



How do we encourage innovation through clusters?

August 2017

Cities in themselves are clusters, and a mix of many different industries to boot. Cluster policy should really be about encouraging innovation, particularly in cities. And this is done through encouraging knowledge spillovers.

What is a cluster?

Clusters – the gathering of businesses in the same industry in the same area – have been a popular focus of policy since [Michael Porter's work](#) in the area. But while policy has been in pursuit of creating clusters for many years, actually creating them has been far more elusive.

There are three broad types of cluster:

- **The clustering of businesses around a natural asset.** Oil and gas activities are a good example of this, and tourist activities around beaches would fall into this category too.
- **The clustering of a specific industry across an area.** An example of this is 'Motorsport Valley' in Oxfordshire and the Midlands.
- **A clustering of many businesses from a number of different sectors in one place.** i.e. cities. In Britain, cities account for 9 per cent of land but 60 per cent of jobs.

So what can policy do to encourage the creation of these clusters? Well, in terms of the first two, not a great deal.

The first type of cluster is down to natural geography. There may well be specifics that can be done to support its development, but it obviously can't be created from scratch unless the natural asset is present. Oil and gas in Aberdeen is an obvious example.

The same holds for the second type of cluster. It seems that it is this cluster that people tend to mean when they talk about cluster policy. But most of these types of cluster seem to come about because of serendipity. No-one really knows how Silicon Valley came about (despite a number of theories) – we merely observe its presence. And while there have been numerous attempts to recreate it elsewhere, the authors are unaware of any that have been particularly successful.

But there are a number of policy levers that can be used to encourage the final type of cluster. Before we get to that though, it's worth understanding two key points about clusters in cities first.

Firstly, because cities are a mix of a broad range of sectors, they aren't often considered as clusters. But this is one of their key strengths. Particular industries do cluster within cities, and the importance of links within sectors is likely to explain why we see this clustering. For example, in central London [law](#) clusters around Chancery Lane, [finance](#) concentrates in the City and [advertising](#) has made its home in Soho.

But by co-locating with other industries, the potential arises for innovation to occur *across* sectors as well as within.¹ And this is what cities offer that single industry clusters do not – access to other companies in both the same and other sectors.

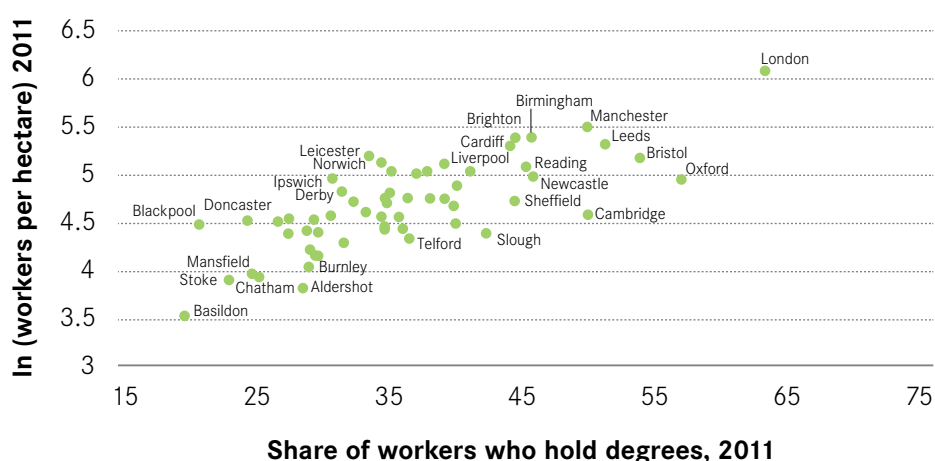
Secondly, supporting growth in cities does not require specific growth industries to be identified. This is a good thing – predicting what will be the future growth industries is incredibly difficult. Cities that have been able to reinvent themselves are the ones that have constantly attracted and grown new industries to offset jobs in declining ones.²

This hasn't stopped valiant attempts from politicians. Past national and local policy shows us that politicians have a great desire to pick out specific industries, through doing things like declaring that they have an advanced healthcare hub, setting up creative industries business space or co-opting an already developing tech cluster and [rebadging it as 'Tech City'](#). Success on this front has been low.

Given these two things (cluster activity and ability to predict future sector growth), place-based policy should instead be thinking about how it facilitates innovation in cities. This is of course tough, but there are some things we know.

Firstly, density encourages innovation – in the US patent rates have been found to be positively associated with employment densities in the urbanised parts of metro areas, suggesting that density helps spur innovation. And the citations of patents are also more likely to come from the same area as the patent itself.³ While we haven't got innovation data at such a local level in the UK, Figure 1 shows that the share of high-skilled jobs in city centres increases with density. This means that planning policy is important for supporting innovation, and it should be used to encourage density in city centres.

Figure 1: Density and high-skilled jobs



Source: Census 2011

1 Glaeser E (2011), *Triumph of the City*. New York: McMillan; Hausmann R, Hidalgo CA, Bustos S, Coscia M, Chung S, Jimines J, Simoes A, Yildirim MA (2013) *The Atlas of Economic Complexity: Mapping Paths to Prosperity*, Cambridge: MIT Press.

2 Swinney P and Thomas E (2014) *A Century of Cities: Urban Economic Change Since 1911*, London: Centre for Cities.

3 Carilino G, Chatterjee S & Hunt R (2006) *Urban Density and the Rate of Invention*, Working Paper 06-14 (Federal Reserve Bank of Philadelphia, 2006); Jaffe A, Trajtenberg M & Henderson R (1993) *Geographic Localisation of Knowledge Spillovers as Evidenced by Patent Citations*, *Quarterly Journal of Economics*, vol. CVIII, August, no. 3, pp577-598.

Secondly, innovation requires a skilled workforce.⁴ This requires skills policies. And it requires good transport systems to get workers into and out of these innovative areas each day. A later briefing will look at these policies in more detail.

These local interventions should be supported by national innovation policy to encourage investment in research and development. The evidence on what works is patchy – a number of studies have found R&D grants and tax credits to have an impact on businesses, but these are not always positive. They appear to have a bigger impact on smaller businesses than larger ones, and the limited evidence available suggests that both grants and tax credits should be part of any national strategy to support innovation.⁵ Given the lack of evidence around this policy, any future efforts to encourage innovation should be rigorously evaluated.

But getting these things right at the national and local level will help support innovation across a number of industries, across a number of places, rather than limiting support to a favoured few.

Implications for policy

National policy

- Use the £23 billion Productivity Fund to increase density in city centres, with the aim of encouraging innovation and information sharing to occur. Specifically it should be used to fund projects set out as part of a detailed local authority-led plan for improving city centres through upgrading office space, public realm and transport connections.
- Do not subsidise out of town office space, as has been done in the past for example through enterprise zones. Some innovative businesses will of course prefer out of town locations to a city centre base and policy should not actively stop this. But they won't need a subsidy to be encouraged to locate there either.
- Encourage investment in innovation through R&D grants and tax credits and evaluate their outcomes to improve the impact of such policies in the future.

Local policy

- Put a spatial plan in place that understands and reflects the roles that different parts of a local economy play and how they link together, particularly focusing on increasing density in city centres.

4 OECD (2011) Skills for Innovation and Research, OECD: Paris.

5 What Works Centre for Local Economic Growth (2015), Evidence Review 9: Innovation, London: What Works Centre for Local Economic Growth.

It is in cities, not in clusters, where policy can help firms locate in one place

Cities account for 8% of land



And they are a mix of a whole range of sectors

To encourage more firms to cluster in our cities we need to

Make our cities
Denser



To encourage
Innovation

Ensure businesses have
Access



To lots of
Skilled workers

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