



Swansea University
Prifysgol Abertawe



Cronfa - Swansea University Open Access Repository

This is an author produced version of a paper published in:

Welsh Economic Review

Cronfa URL for this paper:

<http://cronfa.swan.ac.uk/Record/cronfa50107>

Paper:

Blackaby, D., Drinkwater, S., Murphy, P., O'Leary, N. & Staneva, A. (2018). The Welsh economy and the labour market. *Welsh Economic Review*, 26(0), 1

<http://dx.doi.org/10.18573/wer.228>

Released under the terms of a Creative Commons Attribution 4.0 International License (CC-BY).

This item is brought to you by Swansea University. Any person downloading material is agreeing to abide by the terms of the repository licence. Copies of full text items may be used or reproduced in any format or medium, without prior permission for personal research or study, educational or non-commercial purposes only. The copyright for any work remains with the original author unless otherwise specified. The full-text must not be sold in any format or medium without the formal permission of the copyright holder.

Permission for multiple reproductions should be obtained from the original author.

Authors are personally responsible for adhering to copyright and publisher restrictions when uploading content to the repository.

<http://www.swansea.ac.uk/library/researchsupport/ris-support/>

The Welsh economy and the labour market

David Blackaby^{1,5}, Stephen Drinkwater^{2,5}, Phil Murphy^{1,5}, Nigel O'Leary^{1,3,5} and Anita Staneva⁴

¹Swansea University; ²University of Roehampton; ³National Institute of Labour Studies, Flinders University, Australia; ⁴University of Sydney, Australia; ⁵Wales Institute of Social & Economic Research, Data & Methods (WISERD)

<https://doi.org/10.18573/wer.228>

Accepted: 17/10/18

Introduction

This paper takes a brief review of the labour market performance of Wales over the last 20 to 30 years, and some of the challenges it has faced and will face going forward. These include, public sector pay and employment, the quality of education, trends to more flexible labour markets, and Brexit.

Wales faced a major challenge of restructuring its economy following the decline of staple industries in the 1970s. During the 1980s and 1990s it was claimed (mainly by politicians) that the Welsh economy had been successfully transformed. The coal and steel industries, the backbone of the industrial economy in the late 1970s, had declined, and were being replaced by lighter and more buoyant manufacturing industries helped by the influence and relatively large amounts of foreign direct investment (FDI). The view did not go unchallenged, and it was often noted that Wales

was near or even at the bottom of the regional economic league tables measuring economic prosperity. For example, in 1970 gross domestic product (GDP) in Wales was 92% of the UK average, and by 1983 it had fallen to 88%. As shown in Figure 1, it was down to 76% in 1997, reaching a low of 71% in 2010 before increasing slightly to 73% by 2016. GDP as a measure of economic welfare has been subject to controversy, but despite its many weaknesses remains a principal yardstick and starting point in assessing the level of economic activity and welfare in a country.

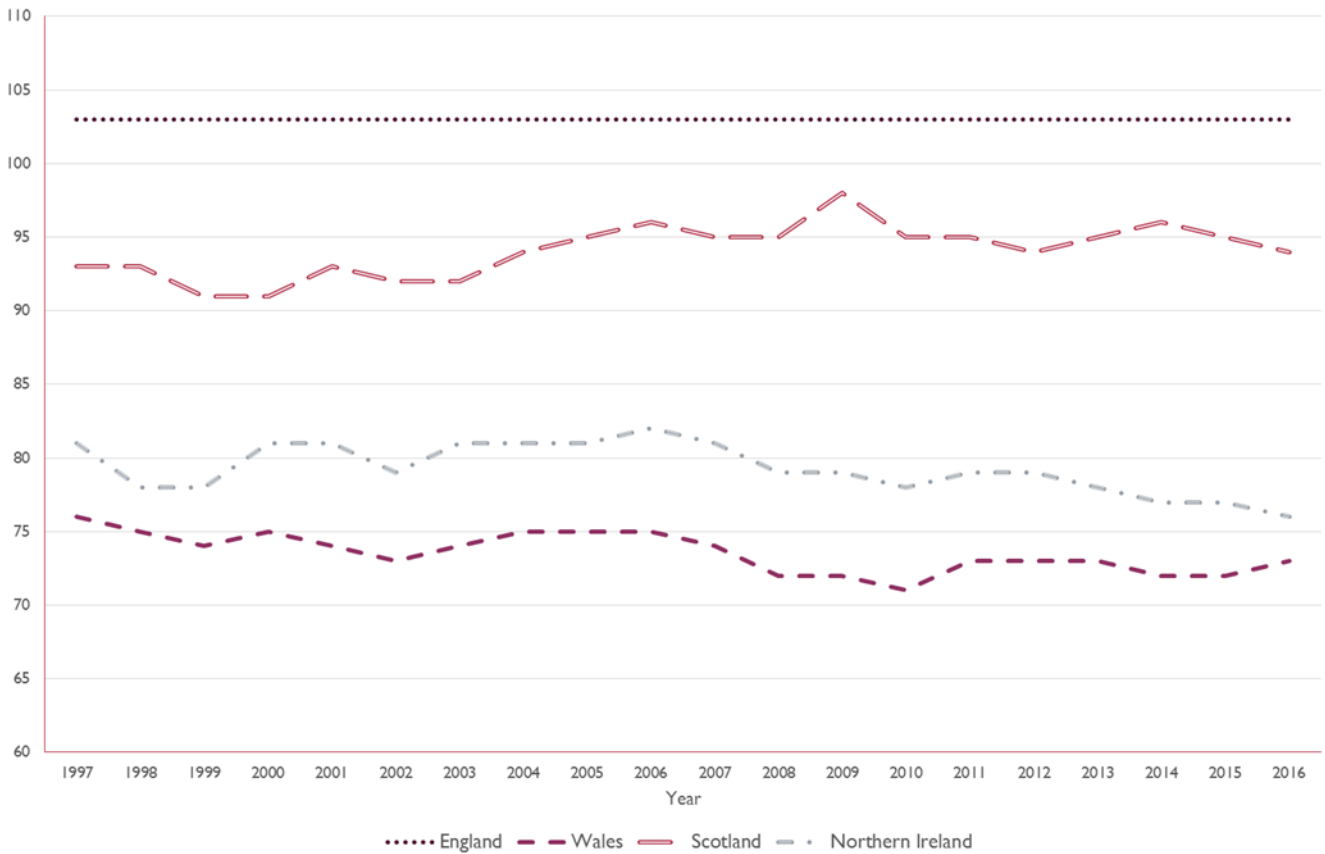
Within Wales a substantial gap in levels of GDP per head exists between East and West. Proximity to Offa's Dyke and its major lines of communication to neighbouring English centres of population are major characteristics of the more successful areas. In 2016 GDP per head of population was £19,140 in Wales whilst it was only £17,137 and

£17,381 in Mid Wales and South West Wales respectively. However, the notion of an East-West divide is too simplistic since great economic inequalities exist between communities within regions.

Earnings

The level of earnings and employment rates are important components of GDP and again both are relatively low in Wales compared to England. In 2017 Wales was at the foot of the regional earnings league table, with a weekly earnings average of £579 per week, compared with £672 in England, £638 in Scotland and £584 in Northern Ireland. As shown in Figure 2 the relative position has not improved since devolution, when in 1997 earnings in Wales were above those in Northern Ireland and the same as in Yorkshire and the Humber, the area in England with the lowest level of weekly earnings. Wales has not always been at the foot of the earnings league table. In 1971 earnings in Wales were

Figure 1: GVA by UK country, 1997-2016, UK=100.



Source: StatsWales

above those in Scotland, Yorkshire and Humberside and the North. It was only after 1979 that male weekly earnings in Wales fell below those of all ‘Northern’ regions. For females in 1971, Wales was close to the top of the regional earnings league table, second only to the South-East (which included London). This position was generally maintained up until 1978 after which relative female earnings showed a general fall relative to Great Britain along with other ‘Northern’ regions. Relatively low earnings in Wales reflect its industrial and occupational structure. The decline in manufacturing and coal

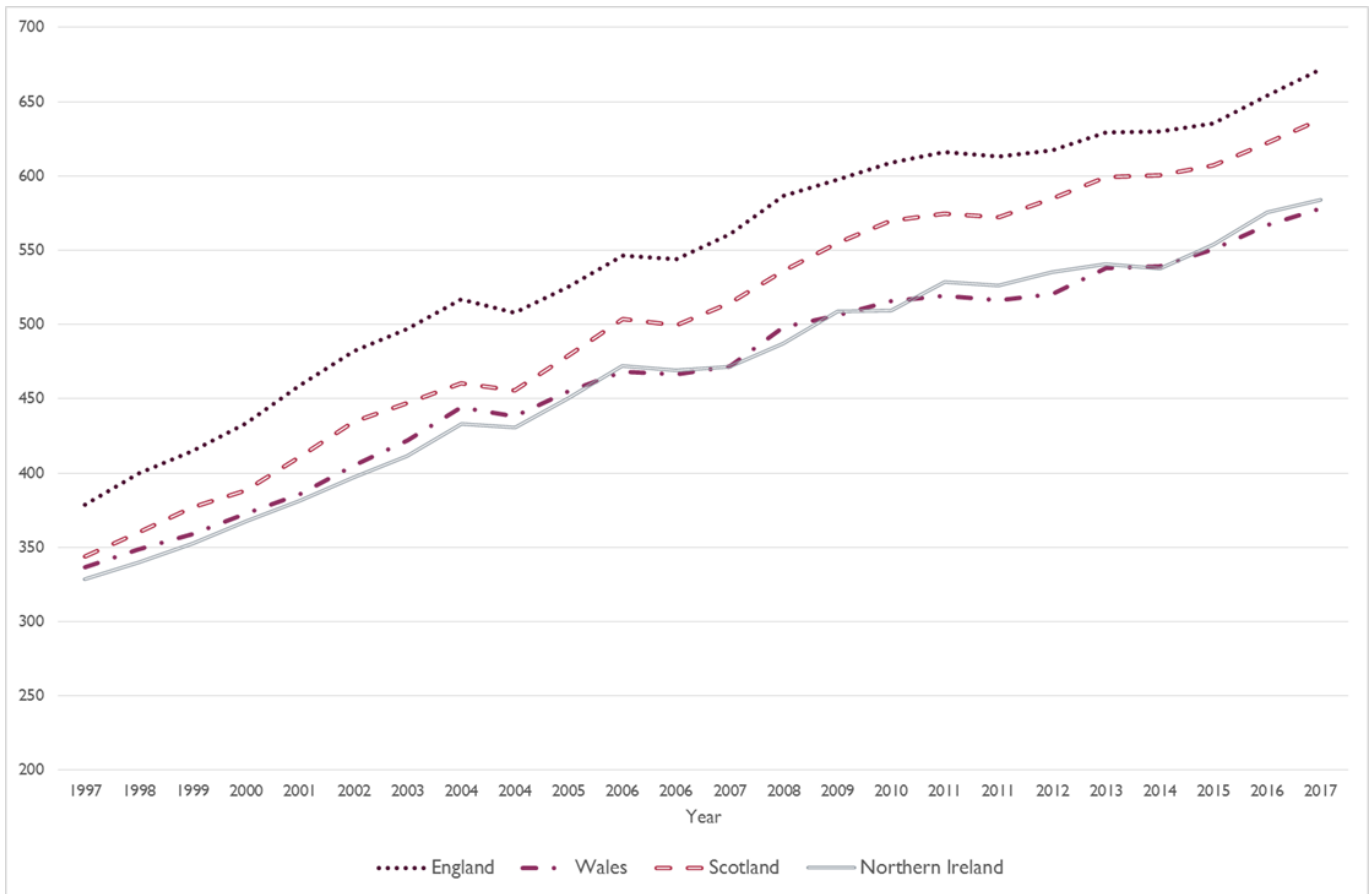
industries which paid relatively high wages, lack of a financial sector, the growth of relatively low paying service jobs, where trade union membership and national collective bargaining levels are lower, are part of the explanation.

Whilst Wales is at the bottom of the UK regional earnings league table substantial regional variation in earnings exist within Wales, with clear evidence of a rural/urban and East/West divide. Gwynedd had the lowest level of earnings in 2017 (as it did in 1997) at £412 per week, compared to £536 in Flintshire and £529 in Cardiff.

Unemployment

The restructuring of the Welsh economy has been accompanied by relatively high levels of unemployment, with large local variations. The ease and speed with which individuals found work depended on the characteristics of the unemployed and the health of the local labour market. Those labour markets heavily dependent on a small number of firms and in sectors in relative decline faced considerable problems, particularly many of the mining communities in the South Wales Valleys. However, Figure 3 shows unemployment on a downward trend and regional

Figure 2: Average gross weekly earnings by UK country, 1997-2017, £.



Source: StatsWales

differences across countries are relatively small even in the early 1990s and 2007/2008 recessions. This has not always been the case, up until the 1990s the patterns of regional unemployment disparities in Britain were relatively stable and diverse with Wales being a relative black spot. Recessions were also accompanied by increases in the dispersion of regional unemployment rates. For example, in the 1980s recession regional unemployment differentials became wider than at any time since the 1930s, with Wales and Northern regions particularly badly affected,

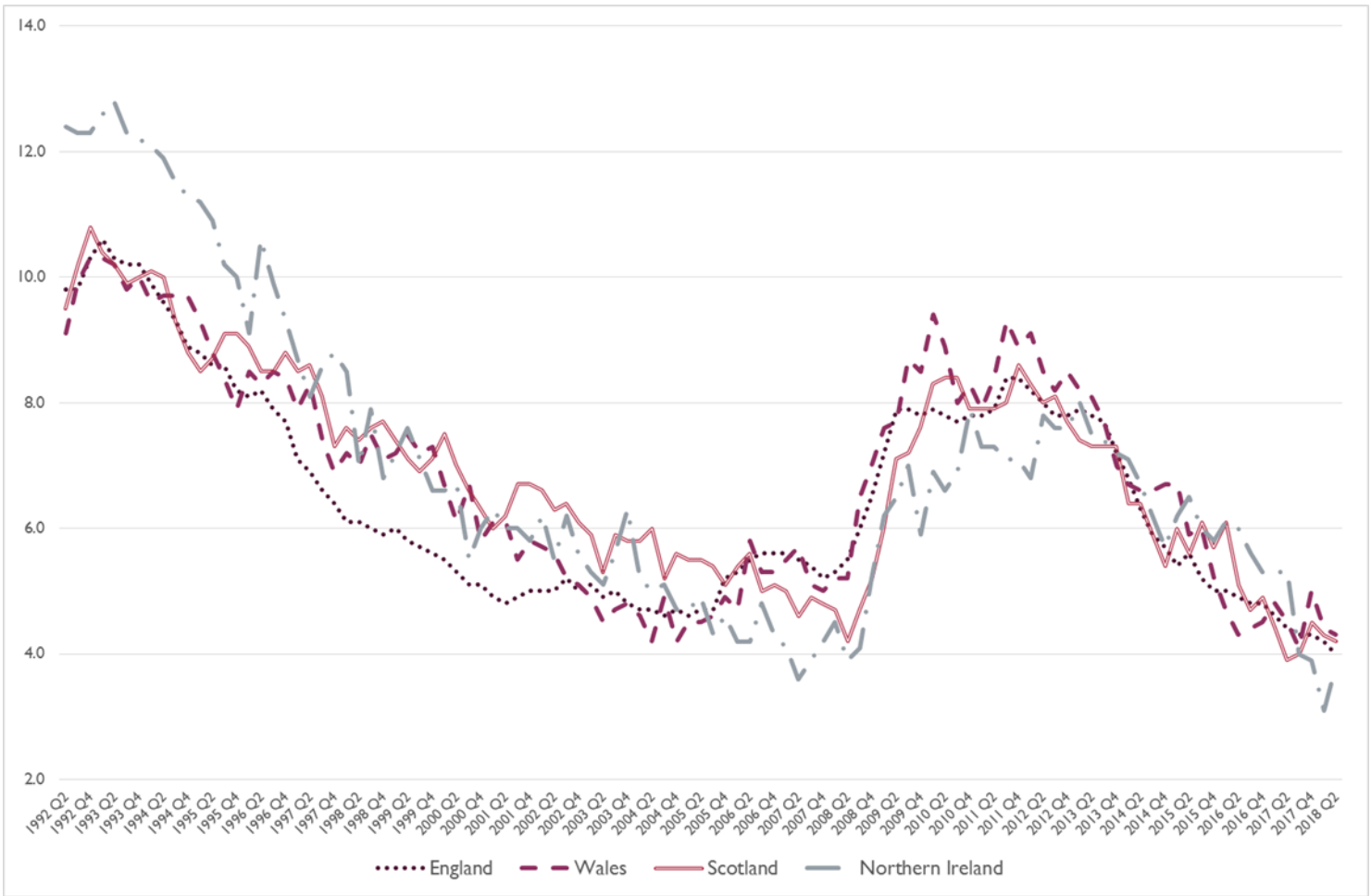
rekindling the debate over a North-South divide. By way of contrast, the two most recent recessions were more broadly based with a similar impact on all regions.

Employment

However, reductions in regional unemployment dispersions masked relatively high levels of inactivity and low employment rates in Wales holding back levels of prosperity. In the recession of the early 1990s the difference between employment rates in Wales and England was over 5 percentage points and below Scotland, but above Northern

Ireland (an area which has also suffered with relatively high levels of inactivity). The gap with England fell before the start of the 2007/08 recession, when it again increased before narrowing, with a gap of less than 3 percentage points in 2017. The reductions in economic inactivity rates, followed the introduction of policies by UK governments (both Labour and Conservative) to make work pay, encouraging moves from welfare to work, through the introduction of the minimum wages, introduction of in-work benefits and welfare reforms. However, policies to address relatively high levels of

Figure 3: Unemployment rate by UK country, %.



Source: StatsWales

inactivity have also been given a high priority by the Welsh Government, and during the most recent recession it introduced ProAct and ReAct programmes (estimates suggest around 10,000 jobs were safeguarded in Wales). The ProAct programme was unique in the UK and involved offering wage subsidies and funding for training to firms to help keep workers in employment that would have been made redundant and helping them become more competitive in the upturn. However, this recession and the subsequent UK austerity

programme did have important implications for Wales.

Public Sector Pay

The financial crisis of 2007/08 led to an increase in the government deficit and the Coalition Government (2010) through its austerity programme, put in place policies to reduce the size of the deficit through tax rises, but mainly spending cuts to reduce the size of the deficit and eliminate it by 2015. This had a number of implications for Wales. First welfare reform had significant implications for poverty reduction policies.

Wales has a higher dependence on welfare benefits than the UK generally. For example, in 2011 Wales had the highest proportion of its population receiving Employment Support Allowance (ESA) or Incapacity Benefit (IB), a significantly higher percentage of individuals claiming benefits for five years or more, and the highest level of disabled benefit claimants. Policies of reducing in work and out of work benefits have implications for poverty levels in Wales, which are higher than in England, Scotland and Northern

Ireland (Joseph Rowntree Foundation, 2018). In addition these policy changes are also taking purchasing power out of the economy with subsequent knock on effects through economic multipliers.

In addition the government introduced a two year public sector pay freeze for workers earning over £21,000 per year. It was estimated that by 2014/15 the pay freeze would save £3.3 billion a year. The austerity programme would also lead to the loss of approximately three quarters of a million public sector jobs by 2016/17. In the Autumn Statement of 2011 the Chancellor of the Exchequer announced that the pay freeze would end in 2012/13, and would be followed by pay awards of 1% for the following 2 years. The government justified this policy by citing research by the Institute of Fiscal Studies (IFS, 2011) which showed a public/private sector pay premium of 8.3%. This IFS research also outlined substantial regional variations in this pay premium being found to be largest in Wales (18.0%), followed by Yorkshire and Humberside (13.4%) and Scotland (13.4%). The South East (0.5%) and London (4.6%) were found to have the smallest differentials. Following this evidence the Chancellor asked a number of the independent Pay Review Bodies to examine how public sector wages

would be made more responsive to local labour market conditions¹.

Given the importance placed by the Treasury (2012) on the findings of the IFS research, economists at Swansea University (Blackaby, et al., 2012b) subjected the IFS research to a robustness test. This research revealed that IFS findings were sensitive to a number of measurement issues, such as which controls were included in their regression equations, how some variables were measured, and the time period chosen to undertake estimation. The IFS research estimated a fairly simple earnings equation, including age, age left full time education, and some interaction terms. This research therefore did not include many factors which economists have found to be important when predicting earnings. Research at Swansea University found that when estimating the public sector pay when including additional controls (such as job tenure, plant size, qualifications and occupational controls) the public/private pay differential fell substantially, and in the case of Wales, was halved in size from 18% to 9%. Inclusion of plant size was found to be particularly important. The IFS in later work, (Cribb, et al., 2014) argue against the inclusion of such variables, as they may be picking up monopoly effects, and so some of the

mechanism through which public sector wages are artificially inflated. Blackaby et al. (2018) recognised the possibility of monopoly elements, but when undertaking such analysis suggested it is important to make appropriate comparisons. The majority of public sector employees work in large establishments, and it would be inappropriate to compare a civil servant with someone working in a corner shop while undertaking such analysis. Rather private sector comparisons should be made with employees working in large private sector companies with a large regional spread.

The research by Blackaby et al. (2018) revealed that the regional wage differentials between public and private sector pay generally decline as plant size increases. Particularly striking in this research was the scale of the public sector premium over small firms, at 38.5%, for males in Wales. However when comparisons were made with private sector plants employing greater than 500 employees these differentials were eliminated in Wales, and were even negative in some other UK regions. A similar figure is found for females when making this later comparison. These findings emphasise the importance of including appropriate controls when undertaking comparability exercises.

An additional complication with the IFS research for policy setting is that the public/private sector wage differential is known to vary over the business cycle, being higher in recessions and falling in periods of recovery, reflecting the greater labour market flexibility in the private sector. Disney and Gosling (2008), for example, reveal the raw public/private sector wage differential increased sharply in the two recessions in the early 1980s and 1990s. Again, when using an earnings equation including the fuller set of controls discussed above, Swansea University research revealed a UK female wage differential above the male differential, however, the wage differentials were much reduced, and in the case of males, the differential was usually significantly negative². When this analysis was conducted for Wales (for the period 1994-2010), the male differential was again rarely significantly different from zero, whilst the female differential was significant at around 10% for much of the period. These results provide little evidence for an extension of regional pay, as it currently exists outside of London and the South East. These findings are also consistent with the research of Income Data Services (2012) who find when using case studies to examine private sector wage behaviour that almost all large companies in the private sector with branches

across the country operated with national pay structures and usually had only 4 or 5 different payment zones.

In light of evidence presented by the Pay Review Bodies on the size of the public sector pay premium, including the costs of introducing and administering regional/market facing pay, the Chancellor in the Autumn Statement stated that the Government would not be pursuing further market facing pay in the public sector. If this had gone ahead, in line with IFS research, salaries of some public sector workers could have been reduced, with implications for recruitment and retention of the workforce, and the quality of the provision of public sector services in Wales. As with welfare cuts, purchasing power in Wales could have been reduced with consequential multiplier effects on the economy.

This Swansea University research also questioned whether it is always appropriate for the public sector wages to mimic wage structures in the private sector. The IFS research, and the results outlined above find a larger public/private sector wage differential for females than males. Does this suggest that females are overpaid and should have their wages cut? Such a case was not made by the Government or the IFS although the logic of mimicking wage structures in the private sector could have

led to this conclusion. However, it could be that more discriminating employment practises exist in some private sector firms and some firms have not implemented the sort of equal opportunities policies which are routinely found in the public sector. Full comparability with the private sector would increase the gender pay gap, reduce pensions and increase inequality.

Gender Pay Gap

In terms of the gender pay gap in Wales, Blackaby et al. (2012a) find that the gap in Wales was smaller than in the UK and greater progress has been made in closing the gender pay gap since devolution. Part of the smaller gender pay gap was found to be due to structural factors. As already discussed, Wales has a relatively high proportion of public sector jobs, and the gender pay gap is smaller in the public sector than in the private sector. Also the finance sector is relatively small in Wales and a relatively large gender pay gap is found to exist in this sector. The UK gender pay gap has tended to fall over time, although the rate of this decline has been less marked more recently. The big fall in both Wales and the UK occurred around the time of the introduction of the 1970s Sex Discrimination Act. Between 1970 and 1981 the gender pay gap in Wales was similar to that in the rest of the country. After 1983

there was some relative improvement in the gender weekly earnings gap, after 1996 in particular Wales has generally done better than the UK in closing the gender pay gap.

Zero-hour Contracts

The increasing use of zero-hour contracts is a growing trend which has implications for earnings and employment stability. Using Labour Force Survey data the ONS (2018) reveals there were over 900,000 individuals in the UK on contracts where they are not guaranteed any hours in a given week. This represents 2.8% of all people in employment, and data reveals a substantial increase in their use since 2012. For example, between 2000 and 2008 there were well below a quarter of a million individuals in such jobs. Their research also revealed that those on zero-hour contracts are much more likely to be young, part-time, female, ethnic minorities, in full-time education and around a third wanting to work more hours. The TUC (2014) noted that such contracts may be helpful to employers in providing flexibility, but note that such contracts can be used to exploit employees. They quote research from the Chartered Institute of Personnel and Development (CIPD) that found half of such workers earned less than £15,000 per year in contrast to just 6% of all employees. They also note that the variability in earnings

for this relatively low paid group can lead to difficulties in claiming certain benefits to which they would be entitled. National Assembly for Wales (2016) research brief reveals that in December 2015, 48,000 individuals in Wales were on zero-hour contracts, the third highest of any devolved nation or English region, after the North West and South West. It also notes research commissioned by the Welsh Government into this issue in Wales finds, “advantages tended to accrue to employers and the disadvantages to employees” and in the social care sector in particular, leads to high turnover which has a detrimental impact on such provision. Clearly legislation and regulation may need to be introduced in this area to protect the wellbeing and welfare of such workers.

Education

An important determinant of an individual’s earnings is the level of qualifications obtained and the amount of job training undertaken. Investment in human capital is also important in determining an economy’s growth potential. Only through investing in human capital can an economy harness the full potential of its physical capital. It is therefore vitally important that the Welsh schooling system is fit for purpose as the most important part of formal training takes place in school. As a result, the

quality of schooling and decisions taken in this area influence life time and career opportunities for the next 40 years. Not only does education increase lifetime earnings, but unemployment rates are strongly linked with qualification levels.

Much has been written on the education system in Wales since devolution and not all of it favourable. For example, Burgess et al. (2013) when examining the relative fall in GCSE results (equivalent to 1.92 GCSE grades per student per year) when compared to England, suggested a large part was played by the abolishment of school league tables in 2002. They find significant differences across schools, “with the effect concentrated in schools in the lower 25% of the distribution of ability and poverty. Schools in the top quantile of the league tables show no effect”. Given the problems already faced by children in these areas such a result is extremely concerning. Power (2016), however, questioned the widespread criticisms of the education system in Wales and noted the large differences in funding levels between Wales and England. She also discusses research by Rees and Taylor (2014) which outlines how, given the higher levels of poverty found in Wales, one would expect lower levels of educational achievement, and when such controls are included in their analysis the attainment gap is significantly reduced. She

Table 1: Most lucrative degrees, 10 years after graduation

Degree	Women's salaries	Men's salaries
Medicine	£45,400	£55,300
Economics	£38,200	£42,000
Engineering and Technology	£23,200	£31,200
Law	£26,200	£30,100
Physical Sciences	£24,800	£29,800
Education	£24,400	£29,600
Maths and Computer Science	£22,000	£26,800
Business	£22,000	£26,500
History and Philosophy	£23,200	£26,500
Social sciences	£20,500	£26,200
Biological Sciences	£23,800	£25,200
European Languages and Literature	£26,400	£25,000
Linguistics and Classics	£23,200	£24,100
Veterinary and Agriculture	£18,900	£21,400
Creative Arts	£14,500	£17,900

Note: Base is median annual salary. Salaries were tracked over a ten year period up to 2013.

Source: IFS research, cited in Milligan (2016)

also cites research that reveals, “that ‘poor’ children in Wales and Scotland generally report greater levels of wellbeing than comparable children in England.”

Rees and Taylor (2014) and Power (2016) noted that critics of the Welsh education system often cite evidence from PISA to justify their claims, and they outline some of the problems with this data set for making such comparisons. However, the OECD (2017) noted that it was the disappointing 2009 PISA results that lead to the start of a comprehensive school improvement programme being implemented in 2011. Taylor and Rees (2014) also conclude that whilst the

relatively poor performance of the education system in Wales may have been exaggerated, “there is at least a prima facie case that attainment levels in Wales lag behind those in comparable countries to some degree”.

Obviously an education system should be about more than driving economic development. However, following devolution, Wales has had the opportunity to change its education system to improve life choices and reduce poverty, but it is not clear that this opportunity has been grasped. The emphasis following devolution appears to have been on nation building with an emphasis on bilingual education. However, an

important feature of the economy over this time has been the move away from manufacturing and towards business and miscellaneous services, and this trend is forecast to continue with implications for skill needs in the economy. Yet have we planned for this, and have appropriate curriculum changes been made? For example, does the schooling system provide sufficient business and economic skills to its pupils? The concern that the education system may not be delivering the necessary skills required by the labour market is longstanding. Back as far as 1776, Adam Smith in the *Wealth of Nations* wrote, “the greater part of what is taught in schools and universities...does not seem

to be a proper preparation for that of business". The economics of education literature clearly show that curriculum matters. For example, the IFS found, when examining the economic returns to university degrees, that these vary widely, with relatively large returns to degrees in economics (see Table 1), but where is this discipline taught in the school curriculum? Research has also shown that management skills in the UK are relatively poor in organisations, and has contributed to reduced productivity and inhibited economic performance.

Brexit and regional policy

As well as educational quality, Wales faces other challenges going forward. Brexit could have dramatic implications for the Welsh economy, although the trading arrangements after Brexit are still to be agreed, so costs and benefits are unknown. However, when assessing the likely implication, Emmerson et al. (2016) summarised the findings from a number of forecasters, under a number of scenarios before the Referendum and noted, "assuming WTO rules, the NIESR, CEP and HM Treasury found that GDP would be more than 7% less in the long run than it would otherwise have been". The relatively large agricultural and manufacturing sectors in Wales, the latter with its complex international supply

chains and just-in-time production methods could also be particularly badly affected.

Exit from the single market could also have implications for foreign direct investment (FDI) inflows into Wales. Dhingra et al. (2016) conclude, "that leaving the EU will reduce FDI inflows to the UK by around 22%". A large proportion of FDI into the UK was undertaken to avoid EU tariffs. Wales benefitted significantly from this investment, and through offering financial incentives as part of regional policy help address the problem of growing regional inequalities. Whilst having around 0.5% of the EU population between 1982 and 1994 Wales received almost 5% of FDI into the EU, resulting in 30% of employees in manufacturing being employed by foreign companies in 1992. Employment in such firms has been found to bring both individual and economy wide benefits through high wages, higher productivity, high growth rates, higher exports, being more capital and R&D intensive, when compared to domestic firms, as well as providing positive productivity spill-overs for domestic firms which are part of the supply chain.

Exit from the EU also leads to uncertainty in the area of regional aid. Since 2000 Wales has received approximately £5bn in Structural Funding from the EU, given the relatively low

level of GDP in West Wales and the Valleys. Consultation has already taken place on what will replace Structural Funding; proposals include a Shared Prosperity Fund to help reduce economic inequalities across the UK. A danger for Wales, the only area in the UK receiving the highest rates of EU support, is that a new policy might spread support more evenly across the UK. If it follows current Industrial Strategy thinking it may be based on identifying places that have, "the potential to contribute towards economic growth", so based on impact rather than current need, which could be detrimental to Wales.

The shape of regional policy in the UK, however, has already changed, with a UK initiative leading to the creation of City Deals. City Deals totalling £2.5bn have already been signed for the Cardiff and Swansea City Regions and there are plans for a similar arrangement in North Wales. Concerns have been raised around the transparency of City Deals and governance arrangements and lack of a deal for Mid Wales regions. Such deals also add to the structure of bureaucracy surrounding economic development policy in Wales, given that Wales already has devolution which does not exist in England. Such deals, initiated from London, lack a coherent all Wales approach, with certain parts of Wales,

especially rural areas, which are already economically disadvantaged, being left out.

To date regional policy in the UK has recognised the importance of attempting to reduce regional inequalities. In the 1970s, in recognition of the special needs of Wales, Scotland and Northern Ireland, the Barnett Formula was introduced. This formula resulted in the less prosperous areas in the UK receiving a higher level of government expenditure per head than England. In addition, many public sector jobs have been moved out of London to less prosperous areas such as Wales. Perhaps Wales requires its own internal type Barnett Formula, and a more active strategy of moving public sector jobs out of the capital to help more effectively

spread economic prosperity throughout all of Wales. Tax raising powers as currently formulated takes away some of the safety net of the current system. Exchanging some of the Barnett funding for tax raising powers, may only increase relative funding available for public services if Wales out performs the rest of the UK. There is a move away from a needs based approach to regional policy, to one based on potential and performance, which could result in some of Wales' poorest areas falling further behind.

Conclusions

Some of the challenges facing the Welsh labour market going forward are new and some old. Wales still does not have a dynamic high paying sector of sufficient size to transform its

economy and significantly raise relative prosperity levels. It is now overly dependent on a relatively large public sector, both in terms of employment and in supporting average wage rates. If economic prospects in Wales are to significantly improve it would require a world class education system to support domestic firms and to attract new FDI. Brexit has potentially important implications for Wales given its relatively large manufacturing and agricultural sectors, and its current relatively high level of EU support. These challenges will require a labour market to be responsive to current trends and pressures, and government support to prevent an increase in inequalities both amongst individuals and across areas.

Acknowledgements

The Quarterly Labour Force Survey is Crown Copyright and made available for use by the UK Data Archive but responsibility for the analysis and interpretation of the data lies solely with the authors. Financial support from the ESRC (grant no: RES-591-28-0001) is gratefully acknowledged.

Endnotes

1. The Treasury (2012) evidence to the Pay Review Bodies also suggested that more market-facing pay would help businesses, particularly in areas where public sector pay is relatively high. Faggio and Overman (2014) find only limited support for this crowding out hypothesis, whilst Welsh Government concluded that there was no evidence of crowding out in Wales (see Hutt, 2012).
2. Research by the ONS (2012) also found that when introducing organisation size into wage equations, that the public/private sector wage differential fell from 7.3% to 2.2%.

References

- Blackaby, D., Drinkwater, S., Jones, M. and Murphy, P. (2012a). The Gender Pay Gap in Wales in 2011, *Contemporary Wales*, Vol. 25, pp.191-203.
<https://cronfa.swan.ac.uk/Record/cronfa14698>
- Blackaby, D., Murphy, P., O'Leary, N. and Staneva, N. (2012b). *An Investigation of the IFS Public/Private Pay Differential: A Robustness Check*. Swansea University, Department of Economics, Discussion Paper No 2012-09.
<https://scholar.google.com/scholar?hl=en&q=Blackaby%2C+D.%2C+Murphy%2C+P.%2C+O%2C+E2%80%99Leary%2C+N.%2C+%26+Staneva%2C+A.+%282012%29.+An+Investigation+of+th>

[e+IFS+public%E2%80%93private+sector+pay+differential%3A+A+robustness+check+%28Economics+Discussion+Paper+No.+2012-09%29.+Swansea%3A+Swansea+University](#)

Blackaby, D., Murphy, P., O’Leary, N. and Staneva, N. (2018). Regional pay? The public/private sector pay differential. *Regional Studies*. Vol. 52, No. 4, pp.477-489. <https://doi.org/10.1080/00343404.2017.1331295>

Burgess, S. Wilson, D. and Worth, J. (2013). A natural experiment in school improvement: The Impact of school performance information on pupil progress. *Journal of Public Economics*. Vol 106, pp. 75-67. <https://doi.org/10.1016/j.jpubeco.2013.06.005>

Cribb, J., Emmerson, C., Sibieta, L. (2014). *Public Sector Pay in the UK*. IFS Report R97, London. <https://www.ifs.org.uk/uploads/publications/comms/r97.pdf>

Dhingra, S., Ottaviano, G. Sampson T. and Van Reenen, J. (2016). *The Impact of Brexit on foreign investment in the UK*. Centre for Economic Performance, Brexit analysis, No. 3, London School of Economics. <http://cep.lse.ac.uk/pubs/download/brexit03.pdf>

Disney, R. and A. Gosling (2008). *Changing Public Sector Wage Differentials in the UK*. IFS Working Paper (WP08/02), Institute for Fiscal Studies (IFS). <https://www.ifs.org.uk/wps/wp0802.pdf>

Emmerson, C., Johnson, P., Mitchell, I. and Phillips, D. (2016). *Brexit and the UK’s Public Finances*. Institute of Fiscal Studies, Report 116, London. <https://www.ifs.org.uk/publications/8296>

Hutt, J. (2012). *Written statement – Regional pay and crowding out*. Welsh Government, 5 July. <https://gov.wales/about/cabinet/cabinetstatements/previous-administration/2012/regionalpaycrowdingout/?lang=en>

Joseph Rowntree Foundation (2018). *Poverty in Wales 2018*. Briefing, March. <https://www.jrf.org.uk/report/poverty-wales-2018>

Milligan, B (2016). *To earn more, study medicine or economics*, says IFS. BBC, 16th April. <https://www.bbc.co.uk/news/business-36028368>

OECD (2017). *The Welsh education reform journey: a rapid policy assessment*. OECD. <http://www.oecd.org/education/The-Welsh-Education-Reform-Journey.pdf>

ONS (2018). *Contracts that do not guarantee a minimum number of hours*. April.
<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/articles/contractsthatdonotguaranteeaminimumnumberofhours/april2018>

Power, S. (2016). The politics of education and the misrecognition of Wales. *Oxford Review of Education*. Vol 42, No. 2 pp 285-298. <https://doi.org/10.1080/03054985.2016.1184871>

Rees, G. and Taylor, C. (2014). *Is there a 'crisis' in Welsh education? A review of the evidence*, London. Honourable Society of Cymmrodorion.
https://wiserd.ac.uk/sites/default/files/documents/Paper_submitted_to_Transactions_of_the_Honourable_Society_of_Cymmrodorio....pdf

Treasury (2012). *Government evidence to pay review bodies: Economics of local pay*. HM Government.
<https://webarchive.nationalarchives.gov.uk/20121105172400/http://www.ome.uk.com/Article/Detail.aspx?ArticleUId=a782b32d-b08b-423b-8061-361211188711>

TUC (2014). *Ending the abuse of zero-hours contracts: TUC response to BIS consultation*.
<https://www.tuc.org.uk/sites/default/files/TUC%20final%20response%20to%20BIS%20consultation%20on%20zero-hours%20contracts.pdf>