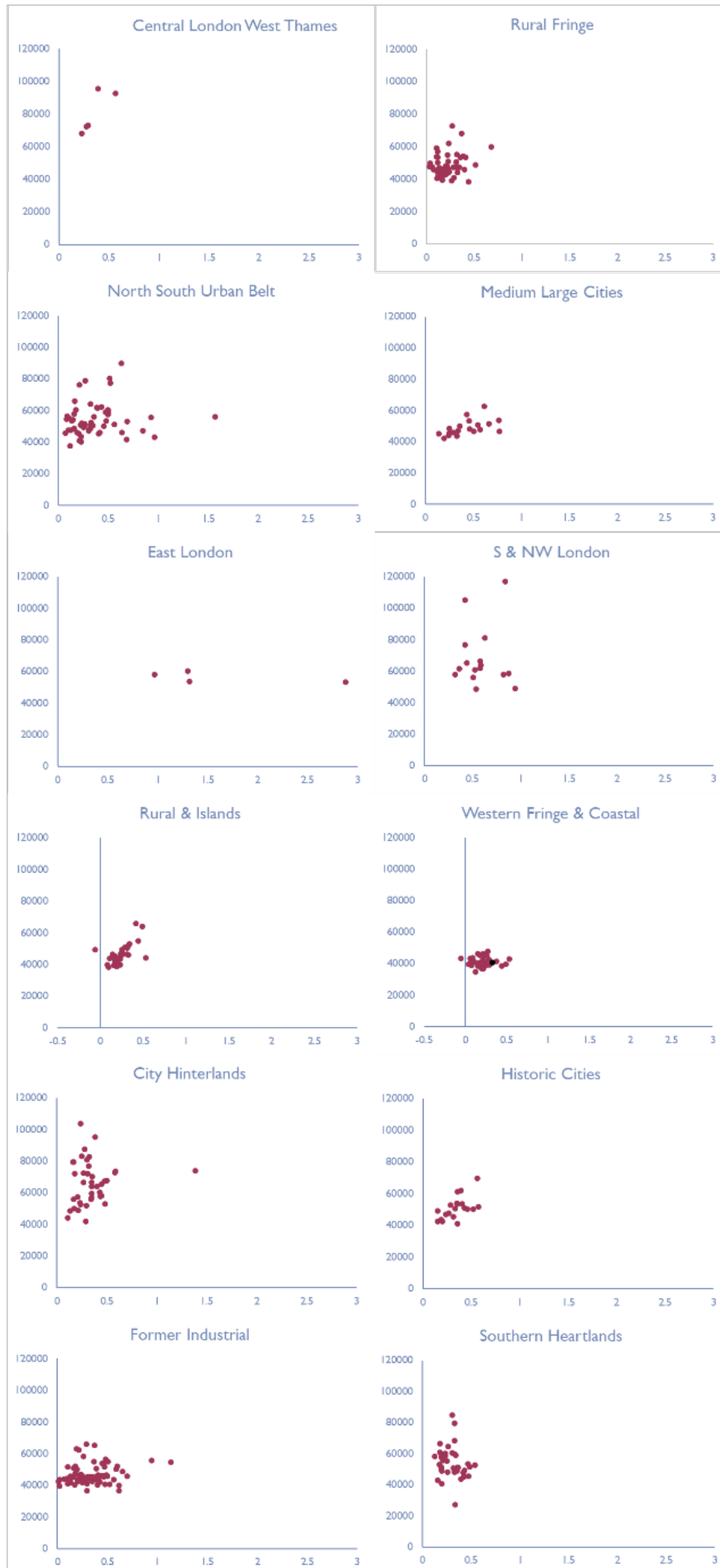
Chart 40: Productivity (GVA per worker) by export status



Source: ONS Research and Bank of England

Again, we wanted to investigate this more through the cluster analysis. A significant constraint is always the availability of export data at a local authority level. Therefore, we needed to adopt a proxy of export activity. We have used the growth in business stock within 'export intensive sectors' in the period 2010-2019. Chart 41 shows that in most of the rural clusters ('Rural & Islands' and 'Western Fringes & Coastal') the growth in business stock in export intensive sectors has been negligible, growing by less than 0.5% over the past decade. Separately, we looked at the proportion of UK businesses in these export intensive sectors on a local authority basis. This showed that there tends to be higher exporting activity in cities, particularly in the three London clusters. Many of the clusters show that in many local authority areas, a relatively small proportion of the business stock are in 'export intensive sectors'.

Chart 41: Cluster analysis - % change in business stock within 'export intensive sectors' and GVA per filled job



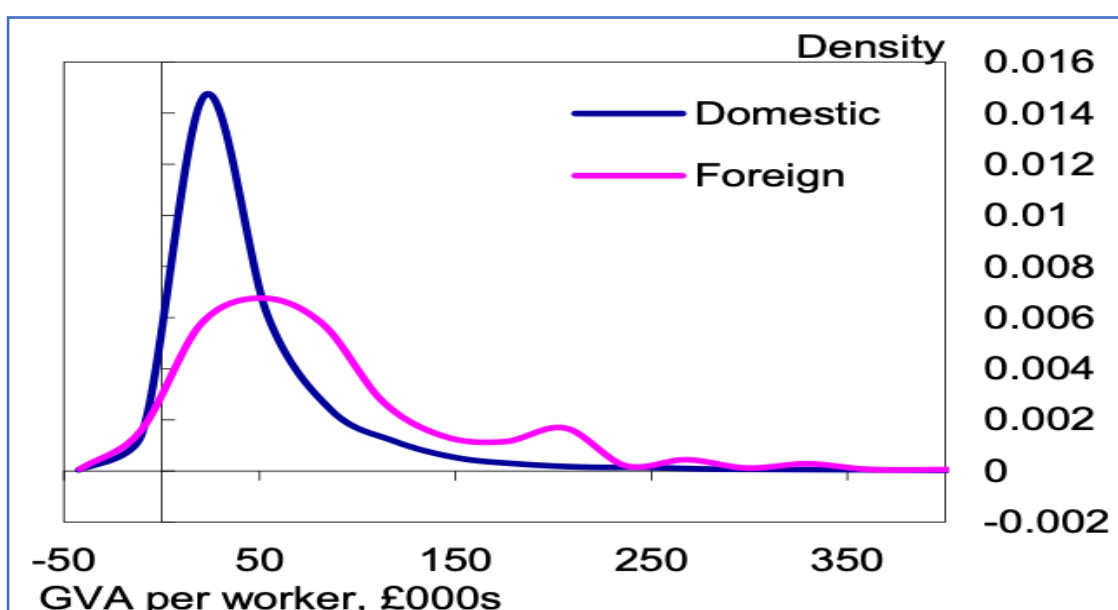
Foreign-owned businesses:

In a similar vein, **there is consistent evidence that foreign-owned businesses are more productive than domestically oriented firms, and significantly so.** It has been evidenced that average productivity of foreign-owned businesses located in the UK is twice that of domestically owned firms.

Again, the same forces noted in the export section are at play. Foreign-owned firms are likely to be exposed to global competition and will be integrated into global supply chains. Again, this highlights the virtue of having an open economy. From a local policy perspective, it perhaps reinforces the need for inward investment activity, with the attraction of foreign-owned businesses providing a range of positive impacts in a local economy. As well as the jobs that are supported, the attraction of foreign inward investment could provide a stimulus to productivity. Firstly, by having higher firm-level productivity itself. Secondly, through their ability to drive best practice within the wider economy.

Chart 42 illustrates that foreign-owned businesses have a very different profile than domestic businesses, with more concentrated at the upper end of the productivity distribution.

Chart 42: Productivity (GVA per worker) by ownership (foreign v domestic)



Source: ONS Research and Bank of England

The importance of good quality management

Another hypothesis in economic circles has been that the emergence of the long tail of less productive businesses has been the result of management failings. Previous work by the London School of Economics (LSE) looked at the link between management quality and productivity²¹. This work suggested that (a lack of) management quality is a plausible explanation for the UK's long tail of businesses.

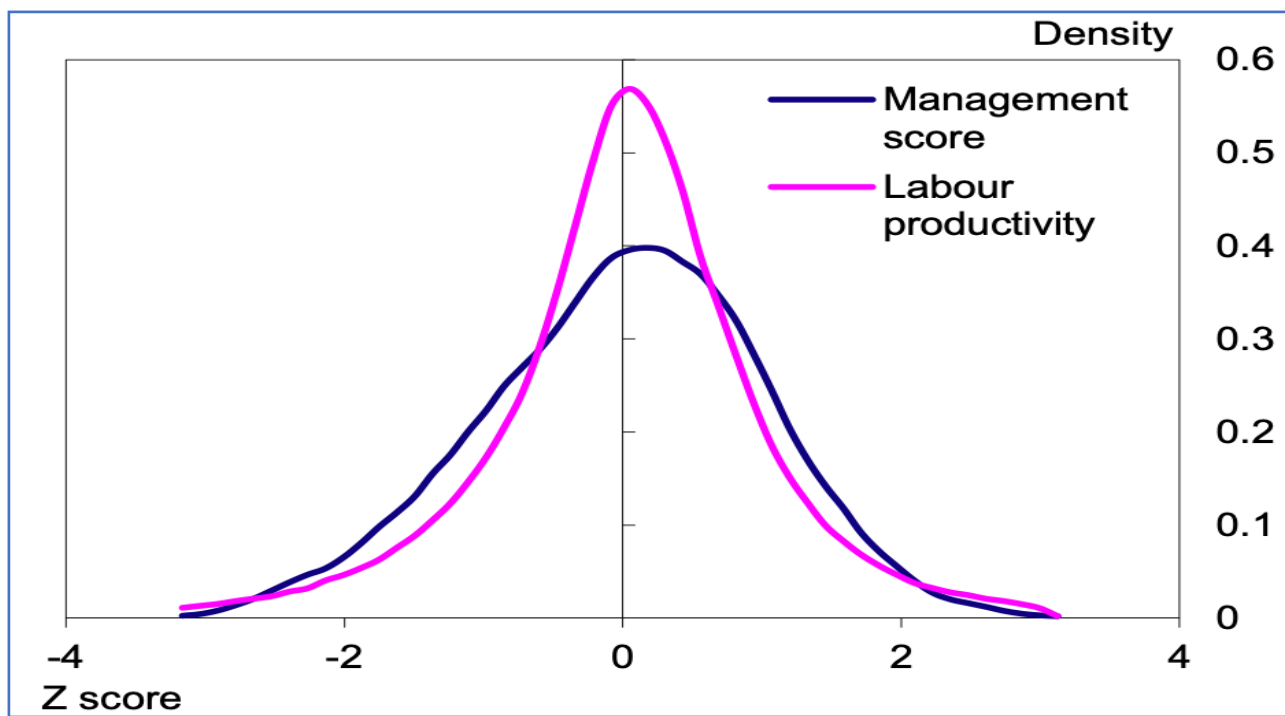
Looked at quantitatively, **there is a statistically significant link between the quality of firms' management processes and practices and their productivity. And the effect is large.** A one standard deviation improvement in the quality of management raises productivity by, on average, around 10%. **This suggests potentially high returns to policies which improve the quality of management within companies.**

Chart 43 shows a normalised distribution of management skills for a subset of UK firms in the LSE analysis²².

Chart 43: Productivity (GVA per worker) by management quality

²¹ 'Measuring and explaining management practices across firms and countries' – Bloom N and Van Reenan J, *Quarterly Journal of Economics*

²² The management kernel is based on 1,500 interviews with firm managers, whilst the productivity kernel is based on firm-level observations. The raw data are converted to Z scores by removing the sample mean from each observation and dividing the demeaned values by the sample standard deviation.



Source: Centre for Economic Performance – London School of Economics

There is some evidence that more high growth businesses are not necessarily run by lone entrepreneurs at important stages of their development, instead they are 'team managed'²³. However, with many corporate functions based in London and the South East, it is more difficult for high growth businesses in other areas of the UK to attract enough management talent to drive businesses forward. Important growth stages are achieved by a CEO, rather than the original entrepreneur. Often, the 'acquisition' of managerial capability by businesses is important in achieving higher growth and improved efficiency/productivity.

This argument is further reinforced by some suggestion that at some stage many high growth businesses have been part of other larger structures i.e. larger businesses. Some high growth firms have been successfully 'incubated' within a wider structure.

In many senses one of the factors that greater managerial capability brings is the ability to better utilise the skills and experience of employees – linking to our earlier commentary on skills utilisation. Some of the evidence suggests that over the past decade, employees have actually had less autonomy than previously (recognising questions about how this is exactly measured). There is evidence from employers surveys such as the nationally-conducted Skills and Employment Survey which shows that approximately one-fifth of employees have identified changes in their own working practices which, if implemented, would make them more productive. However, not all suggestions are necessarily implemented – with only one-in-eight feeding back that suggested changes were adopted by management. The overall argument is that greater levels of productivity are achieved when employees have more autonomy, allowed by supportive management which recognises the value that employees can bring in raising productivity/efficiency²⁴.

After the consideration of these firm-level characteristics, we return to wider factors which may explain CIOs's persistent low productivity.

²³ 'Productivity and the UK's deficiency in scale-ups' – Productivity Insights Network - 2019

²⁴ 'Productivity in Britain: The Workers Perspective. First findings from the Skills and Employment Survey 2017' – UCL Institute of Education

Slowing pace of innovation diffusion

Almost returning back to the concept of the long tail of less productive businesses, a related theory that has received a good level of coverage in the research we have reviewed relates to the slowing pace of technological and innovation 'diffusion' from the 'best' to the 'rest' businesses in productivity terms. For example, research by the OECD found some empirical evidence of a widening dispersion between the fortunes of those companies operating at the technological frontier and the rest²⁵.

As shown elsewhere in this report, the productivity leaders are pulling ever-further away from the lower tail. Or, put differently, rates of technological diffusion have slowed, and perhaps even stalled, recently. **It is stalling diffusion, rather than stifled innovation, that accounts for the UK's productivity puzzle.**

A variety of reasons has been presented to explain this, including increasing monopolistic power in some markets, poor management quality in the 'long tail' of businesses which stifles adoption (see elsewhere), and this empirical pattern helps explain two factors at play in the overall productivity story:

- the co-existence of secular innovation (among a small number of leading businesses) and stagnation (among much of the rest of the business population) – as demonstrated previously, productivity growth patterns between these groups have been strikingly different
- it helps explain the fall in overall productivity growth rates in the UK (and internationally), given that productivity growth is concentrated in a small proportion of firms.

From a policy perspective, it suggests a focus on improving the rate of technological/innovation diffusion to the 'long tail'. This is discussed in more detail later.

Demographics/Age Structure

In terms of demographics, research has also focused on whether there is a link between the demographic structure of an area and its productivity. The hypothesis behind this link is based on three broad factors:

- **Workforce participation** – a relative shortage of workers (as a proportion of total population) could be more accentuated in certain areas
- **Age and the adoption of innovation** – the young and middle-age are more likely to adopt new innovation processes/practices. An older workforce is associated with a fall in the rate of technological progress (Total Factor Productivity). **Some studies show that the adoption and use of innovative practices tends to peak in the 40 to 49 year age bracket²⁶.**
- **Impact on sectoral composition** – a higher proportion of older people affect the shape of demand for goods and services. In broad terms, they demand fewer goods but more services (health, leisure etc.) These sectors tend to be relatively labour intensive and therefore present implications in terms of labour productivity. **There is a higher proportion of these service sector activities in CloS – in response to demand from both the permanent and visitor population – and this may be an explanatory factor.** However, as our earlier analysis seems to suggest (Chart 34) there does not appear to be a strong correlation between a higher presence of less productive sectors and aggregate GVA across local authority areas.

However, the hypothesis of a link between demographics and productivity – although with some strong evidence at a macro level – is not necessarily proven at a micro (sub-national) level. Measurement difficulties have resulted in this link necessarily being proven at a regional level. We have also included this in our cluster analysis (and discussed elsewhere) and did not find a strong correlation.

We also looked at this within our cluster analysis. We explored whether there was a strong correlation between the percentage of the population aged under 50 and productivity levels. Again, at the whole Local Authority level this did not prove positive. There is no strong correlation at a Local Authority level.

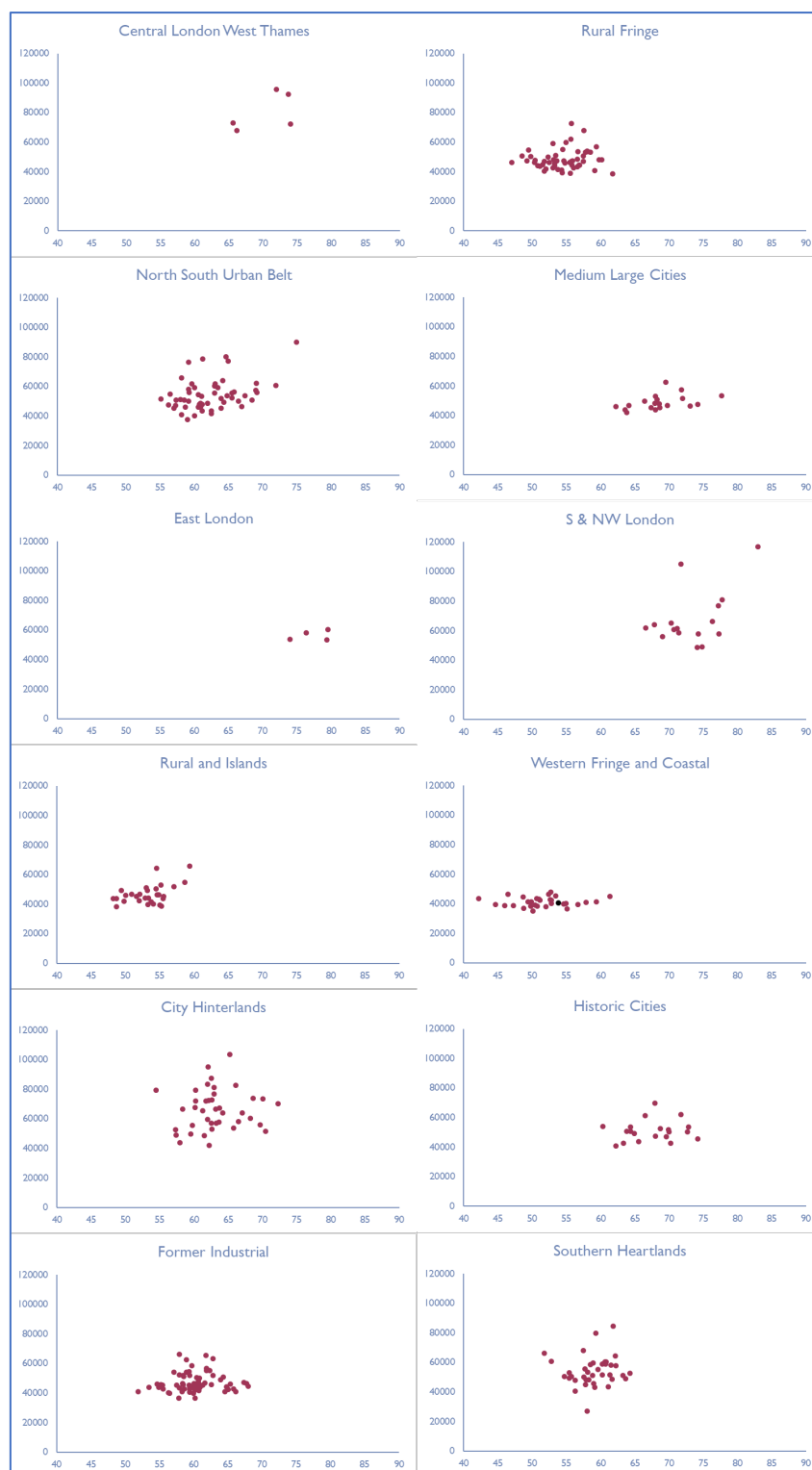
²⁵ 'Frontier firms, technology diffusion and public policy: micro evidence from the OECD' – OECD Productivity Working Paper No. 2

²⁶ 'Demographic ageing and productivity' – Productivity Insights Network

However, when we looked at on a cluster basis, there are some stronger 'links' between high and low performance. CloS has a relatively low proportion of its total population aged under 50, and this is a common characteristic in the 'Rural & Islands', 'Rural Fringe' and 'Western Fringes and Coastal' cluster. As perhaps expected, some of the clusters with higher levels of younger people - 'Central London', 'S & NW London' and 'East London' also have higher productivity. We recognise that there is a cause and consequence argument here - that these more dynamic areas attract younger workers attracted by the opportunities they offer.

The cluster charts are shown below. The x axis shows the percentage of the total population aged under 50. We feel it does illustrate - if not statistically prove - that there is some form of association.

Chart 44: Cluster analysis - % population aged 50+ and GVA per filled job



Finance/Capital

A further interesting argument that has been noted in several papers relates to whether the loose monetary environment over the past decade – in essence, **'cheap money' has impacted negatively on the process of 'creative destruction'**. Creative destruction refers to the process where less competitive businesses stop trading. In effect, the market is working correctly to ensure that the more competitive businesses remain. In theory, this should raise aggregate productivity given that only the most productive businesses survive.

However, several economic commentators have argued that the financial crisis initially made credit more difficult to obtain. This initially meant that businesses replaced capital for labour. This largely provides an explanation for why employment levels remained relatively robust even during the recession. Pressure on wages meant that labour remained relatively cheap and a higher number of jobs were able to be sustained.

The long-term legacy of the financial crisis on productivity (remembering that productivity in the UK took many years to recover back to pre-2008 levels) is the damage it did to higher productivity businesses. The absence of credit may have affected disproportionately high leverage, high productivity companies operating in the upper tail.

In the period following the financial crisis, interest rates were lowered globally – to historically low levels. This situation existed in the UK, with the cost of borrowing for households and businesses low. This low cost of borrowing has led to the concept of what has been labelled 'zombie firms'. These are businesses that, perhaps, would not have been able to sustain loan repayments when monetary policy was tighter, given they are inherently less efficient/competitive/profitable. Greater bank forbearance over the past decade also helped keep these businesses keep afloat. The argument is extended in macro terms with the claim that actually this has resulted in finance being diverted away from more efficient businesses.

This theory has been looked at by the Bank of England (BoE). Econometric work by the BoE looked at establishing a counterfactual which modelled business foreclosures based on higher interest rates being in place²⁷. This had to assume a solvency threshold for business types. This exercise actually resulted in an interesting conclusion that actually looser monetary conditions would have resulted in more defaults against repayments at both end of the productivity spectrum i.e. some of the more productive businesses would also have gone out of business.

The reason for this can be explained by the fact that those businesses tend to be highly leveraged (debt). Therefore, there would be two mechanisms at play – at the lower end of the productivity spectrum, more businesses would have stopped trading due to their lower competitiveness and/or profitability. Also, less productive businesses also tend to have higher levels of leverage/debt because their profits, repayment capacity and investment are low. At the higher end of the productivity spectrum, some highly productive businesses would have gone out of business due to their high leverage.

The econometric modelling did find that many more businesses at the lower end of the productivity spectrum would have gone bust in this modelled scenario, when compared to those at the higher end. In that sense, there would have been more 'creative destruction' than has actually occurred over the following decade (there would have been less 'destructive destruction'). The modelled scenario suggests that UK productivity could have been 1%-2% higher relative to the baseline.

The Bank of England econometric modelling does indicate that the financial crash (in term of liquidity crunch) and the subsequent recession and recovery (associated with loose monetary policy and cheap finance) has impacted the productivity potential of the UK economy.

A key question raised in the context of this work is whether access to EU funding has accentuated this issue in CloS. Whilst this may be a controversial question to raise, we feel it is valid even though it would be difficult to test. There are several programmes within the previous and current programmes which offer grant support to businesses. Whilst each of these programmes have in place systems/processes to assess applications – presumably focusing on need and opportunity – could it be feasible that some less

²⁷ 'Productive and unproductive leverage' – Bank of England - 2016

productive firms have been kept afloat through the availability of grant EU funding (though accepting that rigorous processes are in place to ensure that 'failing' (non growth) business do not receive support)? **The extent of EU support in CloS - relative to other areas of the UK - means that if the availability of grant funding has accentuated cheap loan finance, the impact may be more marked.** Again, it is important that this is a question we highlight. This research exercise does not have evidence that this phenomenon is in place.

Transport infrastructure

Previous research has also investigated the links between improved infrastructure and productivity, whether there is any empirical evidence that supports the notion that improvements in transport and ICT infrastructure leads to productivity improvements. The review of evidence in this area suggests that there are difficulties in demonstrating the causal link between improved transport and productivity growth. Often this is associated with the incremental changes that infrastructure schemes, such as transport improvements, tend to bring.

The research argues that it is easier to demonstrate the benefit of transport investment to overcome barriers to growth i.e. bottlenecks, congestion etc. However, it is much harder to find robust evidence that transport investment drives growth per se. There is some research that suggests that improvements in digital infrastructure seems to reinforce the primacy of large urban areas. **The continued importance of cities in driving economic growth and creating agglomeration effects seems to confound expectations that digital improvements would result in the 'death of distance'. This is an important statement in the context of CloS. Improvements in digital connectivity does not necessarily mean that location and connectivity to major centres of economic activity i.e. cities, have become less important. Physical connectivity still matters - as argued previously.**

The role of cities

Following on from this discussion around agglomeration, there has also been significant focus on the role of cities. Cities have assumed increasing recognition for their importance as 'engines' of economic growth and development, and the contribution they make to economic prosperity. This issue is relevant in the context of this work because CloS obviously does not have an urban area of any significant size. Therefore, a further hypothesis this raises is whether the absence of a major urban area is an explanatory factor for CloS productivity performance.

The range of research and discussion papers on this subject are extensive. In our view, some of those policy discussions have been driven by vested interests. Firstly, we focus on one major ESRC research programme which outlines some interesting observations²⁸.

The research focuses on cities but does include 'non-urban' as a comparator category. This non-urban category has actually outperformed those cities that have been classified as 'falling behind', although lags those which have performed more strongly in terms of overall growth (as shown in Chart 45). **The implication is that having a city per se does not necessarily improve local economic performance.**

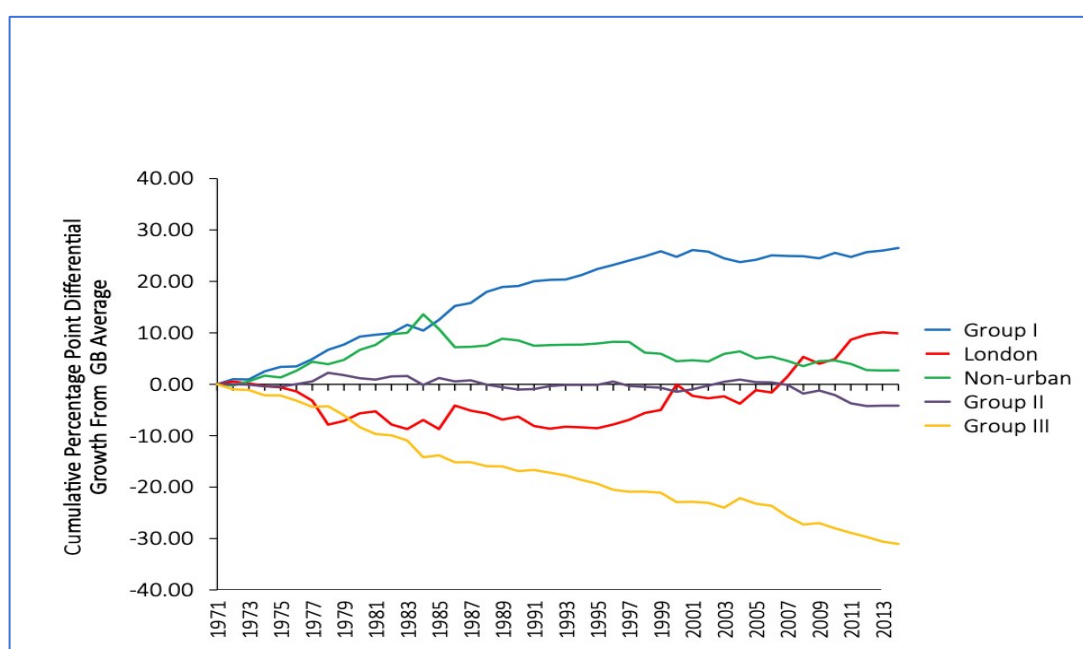
A further conclusion this research makes is that city size and associated agglomeration effects no longer appear to play a role in influencing a city's productivity growth. On skills the research looked at extent of skilled labour in urban areas and concluded there is a strong relationship between the growth of more highly skilled occupations and total employment across cities, but that skilled cities do not automatically reinforce their advantage. It also indicated there is little evidence that agglomeration has been a key driver of the growth in skilled occupations and that smaller and lower density labour market areas in the south of England have grown skilled employment faster than larger and higher density ones (partly as a result of growth in high connectivity, smaller urban environments).

²⁸ 'The economic performance of Britain's cities: patterns, processes and policy implications'. This project is a partnership of the University of Cambridge, University of Southampton, Aston University, Newcastle University and Cambridge Econometrics.

Within the context of the South West, and with particular relevance to CloS – Exeter, is cited as an example of one of these smaller urban areas which has successfully grown its skilled occupation base. It is classified as one of the urban areas ‘pulling ahead’. Conversely, Plymouth (the nearest major urban area to CloS) is identified as one of the cities ‘falling behind’. This reinforces the earlier point of being near a city per se isn’t necessarily a determining factor. **It’s being near – or connected – to a city that has the right dynamics that seems to count.**

Chart 45 illustrates succinctly the performance in economic performance across each of the urban typologies that was constructed as part of this work. Group I includes cities such as Exeter, Cambridge, York etc., whilst Group III includes cities such as Plymouth, Swansea, Stoke etc. CloS is included as a non-urban area. Chart 45 re-emphasises the earlier point, that actually non-urban (rural) areas have outperformed some urban areas. It is important to note that Chart 45 shows total economic (output) growth, rather than productivity performance per se. Another interesting aspect that Chart 45 illustrates is that, in fact, the renaissance of London has actually been a relatively recent occurrence. Until the mid-1980s it had been in long-term decline.

Chart 45: Cumulative differential percentage growth of output relative to GB



Source: ESRC

The findings of this work have been both broadly corroborated and also challenged by further analysis by the ONS²⁹, this time focusing specifically on productivity. The ONS has explored whether there is a relationship between the size or population density of urban areas and their overall productivity. In broad terms, in the south of England, labour productivity differed by the size of the urban area, with large and medium-sized urban areas tending to have higher levels of whether there is a relationship between the size or population density of the urban areas and their overall productivity levels in England and Wales. In the south of England, labour productivity differed by the size of the urban area, with large and medium-sized urban areas having a higher level of productivity than small urban areas. By contrast, for the north and Midlands of England, there was no correlation between the size of urban area and average labour productivity. The higher productivity of larger urban areas in the south is an important source of much of the differentials that exist between areas.

However, these findings relating to urban/rural differences have certainly not been unanimous. For example, further work by the Enterprise Research Centre (ERC)³⁰ that focused on spatial disparities in SMEs productivity (modelling firm-level productivity data) concluded that it found a lack of supporting evidence

²⁹ ‘Understanding spatial labour productivity in the UK’ – ONS (2019)

³⁰ ‘Spatial disparities in SMEs productivity in England’ – Enterprise Research Centre (2020)

for agglomeration theories which stress the benefits of urban areas per se in stimulating higher SME productivity. ERC's analysis showed that firms located in rural areas perform as well as urban firms.

Therefore, our overall interpretation of the evidence is that there is not a difference between urban and rural areas per se. It is the type of urban area that is important, with a north/south split notable within the UK.

The size and role of the public sector

Some of the research literature has focused on the role of the public sector in local economies, with a particular focus on its behaviour and size³¹. Again, it is important to note that this largely reflects a hypothesis, rather than it being evidenced per se – although we have tested this in our cluster analysis (see below). However, we again feel it is an interesting question in the context of CloS and valid to highlight here for consideration.

Some commentary argues that the role of the public sector could be a detrimental factor in terms of the productivity performance of an area. In essence, this argument is based on a concept titled 'allocative efficiency' in economic terms. Allocative efficiency occurs when the market optimally uses resources to meet consumer demand. Because most the public sector does not operate in a market-based system, then its activities may operate in a less 'optimal' manner.

The larger the relative size of the public sector – as a proportion of an economies economic output – then the more significant issue this becomes. The argument from some economic commentators is that the public sector is 'rent seeking' when its size is significant to the local area. It prioritises allocation to its own behalf (political or administrative) and is less efficient in allocating resources than a market-based system.

We feel it is valid to highlight this hypothesis in this work given the institutional structure that is in place in CloS, augmented by the structure that has developed as a consequence of 20+ years of European programme support. The delivery landscape for European programmes is extensive (not necessarily by local design) and we feel it is valid to question whether there has been an element of 'crowding out' which has built over time and/or whether institutions have been 'rent seeking' in their behaviour.

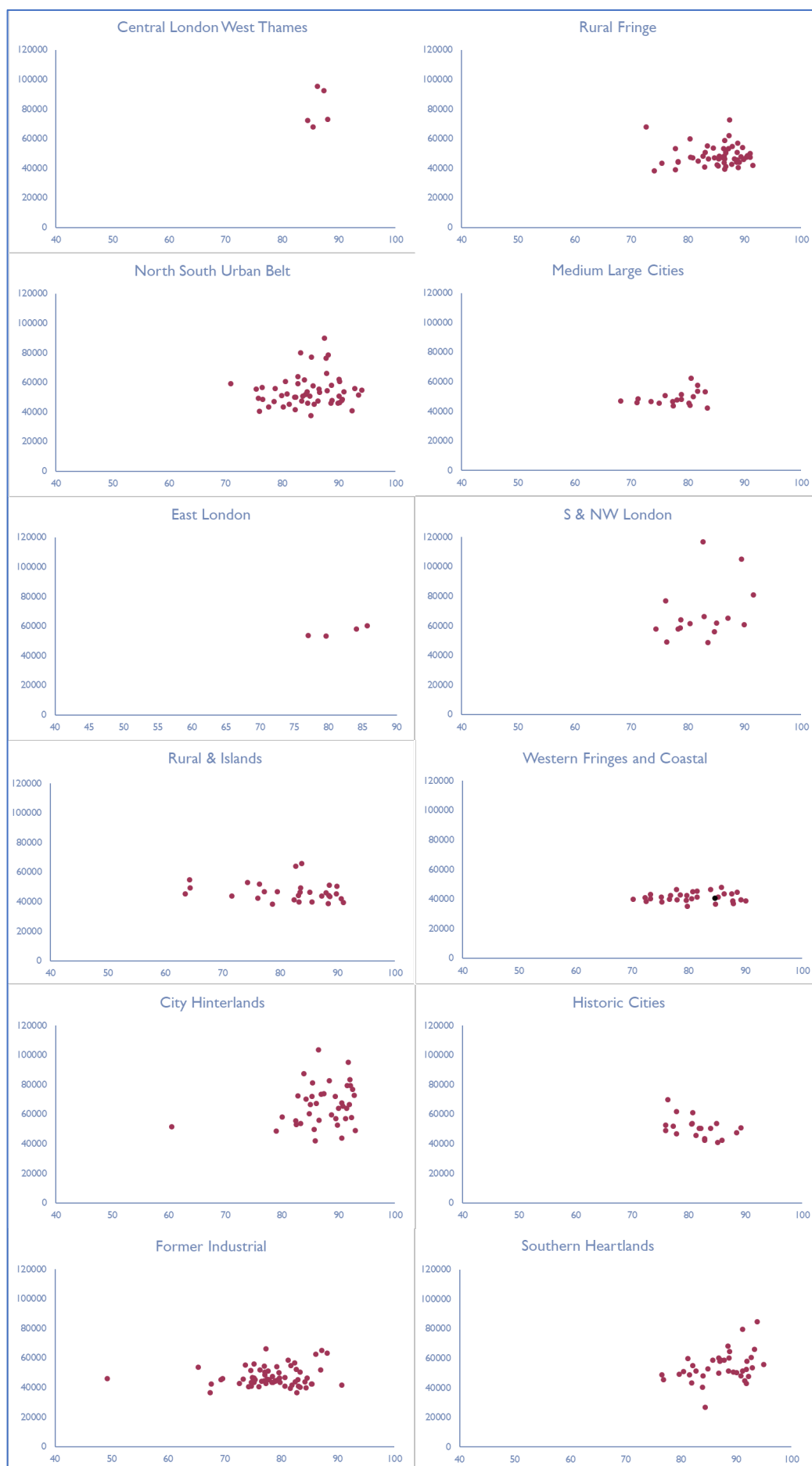
We felt it would be useful to test this theory in our cluster analysis. We looked at this in two slightly different ways:

- Jobs in the private sector as a proportion (%) of total jobs in each local authority
- Conversely, jobs in the public sector as a proportion (%) of total jobs in each local authority

Our cluster analysis did not show a strong correlation between more productive areas and a smaller size of the public sector (or conversely a higher share of private sector employment). The data suggests that private sector employment in CloS broadly equates to 85% of all jobs and is comparable to many higher productivity areas. There are areas in both the 'Rural & Islands' and 'Western Fringes and Coastal' clusters (both viewed as lower productivity areas) that have a much lower representation of private sector employment – as low as 60% in some areas. However, in some urban areas public sector employment can still be relatively high (reflecting that Councils, Hospitals etc tend to be located there).

³¹ 'Innovation and Productivity: Towards a Research and Policy Agenda – evidence review' – Productivity Insights Network - 2019

Chart 46: Cluster analysis - % of workforce within private sector and GVA per filled job



However, we do not necessarily feel that the question/argument does not remain a valid one to raise here. At the core of this work is to better understand why CloS has suffered from persistently low productivity. It could be argued that its specific institutional/delivery structure is one characteristic that sets it apart from many other areas. Our high-level review of other areas has found some examples of where economic development activity appears to be coordinated/centralised – although this would need more investigation to be truly certain. Whilst the evidence is weak, we feel it is a valid argument to highlight.

There have been several studies which argue that fragmented governance structures tend to be associated with areas which have lower levels of productivity³². This is because regional institutions are critical to delivering on policy relating to productivity and its drivers. This calls for a stable, properly resourced, long-term policy framework to help improve the fortunes of struggling areas. A positive relationship has also been found between public-private partnership investments and productivity³³.

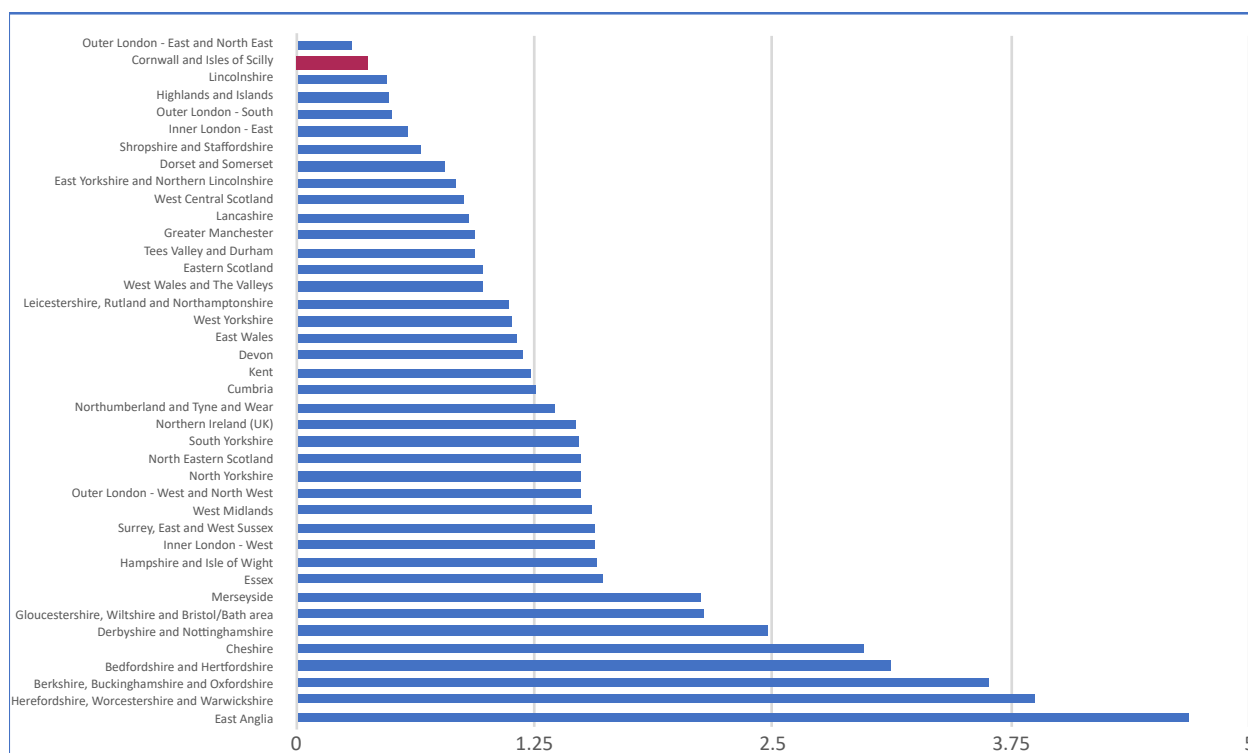
Importance of innovation and R&D

We have previously discussed the argument that has been presented in several papers relating to the slowing rate of technological/innovation ‘diffusion’ as a possible explanation of the slowdown in productivity growth at a macro scale. We have also focused on the empirical evidence that suggests that innovation activity is concentrated in a small proportion of the business population.

Another well-established argument also relates to the level/scale of innovation and R&D activity being an important determinant of productivity differentials at a sub-regional level.

Chart 47 shows that **R&D expenditure in CloS is low when measured as a % GDP**. When compared to areas such as Herefordshire, Worcestershire and Warwickshire, East Anglia and Oxfordshire, the difference is marked. It is probable that these areas reflect the location of R&D intensive universities and the associated activity associated with those universities i.e. Warwick, Cambridge and Oxford all have significant science parks closely associated with the respective universities. This may provide a possible explanation for its lower levels of aggregate productivity.

Chart 47: R&D as a % of GDP by NUTS2 regions - 2017



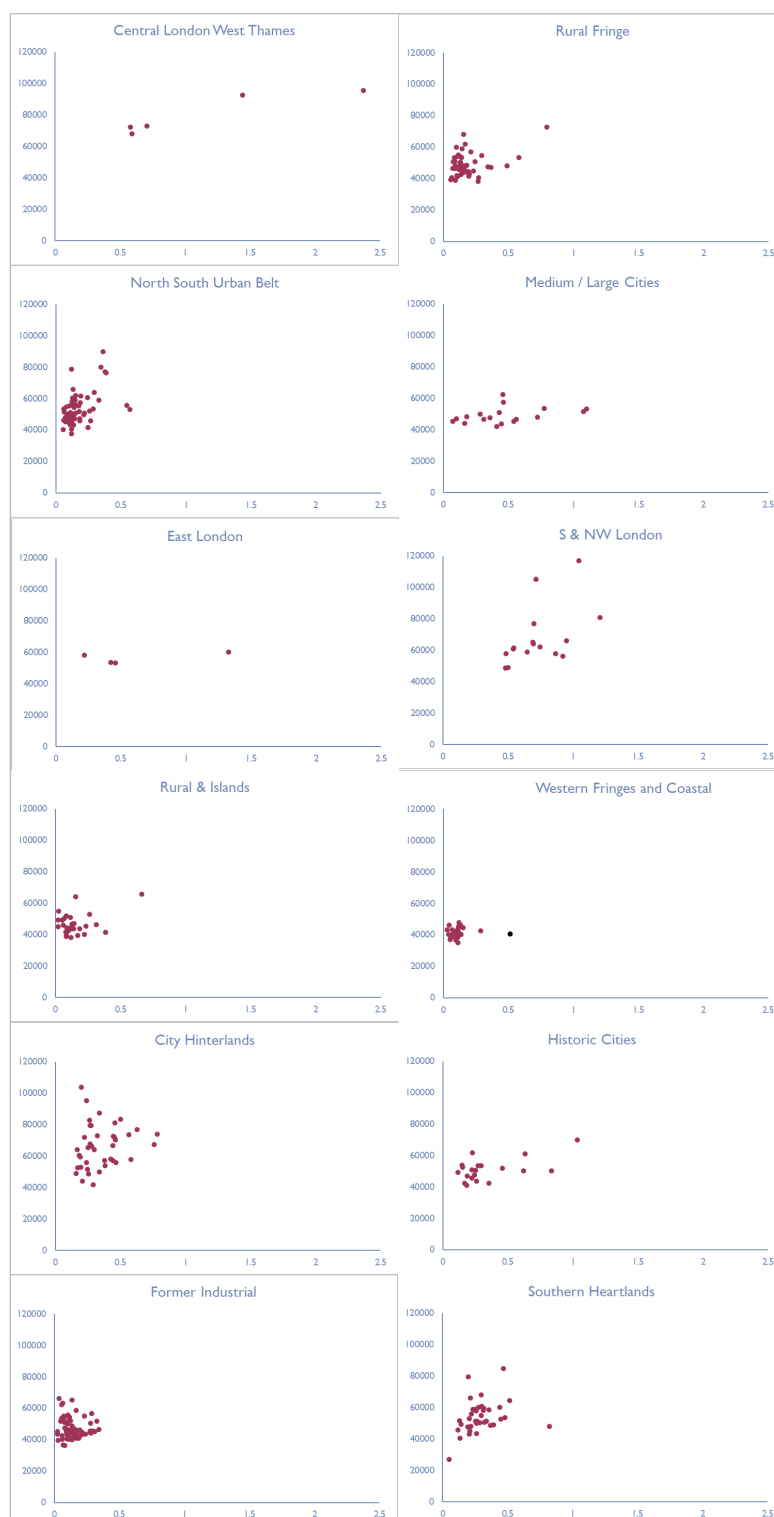
Source: (Eurostat)

³² 'What makes cities more productive? Evidence on the role of urban governance from five OECD countries' – OECD Regional Development Working Papers (2014)

³³ 'Public-private partnership and regional productivity in the UK' – University of Granada (2011)

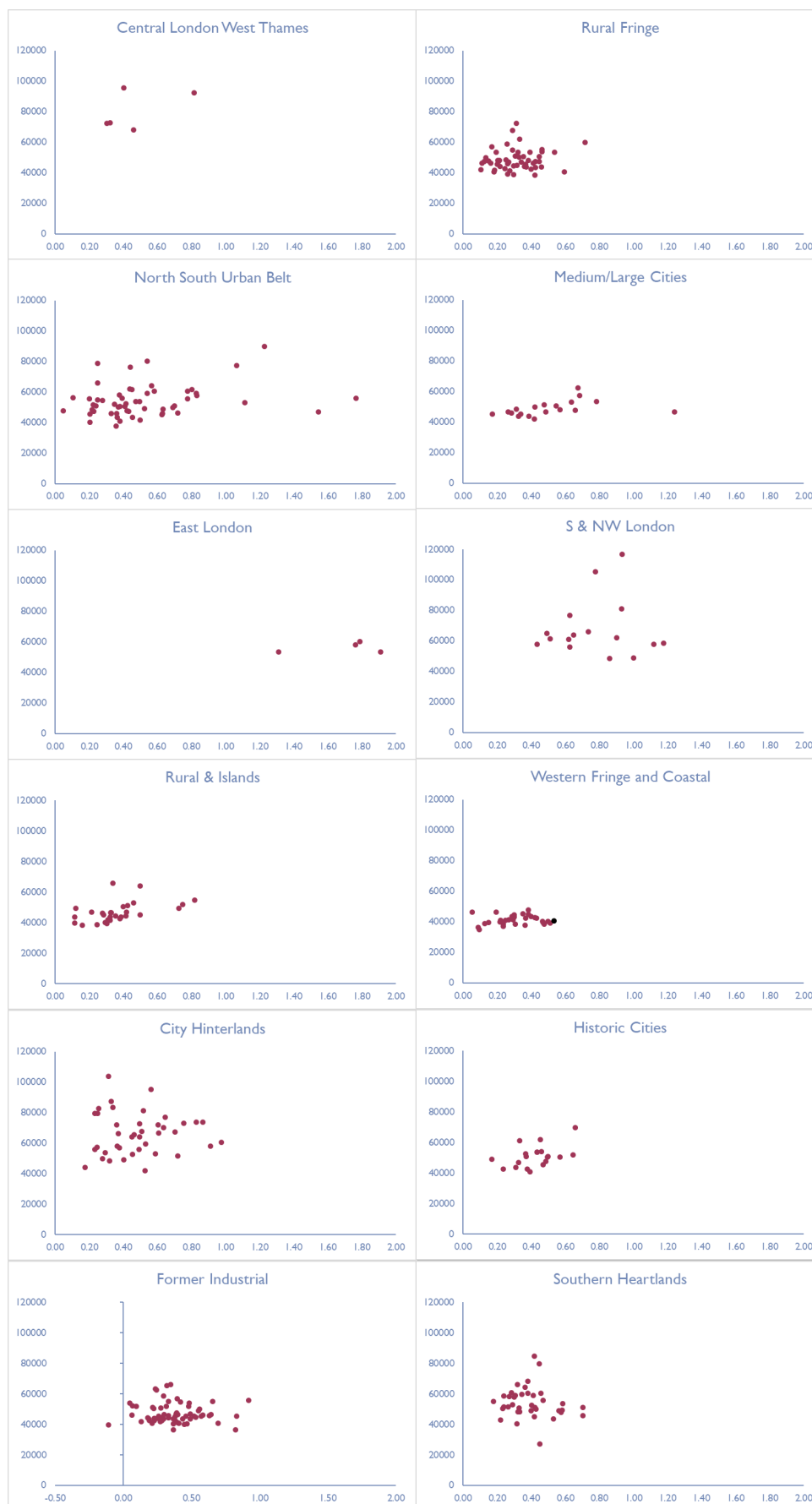
Again, we tested this through our cluster analysis. To investigate this, we looked at this in two different ways. Firstly, the proportion of UK business stock in 'R&D and Knowledge Intensive' sectors within each local authority. Secondly, whether there had been growth in those 'R&D and Knowledge Intensive' sectors over time. We utilised the OECD definition of the top 10 most intensive 'R&D and Knowledge Intensive' sectors, wanting to understand whether levels and/or growth differ across the sectors. The first scatter chart does indicate that in those areas with higher productivity – notably in London – it has a higher proportion of the UK's business stock in 'R&D and Knowledge Intensive' sectors. However, this does need careful interpretation because in a sense this is an indicator of the size of each local authority area. For example, CloS is the largest local authority in the 'Western Fringes and Coastal' cluster and therefore we would expect it to have a larger proportion.

Chart 48: Cluster analysis - % of UK business population in 'R&D and Knowledge Intensive' sectors



We also looked at the growth in these sectors (over the period 2010-2019). This is represented in the below scatter chart. Again, it could be argued that the lowest growth has tended to be found in the predominantly rural clusters. Again, CloS has performed most strongly in the 'Western Fringes and Coastal' cluster.

Chart 49: Cluster analysis – growth of businesses in 'R&D and Knowledge Intensive' sectors



Chapter conclusions

- Between 2004 and 2014 in 99% of the business population in the South West, average annual productivity growth equated to only 1%. In comparison, the most productive 1% of businesses experienced average annual growth of 12% over the same period. We would expect that a similar outcome would be found in CloS and clearly highlights a key conclusion that much of the underlying problem of persistent low productivity lies within the long tail of businesses.
- Recent evidence and analysis has questioned previously long-held views that differences in overall productivity between areas can be explained by differences in industrial mix. CloS still performs poorly even when accounting for its own industrial mix, suggesting that differences in productivity performance relate to something more than simply industrial structure.
- Looking specifically at CloS, of the c40% differential between CloS productivity and the national average, approximately 34 percentage points is due to differences in firm-level productivity, whilst c3.5 percentage points can be explained by its industry mix. This is one of the key findings of this study, that according to ONS analysis it is suggested that 90% of the difference between CloS firm-level productivity and the national average can be explained by lower average productivity in its businesses, rather than its industry/sectoral mix.
- However, sector composition still matters. Productivity does differ across sectors, it's just that productivity levels tend to be much more similar within sectors across the UK. However, if an area has a higher proportion of its economic activity in lower productivity sectors, then this will impact on aggregate productivity. CloS is over-represented in terms of share of employment in lower productivity sectors, such as the agriculture, retail and tourism-driven sectors such as accommodation and food services.
- The evidence seems to indicate that firm size is not necessarily a strong determinant of firm-level productivity. There is some evidence that shows that productivity in micro businesses tends to be lower, given that the focus tends to be on revenue growth rather than efficiency at that stage of business development.
- There is relatively strong evidence that shows a positive association between exporting and foreign-ownership and firm-level productivity. There is a positive and statistically significant relationship. The productivity benefits that external-facing firms bring to an area underscore the importance of promoting trade within an economy. There is a question whether CloS has its share of externally-oriented businesses.
- Other research has found a statistically significant link between the quality of firms' management processes and practices and their productivity. And the effect is large. This suggests potentially high returns to policies which improve the quality of management within companies.
- Some factors that affect productivity are difficult to address. For example, as would be expected, there is a relatively strong association between connectivity and productivity. For example, previous analysis estimated that if CloS had similar levels of physical connectivity to the HotSW (assuming a centre point of both areas) its productivity would increase by c10%.
- A further interesting argument relates to whether the loose monetary environment over the past decade – in essence, 'cheap money' – has impacted negatively on the process of 'creative destruction'. Bank of England modelling indicates that the financial crash (in terms of liquidity crunch) and the subsequent recession and recovery (associated with loose monetary policy and cheap finance) has impacted the productivity potential of the UK economy. A key question raised in the context of this work is whether access to EU funding has accentuated this issue in CloS.

Policy Implications

Holistic and joined-up approach

One aspect that has come out of the papers that discuss how to address the 'productivity puzzle' – at a national and local level – is that the issue can only be addressed in a holistic sense. Whilst economists have sought to unpack individual aspects of the productivity puzzle (some of which we have highlighted in this report), it should not be viewed as a number of unrelated factors. The productivity puzzle is both multi-faceted multi-scalar i.e. the importance of these factors differs in different areas. Some of the factors are transient i.e. they may not necessarily exist in the same form or scale in a uniform way over time.

Of course, this all adds to the difficulty of solving the problem. It is not necessarily a consistent and/or static problem in different areas. This is not meant to be highlighted to add to the complexity of addressing persistent low productivity in CloS. Merely, it highlights the complexity of the problem and partly explains why that – even after decades of policy focus and investment – significant inequalities remain across the UK.

One outcome of this is that solving the productivity puzzle needs to be thought of as a range of interconnected factors, which require a systematic/holistic approach. One of the criticisms of the UK Government response to the productivity problem is that it is dealt with on a departmental basis. Each department has responsibility for specific portfolios which all relate to some of the issues identified (business, employment, education, transport, infrastructure etc.) **What is required is cross-departmental policy which represents a major institutional challenge.**

At a local level, it could be argued that this problem is partly addressed by the devolution agenda. The power given to Mayors of Combined Authorities encompasses many of these responsibilities. Therefore, there could be an argument that devolution provides a greater opportunity to address the question of lower productivity in a more holistic sense. Currently, these powers only exist in some of the larger urban areas – CloS does not have such powers.

Enterprise stimulation – always a good thing?

Another factor which may feel counter-intuitive and potentially controversial to highlight is that stimulating new enterprise activity may not necessarily be beneficial in productivity terms. In areas characterised by an adverse industry profile, many past policy initiatives have sought to foster new enterprise development, but in many cases a high proportion of the firms created appeared to have few advantages in the market, with the emphasis on 'quantity' of business start-ups. The ERDF programme has output targets for number of new enterprises. However, a danger of this emphasis is that it can lead to the creation of large numbers of low-productivity firms in sectors with limited prospects for innovation.

The success of enterprise policies depends on having in place a set of pre-existing conditions such as contextual preconditions such as having a critical mass in R&D, technological knowledge, production know-how, managerial competences.

Sole traders tend to have lower productivity, whilst there is a positive (statistical) association between small and medium enterprises and productivity.

Supporting the diffusion of innovation

As noted previously, there is evidence that one of the problems in a UK context has been the slowing 'diffusion' of innovation from the best performing firms to the rest of the business population. R&D activity is heavily concentrated in a small number of firms. Some policy papers that we reviewed on the issue have outlined some interesting suggestions in terms of possible policy approaches, some of which could be applied at a local level:

- Make innovation diffusion a central theme of the (Local) Industrial Strategy
- Set-up innovation diffusion pilots to test different types of on-the-ground support for businesses
- Utilise supply chain relationships – work with large businesses to better use their supply chain infrastructure to disseminate knowledge and best practice (linked to below)

- Focusing policy back onto technology transfer – encouraging universities to improve the way they undertake technology and knowledge transfer. This may mean further cultural and structural changes in the way that universities work
- Supporting how human capital transfers knowledge – one way is through business mentoring, but with a focus on technical professionals. This is loosely based on the German Steinbeis system.

Focus on management skills

Although difficult to directly associate, there appears a strong link between the quality of a businesses management and how competitive/productive that business is. The evidence suggests that poor practices are most pronounced in sectors where competition is weak.

This suggests that continuing to support the development of management skills could yield significant returns. This extend beyond 'formalised' management development/training but extends to mentors, coaches, technical experts etc. Many of these will not reside locally, and there would be benefit in importing best practice from elsewhere. This focus on management capability is in place in CloS. The evidence suggests this focus needs to remain and potentially become more heightened.

Review of whether institutional structure is allowing support in coordinated manner

We would argue that ensuring coordination of activities to address the productivity problem is a prerequisite. As noted elsewhere in this paper, solving the productivity problem in CloS (as with elsewhere) requires a holistic approach. We have questioned whether the presence of the large-scale European funding programme in CloS has led to a fragmented approach (not necessarily all by local design). There is an opportunity with the gradual withdrawal of EU programme support to review the support landscape and ensure that it is truly joined-up and coordinated. In terms of productivity - this may mean mapping support programmes onto some of the issues highlighted in this report.

Other areas - a review of approaches adopted elsewhere

As part of this work, we have also undertaken a review of other areas in the UK which appeared to be interesting from a productivity perspective. The aim of this exercise was to see whether different approaches to economic development had been adopted, which may explain those areas better performance from a productivity perspective.

It is important to note three factors:

- It not necessarily intended to be a scientific exercise. We have focused on some areas that were identified of interest from a variety of angles. This was a combination of the benchmarking exercise that was undertaken in the previous 'Impact of EU funding', through references in the research review, as well as emerging from our cluster analysis
- It was a desk-based exercise. This exercise principally reviewed the economic strategies in place, as well as an understanding of the broad economic context/structure in place i.e. whether they had economic assets that may explain their performance in a productivity context
- Our expectation was that we would not find a 'magic bullet' that explains why a certain area may have performed better than expected. In our experience, approaches to economic development across the UK tends to be quite similar.

However, the overall objective of this exercise was to see whether there were a few interesting observations that could be made by looking at these different areas.

The areas that were included in this exercise were:

- County Durham (part of North East LEP)
- Cumbria
- Dumfries and Galloway
- Shropshire
- South Kesteven (within Greater Lincolnshire LEP area)
- Wiltshire

Again, it is important to note that these areas cannot necessarily be termed as 'star pupils' from a productivity perspective. Many of these predominantly rural areas also lag the UK average, and have tended to have grown more slowly than the UK average over the past decade. However, they have tended to have performed more strongly than CloS, although to varying degrees. Again, it is important to reiterate that all will also have their own issues to deal with.

In our view, some interesting issues have emerged that are useful to highlight. None of these issues will necessarily lead to a sudden and dramatic improvement in productivity performance. Indeed, some may be difficult to replicate in CloS, some are related to the industrial legacy of an area and its own geographical, institutional and political structure. We also recognise that some of the issues highlighted would require significant structural (and cultural change) within CloS. Finally, we also recognise it could be argued that some factors are obvious. However, we outline these as issues – often couched as questions to consider/discuss in a policy context.

The primary objective of this exercise – alongside the rest of the content highlighted in this report – is to instigate these wider policy discussions. **Ultimately, the aim is to challenge whether 'more of the same' is necessarily the right thing for CloS if it wants to fundamentally address its persistent low productivity.**

The factors that seem to be important are addressed in turn:

- **Having several globally competitive businesses matters.** These businesses act as important drivers of growth, through their own supply chain linkages, ability to pull in skilled workers, and their potential ability to spread best practice amongst the wider business community. Cumbria acts an example here. Businesses such as BAE Systems, GlaxoSmithKline, Innovia Films, Siemens, Centrica, Pirelli, McVities, New Balance, Sealy and Kimberly Clark all have bases in Cumbria. Almost all of these businesses actively export from their Cumbria presence. The location of these businesses also highlights Cumbria's relatively high presence in manufacturing – identified as an important strength which strategically it looks to protect and enhance.
- **Coalescing around significant assets appears important.** Clearly, some of the areas highlighted have significant economic assets, around which further activity has clustered. The presence of Sellafield in Cumbria is an obvious example. It supports many high-value jobs in its own right. It is clear that replicating this in CloS is not possible (or palatable). However, there is some indication that in other areas there has been an attempt to coalesce/focus activity around centres. For example, Durham is home to the North East Technology Park (NETPark) which appears to act as a key focus for much economic development activity. It is the only science park with two UK catapult centres and is the location for research-intensive activity. Alongside the catapult centres (Satellite Applications Centre of Excellence and High Value Manufacturing Centre) it also houses the National Healthcare Photonics Centre, National Formulation Centre, the Centre for Process Innovation, the Durham Energy Institute, and the Swan Centre for Energy Research.
 - In Wiltshire there appears to be a sharper focus on identified 'growth zones' which tend to be located around key transport corridors with place shaping one of five strategic objectives in their SEP. Three of the Growth Zones are already large centres of economic activity and are seen as having the greatest capacity for supporting sustainable growth in the future.
 - Shropshire has built on its historic defence expertise to build its significant cluster in cyber and business security and resilience.
 - The key difference in CloS is that clusters of activity are more geographically scattered. We would argue that it does not have a single location (in physical terms), which provides a focus for related activity (see below comment on innovation-focus). One hypothesis is that this may lead to a lack of momentum. Again, we offer this up as a policy question rather than stating that either approach is better.
- **Focus on the commercialisation of innovation.** Some areas have a specific policy focus – backed by programme investment – to support businesses from innovation into commercialisation, particularly in relation to workspace that can support a business's development journey. For example

Shropshire's SEP has development of incubator, accelerator and grow on space at key sites as an investment theme, together with an intention of bringing SMEs and larger firms together into business networks around how to innovate and grow productivity. Similarly, NETPark in Co Durham offers business space from incubation to larger sites in the same location, meaning businesses do not need to leave established business relationships when moving. The question of move on accommodation has been a particular issue in Cornwall for the innovation centres as there is no natural progression location from them and losing established business relationships has been a concern for businesses. Taking a different approach, Greater Lincolnshire LEP has explicitly set out innovation as a cross cutting theme in its SEP, supporting this through the development of an Innovation Council (led by University of Lincoln), to develop a framework, strategic guidance and priorities for innovation.

- **Simplified delivery landscape.** The desk-based exercise appears to show that in most other areas the delivery landscape may be simpler than found in CloS. In many senses, this is linked to a stronger coalescing of activity in a physical sense. This may bring benefits in terms of a better coordination of activity. In our view the presence of EU Funding in CloS – and at the scale – has led to a complicated delivery landscape. There are a multitude of organisations delivering against the set of objectives and we question whether this has always been in a coordinated manner. Indeed, there is an argument that the scale of the programmes – within a relatively small area – has led to an element of competition i.e. all chasing outputs. Whilst we accept that effort is made to coordinate activity amongst the main economic development actors, we do question whether the landscape remains more 'complicated' than in other areas. The question is whether this stifles efforts to improve productivity.
- **Making links with other areas is seen as important.** Shropshire is cited an example here. In many ways it shares similar characteristics with CloS, although it does benefit from having a 360-degree market opportunity i.e. it is landlocked and has links to several surrounding areas. However, it appears from our review that it has recognised that it needs to make a more concerted effort to forge links with larger urban areas. For example, it has strong strategic links with the West Midlands Combined Authority. It appears to have recognised that it cannot act in isolation. The Greater Lincolnshire LEP also makes references to 'maintaining permeable boundaries with other LEP areas' in order to make mutually beneficial investments. Having wider strategic links and looking outwards from a LEP area is therefore seen by some as important – and where the developing Great South West Partnership of LEPs might have a useful role to play
- **Connectivity:** Transport links are important and being maximised in comparator areas, to build up strong strategic connectivity. Some of the comparator areas clearly have significant advantages over CLOS in this respect, e.g. with links to motorways (Wiltshire/M4, Cumbria/M6) or with significant 'A' roads (e.g. South Kesteven/A1, Wiltshire/A303). They also make use of rail connections – for example Shropshire and the potential opportunity of the new HS2 station proposed at Crewe (outside the LEP area). Like several comparator areas, Shropshire is seeking to make the most of transport links that may be outside their area but could generate opportunities for growth and development within the area. Broadband connectivity is also a common theme across comparator areas with all seeking to improve digital and mobile connectivity. Cumbria and Dumfries & Galloway are both involved in a cross-border Growth Deal (Borderlands GD). This includes joint working in transport, broadband and mobile connectivity to support business productivity and growth.

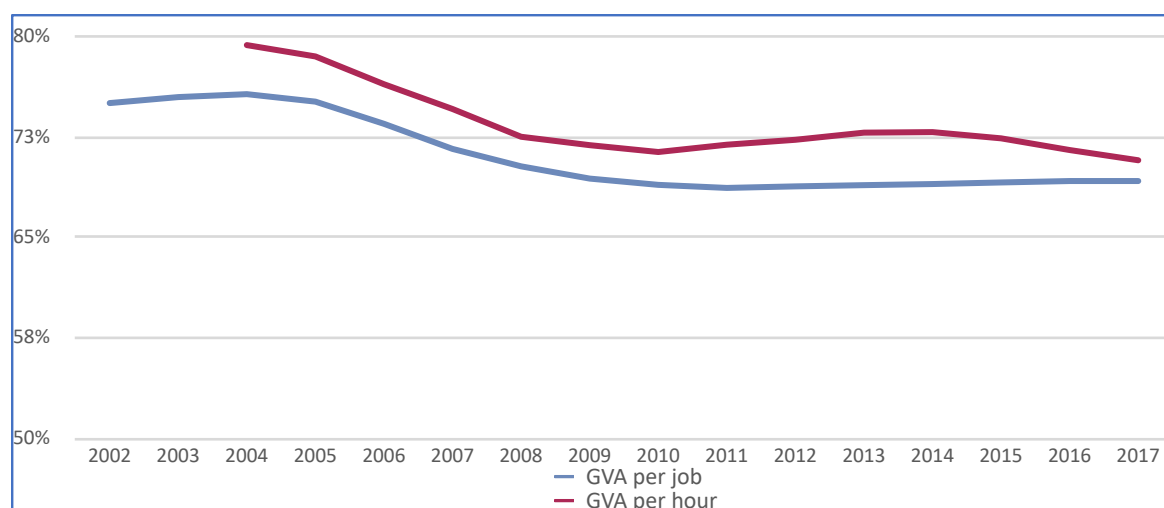
Modelling improvements in CloS productivity

The brief for this work included a requirement to analyse what improvements in productivity would do for the overall CloS economic performance. To set the context, Chart 50 illustrates the level of productivity in CloS as a proportion (%) against the UK average. This includes the two principle measures – GVA per job and GVA per hour. It reinforces the message throughout this report that CloS has fallen in relative terms over the past 10-15 years.

Chart 50 shows that in 2002 the average GVA per job within CloS was 75% of the UK average. However, this has steadily declined, with latest productivity data (2017) estimating this to be c69%. Similarly, in 2004 (earliest available data) GVA per hour in CloS was 79.4%, declining to 70.8% in 2017.

Over this period, average annual growth in GVA per worker in the UK equated to 2.8%, compared to 2.3% in CloS. This is in nominal terms i.e. does not take account of inflation, again highlighting that in real terms productivity growth has broadly ‘flatlined’ at a local and national level. Given that CloS started from a lower baseline, the difference in average annual growth has meant that the ‘productivity gap’ has widened based on this measure. Similarly, when focusing on the GVA per job measure, average annual nominal growth in the UK has been 2.5% since 2004. This compares to 1.6% in CloS.

Chart 50: CloS productivity measures (GVA per job and per hour) relative to UK average



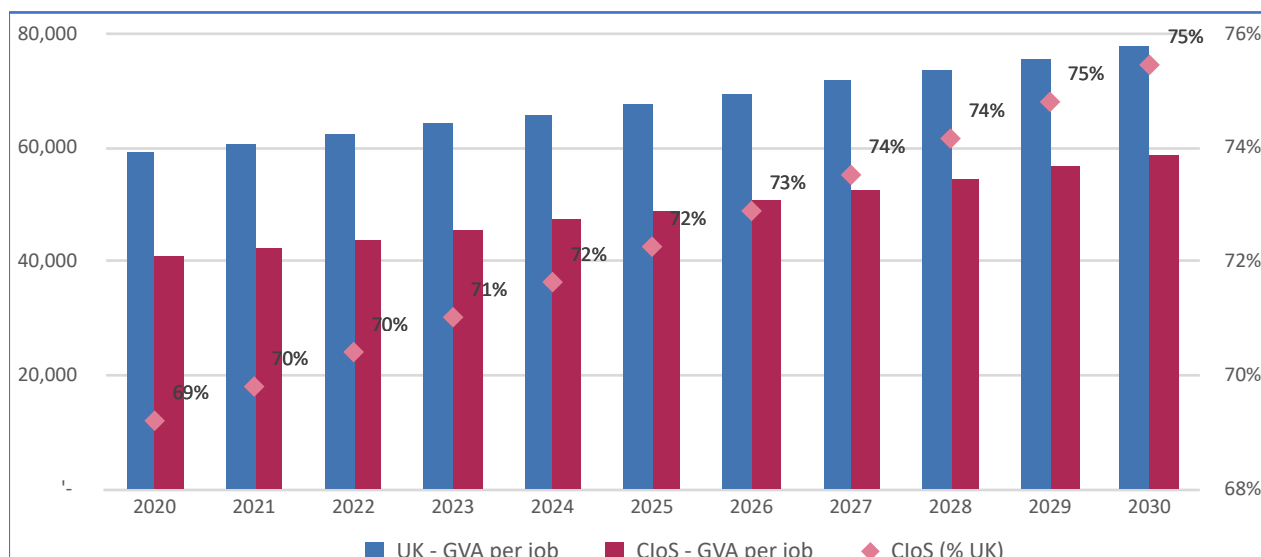
Source: ONS

Our approach to modelling scenarios is understanding what improvements in CloS productivity would need to be achieved to return back to the original baseline noted above i.e. for typical CloS GVA per job to equate to c75% of UK average, and for GVA per job to return to c79% in relative terms. If this were to be achieved, we would view this as a considerable achievement. Put simply, it would reverse the long-term decline as represented in Chart 50 above.

Our modelling is set within a period to 2030, a 10-year horizon which we recognise is a relatively short timeframe. Our scenario modelling is based on an assumption that the UK average would follow the trend illustrated previously i.e. it would continue to grow in nominal terms at 2.8% (GVA per job) and 2.5% (GVA per hour).

If this trend were maintained at a national level, the CloS would need to achieve an average annual growth rate significantly in excess of national growth. This is illustrated in Chart 51, where the ‘productivity gap’ is narrowed. To improve its relative position to 75% of UK average, it would need to grow GVA per job at 3.7% per annum. This is not an inconsiderable shift in fortunes, representing just under 1 percentage point higher growth than seen nationally, and also representing a 60% increase in its average long-term growth (3.7% compared to 2.3%).

Chart 51: Modelled scenario (GVA per job (£) - CloS average nominal growth 3.7% p.a.)

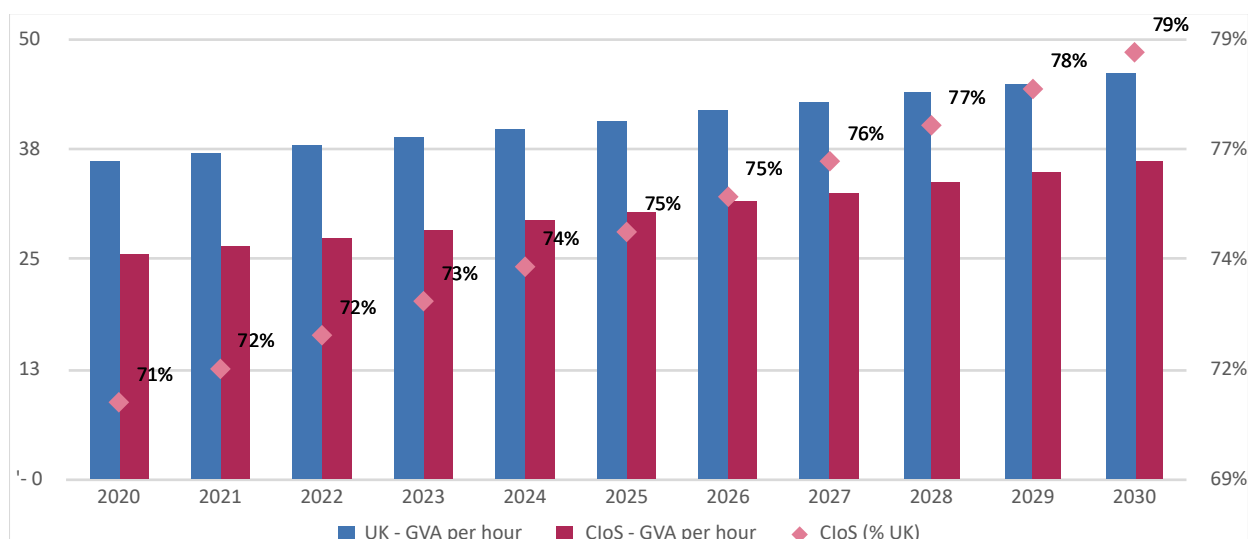


Source: ONS - Ash Futures scenarios

This exercise is repeated for GVA per hour. To improve its relative position back to 79% of UK average (where it was in 2004), it would need to grow GVA per hour at 3.55% per annum. Again, this represents a significant shift in performance, again representing just over 1 percentage point higher growth than seen nationally. The shift is even greater in this scenario (as a result of the more ambitious target of returning back to 79% of UK average rather than 75% in the GVA per job scenario), requiring a 120% increase in its average long-term growth (3.55% compared to 1.6%).

In our view, this illustrates the scale of the requirement and shift in productivity performance if there is an aspiration locally to close the 'productivity gap'. Because no other area in the UK will be standing still, and because CloS is starting from a lower base, then productivity growth would need to be very strong to close the productivity gap in any meaningful way. In our view, this would require a significant cultural shift within the CloS business community, which may be unattainable at this time - certainly within the modelled scenario timeframe.

Chart 52: Modelled scenario (GVA per hour (£) - CloS average nominal growth 3.55% p.a.)



Source: ONS - Ash Futures scenarios

The implications of these modelled scenarios in a strategic context very much relates to aspirations. Hopefully, these scenarios illustrate the scale of the growth required to begin to narrow the 'productivity gap' against the UK average. Even 'aggressive' relative productivity growth over the next 10 years (also happening in relatively troubled/muted economic times), does little to close the productivity gap in a significant sense.

Consequently, we feel that this means:

- Strategic economic policy within CloS should be careful in its aspirations with regards to productivity performance and closing 'the productivity gap'. We would urge against making heroic objectives/aspirations which are very difficult to achieve.
- Policy makers should understand that to significantly close the 'productivity gap' between CloS and the UK average, commitment needs to be in place for the 'long haul'. It will take considerable time to reverse the fortune of several years of relative decline.

In our view a period of CloS productivity growing above any form of national growth should be viewed as a success, even if this were only in marginal terms. Whilst that may not close the 'productivity gap', we feel this would be a significant achievement. This would provide a good foundation.

Are there inherent problems with the measurements?

Across economic development, there has been clear focus on the Gross Domestic Product (GDP) and the regional component, Gross Value Added (GVA) as a measure of growth. Indeed, GDP per capita is a key criterion used by EU Structural Funds to determine which areas are eligible for funding.

Gross Value Added

Gross Value Added (GVA) measures the amount that individual businesses, sectors or industries contribute to the economy. Simplistically, it's the value of the goods and services that have been produced, minus the input costs and raw materials.

Historically the ONS has produced regional gross value added (GVA) by both the income approach (as National Statistics) and the production approach (as experimental statistics). At the end of 2018 it produced the first release of a new balanced measure of regional GVA. This will give users a single measure of economic activity within a region.

The previous income-based approach had three main components³⁴:

- Compensation of employees (wages)
- Gross operating surplus (sum of self-employment income, gross trading profit and surpluses, non-market capital consumption, rental income less holding gains)
- Taxes (less subsidies) incurred as a result of engaging in production (e.g. business rates)

GVA is divided by the regional population to provide GVA per head. It is important to note that this is not a measure of productivity as it includes those in the workforce, and those who are not economically active. Additionally, GVA per head uses a workplace as a numerator and residence as a denominator. An area with lots of in-commuting (e.g. London) would have higher GVA per head as the output of those not living in the area are captured in the regional figure. This has been illustrated earlier through the work by Sheffield Hallam University.

GVA is one of the indicators legally required by the EU statistical body (Eurostat) and is available at a number of sub-regional levels³⁵ and by industries³⁶, which brings advantages of being able to compare the regional output activity of different areas and for different sectors, following a standardised methodology for calculating. GVA has been a common indicator for many years, enabling trends in regional output performance to be reviewed over time.

In order to use GVA to assess labour market productivity, there are two key possible options:

- GVA per workforce job/filled job
- GVA per hour worked (most view this as the preferred indicator)

³⁴ <https://www.ons.gov.uk/economy/grossvalueaddedgva/methodologies/regionalgrossvalueaddedincomeapproachqmi>

³⁵ Available down to NUTS 3 (local areas – principally individual counties and unitary authorities)

³⁶ NUTS 1+2 GVA by 20 industries, NUTS3 by 10 industries

These have the benefit of linking the output produced to the workforce undertaking the work and adjusts for issues around dependent (not economically active) population and commuting effects.

However, there remain limitations to GVA as a measure, which relate to its separate components:

- Firstly, for activity to be captured by GVA it needs to be paid for – and reflected in employee compensation. Unpaid work does not get included (e.g. volunteering, care for family members etc.). For example, if a household sends a child to nursery for care, this would be included in the GVA measure (as the nursery providers are paid for a service). However, if a parent decides to stay at home to look after children, it is not included. The same is true of all household tasks – if you pay someone to clean your house, it is included. The ONS Household Satellite Account estimated that the total level of unpaid household work was worth £1.24 trillion in 2016, equivalent to £18,932 per person³⁷. The reason that this matters is because the hours of unpaid work can impact on individuals well-being. It also matters in terms of what is known as ‘substitution effects’. One argument is that if time is taken on unpaid work, the ability of an individual to complete paid work will be limited. Regionally, the availability and cost of household services may impact an individual’s opportunity to work. Additionally, activity that is socially beneficial, such as volunteering and caring, is excluded from GVA calculations and fail to reflect the value of this to society.
- Importantly, GVA may does not necessarily measure what society values. Given that only ‘paid for’ goods and services are included in the estimation of GVA it is feasible that activity that society views as negative is included. For example, if a major incident pollutes a river and requires significant activity to clean up, this may create the perverse outcome of boosting GVA. In comparison, not polluting the river in the first instance would have had no impact on the measure.
- Additionally, GVA does not measure the value that households place on leisure, a key component of economic welfare. For example, whilst the US has a high GDP per capita relative to other OECD countries, when leisure (and mortality and equality) were included in an enhanced GDP measure, the gap was almost completely closed³⁸. This demonstrates that the regional value added created in the economy is only one component of well-being.

Value Creation and Value Extraction

There has long standing assumption that wages and profits reflect the value that society places on the goods and services produced, and that greater productivity leads to society benefiting more from those goods/services. However, there are two potential issues at play. Firstly, the link between employee wages and productivity has weakened. This implies that the redistributive effect of increasing productivity and therefore increasing prosperity has also weakened. Referring to Krugman’s often used quote (as we have used in this report), the intrinsic relationship between increasing productivity and rising living standards has changed over recent years. The relationship certainly does not appear to be linear.

Secondly, as argued by Professor Mariana Mazzucato from University College London, wages and profits can represent rent seeking behaviour and not value adding. Professor Mazzucato³⁹ argues, for example, that the high wages and profits achieved by the finance sector do not necessarily reflect the risks, rewards and increased productivity of its own activities, rather an increasing ability to extract value from other sectors and redistribute amongst itself. Whilst this may be less of an issue in regional economies, it may explain the very large gap between the SE and London’s performance relative to other areas.

Overall, it has been argued that measuring value added within service-sector activity is more difficult and less defined than measuring the value added in the production of goods. In particular there are many activities where activities do not necessarily lend themselves to be measured – much of the public sector, health sector etc. being cited as examples.

³⁷ <https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/articles/householdsatelliteaccounts/2015and2016estimates>

³⁸ ‘Do-it-yourself digital: the production boundary and the productivity puzzle’ – Economic Statistics Centre of Excellence (2017)

³⁹ A similar assessment is made of the pharmaceutical industry, where she argues that the public sector is a major contributor to the development of new drugs (etc). However, prices charged for new drugs assumes that all the innovation was driving by the private sector.

Therefore, in conclusion whilst GVA is a very useful measure for tracking economic changes within an economy, it certainly has limitations. Consequently, many argue it is important to view progress against a basket of indicators, particularly if the 'end result' of economic growth is to ultimately enhance the social well-being of an area's inhabitants. We would agree with that view.

Additional Measures

In many senses, the relevance of additional measures depend on what CloS wishes to achieve – what are the objectives of the local population. As always, measurements should always reflect those objectives. This may include economic development, business success, employment, the quality of opportunities (wages, job security, quality of jobs), inclusion and quality of life (health and well-being), and the quality of place i.e. the environment. By simply introducing that wide range of objectives, it becomes clear that a wider basket of measures would be more appropriate than simply distilling performance in a single measure.

We discuss some alternative measures in turn:

Gross Disposable Household Income (GDHI)

This is a measure that is often used alongside GVA already. GDHI represents the amount of income available to households after taxes, National Insurance, pension contributions, property costs and other interest payment have been deducted. Using GDHI per head of population enables regional comparisons. It is possible to have high regional productivity, and lower GDHI if an area has a high level of unemployment, dependence etc.

ONS Measuring National Wellbeing

This combines data from a number of sources to review the different facets that combine to give an overview of the wellbeing of individuals. It is largely a self-reported measurement i.e. those who are included in the ONS' survey panel are asked how they feel against a number of factors. The analysis provides an interesting perspective of those who report higher wellbeing and conversely those who report lower wellbeing. As may be expected, factors such as inactivity, self-declared long-term illness/disability and home ownership being strongly associated with wellbeing⁴⁰.

There are alternative well-being indices which have been produced:

- Thriving Places Index: compares regions against several measures across economic, place, health and equality. (www.thrivingplacesindex.org)
- The PriceWaterhouseCoopers (PWC) 'Good Growth For Cities' combines measurements such as job security, wages, income distribution, health, leisure time, affordable housing, entrepreneurial activity, skills, transport infrastructure, carbon emissions. Different weights are applied to each measure (www.pwc.co.uk/industries/government-public-sector/good-growth)

As shown by the well-being indices, poor employment opportunities, and inactivity are associated with lower well-being. Key labour market statistics on employment, hours worked, wages, inactivity, NEETS, education and attainment are important additional indicators that help capture the nuances of economic activity within CloS. They can also lead to indications of links between factors. For example, studies have shown that youth unemployment can lead to long-term 'scarring effects' on the labour market, where periods of youth unemployment means those individuals are more likely in the future to stay in low pay, low skilled employment⁴¹.

⁴⁰ Understanding well-being inequalities: Who has the poorest personal well-being ONS 2018

⁴¹ Research by Eurofound (2017) using the European Social Survey, examining the long term scarring effect of youth unemployment found that although the scarring effects on labour market participation disappeared over time there was a permanent lifelong scarring effect on the earning prospects of young people. This lifelong scarring not only impacted future earnings but also the types of future jobs undertaken, with those who experienced long term unemployment in their youth more likely to be employed in unskilled or semi-skilled jobs. This indicates that the impact of the financial crisis may continue impacting on employment and income inequalities for decades to come – 'Inequality, Well-being and Inclusive Growth Productivity'

Conclusions

This report responded to the requirement set out in the brief to undertake research to better understand the causes and possible mitigation of persistent low productivity in CloS. The report looks at barriers to improving CLOS's productivity performance, and how they could potentially be addressed.

Our work has looked at this through a variety of methods, but principally focusing on a review of available research looking at why productivity growth (in the UK and internationally) has been muted over the past 10-20 years, and understanding how some of the empirical evidence relates to CloS. This has been informed by our knowledge of the characteristics of the CloS economy. Alongside this, we have undertaken data analysis across all local authority areas in England, Wales and Scotland – attempting to make this exercise simpler by ‘clustering’ local authority areas based on similar characteristics. Finally, we have looked at 6 other local authority areas in England and Scotland, wanting to understand whether there are useful lessons to learn (in a productivity context) in what is being done elsewhere.

The work sets out the context that the problem of muted productivity growth is certainly not a problem that is unique to CloS. Many developed economies – including the UK – are only emerging from a period of negative real productivity growth. Growth over the past 20-30 years has not matched that seen previously. In the last 20 years, advanced economies have struggled to achieve a 1% improvement in annual productivity growth in real terms.

Our work reiterates that the ‘productivity puzzle’ has received a significant amount of attention in research and policy terms. Despite this significant activity, performance has not improved. In that sense, there is ‘no magic bullet’. It is fundamental to note that this report does not provide ‘the answer’ to solving CloS's own productivity puzzle. Unfortunately, it is not as simple as that, and there is no one single answer. Productivity performance within an area is a result of a range of complex factors, most of which are interconnected. However, this research has been designed and undertaken to provide a series of pragmatic observations, conclusions and recommendations which we feel will be important for the CloS policy community to consider.

By looking at the productivity data at a sub-regional basis, one of the initial factors to highlight is that the data suggests that growth in labour productivity (as measured by GVA per hour) in CloS has performed relatively robustly since 2018. This is in *absolute* terms. However, because CloS starts from a lower baseline, it has actually fallen further behind the UK average in *relative* terms. The decline in its relative position against the UK average is partly an arithmetic outcome, certainly since 2010. It is simply not growing fast enough to narrow the ‘productivity gap’.

Having stated that, it does remain one of the least productive areas of the UK and this indicates that there are particular structural factors at play.

By combining the review of relevant research, alongside our data analysis and light-touch review of other areas, we highlight what we view as important/useful factors to consider in a CloS context. Some of these factors can be evidenced (to varying degrees) by empirical evidence, whilst some are more qualitative, but we still feel relevant to highlight. In some circumstances the research review highlighted an interesting issue, which we subsequently investigated in our data analysis. Sometimes, that analysis broadly corroborated/confirmed the argument being made, whilst in other occasions we did not find a strong link at a local authority/cluster level.

We feel important factors include:

- The slowdown in productivity growth appears to have been driven by a **reduction in ‘capital deepening’** that has followed the financial crisis in 2008-2010. That is, capital investment has fallen sharply as businesses have replaced investment in capital with labour. Whilst this had a positive outcome in maintaining employment levels (higher than they might reasonably have been expected during the recession period), it did have a detrimental impact on productivity (levels and growth).

Added to this, there is some evidence that **the use of capital (machinery, technology etc.) has slowed - resulting in a slowdown in what economists' term Total Factor Productivity**

- **There is a clear split in performance between the 'best' businesses in terms of productivity, and the 'rest'. In fact, the 'rest' represent a 'long-tail' of less productive businesses.** Productivity growth in this 'long tail' has been very low for a considerable period. We see no reason why this profile is not replicated in CloS. In that respect, it will not differ from most other areas of the UK. However, the key question from a policy perspective is whether CloS has its expected proportion of the 'best' businesses i.e. those at the upper end of the productivity spectrum. Having these 'gazelle' businesses are also important because of their ability to spread best practice through the wider business population (although there are suggestions this process has slowed recently - see below).
- **Physical connectivity still matters.** Previous econometric work shows that a reasonable proportion of the 'productivity gap' can be explained by physical connectivity, often measured as time: distance to major urban areas. Whilst digital improvements have improved matters, it has not led to the 'death of distance'. It remains an important determinant and can visually be seen through maps which show lower productivity in peripheral areas such as CloS.
- **It is differences in firm-level productivity, rather than differences in sector-composition, that is the important determinant in differences in productivity performance between areas** of the UK. According to ONS analysis (using micro-data at a firm-level) it is suggested that 90% of the difference between CloS and the UK average can be explained by lower average productivity in its businesses, rather than its industry/sectoral mix. This is one of the important factors on which this report is based also influencing some of the policy recommendations. More analysis of the contribution of sector-mix to productivity differences between CloS and the rest of the UK may be of benefit, but is outside the scope of this report.
- There are some important firm-levels factors which follow on from the above point. Empirical evidence indicates that **exporting, foreign-ownership and management quality all have close statistical relationships with firm-level productivity.** All are important determinants of differences in productivity at a firm-level. This again raises important questions around whether CloS has its expected proportion of businesses that are exposed to global markets. There is also a question around management quality/practices/aspirations of CloS businesses. There are lots of good businesses in CloS, driven by motivated and skilled, management. Whether this is widespread is another question. This is difficult, or impossible, to evidence but we feel is a worthwhile policy question.
- There is an argument that **the advent of 'cheap money' over the last decade has money' has impacted negatively on the process of 'creative destruction'.** Creative destruction refers to the process where less competitive businesses stop trading. The low cost of borrowing has led to the concept of what has been labelled 'zombie firms'. These are businesses that, perhaps, would not have been able to sustain loan repayments when monetary policy was tighter, given they are inherently less efficient/competitive/profitable. Greater bank forbearance over the past decade also helped keep these businesses keep afloat. A key question raised in the context of this work is whether access to EU funding has accentuated this issue in CloS. Whilst this may be a controversial question to raise, we feel it is valid even through it would be difficult to test.
- **Innovation and R&D intensity remain important** and tend to have a positive relationship with measures of productivity. The available data - although associated with some difficulties at lower geographies - suggests that R&D expenditure within CloS remains relatively low.
- Following on from the above, there is an argument at a macro level that one of the explanations of slow productivity growth has been that **technological/innovation diffusion from those leading businesses to the rest of the business population has slowed significantly over the past few years.** This may partly explain the growing gap between the 'best' and the 'rest'. In part, this may be explained by some factors illustrated above. For example, one argument is that managerial capacity and capability is linked to the ability to adopt new processes. How this process works within CloS is not known, but we feel it is a useful and relevant to raise.

- There is an argument that **the role (and potentially size) of the public sector may be a factor**. This is a multi-faceted argument that covers questions such as whether public sector activity 'crowds out' the private sector, whether activity which supports economic development is coordinated in the best manner, whether links with other areas are as strong as they could be, whether activity should be more strongly coalesced around more identifiable physical assets i.e. growth points. In our view, the relevance to these questions in a CloS context is closely linked to the presence of extensive EU funding over the past 20+ years. The delivery landscape is quite complex, and we would argue coordinated in the most efficient manner. Indeed, there may be elements of competition between elements. How this has impacted its productivity performance cannot be empirically proven, but we feel is certainly a valid issue to raise.

This work also includes a modelling of scenarios around productivity growth, focusing on understanding the scale of growth required for CloS to partially close the productivity gap. This scenario modelling illustrates that significant growth would be required for CloS to close this gap in a significant sense over the next 10 years. It is certainly not going to happen overnight. Our view which follows this, is that CloS should concentrate on achieving better performance in small steps and that it should measure 'success' in absolute terms rather than in relative terms.

Finally, we conclude with a brief section that considers the importance of considering improvements in socioeconomic wellbeing on a much wider sense than simply productivity growth. Whilst productivity is fundamental to the long-term competitiveness of an economy, there are many other important factors which need to be considered. In our view, productivity should be one of a basket of measures against which well-being should be judged. Given this was not a core part of our work, this is only touched on briefly and may require more consideration moving forward.

Addendum

Improving productivity in the wider context - a 'new normal'

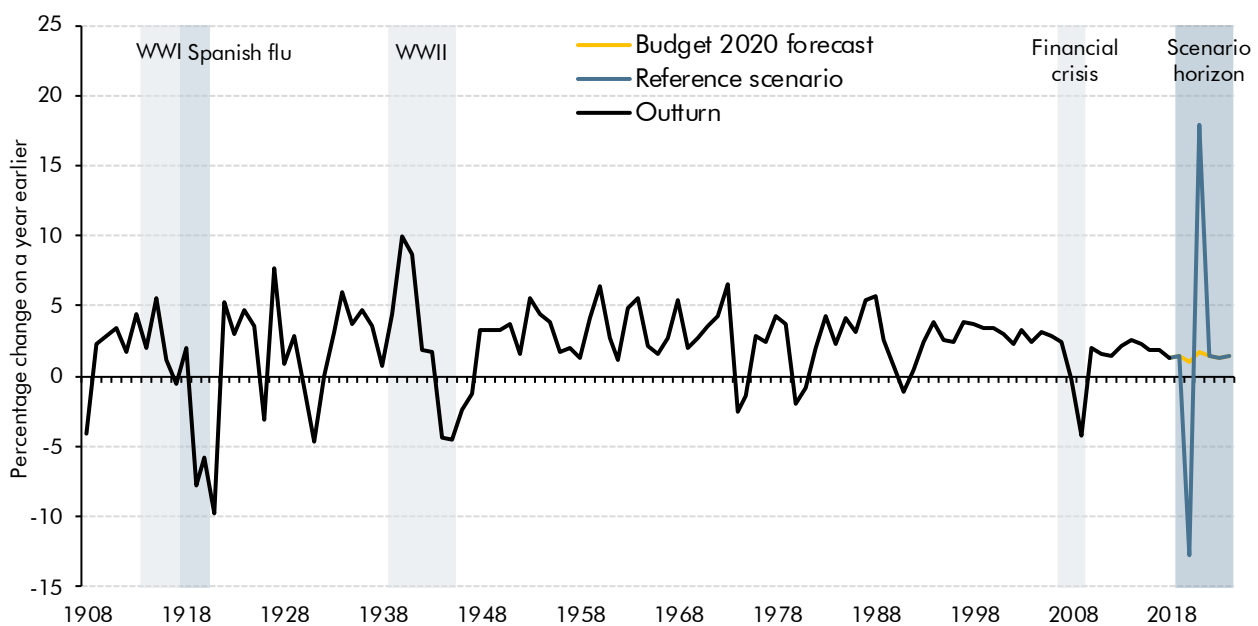
The CloS Productivity Review was completed before Covid-19 developed into a global pandemic. A tragic, human health crisis, resulting in many lives being lost. As containment measures are implemented to control the pandemic, the global economy is in lockdown.

The IMF forecast that global output in 2020 will contract by 3%, the worst recession since the Great Depression (1929-32) and far worse than the Financial Crisis (2009), when the global economy contracted by 0.1%. Unlike the Financial Crisis, this pandemic is forecast to be truly global in its impact, affecting both advanced economies and emerging and developing economies alike.

There is significant uncertainty over the duration and overall impact of the crisis. The IMF forecast assumes that the virus peaks in most economies by the second quarter of 2020. However, this is very uncertain and depends on virus epidemiology, the effectiveness of containment, treatment, testing and development of vaccines, all of which are yet to be fully understood.

In the UK, the Office of Budget Responsibility (OBR) forecasts that UK GDP will contract by 13% in 2020. This is its Covid-19 'reference case'. The Bank of England has also produced its own economic forecasts; the BoE forecasting a 14% contraction in UK output through 2020. Again, both institutions recognise the significant uncertainty in any such forecasts. The scale of such a fall, despite assumed recovery, far exceeds any historic decline.

Figure A.1 OBR UK GDP Forecast in Historic Perspective



Source: Bank of England, ONS, OBR

The initial focus on these forecasts of impact are now shifting onto actual economic data that is slowly emerging. A key release was the ONS's estimates of first quarter economic performance figures. This showed that GDP fell by 2% per cent on a quarterly basis to the end of March. On a monthly basis output plunged by 5.8% in March, even though lockdown restrictions were only in place for the last few days. The ONS commented that this was "the biggest monthly fall since the series began in 1997". All industries in the overall economy saw significant contraction.

The Treasury has introduced several measures to soften the economic impact of the lockdown including the furlough job support scheme (now extended to the end of October - although gradually being

tapered beyond the end of July), and the Government backed loan guarantee scheme, extending to 100% state backed loans for qualifying micro businesses. Public Sector borrowing is assessed to increase by £218 billion in 2020, taking total public sector borrowing to 14% of GDP (compared to 2.1% of GDP in 2019/20).

The impact of Covid-19 on our economy and society is very uncertain including both the short and long term. The 'scarring effects' are expected to be significant, including businesses failures (despite a lag and the safeguarding schemes put in place initial data show 21,000 more businesses collapsed in March 2020 compared with March 2019) and impact on individuals. Recessions are bad for people's standard of living and they tend to be particularly bad for young people.

There is also the prospect of a vicious circle developing, for example significant unemployment can drag an economy down further and affect the rate of recovery. It is almost inevitable that increases in taxes will be needed to cover the significant (unprecedented) increase in spending, and address deficiencies that have been highlighted in our social care system.

It is expected that significant questions will begin to be asked (and already are) about how well our modern economy works for society - the balance between our economic winners and losers and the acceptability of precarious working practices of the gig economy.

Commentators are discussing the '*end of the beginning*' as the UK economy overcomes the first phase of the pandemic. What the 'new normal' will look like is very uncertain. Previous challenges such as Brexit and Climate Change remain pertinent and need to be addressed in any new context that emerges from the post Covid-19 recovery.

From a policy perspective we feel there will be a need and desire to consider all these highly significant issues in a holistic sense. Improving productivity performance over the longer-term remains highly integral to the health of the economy. However, we recognise that short-to-medium priorities may have shifted.

However, all these big issues (Covid-19 recovery, climate change, Brexit, productivity etc.) are not unrelated. There is a better chance of economic and social recovery in a post Covid-19 world if businesses are competitive and resilient. Ultimately, that partly relies on their productivity.

Therefore, whilst the goalposts may have shifted, productivity remains a critical component within this mix of significant policy questions. A greater emphasis may be placed on how well the fruits of labour are shared within society and reflect our wider priorities, but it remains a problem that local policy should not completely disregard. We feel the outcomes of this research should be used to maintain that focus and wider discussions of how a continued focus on improving productivity can sit alongside these other priorities will be important.

The evolving picture of the Covid-19 pandemic on productivity - an early meta-analysis

The Covid-19 pandemic has had a significant economic and societal impact across the UK, primarily since the introduction of the initial national 'lockdown' across the UK at the end of March. The full impact of the pandemic has yet to be realised and its specific impact on the UK economy may not be understood for many years.

As acknowledged elsewhere, this original research was completed at the end of March 20 - just as the first national lockdown was introduced. Cornwall Council wished to revisit the question of whether more is known about the specific impact that Covid-19 is having on productivity. Consequently, this has been briefly revisited in October 2020 - acting as a supplement to the original analysis.

We feel it is important to highlight that the principle policy concern in relation to the impact of Covid-19 on the economy is currently focused on preserving businesses and jobs. The Government support packages that have been in place since the end of March - and now extended - have very much focused on trying to keep businesses trading and having jobs for people to return to. In that respect, the long-term policy focus on improving the UK's absolute and relative productivity performance is currently a secondary/subsidiary focus. Having stated that, as the rate of infection has begun to differ across the UK and the potential for 'tiered lock-downs' is emerging, there remains concerns about how this will affect the Government's intention to 'level up' the economy. There is concern that different social and economic restrictions will exacerbate the regional differences that the UK Government had previously promised to address.

Given the lower focus on productivity - combined with the fact that it remains a highly dynamic and volatile situation - the main focus of monitoring the impact of the pandemic has been on broader economic indicators. The ONS' 'flash estimates' which they have developed to look at the impact of Covid-19 continues to primarily look at the impact on the labour market and business sentiment⁴².

However, some of this is insightful in terms of how it may impact productivity over the medium-to-longer term. Firstly, the overall context is provided by the short, sharp drop in economic output since the end of March. UK GDP fell by 7.3% in March 2020 and by 19.5% in April - the largest drop in output recorded. Whilst there has been some recovery in the subsequent months, this remains under pressure. The latest GDP monthly estimate showed that the economy only grew by 2.1% in August. Overall, UK GDP in August remains 9.2% lower than in pre-outbreak February. This is shown in the table below.

	Feb 2020	March 20	Apr 20	May 20	June 20	July 20	Aug 20	Change in GDP (Feb 20 to Aug 20)	Rolling 3 month growth (June to Aug 20)
GDP	-0.3%	-7.3%	-19.5%	2.7%	9.1%	6.4%	2.1%	-9.2%	8.0%
Index of Services	-0.3%	-7.9%	-17.8%	1.8%	8.2%	5.9%	2.4%	-9.6%	7.1%
Index of Production	0.4%	-4.6%	-19.6%	5.7%	9.8%	5.2%	0.3%	-6.0%	9.3%
Manufacturing	0.8%	-6.0%	-25.1%	7.8%	12.0%	6.9%	0.7%	-8.5%	11.3%
Construction	-1.3%	-5.5%	-41.2%	9.1%	21.8%	17.2%	3.0%	-10.8%	18.5%
Agriculture	-0.8%	-1.8%	-6.0%	0.8%	3.2%	0.1%	-0.4%	-4.3%	1.5%

Source: ONS Monthly GDP estimates

⁴² <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases>

As shown throughout the previous research, labour productivity tends to be measured using either 'jobs' or 'hours' as the denominator. Therefore, by understanding the impact on these two measurements there may be indications regarding the potential impact on productivity through 2020. In terms of jobs and employment, this is difficult to analyse because the Government schemes in place such as the Coronavirus Job Retention Scheme (CJRS) and Self Employment Income Support Scheme (SEISS) have provided a safety net which has helped alleviate the worst effects on the labour market and unemployment. Whether the full extent on unemployment will 'unwind' over the coming months is not yet known – although it is widely expected that there will be a significant impact.

Partly as a consequence of the support schemes in place, the number of people in employment across the UK only fell by c165,000 between March and July 2020. However, the number of people in employment in July 2020 is still higher than the same period the previous year. This is shown in the table below.

Total in employment – aged 16 and over			
	Level	Change on quarter	Change on year
Nov 2019-Jan 2020	32,985,005	183,601	271,240
Dec 2019-Feb 2020	33,073,039	172,089	352,170
Jan 2020-Mar 2020	33,144,232	210,633	447,539
Feb 2020-Apr 2020	32,991,078	6,073	244,954
Mar 2020-May 2020	32,947,516	-125,523	198,582
Apr 2020-Jun 2020	32,924,101	-220,131	112,846
May 2020-Jul 2020	32,979,454	-11,624	202,352

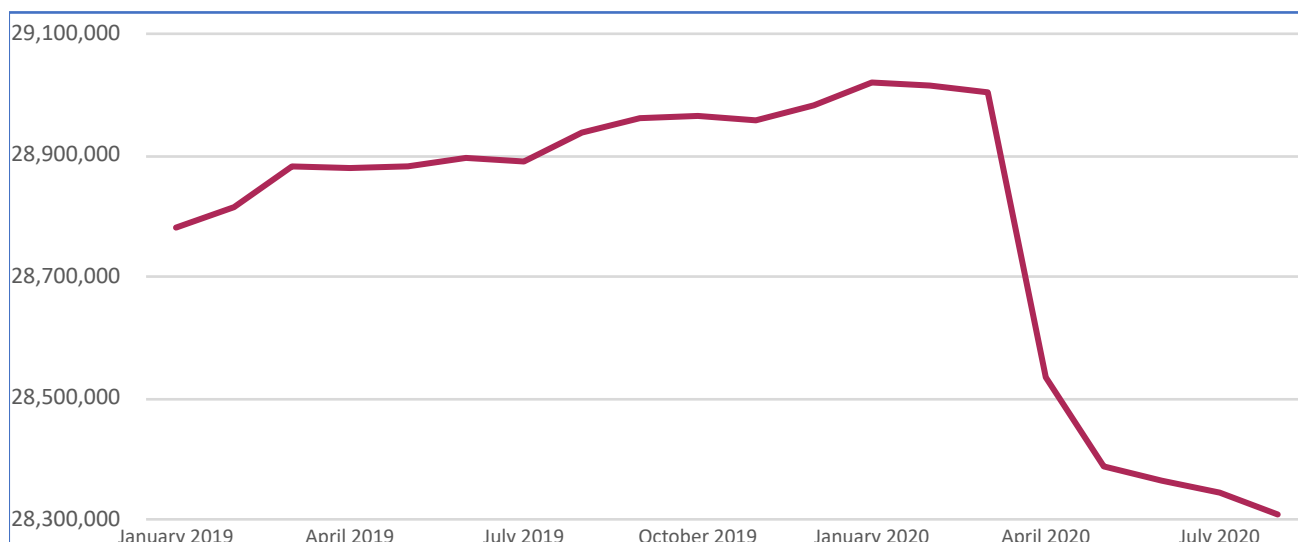
Source: ONS Labour Force Survey

However, many of those who are classified as in employment are temporarily away from work. Experimental estimates based on returns for individual weeks show that more than 5m people were temporarily away from paid work in July 2020, with approximately 2.5m of these being away for three months or more. Of those away for three months or more, at the end of July 2020 approximately four-fifths were earning half or more of their salary.

The ONS recognised that its normal sources – such as the labour Force Survey – may not fully reflect the impact on those in work. Therefore, it has produced experimental data on the number of payroll employees using HM Revenue and Customs' (HMRC's) Pay As You Earn (PAYE) Real Time Information (RTI) as the source. This more dynamic source does allow a 'flash estimate' on jobs and does indicate a more significant evolving impact. The latest figures show a fall in payroll employees in recent months. Early estimates for August 2020 from PAYE RTI indicate that the number of payroll employees fell by 2.4% compared with March 2020. In August, 695,000 fewer people were in paid employment than in March 2020 – but still only a 2.4% fall. This is shown in the chart below.

Therefore, the labour market adjustment – as in falling numbers of people in work – has not yet fully reflected the fall in output.

Chart: Payrolled employees, seasonally adjusted, UK

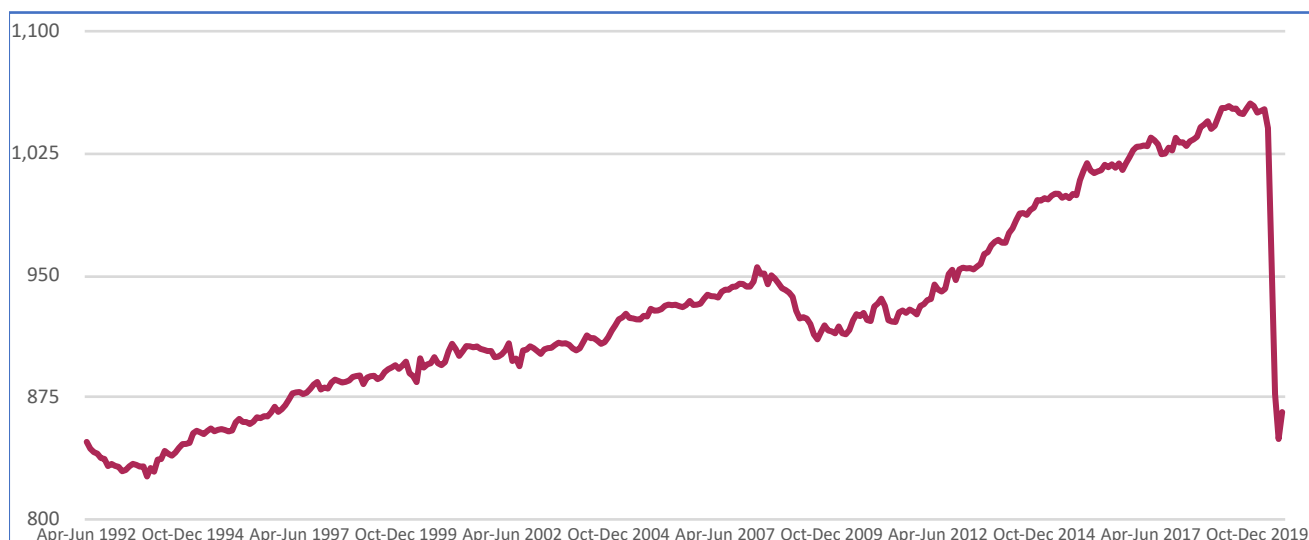


Source: ONS Labour Force Survey

In terms of the other measure – hours – the labour market ‘shock’ was much more immediate and significant. Between February to April 20 and May to July 20, total actual weekly hours worked in the UK decreased by 93.9m to 866.0m hours – a decrease of c9.7%. Therefore, the adjustment in hours worked has more closely matched the fall in output.

Over the year, total actual weekly hours worked in the UK decreased by 183.8 million to 866.0 million hours in the three months to July 2020. Over the same period, average actual weekly hours fell by 5.8 hours to 26.3 hours. This sharp drop in hours worked is clearly illustrated in the chart below.

Chart: UK total actual weekly hours worked (people aged 16 years and over)



Source: ONS Labour Force Survey

Therefore, the broad conclusion that could be inferred from the above data is that over the past six months it is likely that labour productivity as measured as GVA/GDP per job will have fallen sharply – simply as a mathematical result of the numerator (output) falling much more sharply than the denominator (number of jobs). In comparison, the impact on labour productivity as measured on a ‘per hour’ basis, may not be as marked in a statistical sense.

However, what is unknown is how productive those hours that were worked were. Given that the majority of the workforce – particularly in the early part of lockdown – were working from home, the impact of large-scale homeworking has not yet been looked at from a productivity perspective.

However, it is important to stress that that all of these statistics have been produced quickly and will be subject (potentially significantly so) to future revisions. It is also our expectations that – when released – the labour productivity measures at a national and sub-national basis for 2020 should be treated with some caution, certainly in the respect of forming part of any long-term trend. The ‘economic dislocation’ experienced in this period is of such magnitude that interpreting statistics will be fraught with difficulty. These methodological difficulties have already been recognised by the ONS⁴³. Our expectation is that the scale of subsequent revisions will differ across industries.

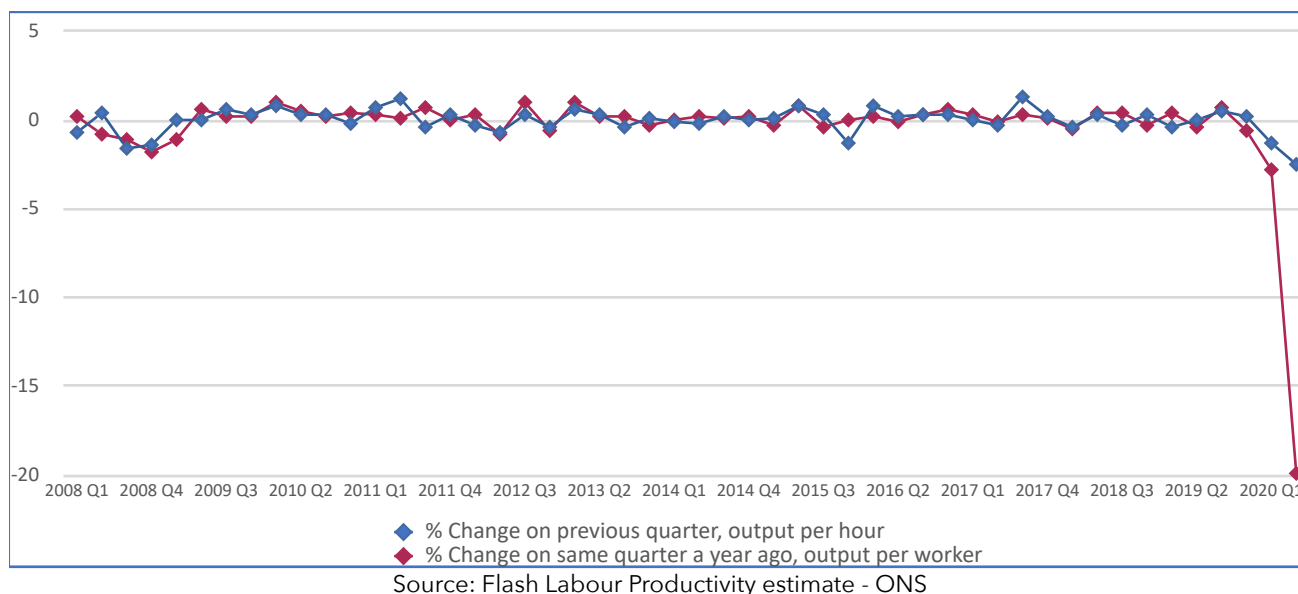
Despite this volatility, the ONS has continued to produce its quarterly ‘flash estimates’⁴⁴. Importantly, this now includes the initial estimate of UK productivity in the period April to June 2020 i.e. the first quarter significantly impacted by Covid-19. As indicated above, the ONS data does reinforce the above argument. Whilst labour productivity for Quarter 2 – as measured by output per hour – fell by 2.5% when compared to the previous quarter, when measured by output per worker it fell by 19.9% – the steepest fall on record. As noted, this is steeper than that observed for output per hour because of the impact of the furlough scheme that retains employees as workers even though they work zero hours.

Measured on an annual basis, the declines are more significant and perhaps because the greatest concern given the declines have largely reversed any improvements in labour productivity generated over the previous few years. When compared with the same quarter in the previous year (Quarter 2 2019), output per hour fell by 3.0% while output per worker fell by 22%, again reflecting the impact of furloughing.

Due to the impact of furloughing, the ONS is currently arguing that output per hour should be considered the headline measure of labour productivity. The ONS have stated that output per worker estimates that exclude furloughed workers will hopefully be added future releases of labour productivity.

The initial estimates of both the ‘per job’ and ‘per hour’ measurements are shown in the chart below – illustrating the difference in the two measures over the period since March.

Chart: UK Output per worker and per hour



For the first time, the ONS has also produced initial estimates of labour productivity on an industry level – covering the period from April to June 20. These initial estimates – which will again be subject to revision – show that every sector in the economy saw a quarter-on-quarter fall in output per hour. Construction saw the largest fall of 11.4% and manufacturing saw the smallest at 0.3%.

⁴³ ‘Coronavirus and the effects on UK productivity measures’ – ONS – May 20

⁴⁴ <https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/articles/gdpandthelabourmarket/apriltojune2020>

The fall in output per hour in construction was driven by a fall in output of 35% for the sector, which was a more significant fall than the 26.6% drop in the number of hours. The second largest fall was seen in services, which saw output fall by 19.9% - faster fall than the 17.9% fall in hours. These changes resulted in a 2.5% decrease in output per hour.

The results on a wide sector level mask much larger changes in the constituent industries. By far the most significant fall in output per hour was in the hotels and catering industry – as expected given the particular impact on that sector. The second largest fall was in transport equipment manufacturing (particularly aerospace).

	Output per hour (growth %)	GVA (growth %)	Hours Worked (growth %)
Whole economy	-2.5	-20.4	-18.4
Non-manufacturing production	-0.5	-6.8	-6.4
Manufacturing	-0.3	-20.2	-19.9
Construction	-11.4	-35	-26.6
Services	-2.5	-19.9	-17.9

Source: Flash Labour Productivity estimate - ONS

The big question in relation to productivity and Covid-19 is whether the declines that have been experienced to date – as highlighted above – are temporary or represents something more structural. The context here, as noted in the previous research, has been subdued productivity growth in many developed economies over the past decade – the ‘productivity puzzle’. As previously discussed, it has taken many years to recover the lost ground in the aftermath of the financial crisis. The hope is that the same experience will not be repeated in a post Covid-19 environment.

What is expected in many quarters is that the economic disruption from the combined effects of Covid-19 and Brexit will complicate the Government’s ‘levelling up’ agenda⁴⁵. This could have significant potential implications for CloS.

⁴⁵ <https://www.ifs.org.uk/publications/15056>

Annex A – approach to cluster analysis

This process identified a range of variable which were felt to have a relationship with, influence on, or productivity.

A key data test was that data was available for all England, Wales and Scotland Local Authorities.

In doing this we excluded the City of London and Isles of Scilly due to key data not being available, and to take out the skewing impact of the City of London in particular. The report considers Cornwall but many of the lessons are applicable to the Isles of Scilly.

A key consideration was which set of Local Authority boundaries to use. As part of this testing we settled on using Local Authority Boundaries as of 2015 (LAD15), again to ensure maximum data availability. Where recent data is only available for 2019 onwards geographies (Unitary Authorities were formed in Somerset, Dorset and Suffolk in 2019) we have continued to use the LAD 15 geography. In order to use the latest available data this has meant that we have taken the new unitary authority data and allocated this to the former LAD 15 districts within the new unitary areas. This was a pragmatic compromise to we could use the latest available data.

We tested these for polarity - e.g. standardising high = x low =y, tested for correlation and then in a two stage process converted all data to percentages - either showing change over time or current share of a total, and then converted all percentage data to a scale of between 0 (the lowest value) and 1 the highest value (with intervals of 0.1 to 0.9).

We then ran a k-Means Analysis in SPSS to test the strength of the statistical relationship across local authorities in England, Wales and Scotland. This process gave us 12 clusters.

Annex B – local authorities in each cluster

'Central London West Thames'	'North South Urban Belt'		'Rural & Islands'
Camden	Amber Valley	Kettering	Aberdeenshire
Hammersmith and Fulham	Basildon	Luton	Allerdale
Kensington and Chelsea	Bexley	Medway	Craven
Richmond upon Thames	Blaby	Midlothian	Derbyshire Dales
Westminster	Broxbourne	North Tyneside	Eden
	Broxtowe	North Warwickshire	Forest of Dean
			Hambleton
			Harrogate
			Herefordshire, County of
			Highland
			Melton
			Mendip
			Mid Devon
			Monmouthshire
			Moray
			Na h-Eileanan Siar
			North Devon
			Orkney Islands
			Perth and Kinross
			Ryedale
			Scottish Borders
			Sedgemoor
			Shetland Islands
			Shropshire
			South Hams
			South Lakeland
			South Norfolk
			Staffordshire Moorlands
			Stroud
'S & NW London'			
Barnet			
Brent	East Lothian	Salford	
Croydon	East Northamptonshire	Slough	
Ealing	East Staffordshire	Solihull	
Greenwich	Erewash	South Derbyshire	
Haringey	Falkirk	South Holland	
Harrow	Fenland	South Ribble	
Hounslow	Flintshire	Stevenage	
Islington	Forest Heath	Swale	
Lambeth	Gedling	Swindon	
Lewisham	Gloucester	Tamworth	
Merton	Gosport	Telford and Wrekin	
Redbridge	Gravesham	Thurrock	
Southwark	Harlow	Warrington	
Tower Hamlets	Havering	Wellingborough	
Wandsworth	Hinckley and Bosworth	West Lothian	
	Ipswich		

‘City Hinterlands’	
Basingstoke and Deane	Rugby
Bracknell Forest	Runnymede
Bromley	Rushmoor
Cheltenham	Sevenoaks
Dacorum	South Gloucestershire
Dartford	Spelthorne
Daventry	Surrey Heath
Epping Forest	Sutton
Epsom and Ewell	Tewkesbury
Guildford	Three Rivers
Hart	Tonbridge and Malling
Hertsmere	Trafford
Hillingdon	Warwick
Kingston upon Thames	Watford
Maidstone	West Berkshire
Mid Sussex	West Oxfordshire
Milton Keynes	Windsor and Maidenhead
Mole Valley	Woking
Reading	Wokingham
Reigate and Banstead	Wycombe
Rugby	

‘Medium/Large Cities’	
Birmingham	Lincoln
Bradford	Liverpool
Coventry	Manchester
Derby	Newcastle upon Tyne
Dundee City	Nottingham
Enfield	Plymouth
Glasgow City	Preston
Kirklees	Sheffield
Leeds	Swansea
Leicester	

‘Former Industrial’	
Ashfield	Neath Port Talbot
Barnsley	Newcastle-under-Lyme
Barrow-in-Furness	Newport
Bassetlaw	North Ayrshire
Blackburn with Darwen	North East Derbyshire
Blackpool	North East Lincolnshire
Blaenau Gwent	North Lanarkshire
Bolsover	North Lincolnshire
Bolton	Oldham
Boston	Pendle
Bridgend	Redcar and Cleveland
Burnley	Renfrewshire
Caerphilly	Rhondda Cynon Taf
Chesterfield	Rochdale
Clackmannanshire	Rotherham
Copeland	Sandwell
County Durham	Sefton
Darlington	South Ayrshire
Doncaster	South Lanarkshire
Dudley	South Tyneside
East Ayrshire	St. Helens
Fife	Stockton-on-Tees
Gateshead	Stoke-on-Trent
Great Yarmouth	Sunderland
Halton	Tameside
Hartlepool	Torfaen
Hyndburn	Wakefield
Inverclyde	Walsall
Kingston upon Hull, City of	West Dunbartonshire
Knowsley	Wigan
Mansfield	Wirral
Merthyr Tydfil	Wolverhampton
Middlesbrough	Wrexham

‘Rural Fringe’	
Adur	Newark and Sherwood
Angus	North Dorset
Arun	North Kesteven
Babergh	North Somerset
Braintree	Oadby and Wigston
Breckland	Poole
Broadland	Purbeck
Bromsgrove	Ribble Valley
Castle Point	Rochford
Cheshire East	Rutland
Cheshire West and Chester	Selby
Chichester	South Kesteven
Chorley	South Somerset
Christchurch	South Staffordshire
Dover	Southend-on-Sea
East Dorset	St Edmundsbury
East Riding of Yorkshire	Stafford
Eastbourne	Stockport
Folkestone and Hythe	Suffolk Coastal
Fylde	Taunton Deane
Havant	Teignbridge
Lewes	Vale of Glamorgan
Lichfield	Wealden
Maldon	West Lancashire
Malvern Hills	West Lindsey
Mid Suffolk	Worthing
New Forest	Wychavon

‘Western Fringes and Coastal’
Argyll and Bute
Carmarthenshire
Ceredigion
Conwy
Cornwall
Denbighshire
Dumfries and Galloway
East Devon
East Lindsey
Gwynedd
Hastings
Isle of Anglesey
Isle of Wight
King's Lynn and West Norfolk
Lancaster
North Norfolk
Northumberland
Pembrokeshire
Powys
Rother
Scarborough
Tendring
Thanet
Torbay
Torridge
Waveney
West Devon
West Dorset
West Somerset
Weymouth and Portland
Wyre
Wyre Forest

‘Historic Cities’
Aberdeen City
Bath and North East Somerset
Bournemouth
Brighton and Hove
Bristol, City of
Cambridge
Canterbury
Cardiff
Charnwood
City of Edinburgh
Colchester
Exeter
Norwich
Oxford
Portsmouth
Southampton
Stirling
Welwyn Hatfield
Worcester
York

'Southern Heartlands'	
Ashford	Horsham
Aylesbury Vale	Huntingdonshire
Bedford	North Hertfordshire
Brentwood	Richmondshire
Central Bedfordshire	Rushcliffe
Chelmsford	South Bucks
Cherwell	South Cambridgeshire
Chiltern	South Northamptonshire
Cotswold	South Oxfordshire
East Cambridgeshire	St Albans
East Dunbartonshire	Stratford-on-Avon
East Hampshire	Tandridge
East Hertfordshire	Test Valley
East Renfrewshire	Tunbridge Wells
Eastleigh	Uttlesford
Elmbridge	Vale of White Horse
Fareham	Waverley
Harborough	Wiltshire
High Peak	Winchester

Annex C – stakeholder workshop

Ash Futures held a workshop attended by 15-20 stakeholders from different organisations/EU supported projects in CIOs (see list).

The purposes of the workshop were to draw out issues and concerns about productivity and discuss opportunities to address these. It built on some early findings from our research work and enabled local stakeholders to have an early stage input into our work.

Discussion from the workshop provided valuable local insight into issues and opportunities. These are summarised in these conclusions from the workshop.

Initial views on improving productivity

Before any information was presented and discussed, attendees were asked to indicate the main thing that their project/programme did to support improved productivity in CIOs (where participants essentially summarised their area of business/skills support) and indicate the one thing they could do to improve productivity if there were no restriction. On the latter a variety of suggestions were made that included:

Business improvements

- Provide access to tools and resources around business improvement
- Give businesses a productivity specialist/take a hands-on approach to direct and influence within a business for a temporary period
- Have a programme for larger companies
- Proving/disproving market opportunities for businesses
- Commission short-term real-time demand led intervention

Skills development

- Focus on the human factors in productivity
- Coaching to improve leadership and skills management
- Stronger trade unions embedded in local skills and learning

Other wider programme developments

- Create a simple measure of productivity to benchmark and improve against
- Improve data sharing across businesses/organisations in order to achieve a more holistic approach
- Offer more flexible approaches in grant distribution

Key Issues for CIOs productivity

Presentations were then made based on our initial findings from data comparisons, culminating in identification a number of potential issues that CIOs might be facing in seeking to deal with its productivity challenge. These were:

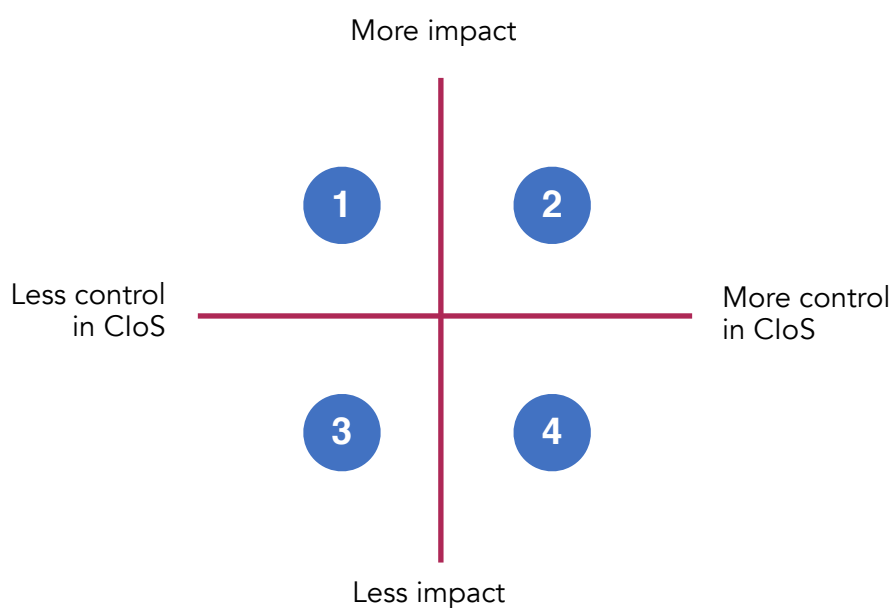
- | | |
|---|--|
| 1. Is CIOs inherently too small | 6. Slowdown in diffusion between the best and the rest |
| 2. The size/power of the public sector in CIOs | 7. Business management – particularly in markets where less competitive pressure |
| 3. The long tail of low productivity of businesses – and absence of the top 10% | 8. Exporting firms and FDI are important |
| 4. Loose and cheap borrowing keeping less competitive businesses afloat | 9. Utilisation of skills important |
| 5. Overseas trade/ownership key | 10. Time/distance from markets |

Attendees discussed one or more issues in groups, with the following points made:

1. **Size/agglomeration:** where the issue of isolation and lack of local pressure from the market to improve means there are few 'stars' in the business community, a lack of ambition and knowing what 'good' looks like. To date activities such as taking people out of county, keynote speakers, outreach and networking as well as collaboration with universities have been means to address this issue
2. **The size of the public sector:** seen as an issue in the context of external funding and because funding calls don't account for productivity and there are limitations of use associated with funding. The positive investments from the public sector to stimulate market failures and the focus on inclusive growth now, are seen as ways in which this issue has been addressed to day
4. **Loose and cheap borrowing:** again, discussed in the context of grant support and the proliferation of different grants associated with business support programmes in CloS, which is confusing. Initiatives such as Access to Finance are seen as one way to address this
7. **Business Management:** seen as an issues because of the interlinked points around businesses that are not creating high profit, salaries are not high enough to attract talent (including young talent), but the high end skills pool is not large and people don't have high expectations anyway. Schemes such as graduate retention schemes and apprenticeship schemes help to address this. However, if businesses have to move location in order to grow their business, this can be an issue because the workforce may not follow if the transport infrastructure is poor
10. **Time and distance to market:** this is an issue because the local market is small with higher costs of doing business and barriers to entry in getting into local supply chains, as well as practical transport considerations (many single carriage roads in the county). Hence there is a low level of export and out of county trade. This is coupled with a lack of big businesses and no HQ of big firms in CloS. Improved connectivity is helping (e.g. broadband, rail, London flights) but businesses also need enabling cost support to help them break into markets. In this respect support schemes need to offer more revenue funding than they currently do

Opportunities for improving productivity

Following on from this, workshop participants then discussed opportunities for improving productivity, grouping these in relation to whether they were opportunities organisations in CloS have more or less control over, and whether they would contribute to a greater or lesser extent to productivity. The following diagram summarises the views from this exercise



Perspectives on productivity

Finally, participants help a plenary discussion about how to respond to these different ideas emerging from earlier discussions, particularly in terms of actions that partners and stakeholders could take. In summary:

Actions which could have a greater impact on productivity but are less in local control

- Devolution
- Better lobbying
- Levelling up agenda
- Pilot projects
- Do more to get impact

1

Actions which could have less impact on productivity but are more in local control

- Quantifying impact over a timeline
- Combining things for larger impact

4

Actions which could have a greater impact on productivity AND are more in local control

- Do more (it will cost more)
- Plan and test
- Be tougher about who to support
- Make sure businesses understand about productivity

2

In making these points participants also made other valuable points which can be grouped around the following headings:

The definition of productivity

- A need to look at how productivity is defined and what alternative definitions there are; with a view that it needs to be defined productivity differently

The workforce perception of productivity

- If you are working more effectively and are more productivity, you may be more likely to be happy in your work...and your business may be able to pay more. So, it could be a virtuous circle
- If employees feel they are adding value not just making the business money, this will help
- Allied to this, the quality of work is really important as people need to have self-esteem and a sense of worth
- BUT a view that there is a mismatch between what young people want in terms of jobs/pay and what businesses want

The influence of EU regulations

- The measures for the current programme were set out in 2013 and couldn't change - in future we need to be much more agile to respond to changing situations
- The ESIF contractual structure has driven activity and meant that projects are chasing outputs rather than anything else
- A need to learn from ESIF supported projects as to which have had the biggest impacts (look at the summative assessments)
- A need to talk to businesses about what worked in ESIF and what didn't work

Other points

- A query as to why more productive countries have shorter working weeks than the UK - why is that
- A query as to why less productive firms are still in business