Wales Centre for Public Policy
Canolfan Polisi Cyhoeddus Cymru

Achieving a prosperous economy: insights from other nations and regions

Report

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Summary

- This report summarises the evidence from approaches that have improved economic performance in a selection of regions in the UK and Europe.

- Identifying areas comparable with Wales can be problematic, as it is neither possible nor practical to find exact matches in terms of economic histories or trajectories. Nonetheless, we believe that looking at other places can provide some insights that may be useful in Wales.

- There is broad agreement that the foundations of a prosperous and inclusive economy include: innovation; high productivity; low levels of income inequality; a strong SME sector; entrepreneurship; and low unemployment. More recently, there has also been growing recognition of the importance of a focus on decarbonisation; a strong foundational economy; and a gender equal economy.

- Existing research demonstrates the importance of coordinating the right mix of policies on skills and infrastructure, in part to avoid unintended consequences, but also to make the most of the policy levers and budgets available to policy makers.

- Improving productivity is a key challenge facing the Welsh economy. Evidence demonstrates how individual interventions, such as improving transport to core economic areas, can have significant effects. Public sector reforms may also drive short and long term productivity improvements.

- Innovation is also fundamental to economic growth and to achieving economic renewal. Promoting clusters and networks of firms, universities and other research actors can be beneficial both for innovation and for the longer-term resilience of the economy.

- Job progression remains a problem in Wales, and evidence from other countries demonstrates the importance of long-term investment in education, as well as tailoring approaches to different sectors and regions.

- The examples presented in this note highlight the need for more research on some issues that are particularly relevant to Wales, including how to balance local community priorities with national economic challenges, and how to improve skills.

Introduction

The Welsh Government's Economic Action Plan, launched in December 2017, established a Ministerial Advisory Board (MAB), tasked with informing policy making and providing challenging external advice. The Wales Centre for Public Policy has been asked to support the MAB to access independent evidence and expertise. This report starts to do this by looking at five examples of policies that have been adopted in regions outside Wales that have had positive economic outcomes. We have selected examples that are relevant to the key themes featured in the Economic Action Plan (Welsh Government, 2017).

As the Economic Action Plan recognises, a prosperous economy is about more than productivity improvements and overcoming labour market inequalities. It is about people's life chances, their health and their housing conditions amongst other attributes. This does not mean that policies should not seek to improve the competitiveness and productivity of the economy, rather that we should not lose sight of the wider goals of economic policy. Tomaney (cited in Morgan, 2019) succinctly sums this up in his observation that the question should be about how communities can shape the economy, rather than allowing the economy to shape communities.

Wales is often described as a small country and a peripheral economy. Both can make the process of achieving economic growth more challenging. However, as economies such as Estonia, Lithuania, Iceland and Luxembourg demonstrate, it does not make it impossible. These countries do not offer good comparisons for Wales though, as they possess macro-economic policy levers that are not available to the Welsh Government or local authorities Wales. On the plus side, as part of the UK economy Wales has access to a breadth of resources not available to smaller economies, but, equally, it has to operate within a wider macro-economic context over which it may have limited influence.

In selecting examples for this report, we have sought out cities and regions that have experienced deindustrialisation and economic renewal, that are part of wider economies and may also have a degree of devolved authority over political or economic matters. While it is not possible to find exact matches for Wales in terms of demographic, economic and governance structures (Cole and Stafford, 2014), we hope that these examples offer some useful insights and ideas.

Research on regional innovation policy interventions confirms that outcomes are hugely dependent on context (Tödtling and Trippl, 2005). Therefore it is not possible to simply 'cut and paste' interventions from elsewhere to Wales. Strategies need to take account of the current strengths and weaknesses of a country, region or locality and of their economic history and trajectories. It is however this need to ground economic strategies within a local geography that makes lesson learning so important; identifying lessons from other regions presents an opportunity to consider the extent to which good practice might be transferable to Wales (Navarro et al., 2014).

This report first provides some context, highlighting key aspects of the Welsh economy, followed by a summary of the lessons drawn from previous work. It then outlines lessons and examples from our selection of regions and cities addressing three key attributes of the economy, namely: i) productivity; ii) innovation; and iii) skills and job progression.

The Welsh economic context

There is broad agreement about the foundations of a prosperous and inclusive economy. They include innovation; high productivity; low levels of income inequality; a strong SME sector; entrepreneurship; and low unemployment. More recently there has been growing recognition of the importance of decarbonisation, a strong foundational economy, and a gender equal economy.

The Welsh economy is currently experiencing historically high levels of employment and low levels of unemployment. Unemployment rates are comparable to the UK average and the employment rate is approaching the UK average, for the first time in many decades. However, wage levels are generally lower than in the UK, with the median weekly earnings of full-time employees in Wales reported to be £519 in 2018, compared to the UK average of £569 (House of Commons Library, 2019). Wales also performs less well against traditional measures of economic prosperity, recording the lowest level of gross value added (GVA) per capita in the UK in 2017 (ONS, 2018). The poor performance of the Welsh economy on this measure, particularly in West Wales and the Valleys, is one reason this part of Wales has been eligible for the EU's highest level of regional economic assistance since the 1990s.

Underpinning some of these headline figures is an older population in Wales, which is in poorer health and has lower levels of educational attainment and skills than the UK average. Wales also has relatively few major economic centres, and those centres are not well-connected to the rest of the country. The economic structure of Wales is also still experiencing the drawn-out effects of large scale deindustrialisation and the move away from traditional industries. Still, Wales has one of the strongest dependencies on manufacturing employment in the UK (10.5 per cent of total jobs, compared to 7.7 per cent in the UK). It also has a stronger dependence on the public sector, with a fifth of jobs found in this sector (20.5 per cent), compared to 16.5 per cent in the UK as a whole.

Writing on the challenges of economic restructuring, Tyler et al. (2017: 451) argue that some cities and regions will find it incredibly difficult to adapt to a modern environment, when they have an ‘inherited pattern of land use, a resource base and institutions that were tailored to another era…’.

> **‘…the legacies of… [deindustrialised] economies have frequently constrained and filtered the development of growth of service sector firms, as well as the provision of a skilled and educated labour force that is well suited to knowledge-intensive firm growth.’** (Tyler et al., 2017: 452)

Of course, averages often hide important details. One of the key characteristics of the Welsh economy is that economic inequalities within Wales can be as great as those between Wales and other parts of the UK. Many argue that the Welsh economy is best thought of as at least three ‘regional’ economies each of which is highly integrated with adjacent areas of England (the M4 corridor and the South West of England in the case of South Wales; the West Midlands in the case of Mid-Wales borders; and the North West in the case of North Wales). Moreover, the economic characteristics, needs and development potential of urban and rural areas in Wales are very different (see Powell et al., 2018).

Some commentators contend that in the short term the Welsh economy is performing as well as can be reasonably expected given its economic structure, including the age composition and skills mix of the population, and its peripheral location. However, some experts we consulted suggested that Scotland has seen a devolution ‘dividend’ that Wales has not.

Although the National Assembly for Wales does not have full control over the policy levers that shape economic prosperity – such as the tax and benefits system and decisions over infrastructure spending – they nonetheless retain competence in key areas. The main policy levers available to the Welsh Government operate over the longer term such that ‘future improvements in Wales’s relative economic performance will depend in part on the success of education and skills levels, as well as better transport and communication links’ (Price, 2018: 9).

In summary, there is a consensus about the challenges that Wales faces but not full agreement about the best ways to promote future economic success (Bell et al., 2017; Webb et al., 2018). Some experts favour using the policy levers that are available to Welsh Ministers and local authorities to strengthen social consumption and local activity to develop the foundational economy. Others emphasise the importance of the knowledge economy and attracting inward investment. In practice of course, both of these are desirable, and the real question is how to achieve the right balance. Not all of the attributes of the Welsh economy are equally amenable to policy interventions; in these cases it is important to acknowledge where the scope for action truly lies.

The economic performance of cities, notably London, and regions such as the South East of England exceeds other cities and areas of the UK, and it is important not to assume that what works for one city or region will work for all (McCann, 2016). Furthermore, Wales does not possess cities the size of London, Birmingham or Manchester.

Lessons highlighted by previous research

Research commissioned by the Welsh Government analysed policy tools that could be applied, as well as regional economic strategies that might inspire new approaches (Welsh Government, 2009). It looked at examples from around the world and presented five detailed case studies from the USA, Germany, Italy, Austria and Spain. The lessons highlighted included:

- Economic development strategies and education policy need to be aligned, not just to provide qualified staff but to strengthen innovation at the regional level. Underlying this is the importance of sustained commitment to an integrated economic system. In the US case study, a senior official was responsible and held accountable for implementation;
- Leadership is critical, both at a state and local level; as is trust and collaboration between different actors;
- Local innovation requires a strong SME presence at the local level. Without this, innovation will be challenging;
- Long-term planning with clear budget allocations helps stakeholders co-ordinate and deliver;
- High levels of policy autonomy from central government coupled with strong competency in foreign affairs (including setting up trade and investment offices abroad) are important for encouraging investment; and

- Strategy documents should signal government priorities, setting out a clear vision of the main priorities and be supported by public funding. These statements are important for guiding private sector investment decisions and can play a role in attracting inward investment.

Policy observations and recommendations included:

- A Welsh Government economic development strategy should be updated when appropriate and contributions sought from local stakeholders so that it is not solely Welsh Government driven. The Welsh Government should promote its strategy through, for example, awareness campaigns and business idea competitions; and in doing so promote entrepreneurship;
- Competitive tender processes can help drive successful programmes, and independent committees can help to generate better decisions;
- Evaluation criteria should focus on scientific quality and the potential for local economic contribution; and
- A broader base of potentially innovative firms is needed, to avoid a gap between a few successful companies and the rest of the local economy. This could be encouraged through the use of vouchers and wage subsidies (Welsh Government, 2009).

Previous work by the Wales Centre for Public Policy (Bell et al., 2017; Webb, 2018) demonstrates the importance of skills in improving peripheral economies. Brought together, these recommendations highlight how coordinating the right mix of policies on skills and infrastructure can avoid unintended consequences and can make the most of limited policy levers and budgets.

> **'…a focus on human capital (particularly addressing low skills), connective infrastructure (internal and external), and diffusing knowledge and innovation among firms should form a central part of the policy mix, and benefit the economy of Wales over the longer term.'** (Jones, 2016)

It is from this starting point that we present some useful cases that may provide insights for Wales (Table 1). These do not provide simple answers about what policy makers in Wales could or should do to promote economic growth, but they offer insights into what did or did not work, from which lessons can be drawn.

Table 1: Issues for Welsh economy and potential insights from other cases

Issue	Case
Transport networks and productivity	Birmingham
Clustering	Leipzig
Modernising during deindustrialisation	Basque region
Synergies between higher education and business	Munich
Investment in education	Spanish regions

Productivity

UK productivity has not yet returned to pre-financial crisis levels and there is a persistent ‘regional productivity puzzle’ (McCann, 2018). Outside London and the South East, all UK regions underperform against OECD and EU productivity benchmarks. The UK’s inter-regional productivity gaps are as big as those across the whole Eurozone; indeed, almost half the UK population lives in regions with productivity akin to the poorer parts of the former East Germany.

> **‘There are some important [regional] differences in productivity performance. Even among the… [top 0.1% of companies], there are some wide regional variations in performance, with the East Midlands at the top (30% [productivity growth] per year) and Wales at the bottom (0%).’**
> (Haldane, 2018)

There is not just a productivity puzzle for the UK, but also for Wales, and its economic fortunes depend on whether or not productivity improves (Price, 2018). The complexities of productivity mean that there are various factors that influence productivity growth, but key elements include skills, over-employment, ageing, investment and housing supply (Haldane, 2017 and McCann, 2018). In turn, these factors are influenced by areas of public policy both within and beyond the Welsh Government’s devolved responsibility.

One factor that is believed to strongly influence productivity growth is the ability to secure the benefits of ‘agglomeration economies’ arising from the concentration of economic activity within a particular area. In Wales, as elsewhere, cities play an important role in fostering economic growth. Research suggests that larger cities have higher productivity than smaller cities; and that larger cities have been favoured in the modern era of globalisation (McCann, 2013). Across Britain cities account for over half of businesses and jobs (Swinney et al., 2018), and evidence suggests that having successful cities encourages greater economic performance elsewhere.

Increasing the critical mass of firms and population is one of the potential benefits of the South Wales Metro (Morgan, 2018). By connecting people and firms it is hoped that this will allow more than one million people to work in close proximity and therefore enhance levels of productivity. This is based on evidence that investing in infrastructure to strengthen transport connectivity can be a potential driver of productivity. For example, modelling has shown how Birmingham's economic performance is hindered by an outdated and inadequate transport infrastructure (Forth, 2018).

The impact of inadequate transport infrastructure on productivity - Birmingham

Since 2018, the Open Data Institute Leeds has tracked bus and tram journeys in Birmingham and the broader West Midlands region (Forth, 2018). Their hypothesis is that, assuming large cities are more productive than small ones, inadequate transport links between Birmingham city centre and its broader region reduces the effective population in the city centre at peak times, which in turn reduces productivity.

They find that if fixed transport infrastructure, such as a tram, was used for journeys, Birmingham's effective population would be about 1.7 million people. However, by instead relying on public transport that becomes congested, Birmingham's effective population at peak times is limited to 0.9 million.

If bus journeys became as reliable at peak time as they are off peak, the effective population of Birmingham would increase from 0.9 million to 1.3 million. Assuming that agglomeration benefits in the UK are similar in size to those in France, this would lead to an increase in GDP per capita of seven per cent and would narrow Birmingham's productivity gap with European cities of a similar size.

Even allowing for much smaller effects than those suggested by Forth's analysis of Birmingham, the development of the South Wales Metro and Cardiff's bus network development could have a positive impact on productivity in Cardiff.

Power and Katz (2016) outline five main elements that have supported the recovery of post-industrial cities and regions:

1 Investment in restoring urban centres, upgrading public transport, renewing neighbourhoods and generally making areas more attractive. Physical infrastructure has to be accessible, innovative and sustainable in order to attract investors.

2 Environmental reclamation from industrial damage, reclaiming industrial wastelands and buildings to create new green spaces that can attract visitors and improve well-being of local communities.

3 Rapid growth in services and smaller enterprises allowing them to act as catalysts for growth and to replace large industry. Skills remain a major barrier but the proliferation of universities and technical colleges, supported by cities, can help to up-skill and re-train graduates.

4 Increasing density and fighting against urban sprawl to promote the smart planning of integrated urban areas, with a focus on community development.

5 Finding new uses for old buildings, infrastructure and heritage sites. More broadly promoting reuse of existing resources and the circular economy.

There are regional differences in economic performance that mean that the geography and context of each area are key variables. As it is not only cities that contribute to growth, measures to improve productivity in Wales cannot solely focus on cities as drivers. There are vast areas of Wales which are not close to a city and furthermore, of Wales's six cities, only three (Cardiff, Swansea and Newport) meet the Centre for Cities' (2019) definition of a city. Of those, not even Cardiff makes the top 10 largest cities in the UK in terms of population.

Measuring productivity in the service sector is inherently challenging, and even more so in the field of public services. Public sector productivity can be best understood as the process of turning public money into publicly desired outcomes. Public sector efficiency might be seen as synonymous with spending cuts, but this is not the only driver of improvements in public sector productivity. More important is where services are reorganised, restructured and innovative approaches are adopted. There is also a difference between technical efficiency (doing things for lower cost or getting more for the same cost) and allocative efficiency (finding new ways of transforming services to achieve the desired public outcomes). Rethinking services and encouraging better use of technology and data in the long term is likely to improve productivity in a sustainable way (Aldridge 2016).

Other things being equal, it is estimated that an increase in the UK's public sector productivity growth from 1.7 per cent to 2.7 per cent per annum could lead to a reduction in public sector net debt of 64 per cent of GDP in 2060/61 (Office for

Budget Responsibility, 2013). Such an improvement in fiscal sustainability has the potential to finance future investment in public services. Given that approximately a fifth of all jobs in Wales are in the public sector, improving the productivity of this sector could have significant implications for overall productivity performance. Indeed, England and Wales have already seen significant reforms to the public sector (most notably in health) to drive public sector efficiency.

The gains from improving the productivity of the public sector can be substantial: evidence from Italian firms suggests that raising public sector efficiency also significantly improves the labour productivity of private sector firms (Giordano et al., 2015). An indirect link to this could be achieved by introducing strategic procurement to support local suppliers. This, in turn, could encourage productivity gains arising from agglomeration as economic growth increases in the local area. In summary, while there are still challenges around measuring productivity growth, improving our understanding of public sector productivity and its drivers could have positive implications for the Welsh economy.

Innovation

There is widespread evidence that certain regions are 'systematically more disposed towards innovation' (McCann and Ortega-Argilés, 2013: 187). This may be due to environmental factors (such as local industries that already exist), the existence of universities or other teaching institutions in the area and subsequently lower costs of knowledge transfer.

Within Wales, the evidence is mixed. On one hand the proportion of GDP that comprises research and development activities (R&D) is amongst the lowest in the UK. On the other hand, the proportion of firms in Wales that report undertaking innovation activities is close to, or exceeds, the UK average, particularly when both product and process innovations are included. This suggests that much innovation is undertaken in-house and is not recorded as R&D expenditure. However, the real challenge is to understand what difference this makes to company prospects in Wales. Does investment in innovation aim to simply keep up with the competition and to maintain the existing market share, or does it focus on developing new market opportunities which could provide new jobs and new economic activity? The latter is crucial as Wales aims to transition to a net-zero carbon economy.

An OECD report (2008) drew two major conclusions about the challenges of regional innovation within the UK. First, limited resources to implement regional innovation actions means that, in order to secure significant and measurable change, actors need to have traction with the full range of public and private sector activities within the regions. Second, while innovation is an important priority, it is only one of many competing priorities. This, combined with the need for more people to champion regional innovation strategies, makes it difficult to raise innovation on the agenda.

One of the ongoing challenges facing the Welsh economy is the lasting effects of deindustrialisation. While its effects may have been mitigated by regeneration funding from the Welsh Government and the European Union, the Welsh economy remains imbalanced. The Basque country has attempted to respond to the challenges of deindustrialisation, with some notable success. While many characteristics differ from those in Wales, such as the nature of tax collection and the fiscal settlement, the region championed a holistic approach to modernising its economy in a way that has connected different areas. This approach may offer useful insights for Wales.

Economic development during deindustrialisation - the Basque country

The Basque country is widely regarded as having developed its economy during a period of deindustrialisation. Morgan (2017: 1544) argues that the 'Basque country enjoys a distinctive status as an old industrial region that successfully negotiated the challenge of economic renewal'. There are just over two million people living within the Basque country of Spain. It is a prosperous region, with under five per cent of the Spanish population contributing over six per cent of Spanish GDP (Scottish Parliament, 2015). The method of tax collection is different to Wales and the UK: the Basque country has autonomous control over most tax collection, paying the Spanish state for reserved areas.

The 'Basque Government was determined to do two things – to modernize the manufacturing sector and to harness the power and resources of the newly founded regional state to underwrite the modernization programme for the sake of economic renewal and social solidarity' (Morgan, 2017: 545). It successfully maintained and developed its traditional industry, driven by economic necessity and the desire to preserve cultural values. It also had some success with innovation strategies. However, it struggled due to a weak university sector, a reliance on public spending and was constrained by its overly complex institutions. The Basque Country has found it difficult to establish exactly what has worked and why, as it has traditionally underinvested in monitoring and evaluation.

Research on Norwegian regions suggests that the reorientation of peripheral economies historically dominated by traditional industries depends on collaboration between industry, universities and applied research institutes (Asheim and Grillitsch, 2015). In turn, this requires a culture of trust and non-hierarchical relationships.

Huggins and Prokop (2017) illustrate that Welsh firms are less well-networked with universities in Wales than is the case for firms and universities in regions with stronger innovation capabilities. Strengthening the interactions between businesses and universities is a growing theme of Welsh policy, as seen in the Reid review (Reid, 2018) and the National Centre for Universities and Businesses report (Morgan et al., 2017).

Clustering and network development

Clustering is a primary innovation strategy in many regions (Porter, 2000). Clusters are important for helping regions benefit from innovation by building international linkages and specialisation; expanding market reach; and tapping into a larger base of ideas, technologies, skills and products. These factors can help companies to put ideas to market before their competitors. Research suggests that spatial clusters of firms, suppliers and service industries improves firms' competitive environment and in turn, improves regional competitiveness (Audretesch, et al., 2019; Verdú and Tierno, 2019). However, these studies and others suggest that over the longer term, there is no clear evidence that clusters are able to generate strong and sustainable impacts in terms of innovation and productivity (Uyarra and Ramlogan, 2012).

There is however a range of types of clusters; differing by formality, industry and geography. Table 2 outlines different types of networks, each having implications for the resultant innovation, as they can support collaboration across various networks, such as between or within universities and industry.

Table 2: Types of network

Formal networks. These are networks based on contractual relationships among organizations, such as strategic alliances, buyer-supplier contracts and joint ventures.
Informal networks. Informal networks rely on connections between people, resulting, for instance, from employee mobility and social networks.
Industry networks. These networks connect actors that operate in the same industry, e.g. business associations of specific industries.
Production chain networks. These are networks based on actors involved in a common production chain, such as electronics.
Global networks. These formal or informal networks span the world.
University-firm networks. These networks link universities and businesses, e.g. R&D collaboration.
Geographical clusters. This is a geographic concentration of firms, higher education and research institutions, and other public and private entities that facilitate collaboration on complementary economic activities.

Source: World Bank and OECD, 2016a.

While Wales possesses many of these attributes, it has struggled to effectively implement clustering and networking strategies that lead to genuine innovation (Pugh, 2014). Of the identified network types, Wales has strong formal and informal networks, as well as geographic clusters. As a devolved nation with a relatively small higher education sector, its production chain networks, global networks and university-firm networks tend to be small. Much of Wales' capacity to innovate has been severely restricted by these underdeveloped links between business, universities and policy makers; and has also been heavily shaped by European funding criteria (Morgan, 2017; Pugh, 2017). The challenges faced by Leipzig, Germany, in developing its media cluster may offer important insights as Wales seeks to develop its own clusters in the creative industries and other sectors.

The growth of a media centre - Leipzig

Since the 1990s, Leipzig has seen rapid development, transforming from an industrial centre of the German Democratic Republic to an economic centre and one of the most liveable cities in Germany. The city is now known as a media centre and remains one of Germany's fastest growing cities. Analysis of cluster firm development (Bathelt, 2005) in Leipzig suggests however that the city's media cluster has stagnated in recent years due to a lack of local and trans-local interaction, meaning firms are neither characterised by strong pipelines to firms and markets outside the cluster, nor do they engage in intensive local networking and interactive learning.

Regional development literature suggests that capabilities for innovation and growth that can boost development are rooted in workplace culture. There exists two parts to the puzzle: 'hardware' (infrastructure) and 'software' (culture). Effective regional development strategy must have both aspects working together.

Mounting evidence suggests that a demand-led as opposed to a supply-side approach to promoting innovation through clustering would be more effective than translating strategies from other regions. Such an approach requires a greater understanding of what support businesses need to develop innovation, as well as the unique attributes businesses can provide (Pugh et al., 2018).

Cluster policies complement specialisation strategies by bringing firms, higher education and other public and private entities together to collaborate on complementary economic activities. There are a wide range of international examples of clustering in areas ranging from high-technology to wine making and biotechnology (World Bank and OECD, 2016b).

One important strength of clusters is that they can also promote economies that are more resilient to economic shocks. In Germany, the social ties developed through close cooperation in cluster networks help to maintain economic activities during downturns in the economy (Wrobel, 2015). It appears that company owners take a longer-term view of the value of maintaining cluster capacity rather than seeking short-term competitive advantage over struggling competitors who help make up the cluster. In the case of Munich, Germany, the role of networks has also proven to be important in maintaining economic performance over time.

Business and research networks - Munich

Munich has had continuing economic success. Research on the theme of resilience demonstrates a number of ways in which Munich has maintained its economic performance through both formal and informal networks (see Evans and Karecha, 2014). It has a strong mix of high-performing universities and research centres, combined with small, medium and large businesses. There is a strong network between business and research, with research institutions supplying graduates and business supplying funding. This is supported by research which calls on universities in Wales to embrace their civic mission (Goddard et al., 2017).

While path dependency theories provide explanations for Munich's success, Evans and Karecha (2014) suggest that policy and governance structures also play their part. Multi-level governance has permitted co-operation across different tiers, with no level being overly dominant; and federal, state and regional government have had both the levers and inclination to pursue aligned policy objectives.

Innovative firms tend to be successful in drawing national and international linkages when fostering business collaboration (Simmie, 2004). This requires the creation of strong networks and a clear strategy for firm growth that supports regional economic development. Other success factors include the ability of actors to build on pre-existing assets, leadership, the effective leverage of private investment and strong industry leadership (OECD, 2010).

Although there is no evidence that clusters are able to generate sustainable impacts in terms of innovation and productivity, an assessment of evaluations of clustering strategy found that clusters can encourage innovation in various ways (Uyarra and Ramlogan, 2012):

- Cluster policies provide the resources and frameworks to advance innovation by encouraging firms to invest in innovation and encouraging partnership between public and private sector organisations;
- Private sector involvement is important to secure market-oriented strategies; and
- Leveraging private investment is contingent on the nature of the cluster, with high-tech clusters attracting more investment.

Skills and job progression

Lack of job progression is a key challenge for the Welsh economy. Workers in low paid jobs are more likely to be in insecure forms of employment and have less opportunity for training and progression. If existing workers do not or cannot progress then there are also fewer opportunities for workers trying to enter the labour market. There is a relationship between job progression, productivity and firm growth (Green and Luchinskava, 2016; Green et al., 2017; Webb et al., 2018).

> **'…the absence of credible job progression adversely affects productivity, reduces sector growth and results in low levels of employee retention.'** (Presbitero et al., 2016)
>
> **'The productivity challenge is all the greater in Wales as the economy exhibits a lower proportion of economic activity in the private sector, a higher proportion of jobs requiring low qualifications and part-time work, and lower average earnings compared to other parts of the UK.'** (Felstead et.al, 2013)

Research on investment in education in the Spanish regions show how areas of the lowest productivity benefited the most from investment in education (López-Bazo and Monero, 2012; Di Liberto, 2008). Furthermore, in such contexts, investment in primary and secondary education can bring the greatest gains (Holtham and Huggins, 2017). While investment in education results in economic gains only over the medium to longer term, it is a policy option that falls within the Welsh Government's devolved competence. Higher education institutions can also act as anchor institutions that support local economies, as well as developing the skills of the future workforce (Goddard et al., 2018).

Education investment in areas of low productivity - the Spanish regions

López-Bazo and Monero (2012) analysed the effect of investment in education on economic growth and productivity in regions across Spain. Their results showed that regions in Spain with the lowest levels of productivity benefitted the most from investment in education. This suggests that investing in education might be an ‘effective tool in enhancing productivity in… less developed regions, and that the social or aggregate return to investments in human capital in those regions might even be larger than in the most productive ones’ (López-Bazo and Monero, 2012: 1340). Di Liberto (2008) also found similar results for lagging regions in Italy.

These results echo Holtham and Huggins’ (2017) findings that expenditure on education stands out in predicting regional economic success. ‘For lower GVA and productivity regions, the most important element is expenditure on primary and secondary education’ (Holtham and Huggins, 2017: 7).

A regional approach to promoting skills can best enable progression and potentially support a specialised strategy of regional development. Existing institutions, such as the Regional Skills Partnership, could help support the provision of tailored skills and training in line with a regional development strategy. Questions around the approach to upskilling the Welsh economy remain. For example, what is an appropriate balance between direct upskilling (through direct training provision), retaining those already skilled and recruiting those with the required skills from outside Wales? The effectiveness of each of these, and the balance between them, is likely to vary by sector.

Conclusion

This report presents examples of policies that have improved economic performance in regions and cities in the UK and Europe which could be relevant to tackling priorities set out in the Welsh Government’s Economic Action Plan. While making comparisons with Wales is not possible because each of the examples have different historical trajectories, they offer some useful insights for local and national policy makers.

A number of the current challenges facing Wales are associated with the lasting effects of deindustrialisation. While funding from the Welsh Government and the European Union may have mitigated some of these effects through redevelopment and regeneration, the economy remains imbalanced. Networks and collaboration are important for supporting innovation to overcome this imbalance, however Wales has relatively small networks. Although there is little evidence on ways of doing this, shaping the roles of businesses, citizens and universities should be considered. Associated policy challenges include how to increase skills in the economy, how to link infrastructure and how to encourage innovation. Addressing these requires coordination across different regions and levels of government, coordinated investment and the collaboration of actors such as business and universities.

There is recognition of a need to coordinate policies on skills and infrastructure to move towards an economy that is based on strong foundations that supports innovation, raises productivity, grows businesses and minimises income inequality. While policy coordination is important, individual measures can also be beneficial. Productivity gains can occur as a result of individual interventions such as improving transport links with core economic areas, or improving the performance of processes in the public sector to transform a service.

Improving skills and job progression has been a long term priority for the Welsh economy and is at the forefront of the Welsh Government's thinking. Evidence from elsewhere highlights the importance of sustained investment in education, as well as tailored local and regional approaches which can better link programmes with demand from businesses. These examples provide a snapshot of possible approaches to stimulating local economic performance in Wales, making the most of limited policy levers and budgets.

There are a number of outstanding questions that are relevant to Wales and need more research. There is limited evidence on how to improve skills to support both the development of communities and how to balance developing regional and local economies with national priorities. There are also questions about where Wales might be strongest in emerging industries including artificial intelligence and what role there might be for government – at local and national levels - to stimulate indigenous business growth and innovation.

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