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Executive Summary

The Government’s new industrial strategy – its flagship domestic policy – aims to improve living standards and economic growth by increasing productivity and driving growth across the national economy.

While industrial policy traditionally focuses on sectors, it is the skills profile of the business base that has a more important bearing on city and therefore national economic performance.

Some types of business will have a much bigger role to play in this than others. Specifically, policy needs to focus on supporting ‘exporting’ businesses – those firms that sell their products to regional, national and international markets. This is because these firms, particularly high-knowledge exporters, drive both productivity growth and jobs in local services such as shops and restaurants.

The first report in this research programme showed that these exporters – and especially the high-knowledge element of them – prefer a city location over a more rural one. 54 per cent of Britain’s exporters and 65 per cent of Britain’s high-knowledge exporters are located in British cities. This is because of the inherent advantages that successful cities offer, namely greater access to knowledge and ideas, deep pools of workers, and markets and suppliers (a process known as agglomeration).

But not all cities offer these advantages to the same extent. This research paper – the second in the series – looks at the varying success of English and Welsh cities to grow their export base, and the implications this has had for the performance of their economies. By looking at the export base of their city centres and their suburbs, it identifies four groups of cities:

- High-knowledge city centres and suburbs – there are 19 cities in this group, predominantly in the South. These cities tend to be the most productive – average GVA per worker is 23 per cent higher than the national average.
- High-knowledge city centres and low-knowledge suburbs – there are 10 cities with these traits, including six of the biggest cities.
- Low-knowledge city centres and and high-knowledge suburbs – there are five cities – Basildon, Blackpool, Derby, Portsmouth and Warrington – in this group.
• Low-knowledge city centres and low-knowledge suburbs – there are 24 cities in this group, predominantly in the North, Midlands and Wales. These cities tend to be the least productive (average GVA per worker is 85 per cent lower than the national average).

Looking at the characteristics of these cities in more detail helps to explain why these patterns emerge. Firstly, skills are important – those cities that have been able to attract high-skilled exporters, be that in the city centres or suburbs, tend to have a large number of high-skilled workers living in or around their cities. Secondly, density is important for city centres – the greater the number of jobs located in a city centre, the higher skilled the jobs tend to be. Thirdly, proximity to London appears to play a role, with cities closer to the capital doing better than those further away. And finally cost doesn’t appear to be a main factor – those cities that have the largest high-knowledge export base also tend to be more expensive.

Cities with low-knowledge export bases do still attract investment, but for very different reasons. Firstly, they provide access to lots of workers, but these workers tend to be lower skilled. Secondly they provide lower cost commercial space. While these factors are relatively unimportant for high-skilled exporters, they are important to lower-skilled export businesses (explaining their industrial structure). The implication of this is that jobs available in these cities tend to be lower skilled and their economies tend to be less productive.

These findings highlight the different challenges and opportunities that cities across the country face. Despite this variation there are a number of broad implications for the Government’s industrial strategy if it wants to encourage growth up and down the country.

1. The industrial strategy must work with the grain of the UK’s economic geography and make the most its cities

Industrial policy needs to take a place-based perspective, building on the strengths of different places and addressing the factors that hold places back. The benefits that cities offer, which by their nature cannot be replicated in every part of the country, are likely to become increasingly important as the UK economy continues to shift towards a more knowledge-intensive service-based economy. Industrial policy will be most effective if it reflects the importance of agglomeration rather than trying to spread economic activity evenly across the country.

2. Making the most of cities requires the integration and co-ordination of many policy areas and related institutions. This is best done at the city scale

An industrial strategy that recognises place will require decisions to be taken locally and tailored to address the specific challenges and opportunities present in different cities. The powers that cities already have, as well as the on-going process of devolution will allow cities to deliver elements of this themselves.
However, some policies, such as research and development spending and high education should remain at the national level. But these policies should be organised and delivered at the city scale, with the aim to encourage the expansion of the export bases of cities. The success of any industrial policy will depend on how policy makers can bring together nationally and locally administered policies to improve the economies of the country’s cities.

3. **For cities with high-knowledge export bases, policies need to focus on managing the costs of growth**

Economic success brings challenges as well as opportunities. Demand for space pushes up the cost of housing and commercial property, and it increases congestion on roads. To support the on-going success of successful cities, policy needs to focus on limiting the impact of these costs through facilitating the increase in housing and commercial space and, where appropriate, considering road pricing in conjunction with improvements to public transport.

4. **For cities with low-knowledge export bases, policies need to focus on strengthening the benefits that they can offer**

To attract investment from high-skilled exporters, cities need to increase the benefits they can offer to such businesses. Most importantly, they need to increase the number of skilled workers that businesses can recruit from. Given that these businesses increasingly show a preference for a city-centre location, investing in their city centres to make them more attractive places to be located will also be important as they look to increase productivity, wages and career progression opportunities in their economies.
Introduction

The early days of Theresa May’s premiership saw the creation of a new Department for Business, Energy and Industrial Strategy (BEIS) charged with delivering a comprehensive industrial strategy. The inclusion of “industrial strategy” in its name represents a step change and signals that the Government wishes to take a more active role in shaping Britain’s business landscape.¹

The green paper on industrial strategy, published in January, sets out 10 strategic-point plan to improve living standards and economic growth by increasing productivity and driving growth across the national economy. The 10 strategic pillars are science, research and innovation; skills; infrastructure; business growth; procurement; trade and investment; affordable energy; sectoral policies; driving growth across the whole country; and creating the right institutions to bring together sectors and places.

But while the green paper sets out the approach and the tools, the Government has made it clear that it was not intended to be the last word, but instead to start a process of public consultation.² This paper – second in this research series – is part of our contribution to shaping Britain’s new industrial strategy, and our response to the official public consultation. It argues that place, rather than being a pillar of its own, should be the framework on which the other elements of the industrial strategy are designed and delivered.

If the industrial strategy is to improve the performance of the national economy, then it needs to focus on exporting businesses - the sector of the economy that determines the long-run prosperity of cities and regions.³ These exporters, which we define as those business that sell to regional and national as well as international markets, are important for three reasons. Firstly they generate income that is independent of the performance of the local economy. Secondly they are more productive than local services sector (such as newsagents and hairdressers). And thirdly the income they generate creates demand, and therefore jobs, in local services.

The first report showed that these exporters aren’t distributed evenly across the country. It found that:

- Businesses and the jobs they create were concentrated in cities. This is most acute for city centres, which accounted for just 0.1 per cent of all land, but 14 per cent of all jobs.

¹ Financial Times (2016) UK industry welcomes Theresa May’s strategy pledge. Available at: https://www.ft.com/content/b51df920-4db5-11e6-8172-e39ec0d3b8fc
² Open Consultation: Building our Industrial Strategy. Available at: https://www.gov.uk/government/consultations/building-our-industrial-strategy
• This is even more acute for exporting jobs in services. Around one quarter of these jobs were located in city centres, and just under 70 per cent of the national total were in cities as a whole. Manufacturing exporters have different location patterns, with 80 per cent being in the suburbs of cities or their hinterlands.

• Exporters tended to be much more highly-skilled in city centres than elsewhere, reflecting the greater access to knowledge that city centres offer.

But while the data shows cities as a group to be an attractive destination for businesses and jobs, not all cities offer these benefits to the same extent. This manifests itself in the great variation in the nature of export base across cities, and results in the divergence that we see across the country in terms of economic performance.

This report builds on the initial analysis to explore why some cities are more successful than others at building their exporting business base. In particular, it looks at how the characteristics of a place can boost productivity, where policymakers could help this happen, and what this means for different places.

Unpacking the place-based characteristics that shape the export base in cities will allow us to propose which types of policy intervention different cities should prioritise in order to build their base of highly-productive knowledge exporters.

Box 1: Definition of ‘exporters’

Exporters (also known as ‘business to business (B2B)’ or ‘tradeable’ businesses) sell to domestic or international markets. They form the export base of the local economy and include services-exporting activities, such as computer programming, R&D, insurance and pension funding, and goods-exporting activities, such as car, textile and chemicals manufacturing.

We also define knowledge exporters using Census 2011 occupation by industry data. The definition comprises broad industrial categories most closely aligned to our more detailed definition using 2-digit codes and the top three occupations (professionals, managers and associate professionals).

The remainder of the private sector economy is made up of local services (also known as ‘business to consumer (B2C)’ or ‘non-tradable’ businesses), such as hairdressers or newsagents, sell directly to the consumer and so serve a very local market.

A full list of how each sector has been defined can be found in the online appendix.

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4 Occupation by industry data used to define knowledge exporters in this report is based on the workplace population for England and Wales. At present, corresponding data series for Scotland is based on the residential population. Due to this lack of comparability, we excluded Scotland from the analysis and report data for England and Wales only.
Exporters play an important role in the national economy

Exporters, businesses that trade services and goods in Britain and overseas, account for over five million jobs in the UK economy. While exporters account for a smaller share of businesses and jobs compared to the local services sector (25 per cent of employment compared to 75 per cent in local services), exporters play an important role in the UK economy for several reasons:

• Firstly, they tend to be more productive than local services businesses – and also drive productivity growth, which drives long-run economic growth.

• Secondly, because exporters generate their revenues from selling into wider domestic and international markets, they generate income independent of the performance of the local economy.5

• Thirdly, businesses in the export base have a multiplier effect on jobs in local services but the size of the multiplier varies according to the type of exporting business. Cities that have more exporting jobs also have more jobs in local services, relative to the size of the working-age population but the relationship between high skill exporting jobs and local services jobs is stronger and suggests that high-skill exporters create even higher demand for local services.

It is for these reasons that the industrial strategy should focus on growing Britain’s export base if its strategic objective is to promote economic growth and boost productivity.

The skills profile of exporters is more important than the sectoral profile for boosting productivity in cities

Having a large number of exporters does not necessarily mean a city is more productive, however – it is the nature of the export base that matters. Some cities have a large export base but are less productive: 35 per cent of jobs in Sunderland are in exporting firms 1.6 times the national average, but productivity (as measured by GVA per worker) is less than 90 per cent of the national average. In particular, cities that tend to have a larger proportion of their export-base jobs in the service-exporting sector are on average more productive than cities that tend to have a larger proportion of goods-exporting jobs (see Figure 1).

Figure 1: Relationship between productivity and the sectoral profile of exporting sector in cities

Correlation coefficient = 0.59
Source: ONS, Regional, Sub-regional and Local Gross Value Added, 2014 data and ONS (2016), Business Structure Database 2

Figure 2: Relationship between productivity and the skill profile of exporting jobs in cities

Correlation coefficient = 0.74
The relationship between levels of productivity and the skills profile of the export base is stronger than the sectoral profile of the export base (see Figure 2). While services exporters tend to be high knowledge on average, the findings suggest that the skills profile of the export base – encompassing services and goods exporters – has a more important bearing on the economic performance of cities than the sectoral profile. This suggests that focusing on the factors that support the growth of these types of businesses is likely to be more important than sector-specific policies.

High-skilled exporting activities – those that are more intensive in communication and cognitive skills – are also at lower risk of being off-shored or automated compared to medium-skilled exporting activities.

High skilled exporters are not evenly or randomly located across the UK

High-skilled exporters are particularly likely to concentrate in cities because of the benefits that are derived from co-location.

Exporters tend to cluster in cities because of the benefits that density and proximity bring – the returns to agglomeration. Agglomeration is the process by which concentrating economic activity in one place makes businesses and workers more productive.

There are three main mechanisms through which the benefits that businesses and workers derive from locating in close proximity to one another are generated:

1. **Learning**: the ability to exchange ideas and information, known as ‘knowledge spillovers’. Knowledge flows between firms occur through social interaction and in proximity to a knowledge source. This suggests that knowledge spillovers best operate over small and dense geographies, where new knowledge is created.

2. **Matching**: the ability to recruit from a deep pool of workers with relevant skills. Larger markets – such as those in cities – imply more jobs and deeper pool of workers. Access to larger and more stable labour market and qualified pool of workers is important: businesses can more easily be matched to workers with specialised skills and this lowers the probability of labour shortage.

3. **Sharing**: the ability to share inputs, supply chains and infrastructure. Larger markets allows for a more efficient sharing of local infrastructure and facilities, and offer producers the advantages of access to a larger variety of intermediate input suppliers.

The benefits businesses derive from being in close proximity to other businesses helps explain why British cities are home to 52 per cent of all businesses and 59 per cent of all jobs – despite covering just 9 per cent of land across the country. But the returns to co-location are higher for some types of firms meaning that some firms are more likely to locate in urban locations and this is true of exporters.

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6 On average across all cities, 14 per cent of jobs in the ‘high skilled’ export base are in the goods exporting sector.
54 per cent of exporters and 65 per cent of high-knowledge exporters locate in cities.

**The export base varies across different cities**

The size and nature of the export base in a city is driven in part by the place-based characteristics that cities offer different types of firms.

Businesses benefit from locating in cities whether they are located in city centres or suburbs but in different ways. High-skilled and knowledge-focused exporters tend to favour city-centre locations because city centres tend to be denser, which facilitates the exchange of knowledge and ideas.

Cities also offer important benefits to lower-skilled and more-routinised businesses but because access to knowledge and ideas are less important they are less likely to locate in dense city centres and are much more likely to be found in suburbs.

**But city centres and suburbs do not play the same role in all cities which has an important bearing on the geography of exporters more generally.**

This section examines the size and the skill profile of exporters across city centres and suburbs of different cities.

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**Box 2: Defining city centres and suburbs**

The analysis in this report makes a distinction between two parts of a city: city centres and suburbs.

**City centres** are defined based on all the postcodes that fall within a circle from the pre-defined city centre point. The radius of the circle depends on the size of the residential population of a city and its size is as follows:

- London – radius of 2 miles;
- Large cities – radius of 0.8 miles;
- Medium and small cities – radius of 0.5 miles.

**Suburbs** are defined based on the postcodes that fall within the rest of a city (defined as primary urban areas (PUAs), the standard definition of cities that Centre for Cities uses). In some areas, the suburbs will include towns, such as Oldham in Manchester.

City centres with a large proportion of exporters also tend to have a more highly-skilled export base.

Across all city centres, there is a positive relationship between the size of the export base and the skill profile of exporting jobs (see Figure 3). For example, in Milton Keynes its city centre is home to nearly 30 per cent of the city’s export jobs, and 58 per cent of those jobs are high skilled. The proportion of export jobs in London’s city centre is 26 per cent, well above the city centre average of 15 percent and over three quarters of those jobs are high skilled, much higher than the city centre average of 46 per cent.
In contrast, city centres with small export bases tend to have lower-skilled export bases. Less than 5 per cent of jobs in Blackpool city centre and 7 per cent in Doncaster city centre are in the exporting firms and less than a third of these jobs in both cities are high skilled, over a third less than the city centre average.

**Figure 3:** Relationship between the size of the export base and the skill profile of exporting jobs in city centres

![Graph showing the relationship between the size of the export base and the skill profile of exporting jobs in city centres.](image)

Correlation coefficient = 0.46

Some city centres have a relatively small, high-knowledge export base. City centres in this category included Aldershot, Cambridge, Coventry, Exeter, Liverpool, Newcastle, Nottingham, Plymouth, Southampton, Worthing and York. In Cambridge and York in particular, their historic city centres have tended to constrain city centre development, which means that high skilled exporting businesses tend to locate in their suburbs.\(^\text{11}\)

Only a handful of city centres have a large, low-knowledge export base, and these include Blackburn, Bradford, Huddersfield, Ipswich and Portsmouth. The export base in these city centres includes a relatively high concentration of manufacturing exporters which suggests that agglomeration economies do not play out in the same way in these city centres as they do elsewhere.

\(^\text{11}\) Cambridge City Council, Cambridge City Centre Capacity Study, Final Report, Issue 14 May 2013, Ove Arup & Partners Ltd
The larger the export base in a suburb, the lower skilled those jobs tend to be

Overall, the relationship between the size of export base and the skill profile of exporting jobs is negative in the suburbs (see Figure 4) – this is in contrast to the relationship found across the city centres.

The suburbs of Burnley had one of the highest concentrations of export jobs – 39 per cent of jobs were in the exporting firms, 12 percentage points higher than the city average. But less than a third of these jobs were high skilled, compared to 40 per cent across city suburbs as a whole. Similarly, in Sunderland 38 per cent of jobs in the city’s suburbs were in the exporting businesses but just 26 per cent were high skilled.

In contrast, just 18 per cent of jobs in London’s suburbs were in the exporting firms but more than half (54 per cent) of those jobs were high skilled. The proportion of jobs in the exporting firms in Exeter’s suburbs was also low, less than 17 per cent, but nearly half of those jobs also tended to be high skilled (49 per cent).

Figure 4: Relationship between the size of the export base and the skill profile of exporting jobs in suburbs

The export base in the suburbs of Aldershot, Cambridge and Reading were large and highly skilled. A far larger proportion of jobs in Cambridge’s suburbs were in the exporting firms, 28 per cent, compared to its city centre, and two in three of those jobs (67 per cent) were high skilled. Data shows that all three cities had a relatively high concentration of R&D activity. This type of activity tends to be high skilled and concentrated in suburbs (see the Cambridge case study).12

12 R&D and computer programming firms are more likely than other service exporters to locate in non-city centre locations.
A typology of city centres and suburbs

In order to explore the factors that shape the nature of the export base in cities, the size and skills profile of the export base is used to categorise city centres and suburbs into four groups:

A. Large, high-knowledge export base
B. Large, low-knowledge export base
C. Small, high-knowledge export base
D. Small, low-knowledge export base

The typology – set out in Figure 5 – provides insights that enable us to examine the nature of the export base in cities and the factors that explain their location in more detail. It is worth reflecting first though on the patterns that emerge when the city centres and suburbs are compared based on the skills profile of the export base.

Figure 5: Typology of city centres and suburbs

<table>
<thead>
<tr>
<th>Class</th>
<th>Large, high-knowledge suburb</th>
<th>Small, high-knowledge suburb</th>
<th>Large, low-knowledge suburb</th>
<th>Small, low-knowledge suburb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large, high-knowledge city centre</td>
<td>Reading, Slough, Milton Keynes, Swindon</td>
<td>London, Oxford, Brighton, Bristol, Cardiff, Leeds, Bournemouth, Norwich, Gloucester</td>
<td>Crawley, Telford</td>
<td>Manchester, Birmingham, Sheffield</td>
</tr>
<tr>
<td>Small, high-knowledge city centre</td>
<td>Cambridge, Aldershot, Southampton</td>
<td>Exeter, York, Worthing</td>
<td>Coventry, Plymouth</td>
<td>Newcastle, Nottingham, Liverpool</td>
</tr>
<tr>
<td>Large, low-knowledge city centre</td>
<td>Portsmouth</td>
<td>Bradford, Huddersfield, Blackburn</td>
<td>Ipswich, Middlesbrough</td>
<td></td>
</tr>
<tr>
<td>Small, low-knowledge city centre</td>
<td>Blackpool, Derby, Basildon</td>
<td>Warrington</td>
<td>Peterborough, Northampton, Luton, Newport, Leicester, Swansea, Mansfield, Wakefield, Stoke, Burnley, Barnsley, Hull, Sunderland</td>
<td>Preston, Birkenhead, Chatham, Southend, Wigan, Doncaster</td>
</tr>
</tbody>
</table>

Key: Group A Group B Group C Group D

Source: Centre for Cities calculations, 2017
The typology highlights the inherent linkages between city centres and suburbs within cities. Cities with a high-knowledge export base in their city centre are more likely to have a high-knowledge export base in their suburbs, and vice versa. And very few cities have high-knowledge export base in their suburbs without also having one in their city centres.

- **Group A**: 19 cities have **high-knowledge city centres and suburbs**. These cities which include Reading, Slough, Milton Keynes and Swindon tend to be located in the South. Leeds and York stand out as the only two cities in the North falling into this category.

- **Group B**: 10 cities have **high-knowledge city centres and low-knowledge suburbs**. This includes six of the core cities, along with Coventry, Crawley, Plymouth and Telford.

- **Group C**: Five cities have **low-knowledge city centres and high-knowledge suburbs**. These include Basildon, Blackpool, Derby, Portsmouth and Warrington.

- **Group D**: 24 cities have **low-knowledge city centres and suburbs**. These cities are predominantly in the North, Midlands and Wales but also include Chatham, Ipswich, Luton and Southend in the Greater South East.

The nature of the export base has a bearing on the economic performance of cities. This is evident across the four broad groups: Group A cities (high-knowledge city centres and suburbs) are 45 per cent more productive than Group D cities (low-knowledge city centres and suburbs).

**Figure 6: Skills profile of export base in city centres and suburbs**

Source: Centre for Cities calculations, 2017
Box 3: Developing a typology for city centres and suburbs

Our typology involved categorising city centres and suburbs into four groups, depending on the size of their export base sector and the skill profile of the exporting jobs.

Arriving at the category within the typology involved the following steps:

**Size**

a Using Business Structure Database to calculate the unweighted average size of export base in city centres/suburbs of cities across England and Wales.

b Allocate city centres/suburbs into the large and small export base categories depending on whether their export base is larger or smaller than city centres/suburbs average.

**Knowledge**

1 Using Census 2011 Occupation by industry data, calculate the unweighted average share of knowledge-exporting jobs in all exporting jobs in city centres/suburbs across England and Wales.

2 Allocate city centres/suburbs into the high and low-knowledge categories depending on whether they have a higher or lower than average share of knowledge-exporting jobs.

If the industrial strategy is to be successful in boosting the UK’s productivity and economic growth, then helping the UK’s urban export base to grow will be an important feature of its approach. But it will also need to be sufficiently flexible to respond to the variation in the export base seen across cities. A policy approach that is appropriate for cities with small, low-knowledge export base is likely to be very different to the one that is appropriate for cities with large, high-knowledge export base.
Factors that shape the nature of the export base in cities

This section explores how the place-based characteristics that enable agglomeration economies – the quality and size of the labour pool, density and proximity to markets – are likely to have impacted on the nature of the export base across city centres and suburbs.

Access to skilled workers

Cities that offer better access to lots of high-skilled workers tend to have a larger and more highly-skilled export base – both in city centres and suburbs. This means that investment in skills and the infrastructure that improves businesses’ access to skilled workers (i.e. housing and transport) will play an important role in growing the export base.

Access to deep pools of high-skilled workers is a priority for high-skilled exporters. Cities with ‘large, high-knowledge’ city centres – as well as ‘small, high-knowledge’ city centres – typically have a larger proportion of graduates within commuting distance (see Figure 7). Nearly a third of the working age population in the wider ‘travel to work area’ of ‘large, high-knowledge’ city centres have graduate level qualifications, compared to only a quarter around ‘small, low-knowledge’ city centres.

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13 Hinterlands are non-urban areas which are considered to fall within the travel-to-work area of cities. This varies from city-to-city and is determined by the average distance that a worker living outside a city travels to get to work in the city. London is considered to have a city centre with large, high-knowledge export base, and a suburb with small, high-knowledge export base. For the purpose of the analysis – because London tends to be outlier – London is considered as a separate category.
Access to skilled workers also appears to have a bearing on the nature of the export base in the suburbs. As Figure 8 shows, businesses located in the suburbs with high-knowledge export base – both large and small – have on average access to more skilled workers than those located in the suburbs with low-knowledge export base.
This relationship holds at city level where cities that offer better access to deep pools of skilled workers tend to have more highly skilled exporting jobs. Across all cities, there is a positive relationship between the proportion of the working-age population within the city’s wider hinterland, graduate level qualifications and the share of jobs in the export base that are high skilled (Figure 9).
**Figure 9:** Relationship between percentage of the working-age population with degree level qualifications and the skill profile of exporting jobs in cities

[Graph showing the relationship between the percentage of the working-age population with degree level qualifications and the skill profile of exporting jobs in cities.](#)


**Access to dense city centres**

Cities with a bigger share of high-knowledge exporters tend to have dense city centres. Policy makers should aim to encourage firms to locate in city centres through strategic planning, public realm and transport improvements.

‘Large, high-knowledge’ city centres are nearly twice as dense (measured by jobs per hectare) as city centres with a ‘small, low-knowledge’ export base. London – which is an outlier – has by far the most dense city centre; its city centre is nearly 2.5 times denser than other large, high-knowledge city centres.
The relationship between density and knowledge exporters is also evident when looking at the nature of the export base across individual city centres (Figure 11). On average, city centres that are more dense have a higher proportion of high skill export jobs.

Source: ONS (2016), Business Structure Database 2015.
There is also a positive relationship between density and high-skilled exporters in suburbs. The relationship is weaker compared to city centres, however, reflecting the fact that knowledge spillovers operate most effectively over dense, small geographic areas.

**Access to markets**

Cities with high-knowledge city centres and suburbs tend to be closer to London. While it is often more important to improve intra-city connectivity, improving the links between cities may help to boost the export base.

City centres with a ‘large, high-knowledge’ export base are closer to London – a proxy for a large market-based on average travel times (see Figure 12). By contrast, city centres where the export base tends to be ‘large, low-knowledge’ are located furthest away from the capital.

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14 Central London falls into the category of city centres with large, high-knowledge export base, and suburbs with small, high-knowledge export base. However, to avoid introducing a bias, London was dropped at this stage of the analysis.
As Figure 13 shows, city suburbs with ‘large, high-knowledge’ export base are located nearest to London (again based on average travel times). And city suburbs furthest away from London tend to have a ‘small, low-knowledge’ export base.
Cities with high-knowledge export bases tend to be located in the Greater South East and the further away a city is from London the less likely it is to have knowledge-exporting jobs. Across all cities there is a negative relationship between average travel times to London and the proportion of exporting jobs that are high skilled (see Figure 14).

**Figure 14: Relationship between travel time to London and the skill profile of exporting jobs in cities**

![Graph showing the relationship between travel time to London and the skill profile of exporting jobs in cities.](image)

Correlation coefficient = -0.55
Source: Department for Transport (2016) and NOMIS (2016), Census 2011.

Although Britain’s knowledge exporters tend to locate in the Greater South East, not all cities in the region have a high-knowledge exporting sector. Less than 40 per cent of exporting jobs in Southend, Chatham, Luton and Crawley were high skilled.

**Limiting the costs of co-location**

Land and property costs tend to be higher in cities with large concentrations of high-skilled exporters. Managing the costs of growth by investing in public transport and maintaining the supply of affordable, high-quality business premises and housing will need to be balanced against policies to improve access to skilled workers and markets.

Rateable values are higher in city centres compared to suburbs. But there is significant variation between different types of city centre. London’s city centre is by far the most expensive in terms of rateable values – three times more expensive than other large, high-knowledge city centres - but even elsewhere, rateable values in ‘large, high-knowledge’ city centres are nearly twice as high as in ‘large, low-knowledge’ city centres.
Those cities with a ‘large, low-knowledge’ export base in their suburbs have the lowest average land and property costs (see Figure 16). Average costs are highest in the suburbs with a ‘large, high-knowledge’ export base. Large export businesses are likely to benefit from the availability of low-cost land and property in ‘large, low-knowledge’ suburbs – export businesses in these areas employ an average of 16 employees compared to the national average of 10 employees.
It is important that cities manage the costs of agglomeration in order to continue to attract and maintain knowledge exporters. Agglomeration benefits must at least initially outweigh costs; otherwise all economic activity would be geographically dispersed. The benefits to geographic concentration of economic activity are also often self-reinforcing, creating virtuous circles over time. However, at some point as a particular city grows, costs will begin to outweigh benefits and workers and firms will be better off choosing to locate elsewhere.
Differences between individual cities: no one-size-fits-all

Cities are increasingly the destination for the most productive and highly skilled exporting firms. But cities can only succeed in supporting knowledge exporters in the future if they can offer knowledge exporters the appropriate business environment for these businesses to operate in.

The analysis outlined in the previous section suggests that access to skills and workers, proximity to other high-skilled firms, and access to markets are important business-environment characteristics influencing the nature of the export base in cities.

Figure 17 sets out the main place-based factors that affect the shape of the export base for all cities in England and Wales and how cities perform against each of these factors.

It highlights the cities’ different strengths and weaknesses that impact their ability to attract and grow knowledge exporters. Several differences emerge between the broad groups of cities identified:

- **Group A:** The majority of cities in this group tend to have relatively dense city centres and highly-skilled populations. Land and property costs are among the highest in the country as a result. The size of the labour pool within the wider city hinterland tends to be smaller, but the quality of the labour pool is high.

- **Group B:** Six of the 10 cities in this group are big cities. The size of the labour pool within their commuting areas tends to be larger but the skills profile is more mixed. On average, there is a lower proportion of graduates within these cities compared to cities in group A. The city centres of these cities tend to be relatively dense, with a large proportion of knowledge exporters. Land and property values tend to be higher in the city centres, reflecting the different role these play in relation to the suburbs.

- **Group C:** Cities in this group tend to have a lower proportion of graduates and smaller labour pools compared to cities in groups A and B. Export activity tends to be concentrated in the suburbs and the city centres tend to be less dense and cheaper compared to other city centres.

- **Group D:** Most cities in this group have low levels of density across city centres and suburbs. The majority have a low proportion of graduates and relatively small labour pools. Land and property costs in these cities tend to be among the lowest in the country.
**Figure 17: Summary of findings for all cities**

Cities are split into four groups based on knowledge type. - number refers to city’s ranking out of 58.

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<td>Knowledge Centre</td>
<td>Large</td>
<td>Knowledge exporting jobs in PUA</td>
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*Data refers to the wider city hinterland.
The differences between and within the groups are explored further through four city case studies: Cambridge and Reading in group A, and Southend and Sunderland in group D – to identify how policy priorities differ in different cities.

1. Sunderland: ‘small, low-knowledge’ export base in city centre, ‘large, low-knowledge’ export base in suburb

In 2015, Sunderland had the largest exports per jobs across all British cities. Most of the export activity in Sunderland is concentrated in the suburbs and tends to be low-knowledge. The skills profile of the export base in the city is reflected in low levels of productivity.

One of the main challenges for Sunderland in attracting and growing knowledge exporters is the availability – or lack thereof – of a skilled workforce. Sunderland’s location is also relatively peripheral. While close to Newcastle, as well as Middlesbrough, Sunderland is otherwise located far from Britain’s large markets. A low density of jobs in its city centre may also help explain why Sunderland’s city centre has not attracted significant number of exporters.

Whilst Sunderland does offer businesses located there significant cost advantages – with relatively cheap and abundant land and cheap office premises – this reflects relatively weak demand. To attract more knowledge-exporting firms Sunderland will need to invest to improve the skills of the workforce and resident population, and encourage development in the city centre.

2. Reading: ‘large, high-knowledge’ export base in city centre and suburb

Reading also has a large export base, although firms tend to be more knowledge-intensive. Two in three exporting jobs in its city centre – and a similar proportion in its suburb – were considered to be high skilled.
Central to the strength of Reading’s economy is its large pool of highly skilled workers - as well as its dense city centre. Reading is also very well connected to London and Heathrow Airport, which facilitates the flow of people, goods and services. The opening of the western section of Crossrail, which is going to be operational from December 2019, will improve this connectivity further.

While Reading has so far been very successful in attracting and maintaining knowledge exporters, it is important that the costs of growth are managed. With some of the highest business property and housing costs in the country, businesses and workers may be deterred from locating in the city in the future if the costs begin to outweigh the benefits.

3. Southend: ‘small, low-knowledge’ export base in city centre and suburb

Southend is also well connected to London but it has struggled to attract and grow knowledge exporters, despite having rateable values which are less than half the average values in Reading. Its export base was small and low-knowledge both in its city centre and in the suburbs. Weak demand in the city is reflected in its relatively low density of economic activity, and low land and property values.

There is a large number of workers that live within commuting distance to Southend, but compared to other cities a very low proportion of Southend’s residential population have degree-level qualifications. The skills profile of the city’s resident population is likely to impact on its ability to attract knowledge-intensive exporters.

For Southend to be able to attract knowledge exporters, policy focus must be on upskilling and reskilling its resident adult population and encouraging more business activity in the city centre.

4. Cambridge: ‘small, high-knowledge’ export base in city centre, ‘large, high-knowledge’ export base in suburb
Cambridge’s export base is highly knowledge-intensive, both in the city centre and in the suburb. The city has been successful at attracting and maintaining research and development activities, and creating a tech cluster in its suburbs by fostering the links between businesses and the University of Cambridge. One of Cambridge’s most significant strengths is its very highly-skilled workforce.

But unlike other high-skilled city economies, the export base in the city centre of Cambridge is small. One explanation for this is the historic nature of its city centre, which constrains significant expansion and densification. The resulting decentralised nature of the development of Cambridge’s business base creates challenges in dealing with the costs of agglomeration in the form of congestion.

However, it is the fundamental undersupply of housing, and high land and office costs that pose a significant threat to the sustainability of the city’s success. Average house prices in Cambridge are some of the highest in the country; in 2016, Cambridge had the third highest house prices in the country behind London and Oxford. And the average cost of an office space in the suburb of Cambridge was higher than in any other city. Without significantly boosting the supply of housing and office space, Cambridge may struggle to attract businesses and workers in the future.

**Summary**

While Cambridge might have more in common with Reading than it does with Sunderland, in terms of the high-value nature of export activity located in the cities, there are differences between them. Cambridge’s city centre does not play the same role as Reading’s and the city’s overall labour pool is smaller, for example. While the characteristics of these places differ, the policy responses to attract, retain and grow the export base in these cities will also differ.

The concluding section of this report sets out what the findings from this report mean for the industrial strategy, and how the policy mix will need to vary in different cities.
Supporting growth in the UK’s export base through industrial policy

Policy makers need to focus on strengthening cities’ ability to support exporters, particularly knowledge exporters, as part of strategic efforts to promote economic growth and boost productivity through the industrial strategy.

There are two main approaches to increasing export activity in cities – and boosting levels of productivity. The first is to maximise the benefits of agglomeration by improving businesses’ access to high-skilled workers, increasing density and access to markets. The second is to reduce the costs associated with high concentrations of firms and workers by reducing housing, transport and congestion costs.

The industrial strategy must work with the grain of the UK’s economic geography and make the most of its cities.

High-knowledge exporters are drawn to cities that can offer access to other high-skill firms and workers in spite of higher costs. Policy makers must strengthen cities’ ability to attract knowledge exporters in order to ‘improve living standards and economic growth’. These firms will boost overall economic growth and productivity, as well as create jobs in other sectors.

The benefits that cities offer exporting firms, which by their nature cannot be replicated in every part of the country, are likely to become increasingly important as the UK economy continues to shift towards a more knowledge-intensive service-based economy.

The Industrial policy will be most effective if it reflects the importance of concentration and co-location rather than trying to spread economic activity evenly across the country.

Cities should be the framework for co-ordinating and delivering the industrial strategy.

Delivering the industrial strategy requires the involvement and co-ordination of many national and local policy areas and institutions. Government needs to make the most of city regions’ ability to bring different partners together and co-ordinate policy design and delivery up in ways that respond to different areas’ unique circumstances.

Part of this approach will mean giving cities greater flexibility – through devolution deals, co-commissioning and place-based pilots, for example – to integrate policy and investment decisions. However, some policies, such as R&D spending and higher
education should remain at the national level. But these policies should be organised and delivered at the city scale, with the aim to encourage the expansion of the export bases of cities.

The success of the industrial strategy will depend on how national and local policy makers can bring together national and local policies to improve the economies of the country’s cities.

**The combination and prioritisation of different policies required to boost export activity will vary from city-to-city.**

Broadly speaking, in cities with strong economies that are already home to a large number of knowledge exporters, policy should focus on maintaining the existing strengths by managing the costs of agglomeration. But in cities with few knowledge exporters, it will be crucial to ensure that policies are focused on addressing existing weaknesses and strengthening the factors that enable agglomeration. The exact policy mix for individual cities will largely depend on the strengths and weaknesses of their economies, and the degree to which place-based characteristics that enable agglomeration play out. This is discussed further in the concluding section of this report.
Place-based policy interventions to attract knowledge exporters: a broad menu of options

Place-based policies can be used to strengthen the benefits cities offer to exporters concentrating within them. While the mix of policy priorities will differ between individual cities, the typology set out in this report highlights a menu of policy options for the four groups of cities:

- **Group A:** Increasing the supply of housing and affordable business premises is likely to be a priority for many of these cities, as is tackling the costs of congestion through planning and investment in public transport.

- **Group B:** Investment in skills and education will form a crucial part of these cities’ strategies to grow and increase the value of existing export activity. The provision of high-quality, affordable business space and efficient public transport systems will also form an important part of supporting the continued attractiveness of their city centres to high-skill exporters.

- **Group C:** Encouraging investment within the city centres through strategic planning, public realm improvements and improvements to public transport will be important for these cities, whilst also playing to the strengths offered by these cities’ suburbs, to support growth over the longer term.

- **Group D:** Investment in education and skills, accompanied by support to better match firms and workers, will be particular priorities in these cities. Many of these cities also need to create an attractive business environment in their city centres that can attract higher-value, knowledge-export activity.

1. Investment in skills and education

*The industrial strategy must prioritise skills and work closely with education-focused institutions to raise levels of educational attainment across all cities.*

For all cities, the shift towards knowledge-exporting activities means that policy makers must increase the educational attainment of residents to make it easier for businesses to recruit workers with the right set of skills. This means improving attainment at all stages of education – from early-years learning and primary schools through to lifelong learning. This is likely to be a particular priority in cities in group D which tend to have lower levels of educational attainment.

Government needs to work closely with business in different ways – at the national, sectoral and local levels – to understand specific skills needs and raise business demand for skills.
All cities must also work closely with employers, employment support organisations, FE (Further Education) colleges and local training providers to ensure that adult residents have access to training opportunities that equip them with the skills demanded by employers in the changing economy. In particular, efforts should be made to raise the level of STEM (science, technology, engineering and maths) skills, digital skills and numeracy – and this applies to all cities, given that STEM skills shortage is a national issue. Attempts should also be made to boost vocational and on-the-job training, including internships and apprenticeships.

Cities in group D in particular should also work closely with firms to improve the quality of matches between firms and workers, as businesses are likely to find it more difficult to find workers with the right skills in smaller, lower-skilled labour markets. This means working with local employers, schools and universities to improve careers advice and ensure that quality careers advice is included as part of the employment support offer.

2. Investment in housing

Cities with high and rising housing costs need to focus on increasing the supply of housing so that they are able to continue to attract and retain workers that businesses need.

For cities in group A, housing policy is likely to play an integral role as an enabler (or inhibitor) of economic growth. There is a political consensus that Britain needs to build more homes – the lack of supply has been a long-term and systemic problem, and is most acute in cities that have been highly successful at attracting high-knowledge exporters.

These cities need to work pro-actively with partners to identify sites for new housing development and plan strategically to ensure that new housing developments are appropriately served by public and private transport infrastructure.

Cities in groups B, C and D, however, tend to have less acute shortages of housing. Housing in these areas tends to be less of a priority as a means of attracting and retaining high skilled workers, although it may be appropriate to address the undersupply of housing in popular neighbourhoods within a city.

3. Investment in city-centre development

Cities should target development in ways that encourage city-centre investment and densification.

For cities in groups C and D, encouraging the clustering of economic activity through investment in city centre development should be a particular policy priority. These cities should improve the functioning of their city centres as business locations by looking at ways to reduce the regulatory costs on businesses looking to bring forward development, removing long term vacant office and retail stock through change of use or demolition if necessary, offering business rate incentives and supporting the introduction of Business Improvement Districts (BIDs) in cities that do not have one.

For cities in groups A and B, the reform of national permitted development rights policy – which currently permits developers to convert office space to residential use
without a full planning permission – would play an important role in better managing the conversion of offices to flats and apartments. Competition for space is often intense in these cities and residential uses will nearly always be more profitable than other uses. Without these controls, the supply of office space will be reduced in the areas where demand for office space is likely to be highest. In cities with the least affordable housing, there are significant opportunities to build more homes by re-designating small areas of green belt land.

4. Investment in public transport systems

*Cities need to work with government to provide more efficient public transport*

Public transport is likely to play an increasingly important role in the economic performance of cities as the national economy continues to shift towards knowledge exporting activities, which are more likely to be concentrated in dense city centres. The role of public transport in strengthening the benefits of cities offer is twofold, both helping cities to increase density and to manage the costs of growth.

For cities in groups A and B, with dense economic activity, an efficient public transport system helps to reduce congestion. In this way, public transport minimises the costs of growth, and helps cities with a large, high-knowledge export base maintain their existing strengths.

For cities in groups C and D, public transport also helps to increase the effective density of cities. An efficient public transport system increases the size of the labour pool that businesses can recruit from by increasing the number of workers that can quickly access the main employment sites in a city.

Creating an efficient city-region transport system requires coordination across different transport modes, different transport institutions (including Network Rail and local transport authorities) and cooperation across administrative boundaries. An important part of this approach means giving more powers to local transport authorities to enable them to do this.