

BRIEFING
PAPER

THE INDUSTRIAL STRATEGY: BUILDING A MORE PRODUCTIVE SOCIETY

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SUMMARY OF FINDINGS AND IMPLICATIONS FOR POLICY AND STRATEGY

This briefing by *Understanding Society* provides new evidence relevant to the Industrial Strategy, touching on particular topics to help inform thinking and ideas around Inclusive Growth.

Hard-wiring Inclusive Growth into the Industrial Strategy means looking beyond the conventional supply side focus on education and skills training. Although these are important for long-term improvements in productivity and equality, and skills constraints could curtail future output, promoting Inclusive Growth requires 'leveraging' all the domains of the Industrial Strategy.

There are two "clusters of remedies" being proposed for productivity improvements – one around investment in infrastructure and technology and the other around investment in people. The research and analysis in this briefing specifically examines economic and social disparities through the dynamics of sectors, R&D spending and entrepreneurship. The findings are relevant to the deployment of Sector Deals, infrastructure investment, innovation and business development.

A number of headline messages emerge from these research findings and the associated roundtable discussion organised by *Understanding Society*:

- Regional imbalances are extremely persistent in the UK. Internal migration can partially compensate for these imbalances over time, and is generally higher than perceived, but population changes always lag behind demand shocks yielding persistent deviations in employment rates. Outside of London, there is a correlation (but not causation) between the proportion of graduates and unemployment amongst those with low skills, i.e. a positive spill-over.
- The challenge of taking forward the Industrial Strategy is getting the balance right between the industries of tomorrow, and the development of low-paid sectors (or 'every-day economy') that account for significant employment. A structural effect, as opposed to the nature of employees who work in those sectors, partly explains the reason for low pay which employers need to tackle. Whilst local growth in general can provide greater opportunities for workers to switch firms, which is associated with improvements in pay for individuals who switch, such growth is proportionately more likely to benefit those in higher skilled occupations. The nature of specific sectoral growth thus matters for inclusion.
- R&D investment by firms can be a mixed blessing for employment, with tensions between increasing innovation, creating employment and reducing inequality within and between regions. On balance, an increase in R&D investment had little impact on employment rates but played an important part in changing the *composition of employment* in local labour markets. The precise effects varied according to the nature of local labour markets. In areas with a lower proportion of routine jobs, R&D growth induced a decrease in employment but an increase in highly-educated workers. In areas with a high proportion of routine jobs,

there was an increase in employment but mainly in non-tradeable services. This can be attributed to an increase in self-employment. R&D investments also significantly increase the gender pay gap.

- On the whole the ‘prosperity pull’ seems to explain the recent growth in self-employment but this presents a particular challenge for less prosperous areas given the dependency of self-employment on local economic opportunities and higher wages.

As voices calling for a new economic model grow, clearly fresh thinking and concerted effort is needed on Inclusive Growth, including evidence on the distribution effects of transport and other investments across people and places. A number of specific ideas to support Inclusive Growth, or areas for caution, emerged from the research and the workshop.

Unlike the ‘work first’ policies that have dominated active labour market policies (ALMP) over the last two decades and supported employment entry, local economic development will also need to be accompanied by ‘career first’ approaches that supports in-work progression and initiatives to raise job quality. The US Work Advance Programme provides an example of helping low income adults enter and progress in high demand sectors of the economy (Lee, 2018). Ultimately, wider reforms in labour market policy are needed given the evidence of a tenuous link between improvements in productivity and the effects on wages.

The findings on R&D investments suggest that such investments need to be incentivised in areas both with ‘high and low routinised jobs’ to avoid further increasing regional disparities. The finding fuel the view that there is too much emphasis in policy and strategy circles on R&D and innovation and not enough on adoption and adaptation of existing technologies and business practices. With many business support programmes narrowly specified, tackling the long-tail of productivity underperformance will depend much more on the adoption of ‘best in class’ technologies and business practices rather than frontier innovation (Athey, 2018).

In parallel, upskilling low skilled residents and improving educational participation and attainment are obvious measures needed in areas with a high proportion of routine jobs. More explicit attention needs to be paid to tackling the gender wage gap that an increase in R&D could exacerbate.

Notwithstanding the need to reduce the number of national business support programmes, this research makes the case for entrepreneurship policy to be highly contextualised to both places and people. Entrepreneurship programmes have to be designed to fit local economic dynamics to maximise potential impact. The findings do not support the assumption that that simply more self-employment is a good thing – for some types of people and localities in fact policy might focus more on improving the quality of work and organisational attachment. One idea, potentially complicated to design, is to encourage and support ‘smarter working’ by networking self-employed and micro-businesses willing to collaborate in the pursuit of new opportunities.

The Industrial Strategy needs to include cross-departmental policies and programmes that integrate growth, productivity and inclusion, whilst enabling workers to gain more of a share from gains in productivity. The focus on sectors matters but may be less effective where

productivity-pay link is less clear cut and gains are not fairly shared between workers in those sectors. Ultimately different leadership and incentive structures are required for institutions so they can marry growth and fairness (Byrne, 2018), and the development of stronger regional institutions that can pursue distinct strategies with confidence and local impact.

It also means not just looking to conventional horizontal supply-side measures on education, employability, access to employment and skills training – but developing ideas that harness the core foundations of Industrial Strategy to promote equality, particularly technological adoption and diffusion and investment in infrastructure, which sit at the centre of the strategy. These will need to be supported by the UK Shared Prosperity Fund and new resources or refocused programmes by other key government departments.

Such an approach might just start to make this Industrial Strategy different from its predecessors and demonstrate that the strategy has the hallmarks of driving economic change that can improve both productivity and equality.

1. ABOUT THIS POLICY BRIEFING

Globally, alternative ideas about how to pursue growth and address inequality (and environmental issues) are gathering momentum, with policy makers such as the OECD, World Bank and others, grappling with the idea of 'Inclusive Growth' (IG). In the UK, various independent commissions have published policy reports on this critical issue, with the IPPR Commission for Economic Justice being the most recent offering (IPPR, 2018), setting out ideas on a plan for a new economy.

This policy briefing on the UK's Industrial Strategy examines emerging evidence related to Inclusive Growth (IG) from some recent academic research. It will be of interest to local economic development partnerships, policy makers, sector groups, trade associations, business, local authorities, charities, think tanks and other stakeholders.

The findings are based on a roundtable event held by *Understanding Society*, the UK Longitudinal Household Study, in May 2018. As such they are selective in terms of topics covered at the roundtable event. Much more research is needed to build comprehensive understanding of what matters for Inclusive Growth in different types of places, in particular sectors and for different groups in society but these individual research projects are revealing and shed interesting new light. Any department, devolved administration, combined authority or economic partnership will have finite resources and influential leverage with stakeholders (under current plans) so targeting effort based on evidence – and experimentation in informed new ideas – rather than hunch and lobbying is important.

The findings focus on particular domains relevant to the Industrial Strategy (marked red), looking beyond traditional supply-side issues such as education and skills where problems of the UK economy are well documented, with a growing discussion about the education and skills implications of the "fourth industrial revolution". These findings focus on the distributional effects from sectoral growth, R&D investment and entrepreneurship – combined with overarching analysis on the 'stickiness' of regional employment disparities in the UK.

Growth and Productivity	
Enterprise, innovation and business dynamics	Regions, places, transport and demographics/ageing
Leadership, management and employee engagement	Work, employment, health and well-being
Investment, patient finance and trade	Education, skills and labour supply

The following topics are covered:

- regional employment disparities and internal migration
- role of growing sectors in promoting Inclusive Growth
- technological innovation and inequality
- changing nature of entrepreneurship and whether it thrives across the UK

The research findings are based on a range of data sources, including *Understanding Society*. As the largest longitudinal study of its kind, *Understanding Society* interviews thousands of

households across the UK annually to collect data that informs key UK social and economic policies. Further information on how the Study can be harnessed to inform and drive the Industrial Strategy is provided in the appendix.

The briefing has a number of sections:

- The challenge for the Industrial Strategy
- What is Inclusive Growth?
- Research findings
- Summary and implications for policy and strategy
- How can *Understanding Society* help? (appendix)

2. THE CHALLENGE FOR THE INDUSTRIAL STRATEGY

The UK's Industrial Strategy represents an attempt to tackle the fundamental problems with the British economy. The strategy, designed to “create an economy that boosts productivity and earning power throughout the UK”, builds on “five foundations” and sets out four “grand challenges” initially that could help drive forward industries of the future. It includes the creation of a £31bn infrastructure National Productivity Investment Fund (2017/18 to 2022/23) with expenditure focused on transport, research & development, digital technologies and housing, partially offsetting previous capital expenditure cuts.

Besides the desire to “make the UK the most innovative country in the world”, a related goal is to “spread the proceeds of growth and address disparities in regional productivity” (HM Government, 2017). It provides a policy framework for the long-term. With devolution settlements for Scotland, Wales and NI, the strategy also aims to reflect developments taking place across these administrations.

A key concern is that not only is productivity much weaker in the UK than major competitors (having virtually stalled over the last decade) but extremely large variations remain between firms in the same sector, across sectors and between places (CBI, 2016). The large variation between companies has been variously described as the ‘long tail’ of poor performance or more accurately the ‘two-tail’ productivity performance.

The concern about productivity comes alongside the effects of inequality, in wide-ranging areas such as income, education and training, new technology, health and access to quality jobs, which tend to feed off each other and may reduce overall demand and productivity in the economy (OECD, 2016). Indeed, some now see high levels of inequality as a threat to economic growth and make the case that a fairer economy will also generate greater prosperity (IPPR, 2018). Debt fuelled consumption is also difficult to sustain over the long-term – households Debt to GDP in the United Kingdom has averaged 57 percent of GDP from 1966 until 2017 and in Q 4 2017 stood at 86.7 percent of GDP, one of the highest amongst western nations (Trading Economics, 2018).

A profound weakness of the British economy is the *combination* of low wage/low skills/low-productivity and the most extreme level of regional inequality in Europe. London and its

hinterland are prosperous on most indicators but almost of half of the UK population lives in regions who productivity levels are no better than the poorer parts of the former East Germany (McCann, 2016). This failure of productivity improvements from one part of the UK to spread to other parts suggests that, alongside many other factors, knowledge-diffusion in the UK is problematic (Haldane, 2018). Within regions major cities and urban clusters have always played an important role in driving growth but there is growing concern that low growth cities, towns and rural areas could further diverge from these economic engines of the UK (Centre for Social Justice, 2018).

Furthermore, the growth of the 'weightless economy' (services and products such as intellectual property, computer software, entertainment products, etc. where value creation is driven by intangible assets) has seen ever richer opportunities for well-skilled workers and frontier firms, while low waged, low-skilled workers and less productive firms risk falling behind. The long-term positive and short-term unintended consequences of artificial intelligence, robot fuelled growth in productivity and other emerging technologies are widely debated but expected to impact on a range of social groups, occupations and tasks.

There is better understanding today "that productivity and growth in productivity is result of complex interplay between many different influences – including the quality and quantity of factor inputs, the levels of R&D, the institutional and governance settings, market incentive systems, knowledge diffusion mechanisms and economic geography" (McCann, 2018). McKinsey Global Institute (MGI) also identifies three principal drivers of the global slow-down in productivity: weakened (post-crises) demand; waning effects of ICT; and limited take-up of digitisation (MGI, 2018). Ageing and demographic trends could also impact on productivity in different ways over the longer-term, influencing the sectoral composition of labour intensive health, care and leisure services (Lisenkova, 2018).

A central debate is how the foundations for the Industrial Strategy – innovation, skills, business start-up and growth, and infrastructure – will play out in different places, between groups and over time. At the heart of the Industrial Strategy lie two difficult challenges: driving forward growth oriented high value sectors whilst generating benefits for people and across places (given the distribution of high value sectors and businesses will be uneven); and with the Industrial Strategy dependent on significantly changing the distribution of mainstream public resources across the UK, and attracting private investment, how this could be achieved?

The relative contribution of productivity, alongside other factors, in explaining stagnating living standards and inequality continues to be a dynamic area of research. The Economic and Social Research Council (ESRC) funded [Productivity Insights Network](#) (PIN) has produced a number of evidence reviews and gaps in knowledge to better understand the 'productivity puzzle'.

In relation to the labour market, for example, emerging evidence suggests that, as a result of structural changes in the UK labour market, wages are no longer responding to a tightening of the labour market as in the past. Although employment rates are at a historic high in the UK

the share of people in poverty¹ in working families now exceeds the proportion of people in poverty in non-working families (Full Fact, 2017).

Researchers find that, in a labour market with low degrees of employment protection, the adjustment by employers in response to changes in the labour market has moved from wages, and to some extent hours worked, to employment, leaving the adjustment of the overall wage bill mainly unchanged (Hantzsche et al, 2018). The links between productivity improvements and wage growth also remains tenuous – an increase in firm productivity is associated with an increase in wages but the effect is tiny (Ciarli et al, 2018a). The Industrial Strategy thus needs to be considered in the context of reforms to labour market policy and government action following the Taylor Review on modernising employment practices (Taylor, 2017).

2.1 Who are the expected beneficiaries?

Who should be the target of Inclusive Growth measures remains a problematic question. In general, concerns range from the “squeezed middle”, who stretch across a large and diverse demographic given the post-recessionary pay-squeeze was wide-spread, to those in poverty. Whether one talks about those “just about managing”, the new working class, “anywheres” and “somewheres” or contrasts those who are successfully riding the waves of globalisation and technological change and those increasingly “left behind”, there remains a lack of clarity amongst politicians (keen not to electorally isolate any group in society) about the target of policy.

Since the Great Recession of 2008, income equality between the richest ten percent and poorest ten percent of households in the UK has narrowed due to a combination of rising employment, falls in income in the middle and top earning households and the introduction of the National Living Wage which benefitted those on low income (Cribb et al, 2017). People on low income are demographically distinct from the general population, and their top concerns are also different from the rest of the population, according to analysis commissioned by the Joseph Roundtree Foundation (Taylor et al, 2017)². They are socially and economically a diverse group and more likely to be younger, female and less educated than the general population. Those in semi-routine and routine occupations make up 45 percent of the group but people in managerial and professional occupations make up the second largest group – reflecting the large size of these occupations within society.

There are a number of areas which are significantly more likely to worry people on lower incomes across the population. For instance, money or debt, work or finding a job, education, housing, and mental health are all relatively more worrying for those on low incomes than those on high incomes (the findings cover all adults not just the working age population). In absolute terms, money or debt and physical health tops the list of their day to day concerns.

¹ Poverty measure based on people whose income is less than 60 percent of the median income in the UK.

² The analysis was based on the British Social Attitudes (BSA) survey which covers all adults over the age of 18 in the UK living in private households. The analysis focused on the poorest fifth of the population, with low income defined as 60 percent below median income.

Chart 1: Concerns amongst poorest fifth of the UK population (2016)



Base: All respondents in the lowest quintile (345)

Source: Taylor et al (2017), Social and political attitudes of people on low incomes (based on British Social Attitudes data)

Analysis of *low-paid workers*³, using *Understanding Society* and BHPS data, found that *being stuck* in low-paid work was associated with being relatively older, being female or having health conditions or disabilities that limited work (Kumar et al, 2014). Escaping low pay was associated with gaining qualifications, work environments (e.g. promotion opportunities, annual increments, etc.) and working in the public sector. Location was a factor as well: people in London had the greatest chance of escaping low pay compared to all other regions of the UK.

Longitudinal analysis by the Department of Work and Pensions into low income dynamics, using *Understanding Society* data for 2011 to 2015, showed that over this period there was limited movement between income quintiles, with 25 per cent of people having moved up into the next quintile and only 4 per cent reaching the highest income quintile (DWP, 2017).

What is politically different today is the extent of disenchantment with the current economic system following the Great Recession of 2008 and the rise of populism – with discontent about “trickle-down” economics and how the benefits of globalisation are being shared within society. In the EU Referendum in UK, for example, the pace of immigration was a significant issue but stalling living standards, particularly the duration of economic hardship and dissatisfaction with one’s financial situation, were salient factors alongside cultural factors, education, political affiliation and campaign tactics (Resolution Foundation, 2018; Borkowska and Martin, 2017; Liberini et al, 2017). The Industrial Strategy presents a significant lynchpin for economic change, with significant and unpredictable political implications if it fails to deliver or is blown off-course by events.

³ Low paid workers were defined as those earning no more than 20 percent above the minimum wage between 1990 and 2000.

3. WHAT IS INCLUSIVE GROWTH?

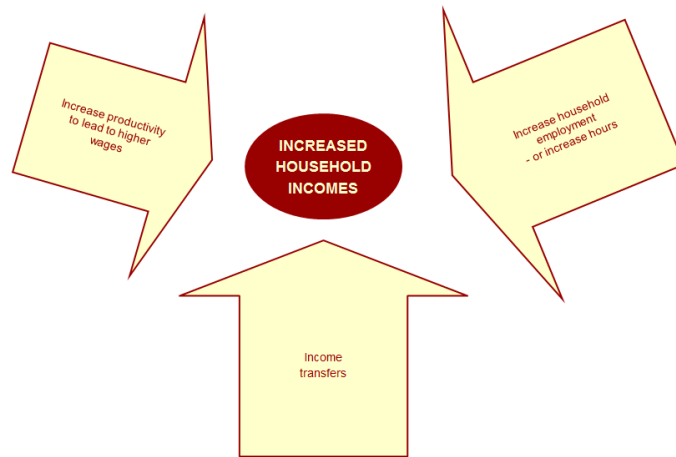
There is no widely accepted definition of Inclusive Growth. Broadly, it is about growth that generates decent jobs, gives opportunities to all sections of society, especially excluded groups, and distributes the income and non-income gains from prosperity more equally across society. The OECD argues for looking beyond income and wealth inequalities to health & wellbeing which also impacts on people's productivity and income.

The World Bank identifies a number of distinct characteristics of Inclusive Growth (World Bank, 2009):

- IG refers both to the *pace and pattern* of growth – wider sources of growth, e.g. in terms of sectoral mix, better job progression for disadvantaged groups or increased household employment/hours
- Emphasises productivity improvement not just job growth – employment that leads to wage growth
- Focuses on productive employment, rather than direct income redistribution
- Requires a long-term perspective (e.g. overtime and in terms of the application of specific levers such as education)
- Not only *has the firm but also the individual as a subject of analysis*.

Contrary to the World Bank perspectives, some proponents see a more active role for regulation and tax and benefits policy, for example, where minimum wage can help generate productivity improvement effects (Rizov, 2016). There is some evidence that inclusive growth is linked to innovation and structural transformations of countries (Saha & Ciarli, 2018). Additionally, others argue for addressing short falls in 'soft infrastructure' (human-capital building) alongside investment in 'hard infrastructure', particularly important for towns and areas that are more remote from productive urban agglomerations (The Industrial Strategy Commission, 2017).

Byrne (2018), sets out three main policy levers for influencing household incomes. With employment levels currently relatively high in the UK compared to previous decades, and income transfers dependent on national policy that would have to benefit a sizeable population, a great deal of 'heavy lifting' could fall onto tackling the productivity challenge – with a sustained tightening of the labour market and tackling precarious work contributing at the margins.



Source: Byrne, L (2018), *Understanding Society* Roundtable presentation

There is indeed a very long chain between growth \Leftrightarrow innovation and productivity \Leftrightarrow sectors \Leftrightarrow local labour markets \Leftrightarrow pay and conditions \Leftrightarrow household living standards. Addressing growth and productivity and inequality issues require unpacking these links and interactions.

There are many factors behind stagnating *family incomes* (as opposed to individual incomes), and analysis into social trends can help explain why family incomes are unlikely to grow as fast as in the past, irrespective of the precise drive to improve productivity and individual earnings. This also raises a fundamental question of not only what potential impact the Industrial Strategy could have on supporting Inclusive Growth but also the role of other policies when examining income or living standards at household level.

The concept of Inclusive Growth is fast becoming a mantra for a new approach to pursue regional development and urban policy (Lee, 2018). Many growth and productivity promoting policy interventions are “spatially blind” but others have an important place-based dimension, particularly those related to the knowledge diffusion and absorption, planning, transport, business support, labour market, skills and education. Cities, seen as key drivers of growth, are better positioned at targeting low income groups and could be more effective at co-ordinating economic and social policy – leveraging additional resources for the Industrial Strategy.

While Scotland, Wales, Northern Ireland and London now enjoy devolved powers, the UK is still one of the most centralised states in Europe (HM Government, 2017), and there continues to be much debate about pace and direction of devolution. The Royal Society of Arts (RSA), in arguing for a place-based approach to Inclusive Growth, saw “flexible devolution of power and responsibility as central” to bringing economic and social objectives together in practice (Inclusive Growth Commission, 2017).

The Industrial Strategy also acknowledges that Britain has a skills problem, ranking the country 16 out of 20 in terms of technical skills (Industrial Strategy, 2017). The LSE Growth Commission, for example, recommended that there should be a generalised tax break for ‘skills investment’ in the same way as there is in plant and machinery. However, if the Industrial

Strategy is to provide a model for nudging the economy in a more inclusive direction, it will need to utilise all the pillars of the strategy – and beyond.

The risk with the concept of Inclusive Growth is that it is a fuzzy concept that could include a wide range of progressive policies – covering quality of life, health, jobs, environment and community development (Lee, 2018). This could dilute the focus on growth and productivity, introducing mission creep.

However, there is evidence that links productivity and health and wellbeing (Hancock and Coopershare, 2018; Bibby and Lovell, 2018) but also a healthy workforce means people can continue to work as they get older. Money and debt concerns, for example, are a big source of stress (Holkar and Mackenzie, 2016). Could a change in the nature of investment in health research and innovation, and its distribution across the UK, proportionately have a bigger impact on productivity and health? Of the 12 “big ideas” that make up the Inclusive Growth Strategy for Leeds, one is to “become the best city for health and wellbeing” (Leeds City Council, 2018). This approach raises an interesting question about the role of health and wellbeing in the Industrial Strategy (i.e. in addition to its link to ageing and clean growth challenges).

Arguably Inclusive Growth should address inequality *between* and *within* places but achieving the former has proved extremely difficult so far (see section 4.1) – although with greater dynamism now driving economic change amongst particular cities outside the Greater South East. Economic development partnerships will also need to consult widely on what approach to take to Inclusive Growth. For example, should they *directly* target particular groups on low income and those disadvantaged in the labour market, depend on *indirect* spillover effects from improvements in local growth and productivity, or pursue a combined approach?

There are also question marks about the institutional capacity at local level to drive forward the Industrial Strategy. One factor is the radical changes to local authority funding in England, with an average reduction of almost 26 percent in real terms since 2009/10 (Amin-Smith et al, 2016). Local authorities in Scotland and Wales have also experienced substantial cuts but smaller in magnitude.

Councils have not cut the budgets for all services equally and those that could contribute to economic, cultural and community development have taken a harder hit. For instance, spending on planning and development, housing, and culture and related services has been cut by more than 40 percent, on average in England. Although the scale of overall cuts differs in Scotland and Wales, the pattern of cuts across services is similar. Councils that are more grant-reliant, in inner London and in poorer (often urban) areas, have experienced a higher level of cuts. Plans for the self-financing of local authorities remain unclear, but 100 percent business rate retention is currently progressing through a number of pilots – with the Industrial Strategy heralding a more top-down approach to economic development (Centre for Cities, 2017).

The Industrial Strategy White Paper sets out that the reforms *are a new approach to economic growth* in the UK, “with a strong focus on communities, regions and networks”. The government plans to “introduce new policies to improve skills in all parts of the country, create more connected infrastructure, back innovation strengths, ensure land is available for housing

growth, and strengthen cultural assets” (HM Government, 2017). However, it is less clear *how* economic development will be reconfigured to improve distributional impacts and what this “new approach” to economic growth this will entail in practice.

There is both a sectoral and place dimension to the strategy, with Sector Deals and Local Industrial Strategies (LIS) designed adopt a horizontal and vertical approach to delivery. Sector Deals are partnerships between the government and industry on sector-specific issues and opportunities to boost productivity, jobs, innovation and skills. They set out government and sector commitments, funding and actions under each of the five foundations of the Industrial Strategy.

LIS are strategies that will build on local strengths and distinctive capabilities to deliver economic opportunities – a role previously carried out by Regional Development Agencies, albeit at a regional level, before they were abolished. LIS will guide the use of local funding streams and any spending from national schemes. An important aspect will be the connection to “locally targeted national policies”. The What Works Centre for Local Economic Development has issued guidance on developing effective local strategies (WWC, 2018), with emphasis on ensuring that LIS focus on what makes them distinct.

An effective local strategy will need to be imbedded into a *theory of change for communities* rather than Inclusive Growth becoming another ‘fashionable concept’, delivered through scattered projects. According to Lee (2018), given the political challenges of redistribution, “the Inclusive Growth agenda does not have to be perfect, it simply has to be better than the alternatives”. What is refreshing is the stated desire in government to have a conversation about the evidence and national-local co-ordination of plans for growth, productivity and inclusion.

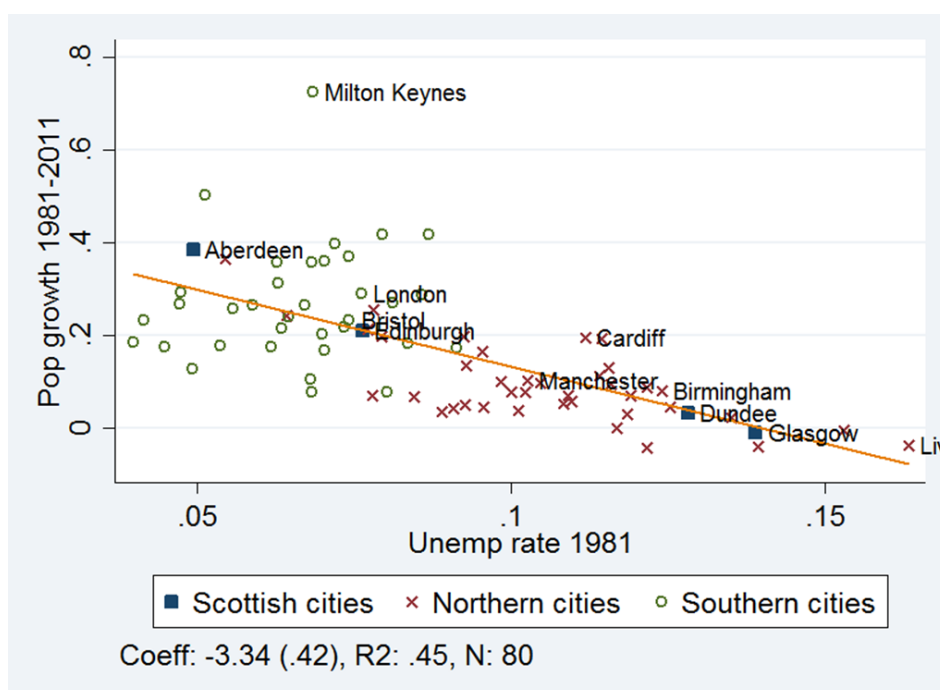
4. RESEARCH FINDINGS

4.1. Regional disparities in the UK and internal migration

Unequal distribution of economic activity across space indicates that agglomeration effects are very important. Why else would firms continue to locate where labour and land are relatively expensive? Cities are seen as critical to economic growth, and with significant variations in employment growth overtime, a general theoretical assumption is that employment disparities between places should even out over time as people migrate from areas with high unemployment to areas with low unemployment.

The broad story of internal migration in the UK over the past few decades has been from the north to the south and from rural areas to urban areas, although Scotland has been experiencing a net inflow whilst people in London have been quitting the capital for a number of years (Champion, 2015; ONS, 2018). Some of migration from areas of high unemployment to those with low unemployment has been happening in the UK and migration response is not as weak as is assumed (Manning, 2018).

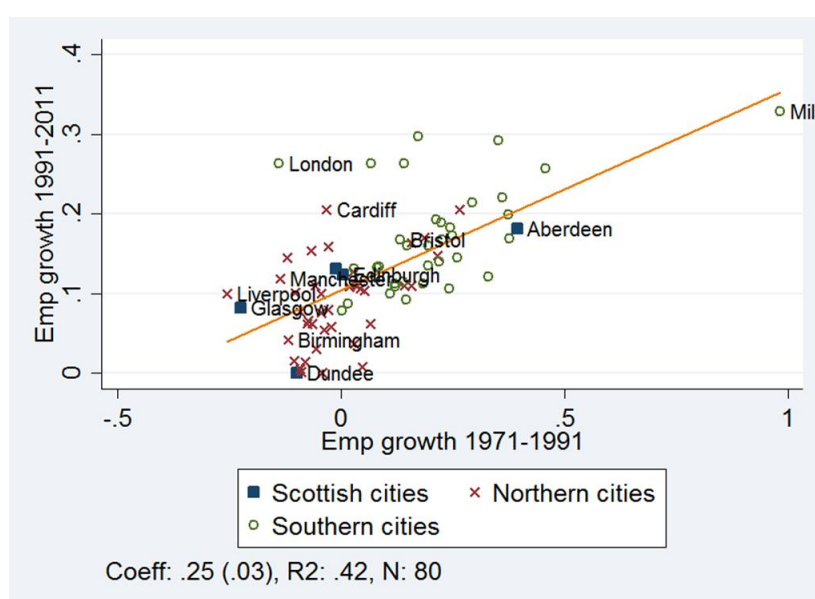
Chart 2: Population growth in cities (1981 to 2011) correlated with unemployment rates (1981)



Source: Manning, A., *Understanding Society* Roundtable, May 2018

However, regional imbalances in employment growth are extremely persistent in the UK. There are individual cities and places that have improved but the overall pattern is that cities which had higher employment growth rates in between the 1970 and 1990 also had higher growth rates between the 1990 and 2010s.

Chart 3: Employment growth in cities between 1971 and 1991 correlated with 1991 to 2011



Source: Manning, A., *Understanding Society* Roundtable, May 2018

How can this unemployment persistence and migration response be reconciled if they are happening alongside each other? Amior and Manning (2018) offer the following explanation: that negative demand shocks (e.g. from the 1980s and subsequent recessions) are very persistent, and whilst populations do respond to such shocks, they can never keep up with the pace of change or the next shock. The process is a continual race between employment changes and the population, with an outcome that unemployment differentials tend to stay fairly stable.

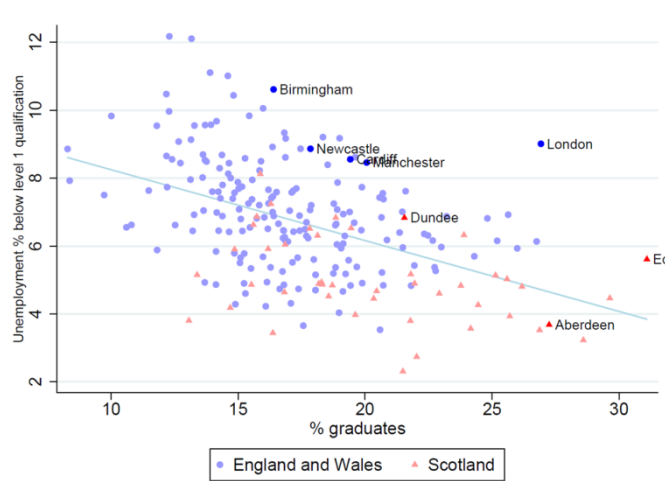
Compared to international migration, very little is known about residential mobility and immobility and the factors that influence this. Mobility matters not only for tackling regional imbalances but can also aid knowledge diffusion as innovators move between firms, sectors and places. However, residential mobility is deeply entwined with social relations, socio-economic position and patterns of daily activities (e.g. housing, education, employment, family, commuting, health, neighbourhood safety, care, welfare system, etc.). Changes in the housing market, due to the 2008 financial crises, has also re-positioned the key actors involved in household moves (Coulter, 2015). A relatively unexplored dimension is the implications for the Industrial Strategy of immigration from the European Economic Area (EEA), across all the foundations of the Industrial Strategy – an issue that the Migration Advisory Committee (MAC) has produced a report on (MAC, 2018).

One study on residential mobility, using *Understanding Society* and Census data, is currently underway considering the impact on residential mobility of immigration, ethnic composition and unemployment (Manning and Langella, forthcoming). Preliminary results so far identify that:

- rises in unemployment have a limited impact of out-migration
- it has a bigger impact on determining in-migration: people are much less likely to move to areas with high unemployment.

A key question is how desirable is residential mobility? If more highly skilled or more ambitious people leave less prosperous areas, as is often the case with graduate and youth migration, this may make things worse for those left behind. Conversely, does an increase in the proportion of graduates in the local labour market benefit those at the bottom – a “skills spill-over effect”? There does seem to be a correlation (not causation), between the proportion of graduates in the labour market and unemployment at the bottom end of the labour market (defined as unemployment rate for those with below level 1 qualification) – with London as an exception.

Chart 4: Proportion of graduate population in cities correlated with unemployment rates for low skilled workers (below Level 1 qualification)



Source: Manning, A., *Understanding Society* Roundtable, May 2018

However, two-thirds of residential moves tend to be only less than 10kms, with only about 1 in 5 moving at least 50kms or more – although these numbers are heavily skewed by students (Champion, 2005). Not surprisingly a frequent policy response has been to invest in transport in order to increase access to markets, particularly given the challenges of affecting city size or towns directly in peripheral regions (i.e. taking jobs to people). Benefits from agglomeration effects, for example, by improving a single inter-city transport link between Manchester and Leeds is, *ceteris paribus*, estimated to increase of total aggregate earnings by more than £60 million a year (National Infrastructure Commission, 2016).

One study that investigated how local labour markets respond to such transport improvements in the UK used data on individual workers to assess how area wages respond to better market access. It examined whether this variation is due to a *changing composition* of the labour market or due to higher wages for *existing workers*. The results indicate that the increase in wages associated with reductions in transport times stems from changes in the composition of the workforce and that wage increases for local workers with unchanged characteristics are minimal (D'Costa et al, 2010) – so other policies alongside transport investment, such as education and skills, are essential for Inclusive Growth.

4.2. Who benefits from sector growth?

A sectoral approach to the Industrial Strategy makes sense for a number of reasons. Institutions are often sectoral, they provide a mechanism through which skills and other investments can be targeted and sectors are interrelated so at place level growing sectors could generate spill-over effects in local economies (Lee, 2018). Institutions which help address low pay – such as Unions, or Sector Skills Councils – already have a sectoral focus.

Given it is quite difficult to change the structural mix of sectors a more realistic strategy is to focus on distinctiveness at local (and national) level. Most places will simply not have the critical mass of firms and institutional set-ups to become a creative industries cluster! Patterns of job growth tend to be highly geographically uneven over time but there is a long term shift to ‘core areas’, disguised by changes in public service employment.

Supply chains, though, can be complex and often global so opportunities for generating local benefits will vary across growing sectors and places. At firm level, there will also be individual opportunities for growth irrespective of the sector, but if national vertical policies and placed based horizontal policies are to be negotiated and co-ordinated, a sectoral focus will be important.

Forecasts suggest continual upgrading of the labour market – but also some significant growth in low paid sectors. Whilst local growth will invariably generate new jobs because of expansion in demand, it is replacement demand by those leaving sectors that accounts for the vast majority of labour market opportunities (Lee et al, 2018; WWC, 2018).

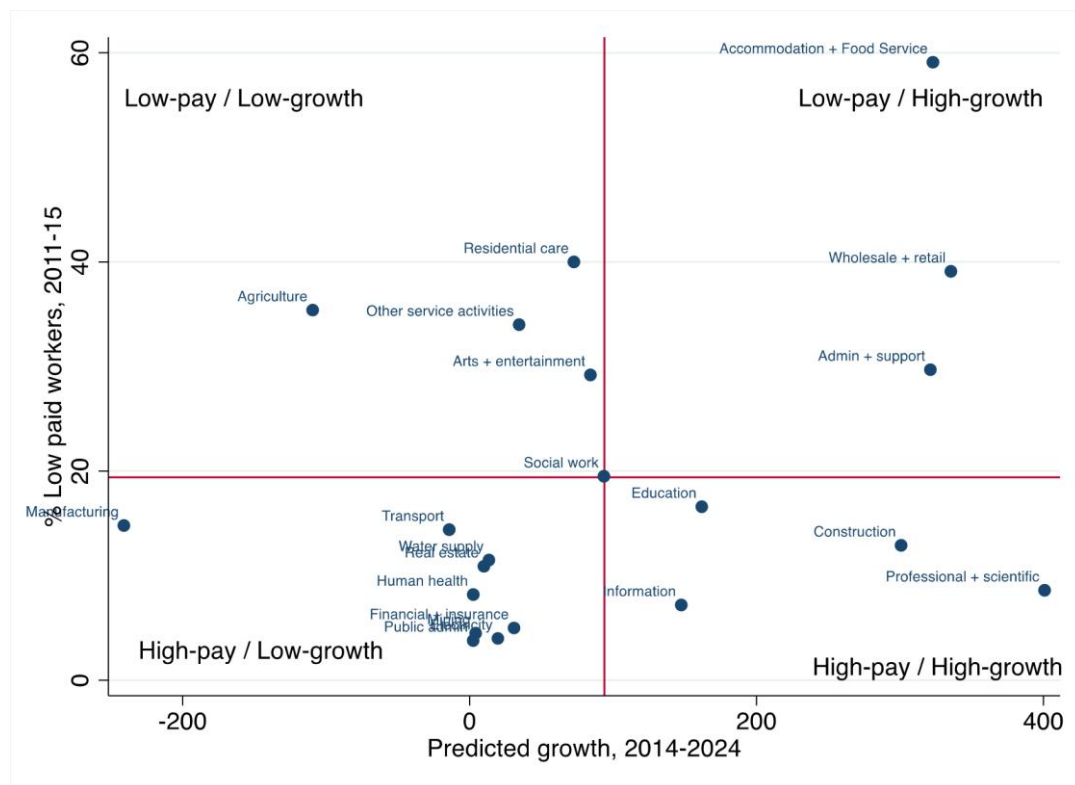
There are low paid workers in every sector of the economy but the rate is much higher in some sectors. Around 60 percent of workers in Accommodation and Food Services are low-paid, the highest rate. There are also high rates in Residential Care (40 percent), Wholesale and Retail (39 percent), and Agriculture, Forestry and Fishing (35 percent) (Lee et al, 2018). So are low paid sectors distinct *because* they tend to employ workers who are poorly qualified or have low levels of skill, i.e., is it to do with the characteristics of people employed in the sector or is there something distinct about the structure of sectors themselves – a ‘sectoral effect’?

The research finds that these patterns *are structural*. This means that when observable characteristics of workers such as education, age, ethnicity, gender, country of birth, region, etc. are controlled for there is still a ‘sector effect’ of being in low pay. If one took two workers, both identical in terms of these characteristics, and put one in Manufacturing and one in Accommodation and Food Services, the latter would be almost 50 percent more likely to be in low pay. These patterns are similar, but less extreme, for household poverty. Compared to one where the main worker is in Manufacturing, a family where the main earner works in Accommodation and Food Services is 12 percentage points more likely to be in poverty.

Some of the low pay sectors are also forecast to grow in future in terms of replacement and expanding demand for workers. Whilst it is difficult to predict the future with accuracy (particularly in light of Brexit and technological change), calculations using the Government’s

'Working Futures' 2014 to 2024 labour market projections⁴ (UKCES, 2016) and *Understanding Society*. These sectors include many non-tradeable jobs – jobs which cannot easily be outsourced as they have to be close to the client and are thus more protected from international competition – but are not necessarily immune from technological change.

Chart 5: Sector classification by predicted growth (2014-2024) and proportion of low paid workers (2011-2015)

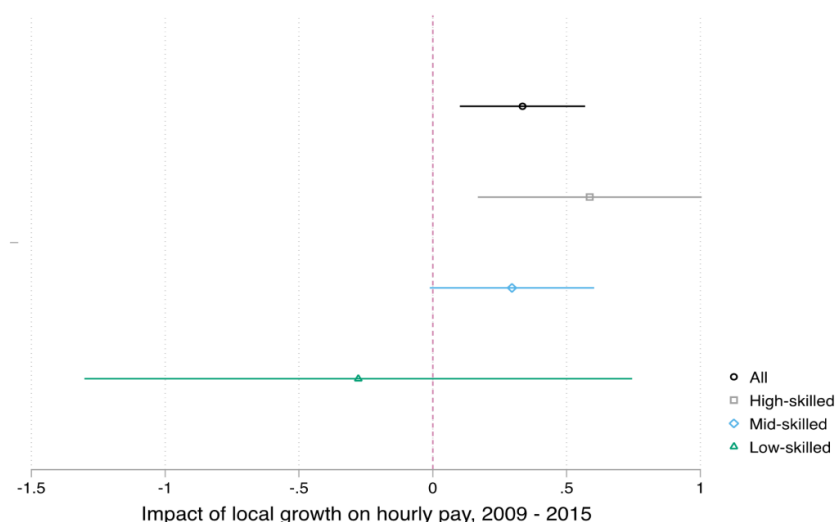


Additionally does local growth matter to those on low pay – the idea that a rising tide lifts all boats? Evidence indicates that aggregate employment growth at local level is more important than employment growth in specific sectors in influencing individuals' wage growth. Securing a pay rise is associated with changing jobs, and agglomeration provides greater opportunities for workers to switch firms, occupations and sectors.

To test this Lee et al ran a simple growth regression where wage growth was modelled as a function of individual characteristics and local employment growth in sectors and travel to work areas. They found that employment growth in a local area can benefit workers, but such growth is also proportionately more likely to benefit those in higher skilled occupations.

⁴ Note this projection predicts growth in employment in low paid sectors such as accommodation and food services and wholesale and retail (marginally). Analysis by [British Retail Consortium](#) suggests that the combined effect of ongoing structural change, an accelerated rate of store closures and productivity improvements mean it is possible that there could be 900,000 fewer jobs in retail by 2025.

Chart 6: Impact of local growth on average hourly pay of different skilled workers (2009-2015)



This analysis into who benefits from growth sectors has identified two challenges:

- continued growth in low paid sectors will generate jobs through replacement and expansion labour demand but not necessarily contribute to increasing better paid work
- whilst *local growth* (agglomeration) matters more to places than specific sectoral growth, such growth is proportionately more likely to benefit higher-skilled workers.

Whether localities choose to focus on agglomeration or sector based strategies, international evidence suggests that the sector-focused approaches can be an important part of addressing low pay. A focus on sectors can help widen access and reach those on low incomes (Lee et al, 2018). When prioritising sectors, the challenge will getting the balance right between those sectors that could create the industries of tomorrow and those that account for significant employment.

4.3. How does technological change affect employment and inequality?

Innovation creates opportunities and is generally linked to productivity growth, but the scope to promote and secure Inclusive Growth will be affected by how technological innovation impacts on local labour markets in terms of structural and sector transformation. There have been a number of studies into the impact of technological innovation, often focusing on high tech sectors – but R&D spending covers a wider range of sectors.

A key objective of government policy is to raise the total research and development (R&D) investment to 2.4 per cent of GDP by 2027 from the current 1.7 percent. Successfully catalysing growth in R&D could increase it to £46bn by 2027 – but with two-thirds of current R&D coming from the private sector, and the rest from higher education, government and not-for-profit sector, a key question is whether funding follows ideas or ideas follow funding? In some areas it can be hard to influence the spatial distribution of R&D – and it is likely that firm

level R&D investment in Cambridge or other prosperous areas will be different from the nature of R&D in Selby (Yorkshire) or other less prosperous areas.

At macro-level R&D spending is associated with economic growth, and whilst innovative firms also tend to hire more workers, the impact of R&D growth on local labour markets is less clear. Do investments in R&D create or destroy jobs in local labour markets? The effects of R&D growth, through wages and growth in employment numbers, can work through the firm itself or via wider-spill-over effects. Existing evidence shows that growth in R&D increases high skilled/non-routine workers which in turn may spur complementary routinized tasks, to be performed by low-skilled workers.

Innovation and enterprise can also drive business dynamics with more productive firms pushing out less productive one. Interestingly evidence, covering the period prior to the recession between 1998 and 2007, shows that many good companies with high-productivity tend to go out of business alongside those with low-productivity (Bravo-Biosca and Westlake, 2014). This is probably because entrepreneurs usually focus on fulfilling gaps in the market, rather than seeking to push out incumbents. Within-firm labour productivity appears to be bigger problem (i.e. the issue of ‘zombie firms’) than external restructuring of sectors.

Research by Ciarli et al (2018b) examines the impact of growth in firm R&D spending (using this as a proxy for innovation) on dynamics in the British local labour markets (Travel to Work Areas). Technological innovation, in this context, covers a wide array of R&D expenditures. Travel To Work Areas (TTWAs) are characterised by their different shares of routinised and non-routinised jobs⁵.

This research looked at local labour market effects over the period 2001 to 2011, covering employment growth and composition, as well as effects on individual wages (Ciarli et al., 2018c). Firm level data with details of their R&D expenditure was used from Business Expenditure on Research and Development (BERD) and combined with information on the TTWA population in 2001 and 2011 using the respective censuses from the Office of National Statistics. Given the design of BERD, the focus was on large and medium companies’ R&D.

On balance, an increase in R&D in the UK TTWAs seems to have a low multiplier employment effect and, *ceteris paribus*, innovation has had little impact on employment rates but it did *change the composition of employment*.

Distinguishing between areas that, prior to 2001, had a higher percentage of workers employed in routine occupations (‘high routinised areas’)⁶ and areas that had a lower percentage of workers employed in routine occupations (low-routinised areas), the researchers found that,

⁵ Proportion of workers in routine occupations in TTWAs is defined using the ONS National Statistics Socio-Economic Classification (NS-SEC). This has 7 categories of occupations of which one is ‘routine occupations’. TTWAs were classified into high routinised areas (HRA) and low routinised areas (LRA).

⁶ In terms of population, TTWAs with low initial routine share account for 85 percent of the population, while TTWAs with a large share of routinised employment account for 15 percent of the population. Most people live in low-routine areas (as measured in 2001) so average effects are negligible.

overall, R&D changes the sector, type and skill composition of employment, and might increase employment differences between these areas.

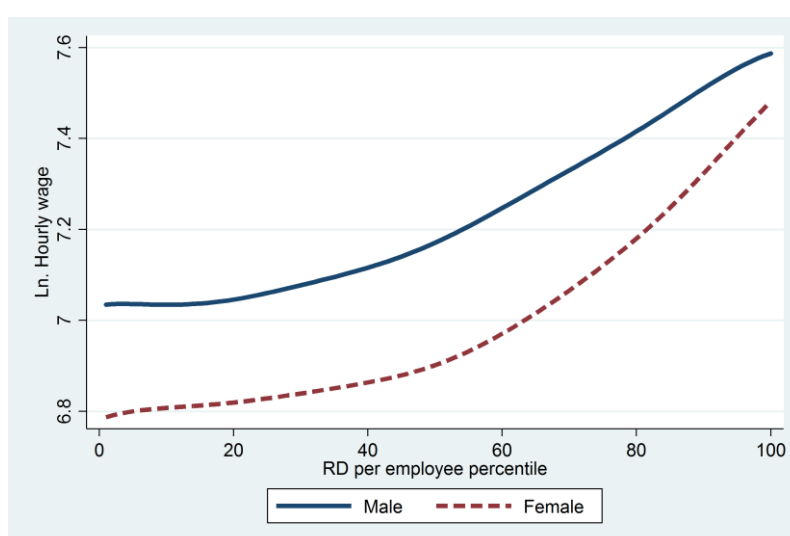
In low-routinised areas, R&D growth induces a decrease in employment, and an increase in the proportion of more highly-educated workers – as well as employment in the manufacturing industry and non-tradeable sectors (e.g. catering, personal services, etc.). In high routinised areas, change in R&D instead led to an increase in employment, but mainly in non-tradeable services and especially amongst those with lower levels of education (with manufacturing employment by contrast reducing).

The employment created in high routinised areas can be mainly attributed to an increase in self-employment, particularly amongst the 25-34yrs olds and 35 to 64yrs olds. The increase in self-employment in the UK has increased over recent decades, with innovation being one of the drivers for this. The analysis cannot identify the underlying mechanisms at play and whether the change in self-employment is due to the opportunities created by R&D or the jobs it destroys.

The effect of R&D on self-employment was further examined by looking at local firm dynamics. This suggests that the increase in self-employment is reflected in a higher number of micro-firms, mirroring the wider trend, which shows that whilst self-employment has been growing, the proportion of self-employed with employees has been falling.

In terms of the effect of firm R&D on wages differentials, Ciarli et al (2018c) found that R&D growth led to systematic wage increases for individual workers, but this varied across occupations. Those in top occupations and in low routinised occupations gained much more than those in highly routinized lower-skilled occupations. Men gain twice as much from an increase in R&D investments with respect to women in the same occupation.

Chart 7: Pay gains by gender (hourly wages) from an increase in R&D spending (2011-2015)



Source Ciarli et al., 2018c

Overall these findings suggest that the desired growth in R&D investment, if achieved, will have quite distinct implications for local labour markets, with the risk of *widening* disparities between firms, within firms and between places in terms of type of employment and wages.

4.4. Where does entrepreneurship thrive across the UK?

Policies to create jobs, incubate new ideas and tackle high levels of unemployment can be pursued by stimulating business activity – with innovation often described as the tool of the entrepreneur. Since 2010, there has been job growth in all the regions of the UK and a key feature of the financial crises of 2008 has been the relatively small impact on employment, a dramatic growth in self-employment and an increase in the economic activity rate.

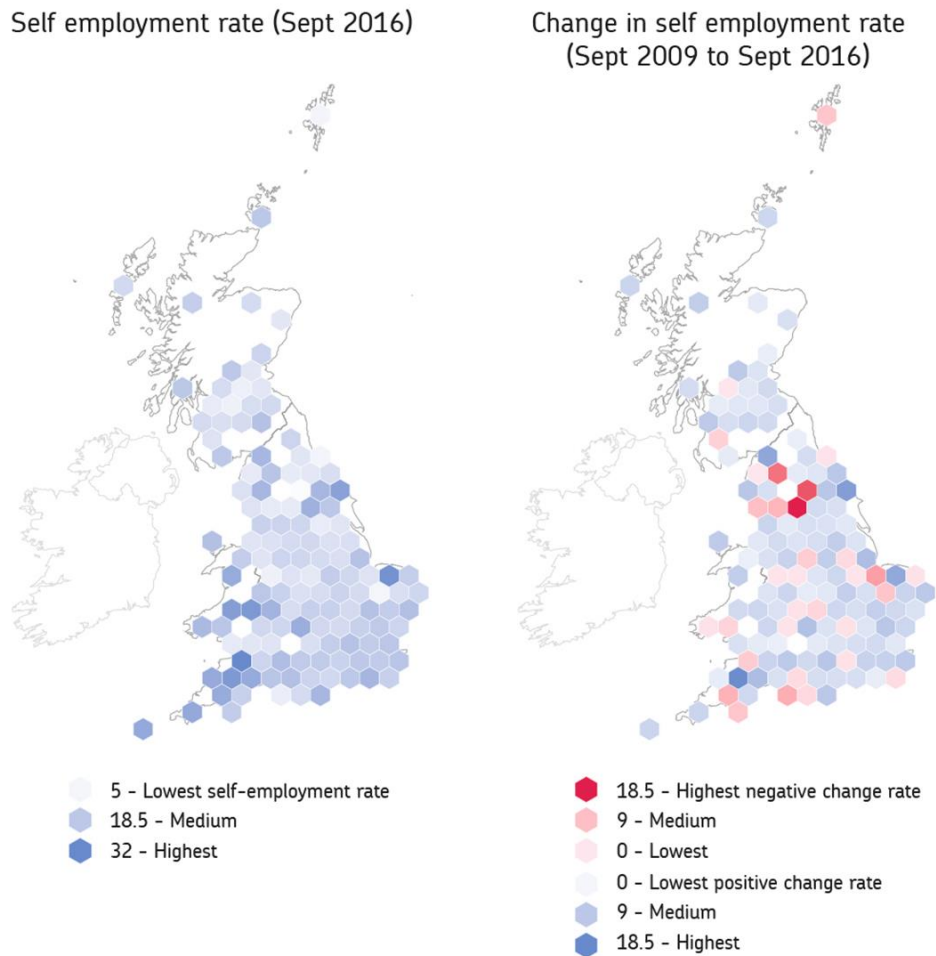
According to ONS, the number of self-employed individuals since 2008 has risen by 1 million, accounting for half of all job growth over that period. It is now 15.1 percent (2017) of the labour force – with growth in rates across all UK regions. Recent growth in self-employment has been more pronounced amongst women.

So does the choice of self-employment over paid employment reflect that individuals are “pushed” into self-employment by negative economic conditions following the financial crises or “pulled” in by improving economic prospects? The nature of self-employment growth has become prominent for a number of reasons: there is concern about increased casualisation in the labour market and growth of the ‘gig economy’/platform working (Taylor Review, 2017); within the self-employed there are a declining proportion of job creators; and the proportion of dependent self-employed (non-business owning) has also slightly declined.

Research by Henley (2016) examined whether those choosing self-employment were reluctantly opting for the “gig economy” work in places where the alternatives are not very attractive or making active choices where business start-up opportunities look more attractive. The research matched each individual in *Understanding Society* with ONS data on average unemployment and lower quartile earnings in their local authority district.

Self-employment is often used as an indicator for entrepreneurial activity, albeit an imperfect one because entrepreneurship is not a particularly well defined statistical concept and so difficult to measure through large scale surveys. The analysis into the pattern of change in self-employment across the UK, between 2009 and 2016, shows wide geographical variations.

Chart 8: Changes in self-employment rate (Sept 2009 – 2016)



Source: Henley (2017) The post-crisis growth in the self-employed: volunteers or reluctant recruits?

There are a range of factors that can help explain the changing nature of self-employment, using “prosperity-pull” explanations:

- self-employment may vary inversely with unemployment
- it relates to economic opportunity drivers, and to the relative attractiveness of self-employment versus paid employment
- past evidence points to importance of motivators such as personal autonomy, work-life balance (especially for women) and financial rewards (more for men)
- strong housing markets may support self-employment growth
- ‘insurance effect’ of other household members in secure jobs, help to reduce the risk.

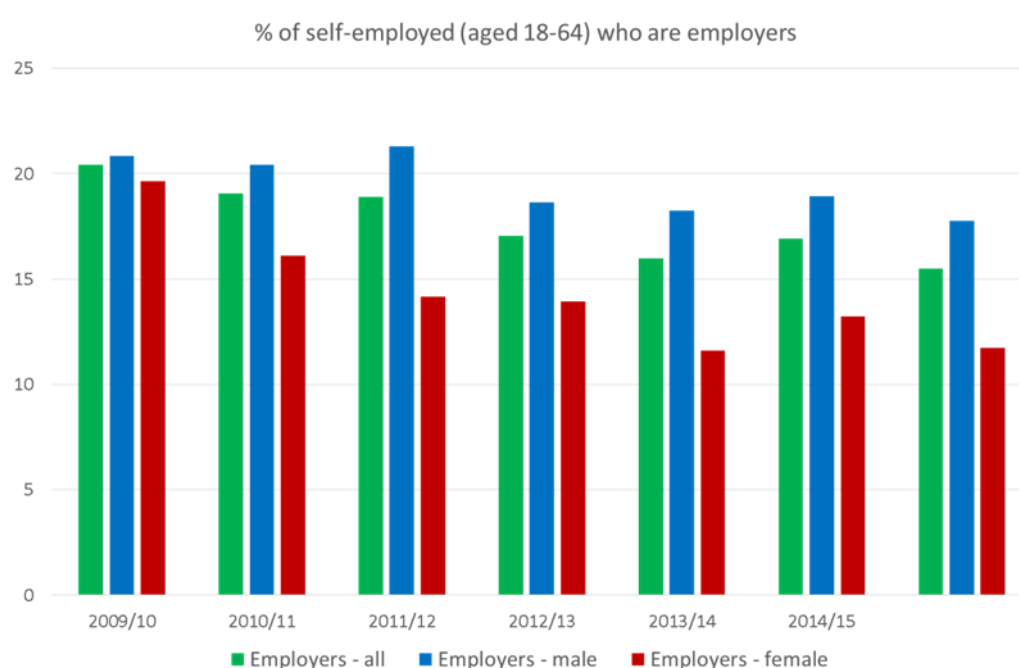
There is also some evidence that job quality is declining, for example, a fall in on-the-job training incidence and intensity, and so could be linked to the growth in self-employment. Paradoxically, people who are self-employed consistently report higher job satisfaction, lower earnings and long work hours.

The probability that an individual chooses self-employment is higher where the local area unemployment is lower, although the statistical effect is not large. A 1 percent drop in the unemployment rate increases probability of self-employment by only 0.2 percent. The only evidence for unemployment ‘push’ into self-employment is for men who were recently unemployed or previously unemployed, with low pay, and in high unemployment locations. The research found that self-employment is linked to the quality of the labour market and higher wages in the local area may encourage self-employment.

‘Push’ effects (‘necessity’/‘last resort’ self-employment) were largely found in terms of higher transition probabilities away from “poor jobs” – those with low pay and long hours, without on-the-job training, on temporary contracts, without collective representation, with private sector SME employers and where individuals have had access to training outside the workplace.

Mirroring other findings, the research also shows that within the self-employed there are a declining proportion of job creators, with women less likely to grow their businesses than men.

Chart 9: Trend in self-employed (by gender) who are also employers (2009/10 to 2014/15)



Source: Henley, 2016 using *Understanding Society* data w1 to w6

The transition from sole-trader to employer was largely a function of the characteristics of the self-employed person. Those likely to make such transitions were male, older, university educated, had more financial wealth and had more accumulated experience in self-employment. Job creation by the self-employed was not discouraged by higher wages in the local area, but was supported by higher local house prices.

Entrepreneurship policy has always covered a wide range of objectives from entrepreneurship education (shifting culture) to start-up support and business growth initiatives. However, there has often been a lack of clarity between entrepreneurship policy and active labour market

policy. This research shows little evidence for the “pushed” effect, and that policies such as the New Enterprise Allowance, paradoxically, are more likely to benefit those areas such as in the South of England where local economic opportunities and earnings are already better than areas in the North or West of Great Britain scarred by the legacy of industrial decline.

The findings show that not all self-employed business owners aspire to grow. This creates a challenge in trying to stimulate business growth and job creation, particularly through other related initiatives such as public procurement and exporting for small and medium sized enterprises.

5. SUMMARY AND IMPLICATIONS FOR POLICY AND STRATEGY

This briefing by *Understanding Society* provides new evidence relevant to the Industrial Strategy, touching on particular topics to help inform thinking and ideas around Inclusive Growth.

Hard-wiring Inclusive Growth into the Industrial Strategy means looking beyond the conventional supply side focus on education and skills training. Although these are important for long-term improvements in productivity and equality, and skills constraints could curtail future output, promoting Inclusive Growth requires ‘leveraging’ all the domains of the Industrial Strategy.

There are two “clusters of remedies” being proposed for productivity improvements – one around investment in infrastructure and technology and the other around investment in people. The research and analysis in this briefing specifically examines economic and social disparities through the dynamics of sectors, R&D spending and entrepreneurship. The findings are relevant to the deployment of Sector Deals, infrastructure investment, innovation and business development.

A number of headline messages emerge from these research findings and the associated roundtable discussion organised by *Understanding Society*:

- Regional imbalances are extremely persistent in the UK. Internal migration can partially compensate for these imbalances over time, and is generally higher than perceived, but population changes always lag behind demand shocks yielding persistent deviations in employment rates. Outside of London, there is a correlation (but not causation) between the proportion of graduates and unemployment amongst those with low skills, i.e. a positive spill-over.
- The challenge of taking forward the Industrial Strategy is getting the balance right between the industries of tomorrow, and the development of low-paid sectors (or ‘every-day economy’) that account for significant employment. A structural effect, as opposed to the nature of employees who work in those sectors, partly explains the reason for low pay which employers need to tackle. Whilst local growth in general can provide greater opportunities for workers to switch firms, which is associated with improvements in pay for

individuals who switch, such growth is proportionately more likely to benefit those in higher skilled occupations. The nature of specific sectoral growth thus matters for inclusion.

- R&D investment by firms can be a mixed blessing for employment, with tensions between increasing innovation, creating employment and reducing inequality within and between regions. On balance, an increase in R&D investment had little impact on employment rates but played an important part in changing the *composition of employment* in local labour markets. The precise effects varied according to the nature of local labour markets. In areas with a lower proportion of routine jobs, R&D growth induced a decrease in employment but an increase in highly-educated workers. In areas with a high proportion of routine jobs, there was an increase in employment but mainly in non-tradeable services. This can be attributed to an increase in self-employment. R&D investments also significantly increase the gender pay gap.
- On the whole the ‘prosperity pull’ seems to explain the recent growth in self-employment but this presents a particular challenge for less prosperous areas given the dependency of self-employment on local economic opportunities and higher wages.

As voices calling for a new economic model grow, clearly fresh thinking and concerted effort is needed on Inclusive Growth, including evidence on the distribution effects of transport and other investments across people and places. A number of specific ideas to support Inclusive Growth, or areas for caution, emerged from the research and the workshop.

Unlike the ‘work first’ policies that have dominated active labour market policies (ALMP) over the last two decades and supported employment entry, local economic development will also need to be accompanied by ‘career first’ approaches that supports in-work progression and initiatives to raise job quality. The US Work Advance Programme provides an example of helping low income adults enter and progress in high demand sectors of the economy (Lee, 2018). Ultimately, wider reforms in labour market policy are needed given the evidence of a tenuous link between improvements in productivity and the effects on wages.

The findings on R&D investments suggest that such investments need to be incentivised in areas both with ‘high and low routinised jobs’ to avoid further increasing regional disparities. The finding fuel the view that there is too much emphasis in policy and strategy circles on R&D and innovation and not enough on adoption and adaptation of existing technologies and business practices. With many business support programmes narrowly specified, tackling the long-tail of productivity underperformance will depend much more on the adoption of ‘best in class’ technologies and business practices rather than frontier innovation (Athey, 2018).

In parallel, upskilling low skilled residents and improving educational participation and attainment are obvious measures needed in areas with a high proportion of routine jobs. More explicit attention needs to be paid to tackling the gender wage gap that an increase in R&D could exacerbate.

Notwithstanding the need to reduce the number of national business support programmes, this research makes the case for entrepreneurship policy to be highly contextualised to both places and people. Entrepreneurship programmes have to be designed to fit local economic dynamics to maximise potential impact. The findings do not support the assumption that that simply more self-employment is a good thing – for some types of people and localities in fact policy might focus more on improving the quality of work and organisational attachment. One idea, potentially complicated to design, is to encourage and support ‘smarter working’ by networking self-employed and micro-businesses willing to collaborate in the pursuit of new opportunities.

The Industrial Strategy needs to include cross-departmental policies and programmes that integrate growth, productivity and inclusion, whilst enabling workers to gain more of a share from gains in productivity. The focus on sectors matters but may be less effective where productivity-pay link is less clear cut and gains are not fairly shared between workers in those sectors. Ultimately different leadership and incentive structures are required for institutions so they can marry growth and fairness (Byrne, 2018), and the development of stronger regional institutions that can pursue distinct strategies with confidence and local impact.

It also means not just looking to conventional horizontal supply-side measures on education, employability, access to employment and skills training – but developing ideas that harness the core foundations of Industrial Strategy to promote equality, particularly technological adoption and diffusion and investment in infrastructure, which sit at the centre of the strategy. These will need to be supported by the UK Shared Prosperity Fund and new resources or refocused programmes by other key government departments.

Such an approach might just start to make this Industrial Strategy different from its predecessors and demonstrate that the strategy has the hallmarks of driving economic change that can improve both productivity and equality.

Appendix

HOW CAN *UNDERSTANDING SOCIETY* HELP?

Understanding Society affords an important resource for identifying short and long-term treatment and policy effects related to the Industrial Strategy. It provides opportunities for research into individuals, households and places, besides generating evidence relevant to individual grand challenges such as ageing and mobility.

The study is designed to collect longitudinal panel data relevant to a number of Industrial Strategy areas:

- Sectoral and occupational factors, quality of work, health and well-being
- Regions and places; changes in transport behaviour; housing/credit constraints
- Skills, labour market progression and migration/immigration
- Young people's educational attainment, aspirations and transitions into the labour market
- Changing nature of employment and the gig economy; self-employment
- Ageing, labour market participation and 'retirement' planning
- Environmental attitudes and behaviours and household consumption of green energy

It is also a bio-social survey, enabling research into work and health and wellbeing. With ethnic minority and migrant boost samples, the study facilitates research into effects of migration for economic development. All four countries of the UK are included allowing researchers to compare the experiences of individuals and households in different places and in different policy contexts. The sample is representative of individual UK regions and the study contains a range of geographical identifiers – useful for place based research, regional comparative analysis, exploiting natural experiments for policy evaluation, examining geographical migration, etc.

The survey can be linked to administrative data, such as the National Pupil Database for England and geographical transport accessibility data. By matching postcodes of participating households to the National Statistics Postcodes Directory (NSPD) the Study is able to provide a range of linked geographical data – such as ONS Lower Super Output Areas, Local authority areas and Travel to Work Areas (TTWA). The data can also be linked to various national indices such as the Index of Multiple Deprivation. Through [Associated Studies](#), other forms of data can be collected for research to supplement quantitative analysis.

The World Bank identified the need to focus on both firms and individuals [and by implication households given their central role in economic welfare] in order to drive forward Inclusive Growth. Exciting and significant opportunities for productivity and labour market research depends on *linking employer and employee data*. For *Understanding Society* this means combining longitudinal data on individual preferences, goals and motivations, employees' education, contract status, work conditions and wage information from the survey alongside aggregate company information. Wave 11 fieldwork of the survey (2019/2020) will seek consent to link to employer's addresses, although considerable developmental work will be need to create new useable data.

With the nature of employment changing rapidly, *Understanding Society* will continue to review concepts and measures on the nature and quality of work (within the constraints of ensuring benefits of the longitudinal design are maintained). For example, Wave 11 (2019/2020) will see the introduction of a new module on the gig working. The Study will also be looking for opportunities to factor into its design the growing implications of technological change.

The questionnaire content in the Study can be explored through the [Long-term Content Plan](#), which set outs all the modules covered over different waves, and online at <https://www.understandingsociety.ac.uk/documentation/mainstage>. *Understanding Society* data are available through the UK Data Service and there are [different levels of access](#) depending on what information is required.

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