

Economic Development in Wales: Evolution and Revolution

Introduction

The introduction of democratic devolution for Wales in 1999 has been presented as a process enabling Wales ‘to make our own decisions and set our own priorities’¹, and as a driver ‘to improve economic performance and productivity to create more and better jobs’.² Debate has since followed over whether Welsh devolution’s purpose has been to improve economic performance as well as to address a democratic deficit.³ It has however been argued the nation’s future economic performance is potentially the most critical measure of devolution’s success.⁴ Studies suggest that an expectation of a ‘devolution dividend’ would be unfounded,^{5 6} and indeed that devolution may actually bring negative economic effects.⁷ The fact remains though that as democratic devolution passed into law,⁸ Wales was now responsible for its own economic development.

¹ Ron Davies, *Devolution: A Process Not an Event* (Institute of Welsh Affairs Cardiff, 1999).

² Andy Pike et al., ‘In Search of the ‘Economic Dividend’ of Devolution: Spatial Disparities, Spatial Economic Policy, and Decentralisation in the UK,’ *Environment and Planning C: Government and Policy* 30, no. 1 (2012). p.10

³ Adrian Kay, ‘Evaluating Devolution in Wales,’ *Political Studies* 51, no. 1 (2003).

⁴ John Osmond, *The National Assembly Agenda: A Handbook for the First Four Years* (Institute of Welsh Affairs, 1998).

⁵ C Jeffery, ‘Final Report of the Devolution and Constitutional Change Programme’ *School of Social and Political Studies, University of Edinburgh* (2006).

⁶ Andy Pike et al., ‘In Search of the ‘Economic Dividend’ of Devolution: Spatial Disparities, Spatial Economic Policy, and Decentralisation in the UK’

⁷ Daniel Bailey, ‘Economic Renewal through Devolution? Tax Reform and the Uneven Geographies of the Economic Dividend’ *Competition & Change* 21, no. 1 (2017).

⁸ UK Gov, ‘Government of Wales Act’ (1998).

In this context, the prospect of devolution providing less uneven economic benefit across the UK was unlikely, despite being 'elevated into one of the principal goals' for Welsh devolution.⁹ It should be noted though, that those wider goals include the reduction of economic inequality and achieving sustainable development. In this chapter, the relationship between economic performance and devolution is examined in the context of the emergence of City and Growth Deal regions across Wales, which introduce a new level of spatial governance and activity. Combined with Brexit and establishment of a new UK Internal Market, this is redefining the relationship of regions with the Welsh and UK Governments.

Pre-Devolution

Prior to the creation of the National Assembly, Wales already languished as one of the poorer parts of the United Kingdom, and its economic performance was in stark contrast to the prosperity it fuelled through the industrial revolution. The challenges faced by the Welsh economy can be traced back to the economic restructuring that saw the United Kingdom established as the world's first industrial nation.¹⁰ Having powered an empire, as part of the 'Outer Britain' of regions which were home to heavy industry, Wales had served its purpose as the industrial revolution turned full circle.

⁹ Kevin Morgan, 'Devolution and Development: Territorial Justice and the North-South Divide,' *Publius: The Journal of Federalism* 36, no. 1 (2006). p.197

¹⁰ Peter Mathias, 'The First Industrial Nation: The Economic History of Britain 1700–1914' (Routledge, 2013).

At the turn of the millennium Wales was performing poorly across a broad range of economic measures, despite its comparatively vibrant and productive manufacturing sector.¹¹ This weak overall performance included limited indigenous new enterprise, and low levels of business investment in research and development (R&D), compared to other UK regions. Since records began at the beginning of 1970s, the GDP of Wales broadly tracked that of the wider UK, but at a lower level. This continuing gap relative to UK (and Europe) resulted in Wales qualifying for the highest level of EU Regional Aid (Objective 1) in 2000. This phenomenon was reflected across much of the UK with the deindustrialisation of many regions which saw their fortunes fall behind the growth of London and south east England.

To arrest this decline, economic development policy in Wales, led by UK Government's Welsh Office and delivered through the Welsh Development Agency (WDA) from 1976 onwards, focused on pursuing inward investment. The approach involved what Cooke and Clifton¹² termed the 'field of dreams' approach of 'build it and they will come'. This strategy produced a significant impact particularly during 1983-93, with Wales attracting 15-20% of inward-UK Foreign Direct Investment (FDI),¹³ but despite this impressive FDI performance, the overall Welsh economy continued to decline.¹⁴

¹¹ John Osmond, 'The National Assembly Agenda: A Handbook for the First Four Years'

¹² Philip Cooke and Nick Clifton, 'Visionary, Precautionary and Constrained 'Varieties of Devolution' in the Economic Governance of the Devolved UK Territories,' *Regional Studies* 39, no. 4 (2005). p.439

¹³ Hans-Joachim Braczyk, Philip N Cooke, and Martin Heidenreich, 'Regional Innovation Systems: The Role of Governances in a Globalized World' (Psychology Press, 1998).

¹⁴ Kevin Morgan, 'Devolution and Development: Territorial Justice and the North-South Divide'

As a result of FDI efforts, the contraction of primary industries since the 1970s was largely offset by a partial restructuring of the Welsh economy with 200,000 jobs absorbed into a modernised employment base of services and advanced manufacturing.¹⁵ Alongside this was also a redistribution of UK public sector employment, with the Driver and Vehicle Licensing Agency, Companies House and the Office of National Statistics located in Wales. The new employment and shift in industry mix was also accompanied by a gender restructuring of the workforce that saw the proportion of women employed in Wales rise from 38% in 1975 to 50% in 1994.¹⁶ However, the opportunities for tempting FDIs to Wales declined during the 1990s, due to a slowing UK economy¹⁷ and emergence of competitor regions for low-skilled manufacturing such as China and India.¹⁸

The focus on heavy industries, branch plant manufacturing and major regeneration schemes risks overlooking the contemporaneous growth clusters in technology fields including optoelectronics and biotechnology.¹⁹ The optoelectronics cluster originally identified by DTI stretched across Wales from optronics and space technology in north east Wales through to the semiconductor industry in south east Wales. These technology clusters subsequently became a focus of WG economic policy as it aimed to increase activity within higher GVA sectors.

¹⁵ WAG, 'A Winning Wales: The National Economic Strategy of the Welsh Assembly Government,' ed. Economic Policy Division (Online2001).

¹⁶ Gavin Cameron, John Muellbauer, and Jonathan Snicker, 'A Study in Structural Change: Relative Earnings in Wales since the 1970s,' *Regional Studies* 36, no. 1 (2002).

¹⁷ Stephen Young, Neil Hood, and Ewen Peters, 'Multinational Enterprises and Regional Economic Development,' *Regional studies* 28, no. 7 (1994).

¹⁸ Chien-Hsun Chen, 'Regional Determinants of Foreign Direct Investment in Mainland China,' *Journal of economic studies* 23, no. 2 (1996).

¹⁹ DTI, 'Business Clusters in the UK - a First Assessment,' ed. Department for Trade and Industry (2001).

Wales' persistent lagging economic performance had been caused by its heavy reliance on low value-add employment. This resulted in lower productivity per employee, and was accompanied by higher rates of economic inactivity (particularly in the West Wales and Valleys region). These factors were compounded by almost 60% of Welsh GDP relating to the public sector,²⁰ and in order to arrest the continued decline, a major economic restructuring was required, with a focus on redeveloping and growing private sector activity.

Devolution Early Years 1999-2006

'A Winning Wales'

As Wales took responsibility for its own economic development ambitions, the collapse of the mammoth LG FDI project involving a support package of £250 million became a cause célèbre in economic policy discussion.^{21 22} The withdrawal of the South Korean conglomerate from this megaproject coincided with an ongoing downturn in Wales' FDI performance, set within increasing competition for such projects, and signalled a turning-point in economic development approach.²³ Observers had also noted weaknesses in the 'embeddedness' of such

²⁰ Kevin Morgan, 'The New Territorial Politics: Rivalry and Justice in Post-Devolution Britain,' *Regional Studies* 35, no. 4 (2001).

²¹ Nicholas A Phelps and Mark Tewdwr-Jones, 'Globalisation, Regions and the State: Exploring the Limitations of Economic Modernisation through Inward Investment,' *Urban Studies* 38, no. 8 (2001).

²² Leon Gooberman, 'Business Failure in an Age of Globalisation: Interpreting the Rise and Fall of the LG Project in Wales, 1995–2006,' *Business History* (2018).

²³ Leon Gooberman 'Welsh Office Exceptionalism, Economic Development and Devolution, 1979 to 1997,' *Contemporary British History* 30, no. 4 (2016).

branch-plant manufacturing activity,²⁴ together with an imbalance against support for indigenous enterprise and development of more localised clusters.²⁵ Aiming to address this, the Welsh Assembly Government's (WAG) ten-year economic development plan 'A Winning Wales', published in 2001²⁶ and updated in 2003,²⁷ presented a vision of 'a prosperous Welsh economy that is dynamic, inclusive and sustainable, based on successful, innovative businesses with highly skilled, well-motivated people.'²⁸

The strategy sought to rebalance the Welsh economy towards more knowledge-based activity, by promoting research and development and innovation, and targeting growth of the services sector. In 2003, WAG reported on its progress towards achieving the 'Winning Wales' vision, prior to delivering an updated version of the strategy in 2004.²⁹ This restated WAG's aim to increase the prosperity of Wales to 90% of the UK level within a decade and be level with the UK within a generation. There was also a shift to greater regional spatial planning,³⁰ that would later reflect the geographical boundaries of the four City and Growth Deals. WAG strategy and policies had included a central role for the WDA, with greater focus on local business support and entrepreneurship schemes.

²⁴ N AVMacKinnon Phelps et al., 'Embedding the Multinationals? Institutions and the Development of Overseas Manufacturing Affiliates in Wales and North East England,' *Regional Studies* 37, no. 1 (2003).

²⁵ Philip Cooke and Nick Clifton, 'Visionary, Precautionary and Constrained 'Varieties of Devolution' in the Economic Governance of the Devolved UK Territories,' *ibid.* 39, no. 4 (2005).

²⁶ WAG, "A Winning Wales: The National Economic Strategy of the Welsh Assembly Government"

²⁷ WAG, "A Winning Wales: Annual Report 2002-2003," (Welsh Assembly Government, 2003).

²⁸ WAG, "A Winning Wales: The National Economic Strategy of the Welsh Assembly Government"

²⁹ WAG, "A Winning Wales; the National Economic Development Strategy of the Welsh Assembly Government"

³⁰ "People, Places, Futures: The Wales Spatial Plan," (Welsh Assembly Government, 2004).

The WDA had been established by the UK Labour Government in 1976 to further economic development across Wales, promote competitiveness, and support employment.³¹ Even in its early years it had faced criticism of its activities, and whilst not always justified,³² this contributed to the Government's dissatisfaction with its performance, which was to lead to its disbandment. The Agency's initial focus was to attract FDI and evolved to involve further effort in supporting indigenous enterprise, particularly that which was new and/or knowledge-based, along with further integration of the skills agenda. This came about with the changing global economic conditions and WAG's economic strategy rather than the Westminster-directed Welsh Office.³³

The Agency's remit included implementation of the *Entrepreneurship Action Plan*, reaching beyond the FDI and commercial/industrial property agenda. The difference is clearly seen in the WDA Corporate Plan from the period which was developed prior to its absorption into WAG.³⁴ The Strategy also outlined how EU Structural Funds, including Objective 1 funding would be used in economic development for West Wales and the Valleys. These economic development ambitions were boosted by the significant EU funding, though qualification for the highest level of regional aid was itself a dire indictment of the woeful state of much of the Welsh economy. Nevertheless, there was also ongoing debate regarding the additionality of this support, as the

³¹ UK Gov, "Welsh Development Agency Act 1975," (1975).

³² Philip Cooke, 'Discretionary Intervention and the Welsh Development Agency,' *Area* 12, no. 4 (1980).

³³ WAG, 'A Winning Wales: The National Economic Strategy of the Welsh Assembly Government.'

³⁴ WDA, 'Welsh Development Agency Corporate Plan 2003/4-2006/7 'Creating Success Together',' ed. Welsh Development Agency (2002).

required match-funding would pressure existing budgets.³⁵ This issue was ultimately what led Rhodri Morgan to the role of First Minister, after Alun Michael's government had failed to secure additional match-funding from UK central government.

A notable example of the shift towards entrepreneurship and innovation support with Structural Funds investment was the controversial Technium initiative. Debate has centred on the aggregate 'network' of these centres, mostly focused upon headline figures. This debate has however had limited focus on actual project data except for that from Murphy³⁶ and Davies,³⁷ or lacks the depth of analysis of underpinning theory such as that provided by Cooke³⁸ and Morgan.³⁹ There is consensus, however, that the initiative struggled initially to increase its impact with the rollout of a pan-Wales network. The original aims of the initiative were to nurture indigenous innovation and to attract 'stickier' higher-GVA inward-investment R&D activities, with an emphasis on drawing upon local universities to support the agenda. This stepped away from the branch-plant focus of the WDA and towards greater knowledge-based activities involving ventures at an earlier riskier stage of their development. Despite its initial success, the initiative became embattled and ultimately ended with the network being

³⁵ Gillian Bristow and Nigel Blewitt, 'The Structural Funds and Additionality in Wales: Devolution and Multilevel Governance,' *Environment and Planning A* 33, no. 6 (2001).

³⁶ Lyndon Murphy, Robert Huggins, and Piers Thompson, 'Social Capital and Innovation: A Comparative Analysis of Regional Policies,' *Environment and Planning C: Government and Policy* 34, no. 6 (2015).

³⁷ Gareth Huw Davies et al., 'Reflections on Technium Swansea: Ambition, Learning and Patience,' in *Creating Entrepreneurial Space: Talking through Multi-Voices, Reflections on Emerging Debates* (Emerald Publishing Limited, 2019).

³⁸ Philip Cooke, *Re-Framing Regional Development: Evolution, Innovation and Transition* (Routledge, 2013).

³⁹ Kevin Morgan, "The Regional State in the Era of Smart Specialisation," *Ekonomiaz* 83, no. 02 (2013).

disbanded in 2011.⁴⁰ The project's key challenges identified during its decade of operation included a lack of coherent management control,^{41 42} together with too great a focus on property development rather than operating as a knowledge/innovation initiative.^{43 44 45} The emphasis on property development resonated with the original WDA approach of holding industrial/commercial property, albeit within a market that differed significantly from previously-targeted inward-investing manufacturing operations.

It is widely acknowledged that there were missed opportunities to learn from the experience of first Technium site prior to rollout of the network,⁴⁶ but some lessons were absorbed. While some commentators⁴⁷ were still in 2018 labelling sites such as Technium Pembrokeshire as 'emptiums', this centre had in 2019 achieved full occupancy,⁴⁸ beyond the 85% occupancy rate that DTZ noted in 2009 as 'best practice'.

At the time of network disbandment, three sites had only been in operation for 3 years, with a further three sites having only been open for a further 2 years. The initiatives themselves and relevant evaluation guidance suggested more meaningful time horizons for incubator and

⁴⁰ WG, 'Written Statement - Technium Update,' news release, 2011,

<http://gov.wales/about/cabinet/cabinetstatements/previous-administration/2011/techniumupdate/?lang=en>.

⁴¹ DTZ, 'Evaluation of the Technium Programme, Final Report to the Welsh Assembly Government, Stage 1: Scoping and Review,' (Online2009).

⁴² Morgan, 'The Regional State in the Era of Smart Specialisation.'

⁴³ Philip Cooke, 'The Regional Innovation System in Wales, Regional Innovation Systems. The Role of Governances in a Globalized World' (London: Routledge, 2004).

⁴⁴ Simon Gibson, 'Commercialisation in Wales - a Report by the Independent Task and Finish Group,' (2007).

⁴⁵ Rhiannon Pugh, Niall G MacKenzie, and Dylan Jones-Evans, 'From 'Techniums' to 'Emptiums': The Failure of a Flagship Innovation Policy in Wales,' *Regional studies* 52, no. 7 (2018).

⁴⁶ Cooke, 'Re-Framing Regional Development: Evolution, Innovation and Transition.'

⁴⁷ Pugh, MacKenzie, and Jones-Evans., 'From Techniums Emptiums'.

⁴⁸ BNW, 'Pembrokeshire's Bridge Innovation Centre Praised as Exceptional Launch Pad,' news release, 2019, <https://businessnewswales.com/pembrokeshires-bridge-innovation-centre-praised-as-exceptional-launch-pad/>.

science park initiatives,^{49 50} while the DTZ⁵¹ review of individual centres showed that earlier established centres had started to make progress.

The tension between the focus upon property development, and innovation-led activities, was a continuing theme during the 2000s, in which WG challenged and gradually dismantled the WDA approach. This culminated in a broader shift as WG took firmer control of policy implementation by disbanding a range of its arms-length bodies.

Bonfire of the quangos

The Second Assembly term (2003-2007) saw the controversial long-threatened ‘bonfire of the quangos’, as functions undertaken by quasi-autonomous non-governmental organisations (quangos) were absorbed into the Welsh Assembly Government. This involved the absorption into Government of the Welsh Development Agency (WDA), Wales Tourist Board (WTB) and Education and Learning Wales (ELWa), each of which had operated independently. This change was articulated in Welsh Assembly Government’s vision for the future of public services, ‘Making Connections: Delivering Better Services for Wales’⁵². Its intention was to deliver greater efficiency and impact by creating improved co-operation and co-ordination between agencies and across the public sector.

⁴⁹ EU, ‘Guide to Cost-Benefit Analysis of Investment Projects,’ ed. DG Regional Policy Evaluation Unit, European Commission (Web2002).

⁵⁰ ‘Guide to Cost-Benefit Analysis of Investment Projects, Economic Appraisal Tool for Cohesion Policy 2014-2020,’ ed. Directorate-General for Regional and Urban Policy (Web2014).

⁵¹ DTZ., ‘Evaluation of the Technium Programme’

⁵² WAG, ‘Making the Connections: Delivering Better Services for Wales: The Welsh Assembly Government Vision for Public Services,’ ed. Welsh Assembly Government (2004).

While other quangos were lesser known, the WDA had become renowned worldwide in promoting Wales as a location for business activity. Despite notable success through FDI, the WDA had already been targeted for the 'bonfire' as early as 1997. The then Welsh Secretary Ron Davies pledged to merge the Agency with other bodies and to open up its appointments process, which was regarded by many as opaque. The 'Making Connections' Vision made very clear that the changed lines of political accountability lay with the Welsh Government:

It is this Assembly, with the authority of its democratic mandate, which must assume responsibility and accountability for public policy in Wales. It is for Ministers to determine policy, and for this Assembly to hold us to account.⁵³

These quangos were merged with Government in April 2006. Observers critical of this move thought of this as an example of 'moving the institutional deckchairs',⁵⁴ and it was noted that the impact of the policy would take some years to become clear.⁵⁵ Despite its Labour roots, much of the WDA's success had been during the influence of experienced and respected Conservative Secretaries of State for Wales such as Nicholas Edwards and Peter Walker.⁵⁶ This changed though under Welsh Secretary John Redwood, MP for Wokingham as he sold off public assets with the stated aim of allowing more Thatcherite laissez-faire market forces. This in itself was a rolling back of the Conservative Government's support for the WDA in addressing market failure that the Agency and its investments had been established in order to tackle. The

⁵³ WAG, 'Making the Connrctions: Delivering Better Services for Wales'.

⁵⁴ Philip Cooke and Nick Clifton, 'Visionary, Precautionary and Constrained 'Varieties of Devolution' in the Economic Governance of the Devolved UK Territories,' p.444

⁵⁵ Morgan, 'Devolution and Development: Territorial Justice and the North-South Divide.'

⁵⁶ Aled Eirug, 'The Welsh Development Agency,' *Geoforum* 14, no. 4 (1983).

direction was reversed as the new Assembly Government pursued a much more interventionist approach.

One Wales 2007-2010

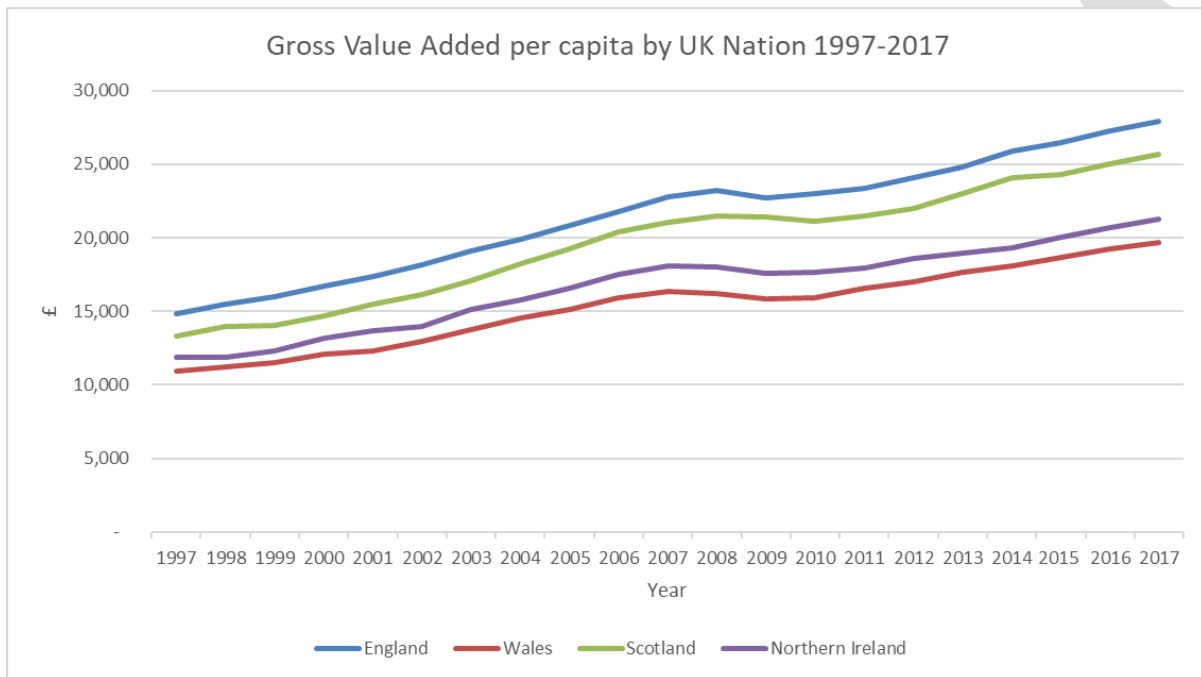
The new coalition Labour-Plaid Cymru government was formed in 2007 on the basis of the 'One Wales agreement'. Its twin priorities were a 'healthy future' centred on investment in the NHS with a focus on equality and overall employment, and a 'prosperous society' based on increasing economic growth and closing the gap with other UK and EU regions. The economic development agenda was led by the Plaid Cymru leader Ieuan Wyn Jones who also became Deputy First Minister as part of the 2007-2011 One Wales Delivery Plan. The plan emphasised an 'all-Wales approach to economic development' bringing further emphasis to activity in North West Wales, Plaid Cymru's traditional heartland. The plan also reflected a greater emphasis upon social inclusion and sustainability, and showed greater ambition for rail connectivity between north and south Wales.

Alongside longer-term rail and road upgrades, this ambition resulted in creation of an air-link, established as a Public Service Obligation (PSO) route, connecting RAF Valley in Ynys Mon with Cardiff Airport. This subsidised service was rapidly dubbed 'Ieuan Air' after the Deputy First Minister and frequent flyer on the service which served his constituency.⁵⁷ Whilst this may have raised eyebrows, this symbolic development, though limited in scope, did point towards a more

⁵⁷ BBC, 'Tories Criticise 'Ieuan Air' Link,' [news.bbc.co.uk/1/hi/wales/north_west/7398506.stm](https://www.bbc.com/news/health-16111611).

interventionist WG approach to transport infrastructure, not least to support its economic development role. This would subsequently include the nationalisation of Cardiff airport, and the rail network in Wales in 2021.

In the wider economy, a continued comparatively low regional level of Business Expenditure on R&D⁵⁸ brought focus to the capacity and capability of the region’s universities to support development of knowledge-based enterprise. This was not only through infrastructure such as the Technium initiative, but also through targeted development of science and technology with the intent to ‘anchor companies undertaking industrial R&D in Wales’.⁵⁹ This approach targeted sectors which offer potential for higher levels of GVA, including Life Sciences and Health, Low Carbon technologies, and Advanced Engineering and Materials.



⁵⁸ Mark Rogers, ‘R&D and Productivity in the UK: Evidence from Firm-Level Data in the 1990s,’ (2006).

⁵⁹ WAG, ‘Science for Wales: A Strategic Agenda for Science and Innovation in Wales,’ (2009).

Fig. 1: GVA by UK Nation, Source: ⁶⁰

The One Wales Plan initially benefited from a period of economic growth as Wales enjoyed an increase in employment ahead of the UK as a whole, although productivity continued to lag behind the other UK nations (Fig.1). This reflected Wales' growth in public-sector employment, and its continued structural imbalance with fewer higher-GVA service sectors compared with the rest of the UK.

Alongside sectors targeted through the development of science and technology, other high-growth potential sectors focused on by Welsh Government (WG) economic development policy included the creative industries. While available data were imprecise, employment in this sector in 2004 across Wales totalled somewhere between 22-30,000 people, representing over 1% of total Welsh economic output.⁶¹ This employment was concentrated in the Cardiff region where at the time it exceeded the number of jobs in financial services. There were notable wider examples of growth in the sector, such as Tinopolis headquartered in Llanelli and which has since grown into a significant multinational group. North Wales, through companies such as Barcud and Cwmni Da, offered further potential for links eastwards with UK-wide initiatives in Liverpool and Manchester regions. Developments during the period included support for the founding of the 'Valleywood' Dragon Studios in Bridgend, within five miles of the threatened Ford engine plant, which finally closed in 2020. Despite being driven by well-known industry

⁶⁰ ONS, 'Regional Gross Value Added (Income Approach) Reference Tables,' ed. Office for National Statistics (2018).

⁶¹ Ian Hargreaves, 'The Heart of Digital Wales: A Review of Creative Industries for the Welsh Assembly Government,' (2009).

figures it was initially beset by funding and development issues, and did not deliver on its early promise, which had included a new hospital and theme park on an adjacent site.⁶²

This was followed by further restructuring of WG-sponsored support for the sector with the establishment of new development bodies and the creation of new public funds for commercial projects. Such commercial property-related developments would have been the focus of the WDA before 2006, and heralded the more direct challenges and accountability WG would face in subsequent projects.

The expansion of the public sector in Wales was halted by the financial crisis of 2008. Previously, much employment growth and replacement of lost manufacturing jobs had come from new public sector employment,⁶³ and this dependence provided poor preparation for the austerity in public budgets which followed, including the reduction in the income from the Barnett formula which provided the base for the Welsh Government budget. The 2008 financial crisis had less initial impact in Wales than felt by other parts of the UK due to its lesser reliance upon services, and in particular financial services which were at the epicentre of the crisis. Sensier and Artis⁶⁴ subsequently demonstrated that Wales had initially weathered the economic crisis well in comparison with many other UK regions, as the experience of previous

⁶² WG, 'Dragon International Film Studios,' news release, 2006.

⁶³ Philip Cooke and Nick Clifton, 'Visionary, Precautionary and Constrained 'Varieties of Devolution' in the Economic Governance of the Devolved UK Territories,'

⁶⁴ Marianne Sensier and Michael Artis, 'The Resilience of Employment in Wales: Through Recession and into Recovery,' *Regional Studies* 50 no.4 (2014).

recessions had contributed to the major erosion of the heavy industry and manufacturing sectors. The greater diversification of economic sectors together with Welsh Government's ProAct employment support programme succeeded in moderating the level of job losses, supporting over 10,000 jobs across a range of sectors.⁶⁵

Despite this challenging context, WG continued to invest in capacity for knowledge-based enterprise within Wales, with a new focus upon the Smart Specialisation⁶⁶ approach, which would become a centrepiece of subsequent development efforts⁶⁷. This place-based approach would focus on localised strengths across industry and academia to support sustainable economic development.

2010-Present

WG refreshed its economic strategy in 2010 with 'An Economic Renewal,'⁶⁸ focussing on the development of skills to improve productivity, and infrastructure. However, in comparison with previous policies, it lacked firm targets and timescales, offering vague goals rather than the previous predominantly economic and employment growth ambitions.⁶⁹ The strategy continued to focus upon the strengths and opportunities afforded in the sectors of Life Sciences, Health, Low Carbon technologies, Energy and the Environment.⁷⁰ Fostering

⁶⁵ WAG, Impact Evaluation of ProAct, Welsh Assembly Government (2011).

⁶⁶ Dominique Foray, Paul A David, and Bronwyn Hall, 'Smart Specialisation—the Concept,'" *Knowledge economists policy brief* 9, no. 85 (2009).

⁶⁷ WG, 'Innovation Wales,' ed. Welsh Government (2014).

⁶⁸ WAG, 'Economic Renewal: A New Direction,' ed. Welsh Assembly Government.

⁶⁹ 'Wales: A Vibrant Economy: The Welsh Assembly Government's Strategic Framework for Economic Development Consultation Document,' (2005).

⁷⁰ WG, 'Innovation Wales.'

partnerships across clusters of activity, and targeting new energy technologies, brought an emphasis on economic development to innovation activity as a way of achieving an amalgam of economic, social and environmental goals.⁷¹ This included championing initiatives such as SPECIFIC, which brings together academic research in photovoltaic technology, with industry partners ranging from metals production through to manufacturing and housebuilding.

A more interventionist WG approach saw greater investment in activity beyond the provision of built infrastructure. One notable development was the arrival in Wales of the world-famous Pinewood Studios franchise, through a partnership between the Studios and WG to develop a complex for creative industries on the outskirts of Cardiff. A £30m fund was established to co-invest and attract productions to the facility, alongside the leasing of a vacant building for studios. The initial number of projects did not realise the anticipated returns, and the arrangement was subsequently terminated following concerns which emerged in 2016, with the WG recognising the collaboration had not resulted in good value for money.⁷²

A similar approach had been developed for Life Sciences with the establishment of the £50m Arthurian investment fund, based at the Life Sciences Hub Wales. Led by celebrated biotechnology entrepreneur Sir Chris Evans, the Fund encountered some early criticism, though at the time it was noted it was too early to determine value for money. The Fund has subsequently supported creation of over 200 jobs and provided a 3:1 return on WG

⁷¹ Morgan, 'The Regional State in the Era of Smart Specialisation.'

⁷² WAO, 'The Welsh Government's Relationship with Pinewood,' ed. Welsh Audit Office (2018).

investment,⁷³ which considering the risk associated with ventures in such a challenging sector, provided both economic development and financial return for the public investment.

The focus on high-growth high-GVA sectors was accompanied by a return to considering entrepreneurship and company growth more broadly. A review of small and medium size enterprises' (SME) access to finance⁷⁴ identified deficiencies in the support from the UK banking sector for the SME community. This section of the Welsh economy is particularly important with SMEs representing 75% of private sector employment,⁷⁵ and the review recommended greater focus on economic development benefit from public investment, rather than pure financial return. The review also set out the rationale for a new entity to ensure that 'every viable business in Wales should get access to funding at an affordable price' with 'the primary role of government-backed funding for SMEs is to drive forward economic development.'⁷⁶

The recommendations were taken forward by WG resulting in the establishment of the Development Bank of Wales in 2016, later branded 'Banc'. The bank brought together Finance Wales funding together with a range of support, from technology start-ups seed-funding through to property development loans, for projects in Wales.

However, the most notable WG business investment was the nationalisation of Cardiff Airport. In 2013, WG purchased the airport for £52m from its owners TBI who had put it up for sale. The purchase could be considered as a return of the airport to public ownership, only having been

⁷³ Sion Barry, 'The Welsh Life Sciences Firm That's Just Struck a Huge £80m Deal in China,' *Western Mail* 2019.

⁷⁴ Dylan Jones-Evans, 'Access to Finance Review Stage 2 Review,' (Welsh Government, 2013).

⁷⁵ EIW, 'Medium-Sized Businesses and Welsh Business Structure,' ed. Economic Intelligence Wales (Online2019).

⁷⁶ Jones-Evans.

privatised in 1995 following 40 years of public ownership and operation, initially by Glamorgan Council.⁷⁷ Since being taken on by WG, there has been new investment into facilities and while there has been volatility in the range of airlines operating from the airport, there have been new links formed, notably to the Middle East with Qatar airlines. Part of the rationale for WG intervention was to secure the airport's future, with its claimed economic impact measuring over 2,400 aviation-related jobs and over £246m of direct annual economic benefit to Wales.⁷⁸ However, as the responsibility for air transport regulation and tax policy, such as Air Passenger Duty, is retained by UK Government the scope for further WG intervention has been limited.⁷⁹

Between 1999 and 2010, devolution operated under the alignment of a Labour UK Government and a Labour led Government in the National Assembly. The following UK Conservative/Liberal Democrat coalition and its regressive austerity programme pressured the finance available to Wales for economic development. Against this backdrop of imposed austerity and the more challenged UK-Wales political relationship, there did exist the prospect of major collaborative initiatives to stimulate economic development. Major energy infrastructure projects fall under the retained powers of UK government, though represent significant regional economic drivers in both their construction and operation. A notable example of the impact of this separation of powers was in Ynys Mon, with the relationship between Anglesey Aluminium and the neighbouring Wylfa nuclear power plant, both established in the 1970s. The aluminium plant

⁷⁷ Times, 'Council Take over an Airport,' *The Times*, 2nd April 1965 1965.

⁷⁸ CA, 'CEO Statement,' <https://www.cardiff-airport.com/news/2020/08/19/ceo-statement-cv19-and-the-aviation-industry/>.

⁷⁹ NAW, 'A Review of Cardiff Airport's Performance and Prospects in the Context of Current UK Regional Airport Economics,' ed. Northpoint (Online: Public Accounts Committee, National Assembly for Wales 2020).

was one of the largest employers on the island, with over 500 staff. As one of the UK's largest electricity consumers using the neighbouring Wylfa nuclear plant's baseload, the two entities were inherently interlinked. The planned decommissioning of Wylfa and complexities in extending arrangements, without a timely replacement, led in turn to the loss of both important regional employers.

Despite being too late to potentially support Anglesey Aluminium, the continuation of nuclear power generation in North Wales was given a boost with the endorsement of a new reactor at Wylfa.⁸⁰ Significant investment was made in the initial phases of development, despite the opposition of anti-nuclear activists and Plaid Cymru, with the exception of the local Assembly Member and former party leader, Ieuan Wyn Jones. However, the initiative has since been dealt a major blow with Hitachi's withdrawal after the Horizon consortium's negotiations with UK government failed to progress. A similar ebb and flow featured with another proposed major energy initiative in south Wales. Swansea Bay offers the second largest tidal range in the world, and therefore the prospect of massive reliable renewable energy generation. The concept of a man-made tidal lagoon presented greater potential feasibility than the proposed Severn barrage^{81 82}. Despite initial support from UK government and achieving the all-important planning consent, this enthusiasm waned. This was ostensibly due to concern over costs as the scheme competed against Government subsidy (mainly UK) for other projects such

⁸⁰ UK Gov, 'The UK's Nuclear Future,' ed. Innovation and Skills Department for Business (2013).

⁸¹ Clive Baker, 'Tidal Power,' *Energy Policy* 19, no. 8 (1991).

⁸² DG Wardle, JP Gibson, and RF McGlynn, 'The Present Status of the Severn Barrage Project Studies' (paper presented at the International Conference on Renewable Energy-Clean Power 2001, 1993., 1993).

as those using nuclear and offshore wind technology, though not in itself an insurmountable issue, as highlighted by leading business figures.⁸³ UK government support was lost despite a significant independent review giving strong support to the proposal,⁸⁴ with the concept of a Swansea lagoon advocated as a 'pathfinder' for future potential developments. The review applauded not only the initial economic impact of the construction and operation, but also the longer-term opportunity for supporting local steel and manufacturing industries.

The fate of these initiatives reflected the limitations of the Welsh Government and the supremacy of the UK Government in brokering economic development within the energy sector, and highlighted failures to resolve the long-standing challenge of financing long-term major infrastructure projects in Wales.⁸⁵

City Deals

The period from 2010 also ushered in wider UK devolution, with the Localism Act⁸⁶ paving the way for greater devolution to English regions, including the creation of elected mayors and a greater role for Local Enterprise Partnerships (LEPs) in regional economic policy. The opportunity for the local retention of business rates by English regions accompanied by

⁸³ Chris Kelsey, 'Big Drop in Swansea Bay Tidal Lagoon Subsidy Cost Makes Project a 'No-Brainer' Says Sir Terry Matthews' *Western Mail* 2016.

⁸⁴ Charles Hendry, 'The Role of Tidal Lagoons,' *Final Report* (2016).

⁸⁵ WG, 'Wales Infrastructure Investment Plan for Growth and Jobs,' ed. Strategic Investment Division (Online2012).

⁸⁶ UK Gov, "Localism Act 2011," (Online2011).

additional UK central government funding led to a clamour from counterparts in Scottish and Welsh regions to receive similar potential benefits. However, it is argued that the arrangements do not aid inter-regional competition and favour the existing prosperous regions whilst exacerbating regional inequalities.⁸⁷

This regional economic development approach was set in the context of UK industrial policy's focus on key sectors and technologies.⁸⁸ This aligned to an extent with those sectors targeted by WG,^{89 90} albeit with those areas such nuclear and energy more influenced by the UK Government's powers, as witnessed by the fate of proposed developments at Wylfa and the Swansea Bay Tidal Lagoon.

Despite those areas of alignment in industrial policy, the City Deals create a layer of complexity in the Welsh context, accentuated by the lack of (as in England) elected mayors as figureheads. In Wales, Senedd Members provide a superficial layer of democratic accountability, although Waite & Morgan⁹¹ note it as an opportunity for WG to support coherence within and between regions. Ultimately Wales has seen a set of Deals established, from Cardiff Capital (2016) and Swansea Bay (2017) City Regions and then the subsequent North and Mid Wales Growth Deals

⁸⁷ Daniel Bailey, 'Economic Renewal through Devolution? Tax Reform and the Uneven Geographies of the Economic Dividend,' *Competition & Change* 21, no. 1 (2017).

⁸⁸ Chris Rhodes, 'Industrial Policy, 2010 to 2015,' ed. Economic Policy and Statistics (House of Commons Library 2014).

⁸⁹ WG, 'Sectors Delivery Plan,' ed. Economy and Transport Department for Business (2013).

⁹⁰ WG, 'Innovation Wales.'

⁹¹ David Waite and Kevin Morgan, 'City Deals in the Polycentric State: The Spaces and Politics of Metrophilia in the UK,' *European Urban and Regional Studies* 26, no. 4 (2019).

(2020).⁹² These regions and the partnerships around them broadly reflect Wales's Spatial Plan,⁹³ and align the City/Growth Regions with their local Smart Specialisations. Each deal also gives focus to developing the skills required to support the growth of targeted sectors, with the involvement of universities and further education colleges. While the Deals are at different stages of development and delivery, a recent review provided a positive report on their progress.⁹⁴

Much like the previous debate relating to the potential for English Regional Development Agencies (RDAs),⁹⁵ the prospect of these regions realising significant economic development with their level of available resources requires a dose of realism. For example, while the launch of the Swansea Bay City deal was surrounded by a mixture of fanfare, scrutiny and criticism, the combined value of the Deal only equates to 0.16% of the region's economy, delivered across a timescale equal to two EU Programme cycles. These Deals will be only truly transformative if their regional project portfolios are able to leverage significant additional investment.

However, the focus of these Deals has not solely to pursue economic development, but also to address health and wider social inequalities, such as improving access to public services, reduce

⁹² HoC, 'City Deals and Growth Deals in Wales: Second Report of Session 2019,' ed. House of Commons Welsh Affairs Committee (Online2019).

⁹³ WAG, 'People, Places, Futures: The Wales Spatial Plan.'

⁹⁴ HoC. 'City Deals and Growth Deals in Wales: Second Report of Session 2019,'

⁹⁵ Morgan, 'Devolution and Development: Territorial Justice and the North-South Divide.'

fuel poverty and improve housing.^{96 97} The Deals themselves and the individual projects they realise are also being considered within the context of the Well-being for Future Generations (Wales) Act 2015 (WFGA),⁹⁸ a novel piece of legislation passed by the National Assembly. This has subsequently come to frame all developments, including economic policy and City/Growth Deals, and with the independent Future Generations Commissioner given the power to scrutinise proposals.

Whilst the City and Growth Deals have attracted much interest, the most significant economic development for Wales has been the departure of the United Kingdom from the European Union. The WDA-era FDI boom had in large part been supported by attracting investors with access to the growing EU Single Market. Amid assurances that such benefits would be preserved, the majority of voters, in Wales as well as England, voted for Brexit. Considering the significant levels of EU investment into Wales, this may have a surprising result, although the disgruntlement caused by the UK Government's austerity agenda was fundamental to this outcome.⁹⁹ Austerity had hit the poorest communities hardest,¹⁰⁰ resulting in understandable disillusionment amongst voters towards an UK government that was ostensibly campaigning to remain in the EU. The resulting economic uncertainty and the prospect of friction in trade

⁹⁶ SU, 'Internet Coast: Phase 1: City Deal Proposal Impact Appraisal,' in *V1.26* (School of Management: Swansea University, 2017).

⁹⁷ CCR, 'Key Cardiff Capital Region Projects Given City Deal Backing,' <https://www.cardiffcapitalregion.wales/news-post/key-cardiff-capital-region-projects-given-city-deal-backing/>.

⁹⁸ NAW, 'Well-Being of Future Generations (Wales) Act 2015,' ed. National Assembly for Wales (2015).

⁹⁹ Thiemo Fetzer, 'Did Austerity Cause Brexit?,' *American Economic Review* 109, no. 11 (2019).

¹⁰⁰ NEF, 'Austerity Is Subduing Uk Economy by More Than £3,600 Per Household This Year,' news release, 2019, <https://neweconomics.org/2019/02/austerity-is-subduing-uk-economy-by-more-than-3-600-per-household-this-year>.

impacts upon key sectors in Wales. These effect activities ranging from aerospace, with Airbus's pan-European assembly plants, farming subsidies, and the regulation of medical technologies. Wales's manufacturing sector is also precariously placed with Europe as its major export market, particularly as European customers may look to alternative suppliers within the EU Single Market.

Trade for Wales with its EU neighbours is now embroiled in greater friction and cost, but a positive regional development has been the removal of tolls from the Severn Bridge at the end of 2018. This has reduced trade friction for south Wales and it was projected by the Welsh Office that this would provide an annual £100m boost to the Welsh economy, removing barriers that the UK Government accepted had 'hindered Wales's economic prosperity for more than half a century'.¹⁰¹ Projections for WG back in 2012 even then suggested a potential uplift in excess of this figure from productivity uplift and wider benefits.¹⁰²

Emerging Context

Two decades on from democratic devolution, the economic context has never been more unsure. Beyond the tragic human consequences of the Covid pandemic, its prevalence has led

¹⁰¹ UK Gov, 'Severn Crossings to Go to Toll-Free on 17 December 2018,' news release, 2018, <https://www.gov.uk/government/news/severn-crossings-to-go-toll-free-on-17-december-2018>.

¹⁰² ARUP, 'The Impact of the Severn Tolls on the Welsh Economy: Final Report,' (2012).

to huge economic challenges globally. Before its future impact ripples through the economy, following the end of furlough and other support schemes, unemployment in Wales was already starting to rise sharply as firms struggled with lockdowns despite £1.7bn of WG support by the end of 2020, in addition to UK schemes. This support may appear significant but is small in a context where tourism alone suffered a £6.6bn loss to the Welsh economy in just the first four months of the pandemic.¹⁰³ Furthermore, in the longer-term, Covid has compounded the regressive effects of Westminster-driven austerity, falling disproportionately hard upon the most vulnerable including younger workers and those from black and minority ethnic backgrounds.¹⁰⁴

The impact of Covid has coincided with the transition phase of Brexit, and although the separation of UK from the EU has been enacted, its effects are not obvious or complete. The potential 'No Deal' outcome had been set to hit Wales hardest, along with those other UK regions most reliant on manufacturing and agriculture.¹⁰⁵ While this outcome did not materialise, the deal struck is already creating difficulty for these sectors.¹⁰⁶ Minto & Morgan¹⁰⁷ suggest the challenges and opportunities for Wales to remain engaged with Europe, building upon networks and bilateral regional relationships. They note the need to work more closely with the private sector and civic society to achieve this, though challenged by a poorer

¹⁰³ STEAM, 'Shocking Wales Tourism Figures Highlight Covid's Devastating Impact on the Sector, Scarborough Tourism Economic Activity Monitor (Steam) Report,' *Western Mail* 2020.

¹⁰⁴ Jesus Rodriguez and Guto Ifan, 'Covid-19 and the Welsh Economy: Shutdown Sectors and Key Workers,' (Wales Fiscal Analysis Cardiff University, 2020).

¹⁰⁵ IoG, 'No Deal Brexit and the Union' (Institute for Government, 2019).

¹⁰⁶ Rachel Minto and Kevin Morgan, 'The Future of Wales in Europe,' *Edinburgh Law Review* 23, no. 3 (2019).

¹⁰⁷ Ione Wells, 'Post-Brexit Taxes for Stell 'Very Damaging' Says Kinnock,' *BBC* 2021.

environment. This may, or may not, be helped by the promised Shared Prosperity Fund (SPF) that is due to emerge as a replacement for the regional aid previously delivered through EU Structural Funds. This is unlikely in itself to be aligned with EU Programmes, as indicated by the decision to cease participation in the celebrated Erasmus educational exchange programme. Along with the uncertainty around the quantum and timing of the SPF, it also creates a new policy dynamic, with the tightening of the Westminster purse-strings as the economic lever for economic and social development beyond those policy areas tied directly to the financial mechanism of the Barnett formula, and the City/Growth Deals.

It is anticipated that SPF will focus on regional differentiators, and technology clusters have already become a core part of City Deal strategies in Wales. The first of these, focused on the semiconductors cluster along the M4 corridor has attracted significant investment into the Cardiff City Region and beyond. In parallel, the City Deals and other investments are supporting additional clusters including life sciences and health along the M4 corridor, and marine energy on the west and north Wales coast. These deals are presented as part of a solution to improve productivity across the wider UK, distributing investment and opportunity more equitably.

The Covid pandemic has also further exposed spatial and other entrenched inequalities across the UK which has accentuated the UK Government's stated aim of creating a 'levelling up' agenda. This is now reflected in its development of 'Place Based Analysis' to allow for greater spatial distribution of public investment under the Treasury's Green Book guidance.¹⁰⁸ Within

¹⁰⁸ HM Treasury, 'The Green Book: Central Government Guidance on Appraisal and Evaluation,' ed. HM Treasury (Online2020).

Wales, the recent OECD governance review¹⁰⁹ echoes this notion, reflecting upon territorial economic inequalities across Wales, which bear similarities to the inequalities across the UK as a whole. The importance of physical and digital connectivity to support well-being and economic growth across Wales is also emphasised, along with the need for stronger mechanisms to achieve this.

Conclusion

Wales emerges into its third decade of democratic devolution, faced with notable uncertainty and challenges. Its economic prospects are interwoven with significantly deteriorating relationships both within and beyond the United Kingdom. Over this period, Welsh Government has not been able to reverse the nation's fortunes and there has seemingly not been a devolution economic dividend. Since the creation of the National Assembly for Wales, the nation's economic performance has continued to fail to catch up with the economic performance of most of the rest of the UK, while other lagging regions such as Cornwall had succeeded in closing the gap. It should be noted though that these two decades, punctuated by a global recession and the retrenchment of Wales' prided FDI-driven manufacturing base, have been a difficult time to drive prosperity forward in the teeth of significant economic headwinds. This makes it difficult to assess economic development in the two decades of devolution

¹⁰⁹ OECD, 'The Future of Regional Development and Public Investment in Wales, United Kingdom,' ed. Organisation for Economic Cooperation and Development (Online2020).

against any counterfactual argument, though undoubtedly the Welsh Government's ambition to narrow the gap with the performance of the wider UK economy has been disappointed.

Undoubtedly, the lack of powers granted in the devolution settlement has limited Wales's ability to act,¹¹⁰ though bold steps such as disbanding the WDA and pursuing a more interventionist sectoral approach have displayed the ambition 'to make our own decisions and set our own priorities'. An assertive UK Conservative government may bemoan how Wales has performed, but may be held politically accountable for the period of economic decline before devolution. It is however ironic that the extinct WDA's emphasis on inward investment is still relevant and opposition political, parties wish to revive it, as Wales recently missed out on two major inward-investment opportunities in the targeted automotive sector, with the British Volt battery Gigafactory preferring Blyth in Northumberland, and the Ineos Grenadier investment, led by a leading Brexiteer businessman, departing for the EU.

The shift towards developing Wales's strength of indigenous companies and clusters shows promise. Successes in the emergence of the semiconductor, life sciences and creative industries have been engendered partly by taking the longer timescales required to achieve more meaningful structural economic development than FDI investment, and that Wales requires. The shift from pursuing 'quick-wins' for job creation through the WDA's attraction of inward-

¹¹⁰ OECD, 'The Future of Regional Development and Public Investment in Wales, United Kingdom,'

investment via arms-length premises and grants¹¹¹ to a more interventionist longer-term development of key sectors has received mixed success.

As observed by Pike,¹¹² any economic benefit from devolution may not be plainly apparent, and with the continued dominance of central-UK government's influence upon regional development policy, this may continue to be the case. The Internal Market Act 2020,¹¹³ passed despite the objection of the Welsh Government,¹¹⁴ gives UK government powers for infrastructure and economic development. In the wake of cancelling major initiatives such as Wylfa B and the Swansea Bay Tidal Lagoon, it remains to be seen what UK Government will invest in Wales beyond its current contributions to City and Growth Deals. Drawn into the post-Brexit context, EU State Aid rules have been cited why extended power deals could not be extended to Anglesey Aluminium in the past or to BSC's Port Talbot steelworks. However, it remains to be seen how any new arrangements under Brexit will benefit such sectors. The possible nationalisation of critical infrastructure by the Welsh Government in key sectors beyond transport, may well be areas in which Welsh Government may wish to intervene.

In terms of Wales' future economic prospects, it remains to be seen whether democratic devolution will be a continued evolution, as Rhodri Morgan viewed it, or revolution, returning control of economic policy to Westminster, and strengthening the powers of the UK

¹¹¹ Aled Eirug, 'The Welsh Development Agency'

¹¹² Andy Pike et al., 'In Search of the 'Economic Dividend' of Devolution: Spatial Disparities, Spatial Economic Policy, and Decentralisation in the UK'

¹¹³ UK Gov, 'United Kingdom Internal Market Act 2020,' (2020).

¹¹⁴ WG, 'Written Statement: Possible Legal Challenge to the UK Internal Market Bill,' news release, 2020, <https://gov.wales/written-statement-possible-legal-challenge-uk-internal-market-bill>.

government. As such, it will likely be the next Senedd term which indicates whether there is an emergence of the 'dark side' of territorial politics described by Morgan¹¹⁵ in 2001 which would create rivalry and parochialism, or instead the internal and external cooperation needed to confront the global challenges faced by Wales, UK and wider world. As such it highlights how levels of governance should work together for all citizens, a concept partly broken by Brexit. In exemplars such as the steel industry, that BSC Port Talbot provides steel for manufacturing in the Midlands and North of England, Wales has traditionally understood and benefited from focusing on regional interdependence and collaboration rather than competition. The present political outlook for the United Kingdom makes realising that opportunity somewhat more challenging.

¹¹⁵ Morgan, 'The New Territorial Politics: Rivalry and Justice in Post-Devolution Britain.' p.203

References

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- ARUP. 'The Impact of the Severn Tolls on the Welsh Economy: Final Report.' 2012. , <https://gov.wales/sites/default/files/statistics-and-research/2018-12/121105severntollfinalen.pdf>, Access date 15th January 2022
- Bailey, Daniel. 'Economic Renewal through Devolution? Tax Reform and the Uneven Geographies of the Economic Dividend.' *Competition & Change* 21, no. 1 (2017): 10-26.
- Baker, Clive. 'Tidal Power.' *Energy Policy* 19, no. 8 (1991): 792-97.
- Barry, Sion. 'The Welsh Life Sciences Firm That's Just Struck a Huge £80m Deal in China.' *Western Mail*, 2019. <https://www.walesonline.co.uk/business/business-news/welsh-life-sciences-firm-thats-16108291>, Access date 15th January 2022
- BBC. 'Tories Criticise 'Ieuan Air' Link.' BBC News, [news.bbc.co.uk/1/hi/wales/7398506.stm](https://www.bbc.com/news/health-57398506). Access date 15th January 2022
- BNW. 'Pembrokeshire's Bridge Innovation Centre Praised as Exceptional Launch Pad.' news release, 2019, <https://businessnewswales.com/pembrokeshires-bridge-innovation-centre-praised-as-exceptional-launch-pad/>. Access date 7th March 2021
- Braczyk, Hans-Joachim, Philip N Cooke, and Martin Heidenreich. *Regional Innovation Systems: The Role of Governances in a Globalized World*. Psychology Press, Hove, 1998.
- Bristow, Gillian, and Nigel Blewitt. 'The Structural Funds and Additionality in Wales: Devolution and Multilevel Governance.' *Environment and Planning A* 33, no. 6 (2001): 1083-99.
- CA. 'CEO Statement.' Cardiff Airport, <https://www.cardiff-airport.com/news/2020/08/19/ceo-statement-cv19-and-the-aviation-industry/> Access date 15th January 2022
- Cameron, Gavin, John Muellbauer, and Jonathan Snicker. 'A Study in Structural Change: Relative Earnings in Wales since the 1970s.' *Regional Studies* 36, no. 1 (2002): 1-11.
- CCR. 'Key Cardiff Capital Region Projects Given City Deal Backing.' Cardiff Capital Region, <https://www.cardiffcapitalregion.wales/news-post/key-cardiff-capital-region-projects-given-city-deal-backing/> Access date 15th January 2022
- Chen, Chien-Hsun. 'Regional Determinants of Foreign Direct Investment in Mainland China.' *Journal of economic studies* 23, no. 2 (1996): 18-30.
- Cooke, Philip. 'Discretionary Intervention and the Welsh Development Agency.' *Area* 12, no. 4 (1980): 269-77.
- . *Re-Framing Regional Development: Evolution, Innovation and Transition*. London: Routledge, 2013.
- . *The Regional Innovation System in Wales*. Regional Innovation Systems. The Role of Governances in a Globalized World. London: Routledge, 2004.
- Cooke, Philip, and Nick Clifton. 'Visionary, Precautionary and Constrained 'Varieties of Devolution' in the Economic Governance of the Devolved UK Territories.' *Regional Studies* 39, no. 4 (2005): 437-451.
- Crafts, Nicholas. 'Regional Gdp in Britain, 1871–1911: Some Estimates.' *Scottish Journal of Political Economy* 52, no. 1 (2005): 54-64.
- Davies, Gareth Huw, Sian Roderick, Michael D Williams, and Roderick Thomas. 'Reflections on Technium Swansea: Ambition, Learning and Patience.' In *Creating Entrepreneurial Space: Talking through Multi-Voices, Reflections on Emerging Debates*: Emerald Publishing Limited, Bingley: 2019.
- Davies, Ron. *Devolution: A Process Not an Event*. Institute of Welsh Affairs Cardiff, 1999. 1-16

- DTI. 'Business Clusters in the UK - a First Assessment.' edited by Department for Trade and Industry, Londn, 2001. 18-32
- DTZ. 'Evaluation of the Technium Programme, Final Report to the Welsh Assembly Government, Stage 1: Scoping and Review.' <https://gov.wales/sites/default/files/statistics-and-research/2018-12/101119techniumstage1en.pdf>, Access date 15/01/2022
- Eirug, Aled. 'The Welsh Development Agency.' *Geoforum* 14, no. 4 (1983): 375-88.
- EIW. 'Medium-Sized Businesses and Welsh Business Structure.' edited by Economic Intelligence Wales. 2019, <https://developmentbank.wales/sites/default/files/2019-11/EIW%20Quarterly%20Bespoke%20report%20English.pdf> Access date 15th January 2022
- EU. 'Guide to Cost-Benefit Analysis of Investment Projects.' edited by DG Regional Policy Evaluation Unit, European Commission. Web, 2002.
- . 'Guide to Cost-Benefit Analysis of Investment Projects, Economic Appraisal Tool for Cohesion Policy 2014-2020.' edited by Directorate-General for Regional and Urban Policy. 2014. https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf., Access date 15th January 2022
- Fetzer, Thiemo. 'Did Austerity Cause Brexit?'. *American Economic Review* 109, no. 11 (2019): 3849-86.
- Foray, Dominique, Paul A David, and Bronwyn Hall. 'Smart Specialisation—the Concept.' *Knowledge economists policy brief* 9, no. 85 (2009): 100.
- Gibson, Simon. 'Commercialisation in Wales - a Report by the Independent Task and Finish Group.' 2007, https://senedd.wales/media/fw2pbd2k/commercialisation_in_wales_-_gibson_review_english.pdf, Access date 15th January 2022.
- Goberman, Leon. 'Business Failure in an Age of Globalisation: Interpreting the Rise and Fall of the LG Project in Wales, 1995–2006.' *Business History* (2018): 240-260
- . 'Welsh Office Exceptionalism, Economic Development and Devolution, 1979 to 1997.' *Contemporary British History* 30, no. 4 (2016): 563-83.
- Gov, UK. 'Government of Wales Act.' UK Government 1998, <https://www.legislation.gov.uk/ukpga/1998/38/contents>, Access date 15th January 2022.
- . 'Localism Act 2011.' UK Government 2011, <https://www.legislation.gov.uk/ukpga/2011/20/contents/enacted>, Access date 15th January 2022.
- . 'Severn Crossings to Go to Toll-Free on 17 December 2018.' UK Government 2018, <https://www.gov.uk/government/news/severn-crossings-to-go-toll-free-on-17-december-2018> Access date 15th January 2022.
- . 'The UK's Nuclear Future.' edited by Innovation and Skills Department for Business, UK Government, 2013 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/168048/bis-13-627-nuclear-industrial-strategy-the-uks-nuclear-future.pdf Access date 15th January 2022.
- . 'United Kingdom Internal Market Act 2020.' 2020, UK Government, <https://www.legislation.gov.uk/ukpga/2020/27/contents/enacted> , Access date 15th January 2022.
- . 'Welsh Development Agency Act 1975.' UK Government, 1975 <https://www.legislation.gov.uk/ukpga/1975/70/contents> , Access date 15th January 2022.
- Hargreaves, Ian. 'The Heart of Digital Wales: A Review of Creative Industries for the Welsh Assembly Government.' Cardiff University, (2009)

- https://www.cardiff.ac.uk/_data/assets/pdf_file/0006/113586/HeartofDigitalWales.pdf Access date 15th January 2022.
- Hendry, Charles. 'The Role of Tidal Lagoons.' *Final Report* (2016), <https://hendryreview.files.wordpress.com/2016/08/hendry-review-final-report-english-version.pdf> Access date 15th January 2022.
- HoC. 'City Deals and Growth Deals in Wales: Second Report of Session 2019.' edited by House of Commons Welsh Affairs Committee. Online, 2019, <https://publications.parliament.uk/pa/cm201919/cmselect/cmwelaf/48/48.pdf> Access date 15th January 2022.
- IoG. 'No Deal Brexit and the Union': Institute for Government, 2019, <https://www.instituteforgovernment.org.uk/publications/no-deal-brexit-union> Access date 15th January 2022.
- Jeffery, C. 'Final Report of the Devolution and Constitutional Change Programme.' *School of Social and Political Studies, University of Edinburgh* (2006).
- Jones-Evans, Dylan. 'Access to Finance Review Stage 2 Review.' Welsh Government, 2013, <https://uwe-repository.worktribe.com/output/926259>, Access date 15th January 2022.
- Kay, Adrian. 'Evaluating Devolution in Wales.' *Political Studies* 51, no. 1 (2003): 51-66.
- Kelsey, Chris. 'Big Drop in Swansea Bay Tidal Lagoon Subsidy Cost Makes Project a 'No-Brainer' Says Sir Terry Matthews' *Western Mail*, 2016, <https://www.walesonline.co.uk/business/business-news/swansea-bay-tidal-lagoon-strike-10817156>, Access date 15th January 2022.
- Mathias, Peter. *The First Industrial Nation: The Economic History of Britain 1700–1914*. Routledge, Abingdon-on-Thames, 2013.
- Minto, Rachel, and Kevin Morgan. 'The Future of Wales in Europe.' *Edinburgh Law Review* 23, no. 3 (2019): 423-28.
- Morgan, Kevin. 'Devolution and Development: Territorial Justice and the North-South Divide.' *Publius: The Journal of Federalism* 36, no. 1 (2006): 189-206.
- . 'The New Territorial Politics: Rivalry and Justice in Post-Devolution Britain.' *Regional Studies* 35, no. 4 (2001): 343-48.
- . 'The Regional State in the Era of Smart Specialisation.' *Ekonomiaz* 83, no. 02 (2013): 103-26.
- Murphy, Lyndon, Robert Huggins, and Piers Thompson. 'Social Capital and Innovation: A Comparative Analysis of Regional Policies.' *Environment and Planning C: Government and Policy* 34, no. 6 (2015): 1025-57.
- NAW. 'A Review of Cardiff Airport's Performance and Prospects in the Context of Current UK Regional Airport Economics.' edited by Northpoint, Public Accounts Committee, National Assembly for Wales 2020, <https://business.senedd.wales/documents/s99239/PAC5-08-20-P2%20-%20Cardiff%20Airport%20performance%20and%20prospects.pdf> Access date 15th January 2022.
- . 'Well-Being of Future Generations (Wales) Act 2015.' edited by National Assembly for Wales, 2015, <https://www.legislation.gov.uk/anaw/2015/2/contents/enacted> Access date 15th January 2022.
- NEF. 'Austerity Is Subduing UK Economy by More Than £3,600 Per Household This Year.' New Economics Foundation, 2019, <https://neweconomics.org/2019/02/austerity-is-subduing-uk-economy-by-more-than-3-600-per-household-this-year> Access date 15th January 2022
- OECD. 'The Future of Regional Development and Public Investment in Wales, United Kingdom.' edited by Organisation for Economic Cooperation and Development. 2020, <https://www.oecd.org/fr/cfe/the-future-of-regional-development-and-public-investment-in-wales-united-kingdom-e6f5201d-en.htm> Access date 15th January 2022

- ONS. 'Regional Gross Value Added (Income Approach) Reference Tables.' edited by Office for National Statistics, 2018,
<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/regionalgrossvalueaddedincomeapproach> Access date 15th January 2022
- Osmond, John. 'The National Assembly Agenda: A Handbook for the First Four Years'. Institute of Welsh Affairs, Cardiff, 1998.
- Phelps, N AVMacKinnon, Danny Mackinnon, Ian Stone, and Paul Braidford. 'Embedding the Multinationals? Institutions and the Development of Overseas Manufacturing Affiliates in Wales and North East England.' *Regional Studies* 37, no. 1 (2003): 27-40.
- Phelps, Nicholas A, and Mark Tewdwr-Jones. 'Globalisation, Regions and the State: Exploring the Limitations of Economic Modernisation through Inward Investment.' *Urban Studies* 38, no. 8 (2001): 1253-72.
- Pike, Andy, Andrés Rodríguez-Pose, John Tomaney, Gianpiero Torrasi, and Vassilis Tselios. 'In Search of the 'Economic Dividend' of Devolution: Spatial Disparities, Spatial Economic Policy, and Decentralisation in the UK.' *Environment and Planning C: Government and Policy* 30, no. 1 (2012): 10-28.
- Pugh, Rhiannon, Niall G MacKenzie, and Dylan Jones-Evans. 'From 'Techniums' to 'Emptiums': The Failure of a Flagship Innovation Policy in Wales.' *Regional studies* 52, no. 7 (2018): 1009-20.
- Rhodes, Chris. 'Industrial Policy, 2010 to 2015.' edited by Economic Policy and Statistics. House of Commons Library, 2014, <https://commonslibrary.parliament.uk/research-briefings/sn06857/> Access date 15th January 2022.
- Rodriguez, Jesus, and Guto Ifan. 'Covid-19 and the Welsh Economy: Shutdown Sectors and Key Workers.' Wales Fiscal Analysis Cardiff University, 2020,
https://www.cardiff.ac.uk/_data/assets/pdf_file/0017/2410343/Covid-19-and-the-Welsh-economy-shutdown-sectors-and-key-workers-briefing-paper.pdf Access date 15th January 2022.
- Rogers, Mark. 'R&D and Productivity in the UK: Evidence from Firm-Level Data in the 1990s.' Department of Economics Working Paper Series, Oxford University (2006),
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.622.5828&rep=rep1&type=pdf> Access date 15th January 2022.
- Salvador, Elisa, and Rebecca Harding. 'Innovation Policy at the Regional Level: The Case of Wales.' *International Journal of Foresight and Innovation Policy* 2, no. 3 (2006): 304-26.
- Sensier, Marianne, and Michael Artis. 'The Resilience of Employment in Wales: Through Recession and into Recovery.' *Regional Studies* 50, no. 4 (2014): 1-14.
- STEAM. 'Shocking Wales Tourism Figures Highlight Covid's Devastating Impact on the Sector, Scarborough Tourism Economic Activity Monitor (Steam) Report.' *Western Mail*, 2020,
<https://www.business-live.co.uk/economic-development/shocking-wales-tourism-figures-highlight-19434579> Access date 15th January 2022.
- SU. 'Internet Coast: Phase 1: City Deal Proposal Impact Appraisal.' In V1.26. School of Management: Swansea University, Swansea 2017.
- Times. 'Council Take over an Airport.' *The Times*, 2nd April 1965, London, 1965.
- Treasury, HM. 'The Green Book: Central Government Guidance on Appraisal and Evaluation.' edited by HM Treasury 2020,
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf Access date 15th January 2022.
- WAG. 'Economic Renewal: A New Direction.' edited by Welsh Assembly Government: Crown Copyright, Welsh Assembly Government, Cardiff 2010.
- . 'Making the Connections: Delivering Better Services for Wales: The Welsh Assembly Government Vision for Public Services.' edited by Welsh Assembly Government, Cardiff, 2004.

- . 'People, Places, Futures: The Wales Spatial Plan.' Welsh Assembly Government, Cardiff, 2004.
- . 'Science for Wales: A Strategic Agenda for Science and Innovation in Wales.' Welsh Assembly Government, Cardiff, 2009.
- . 'Wales: A Vibrant Economy: The Welsh Assembly Government's Strategic Framework for Economic Development Consultation Document.' Welsh Assembly Government, Cardiff, 2005.
- . 'A Winning Wales: Annual Report 2002-2003.' Welsh Assembly Government, Cardiff, 2003.
- . 'A Winning Wales: The National Economic Strategy of the Welsh Assembly Government.' edited by Economic Policy Division. Welsh Assembly Government, Cardiff, 2001.
- . 'A Winning Wales; the National Economic Development Strategy of the Welsh Assembly Government.' Welsh Assembly Government, Cardiff, 2004.
- . 'Impact Evaluation of ProAct', Social Research, Welsh Assembly Government, Cardiff, 2011
- Waite, David, and Kevin Morgan. 'City Deals in the Polycentric State: The Spaces and Politics of Metrophilia in the UK.' *European Urban and Regional Studies* 26, no. 4 (2019): 382-99.
- Wales, NHS. 'Together for Health - a Five Year Vision for the Nhs in Wales.' edited by Welsh Government, 2011, <http://www.wales.nhs.uk/sitesplus/documents/829/togetherforhealth.pdf> Access date 15th January 2022.
- WAO. 'The Welsh Government's Relationship with Pinewood.' edited by Welsh Audit Office, 2018, <https://senedd.wales/laid%20documents/cr-ld12165/cr-ld12165-e.pdf> Access date 15th January 2022.
- Wardle, DG, JP Gibson, and RF McGlynn. 'The Present Status of the Severn Barrage Project Studies.' Paper presented at the International Conference on Renewable Energy-Clean Power 1993., <https://ieeexplore.ieee.org/document/264118/similar#similar> Access date 15th January 2022.
- WDA. 'Welsh Development Agency Corporate Plan 2003/4-2006/7 'Creating Success Together'.' edited by Welsh Development Agency, 2002.
- Wells, Ione. 'Post-Brexit Taxes for Stell 'Very Damaging' Says Kinnock.' *BBC*, 2021 <https://www.bbc.co.uk/news/uk-wales-55845067>, Access Date 15th January 2022.
- WG. 'Dragon International Film Studios.' news release, 2006.
- . 'Innovation Wales.' edited by Welsh Government, Cardiff, 2014.
- . 'Sectors Delivery Plan.' edited by Economy and Transport Department for Business, Cardiff, 2013.
- . 'Wales Infrastructure Investment Plan for Growth and Jobs.' edited by Strategic Investment Division. Cardiff, 2012.
- . 'Written Statement - Technium Update.' news release, 2011, <http://gov.wales/about/cabinet/cabinetstatements/previous-administration/2011/techniumupdate/?lang=en>. Access date 15th January 2022
- . 'Written Statement: Possible Legal Challenge to the Uk Internal Market Bill.' news release, 2020, <https://gov.wales/written-statement-possible-legal-challenge-uk-internal-market-bill> Access date 15th January 2022
- Young, Stephen, Neil Hood, and Ewen Peters. 'Multinational Enterprises and Regional Economic Development.' *Regional studies* 28, no. 7 (1994): 657-77.