

Framework for Regional Investment in Wales

Annex B: Socio-Economic Analysis of Wales 2020

Welsh European Funding Office (WEFO)

Table of Contents

ANNEX B: SOCIO-ECONOMIC ANALYSIS OF WALES 2020

1	Introduction and Purpose	3
2	Geography and Demography	4
	Introduction	4
	Geography	4
	Demography	5
3	Economic Context	9
	Introduction	9
	Output, Productivity, and Economic Welfare	9
	Labour Market Overview	16
	Industry/Business Structure	25
4	Priority Area: Productive and Competitive Businesses	28
	Key Points	28
	Why Focus on Productivity?	30
	Key Productivity Factors	33
	Other Productivity Factors	43
	Summary	51
5	Priority Area: Reducing the Factors that Lead to Income Inequality	52
	Key Points	52
	Why Focus on Reducing Income Inequality?	53
	Measuring Income Inequality	54
	Income, Earnings, and Skills	60
	Cost of Living	68
	Summary	76
6	Priority Area: Supporting the Transition to a Zero Carbon Economy	77
	Key Points	77
	Why Focus on Transitioning to a Zero Carbon Economy	78
	Emission Areas	81
	Summary	95
7	Priority Area: Healthier, Fairer, and More Sustainable Communities	97
	Key Points	97
	Why Focus on Creating Healthier, Fairer and More Sustainable Communities?	98
	Health Factors	99
	Adult Social Care	104
	Welsh Language	107
	Development Activity Being Led by Communities	109
	Access to services	110
	Summary	113
	Appendix	114

1 Introduction and Purpose

- 1.1 The purpose of this socio-economic analysis is to provide a high level overview of the economic landscape of Wales to help inform the evidence based policy-making for regional investment in Wales outside of the European Union.
- 1.2 Our goal is to inform interested parties who wish to build their understanding of the evidence base and logic for our proposals so that they can effectively engage with and contribute to the consultation process.
- 1.3 The Welsh Government has proposed four priority areas for regional investment outside of the EU. These priority areas are: **Productive and Competitive Businesses**; **Reducing the Factors that Lead to Income Inequality**; **Supporting the Transition to a Zero Carbon Economy**; and **Healthier, Fairer, and More Sustainable Communities**.
- 1.4 This socio-economic analysis is structured as follows:
- **Geography and Demography** – a high level description of the geography and demography of Wales over time.
 - **Economic Context** – an overview of the figures and trends of relevant socio-economic indicators to the priority areas set in the consultation.
 - **Priority Area: Productive and Competitive Businesses** – areas covered in this section of the socio-economic analysis include skills, business demography, agglomeration, trade, and research, development and innovation.
 - **Priority Area: Reducing the Factors that Lead to Income Inequality** – areas covered in this section include measurements of income inequality, earnings, tax and benefits, low and high paid work, skills, and selected living costs.
 - **Priority Area: Supporting the Transition to a Zero Carbon Economy** – areas covered in this section include emissions profiles of sectors such as industry, power, transport, agriculture, and buildings.
 - **Priority Area: Healthier, Fairer, and More Sustainable Communities** – areas covered in this section include factors contributing to health, social care, the Welsh language, community-led development activity, and access to services.

2 Geography and Demography

Introduction

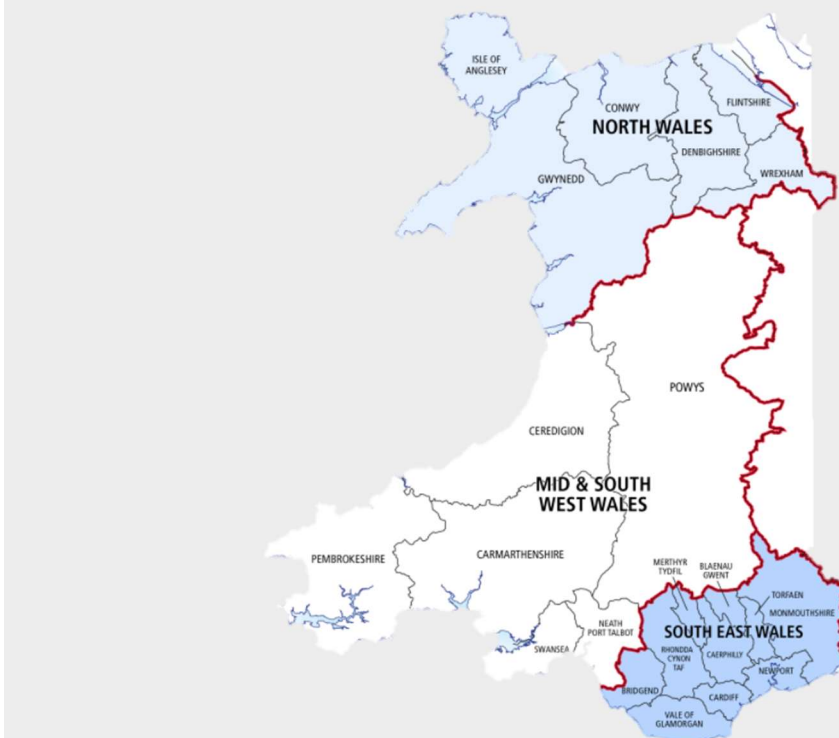
- 2.1 This section provides a brief overview of a selection of non-economic characteristics in Wales that the Welsh Government will need to consider when devising programmes for future regional investment after Brexit. Many of these characteristics have been referenced in later sections of the socio-economic analysis.

Geography

- 2.2 The total land area of Wales covers 20,736 km², with the country sharing only one land border, with England, which is 160 miles in length and with the coastline covering approximately 715 miles. At an administrative level the country is split into 22 local authorities, which can be grouped into three key regions: North Wales, Mid & South-West Wales, and South-East Wales (see **Figure 2.1**). Data for Mid & South-West Wales are sometimes available separately, which have been used when available.

Figure 2.1

Map of the three proposed Welsh economic regions



Source: Welsh Government

Demography

Population Size/Density

- 2.3 As of mid-2018, there were an estimated 3,138,631 people living in Wales, which represented a 3.7% increase since mid-2008 (see **Table 2.1**). This was a considerably smaller increase than was seen in the United Kingdom and England over the same period (7.5% and 8% respectively). Mid Wales was the only region of Wales believed to have actually seen its population decline (by 1.2% compared to 2008) – although this decline has taken place since 2013.

Table 2.1

Population size/change in Wales

Region / Area	POPULATION SIZE			thousands and percent
	2008	2013	2018	Population change 2008-2018
UNITED KINGDOM	61,824	64,106	66,436	7.5%
ENGLAND	51,816	53,866	55,977	8.0%
WALES	3,026	3,082	3,139	3.7%
North Wales	683	691	698	2.3%
Mid Wales	208	209	205	-1.2%
South-West Wales	677	688	702	3.7%
South-East Wales	1,458	1,495	1,533	5.1%

Note: Figures have been rounded but population change has been calculated using figures that have not been rounded.
Source: StatsWales

- 2.4 **Table 2.2** breaks down the factors related to population density in each region. South-East Wales (which includes Cardiff, Newport, and the Welsh Valleys) is estimated to be home to 48.8% of the Welsh population but represents only 13.5% of the total land area of the country, making it by far the most densely populated region. Mid Wales on the other hand is the largest region within Wales, by land area, but is home to only 6.5% of the population making it significantly more sparsely populated than all other regions.

Table 2.2
Population density (2018)

Region/Area	Population (thousands)	Welsh population within area	Land area (km ²)	Share of total Welsh land area	Persons per km ²
WALES	3,139	100.0%	20,736	100.0%	151.36
North Wales	698	22.3%	6,150	29.7%	113.55
Mid Wales	205	6.5%	6,966	33.6%	29.49
South-West Wales	702	22.4%	4,810	23.2%	145.95
South-East Wales	1,533	48.8%	2,810	13.5%	545.54

Source: StatsWales

Gender Composition

- 2.5 In line with overall population growth, the number of both men and women has increased in Wales (**Figure 2.2**). The relative share of each group has remained roughly equal with women being a large group than men by 2 percentage points (51% to 49%).

Figure 2.2
Mid-year population estimates for Wales, by gender (million)



Age Composition

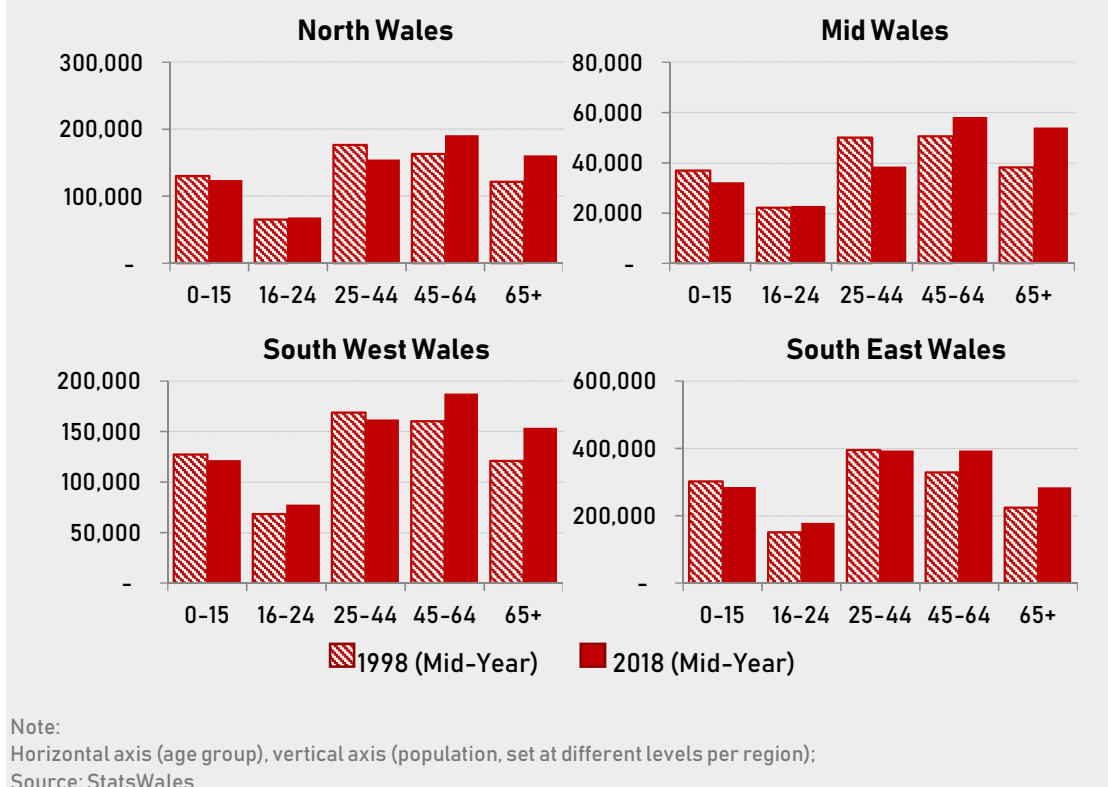
- 2.6 In line with wider UK trends, as well as rising life expectancy Wales has witnessed a shift in the age composition of its population, with all four regions witnessing a fall in the size of the population under the age of 44, and an increase in the numbers of those aged 45 and over since 1998 (see **Figure 2.3**). This was most pronounced in Mid-Wales where the share of the population aged 45 and over increased by 9.8 percentage points.¹
- 2.7 The shift observed has important implications for the future in Wales, as the increase in the old-age support ratio witnessed will increase pressure on the provision of public

¹ Meaning there was an equivalent fall in the share of the population aged under 45 in this region.

services, such as social care, all things remaining equal.² This will be explored in more detail in the priority area **Healthier, Fairer, and More Sustainable Communities**.

Figure 2.3

Mid-year population estimates, by age (1998 & 2018)



Ethnic Composition

2.8 As of the last census in 2011, Wales was the second most ethnically diverse nation in the United Kingdom with 4.5% of the population not describing their ethnicity as white. It was however much less ethnically diverse than England where the figure was 14.7% - the breakdown for all nations, by ethnic group, can be seen in **Table 2.3**. Of the 4.5% of the population in Wales that did not define themselves as white, 2.3% were Asian/Asian British, making it the largest non-white ethnic group in the country.

² The old-age support ratio is the number of people of working age relative to those of retirement age. For more info see: OECD (2011). *Pensions at a Glance 2011: Retirement-income Systems in OECD and G20 Countries*. Organisation for Economic Co-operation and Development.

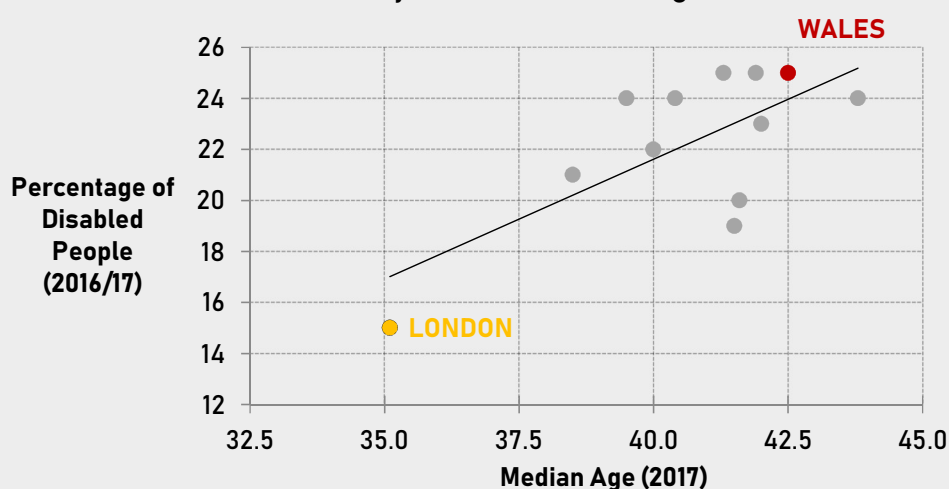
Table 2.3**Ethnic diversity in the UK and constituent countries (2011 Census)**

Region / Area	White	Gypsy / Traveller / Irish Traveller	Mixed / Multiple ethnic group	Asian / Asian British	Black / African / Caribbean / Black British	Other Ethnic Group
United Kingdom	87.1%	0.1%	2.0%	6.9%	3.0%	0.9%
WALES	95.5%	0.1%	1.0%	2.3%	0.6%	0.5%
England	85.3%	0.1%	2.3%	7.8%	3.5%	1.0%
Scotland	95.9%	0.1%	0.4%	2.7%	0.7%	0.3%
Northern Ireland	98.2%	0.1%	0.3%	1.1%	0.2%	0.1%

Source: Nomis (ONS)

Disability

- 2.9 As of 2016/17, Wales was one of three regions in the United Kingdom with the highest proportion of disabled people as a percentage of the total population – along with the North East of England and the East Midlands – at 25%. Given that the average (median) age of Wales is amongst the highest of the NUTS1 statistical regions³ of the UK, this is to be partially expected as disability rates tend to increase with age (**Figure 2.4** illustrates this correlation in UK regions/nations between median age and the disability rate).

Figure 2.4**The correlation between Disability Rate and Median Age**

Source: Family Resources Survey 2017 (disabled population); ONS (median age)

³ NUTS stands for *Nomenclature of Territorial Units for Statistics*. The UK is split into 12 NUTS1 regions: England is split into nine NUTS1 regions and there is one region each of the three home nations (Wales, Scotland, and Northern Ireland).

3 Economic Context

Introduction

- 3.1 This section highlights data that should be both economically relevant to regional investment spending and which also have a cross-cutting relevance to many of the four priority areas set by the Welsh Government. As a result many of the areas discussed in this section will be explored in more detail in later chapters focussing on these priority areas. Many of the statistics in this chapter have limited explanatory power in and of themselves but taken together can provide a better overall picture of the economy.
- 3.2 Of the data included, much of it focusses on the 'supply-side' of the economy such as measures of productivity in Wales and characteristics of the Welsh workforce and wider population. These are areas of the economy the Welsh Government already seeks to influence, through programmes and policies, and there are signs that progress has been made in some areas – especially with regards to the skills profile of the workforce and labour market participation. However in areas, such as productivity, growth has failed to meet the rate expected prior to the financial crisis in 2008 (as in the rest of the UK and much of the developed world). Addressing this will be essential to the future prosperity of our nation and well-being of the Welsh population more widely.

Output, Productivity, and Economic Welfare

GDP: Prior Eligibility for European Regional Funding

- 3.3 The most commonly referenced statistic of economic performance and output is Gross Domestic Product (GDP), which measures the value of goods and services produced and provides an estimate as to the size of the economy. In 2017/18, the size of the Welsh economy in GDP was estimated at £70.7 billion, or 3.4% of overall UK GDP.⁴
- 3.4 The allocation of European Structural and Investment (ESI) funding has traditionally been determined using GDP per head expressed in purchasing power standards (PPS)⁵ to see how regions compare to the average of all EU member states. Regions were then placed into three categories according to their relationship to this statistic. More Developed Regions had a GDP per head that was above 90% than the EU average, Transition Regions were between 75% and 90%, and Less Developed

⁴ Ifan, G., Siôn, C., & Gareth Poole, E. (2019). *Government Expenditure and Revenue Wales 2019*. Wales Fiscal Analysis. Cardiff University.

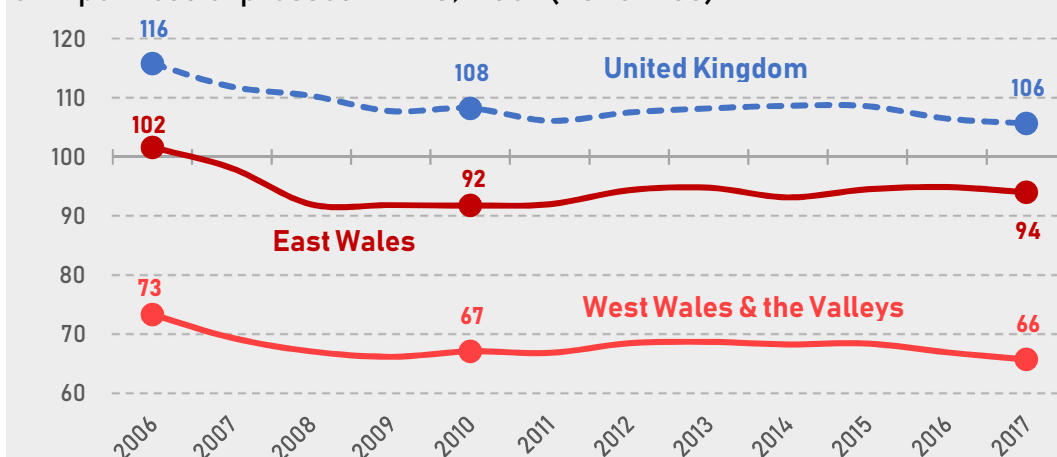
⁵ PPS is used as it eliminates the differing price levels between countries which allows for more meaningful volume comparisons of GDP between states. This allows for GDP values and comparisons between countries to be expressed in a common currency unit.

Regions had a GDP per head below 75%. This meant in crude terms that the lower this statistic was for a particular region relative to the EU average, the more funding it would be entitled to relative to other regions.⁶ The regions used by the EU were NUTS2 statistical regions, of which the whole of Wales is comprised of two: *East Wales* and *West Wales and the Valleys*.⁷

- 3.5 While the United Kingdom as a whole, in recent years, has consistently had a higher GDP per head (expressed in PPS) than that of the EU28 average, **Figure 3.1** shows how this has not been the case for the two Welsh sub-regions – especially for West Wales and the Valleys (in 2017 this region had a GDP per head that was 66% of the EU28 average). As such it is reasonable to assume that West Wales and the Valleys would have continued to have been classed as a Less Developed Region, while East Wales would likely fall within the More Developed Region (assuming that ESI regional classification remained the same as 2014-2020).

Figure 3.1

GDP per head expressed in PPS, Index (EU28 = 100)



Source: EuroStat (annual data)

GVA per Head: Measuring Regional Productivity

- 3.6 When looking at a regions productive output Gross Value Added (GVA) is typically used (it also has historically been used as a proxy for regional output trends due to how closely it tracks with GDP). GVA measures the net value of outputs once the value of intermediary inputs have been subtracted.⁸ Note that this cannot be used as an

⁶ For a more detailed understanding of ESI funding as it relates to UK regions see: [House of Commons \(2018\) UK funding from the EU; Briefing paper No 7847](#)

⁷ East Wales comprises 7 local authorities (Cardiff, Flintshire, Monmouthshire, Newport, Powys, Wrexham, and Vale of Glamorgan); West Wales comprises 15 local authorities (Blaenau Gwent, Bridgend, Caerphilly, Carmarthenshire, Ceredigion, Conwy, Denbighshire, Gwynedd, Merthyr Tydfil, Neath Port Talbot, Pembrokeshire, Rhondda Cynon Taff, Swansea, and Torfaen)

⁸ "GVA is the value of an industry's outputs less the value of intermediate inputs used in the production process... GVA at basic prices plus taxes on products less subsidies on products equals GDP at market prices". For more information see: <https://www.ons.gov.uk/economy/grossdomesticproductgdp/methodologies/aguidetointerpretingmonthlygrossdomesticproduct>

indicator as to the economic welfare of the inhabitants in a particular region – for example, income generated within a region is not necessarily retained at the regional level – and should primarily be used to measure the productive performance of a region as a whole.

Table 3.1
GVA¹ per head

Region/Area	2007 (£)	2017 ² (£)	10 year growth
United Kingdom*	22,184	27,298	23%
WALES	16,136	19,899	23%
England	22,818	28,096	23%
North East	16,910	20,129	19%
North West	19,519	23,918	23%
Yorkshire and The Humber	18,889	21,426	13%
East Midlands	18,040	21,845	21%
West Midlands	18,098	22,713	26%
East of England	20,657	24,772	20%
London	38,873	48,857	26%
South East	24,072	29,415	22%
South West	19,583	23,499	20%
Scotland	20,815	25,485	22%
Northern Ireland	18,038	21,172	17%

Notes:

1: based on current basic prices (not adjusted for inflation) calculated using a balanced approach

2: data for 2017 are provisional

Source: ONS

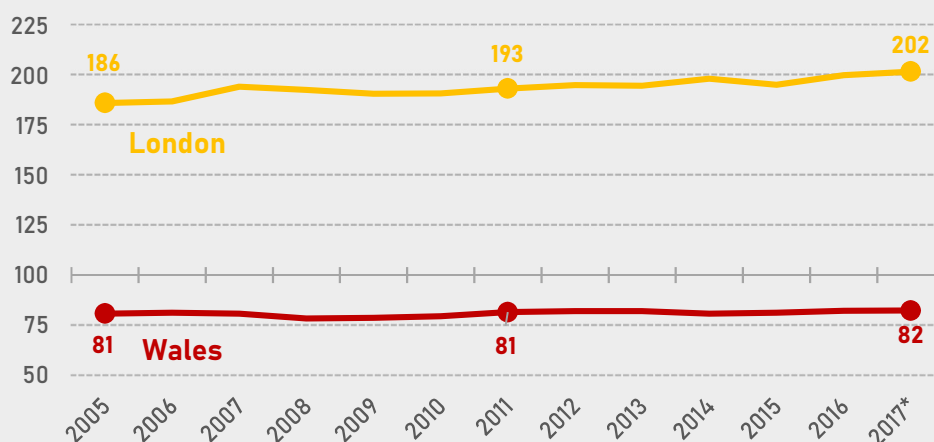
3.7 **Table 3.1** shows GVA per head across the UK's four nations (with England divided into 9 further regions).⁹ Wales's GVA per head is estimated to have grown at the same rate over the 10-year-period leading up to 2017 as the UK average. Wales continued to have the lowest value for this statistic out of all the UK's major regions. Given that London significantly skews the average of many key economic indicators in the UK, **Figure 3.2** and **Figure 3.3** illustrate how Wales has been doing relative to all other NUTS1 regions except London and reaffirms the view that while Wales is not falling further behind it is still significantly below the UK average.¹⁰

⁹ Together these form the UK's NUTS1 statistical regions.

¹⁰ **Figure 3.2** shows how Wales has not moved further away from the average of all UK regions (excluding London and Wales; **Figure 3.3** shows how GVA per head growth has followed the same trends as all UK regions, with London performing slightly better.

Figure 3.2

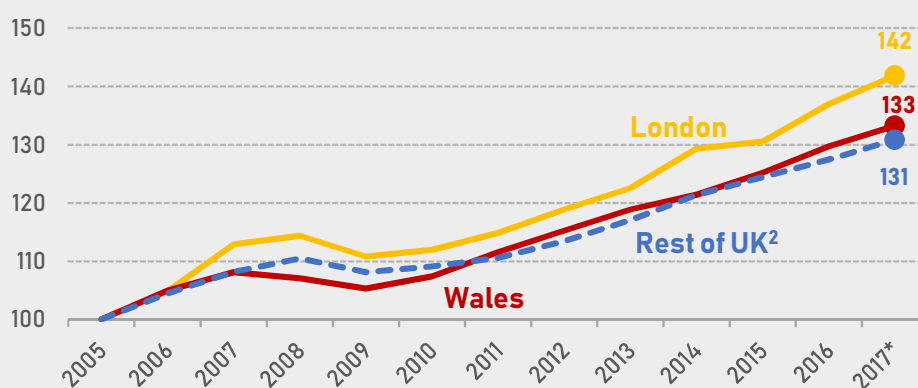
GVA¹ per head, Index (UK, excluding Wales and London² = 100)



Source: Author's calculations using ONS annual data

Figure 3.3

GVA¹ per head, Index (2005 = 100)



Notes: 1- based on current basic prices (not adjusted for inflation) calculated using a balanced approach

2: UK average once London and Wales have been removed; * data for 2017 are provisional

Source: Author's calculations using ONS annual data

Explaining the GVA per Head Gap

- 3.8** As well as the strong performance of London, there are a range of other factors that limit how informative the GVA per head statistic can be with regards to regional economic performance. GVA at the NUTS 1 level is measured at the work place but it is allocated across resident or domiciled populations to estimate GVA per head. It follows that regions with relatively high dependent populations, be that because of large numbers of children or elderly people, may appear to be doing less well than regions with the opposite characteristics. Wales has a relatively high dependent population which effectively subtracts from GVA per head compared with other parts of the UK with lower dependent populations. Additionally, because GVA is measured as the work place, it follows that GVA created by commuters is credited to the region where those commuters work rather than their country or region of residence. Wales has net out-commuting of approximately 50,000 workers per day. The GVA these net out-commuters, who are Welsh residents, create is not attributed to Wales. Reported aggregate GVA and by implication reported GVA per head is penalised accordingly.

But by far the largest single explanation of the gap in GVA per head between Wales and the UK is lower productivity. The lower employment rate in Wales compared with the UK also explains a portion of the gap in GVA per head.

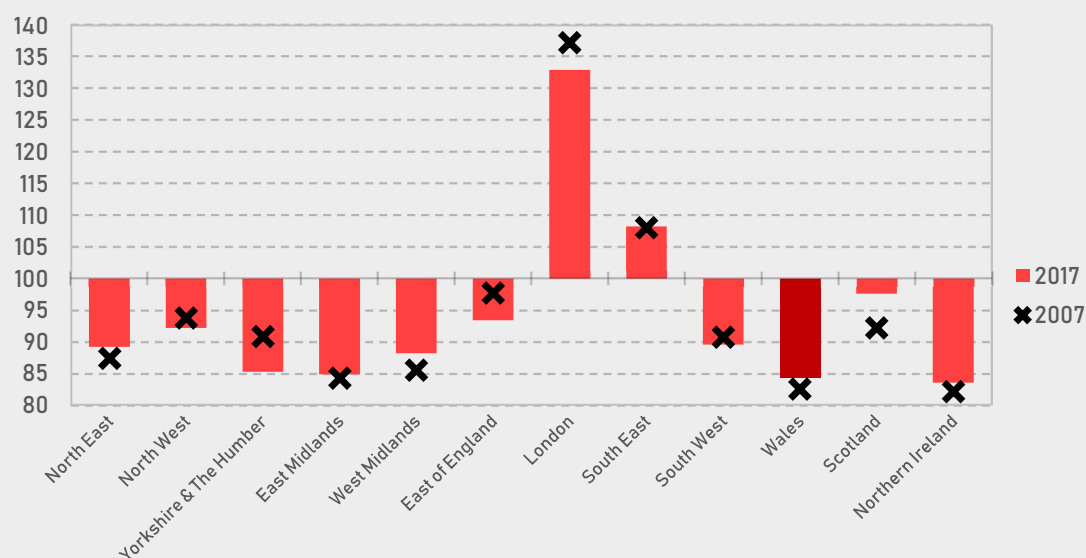
- 3.9 While GVA per head can be a useful statistic, especially at a national level, it has clear limitations in providing insights with regards to labour productivity. The following subsection attempts to analyse a statistic that can provide insights in this area.

GVA per Hour Worked: Measuring Labour Productivity

- 3.10 In order to measure Labour productivity of people who work in Wales, GVA per hour worked is a commonly used statistic. In 2017 GVA per hour worked in Wales was £28.30 which was roughly 16% below the UK average (£33.70) – although most regions relative performance is negatively skewed due to the performance of London and the South East. Notably, as **Figure 3.4** shows, this statistic had improved relative to that recorded 10 years prior, with Wales being the region with the fourth biggest improvement of its relative performance (1.7 percentage points closer to the UK average).

Figure 3.4

GVA¹ per hour worked by region, Index (UK = 100)



Notes: 1 – based on current basic prices (not adjusted for inflation) calculated using a balanced approach
Source: ONS

- 3.11 Continuing with this theme, research by the ONS shows the growth of overall Real GVA in the UK's major regions between 2010 and 2017 (see **Table 3.2**). It further splits the factors that have contributed to this growth by two factors: *productivity hours* and *labour productivity*. An increase in the number of hours recorded (which could be caused by the population moving from part-time work to full-time work, or an increase in the employment rate) would increase output and thus productivity. An increase in the amount of output recorded per hour work is what is more commonly referred to as

labour productivity.¹¹ Over this period, labour productivity accounted for 5% of the 13% increase in Wales' Real GVA, making labour productivity a stronger contributor of overall GVA growth when compared to other UK regions. The remaining 8% of growth was caused by an increase in productivity hours (likely as a result of a rise in the employment rate – see **Figure 3.6**)

- 3.12 Again, some care should be given to appreciating what GVA per hour worked can and cannot tell us about the labour productivity of the Welsh workforce. For example, this statistic does not tell us how productivity is distributed within the workforce or how much income could be deemed to be rental income and not the direct result of labour input. However, as labour productivity is strongly correlated with real wages in the UK,¹² improving this statistic will be explored in more detail in the priority area **Productive and Competitive Businesses**.

Table 3.2
Growth in Real GVA, productivity hours, and labour productivity (2010–2017)

Region/Area	Total Real GVA Growth	GVA Growth Factors	
		Productivity Hours	Labour Productivity
United Kingdom	15%	12%	2%
WALES	13%	8%	5%
England			
North East	7%	2%	4%
North West	11%	9%	2%
Yorkshire & The Humber	9%	8%	1%
East Midlands	13%	11%	2%
West Midlands	18%	13%	5%
East of England	16%	16%	0%
London	27%	24%	2%
South East	13%	13%	0%
South West	10%	9%	1%
Scotland	12%	8%	3%
Northern Ireland	13%	7%	5%

Source: ONS

GDHI: Measuring Economic Welfare

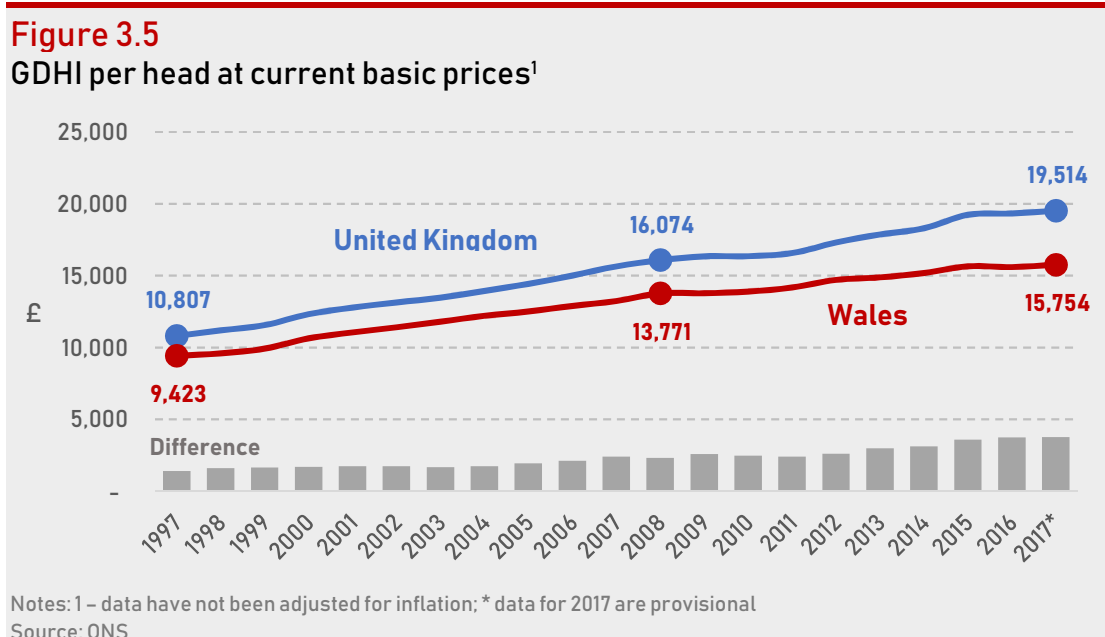
- 3.13 In order to better measure the economic (or 'material') welfare of households in a region, a better statistic to refer to is Gross Disposable Household Income (GDHI). This statistic roughly estimates the amount of remaining income that individuals have

¹¹ Some measures of labour productivity also include productivity per worker employed.

¹² Castle, J., Hendry, D., & Martinez, A. (January, 2020). *The paradox of stagnant real wages yet rising 'living standards' in the UK*. Vox, CEPR Policy Portal.

available for spending and/or saving after tax deductions, benefit transfers, and other factors have been taken into account.¹³

- 3.14** **Figure 3.5** shows estimated GDHI per head at current basic prices¹⁴ since 1997 and brings into focus the widening gap that has been emerging between Wales and the UK average (both in absolute and relative terms). In 1997, GDHI per head was £10,807 in the UK and £9,423 in Wales (87% of the UK figure), a gap of £1,384 per head. By 2017 the UK figure was £19,514 and in Wales it was £15,754 (81% of UK figure), which represented a gap of £3,760. Between 1999 and 2017, GDHI growth in Wales was amongst the second lowest recorded of all the UK nations and major regions.¹⁵



- 3.15** As with other headline figures, GDHI per head does not provide insights into how it is distributed, so cannot, for example, demonstrate what the GDHI is for the typical household unit.¹⁶ However, it is likely that lower GDHI growth over time – like that seen between 1999 and 2017 – will result in the average household having a lower level of material welfare than equivalent households in the rest of the UK.

¹³ Providing more detail, GDHI accounts for income sources such as that earned via wages, property income (including that accrued from financial assets and other non-produced assets), self-employment income, and state benefits; it also accounts for deductions such as taxes on income and wealth, interest payments on loans and property, and pension contributions or other social security schemes.

¹⁴ This means the data has not been adjusted for inflation. Regional price levels are known to vary by region but this data is not currently calculated by the ONS, therefore real values for GDHI are not possible to estimate.

¹⁵ [Welsh Government \(2019\). *Regional gross disposable household income: 1997 to 2017*. Statistics and Research.](#)

¹⁶ The household sector covered in the GDHI statistic includes individuals who live in residential accommodation, as well as those who live in retirement homes and prisons, for example.

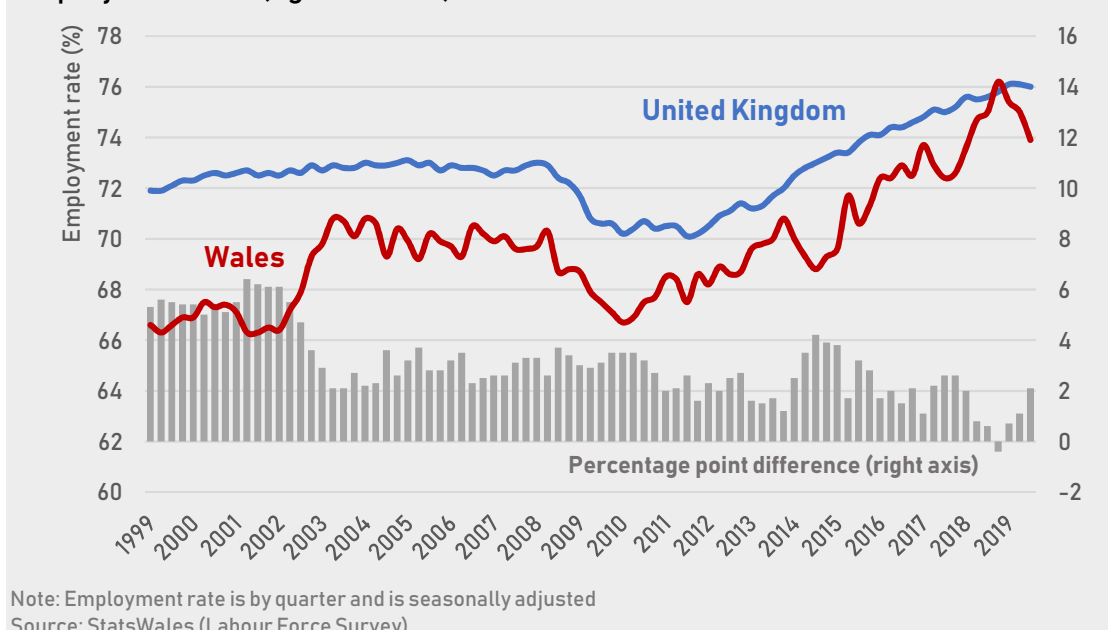
Labour Market Overview

Employment Activity & Unemployment

- 3.16** One of the most positive trends in the Welsh economy since devolution has been the increase in the employment rate, from being roughly 5.5% lower than the UK average in 1999 it was briefly expected to have overtaken the UK average in the last quarter of 2018 (**Figure 3.6** shows this in more detail). There was a particular period of convergence between 2002 (Q1) and 2003 (Q3) where this gap was estimated to have more than halved – largely accelerated by a relatively high number of women finding employment.

Figure 3.6

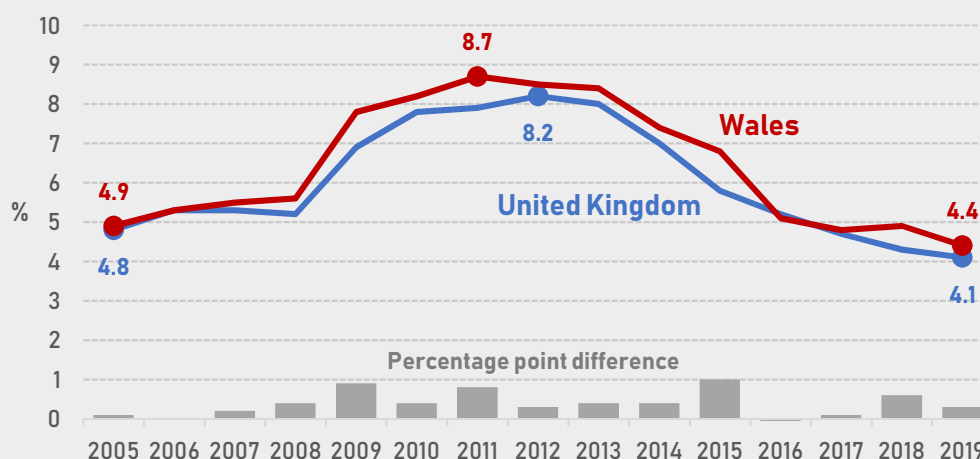
Employment rate (ages 16 to 64)



- 3.17** The unemployment rate in Wales has roughly followed the same trend seen in the UK (see **Figure 3.7**). Despite the large increases in unemployment seen in the years after the financial crisis (where unemployment in the UK peaked at 8.2% in 2012), the unemployment rate in Wales was in fact lower in 2019 than it was prior to the crisis period (4.1% as opposed to 4.4%).

Figure 3.7

ILO Unemployment rate (ages 16 to 64)



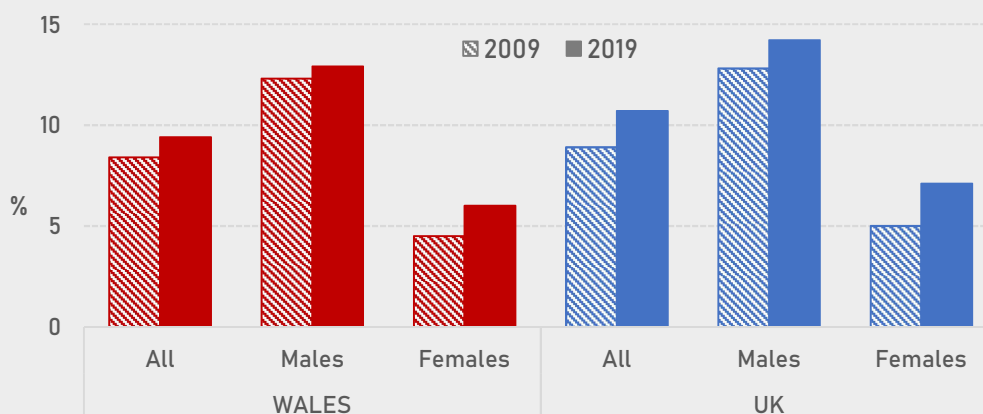
Note: The ILO measure, which is a count of those who are out of work and want a job, have actively sought work in the last 4 weeks and are available to start work in the next two weeks; plus those who are out of work, have found a job and are waiting to start in the next 2 weeks, is a more encompassing measure of unemployment, which is used around the world. Data are for year ending in June for year quoted.

Source: StatsWales

- 3.18** In the last 10 years there has been an increase in the share of the population that is self-employed in Wales and in the UK as a whole (**Figure 3.8**). In 2009, the overall share of the Welsh population (aged 16-64) that were self-employed was 8.4%, by 2019 this had increased to 9.4%. In Wales, as in the UK, there were larger percentage point increases in the share of women that were self-employed than men – although men are still substantially more likely to be self-employed than women.

Figure 3.8

Percentage of population aged 16-64 who are self-employed



Note: Date are up to June of year quoted from July of year prior

Source: Annual Population Survey

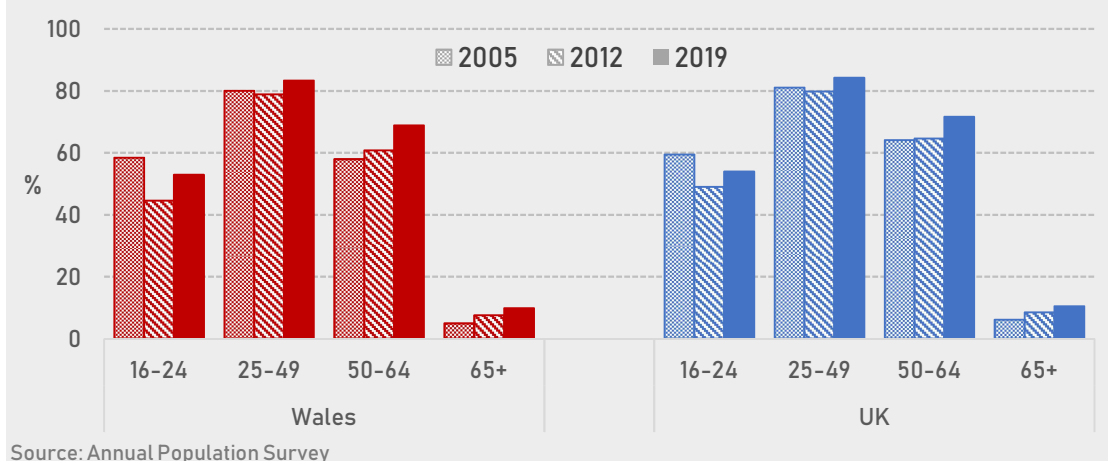
Employment by Demographic Characteristics

- 3.19** In line with the improvement in the baseline figure, employment rates have increased for all but one age group (16-24 year olds) since 2005 – see **Figure 3.9**. While the decrease in the employment rate for 16-24 is attributed in part to the higher number of

people within this age group electing to go on to higher education, it is worth noting that there has been an upturn since 2012 (which was closer to the aftermath of the financial crisis). The increase in the employment rate for this group since 2012 – along with every other age group – suggests that a lack of employment opportunities was another likely factor.

Figure 3.9

Employment rate by age

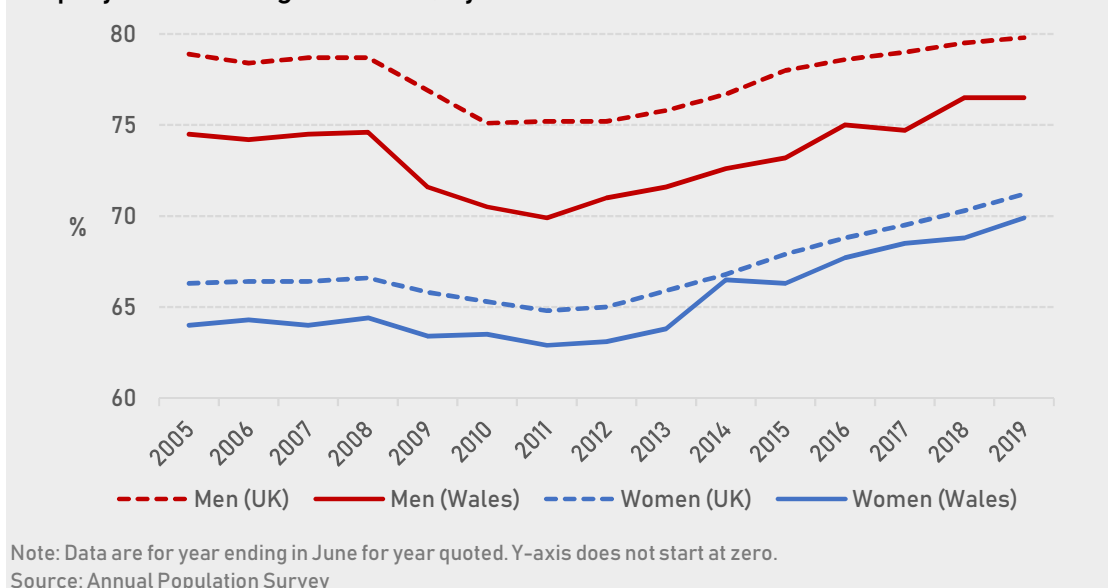


- 3.20** Placing these employment rates within a European context, as of the last quarter of 2019, the UK and Wales are estimated to compare favourably to, and are above, the EU28 average and G7 average for every age group under 65.¹⁷
- 3.21** Looking at the employment rate split by sex provides a number of insights (see **Figure 3.10**). Men are substantially more likely to be in employment than women. Both men and women in Wales are less likely to be in employment than the figure in the UK as a whole, although the percentage point gap difference for women is less pronounced (1 point as opposed to the 3 point gap seen for men). Employment levels for women were far less affected by the employment downturn that came as a result of the great recession period in 2008/9¹⁸ (unlike for men), but levels for both men and women have improved since the end of the recession period.

¹⁷ OECD (2020), Employment rate by age group (indicator). doi: 10.1787/084f32c7-en (Accessed on 20 January 2020)

¹⁸ The great recession (a result of the financial crisis) refers to five continuous quarters of GDP decline – Q2 2008 to Q2 2009.

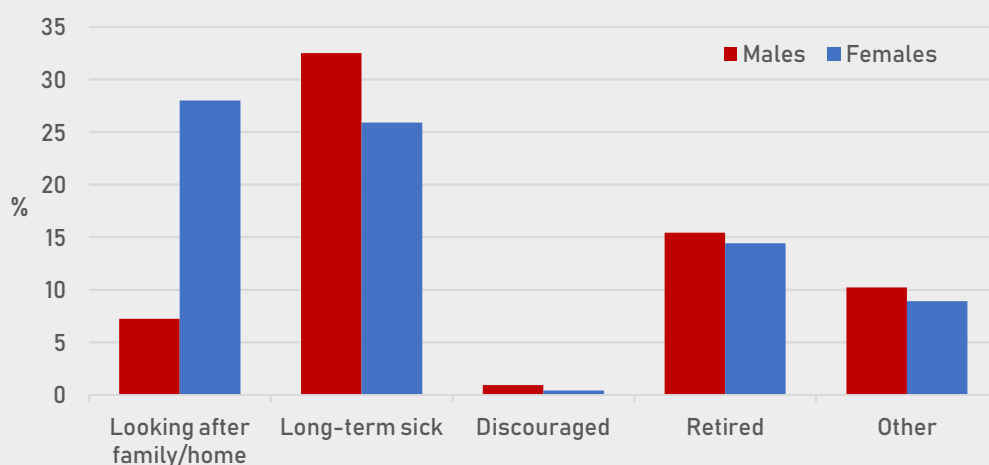
Figure 3.10
Employment rate aged 16 to 64, by sex



3.22 Reasons for economic inactivity differ by sex, with women substantially more likely than men to be economically inactive as a result of looking after family members and/or the home (**Figure 3.11**). This substantial difference provides one key explanation for the difference in employment rates between sexes seen in **Figure 3.10**. The reason for men to be economically inactive is more likely than women to be as a result of long term sickness. However, it is important to note that this is as a share; women are far more likely than men to be economically inactive, and as a result there is a higher *absolute* number of women inactive as a result of long-term sickness. Compared to the UK these figures differ with women in Wales more likely to be retired or long-term sick but less likely to be looking after family/home. The long-term sick rate is also higher for men in Wales (32.5%) than the figure for the UK as a whole (28.9%).

Figure 3.11

Reasons given for economic inactivity of those aged 16 to 64 in Wales, by sex (2019)



Note: Data are for year ending June, 2019. Data will not necessarily add up to 100% as some data have been omitted.
Source: Annual Population Survey

3.23 Looking at the employment rates for ethnic minorities (aged 16 to 64) in Wales over the past 10 years, relative to the headline figure for the whole of the country, we can see that ethnic minorities continue to be less likely to be in employment than the population as a whole (see **Figure 3.12**). Despite an increase of 5 percentage points in the employment rate for ethnic minorities, the gap compared to the whole population in Wales has remained at 9 percentage points as the overall rate showed a comparable increase. According to the data from the Annual Population Survey, ethnic minorities are less likely to be in employment in Wales than in England, although it should be noted that the gap is roughly equivalent to the overall employment rate gap between the two nations.

Figure 3.12

Employment rate for ethnic minorities in Wales



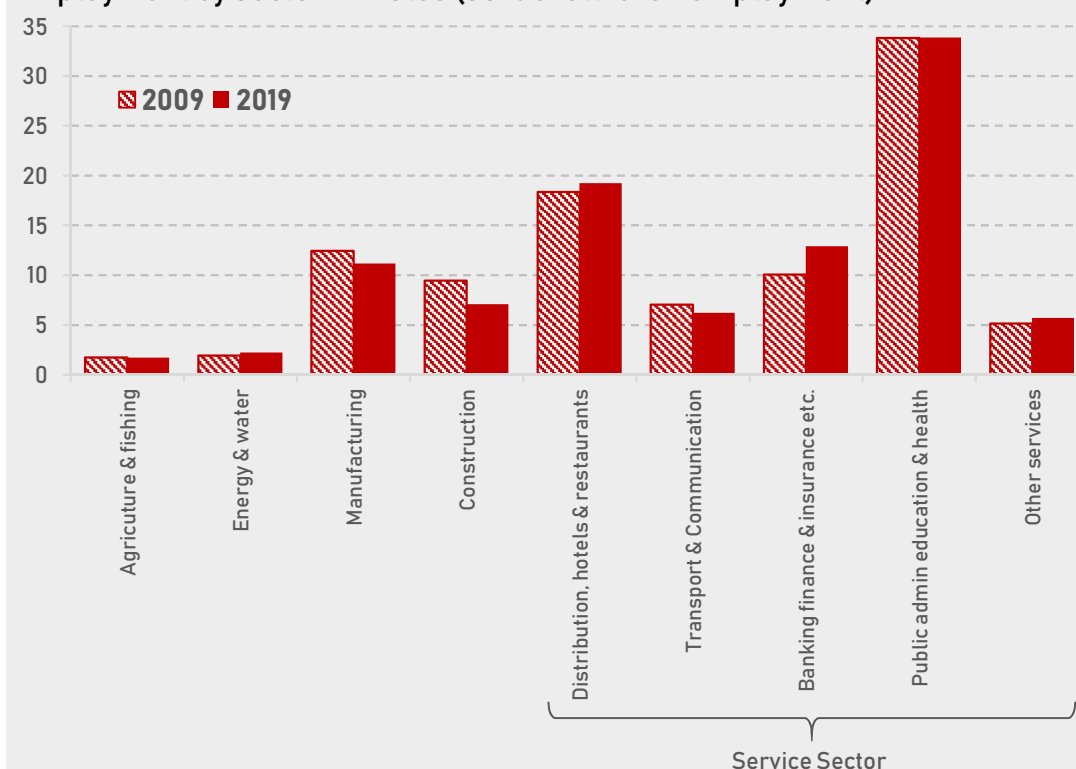
Note: Data are for year ending in June for year quoted.
Source: Annual Population Survey

Employment by Sector

3.24 **Figure 3.13** shows the estimated distribution of Welsh workers across industries in the first quarter of 2019, compared to 2009. In line with trends in most developed nations, the relative share of manufacturing jobs has declined (though the absolute number of jobs in the industry is similar). The absolute and relative decline seen in the construction industry in Wales however is not in line with the UK, where absolute numbers have increased slightly and the construction industry's relative contribution to employment is roughly the same as it was 10 years ago.¹⁹

Figure 3.13

Employment by sector in Wales (as % of all 16–64 employment)



Note: Sectors are defined using one-digit SIC2007 (Standard Industrial Classification) codes.

Source: Annual Population Survey

3.25 Wales has consistently had a higher number of public sector workers – as a percentage of those employed – than the UK average since 2002²⁰ (**Figure 3.14**). However, both Wales and the UK have seen a decrease in the relative share of public sector workers since a peak in 2011, largely attributed to the consequences of UK governments' fiscal policies. While Welsh public spending is higher, this may be

¹⁹ Looking at the UK as a whole we even see some evidence that the construction industry's relative contribution to employment is starting to potentially improve as a result of an increase in private sector demand for house building and infrastructure projects more generally. See: House of Commons (2018) *Construction industry: statistics and policy*; Briefing Paper, No.01432

²⁰ This is the earliest date for which comparable data is available.

justified given that Welsh Government research suggests that its relative needs are higher.²¹



- 3.26** Women are far more likely to work in the public sector in the UK than men and account for a higher relative and absolute proportion of the public sector's labour force. In the year ending September 2019, 36% of all women employed in Wales were employed in the public sector, as opposed to 18% of all men, roughly in line with UK trends when accounting for the prominence of the public sector in Wales.²²

Educational Attainment of Workforce

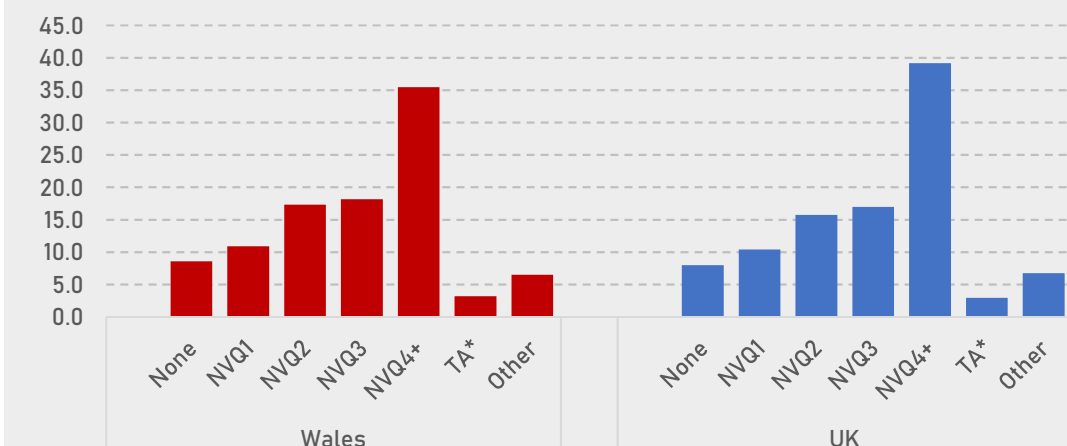
- 3.27** When looking at the distribution of the highest educational attainment achieved by those of general working age (16-64), a 'long tail' can be observed. This refers to the fact that the majority of those within this age range appear to be distributed across the qualification levels below NVQ level 4 (higher education degree level and equivalent), and this issue is estimated as being slightly more pronounced in the Welsh labour force than for the UK as a whole (see **Figure 3.15**). On the basis of the estimates made for 2018, the number of people with NVQ level 4 and above qualifications in Wales is 3.7% lower than what would be expected from the UK average, with an increased relative number of people with NVQ3 and below.

²¹ See: Holtham Commission (2009) *Funding devolved government in Wales: Barnett & Beyond*; First report.

²² For wider UK comparison, 30% of women and 14% of men were estimated to be employed in the public sector.

Figure 3.15

Highest qualification level of those aged 16 to 64 (2018)



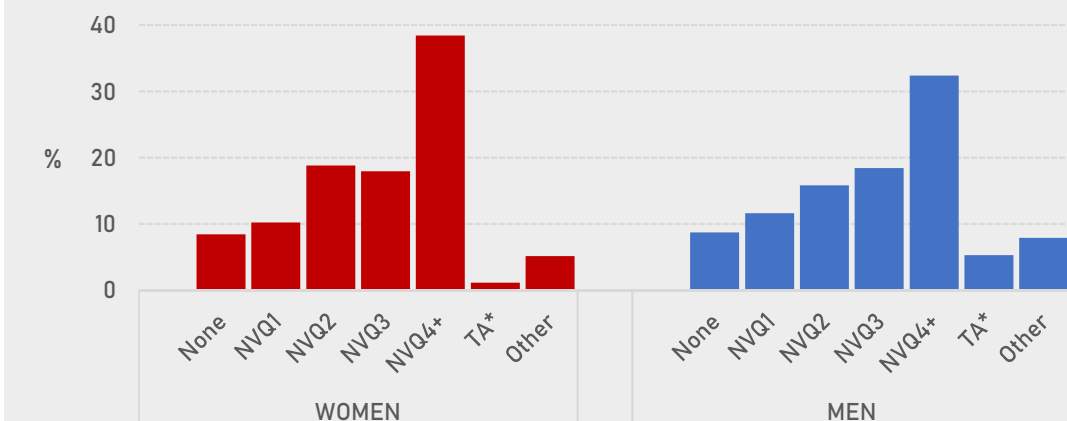
Notes: * TA stands for Trade Apprenticeships

Source: Annual Population Survey

- 3.28** When focusing on the data in Wales between sexes, we can see that the same long tail is observed – as could be expected (see **Figure 3.16**). Women in Wales, as in the UK as a whole, are far more likely to obtain degree level qualifications than men (a 6 percentage point difference) while being less likely than men to take up and complete trade apprenticeships (a 4.2 percentage point difference). These data also raise the question why the employment level for women remains lower than men (**Figure 3.10**), despite generally being more qualified.

Figure 3.16

Highest qualification level in Wales of those aged 16 to 64, by sex (2018)



Notes: * TA stands for Trade Apprenticeships

Source: Annual Population Survey

- 3.29** Research by the OECD suggests that proficiency in certain skills (such as numeracy, literacy, and problem solving) are associated with better labour market outcomes for those who have them – namely in the form of higher wages and better employment

prospects – as well as having wider positive well-being effects.²³ It also notes that proficiency in these skills tends to be correlated with higher education attainment, although the relationship is difficult to dissect in terms of causality. While you are more likely to improve these skills by engaging in higher education study and training, it is also true that those who demonstrate higher levels of proficiency during compulsory education are more likely to go on to higher education. Taking this into consideration, it may be more effective not to solely fixate on encouraging higher educational achievement as a way of boosting economic outcomes for a region and the individuals involved, but also focussing on how education and training can develop these skills.

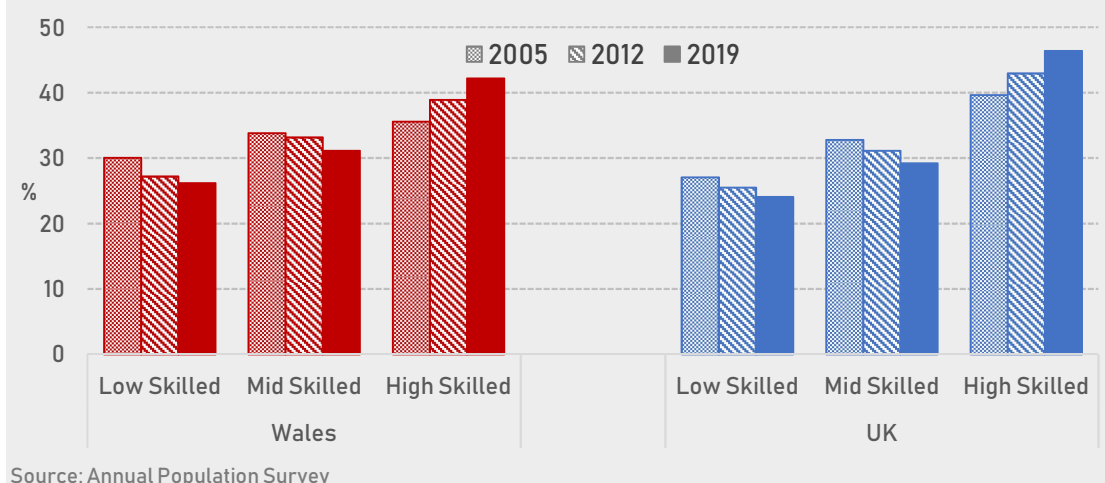
- 3.30 The importance of the skills profile of Wales is particularly relevant to two of the priority areas set by the Welsh Government and will be explored in more depth in later chapters: **Reducing the Factors that Lead to Income Inequality** and **Productive and Competitive Businesses**.

Employment by Qualification & Skill Level

- 3.31 The relative growth of high-skilled occupational work in Wales (a 6.6 percentage point increase) between 2005 and 2019 follows wider UK trends, as does the relative fall in mid-skilled work (-2.7%) and low skilled work (-3.9%).²⁴ **Figure 3.17** does however show how the occupational distribution of jobs in Wales has consistently been lower than the UK average since 2005 in high skilled occupations with a higher proportion of jobs at a low or mid skilled level.

Figure 3.17

Employment by occupational skill level (as % of total employment)



²³ OECD (2016) *Skills Matter: Further Results from the Survey of Adult Skills*, OECD Skills Studies, OECD Publishing, Paris.

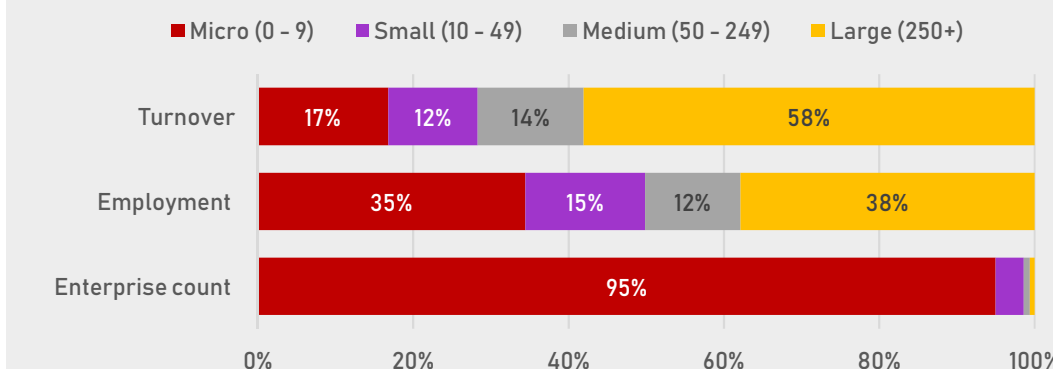
²⁴ Occupational skill levels are defined using SOC2010 (standard occupational classification) codes which use job titles as an indicator of the skill level needed to do jobs, and is one of the better indicators available to calculate the skills profile of labour market demand. More information on the methodology used is available from the Office of National Statistics.

Industry/Business Structure

- 3.32** In Wales, as in the UK, Micro businesses (who employ 0 to 9 people) account for the vast majority of enterprises in the country but in Wales they provide a smaller share of employment, and contribute an even smaller relative share of turnover; the opposite is true for large businesses (who employ 250 people or more). In 2018, the turnover of large companies was equivalent to £69 billion, more than three times as much as for any other enterprise size classification (£16.2 billion for medium, £13.7 billion for small, and £20 billion for micro businesses). This figure represented 60% of total business turnover in Wales, whereas the figure in the UK for large enterprises was 50%.

Figure 3.18

Share of enterprises, employment, and turnover in Wales, by business size (2018)



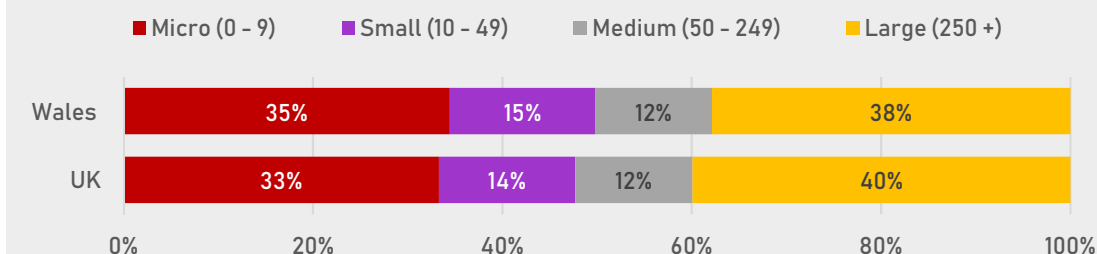
Note: Business size refers to number of people employed.

Source: StatsWales

- 3.33** As **Figure 3.19** demonstrates, the distribution of workers in the economy, by the size of the company for which they work, is similar to that seen in the UK as whole, suggesting that this is unlikely to be a factor contributing towards Wales' lower labour productivity relative to the UK. This is explored in more detail in [Productive and Competitive Businesses](#).

Figure 3.19

Employment by firm size (2018)



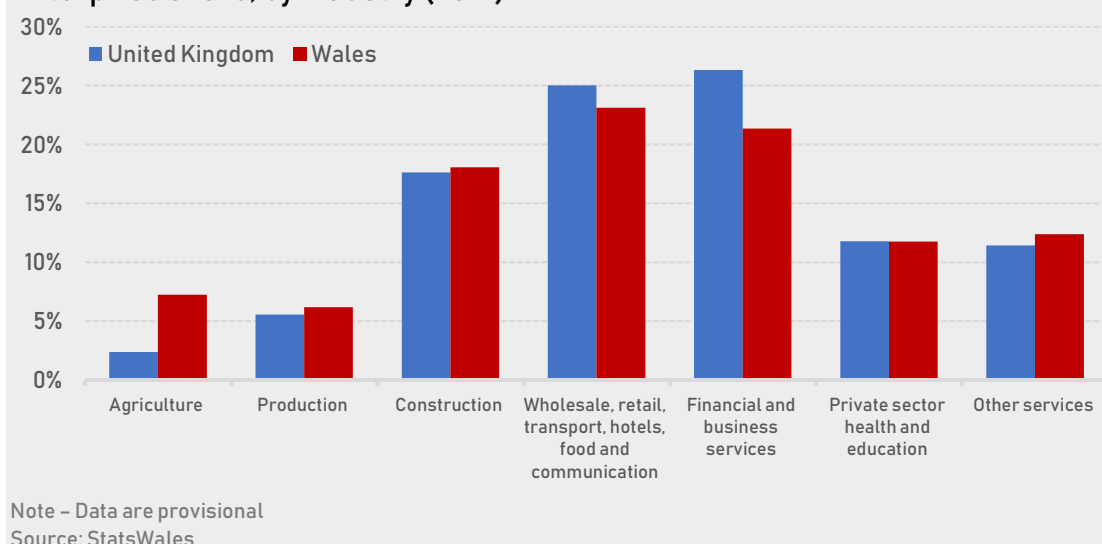
Source: StatsWales

- 3.34** **Figure 3.20** shows the distribution of businesses by industry sector in Wales and the UK for comparative purposes. Wales has a larger share of its industry concentrated in agriculture than the UK average (7%, a 5 percentage point difference) and a lower

share in financial and business services (21%, a 5 percentage point difference). Compared to the UK a smaller share of industry in Wales is concentrated in the service sector.

Figure 3.20

Enterprise share, by industry (2019)

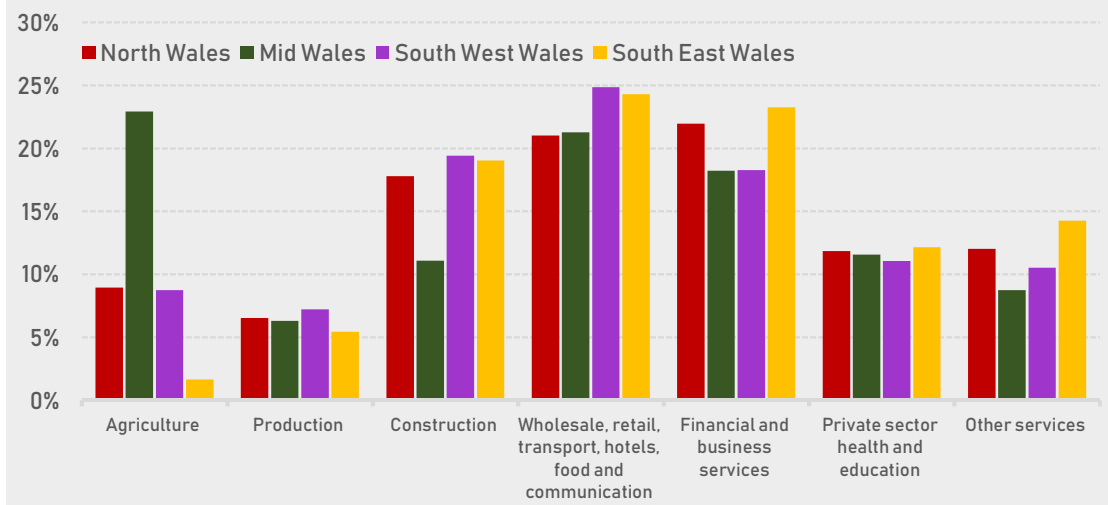


3.35 **Figure 3.21** shows the industry make-up in Wales split across four regions. The dominance of the agricultural sector in Mid-Wales is particular pronounced compared to other regions especially comparing this to size of the agricultural sector in the South-East of the country (representing 2% of all enterprises in this region). The service sector in Wales is more concentrated in the South-East, the region of Wales that should be able to make the most advantage of agglomeration effects, which have been shown to be particular beneficial to this sector.^{25, 26}

²⁵ For reference, see population densities of Welsh regions in **Table 1.2**.

²⁶ Graham, D. (2007) *Agglomeration Economies and Transport Investment*. Joint Transport Research Centre: OECD & International Transport Forum. Discussion paper No. 2007-11.

Figure 3.21
Enterprise share in Welsh regions, by industry (2019)



Note: Data are provisional.
Source: StatsWales

4 Priority Area:

Productive and Competitive Businesses

Key Points

- Productivity is closely correlated to wages, living standards, and wider economic growth, and is seen as being a driving force in increasing these factors. Productivity is also crucial to firms' success in competitive markets.
- While productivity in Wales relative to the UK has remained fairly stable since the financial crisis, Wales has been affected by the same slowdown in productivity growth seen in the UK over the past decade. This has been accompanied by a slowdown in real wage growth in the UK.
- Human capital improvements (which are primarily generated through training and skills) are important to raising productivity, with efforts to reduce the numbers of people with low skills being particularly effective in this regard. The qualification level of Wales' working age population is skewed further towards low skill qualifications than both England and Scotland.
- Projections suggest that the growth in jobs will be concentrated in occupations that traditionally demand higher levels of qualifications. Therefore, as well as the effect it could have on increasing productivity, a focus on skills and education will be required to ensure Wales keeps up with wider labour market trends.
- Evidence shows that there are important work-related skills not always cultivated by current education provision. Increasing the attainment of these skills through apprenticeships has been shown to raise the productivity potential of workers, but the type, delivery, and quality of training in this area is also critically important to their success.
- Smaller firms appear to have greater problems recruiting staff, with a high percentage of vacancies (40% for the smallest firms) reported as hard to fill due to a skills shortage.
- The business birth rate as a percentage of the population aged 16-64 is lower in Wales than the UK average, and higher rates of business birth growth are associated with increased productivity. However, business survival rates in Wales are not notably different from the UK average.

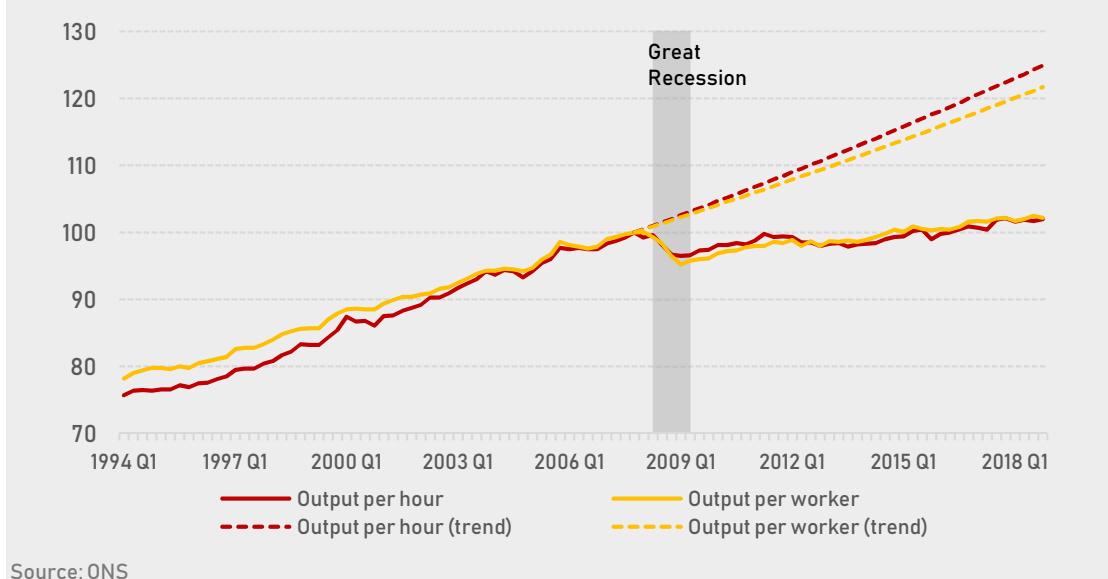
- The Total early-stage Entrepreneurial Activity (TEA) rate in Wales, which measures the share of the working age population that are involved in the early stages of business creation, is around the same level as Scotland and Northern Ireland but lower than in England.
- In recent years, labour productivity growth has been higher in densely populated urban areas as opposed to those that are more rural and sparsely populated. As Wales is one of the most sparsely populated areas of the UK, its productivity is negatively affected by the fact that it is less able to utilise agglomeration effects to drive productivity.
- Wales could still attempt to capture agglomeration density benefits by reducing travel times and costs, thereby increasing the geographical area in which firms, workers, and customers can interact with ease.
- Firms that trade more internationally are more productive than those that don't and pay higher wages, although establishing a causal link between these two factors is less clear.
- Accessing a larger and more diverse customer base via exporting could allow firms to be exposed to processes/practices in foreign markets and employ economies of scale otherwise unattainable.
- Imports, as well as decreasing prices for consumers and input using businesses, expose business to greater competition, which in turn is associated with increasing productivity. There is evidence to suggest that management practices are improved as an exposure to competition.
- Over 60% of Wales' exports are destined for the European Community, more than 10 percentage points higher than what the proportion of the UK as a whole exports to the EC. Any barriers to trade erected as a result of the UK's withdrawal from the European Union are expected to have a negative impact on economic performance.
- Technology and innovation can integrate with human capital to increase productivity and has been a key driver of productivity growth historically.
- Increasing knowledge transfer and collaboration between research institutions in Wales and business is critically important to aiding innovation. Current Welsh Government programmes (assisted by EU funding) have fostered these relationships.
- While absorbing the results of research and development (R&D) is of the foremost importance to improving productivity growth, total R&D spending per head of population was lower in Wales than in any other UK nation, less than half that seen in England. Increasing the volume of UK-wide funding that is attracted by Welsh research institutions is one path towards addressing this disparity.

Why Focus on Productivity?

- 4.1 In economic terms, productivity describes the efficiency with which output can be achieved with given inputs and is therefore commonly measured as output per unit of input. There is general agreement that increasing productivity is essential to increasing overall living standards (being able to produce more with less) and wages (as workers are worth more to the companies for which they work).²⁷ While the long run average for productivity growth year-on-year has been roughly 2%, recent productivity growth since the financial crisis has been much lower.

Figure 4.1

The UK productivity problem (Index 2007 Q4 = 100)



- 4.2 **Figure 4.1** shows UK labour productivity since 1994 and displays a clear divergence between actual UK productivity – since the start of the great recession in the late 2000s – and the historical trend. This divergence is economically significant; had output per hour followed the long-term trend it would have been roughly 22% higher than that recorded in the last quarter of 2018 (this figure is 19% for output per worker); as it was, labour productivity was estimated to only be 2% higher at the end of 2018 than it was at the beginning of the great recession.
- 4.3 There is disagreement amongst economists as to the causes of this seemingly anomalous slowdown in productivity growth. Several explanations have been given, such as: the scarring effects the financial crisis has had on business confidence to invest; the effects of lower interest rates on keeping unproductive businesses afloat; current innovations and technologies not having the same productivity enhancing capabilities as those that preceded them; and, a lack of diffusion in innovation and best practices between firms operating on the technological frontier and those within it.²⁸

²⁷ For correlation between wages and productivity see: [IFS \(2019\) Let's talk about six big economic challenges that need addressing](#)

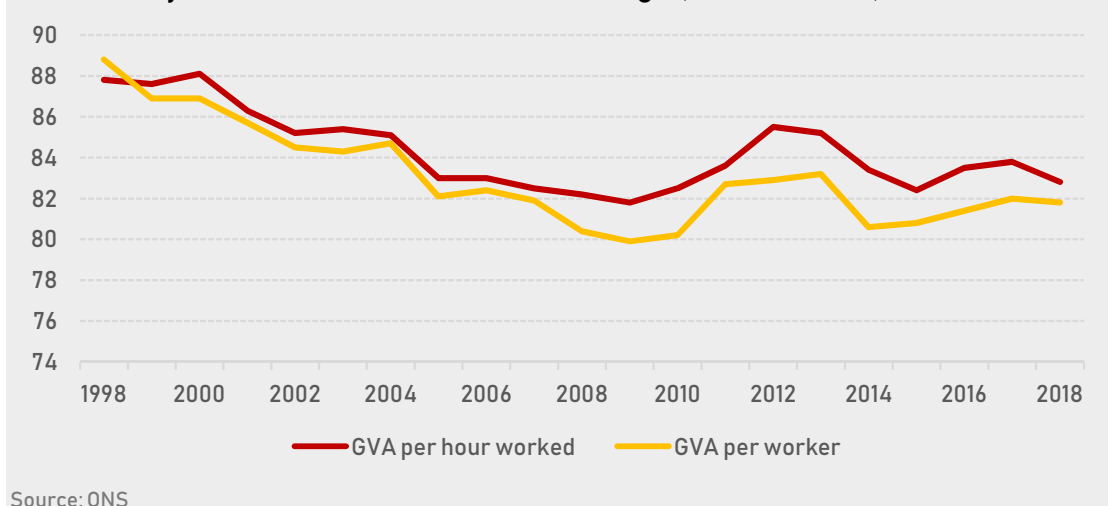
²⁸ Haldane, A. (2017). *Productivity puzzles*. Speech at the London School of Economics, 20.

Given all this, the question remains, what is the picture of productivity specifically in Wales and are the same problems witnessed?

- 4.4** **Figure 4.2** shows an index of labour productivity in Wales relative to the UK headline figure between 1998 and 2018. Had the problems that have been negatively affecting the UK economy not also been affecting Wales we would expect to see a convergence between labour productivity in Wales and the UK average – this is not the case however. In fact, Wales was moving further away from the index value (below the UK) in the years leading up to the financial crisis which can partly be explained by both the strong relative productivity performance of London and the probable anticipated effects that came with the improvement in Wales’ labour market performance during this period, as unemployed workers re-join the labour market but largely in roles associated with lower than average productivity (see **Figure 3.6**).

Figure 4.2

Productivity in Wales relative to the UK average (Index UK=100)



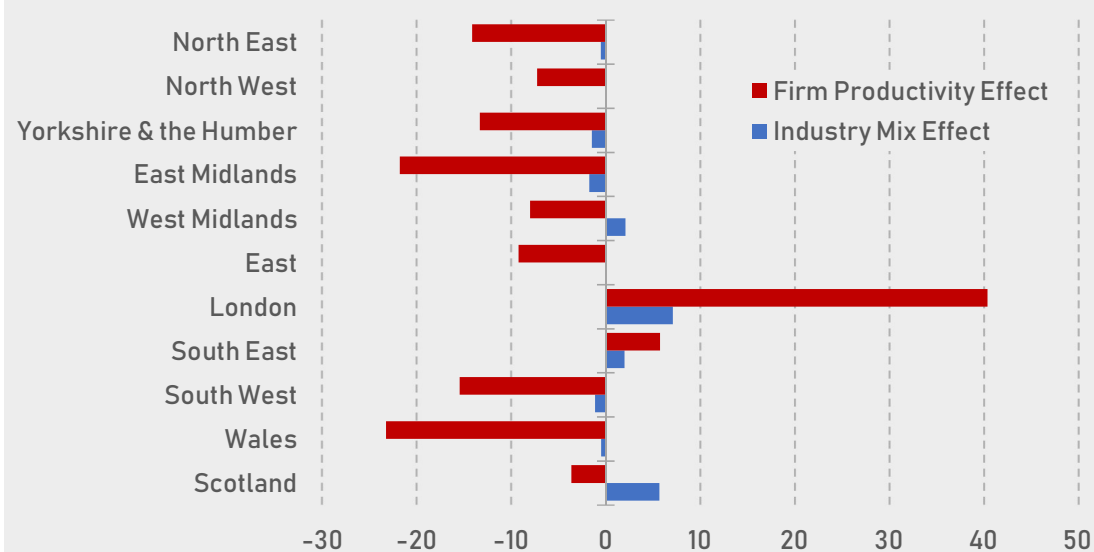
- 4.5** Some attempts at explaining the spatial imbalance seen across the UK have centred on the theory that the industry mix of so-called ‘left behind’ regions is more concentrated in low-productivity sectors and declining industries. However, as **Figure 3.20** shows, with the exception of a higher than average proportion of the economy dedicated to agriculture, the industry mix of Wales does not differ hugely from that of the UK average. Additional research done by the ONS attempts to shed further light on this topic. While London and the South East do have a larger share of high productivity firms, all sub-regions in Great Britain (NUTS1 and NUTS2) have a mixture of high and low productivity firms.²⁹ The key difference in productivity for regions appears not to be between different industries (an industry mix effect) but the average productivity of firms within industries (a firm productivity effect) – see **Figure 4.3** for more detail.

²⁹ ONS (2018) Regional firm-level productivity analysis for the non-financial business economy, Great Britain: April

Figure 4.3

Firm productivity and industry mix effects on GVA per worker (2015)

UK Index = 100



Note: This research omitted the financial and real-estate industries due to their unique characteristics

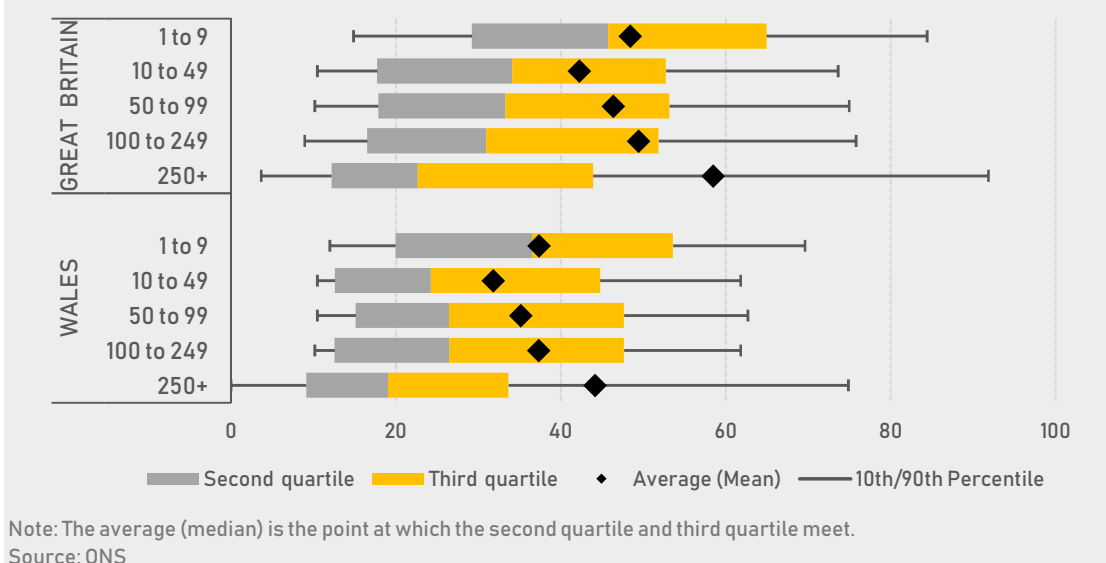
Source: ONS

- 4.6 To give more insight into firm productivity in Wales, **Figure 4.4** shows research conducted by the ONS on the distribution of local plant³⁰ productivity (GVA per worker) in Great Britain and Wales, categorised by the size (number of employees) of the firm that operates the plant. While average (median) productivity generally decreases at the local plant level the larger the size of the parent company, average (mean) productivity actually increases. The fact that median productivity decreases can largely be explained by the fact that larger companies are more likely to divide their low and high productive activity amongst local plants, which can be seen by the size of the range for large companies' local plant productivity. However, as larger companies should be able to make greater use of economies of scale – especially with regards to business administration and supply chain costs – the fact that average productivity increases with firm size is unsurprising. More importantly this research shows, at a regional level, that local plant productivity in Wales (across all firm sizes) is below the levels of Great Britain as a whole and is in keeping with the findings shown in **Figure 4.3**.

³⁰ Local plant level analysis allows us to see productivity at a 'site' level as opposed to the overall productivity recorded at a head-office level; although, it is worth noting that the ONS state that for approximately one quarter of firms there is no distinction between local plants, reporting units, and enterprises (as the firm only has one site).

Figure 4.4

**Distribution of local plant productivity (GVA per worker)
by firm size (employee numbers), 2015**



- 4.7 While exploring in detail the exact causes of the UK's productivity slowdown are beyond the scope of this socio-economic analysis, the following paragraphs will provide details on factors identified by the Welsh Government that could aid in improving Wales' productivity performance. This includes a focus on the Welsh workforce, Welsh business structure and demography, and agglomeration, as well as briefly covering other areas that could have an influence on productivity.

Key Productivity Factors

Upskilling the Welsh Workforce and Meeting Skill Demand

- 4.8 Research by the OECD suggests that human capital is critically important to improving the economic performance and productivity of regions and, more specifically, that upskilling those with the lowest qualification levels appears to have a greater impact on achieving high levels of regional growth than a focus on increasing the share with higher qualifications.³¹ There is also evidence to suggest from Welsh business that the hardest occupations they have in filling are toward the middle/lower end of the occupational skill spectrum.³²
- 4.9 **Figure 5.13** shows that the Welsh workforce has upskilled, with the share of the population with NQF levels 3 and above³³ increasing since 2008 – with a large relative increase in the number of graduates and post-graduates in Wales – while the share of those with low and no qualifications dropped. Despite these positive trends Wales still has a lower proportion of graduates and those going on to higher education than

³¹ [OECD \(2012\), *Promoting Growth in All Regions*, OECD Publishing.](#)

³² FSB Cymru (2018). *A Skillful Wales. Federation of Small Businesses (Wales).*

³³ NQF level 3 represents A-levels and equivalent qualifications.

England and Scotland³⁴ – with both regions also having higher productivity levels (see **Figure 3.15** for further illustration).

- 4.10 When looking at alternatives to higher education, and ways to increase the skills profile of those with lower qualification levels, there is evidence to suggest that there is a positive earnings differential for those who complete apprenticeships when compared with those of the same pre-apprenticeship qualification level.³⁵ Given the link between productivity and wages, this suggests they are also judged to be of more productive value to their employers. It is important however that care is taken in judging the value of apprenticeships, as the benefit to the individual differs across sectors, with advanced apprenticeships having a greater wage differential than classroom-based alternatives.
- 4.11 Other research suggests that, while higher levels of qualifications are associated with higher pay even for non-graduates (and that qualifications that have a more traditionally academic focus pay more than those that are more ‘vocational’), perhaps a more important factor is how non-graduate qualifications fit with the sectors in which they work.³⁶ Put more simply, and perhaps intuitively, employers appear to be more interested in the particular skills their workers possess that could complement their roles, as opposed to concentrating solely on the highest qualification level workers have reached as a signal of capability. This is also increasingly true for graduates as well.
- 4.12 Meeting skills demand will ensure that individuals have both the required qualifications they need to do their job and the right skills needed to do so effectively. The UK Government’s most recent *Working Futures* projections indicate that in the period 2017-2027 employment will increase in what are traditionally viewed as ‘high-skilled’ occupations, as well as in *caring, leisure and other service occupations* (see **Figure 4.5**).³⁷ While these figures are for the UK as a whole and occupational composition differs, the general trajectory of job growth across occupations is likely to be similar in Wales. Research by the ONS looking at the risk that automation could pose to sections of the labour market noted that job growth between 2011 and 2017 was concentrated in jobs that were regarded as being at low or medium risk of automation.³⁸ This suggests that UK labour market demand is moving towards more complex and less routine skills. Higher skilled roles, and particular those classified within *professional occupations*, were the least at risk of automation.

³⁴ [JRF \(n.d\) Qualifications of the working-age population over time. Joseph Rowntree Foundation. \[Website\]](#)

³⁵ Cavaglia, C., McNally, S., and Ventura, G. (2018). Do Apprenticeships Pay? Evidence for England. *Centre for Vocational Education Research*. Research Discussion Paper 015.

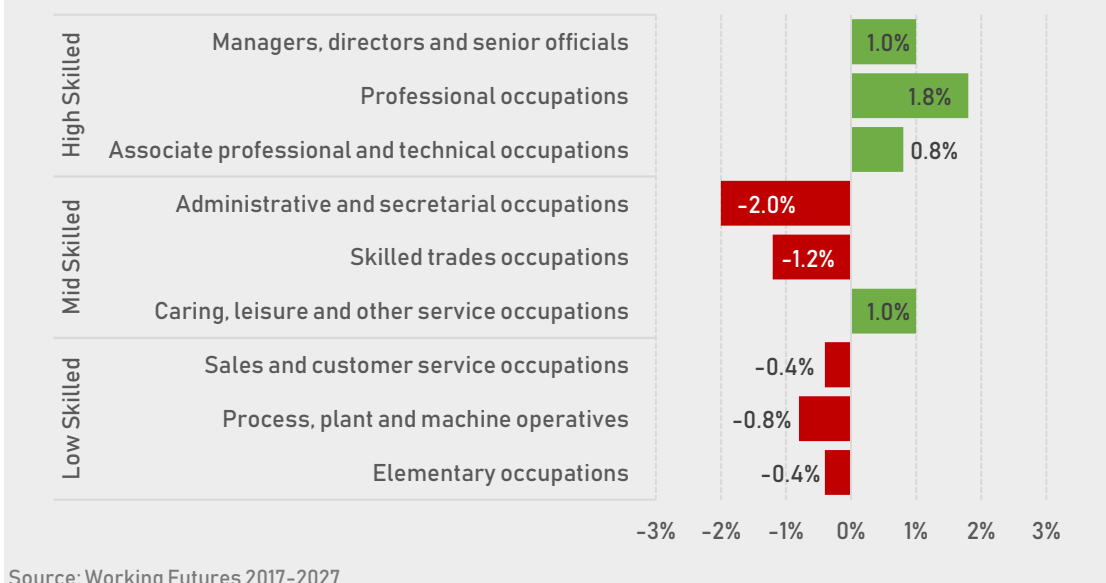
³⁶ D’Arcy, C., and Finch, D. (2016). Finding your routes: non-graduate pathways in the UK’s labour market. *Resolution Foundation/Social Mobility & Child Poverty Commission*.

³⁷ Wilson, R. et al. (2020). *Working Futures 2017-2027: Long-run labour market and skills projections for the UK – annexes*. UK Department for Education.

³⁸ ONS (2019). *Which occupations are at highest risk of being automated?* UK Office for National Statistics.

Figure 4.5

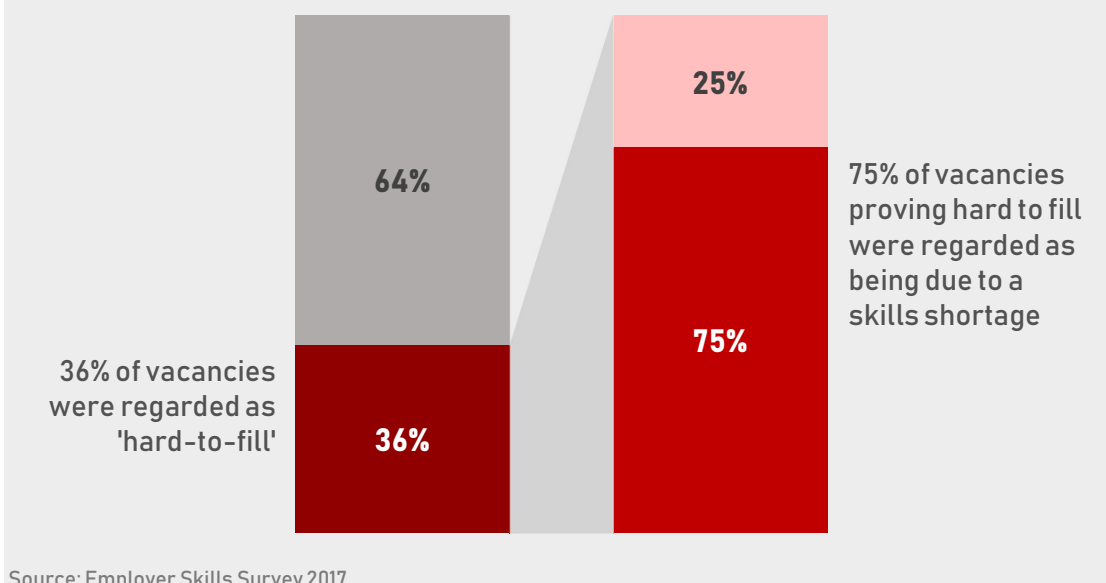
Annual average percentage point change in employment in UK by occupation 2017-2027



- 4.13 Using responses from the Employer Skills Survey (2017) we can see that 36% of the vacancies that Welsh employers said they had open were regarded as being hard to fill. This rate was higher than it was in both England and Northern Ireland (32.9% and 30.9%) but lower than in Scotland (39.3%). Of note is the fact that the share of hard to fill vacancies that were classed as being due to a skills shortage (which could be due to a lack of skills, qualifications, or experience) was more pronounced in Wales (75%) than it was in any of the other UK nations (68% in England, 69% in Northern Ireland, and 60% in Scotland).

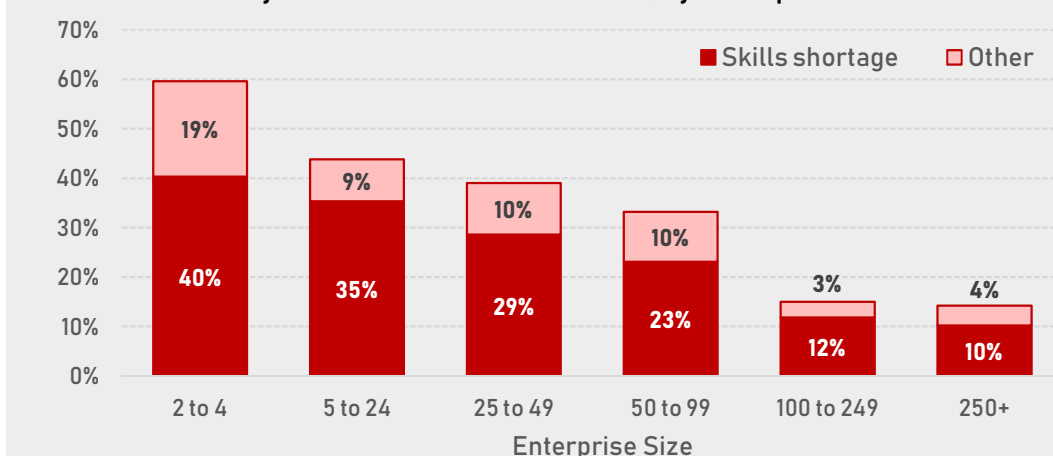
Figure 4.6

Response of Welsh businesses regarding whether they currently had any 'hard to fill' vacancies and, if so, what was making them hard to fill



- 4.14 **Figure 4.7** shows how the difficulty of filling vacancies appears to correlate with the size of the enterprise posting the vacancy. Micro businesses with two to four employees state that 60% of their vacancies are proving hard to fill which is far larger than the figure for larger businesses (250+ employees) for whom the figure stands at 14%. The proportion of vacancies that were classified as being hard to fill due to skills shortages were also correlated with firm size. It is important to note however that smaller firms may not have the expertise and experience in recruiting staff that allows them to correctly identify the causes of a hard to fill vacancy.

Figure 4.7
Hard to fill vacancy rate for Welsh businesses, by enterprise size and reason



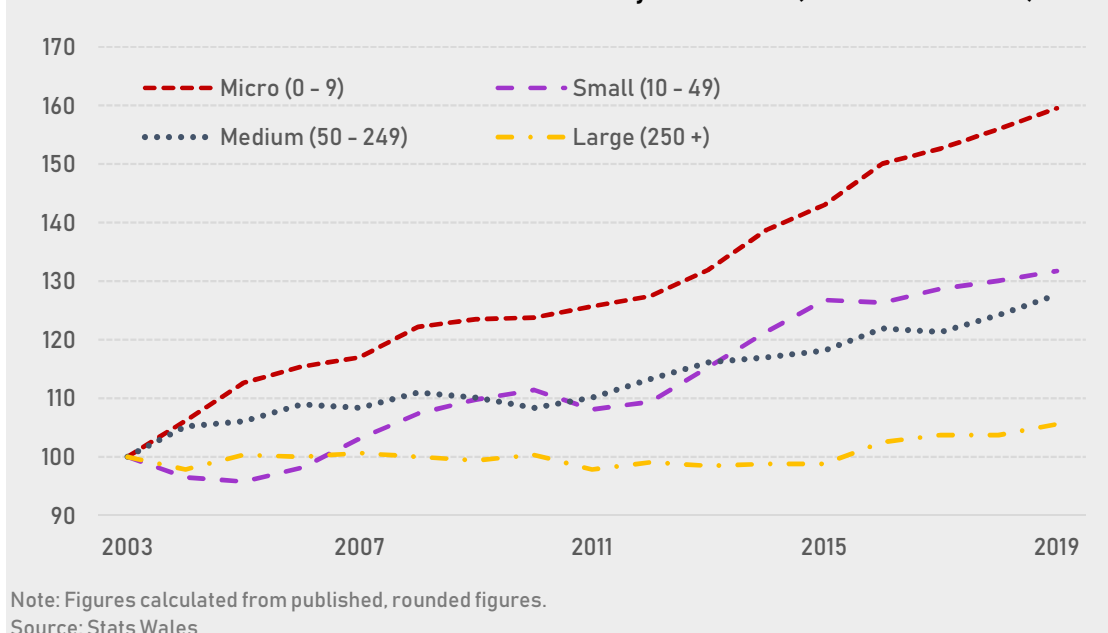
Source: Employer Skills Survey 2017

Business Demography & Entrepreneurship

- 4.15 While improving the skills profile of the workforce has been identified as being of critical importance to improving the productivity performance of regions, it is also necessary for Wales to create and sustain the firms and industries that can drive that productivity growth.
- 4.16 As of 2019 there were an estimated 267,000 active businesses in Wales. The number of active businesses was approximately 58% higher in 2019 than it was in 2003. This has largely been driven by the number of micro businesses in Wales (employing between 0 to 9 people); the number of large businesses by contrast has remained fairly stable (see **Figure 4.8**). When looking at the differences in the Welsh economic regions, much of the growth in the number of active businesses has been driven by the South East of Wales which saw its active business population grow by 72% in the same period. The active business populations of the North and South West Wales regions grew by a 55% and 54% respectively, and Mid Wales saw its active business grow by a comparatively modest 23%.

Figure 4.8

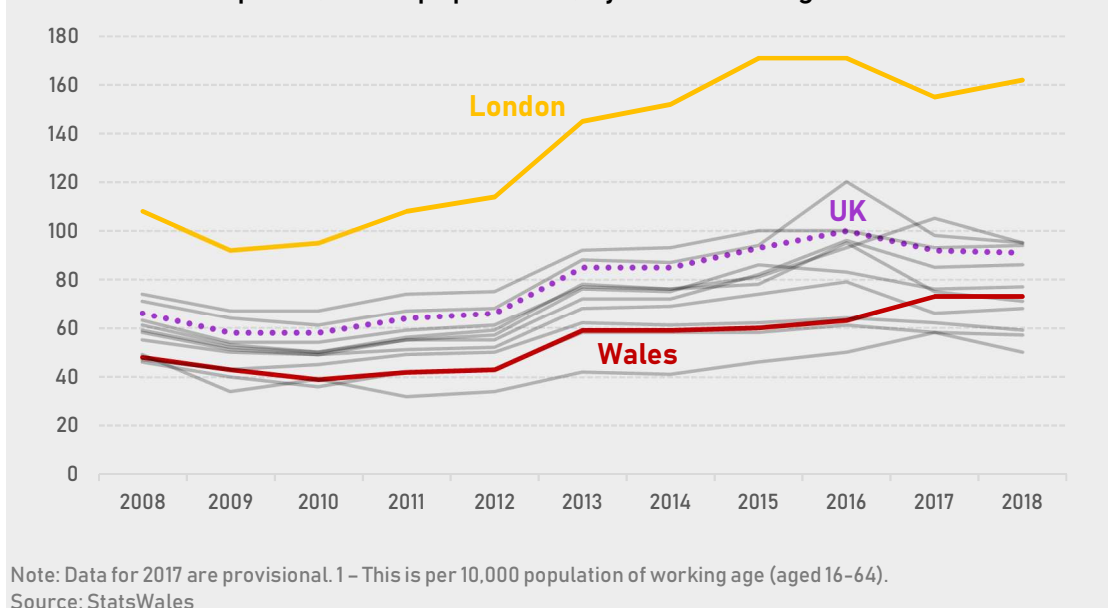
Total number of active businesses in Wales by size band (Index 2003 = 100)



- 4.17** The low number of businesses in Wales relative to the working age population compared to other areas is unsurprising given that business birth rates per 10,000 of population have been lower than most other regions over the last decade for which data is available (see **Figure 4.9**). In 2018 there were 73 business births per 10,000 of population in Wales, while for the same indicator in the UK the figure was 91. The effects of agglomeration (i.e. higher population density) on productivity are often cited and research by the OECD suggests that firm creation rates are also higher in urban regions as opposed to rural regions - a potential pathway to higher productivity.³⁹ Wales is more sparsely populated than any other major UK country/region and as a result does not benefit to the same extent from agglomeration effects. This is discussed in more detail in the next sub-section.

³⁹ OECD (2018) OECD Regions and Cities at a Glance 2018, OECD Publishing, Paris
https://doi.org/10.1787/reg_cit_glance-2018-en

Figure 4.9
Business births per 10,000 of population¹, by UK NUTS1 regions



- 4.18** Another factor potentially affecting entrepreneurial activity is related to the human capital make-up of Wales which, as previously mentioned, has a lower proportion of graduates than England and Scotland. There is evidence to suggest that there is a positive relationship between tertiary education enrolment rates in a country and several measures of entrepreneurial performance, including survival and business growth.⁴⁰ Possible explanations include the link between university education and productivity (and competitiveness normally by extension), knowledge spillovers, and a more sophisticated consumer market.
- 4.19** The Global Entrepreneurship Monitor (GEM) provide some of the most in depth statistics we have on entrepreneurship rates and characteristics in Wales.⁴¹ The Total early-stage Entrepreneurship Activity rate (TEA) measures the percentage of the working age population that are either involved in setting up a business currently (nascent entrepreneurs) or owner-managers of new businesses (under 3.5 years old). In 2018 the TEA rate was 6.9% in Wales, 6.3% in Scotland, 6.5% in Northern Ireland, and 8.1% in England and there was no statistically significant difference between the home nations. In the UK, the motivating factor for those who were engaged in TEA was six times more likely to be because they perceived an opportunity, or potential for new market creation, as opposed to those who started a new business as they believed there were no other alternatives to finding work.
- 4.20** **Table 4.1** shows how the non-entrepreneurial population in the four home nations responded to qualitative questions related to entrepreneurship in the GEM 2018. Given the importance of perceived opportunity to become an entrepreneur, it is worth noting

⁴⁰ Millán, J., Congregado, E., Román, C., Van Praag, M., and Van Stel, A. (2011) The Value of an Educated Population for an Individual's Entrepreneurship Success. *Tinbergen Institute*. Discussion paper 2011-066/3.

⁴¹ The Welsh government sponsors the Welsh component of the GEM UK research project.

that, to the question “There are good start-up opportunities where I live in the next 6 months”, fewer Welsh respondents agreed with this statement (33.2%) than in Scotland (35.7%) and England (40.6%).

Table 4.1

Perceptions of entrepreneurship among non-entrepreneurially active individuals in the UK Home Nations

	<i>per cent</i>				
	UK	England	WALES	Scotland	N. Ireland
I know someone who has started a business in the last 2 years	28.2	28.1	28.6	28	29.2
There are good start-up opportunities where I live in the next 6 months	39.5	40.6	33.2	35.7	31.6
I have the skills, knowledge and experience to start a business	40.1	40.9	37.2	35.8	37.1
Fear of failure would prevent me from starting a business (for those who agree there are good start-up opportunities)	42.8	42.9	42.1	41.9	44.9
Most people consider that starting a business is a good career choice	56.3	57.1	54.7	52.5	49.2
Those successful at starting a business have a high level of status and respect in society	77.7	77.6	77	79.2	78
You will often see stories about people starting successful new businesses in the media	58.2	57.8	57.3	60.6	63.4

Source: GEM Annual Population Survey 2018

- 4.21** **Table 4.2** shows that, of those in the UK who were in the process of starting up a business in 2018, approximately 60% either were expecting to self-fund their business or did not anticipate needing any funding. These figures are not available for Wales but there is no reason to expect them to be significantly different. The three external funding sources most expected to be used were close family members (16.7%), banks or other financial institutions (15.1%), and government programmes, donations or grants (11.6%).

Table 4.2**Nascent entrepreneurs in the UK expecting funding from different sources***per cent*

Type of funding expected	2016	2017	2018
No funding needed	3.8	6.7	8.4
All funded by entrepreneur	44.6	44	53
None funded by entrepreneur	1.4	1.5	2.1
Close family member (spouse, parent, sibling)	21.5	15.5	16.7
Other relatives, kin or blood relations	7.5	5.7	7.5
Employer or work colleagues	6.2	2.4	5.1
Private investor or venture capital	18.4	14.6	10.4
Friends or neighbours	12.5	4.4	3.8
Banks or other financial institutions	24	23.4	15.1
Government programmes, donations or grants	24.4	20.6	11.6
Online crowdfunding	6	6.5	5.8
Any other source	8.4	9.8	6.2

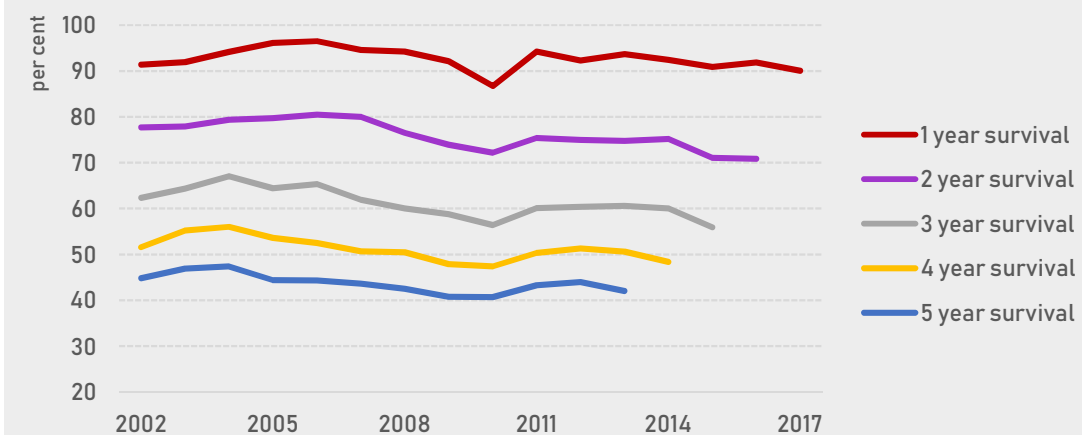
Source: GEM Annual Population Survey 2018

- 4.22** Business survival rates have fallen since 2002, with the largest falls occurring in the 2-year survival rate and 3-year survival rate (see **Figure 4.10**). The effects of business survival rates on productivity are unclear. Low business survival rates could also indicate that conditions are not favourable for businesses to stay afloat. But if they are due to high business dynamism, whereby unproductive firms are replaced by more productive firms, this could have positive effects on overall productivity. It is worth noting that low business dynamism may not necessarily impact productivity should existing firms continue to innovate.⁴² Regardless of these factors, as business survival rates in Wales do not differ greatly from those of other UK nations it is unlikely that these rates give any indication as to Wales lower productivity relative to other regions.

⁴² Li, H. (2017). *How Does Business Dynamism Link to Productivity Growth?*. FRBSF Economic Letter, 01.

Figure 4.10

Business survival rates after birth in Wales, by birth year



Note: Data for 2015 and 2016 are provisional.

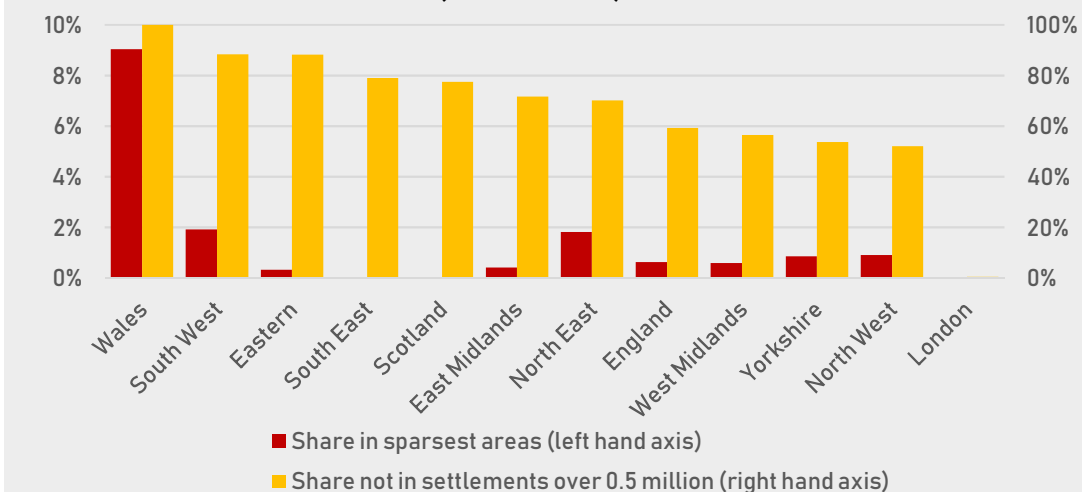
Source: StatsWales

Agglomeration & Connectivity

- 4.23** While mentioned in previous sub-sections it is important to focus on the effects that agglomeration effects can have on productivity as this is an area where Wales is at a disadvantage relative to other parts of the UK. As of the 2011 Census, Wales was the only major region/country in Great Britain that did not have a settlement over the size of 500,000 and had the highest share of its population living in the sparsest areas (see **Figure 4.11**). Keeping with these figures, in 2012 the Centre for Cities estimated that the share of regional GVA that was generated in cities was smaller in Wales than in any other region of the UK at 33% (see **Figure 4.12**).⁴³

Figure 4.11

Share of population who live in sparsest areas and in settlements over 0.5 million (2011 Census)



Source: ONS

⁴³ There were three Welsh cities identified: Swansea, Cardiff, and Newport.

- 4.24 The ONS have shown how labour productivity was lowest in England and Wales in areas that were sparsely populated, as opposed to urban areas, and did find that industries that have relatively low labour productivity (such as agriculture, forestry and fishing, and accommodation and food service activities) tend to cluster in these areas.⁴⁴

Figure 4.12

Share of GVA in each nation/region estimated to be generated in cities (2012)



Note: Greater South East includes three NUTS1 regions – London, the South East, and East England.
Source: Centre for Cities: Cities Outlook 2012

- 4.25 Agglomeration effects may be more beneficial for some industries as opposed to others. Research that looked at UK industries suggested that the service sector in particular may benefit from agglomeration effects more so than other industries where there were diminishing returns to agglomeration intensity – these were manufacturing, construction, distribution hotels and catering, and transport and communication.⁴⁵ Additional evidence suggests that the benefits of agglomeration may well come via knowledge spillover effects between different industries that could come with added population density,⁴⁶ as opposed to firm level productivity effects caused by being subjected to increased local competition⁴⁷ – although firm level productivity effects could apply to some business types.⁴⁸
- 4.26 While Wales' low population density may contribute to reducing productivity growth it may be possible to create agglomeration effects if transport investment is able to

⁴⁴ ONS (2017) *Exploring labour productivity in rural and urban areas in Great Britain: 2014*. Office for National Statistics.

⁴⁵ Graham, D. (2006) *Investigating the link between productivity and agglomeration for UK industries*.

⁴⁶ Carlino, G., Chatterjee, S., and Hunt, R. (2001). *Knowledge Spillovers and the New Economy of Cities*. Federal Reserve Bank of Philadelphia. Working paper No. 01-14.

⁴⁷ Combes, P., et al (2012). *The productivity advantages of large cities: distinguishing agglomeration from firm selection*. *Econometrica*, 80(6), pp 2543-2594.

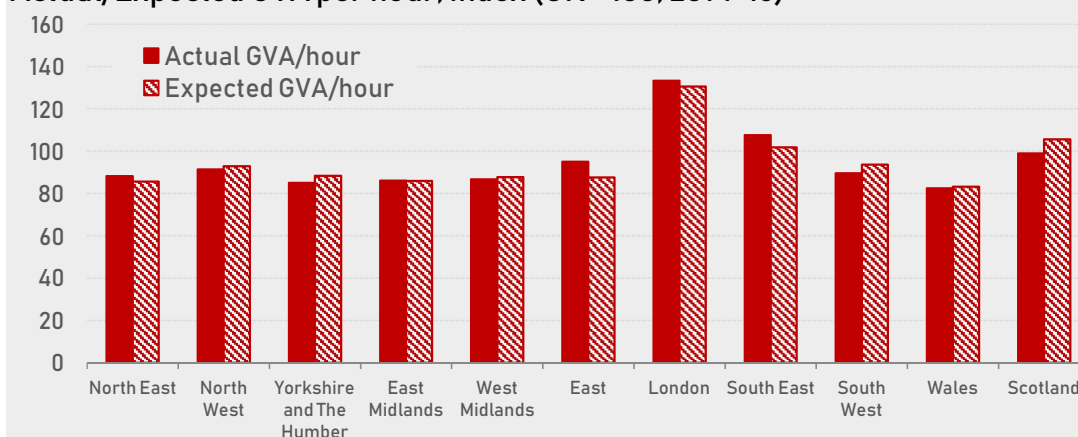
⁴⁸ Such as those that primarily service the local economy.

reduce travel times and/or costs associated with travel.⁴⁹ This will act to increase the ability of firms, employees, and customers to interact with ease over larger distances. These opportunities are likely to be more readily available in the population clusters of the South East and South West of Wales, as opposed to the many densely populated town centres across the country that are more isolated from other sizable settlements.⁵⁰

4.27 Finally, **Figure 4.13** shows the results of a simple regression analysis that considers whether agglomeration and skills combined can explain most of the productivity gap that exists between Wales, other UK nations, and English regions. Skills are captured by the share of the working age population educated to NVQ4+ (essentially qualified to degree level and above) and agglomeration is proxied by the proportion of the population living in settlements of 125,000 plus people). The resulting modelled “expected GVA per hour” fits “actual GVA per hour” very closely. While some of this apparent accuracy could be spurious, it is useful to see that the findings are consistent with the wider evidence base that demonstrates the importance of agglomeration and skills in explaining productivity differential levels at the NUTS1 level. The analysis should be interpreted in this general fashion rather than as providing strong evidence in itself.

Figure 4.13

Actual/Expected GVA per hour, Index (UK = 100, 2014-16)



Notes: Expected GVA is based on average relationship with ‘educational attainment level’ and ‘agglomeration’
Source: Welsh Government calculations using ONS data

Other Productivity Factors

4.28 The following subsections attempt to explore two other factors that can influence productivity, but where the interaction, and how Welsh Government can influence this interaction, is less clear. The impact that these factors have on aggregate productivity could potentially be limited when compared to the importance of the factors highlighted

⁴⁹ Graham, D. J. (2007). *Agglomeration, productivity and transport investment*. Journal of transport economics and policy (JTEP), 41(3), 317-343.

⁵⁰ Goodair, B. & Kenny, M. (2020) *Townscapes: Wales*. Bennett Institute for Public Policy. University of Cambridge.

above, but are still worthy of exploring. Businesses that engage in international trade are generally more productive than those that do not, even when accounting for a range of factors such as foreign ownership, business size, and industry. Research and development (R&D) spending per head of population is low in Wales, and while there is scope to increase that (especially by increasing the funding captured by our higher education institutes at the national level), absorbing and exploiting the findings and practices that result from R&D in Wales, the UK, and outside our borders may be of equal importance, if not more.

Trade & Exports

- 4.29** Research by the ONS (2018) found that businesses either exporting or importing goods from outside the UK had higher labour productivity levels (GVA per worker) than businesses that did not do either.⁵¹ Businesses that both imported and exported goods were found to have a higher value distribution for labour productivity than all other groups (see **Figure 4.14**). Large, foreign-owned firms are more likely to trade internationally, but even when accounting for business size, foreign ownership, and industry, labour productivity relative to non-traders was 21% higher for those that exported and 20% higher for those that imported. The labour productivity premium associated with EU-trade was smaller than that associated with trade outside of the EU – likely as a result of larger productivity advantages being necessary to make firms competitive when trading outside the EU (where higher barriers to entry and higher transportation costs are more likely). Other research suggests that exporting firms generally pay higher wages than those that don't, though there was no definitive difference in the rate of wage growth observed.⁵²
- 4.30** While higher productivity levels for firms are correlated with their engagement in international trade, establishing a causal link between the two is more complicated. Does trading internationally make firms more productive, and/or does being more productive allow firms to competitively trade outside the country they are based in? Attempting to access foreign markets may act as an incentive for firms to achieve productivity gains in an effort to cut costs and remain competitive; while gaining access to a larger consumer base could also allow companies to utilise economies of scale not otherwise available. There is the possibility that factors that assist productivity – such as knowledge transfers – are more likely to occur for firms that are integrated in foreign markets.⁵³ Direct evidence from UK firms suggested that exporting may increase the propensity for companies to learn from their client base, which in turn is linked with higher future productivity growth.⁵⁴

⁵¹ Wales, P., Black, R., Dolby, T., and Awano, G. (2018). *UK trade in goods and productivity: New findings*. UK Office for National Statistics.

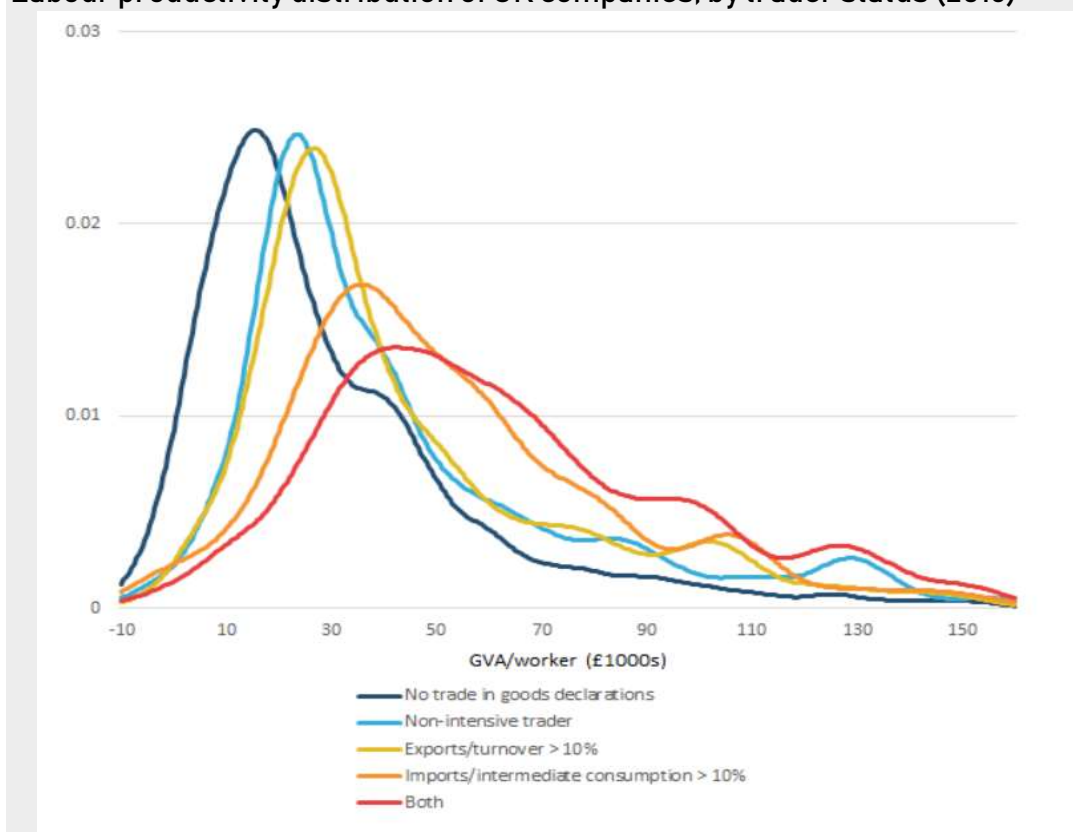
⁵² Berthou, Antoine et al. (2015). *Assessing European firms' exports and productivity distributions: The CompNet trade module*. National Bank of Belgium. NBB Working Paper, No. 282

⁵³ Cameron, G., Proudman, J., & Redding, S. (2005). Technological convergence, R&D, trade and productivity growth. *European Economic Review*, 49(3), 775-807.

⁵⁴ Crespi, G., Criscuolo, C., & Haskel, J. (2006). *Productivity, exporting and the learning-by-exporting hypothesis: direct evidence from UK firms* (No. 726). Centre for Economic Performance, London School of Economics and Political Science.

- 4.31 Another aspect of trade that could help boost firm productivity and competitiveness is exposure to imports. Research by the OECD found that regions with a higher reliance on tradeable sectors – sectors that are or could be exposed to international competition – have better long-term economic performance prospects than those that do not.⁵⁵ Evidence suggests that a key effect of increased competition is on improving management practices within firms, which in turn increase productivity.⁵⁶

Figure 4.14
Labour productivity distribution of UK companies, by trader status (2016)



Note: Employment weight, ABS basis
Source: ONS (2018)

- 4.32 Currently the majority of Welsh goods are destined for the European Community and these shares have remained relatively stable over the past six years. Reduced levels of trade with the EU, even in the event of trade liberalisation with non-EU trading partners, is still expected to have a negative impact on UK living standards of between -1% to -2.3%.
- 4.33 Figure 4.15 shows the cumulative share of Welsh export destinations for goods outside the UK between 2014 and 2019. In the year up to Q3 of 2019, 61% of Welsh exports were estimated to be delivered to members of the European Community,⁵⁷ 12

⁵⁵ OECD (2018). *Productivity and Jobs in a Globalised World: (How) Can All Regions Benefit?*. OECD Publishing. Paris. <http://dx.doi.org/10.1787/9789264293137-en>

⁵⁶ Van Reenen, J. (2011). *Does competition raise productivity through improving management quality?*. International journal of industrial organization, 29(3), 306-316.

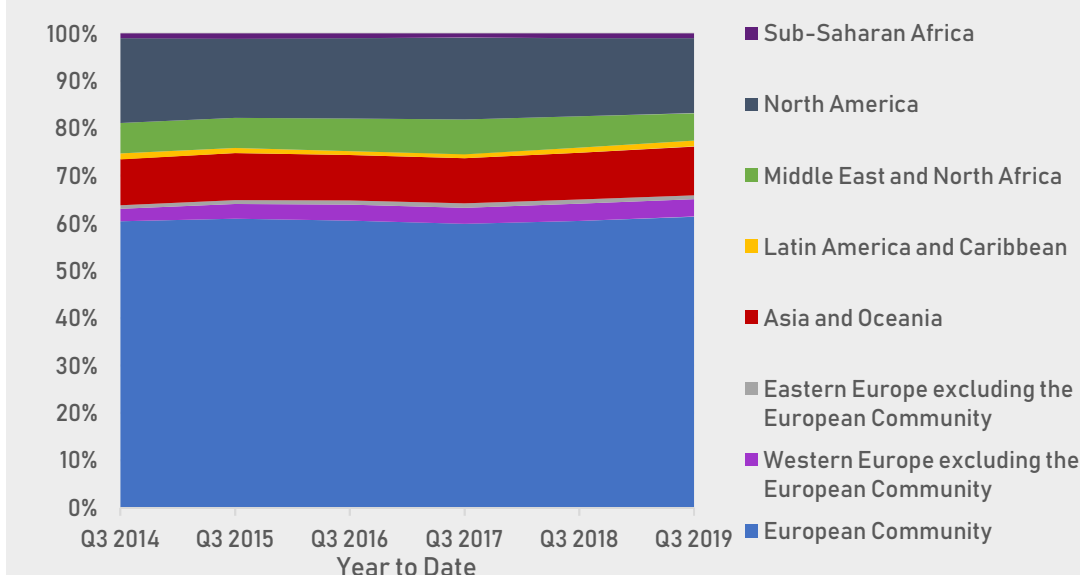
⁵⁷ This comprises the 27 member states of the European Union (excluding the UK) as of 1st July 2013.

percentage points higher than the share of UK exports that are made to this region (49%, data is rounded). The next two most popular regions for Welsh exports were North America (17% of total) and Asia and Oceania (10%).

- 4.34 It remains unclear how this will develop in the coming years however given the uncertainty surrounding the terms of the UK's future trading relationship with the EU single-market. Any additional trade friction is expected to have a negative impact on businesses that trade with the EU and/or are reliant on supply chains that do. This could have a knock-on effect of reducing competitiveness if additional costs are imposed on businesses by barriers to trade.⁵⁸ Reduced levels of trade with the EU, even in the event of trade liberalisation with non-EU trading partners, is still expected to have a negative impact on UK living standards of between -1% to -2.3%.⁵⁹

Figure 4.15

Destination share of Welsh exports (goods), by quarter



Note: Data for YTD Q3 2019 contain provisional figures; data are calculated using the 'special trade' method of calculating exports. For more information see HMRC Methodology Paper for Overseas Trade Statistics. These shares are on the basis of the value of total exports made by destination.

Source: StatsWales

- 4.35 As well as international trade, Welsh firms are firmly integrated within UK supply chains and therefore import and export to other UK nations. The Welsh Government have stated that while data are not available to measure the precise volume and value of trade between Welsh firms and those in other parts of the UK, approximate measurements indicate that they are at least as important as international exports.^{60,61} Many of the productivity and competitiveness benefits attributed to trading

⁵⁸ For example, in the form of increased costs associated with compliance or trade tariffs.

⁵⁹ Dhingra, S., Ottaviano, G. I., Sampson, T., & Reenen, J. V. (2016). *The consequences of Brexit for UK trade and living standards*. Centre for Economic Performance/LSE.

⁶⁰ Welsh Government (2018). *Trade Policy: the issues for Wales*. Crown copyright.

⁶¹ Surveys are currently underway to attempt to estimate intra-UK trade between Wales and other UK nations.

internationally mentioned already will also be able to be realised to some extent by Welsh firms expanding into UK markets outside of Wales.

Research, Development, and Innovation

- 4.36 Technology and innovation can complement the skills gained through education and training, as well as simplify and shorten processes used across economic sectors, which aids in increasing productivity growth. Encouraging our businesses to take up innovative processes and to realise their potential through harnessing emerging technology and research is therefore one of the Welsh Governments aims with its set of **SMART** programmes – currently funded by the European Regional Development Fund.⁶²
- 4.37 Current EU funding objectives have sought to increase the translation of innovations that derive from research into new goods, services and processes, especially by improving their links with higher educational bodies. While R&D spending is identified as an important factor in increasing productivity – at least at the national level – evidence suggests that a large amount of the higher productivity performance of US firms, relative to EU firms, is explained by their higher capacity to translate R&D into productivity gains (this is especially true for high-tech firms).⁶³
- 4.38 Evidence suggests that firms that invest in Research and Development (R&D) tend to be more productive when compared to those that do not.⁶⁴ Since 2001 the business sector in Wales has come to play a leading role with regards to R&D expenditure (from 44.5% of R&D spending in 2001 to 56.6% in 2017) – see **Figure 4.16**. This is compared to a fall in the share conducted by Higher Education bodies (42% to 36.3%) and Government/Research Councils (13.5% to 2.2%). In the UK, the business sector conducts the highest relative share of R&D in every nation and English region, and in 2018 over half of UK business R&D expenditure was carried out by companies under foreign ownership.⁶⁵

⁶² Welsh Government (2017). *SMART*. Crown copyright.

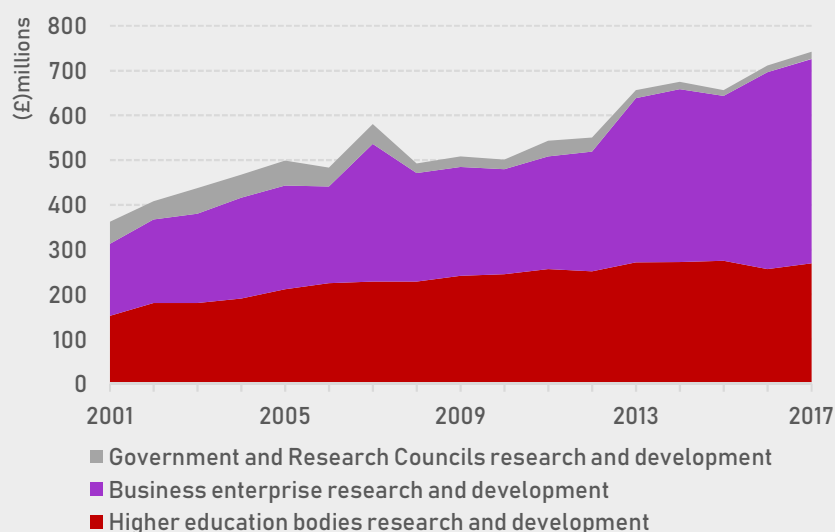
⁶³ Castellani, D., Piva, M., Schubert, T., & Vivarelli, M. (2016). *The Productivity Impact of R&D Investment: A comparison between the EU and the US*. IZA Discussion Paper No. 9937.

⁶⁴ OECD (2014), Perspectives on Global Development 2014: Boosting Productivity to Meet the Middle-Income Challenge, *OECD Publishing*. http://dx.doi.org/10.1787/persp_glob_dev-2014-en

⁶⁵ ONS (2019). *Business enterprise research and development, UK: 2018*. UK Office for National Statistics.

Figure 4.16

Research and development expenditure in Wales, by sector and year



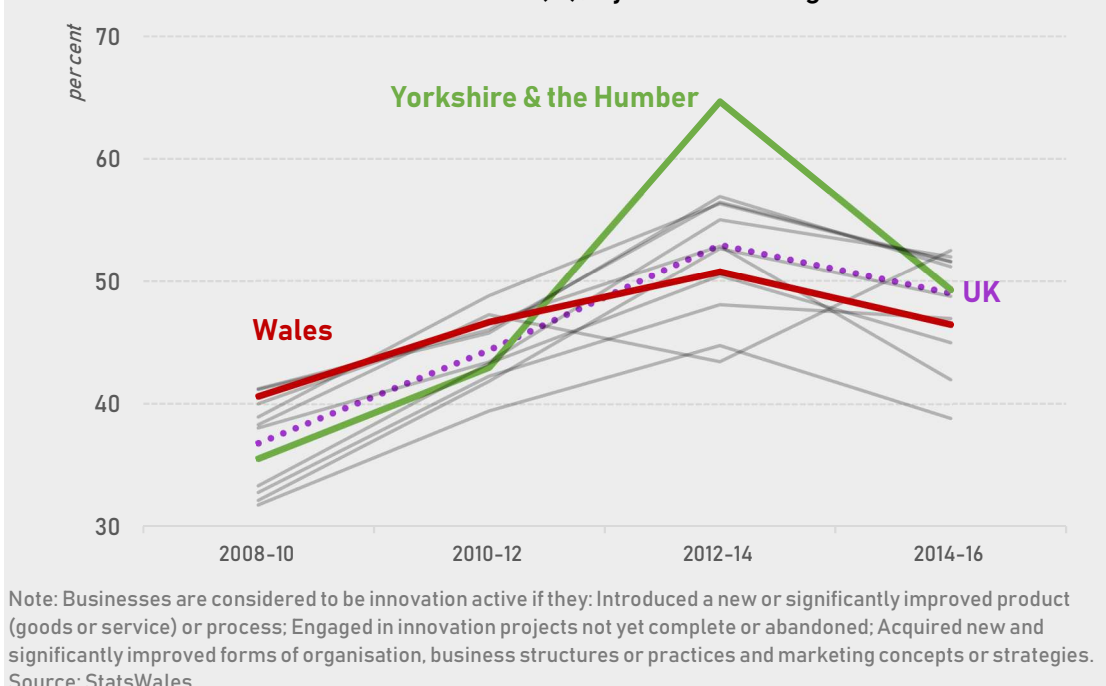
Note: Figures rounded to nearest £ million.

Source: StatsWales

4.39 **Figure 4.17** shows the percentage of businesses that indicated that they were Innovation active using the definition adopted by Eurostat - these were businesses that stated that they had, in the period covered: introduced a new or significantly improved product (goods or service) or process; engaged in innovation projects not yet complete or abandoned; acquired new and significantly improved forms of organisation, business structures or practices and marketing concepts or strategies. For the two most recent periods covered Welsh businesses had a lower innovation activity rate than the UK as a whole, but for the four periods covered the rate in Wales was not significantly different to the UK average, suggesting that Welsh businesses are not lagging behind the rest of the UK in their attempts to innovate (though this statistic gives no insight into the quality and efficacy of that innovation).

Figure 4.17

Businesses that are innovation active (%), by UK NUTS1 regions



- 4.40 Despite the rise in business expenditure on research, spending on R&D per head of population in Wales is the lowest of all the UK's nations (**Figure 4.18**). In 2017, R&D expenditure per head in Wales was effectively half that in Scotland and even lower than the £554 recorded in England. Seen within a European context, R&D spending in Wales as a percentage of GDP has been consistently below the UK average, which itself has been below the EU and Euro Area (see **Figure 4.19**); while relative European spending averages are estimated to have increased when compared to what they were before the start of the financial crisis, spending in Wales and the UK has remained relatively stable.⁶⁶

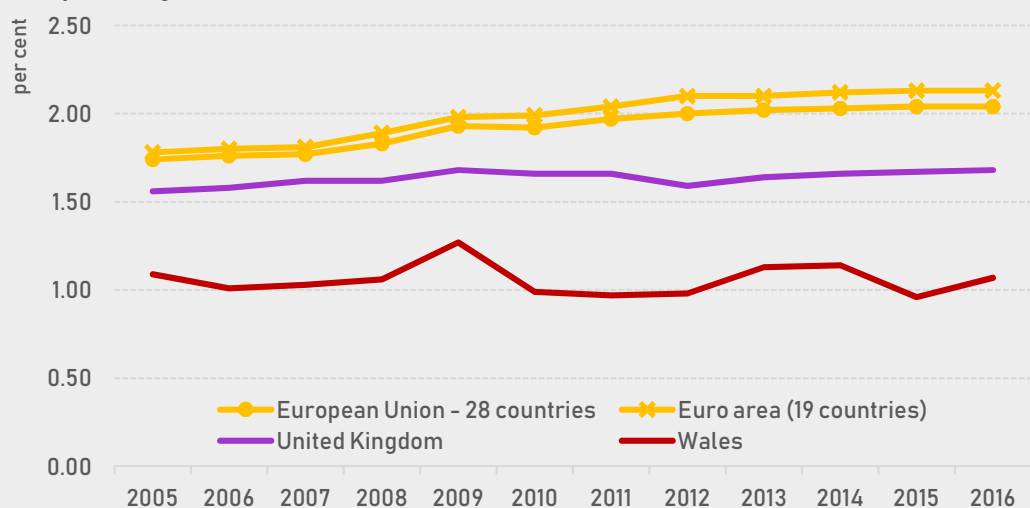
⁶⁶ Important to consider that R&D spending intensity effects across country can be affected by industry structures within countries. Some sectors are better able to distinguish R&D spend in accounts than others. International trends can also be distorted by tax exemptions in certain areas/nations.

Figure 4.18
R&D expenditure per head of population (2017)



Source: ONS (2017)

Figure 4.19
R&D spending (all sectors) as a % of GDP



Note: Some values are estimates for Wales (2005, 2006, 2007, 2009, 2010, 2012, 2014, and 2016) and for the United Kingdom (2008, 2009, 2012, 2014, and 2016).

Source: Eurostat

- 4.41 In 2018 a review of government funded R&D in Wales encouraged the Welsh Government to address this disparity in funding between Wales and other UK nations by enabling Welsh researchers to attract a greater share of UK-wide funding – such as UK Research & Innovation (UKRI).⁶⁷ Among the proposals put forward was for there to be a *Future of Wales fund* which would aim to incentivise research institutions to seek funding outside Wales by providing a bonus payment (relative to the size of funding attracted) if they do so successfully.

⁶⁷ Reid, G. (2018). *Review of Government Funded Research and Innovation*. Welsh Government. Crown copyright.

Summary

- 4.42 Increasing the competitiveness of Welsh businesses will be crucial to raising the living standards and meeting the aspirations of our population. In order to achieve this aim, we urgently need to address the slowdown in productivity growth since the great recession of 2008/9 that has been seen in Wales (as well as across the UK and other developed economies). Raising the skills profile of our workforce in order to meet the demand for skills from businesses now and in the future will be crucially important, especially raising the skills of those who currently have the lowest qualification levels. We will need to encourage potential entrepreneurs to realise their aspirations as well as provide an environment in which for them to do so. Due to our population dispersion, we will also need to increase connectivity within Wales in order to ensure that we are better able to benefit from the positive effects of agglomeration.
- 4.43 The nature of the UK's future trading relationship with the European Union will also be vital to Wales' future economic performance. Compared to the UK, Wales exports a greater share of its goods to the European market, and any barriers to trade erected are expected to have detrimental impacts on productivity growth in Wales – as well as for the UK as a whole. A priority will be to ensure that our research institutions are best placed in the future to attract funding and investment from across the UK. Finally, we will need to continue to foster relationships between research institutions and business to ensure that best practice is adopted by the firms that produce the goods and services we use in Wales and that they are enabled to export beyond our borders.

5 Priority Area:

Reducing the Factors that Lead to Income Inequality

Key Points

- Various measurements used to measure income inequality show that it has remained relatively stable over the past three decades but there was a steep increase seen across most measures during the economic reforms of the 1980s. The UK is currently one of the most unequal countries in Europe.
- There is evidence to suggest that economic inequality may have had a negative impact on economic growth and productivity in the UK.
- The tax and benefits system has come to play an ever more important role in keeping income inequality stable, but this does mean groups dependent on state assistance are more at risk of changes in government spending.
- Compared to most major UK regions, Wales has a higher proportion of low-paid jobs (that pay 2/3 the UK median wage) and the lowest proportion of high-paid jobs (that pay 1.5 times the UK median wage). The median Welsh wage is lower than the median for the UK as a whole.
- The skills profile of the Welsh workforce is slightly more skewed towards a lower qualification level than the UK. Higher qualification attainment is associated with higher earnings; individuals with high level qualifications are more likely to find work in an occupational class associated with high pay.
- As well as this, the job classifications that are seeing the highest relative growth are mostly in those occupations that traditionally require higher levels of qualifications.
- The role that housing costs play in increasing inequalities has become more significant. The relative income position of pensioners improves once housing costs are accounted for, while the position of adults – and the children dependent on them – gets worse. This can largely be explained by the differences in costs associated with home ownership.
- There is some evidence to suggest that social housing rents have risen faster than private housing rents which could be driving up the cost of living for some of the

most vulnerable families in Wales (though social housing rents are still well below private rents). However, it is worth noting that the quality of social housing stock has significantly improved over the past decade, so increased costs may be offset by increased energy efficiency.

- The number of households in Wales that suffer from fuel poverty has reduced drastically in recent years but 12% were still estimated to be affected in 2018. Falls in the relative price of energy or increasing energy efficiency are the two most important factors in its decline.
- There are other factors that may be increasing the cost of living for families and putting them under financial strain. Across the UK, public transport costs have risen faster in recent years relative to other household goods and services, and relative costs associated with owning a personal form of transport. At the same time 37% of non-pensioner respondents in the National Survey for Wales in 2018/19 stated they had encountered some struggle in meeting bill payments.

Why Focus on Reducing Income Inequality?

- 5.1 Across countries there is a tendency for higher income inequality to be associated with increased social problems and worse general levels of population health. This reflects a potential sensitivity societies have to the scale of social stratification.⁶⁸ There is also evidence to suggest that income inequality could be having a negative impact on growth in the United Kingdom, in particular the distance in incomes between low income households and the rest of the population.⁶⁹ Health and social problems tend to turn divert resources away from areas that could further induce growth – this is beyond the impacts they have on individuals and communities.⁷⁰
- 5.2 As an illustration of inequalities in Wales and the effect they have on outcomes, the difference between the least and most deprived quintiles is significant in terms of life expectancy (a difference of 5.9 years for females and 7.1 years for males). The strength of the deprivation effect on health outcomes is brought into further focus in **Figure 5.1**. This shows that at birth females in the most deprived quintile can expect to spend 73.6% of their life in good health compared to 86% for those in the least deprived quintiles (a difference of 12.4 percentage points).⁷¹

⁶⁸ Wilkinson, R., and Pickett, K. (2009) *Income Inequality and Social Dysfunction*. Annual Review of Sociology, Vol. 35, pp. 493-511

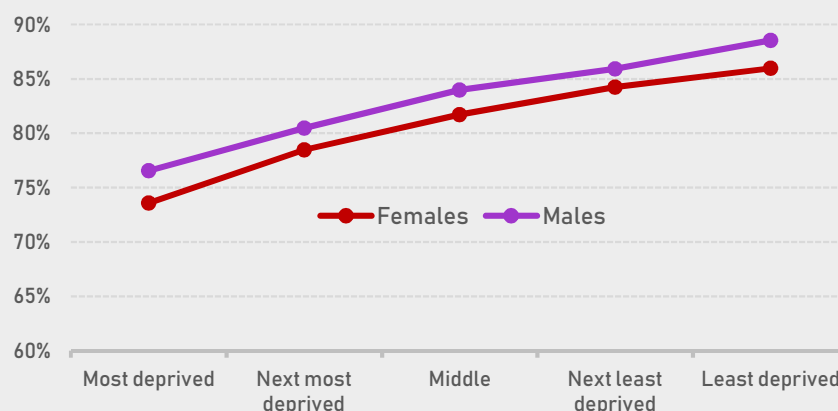
⁶⁹ Cingano, F. (2014) *Trends in Income Inequality and its Impact on Economic Growth*. OECD Social, Employment and Migration Working Papers No. 163

⁷⁰ Detotto, C., & Otranto, E. (2010) *Does crime affect economic growth?* Kyklos, 63(3), pp. 330-345.

⁷¹ The difference in healthy life expectancy is 12% for males between the most and least deprived quintiles.

Figure 5.1

Percentage of life expectancy in good health in Wales at birth, by deprivation quintiles (2010–14)



Source: Public Health Wales Observatory

- 5.3** The Welsh Government is currently committed to reducing the income inequalities seen across Welsh society. The Well-being and Future Generations (Wales) Act 2015 commits the government to creating **a more equal Wales** which is “*a society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances)*”. This includes ensuring equal access to decent jobs, recognising everyone’s value; enabling people to develop the skills and knowledge to be fulfilled; giving people equal opportunities to participate in decision making, to enable equal outcomes; and, understand the causes and symptoms of health inequalities, include adverse childhood experiences and violence against women, domestic abuse and sexual violence.
- 5.4** The socio-economic analysis for this priority area is split into three sections. The first section attempts to set out how income inequality can be measured in the UK (and where possible in Wales). The second section focuses on income, earnings and skills – the trends seen in these area and whether there are any indications how it could assist in reducing income inequality. The third and final section focuses on the cost of living and attempts to demonstrate areas which may be placing financial strain on individuals and families.

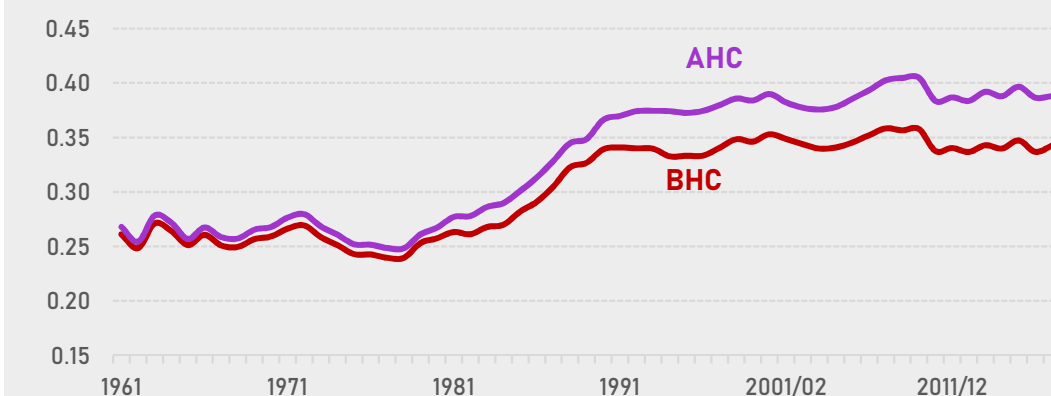
Measuring Income Inequality

Gini Coefficient

- 5.5** The Gini coefficient is the most traditionally quoted measurement of income inequality, especially to make cross-country comparisons. The coefficient can be any value between 0 (complete equality, where all incomes for individuals in an area are equal) and 1 (complete inequality, where all income in an area goes to one person). While this data is not available for Wales only, **Figure 5.2** shows what this value has been for Great Britain since 1961 – before and after housing costs (BHC and AHC).

Figure 5.2

Gini Coefficient of equivalised disposable income for people who live in Great Britain



Source: Institute for Fiscal Studies using data from FES (prior to 1995/96) and FRS (1995/96 onwards)

- 5.6** After a period of continuous rise between 1978 and 1992, the Gini coefficient has remained relatively stable and in 2017/18 was estimated to be 0.34 before housing costs were taken into account and 0.39 after housing costs. The effects of housing costs on inequality will be discussed further in this chapter, but it is worth noting it is estimated to play an economically significant role in worsening inequality across a range of measurements. Great Britain's Gini coefficient (BHC) is also currently higher than the EU28 average of European member states (which was 0.31 in 2017).⁷²
- 5.7** One issue with the Gini coefficient is that it fails to give any insight into how incomes are distributed across the economy. So, for example, it cannot provide any insights into the number of people in relative or absolute poverty in a region or how concentrated income is at a particular point. The next measurements attempt to bridge that gap.

Income Ratios

- 5.8** To get a better idea how incomes differ now and historically we can look to how income ratios have evolved over time. An income ratio allows us to check how many times bigger one group's income is to another. **Figure 5.3** shows the income ratios between three income groups before and after housing costs (BHC/AHC) in the UK.⁷³ The income groups are defined as follows:

- **High income individuals** – defined by the income level at the 90th percentile (the point at which 90% of the UK population have less income)

⁷² See Eurostat: <https://ec.europa.eu/eurostat/web/products-datasets/-/tessi190>

⁷³ Data is not currently available at the Welsh level

- **Middle income individuals** – defined by the median income level (the point at which 50% of the UK population have less income)
- **Low income individuals** - defined by the income level at the 10th percentile (the point at which 10% of the UK population have less income)

Figure 5.3

UK income ratios at different points of income distribution¹, 1994/95 to 2017/18



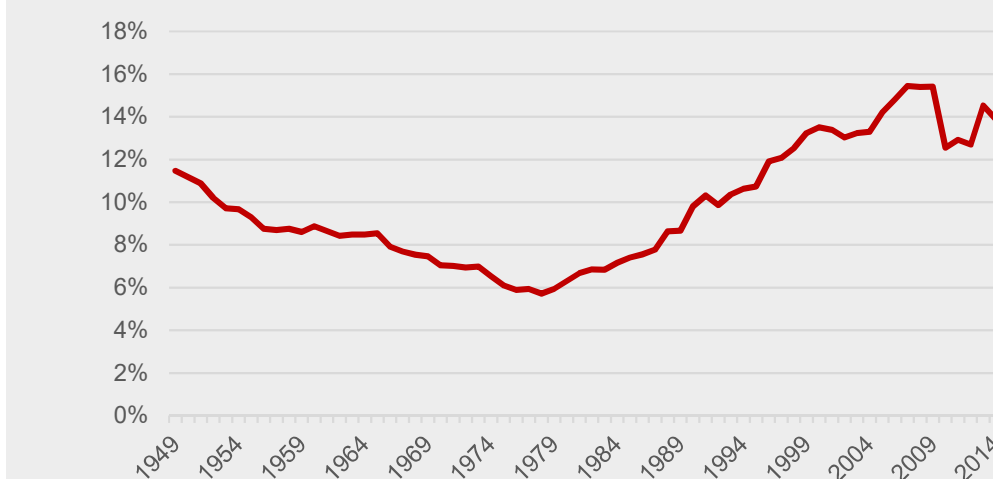
5.9 While income ratios have remained relatively stable since 1994/95, the effects that housing costs seem to have on widening the income ratio between those with low incomes and those with middle and high incomes is particularly apparent (by comparison, housing costs have a far smaller effect on worsening economic inequality between high and middle income individuals). This suggests that housing costs do not

scale up relative to how high up the income distribution you move – there is a minimum standard of housing that a person needs, regardless of income.

- 5.10** There are two things to bear in mind when interpreting the figures presented in **Figure 5.3**. First, while there has been relative stability in the income inequality ratios shown since the mid-1990s, the inequality ratios are thought to have widened between the late 1970s and early 1990s.⁷⁴ Second, there is some evidence to suggest that analysis of income inequality should go beyond the top 10% (P90), with the top 1% (P99) receiving a higher share of overall income in the long term since the late 1970s (see **Figure 5.4**) – the economic crisis which began in 2008 is estimated to have briefly stopped this trend.

Figure 5.4

UK top 1% fiscal income share, 1949 to 2014



Source: World Inequality Database

Relative Income Poverty

- 5.11** An individual being in relative poverty is defined as being in a household that collectively has less than 60% of the average (median) income of all other households in the UK at a given moment in time.⁷⁵ As such it has been used as one of the key metrics to track how one aspect of income inequality is increasing/decreasing over time as it measures how many people have incomes significantly lower than the average expected within a country/region.
- 5.12** **Figure 5.5** shows the estimated percentage of individuals in Wales defined as being in relative poverty between 1994/96 and 2015/17, before and after housing costs; it also shows the estimated percentage of individuals in certain population groups that are thought to be in relative poverty. As can be seen, a greater proportion of working adults and children are pushed into relative poverty as a result of housing costs,

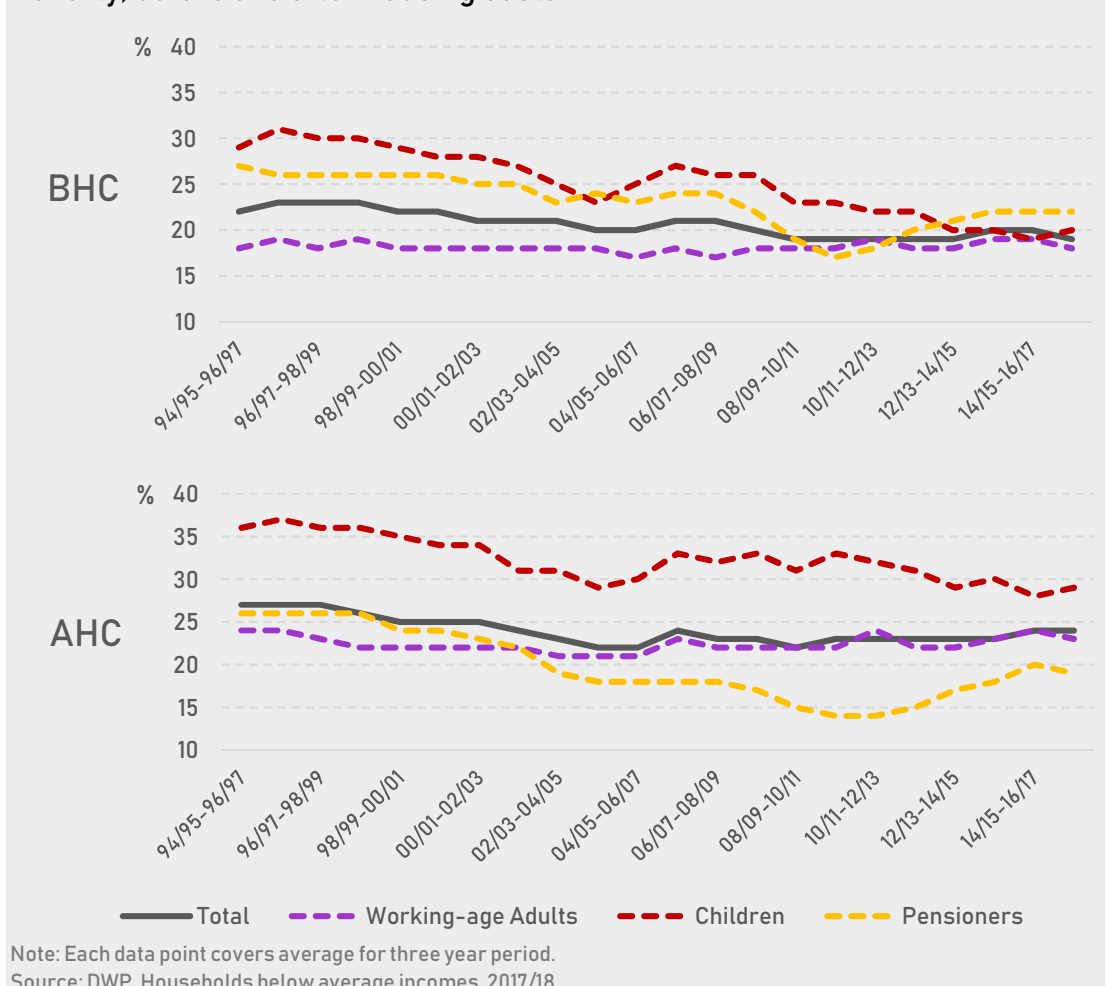
⁷⁴ [IFS \(2019\) Living Standards, poverty and inequality in the UK: 2019](#)

⁷⁵ Relative poverty rates are defined for the UK as a whole,

whereas fewer pensioners are actually regarded as being in relative poverty once these costs are taken into consideration.

Figure 5.5

Individuals in Wales, by category, living in households that are in Relative Poverty, before and after housing costs



- 5.13** The change in the position of pensioners, from being the age group most likely to be in relative poverty before housing costs, to the group least likely to be after they are taken into account, reflects this group's low housing costs relative to income. In line with expectations, the Resolution Foundation estimate that, in Wales, those aged 65 and above are the most likely to own their own home outright⁷⁶ – and by extension not need to make mortgage repayments or make rent payments. Working-age families however are less likely to own their own home outright, and more likely to be privately/socially renting or making mortgage repayments.⁷⁷

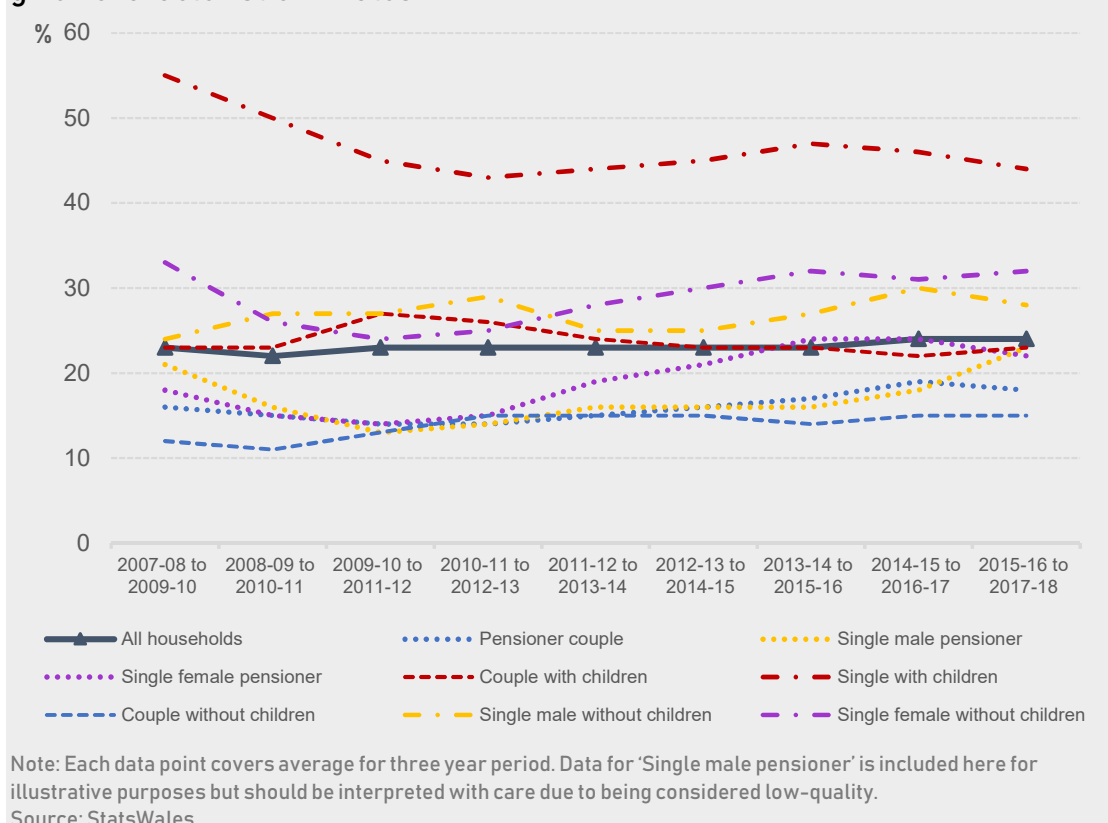
⁷⁶ The Resolution Foundation's estimates are based on data from the Labour Force Survey (ONS). For more detail, see: <https://www.resolutionfoundation.org/data/housing/>. See **Figure 5.17** in this document for home ownership figures in Wales across age groups.

⁷⁷ At a UK level, the DWP state that 3/4 of pensioners own their own house outright as opposed to 1/5 of working age adults.

5.14 **Figure 5.6** gives us an estimation of the risk of being in relative income poverty for individuals based on the characteristics of the household in which they reside. The group most at risk of being in relative income poverty were single adults with children (44% of people in this category were at risk of being in relative poverty), but being single in general increases the risk for an individual of being in relative poverty above the average across all households; all other groups measured were less at risk of income poverty than the average for all households. Given that this statistic is after housing costs, one possible explanation for this is that the cost of housing will not be shared for the majority of single individuals, as opposed to households with two working adults. Some single adults will obviously choose to live together but, at the UK level, the number of households with two or more unrelated adults only represented 3% of all households.⁷⁸

Figure 5.6

Risk of being in relative income poverty (after housing costs), for people with given characteristic in Wales



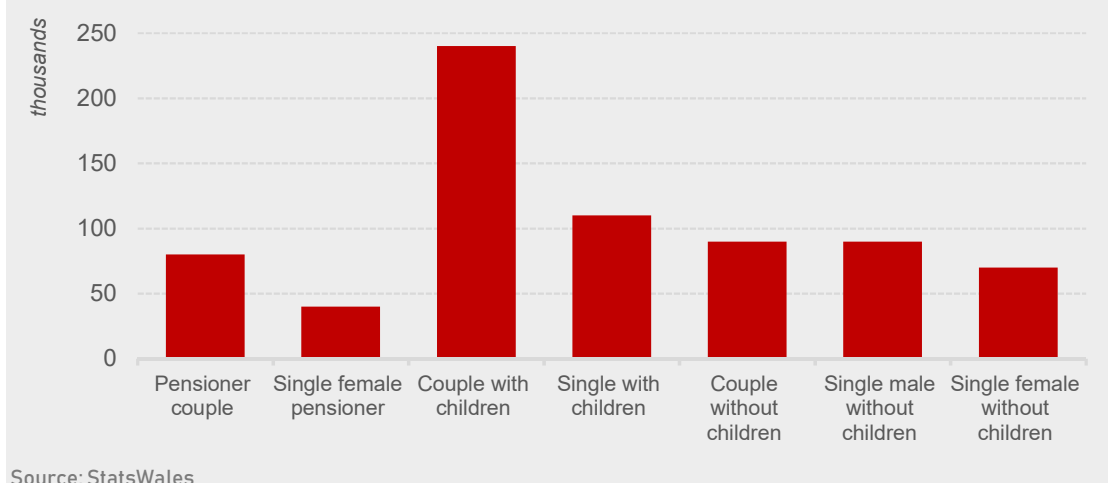
5.15 When looking at the absolute figures of those in relative poverty by a given characteristic (**Figure 5.7**), we can see that the two largest groups are those responsible for children, either by an adult couple (240,000) or single adult (110,000). At present there are a number of policies aimed at helping families with children, these include: *The Childcare Offer for Wales*, which provides eligible working parents of 3 and 4 year olds with up to 30 hours of free childcare; the *Pupil Development Grant*,

⁷⁸ See: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/families/bulletins/familiesandhouseholds/2018>

which provides parents of pupils eligible for free school meals with assistance to buy school equipment and clothing, provision for free school meals, free breakfast, and free transport to school, amongst others.

Figure 5.7

Number of people in relative poverty with given characteristic in Wales (2015/16 to 2017/18)



Income, Earnings, and Skills

Gross Earnings

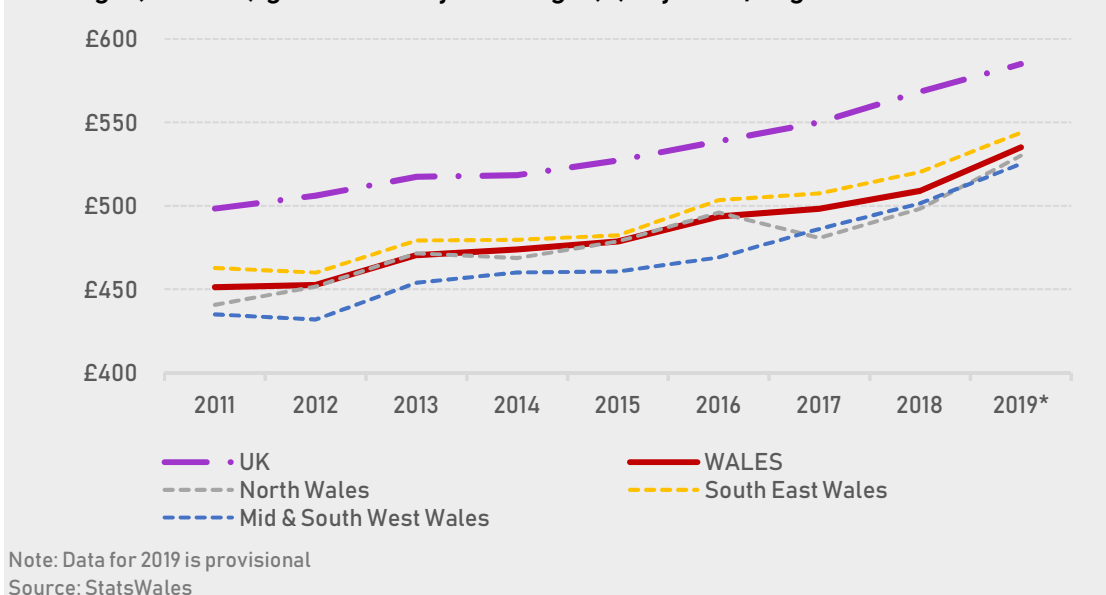
- 5.16** Average (median) gross weekly earnings in Wales are estimated to have been consistently below the UK level in the past decade, with the gap in 2019 estimated to be £50 (9%) lower than the UK value (see **Figure 5.8** for data since 2011). The gap in average weekly earnings between the Welsh economic regions is less severe with South East Wales having average earnings £18.70 higher than Mid & South West Wales in 2019.⁷⁹
- 5.17** While there has been nominal wage growth the UK and Wales over the past decade, real wage growth (wages once inflation is accounted for) has been modest at best and real wage levels are still lower than they were pre-financial crisis.⁸⁰ There is a strong link between real wages and productivity – see the priority area **Productive and Competitive Businesses** for more detail.

⁷⁹ In 2019 median gross weekly earnings were £569 in the UK and £509 in Wales, with regional median earnings as follows: £520 in South East Wales, £501.90 in Mid & South West Wales, and £498.80 North West Wales.

⁸⁰ See: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/articles/supplementaryanalysisofaverageweeklyearnings/latest>

Figure 5.8

Average (median) gross weekly earnings (£), by area/region



The Tax and Benefit System

- 5.18** In the UK the primary method of reducing economic inequalities is via the tax and benefits system. While the Welsh Government does not have the ability to legislate on the benefits system (which is controlled by the UK government), it does have some discretionary powers in setting its own tax legislation, which includes its ability to set income tax rates in Wales (though not income tax rate thresholds). At present income tax rates in Wales are currently set at the same levels as in England.
- 5.19** Research by the ONS (see **Figure 5.9**) shows how tax and benefit transfers are believed to have affected the Gini coefficient of the UK in 2018. According to this research, the benefits system and state provisions have an economically significant role in reducing income inequality, whereas indirect taxes – such as VAT – increase it due to the ‘regressive’ nature of many of these taxes.⁸¹
- 5.20** The tax and benefits transfer system has played an increasingly important role in keeping income inequality stable across income percentiles in the past two decades.⁸² This means that those at the bottom of the income distribution face greater exposure to the effects that changes in government tax and benefits policy could have on their income. Research by the Institute for Fiscal Studies shows that “before taxes and benefits, the highest-income fifth of individuals have an average household income that is 12 times as high as the poorest fifth. Adding all cash benefits and deducting the

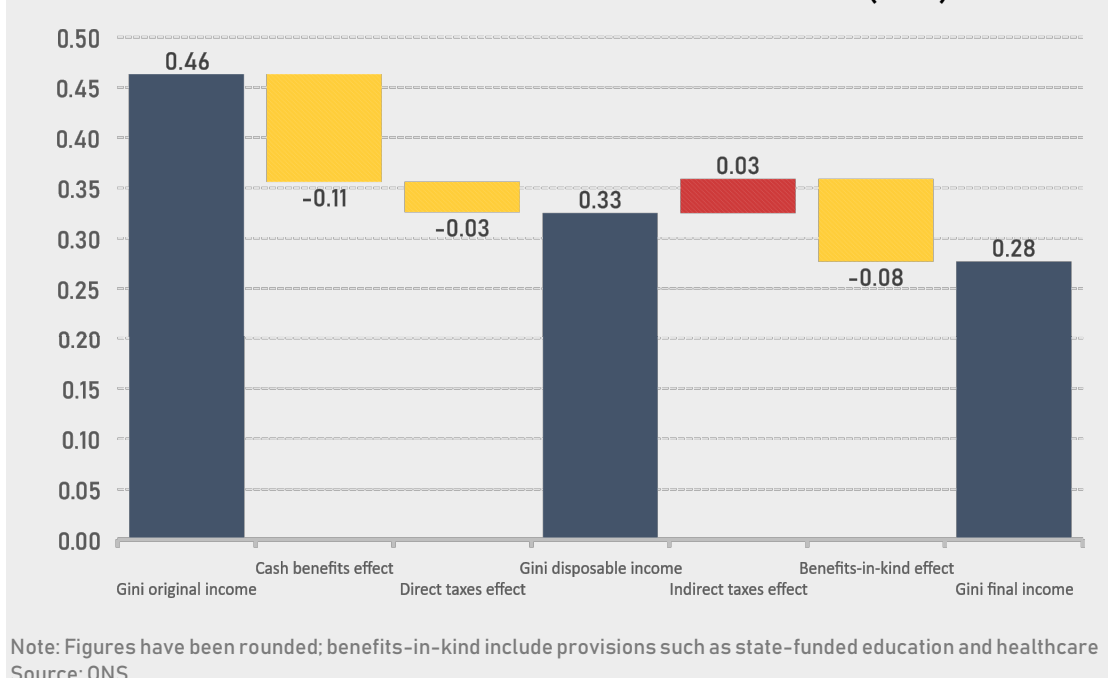
⁸¹ For example, the amount of VAT you pay is relative to the value of that being purchased, not to the income of the person purchasing it.

⁸² Joyce, R. and Xu, X. (2019) *Inequalities in the twenty-first century: Introducing the IFS Deaton Review*. Institute for Fiscal Studies.

main direct personal taxes (income tax, employee and employer NICs and council tax) bring this figure down to 5.⁸³

Figure 5.9

Effect of tax and benefit transfers on UK Gini coefficient value (2018)



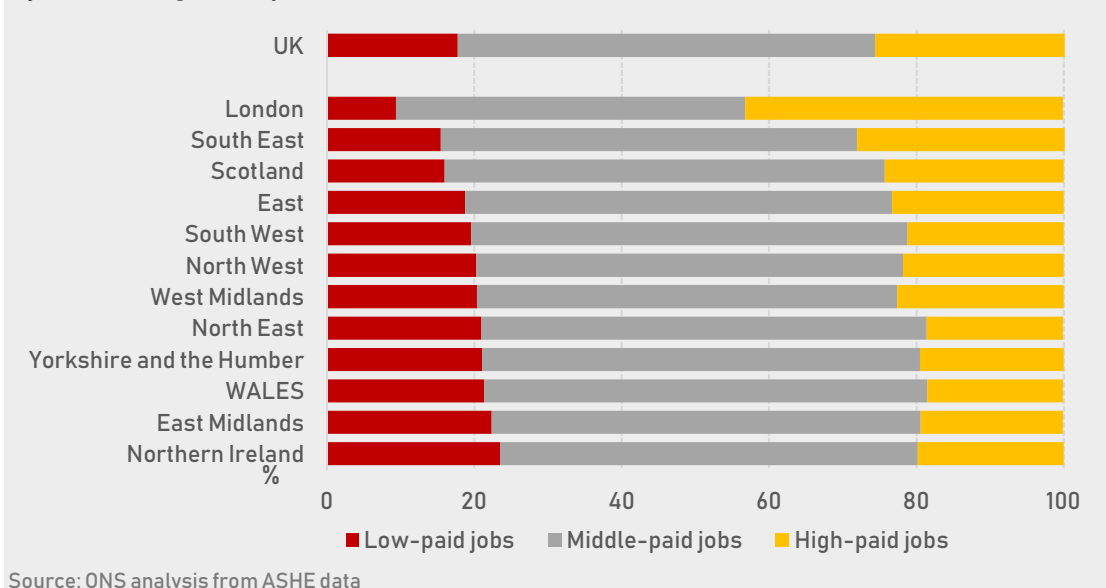
Low and High Paid Work

5.21 In 2018, Wales was estimated to have the third highest percentage of employees, in low-paid jobs (less than 2/3 of UK medium hourly earnings) of all the UK's major regions at 21.4% (UK rate is 17.8%), and also was estimated to have the lowest percentage of employees in high-paid jobs (above 1.5 times UK median hourly earnings) at 18.4% (UK rate is 25.7%) – see **Figure 5.10** for more detail. When making pay comparisons within the four UK nations (i.e. comparing pay against the median wage for that particular nation), the share of employees in low-paid jobs in Wales is 8%, lower than both England (14%) and Scotland (11%)⁸⁴ – this is aided however by the fact that the median wage in Wales is lower than those regions (see **Figure 5.8**).

⁸³ IFS (2019) *How high are our taxes, and where does the money come from?*. Institute for Fiscal Studies. [Website].

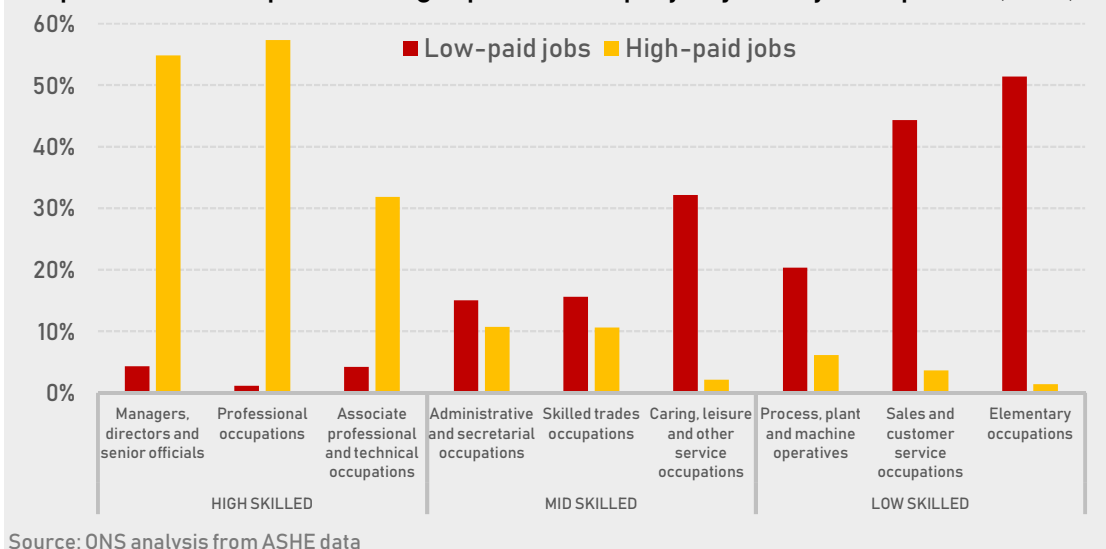
⁸⁴ ONS (2019) Job quality indicators in the UK – hours, pay and contracts: 2018. *Office for National Statistics*.

Figure 5.10
Proportion of low-paid and high-paid employee jobs,
by NUTS1 region (April 2018)



5.22 Analysis by the ONS (see **Figure 5.11**) shows a correlation between high/low pay and occupational classification⁸⁵ – which can be used as a crude estimate of the skill level required by occupation. This provides one potential explanation for the prevalence of low-paid jobs in Wales as, relative to the UK, Wales has a higher proportion of its workforce in low and mid skilled employment and a lower proportion in high skilled work (see **Figure 3.17** for more detail).

Figure 5.11
Proportion of low-paid and high-paid UK employee jobs, by occupation (2018)



⁸⁵ Occupational classification is derived from SOC2010 codes, which use stated job titles to group individuals into different occupational groups.

Skills and Education

- 5.23** When looking at the qualification profile of the Welsh workforce by occupation – as shown in **Figure 5.12** – we can see how the educational profile of the workforce skews towards higher qualification levels as we move up the skill level categorisations (low, mid, and high). Those in the professional occupations class have the greatest proportion of individuals whose highest qualification is either NQF level 4-6 (degree level qualifications) or NQF level 7-8 (post-graduate qualifications) of any of the occupational classes. Research suggests that the labour market position of graduates (aged 25-59) in the UK is not too dissimilar to other European economies in that the majority find employment in jobs that have a high occupational classification.⁸⁶
- 5.24** In line with what can be expected given what can be seen in **Figure 5.11** and **Figure 5.12**, higher qualification attainment is correlated with higher earning potential – this is often referred to as a ‘graduate earnings premium’. The Department for Education estimated that in the UK the difference in median earnings between graduates and non-graduates was as high as £10,000 in 2018, with the difference between those with post-graduate qualifications and non-graduates even higher at £16,000.⁸⁷ It is worth noting that there is some evidence to suggest that the premium that graduates achieve may be becoming less pronounced for more recent graduate cohorts.⁸⁸
- 5.25** While obtaining a graduate degree is expected to provide an earnings premium, there is some evidence to suggest that inequality in earnings amongst graduates increased between 1994 and 2014.⁸⁹ Specifically this inequality was identified as being between graduates of the same-subjects as opposed to a difference in earnings between graduates of different subjects. The main driver of this inequality was primarily believed to be driven by the increased variation of cognitive ability in more recent graduate cohorts than those prior, a perceived consequence of the increased numbers of people going to university.⁹⁰ It is important to note that subject choices of graduates, as well as the institution they attended, do have a significant impact on expected earnings.⁹¹ Responses to The Education and Skills Survey conducted by the CBI and Pearson suggest that, while graduate skills are greatly valued, the business community particularly value the aptitude and attitude to work of those they employ.⁹²
- 5.26** When accounting for the fact that those who obtain post-graduate qualifications are increasingly from richer households, the earnings premium for post-graduates – even

⁸⁶ Green, F., and Henseke, G. (2017) *Graduates and ‘graduate jobs’ in Europe: a picture of growth and diversification*. Centre for Global Higher Education working paper series.

⁸⁷ This was for those aged 16-64. For those aged 21-30 the graduate/non-graduate gap was £4,500 and the post-graduate/non-graduate gap was £9,000. For further information see:

<https://www.gov.uk/government/statistics/graduate-labour-market-statistics-2018>

⁸⁸ Boero, G., Cook, D. Nathwani, T., Naylor, R., and Smith, J. (2019) *The Return to a Degree: New evidence based on the birth cohort studies and the labour force survey*. HESA & Warwick University.

⁸⁹ Lindley, J., and McIntosh, S. (2015). Growth in within graduate wage inequality: The role of subjects, cognitive skill dispersion and occupational concentration. *Labour Economics*, 37, 101-111.

⁹⁰ Increased occupational dispersion – i.e. more occupational levels and roles – is also believed to have played a factor, albeit less significant.

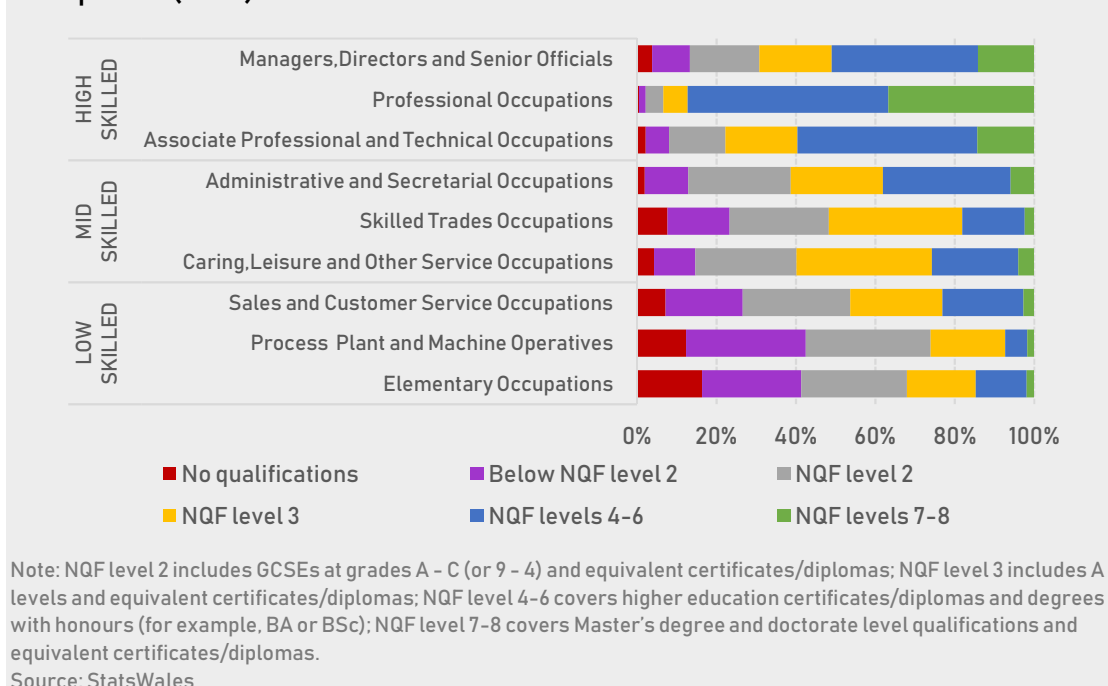
⁹¹ Belfield, C., et al. (2018) *The impact of undergraduate degrees on early-career earnings*.

⁹² CBI/Pearson (2017). *The Education and Skills Survey 2018: Helping the UK to Thrive*

over under-graduates – has been identified as an obstacle to social mobility. Policies that increase post-graduate opportunities for individuals from poorer households should be considered.

Figure 5.12

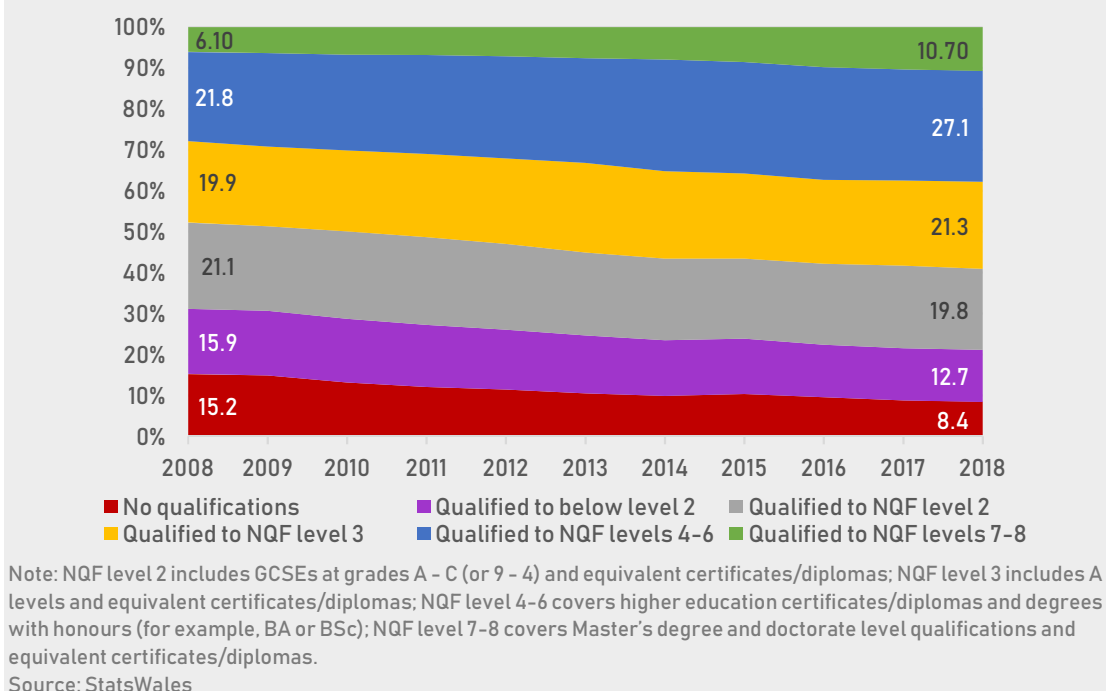
Highest qualification levels of working age adults in employment in Wales, by occupation (2018)



- 5.27** There is evidence to suggest that in recent years the Welsh workforce is upskilling, at least in terms of qualifications. **Figure 5.13** shows the change in the qualification profile of the working age population in Wales over the most recent 10-year period for which data are available. The proportion of those obtaining graduate degrees, postgraduate degrees, or equivalent qualifications increased between 2008 and 2018; the proportion of those whose highest educational qualification was an NQF level 4-6 qualification (degree level) increased by 5.3%, while the proportion of those whose highest qualification was an NQF level 7-8 qualification (postgraduate level) increased by 4.6%. Equally, the proportion of those with low level has decreased – especially for those who have no qualifications (down 6.8%).

Figure 5.13

Highest qualification level of working age adults in Wales



Income and Employment Deprivation Across Wales

5.28 Several types of deprivation are measured and used to create the Welsh Government’s WIMD (Welsh Index of Multiple Deprivation) statistic. Two types of deprivation measured to create this index, income and employment deprivation, are particularly relevant to this priority area and indicate where certain intervention – such as those that target skills deficiencies – could be most effective. The following paragraphs use WIMD data at the local authority level, but data is available at Lower Layer Super Output Areas (LSOAs) which represent statistical units of approximately 1000 people.

5.29 Income deprivation within the WIMD index is defined as the percentage of **all people** within an area that fall within any of the following three categories:

- an adult, or dependent child of an adult, in receipt of an income related benefit
- an adult, or dependent child of an adult, in receipt of Working and Child Tax Credits, with income less than 60% of the median in Wales
- an asylum seeker

5.30 Employment deprivation is measured as the percentage of **working-age adults** within an area that fall under the following category:

- a working-age adult in receipt of an employment related benefit

- 5.31** **Table 5.1** shows the income and employment deprivation rates for every local authority in Wales using WIMD 2019 data, ordered by economic region. Of the six most income deprived local authorities, five were in South East Wales: Blaenau Gwent (21%), Merthyr Tydfil (20%), Rhonda Cynon Taf (19%), Caerphilly (18%) and Newport (18%). Analysis conducted by the Welsh Government using data in 2014 showed that income deprivation was more prevalent in more densely populated areas than those sparsely populated, and that it also correlated with town size.⁹³ This is not necessarily indicative of any causal link, however.
- 5.32** Of the six most employment deprived local authorities, five were in South East Wales and more specifically the Valley's region: Blaenau Gwent (15%), Merthyr Tydfil (14%), Rhondda Cynon Taf (13%), Caerphilly (12%), and Torfaen (12%). In response to the high levels of deprivation and other issues seen in the Valleys the Welsh Government set up the Valleys' Taskforce in 2016. In 2019 the taskforce agreed on seven priority areas for taking forward their work, these were: strategic hubs, foundational economy, entrepreneurship and business support, housing, Valleys Taskforce innovation fund, transport, and a valleys regional park.⁹⁴

⁹³ So, for example, Aberystwyth would be a large town in a sparsely populated area. For more detail on analysis see: [Welsh Index of Multiple Deprivation 2014: A guide to analysing deprivation in rural areas](#)

⁹⁴ [Welsh Government \(2019\) Our Valleys, Our Future: 2019 to 2021.](#)

Table 5.1

Population in income and employment deprivation in Wales, by local authority (WIMD 2019)

	% of population	
	In Income Deprivation	In Employment Deprivation
WALES	16	10
North Wales		
Conwy	15	10
Denbighshire	17	11
Flintshire	12	8
Gwynedd	13	8
Isle of Anglesey	15	10
Wrexham	15	9
Mid & South-west Wales		
Carmarthenshire	15	11
Ceredigion	12	8
Neath Port Talbot	19	14
Pembrokeshire	15	10
Powys	11	7
Swansea	17	11
South-east Wales		
Blaenau Gwent	21	15
Bridgend	16	11
Caerphilly	18	12
Cardiff	16	9
Merthyr Tydfil	20	14
Monmouthshire	10	7
Newport	18	11
Rhondda Cynon Taf	19	13
Torfaen	17	12
Vale of Glamorgan	13	8

Source: StatsWales

Cost of Living

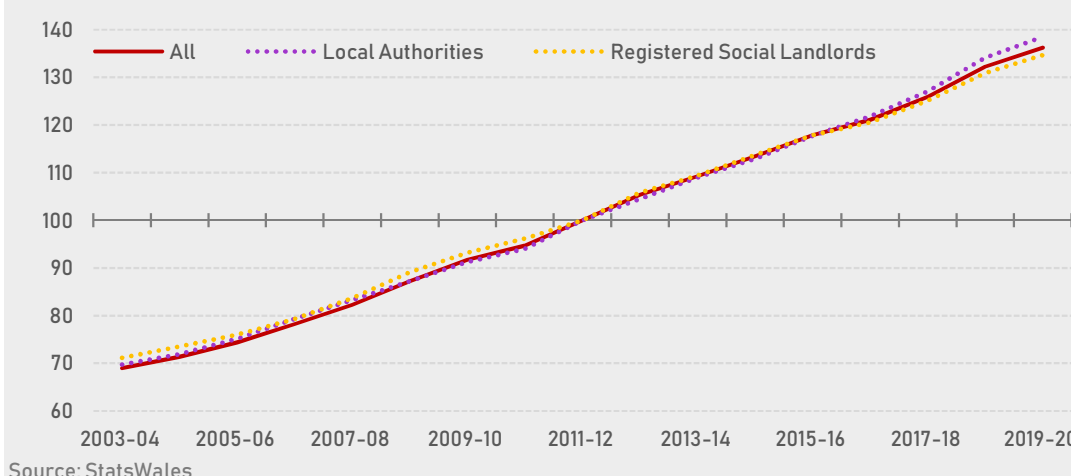
Costs Associated with Housing

- 5.33** As the effects of housing costs on income inequality have been mentioned in many of the preceding paragraphs, it is worth briefly examining the trends and dynamics of the housing market in Wales (as well as the wider UK market for comparative purposes).
- 5.34** Average social-housing rents in Wales for self-contained⁹⁵ units have risen 36% since 2011-12 (the equivalent of a £24.80 per week increase). There was no noticeable difference in the increases by the two providers of social-housing - local authorities and registered social landlords (see **Figure 5.14**).

⁹⁵ Self-contained means units where facilities are included within the unit (such as a kitchen or bathroom) and not communally shared with other units.

Figure 5.14

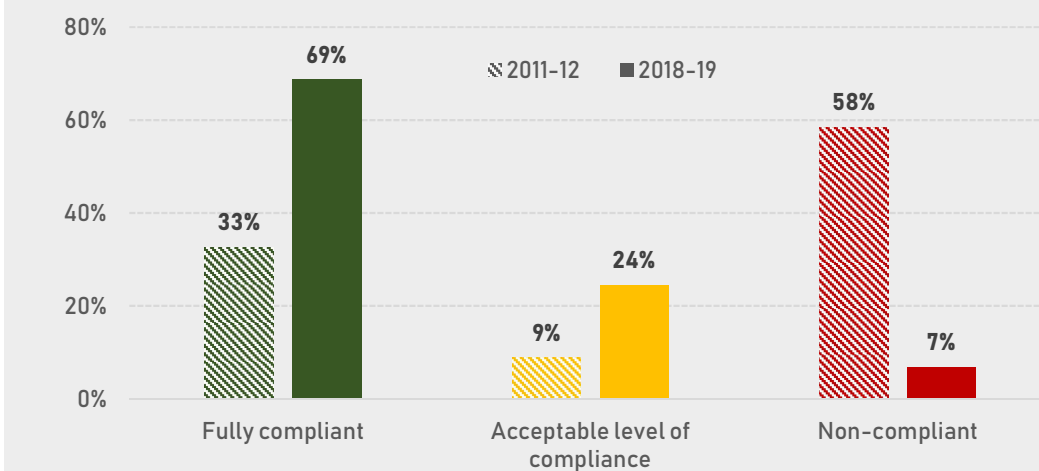
Index of average weekly rents in Wales' self-contained social housing stock at social rent (2011-12 = 100)



- 5.35 The degree to which this will have affected those families in social housing will depend on whether their dwelling has received improvements in recent years. The quality of housing stock has increased significantly since 2011-12, so the effects of rising social housing rent may be offset somewhat by rising levels of appliance and building energy efficiency (see **Figure 5.15**).

Figure 5.15

Social housing stock in Wales that meets Welsh Housing Quality Standard (WHQS)



Note: The WHQS measures 42 individual elements within the following seven categories: In a good state of repair; safe and secure; adequately heated, fuel efficient and well insulated; contain up-to-date kitchens and bathrooms; well managed (for rented housing); located in attractive and safe environments; as far as possible suit the specific requirements of the household (e.g. specific disabilities).

The social housing stock contains stock managed by local authorities and registered social landlords.

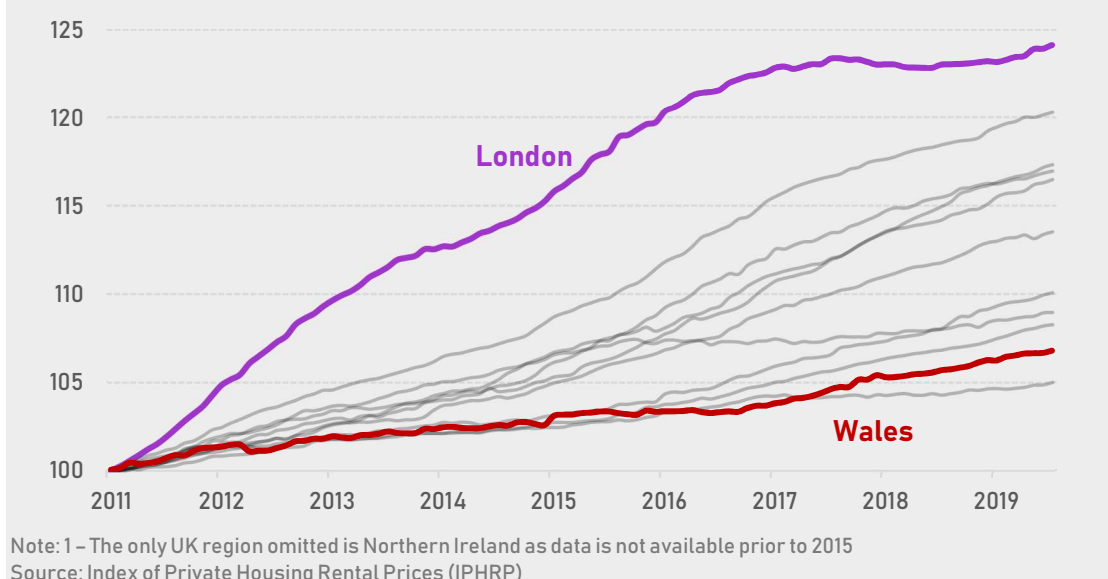
Source: StatsWales

- 5.36 Looking at the private rental market, **Figure 5.16** shows an experimental index produced by the ONS to track how prices have changed for those who rent residential

property from private landlords, by NUTS1 regions (excluding Northern Ireland).⁹⁶ Private rental price growth in Wales on aggregate was estimated to be the second lowest measured amongst the UK's major regions, and far below the price rises seen in London. Care should be taken in interpreting this statistic for two reasons: the first is due to the statistics experimental measure; the second is due to the fact it only goes back to 2011 (the steepest inflation in house prices occurred at the start of the 21st century, it is reasonable to assume that rents also rose sharply during this period).

Figure 5.16

Index of Private Housing Rental Prices, by UK NUTS1 regions¹ (2011 = 100)



5.37 The relative significance of analysing the private rental market is becoming more apparent due to the estimated gradual fall in home ownership amongst the Welsh population – especially for those aged 25-34 (see **Figure 5.17**). The fall in home ownership amongst this age group and the cohort above them can *partially* be explained by the increasing ratio of house prices to wages that has occurred since the turn of the millennium – more commonly known as the ‘household affordability’ ratio⁹⁷ – making it harder for first-time buyers to get on the property ladder. The median and lower quartile household affordability ratio for most local authorities in Wales is lower than for England & Wales as a whole, although in most areas the ratio is still in the order of 1.5 to 2.5 times what it was 20 years ago (see **Appendix** for more detail). In areas, such as Mid Wales, median house prices are seven times that of median earnings. That being said, the ratio in most Welsh local authorities has remained stable since the financial crisis, the point at which home ownership rates drop off.

5.38 While the fall in home ownership in Wales has been gradual, there are concerns about the effects that falling home-ownership rates could have on the future. At present the

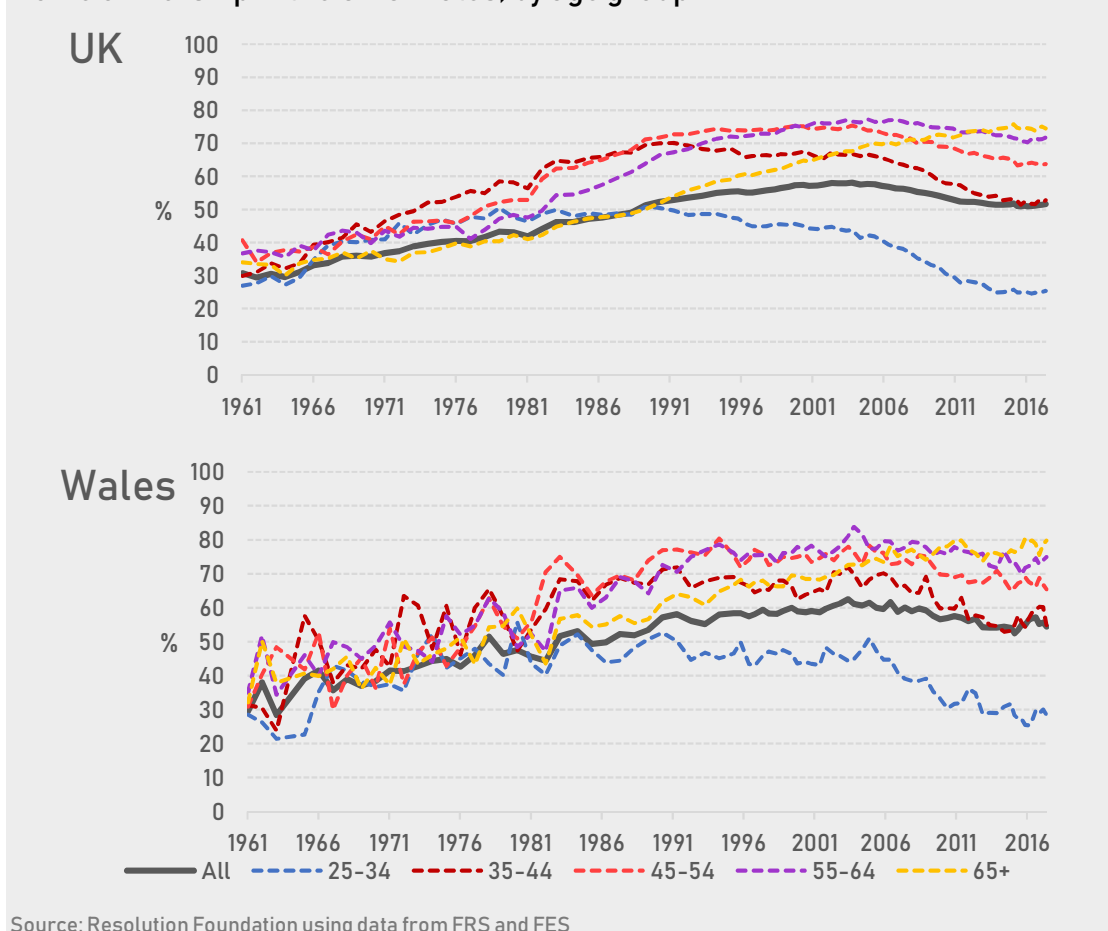
⁹⁶ This measurement tracks both newly advertised rents, as well as price changes in rents for those living within the same property as the year previously.

⁹⁷ This is an area based metric, so the median household affordability ratio for an area, say a local authority, will be the median house price in that area divided by the median level of earnings in that area.

income position of pensioners before housing costs is mitigated by the low housing costs they face, if home ownership rates fall this may not be the case for future generations when they retire if they are still renting or making mortgage repayments. Home ownership also has an intergenerational component as parental wealth is a key indicator as to whether someone will own their own home at the age of 30.⁹⁸ The length of time it would take first time buyers (FTBs) to save for a deposit solely by saving from their own disposable income has increased in the past three decades, and since the financial crisis FTBs are estimated to have been more dependent on some form of financial assistance (such as inheritance or parental support) than before the financial crisis.⁹⁹ This presents another challenge for improving social mobility.

Figure 5.17

Home ownership in the UK & Wales, by age group



- 5.39** The cause of UK house price rises is complex, multi-dimensional, and can differ geographically. While much of the debate on the issue is based around new and existing housing stock not meeting housing demand (i.e. a demand and supply issue), some point to the UK's sustained low interest rates beginning in the mid-1990s – and which now stand at less than 1% – as having contributed to the problem. For example,

⁹⁸ Wood, J. and Clarke, S. (2018) House of the rising son (or daughter): the impact of parental wealth on their children's homeownership. *Resolution Foundation*.

⁹⁹ Clarke, B. (March 2015) New CML data shows nearly half of first-time buyers didn't use the 'bank of mum and dad'. *Council of Mortgage Lenders [website]*.

research by the Bank of England suggests that lower interest rates (and the expectation of them remaining low) may have made housing more attractive as an asset relative to other forms of saving.¹⁰⁰ This is in addition to making borrowing against higher property prices more affordable for buyers, as interest repayments on borrowing were lower. Other research suggests that the fall in home ownership in the wake of the financial crisis can partially be explained by banks pulling back on higher loan-to-value (LTV) mortgages, meaning that first time buyers were required to contribute a higher deposit relative to the price of the house.¹⁰¹

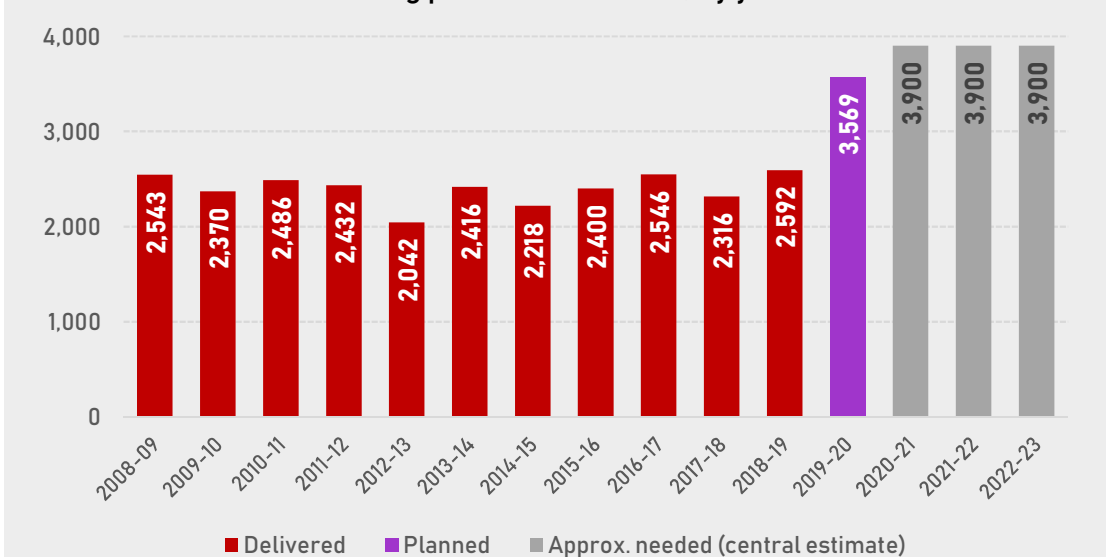
- 5.40 In response to recommendations made to the Welsh Government by the Independent Review of Affordable Housing Supply (April 2019) the Welsh Government signalled that more affordable housing¹⁰² needed to be provided than currently was the case.¹⁰³ Recent Welsh Government estimates of future housing need estimated that 3,900 new affordable housing units would need to be built each year over the next 5 years, which is above the annual rate seen across the last decade (**Figure 5.18**).

¹⁰⁰ Lewis, J. and Cumming, F. (2019, September 6) *Houses are assets not goods: taking the theory to the UK data*, Retrieved from: <https://bankunderground.co.uk/2019/09/06/houses-are-assets-not-goods-taking-the-theory-to-the-uk-data/>

¹⁰¹ Mulheim, I. (2019) *Tackling the UK housing crisis: is supply the answer?*, UK Collaborative Centre for Housing Evidence

¹⁰² "The definition of affordable housing for the purposes of the planning system is outlined in Technical Advice Note 2... The definition applies to housing where there are secure mechanisms in place to ensure that it is accessible to those who cannot afford market housing, both on first occupation and for subsequent occupiers. It includes social rented housing owned by local authorities and Registered Social Landlords and intermediate housing where prices or rents are above those of social rents but below market housing prices or rents." Jones, M. (2018) *What next for affordable housing in Wales?* Senedd Research. [Website]

¹⁰³ Welsh Government (2019) *Planning authorities must make more affordable housing available*. Press Release. [Website]

Figure 5.18**Additional affordable housing provision in Wales, by year**

Note: Estimated affordable housing need is 2018-based and uses central estimate of projected housing demand.

Source: StatsWales, Welsh Government (2019) Estimates of Housing Need in Wales by Tenure (2018-based)

- 5.41 The extent to which regional investment spending can meaningfully affect house prices, ownership, and associated wider household costs in the short term is somewhat unclear, but there is a possibility it is limited by the prominent role that monetary and regulatory levers, which lie outside Welsh Government control, play in influencing house prices. In the longer term, however, the increased provision of both affordable housing and self-contained social housing units will be necessary to meet future demand.

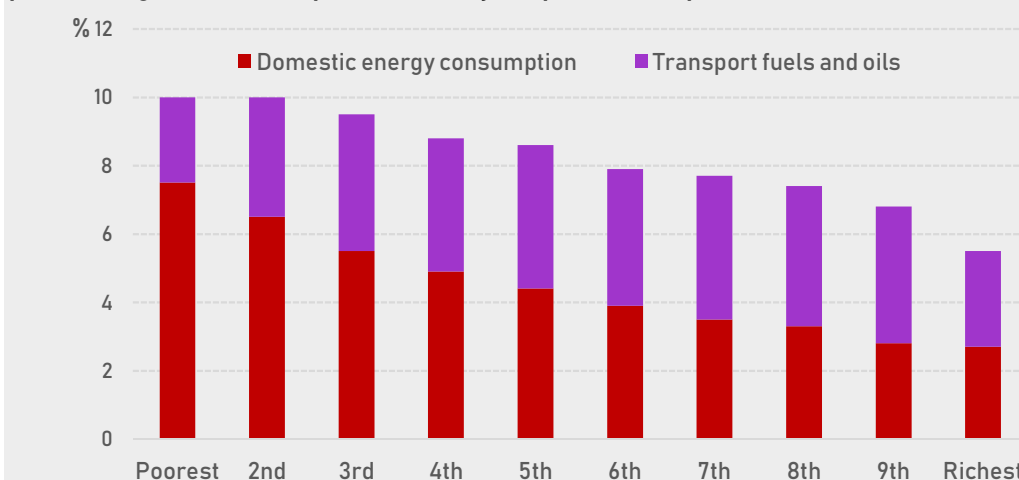
Fuel Poverty

- 5.42 In Wales a household is regarded as being in fuel poverty if 10% or more of its household expenditure is spent on meeting its energy needs, and is regarded as being in severe fuel poverty if it's spending 20% or more. **Figure 5.19** shows the estimated percentage of household expenditure that is estimated to be spent on meeting two types of fuel need by income decile groups in the UK. Annual fuel poverty statistics showed that in the year 2018 155,000 households in Wales were living in fuel poverty (12% of all households), while 32,000 households were in severe fuel poverty (2%); the percentage of households in fuel poverty in Wales a decade prior in 2008 was 26%, with the large decrease seen since being explained by increasing energy efficiency improvements in housing and household incomes being higher, relative to changes in the price of fuel.¹⁰⁴

¹⁰⁴ UK Department for Business, Energy & Industrial Strategy (2019) *Annual Fuel Poverty Statistics in England, 2019 [2017 data]*.

Figure 5.19

Household expenditure on domestic energy and transport fuels and oils as a percentage of total expenditure, by disposable equivalised income decile group



Note: Deciles use modified OECD equivalence scale; data is for the United Kingdom
Source: ONS

- 5.43** Arguments for reducing fuel poverty that don't centre on alleviating financial strain on low income families, also point to increased well-being – particularly physical and mental health. One review of the relevant literature conducted in 2010 stated that while improvements in physical health may be modest for adults, for the elderly and children there were significant health benefits.¹⁰⁵ One aspect of improvement that was more uniformly recorded across age groups in different studies was an improvement in reported mental health.
- 5.44** Reducing fuel poverty further will likely be achieved via the same routes as recent reductions – keeping energy costs changes lower than wage changes and/or increasing the energy efficiency of the existing housing stock. Given its particular relevance to the priority area, **Supporting the Transition to a Zero Carbon Economy** focuses in more detail on these areas.

Other Indicators

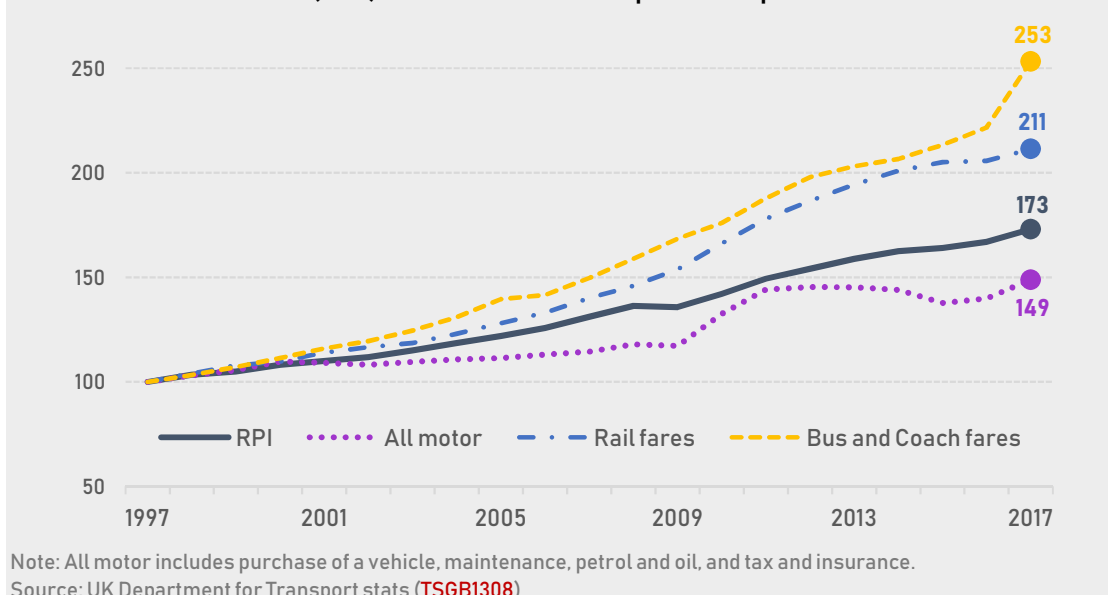
- 5.45** While an imperfect measurement due to transport provision in Wales being a devolved issue, the Department for Transport publishes the transport components of the Retail Price Index (RPI) which shows that, across the UK as a whole, public transport costs for rail, bus and coaches have risen faster than the average for all other goods in the RPI, while motor related costs have risen at a slower rate. The fall in motor costs appears to be primarily driven by the fall in the cost of purchasing a vehicle as certain costs associated with car ownership have risen considerably since 1997 – for example, insurance related costs are estimated to be over 4 times higher in nominal terms than they were in 1997. If these price changes are similar in Wales (and particularly for motor costs there is every reason to suspect they will be) than they reflect an

¹⁰⁵ Liddell, C., & Morris, C. (2010) *Fuel poverty and human health: A review of recent evidence*. Energy policy, 38(6), 2987-2997

increasing financial burden for those who depend on public transport – often more income deprived groups in society.

Figure 5.20

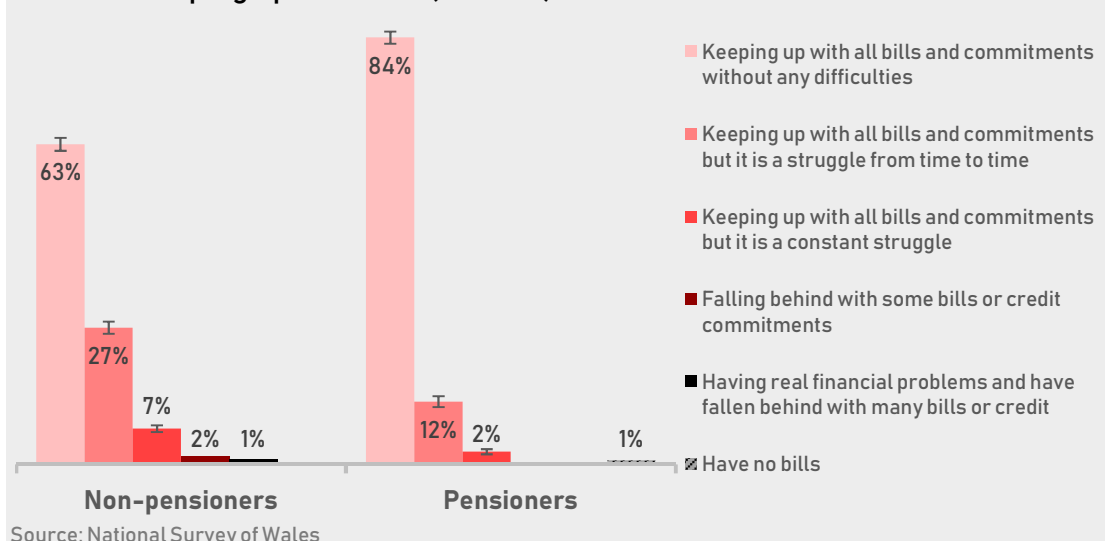
UK Retail Price Index (RPI) and index of transport components



- 5.46** As an indicator of financial strain, the National Survey for Wales asks respondents whether they are keeping up with their bill payments – the results can be seen in **Figure 5.21** split between two groups: pensioners and non-pensioners. Of those that responded 37% of non-pensioners replied that they had some problems keeping up with bill payments with 7% stating it is a constant struggle to do so and 2% saying they are already falling behind. The figures for pensioners were less severe with 84% keeping up with all bills and commitments without any difficulties. For those affected by financial stress this could cause health and well-being problems for them and their families.¹⁰⁶ It is also an indication that the cost of living at the moment could be too high for as much as a third of the population.

¹⁰⁶ Choi, L. (2009) *Financial stress and its physical effects on individuals and communities*. Community Development Investment Review, 5(3), 120-122.

Figure 5.21
Whether keeping up with bills (2018-19)



Summary

- 5.47** While most measures of income inequality are not available at the Wales level, income inequality in the UK is above the average for EU member states and there is evidence to suggest it may be negatively impacting growth. The effect of housing costs on income inequality and relative poverty is to increase the distance between the poorest in society and those above them and to push more children and adults (particularly single parents) into relative poverty. With regards to other aspects of the cost of living, fuel poverty in Wales has fallen substantially, which is to be welcomed, but it is still estimated to affect 12% of Welsh households.¹⁰⁷ On top of this there is indication that a large proportion of households are in some degree of financial difficulty.
- 5.48** The most important lever for reducing economic inequality – namely the tax and benefit system – is largely outside of the Welsh Government’s control. However it is also worth focussing on the fact that Wales has a high proportion of low paying jobs and low proportion of high paying jobs when compared to other major UK regions and countries. One possible explanation for this is that Wales has a long-tail of lower skilled working age adults when compared to the UK as whole, which also suffers from this problem. The jobs in the British economy that are shown to pay more are those jobs that increasingly require a higher level of qualification attainment – this is particularly relevant to the priority area **Productive and Competitive Businesses** as well.

¹⁰⁷ As of 2018.

6 Priority Area:

Supporting the Transition to a Zero Carbon Economy

Key Points

- Greenhouse Gas (GHG) emissions in Wales have shown an overall downward trend in recent decades. Emissions data for 2017 suggests Wales could meet its 2020 interim target to reduce emissions by 27% from the baseline.¹⁰⁸ However there has been substantial inter-year variability and emission levels per head in Wales are still above the global average. Wales accounts for 9% of UK-wide emissions, but only around 5% of UK population.
- The industry sector made the largest contribution to GHG emissions in Wales, but emissions from this sector have reduced by 38.5% from the baseline to 2017. Evidence suggests industrial heat recovery is one method for industry to reduce energy waste but there are currently barriers to reaching its full potential.
- GHG emissions from the power sector were generally showing an upward trend over the last two decades until 2016 but fell substantially in 2017. As a result of this decrease in 2017, the overall trend from the baseline shows a 7% reduction in emissions.
- Renewable energy generation in Wales has increased in recent years, largely because of investments in onshore and offshore wind energy. An estimated increase in domestic energy demand served by renewables from 19% in 2014 to 50% in 2018 suggests the Welsh Government's commitment to meeting 70% of its domestic electricity consumption demand through renewable sources by 2030 is not unfeasible but investment in renewable energy capacity may be required.
- Over the last two decades, GHG emissions related to transport have so far not been declining at the rate required to meet their 2020 sectoral contribution emission targets. Transport sector emissions have so far declined by 4.5% from the baseline, against a target where emissions will be 14% lower than the baseline in the year 2020.

¹⁰⁸ Baseline is estimated GHG emission levels in the following years: 1990 for carbon dioxide, methane and nitrous oxide; 1995 for fluorinated gases.

- Compared to the UK, a higher proportion of workers use a car to travel to work in Wales. The Welsh Government aim to reduce travel emissions by supporting a change in people's travel behaviour including transitioning away from car travel, introducing electric vehicles and increasing fuel efficiency.
- The contribution of the agriculture sector towards emission levels has decreased by 11.22% between the baseline and 2017. The sector currently emits more greenhouse gas emissions than its 2020 target sectoral contribution, however historically it has emitted less than the 2020 target (for example between 2008 and 2013).
- Emissions from buildings have fallen considerably and in 2017 were 31.5% lower than the baseline. The majority of building emissions come from the residential sector, with contributions from business and public buildings (this excludes emissions associated with industry or manufacturing).
- Welsh Government aim to decarbonise emissions from the residential sector by reducing energy demand (through increasing building energy efficiency and driving behaviour change) and increasing use of low carbon heat.
- The land use, land use change and forestry (LULUCF) sector is the only sector with current capability to remove emissions from the atmosphere. The LULUCF sector provided a net reduction of GHG emissions equivalent to 395 ktCO₂e in 2017.

Why Focus on Transitioning to a Zero Carbon Economy

- 6.1 The fifth assessment report in 2014 of the UN's Intergovernmental Panel on Climate Change (IPCC) brings into sharp focus the rate of change seen over the course of recent decades. The rate of warming over 1951 to 2012 was estimated to be 0.12 °C per decade and the IPCC stated that "the period 1983 to 2012 was likely the warmest 30-year period of the last 1400 years in the Northern hemisphere". The sea level was also estimated to have risen by 19cm between 1901 and 2010. The UK's Committee on Climate Change (UKCCC) has stated that we are currently on track for around 3°C of warming by 2100. Current global commitments are based on attempting to keep warming to below 2°C by 2100, which would help to limit some of the most catastrophic effects of climate change, but keeping temperature rises to below 1.5°C is needed to prevent many important effects.
- 6.2 The IPCC have sought to outline what some of these predicted impacts will be under different temperature rise scenarios. Even under a scenario whereby there is a 1.5°C increase in global temperatures, risks to health, livelihoods, food security, water supply, human security, and economic growth are expected to rise.¹⁰⁹ Many of these

¹⁰⁹ IPCC (2018). *Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate*

impacts are predicted to be particularly severe in some of the world's most disadvantaged regions. These risks are heightened even further should temperatures rise by 2°C.

- 6.3 In May 2019 the UKCCC recommended that the UK seek to work towards a net-zero emissions target of all greenhouse gases (GHG) by 2050,¹¹⁰ and this target was enshrined into UK law via an amendment to the **Climate Change Act 2008** in June 2019. There is therefore, amongst other considerations, a legal imperative for the UK to transition towards a zero carbon economy.
- 6.4 Achieving this goal will mean that by 2050 the UK will have the capability to absorb all of its territorial GHG emission contributions from the atmosphere in a given year. This will require a combination of drastically reducing the volume of all emissions emitted from their current levels, while increasing the capacity for emissions to be absorbed from the atmosphere by our natural eco-systems as well as carbon capture and storage.
- 6.5 As well as a UK target, the UKCCC recommended individual targets for Wales and Scotland and recommended a target of a 95% reduction in GHG emissions relative to the baseline level for Wales.¹¹¹ This represents Wales' fair contribution to the UK's commitments under the Paris Agreement. As Wales has fewer opportunities for CO₂ storage and, compared to the rest of the UK, higher agricultural and industrial emissions the UKCCC felt it was not feasible for Wales to reach net-zero by 2050. However, the Welsh Government has announced its ambition to press forward with rapid decarbonisation and aim to reach net zero by 2050. It is currently seeking advice from the UKCCC on how to achieve this ambition.¹¹²
- 6.6 At present, the statutory target enshrined in law in Wales is lower than this announced target. The current target set by **The Environment (Wales) Act 2016** is at least an 80% reduction in greenhouse gas emissions in Wales in 2050. The Act also requires interim targets to be set for 2020, 2030, and 2040 in order for progress towards the 2050 target to be appropriately monitored. These targets were set in December 2018: 27% in 2020, 45% in 2030 and 67% in 2040. It is important to note when reading this section of the socio-economic analysis that the 2020 target referred to from this point onwards is based on the pathway to meeting the statutory target of an 80% reduction. The Welsh Government has requested the UKCCC's advice on how the new 95% target for 2050 affects the interim targets set in 2018. It expects to receive the CCC's

change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland, 32 pp

¹¹⁰ UK CCC (2019). *Net Zero: The UK's contribution to stopping global warming*. UK Committee on Climate Change.

¹¹¹ Baseline is estimated GHG emission levels in the following years: 1990 for carbon dioxide, methane and nitrous oxide; 1995 for fluorinated gases.

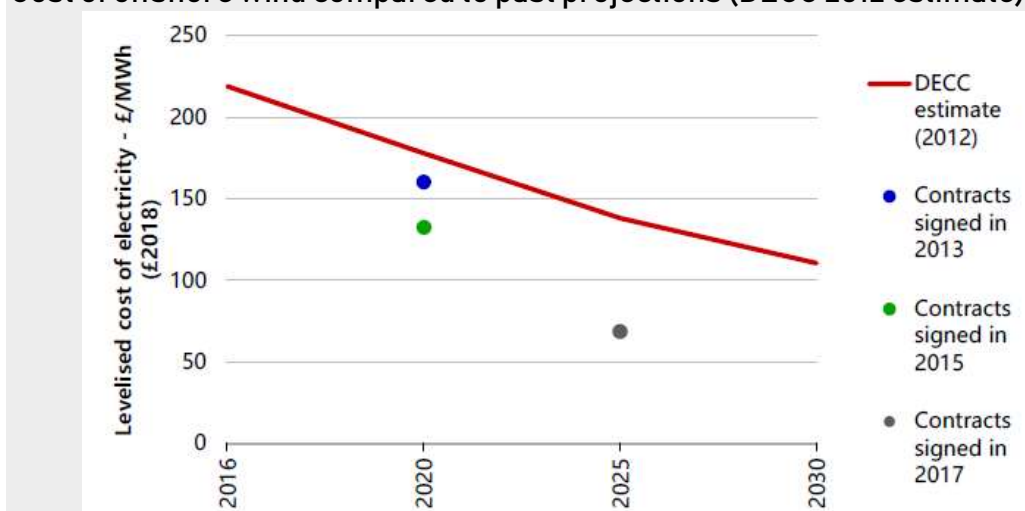
¹¹² *Wales accepts Committee on Climate Change 95% emissions reduction target* (2019, June 11) Retrieved from: <https://gov.wales/wales-accepts-committee-climate-change-95-emissions-reduction-target>

advice in September 2020 and will ask the Senedd/Welsh Parliament to amend the existing targets towards the end of 2020.

- 6.7 The Welsh Government has outlined a set of policies by which it will seek to reduce emissions in its policy document **Prosperity for All: A Low Carbon Wales**, and has stated: “The transition to a low carbon economy brings opportunities around clean growth, quality jobs and global market advantages, as well as wider benefits such as better places to live and work, clean air and water, and better health. If we are to maximise these opportunities and realise the benefits, we need to have a whole government approach and work collectively with businesses, the third sector, and communities and people across Wales.”
- 6.8 This section of the socio-economic analysis focuses on the five largest emission sectors and is ordered by the contribution size of each sector in Wales for 2017. The five sectors are: industry, power, transport, agriculture, and buildings. The land use and forestry sector is highlighted at the end of this section as it is the only sector with the current capability to remove emissions from the atmosphere. A selection of current Welsh Government policies and programmes that aim to reduce emissions within each of these sectors have also been mentioned in order to understand current efforts being made.
- 6.9 Forecasting how technologies which will help tackle emissions reduction will evolve over time is difficult. **Figure 6.1** demonstrates how the strike price agreed for offshore wind projects (per megawatt hour of electricity in GBP) ended up being far below the forecasts made by the UK Department of Energy and Climate Change in 2012.

Figure 6.1

Cost of offshore wind compared to past projections (DECC 2012 estimate)



Note: Strike prices are agreed in advance of delivery and are the fixed price at which the company will sell each unit of electricity.

Source: Offshore wind costs from CCC analysis based on DECC (2012); Electricity generation costs and LCCC (2019) CfD register.

- 6.10 Finally, it is important to recognise that public investment will not be the main driver in reducing emissions to the levels needed to reach our climate targets. The UKCCC give

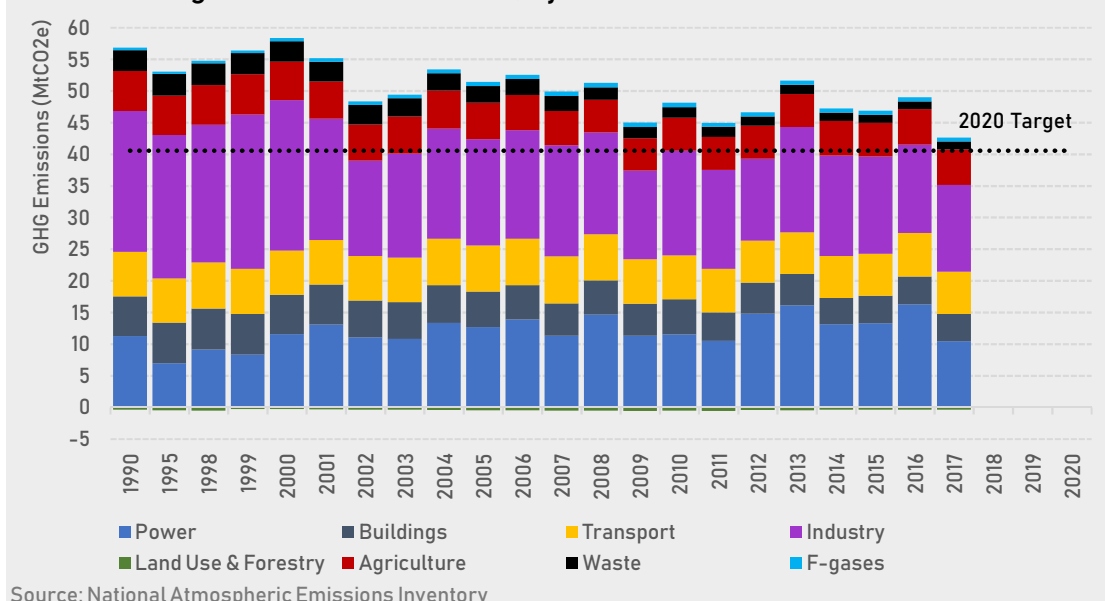
great weight to the role of government in setting carbon prices to incentivise the required changes in behaviour by businesses and consumers. They also emphasise that both the UK and Welsh governments will play critical roles by setting regulations (particularly in respect of the use of fossil fuel vehicles, energy efficiency in buildings and waste).

Emission Areas

- 6.11** In 2017 there was an estimated 42.2 megatonnes of carbon dioxide equivalent (Mt CO₂e) greenhouse gases (GHG) emitted in Wales. This was roughly 13.5 metric tons per capita,¹¹³ and above recently seen emission levels for OECD members, EU member states, and the global average.¹¹⁴ Although there has been inter-year variability since base year in 1990, there is an overall downward trend for emissions. In 2017 emissions were close to the interim target set for 2020 (a 27% reduction from the baseline) in order to ensure Wales was on a path for an 80% reduction in emissions by 2050 (see **Figure 6.2**).¹¹⁵

Figure 6.2

Greenhouse gas emissions in Wales, by sector



- 6.12** The two emission sectors that made the largest GHG emission contributions in 2017 were the industry sector (32%) and the power sector (25%), followed by the transport sector (16%), agriculture sector (13%), and buildings sector (10%) – see **Figure 6.3**. The waste and fluorinated gas (F-gases) sectors¹¹⁶ both emitted less than 4% of total

¹¹³ Calculated using mid-year 2017 population estimate of Wales. See: [National level population estimates by year, age and UK country; StatsWales](#)

¹¹⁴ 2014 data: [World Bank \(n.d.\) CO₂ emissions \(metric tons per capita\) \[data\]. World Bank Group.](#)

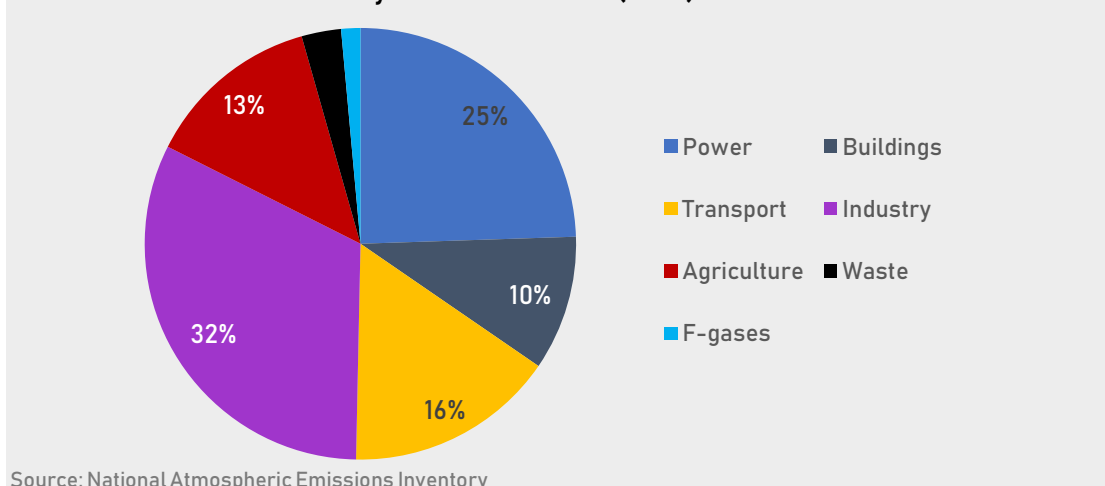
¹¹⁵ More information on how the sector and wales emission estimates are calculated can be found here: [Brown, P. et al \(2019\) UK Greenhouse Gas Inventory, 1990 to 1997. Ricardo Energy & Environment \(for UK DEFRA\).](#)

¹¹⁶ There are four types of fluorinated gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

emissions and the land use, land use change, and forestry sector remained a net sink (i.e. capturing more GHG emissions than it emitted). The sink from this sector totalled 395 ktCO₂e in 2017.

Figure 6.3

Share of total emissions by sector in Wales (2017)



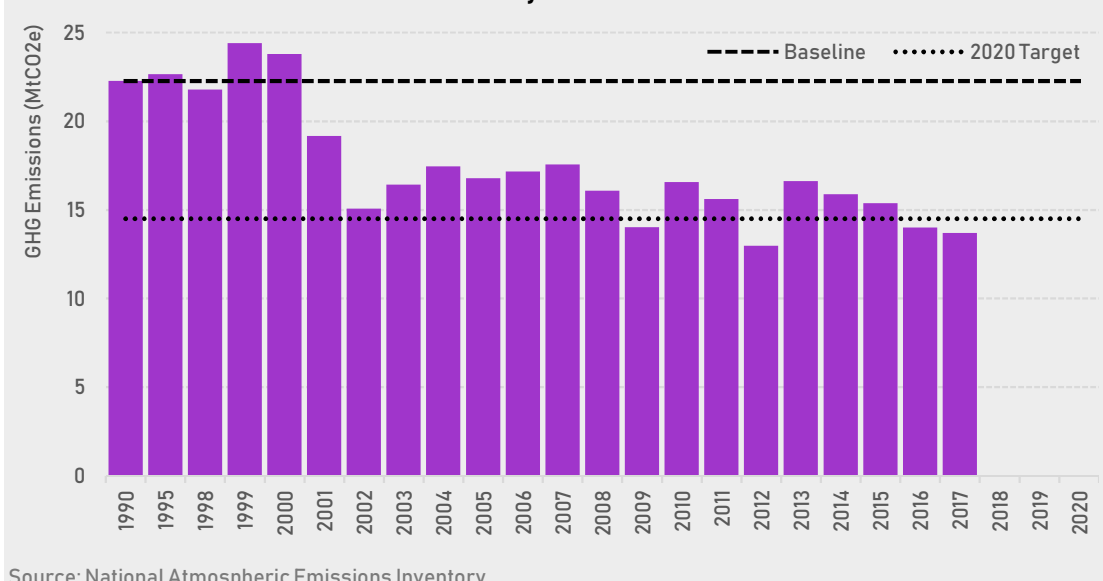
Industry

- 6.13** Emissions from industry represented 32% of total emissions in 2017 – approximately 13.7 MtCO₂e (**Figure 6.4**). Emission contributions from industry were 38.5% lower in 2017 than the base year with the largest decline occurring between 1999 and 2002.¹¹⁷ In 2017, emissions were below the 2020 target of 14.5 MtCO₂e (35% lower than the baseline).
- 6.14** The industry sector accounts for iron and steel production, manufacturing, construction, cement production, machinery operation, food processing, petroleum refining and oil and gas extraction. In 2017, iron and steel production (5.3 MtCO₂e) and petroleum refining (2.2 MtCO₂e) accounted for half of all emissions for this sector.

¹¹⁷ This decline was largely as result of a fall in emissions associated with stationary combustion: both in the iron and steel industry and in other manufacturing industries.

Figure 6.4

Emissions contribution of the industry sector in Wales



- 6.15** The Welsh Government has acknowledged that many of the powers that relate to heavy industry are reserved by the UK Government, but it has given a commitment to helping to reduce industry sector emissions by: improving energy efficiency measures of material, energy and processes, innovation and waste heat; and, by increasing low carbon heat and industrial process measures.¹¹⁸
- 6.16** Due to the high levels of emissions that derive from energy intensive processes used by industry, industrial heat recovery is an area that has attracted attention. Industrial heat recovery refers to the process by which heat generated from the industrial process, which is normally wasted, is recovered and used.¹¹⁹ The UK Government stated in 2018 that “a number of manufacturers have already invested in industrial heat recovery technologies, and many more have expressed an interest. But deployment continues to fall short of its estimated economic potential because of a range of commercial, technical and information barriers. These barriers mean that less than half of the potential is commercially viable at present.”¹²⁰ Overcoming these barriers, therefore, presents a potential avenue for investment spending.

Power

- 6.17** The power sector in Wales was responsible for 25% of all emissions in 2017 – approximately 10.4 MtCO₂e (see **Figure 6.5**). Power sector emissions had risen moderately over the course of the past two decades leading up to 2016 but fell considerably in 2017 and were 7.5% lower than the baseline in that year. This was

¹¹⁸ Welsh Government (2019) Industry: Sector Emission Pathway

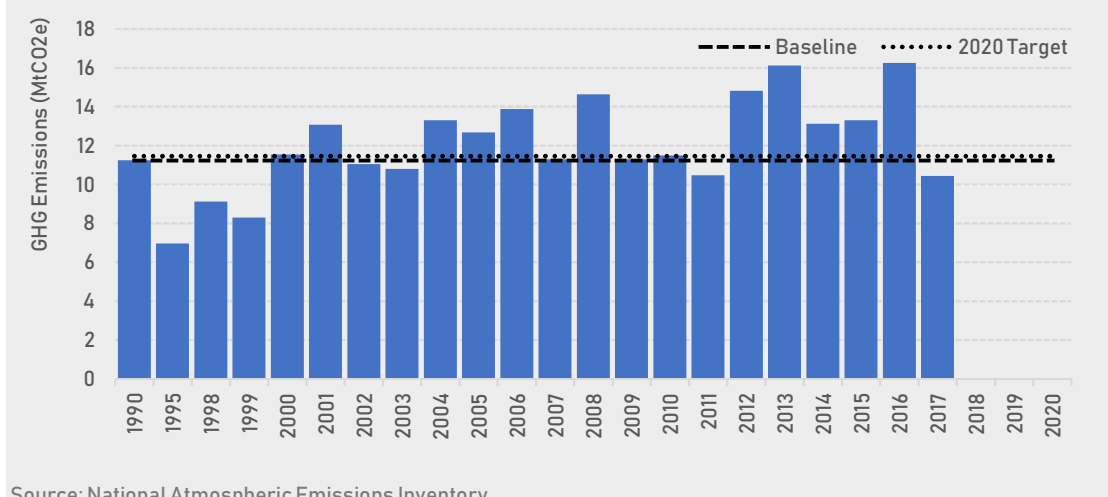
¹¹⁹ As examples, this could be used by the same facility, other end-users via a heat network, or could be converted from heat to electricity.

¹²⁰ BEIS (2018) *Industrial Heat Recovery Support Programme: Government Response*. UK Department for Business, Energy & Industrial Strategy.

also below the 2020 target of 11.5 MtCO₂e. Emissions from the power sector result from the process of electricity and heat production.¹²¹

Figure 6.5

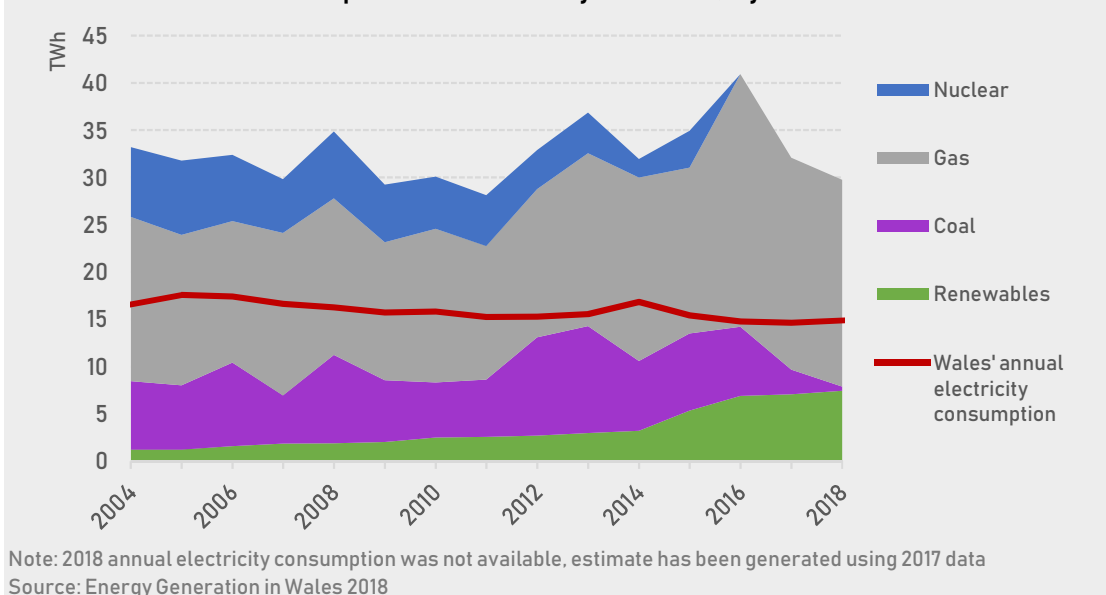
Emissions contribution of power sector in Wales



- 6.18** The Welsh Government has stated its ambition that the country “... need[s] low carbon electricity to become the main source of energy in Wales. Renewable electricity will be used to provide both heating and transport in addition to power.”¹²² It aims to do this by reducing overall power generation from fossil fuels, increasing the deployment of renewable energy, and increasing support for innovation in the power sector.
- 6.19** Wales is a net exporter of electricity and was estimated to have generated 30.2 terawatt-hours (TWh) of electricity in 2018, with the amount consumed in Wales approximately half of this (14.9 TWh). The energy mix of electricity generated in Wales is dominated by gas (22 TWh), with the role of both coal and nuclear energy having diminished in recent years (see **Figure 6.6**). The generation of electricity by coal fired power stations has fallen considerably in the past two years and fell by 83% in 2018 compared to 2017. Aberthaw power station, the last coal powered operating plant, is due to be decommissioned in 2020.

¹²¹ Griffin, A., Bailey, R., and Brown, P. (2014) *An introduction to the UK's Greenhouse Gas Inventory*. UK Department of Energy & Climate Change (DECC).

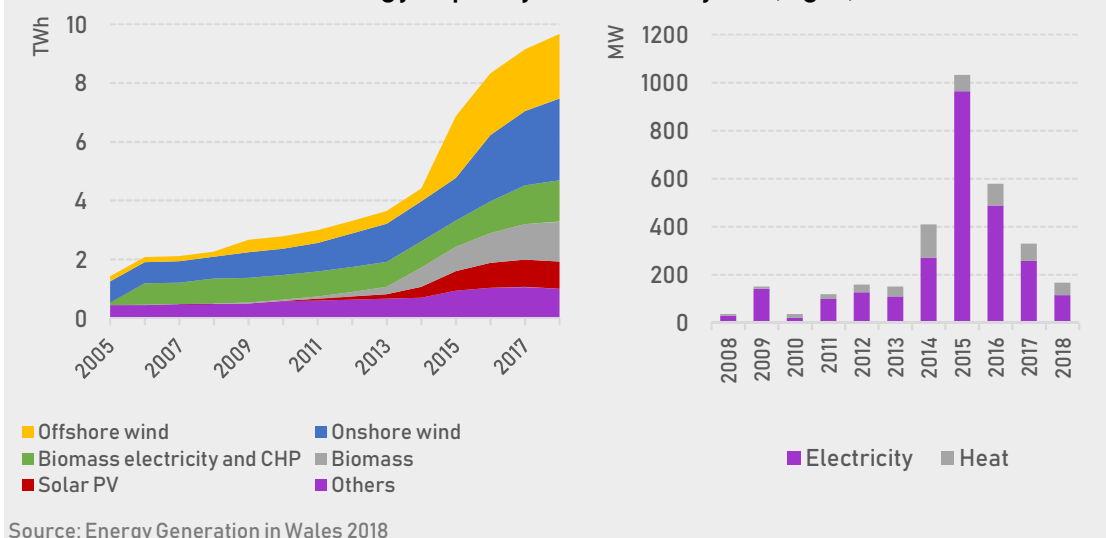
¹²² Welsh Government (2019) *Power: Emission Pathway*

Figure 6.6**Generation and consumption of electricity in Wales, by fuel source**

- 6.20 Renewable energy generation in Wales has risen considerably in the past decade, both in the production of heat and electricity. In 2011 renewable energy was estimated to have contributed 3 TWh of electricity and heat; this had more than tripled by 2018 to just over 9.5 TWh (**Figure 6.7**). This was largely as a result of a spike in increased capacity in 2015 in offshore wind energy, and in 2016 in onshore wind energy. In 2018, onshore and offshore wind generated over 50% of Wales' renewable energy. Renewable heat generation in Wales is principally from biomass sources.

Figure 6.7

Estimate annual renewable energy generation in Wales (left);
Additional renewable energy capacity installed in year (right)

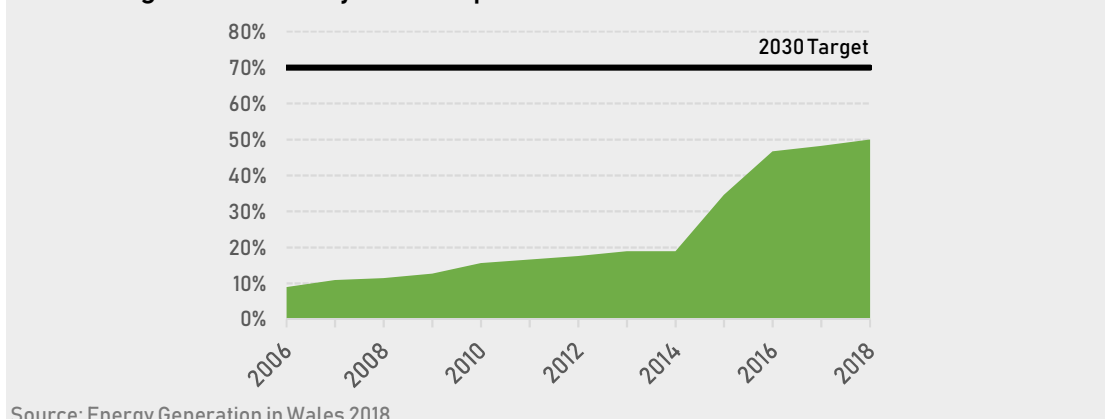


- 6.21 The Welsh Government has committed to meeting 70% of its domestic electricity consumption demand using renewable energy sources by 2030. While electricity consumption has not risen significantly in recent years (**Figure 6.6**), the increased

generation of energy from renewable sources in Wales has allowed the share of domestic energy demand served by renewables to increase from an estimated 19% in 2014 to 50% in 2018 (**Figure 6.8**). Currently there does not appear to be any reason to suggest that the Welsh Government could not meet the 2030 target but additional capacity will need to be installed should energy demand remain stable or increase.

Figure 6.8

Percentage of electricity consumption from renewables in Wales



- 6.22** The Welsh Government has sought to encourage local ownership models in the production of renewable energy as a way of ensuring that communities themselves can benefit from the energy projects being delivered in their area. **Table 6.1** shows recorded locally owned renewable energy projects in Wales. In 2018 locally installed renewable electricity energy capacity represented 17% of all renewable energy capacity. Increasing the financial viability of local ownership projects is important in order to ensure their success, as often communities can struggle to raise the finance needed to explore feasibility and then proceed with planning.¹²³ Encouraging development activity that is led by local communities is a topic explored in more detail for the priority area **Healthier, Fairer, and More Sustainable Communities**.

¹²³ Gancheva, M. et al. (2018). *Models of Local Energy Ownership and the Role of Local Energy Communities in Energy Transition in Europe*. Commission for the Environment, Climate Change and Energy: European Committee of the Regions.

Table 6.1
Locally owned renewable energy in Wales (2018)

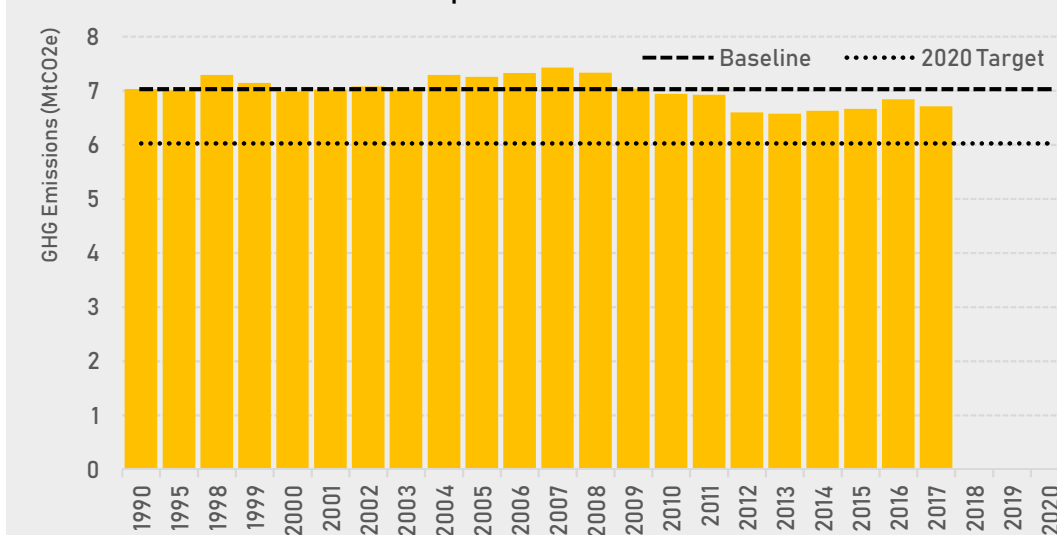
Ownership Category	Total number of projects	Capacity (MWe)	Capacity (MWth)	Estimated generation (MWh)
Community	174	37	1	50
Domestic	56,909	184	78	360
Farms and Estates	775	23	117	456
Housing Association	5,687	7	5	11
Local Authority	300	13	3	33
Local Business	379	270	16	826
Other public sector and charity	413	5	23	75
Total	64,637	540	243	1,812

Source: Energy Generation in Wales 2018

Transport

- 6.23** In 2017 the emissions contribution of the transport sector represented 16% of all emissions – approximately 6.7 MtCO₂e and were only 4.5% lower than the baseline. Emissions will need to decline at a more rapid rate to meet the 2020 target of 6 MtCO₂e (14% lower than baseline). Transport sector inventory emissions include emissions from air, land, and sea transportation, including public sector transport (such as ambulances and fire engines), domestic and international aviation, and shipping.¹²⁴

Figure 6.9
Emissions contribution of transport sector in Wales



Source: National Atmospheric Emissions Inventory

- 6.24** The emissions from the transport sector are dominated by land transportation with cars contributing 54.2% of the sector's total (3.6MtCO₂e). After cars, light duty trucks

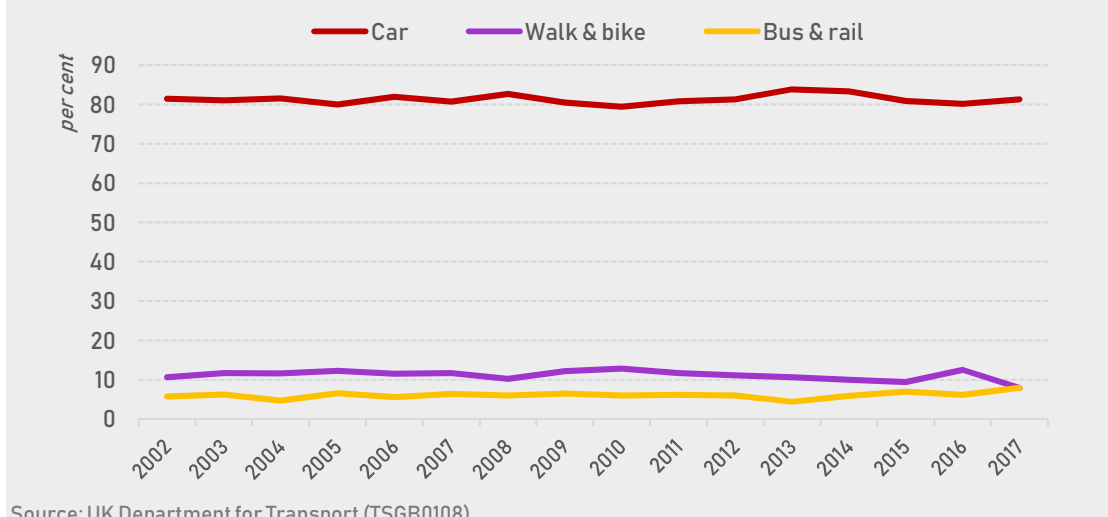
¹²⁴ Griffin, A., Bailey, R., and Brown, P. (2014) *An Introduction to the UK's Greenhouse Gas Inventory*. UK Department of Energy & Climate Change (DECC).

(16.3%, 1.1MtCO₂e) and heavy duty trucks (14.5%, 1.0MtCO₂e) contributed the most towards emission levels, together representing 30% of the sector total.

- 6.25 The Welsh Government has stated it intends to reduce emissions in this sector by: behavioural change measures (modal shift to more sustainable travel); increasing uptake of electric vehicles; and, reducing emissions from road and rail transport through vehicle and fuel efficiency measures.¹²⁵
- 6.26 Looking at the modal trends of transport use, **Figure 6.10** provides an annual breakdown of the usual transport method that individuals who live in Wales stated they used to get to work. In 2017, a higher proportion of Welsh workers were estimated to use the car to get to work (81%) than in any other region in the UK. One potential explanation for this is Wales' low population density and low levels of agglomeration meaning there is an increased likelihood that individuals live greater distances from the places where they work. Between 2002 and 2017 there appeared to be no perceivable modal shift in Wales between any of the three methods, with the share of people using the car to travel to work in 2017 effectively the same as in 2002.

Figure 6.10

Usual method to travel to work for those who live in Wales



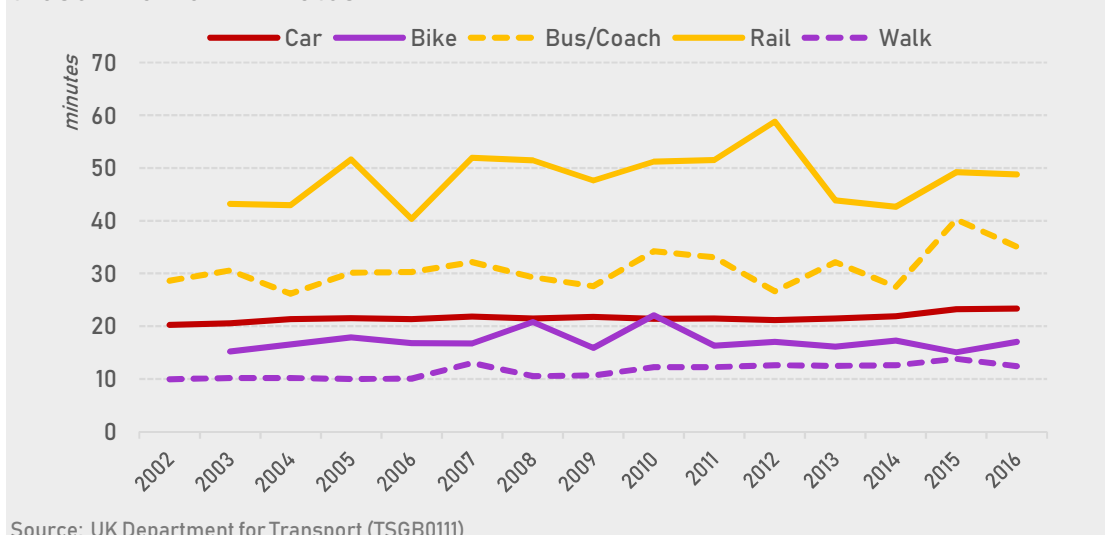
- 6.27 Average travel to work times were slightly higher in 2016 than they were in 2002 for all travel methods but not significantly (see **Figure 6.11**). This also provides potential insight into the role generally that distance could play in determining the transport method that commuters opt to use to travel to work. Using commuter flow statistics, approximately 31% of the employed population in Wales work in areas outside of the local authority in which they live. While the most sustainable forms of travel (walking and cycling) may not be feasible methods of travel for many in Wales, the priority area **Healthier, Fairer, and More Sustainable Communities** does explore whether rates

¹²⁵ Welsh Government (2019). *Transport: Emissions Pathway*. Crown copyright.

of active travel could be higher than their current levels, contributing to people's health generally and a cleaner environment with lower emissions.

Figure 6.11

Average journey to work time by method of transport for those who work in Wales

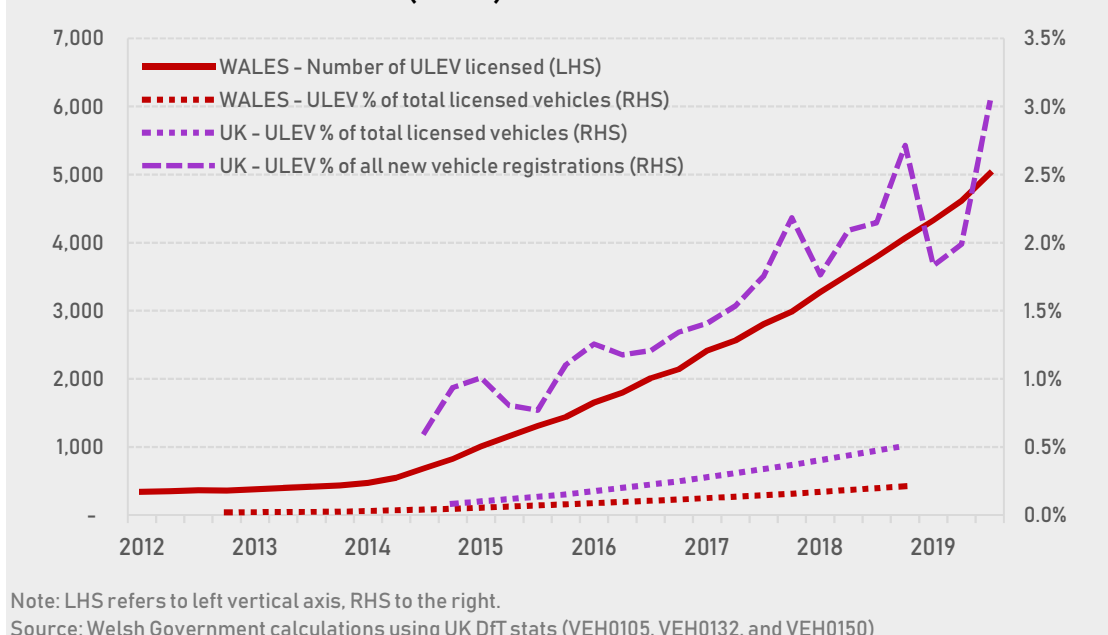


- 6.28** Given the above trends and figures, a key driver in reducing emissions from the transport sector will be as a result of the increased usage of lower emitting vehicles. As **Figure 6.12** shows, the percentage of licensed vehicles on the road that are currently classed as ultra-low-emission vehicles (ULEVs) is approximately 0.5% in the UK and 0.2% in Wales. However the share of new vehicle registrations that are for ULEVs is higher and the trend is increasing in the UK as a whole.¹²⁶
- 6.29** While electric vehicles currently represent a small proportion of vehicles on the road in both Wales and the UK, this is likely to increase significantly during the 2020s as EU regulation has set mandatory emission reduction targets for new cars. From 2021, phased in from 2020, the EU fleet-wide average emission target for new cars will be 95g CO₂/km, which has driven manufacturers to launch new battery electric models. The UK Government has pledged to pursue an approach for the future that is at least as ambitious as the current EU arrangements for vehicle emissions regulation, and is also considering bringing forward its current ban on the sale of new non-hybrid petrol and diesel cars from 2040 to 2035. A comprehensive network of publicly accessible electric vehicle chargers is necessary to support the large-scale uptake of battery electric vehicles in Wales. The rate of deployment of charge points will depend largely on investment from the private sector and may be influenced by the cost of upgrading grid connections and Wales' rural landscape.

¹²⁶ Vehicle registration data is not available at the Wales level.

Figure 6.12

Ultra-low-emission vehicle (ULEV) trends in Wales and UK



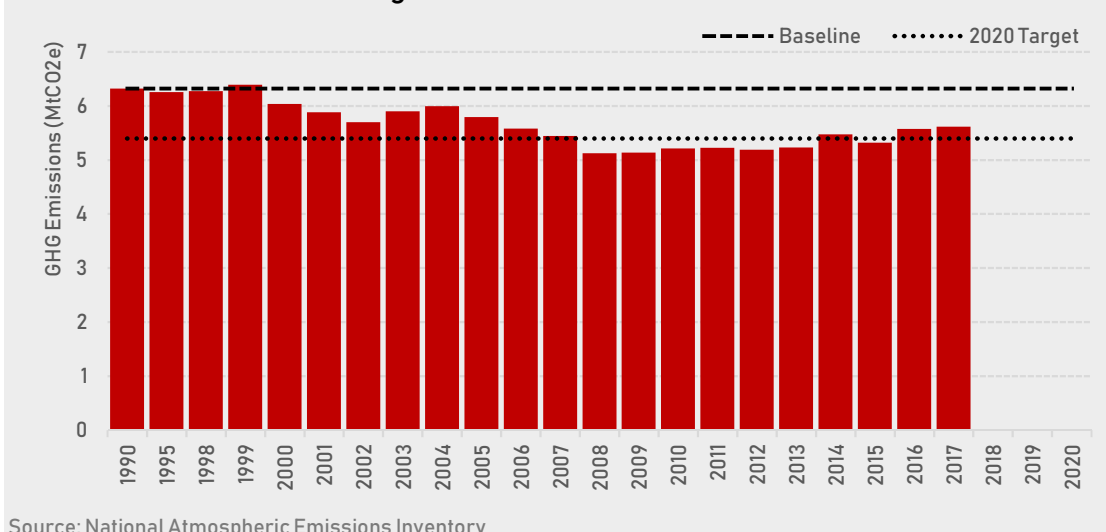
Agriculture

- 6.30** The agriculture sector (see **Figure 6.13**) is estimated to have contributed 5.6 MtCO₂e in 2017 (13% of total emissions). This was 11% lower than baseline emissions but still above the 2020 target of 5.4 MtCO₂e. The emission inventory for agriculture takes into account emissions from livestock, and agricultural soil management including the application of fertilisers, and emissions from off-road machinery used in the agricultural sector.¹²⁷

¹²⁷ Griffin, A., Bailey, R., and Brown, P. (2014) *An Introduction to the UK's Greenhouse Gas Inventory*. UK Department of Energy & Climate Change (DECC).

Figure 6.13

Emissions contribution of agriculture sector in Wales



- 6.31** The Welsh Government has stated that it will seek to reduce emissions in this area by: improving efficiency of livestock production; improving crop and nutrient management; and, improving on farm fuel and energy efficiency.¹²⁸
- 6.32** The Welsh Government currently provides support to farmers in Wales, including through the EU Rural Development Programme (RDP) in the form of the **Farm Business Grant**. This provides farmers with grants to assist in the purchase of eligible capital products, including items that increase energy and resource efficiency.¹²⁹ **Farming Connect** is also another Welsh Government programme that uses EU funding and seeks to drive innovation, competitiveness, environmental performance, and sustainability in the agricultural sector. It seeks to achieve this by creating the links (with agricultural colleges and university bodies, for example) that encourage and enable farmers to witness and then adopt best practices in the sector.

Buildings

- 6.33** In 2017 the building sector contributed 10% of total emissions in Wales. This sector has seen its emission contribution fall in recent decades and emitted approximately 4.3 Mt CO₂e in 2017, which was 31.5% lower than the baseline level (see **Figure 6.14**). This sector is on course to meet, and maybe even surpass, its 2020 target of a reduction of 30% from the baseline, although increases cannot be ruled out. Emissions from the residential sector inventory are estimated by taking into account fuel combustion for heating, cooking and garden machinery; emissions associated with household products such as aerosols; and the breakdown of consumer products (detergents, for example).¹³⁰ It also accounts for emissions from business and public

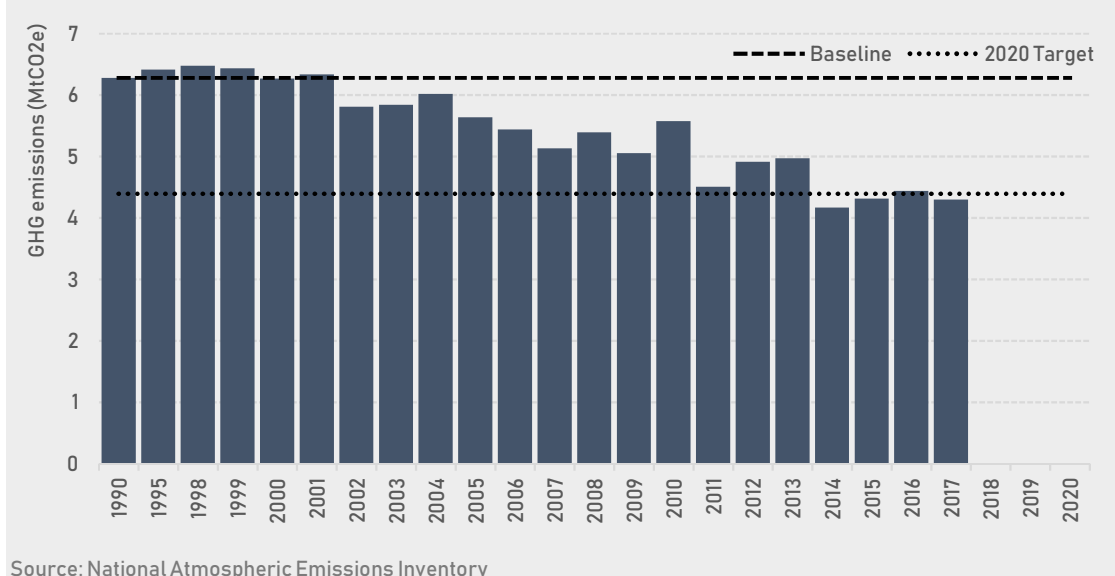
¹²⁸ Welsh Government (2019) *Agriculture: Sector Emission Pathway*. Crown copyright.

¹²⁹ Welsh Government (2018) *Farm Business Grant – Annex A: List of Eligible Capital Items*.

¹³⁰ Griffin, A., Bailey, R., and Brown, P. (2014) *An introduction to the UK's Greenhouse Gas Inventory*. UK Department of Energy & Climate Change (DECC).

sector premises, though not those associated with industrial processes and manufacturing.

Figure 6.14
Emissions contribution of buildings sector in Wales



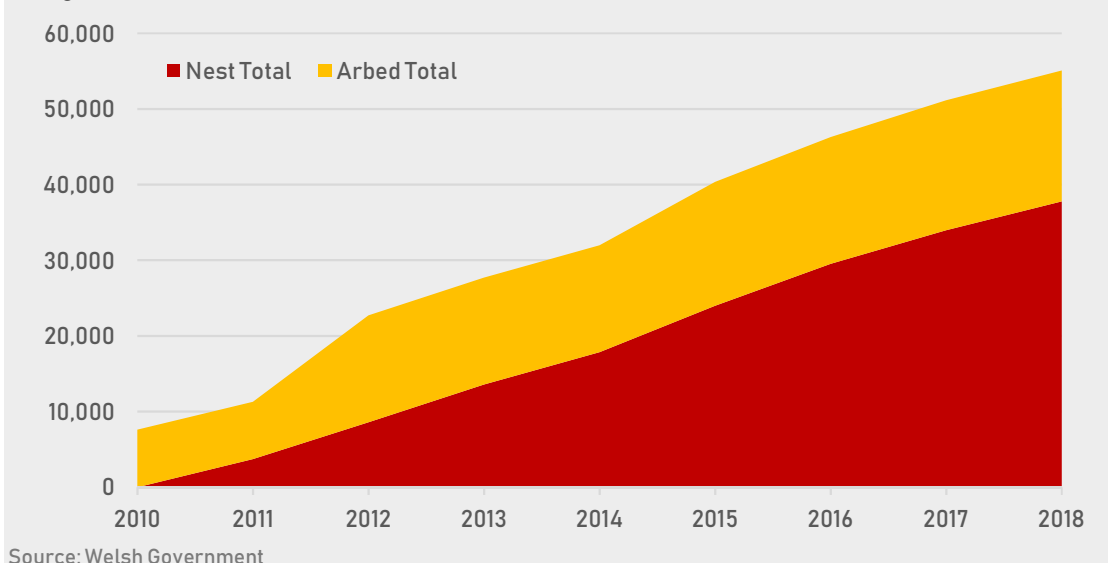
- 6.34** The Welsh Government has stated that “if Wales is to meet its climate targets, buildings will need to operate at close to zero emissions by 2050”.¹³¹ The residential sector accounts for the vast majority of emissions that come from buildings. In 2017 residential building accounted for 82% of this sector’s emissions (3.5 Mt CO₂e), with business buildings and public buildings representing 10% and 8% respectively (0.4 and 0.3 Mt CO₂e).
- 6.35** In order to decarbonise this sector the Welsh Government has stated that this will be achieved by: energy efficiency measures; low carbon heating measures (biomass, for example); and behavioural change measures to the way buildings are managed.¹³²
- 6.36** The Welsh Government has sought to increase the energy efficiency standards of energy inefficient homes for low-income households, and those living in the most deprived areas, via the Welsh Government Warm Homes programmes **Arbed** and **Nest**. The aims of these programmes are to reduce fuel poverty, boost economic regeneration, and reduce emissions. By 2018/19 more than 55,000 homes had received support via these schemes (see Figure 5.15). The Welsh Government Warm Homes programmes were partially supported by EU funds.

¹³¹ Welsh Government (2019) *Buildings: Sector Emissions Pathway*. Crown Copyright.

¹³² Ibid.

Figure 6.15

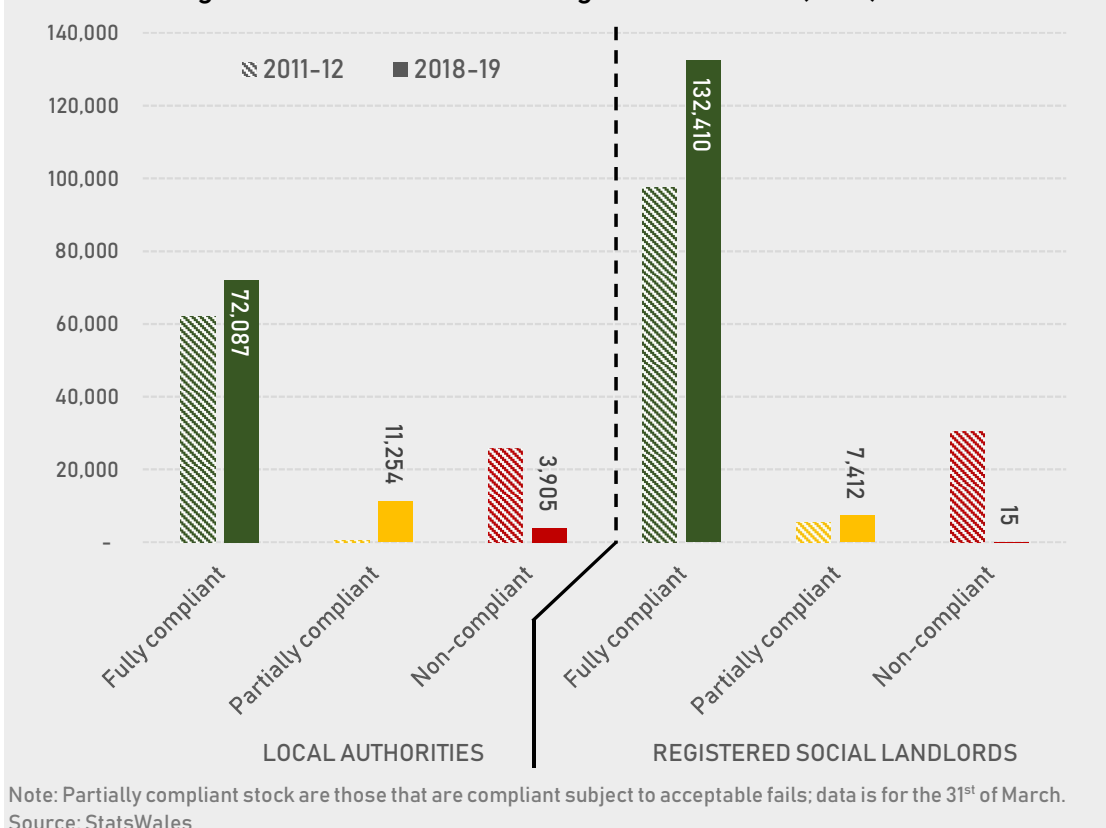
Cumulative number of properties receiving measures under the Warm Homes Programme



- 6.37** Another area where the Welsh Government has assisted in decarbonising the residential sector is social housing. Social housing is measured against a series of indicators which constitute the Welsh housing quality standard (WHQS) that social houses must meet to be considered to be of a good standard. The Welsh Government has mandated that all social housing be updated by the end of 2020 to ensure it meets this standard, and has provided funding to local authorities and social landlords in order to achieve this goal. One of the requirements to meet the WHQS is that homes are adequately heated, fuel efficient, and well insulated. This means that homes must have a Standard Assessment Procedure (SAP) rating of 65 or above. Local Authority controlled social housing stock that meets this rating increased by 13 percentage points to 83% between the period 2011/12 to 2018/19, while stock controlled by socially controlled landlords increased by 22 percentage points to 95% in the same period (see Figure 5.16).

Figure 6.16

Social housing stock that has a SAP rating of 65 or above (2019)



- 6.38** Energy efficiency is a cross cutting issue as it not only increases our ability to reduce energy demand and wastage, but it could also help to alleviate fuel poverty – this is covered in more detail in the section **Reducing the Factors that Lead to Income Inequality**. It is also important to account for the rebound effect that reductions in energy costs could have on energy demand. Energy savings made by increasing efficiencies may not lead to falls in demand equivalent to the saving, for example – families may choose to heat their homes to a warmer temperature than previously due to a reduction in cost.¹³³

Land Use, Land Use Change, and Forestry (LULUCF)

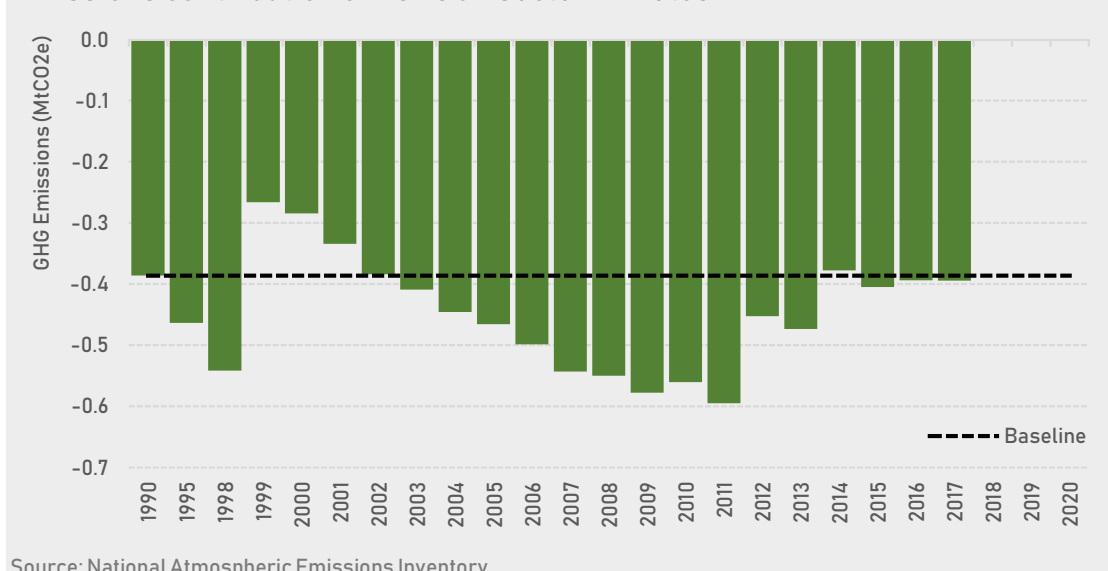
- 6.39** The land use, land use change and forestry sector is the only sector with current capability to remove greenhouse gas emissions from the atmosphere. The sector has so far provided a net emissions reduction (sink) in all years covered by the National Atmospheric Emissions Inventory (NAEI) for Wales (see **Figure 5.17**). The land use change inventory takes into account GHG emissions and removals based on land usage characteristics and changes (as an example, how converting grassland to

¹³³ Coyne, B., Lyons, S., McCoy, D. (2017) *The effects of home energy efficiency upgrades on social housing tenants: evidence from Ireland*. Centre for Climate Change Economics and Policy / Grantham Research Institute on Climate Change and the Environment. Working paper No. 315 / 279

forestry in a given year affected the sum of CO₂e emissions).¹³⁴ In 2017 the sector provided a net reduction of 0.4 MtCO₂e. The net LULUCF sink has increased by 2.2% since the base year.

Figure 6.15

Emissions contribution of LULUCF sector in Wales



- 6.40** The Welsh Government has stated that maintaining the carbon sink from the LULUCF sector will be essential in meeting its climate targets and the LULUCF sink will need to increase from the baseline by 2030. It will seek to do this by increasing tree cover, reducing carbon loss from peatlands, and building carbon stores within biomass.¹³⁵
- 6.41** Currently there are a range of Welsh Government programmes and policies that will aid the above objectives, some of which are supported by EU funds. **Glastir Woodland Creation**, currently funded by the RDP, provides capital grants for woodland creation and area payments, including to farmers for agricultural income forgone. The Welsh Government are working in joint collaboration with Natural Resources Wales to prepare a **National Peatland Action Programme** which will look to ensure the favourable management and restoration of peatland ecosystems. The Welsh Government has also set out in **Woodlands for Wales** how forestry and land use changes should be accessed.

Summary

- 6.42** The Environment (Wales) Act 2016 has set a target to reduce greenhouse gas (GHG) emissions in Wales by at least 80% in 2050. The Welsh Government is also waiting on advice from the UKCCC (expected September 2020) on how current interim targets will need to change to meet the new UKCCC 95% reduction target and plans to ask

¹³⁴ Griffin, A., Bailey, R., and Brown, P. (2014) *An introduction to the UK's Greenhouse Gas Inventory*. UK Department of Energy & Climate Change (DECC).

¹³⁵ Welsh Government (2019) *Industry: Sector Emission Pathway*. Crown Copyright.

the Senedd/Welsh Parliament to amend the existing interim targets towards the end of 2020. To achieve the new target, the UKCCC believe carbon pricing and robust regulation will be needed to drive changes in consumer and business behaviour, as well as public investment in programmes and technologies.

- 6.43 The industry sector contributes the most to GHG emissions in Wales, however many powers relating to heavy industry are reserved to the UK Government. To support the reduction in industry-related emissions, Welsh Government aim to improve energy efficiency in and increase the use of low-carbon industrial processes. In the power sector the use of renewable sources to meet domestic electricity demand is also increasing and locally owned renewable energy resources can be an effective way to ensure communities also see the personal benefit of this. As the residential sector accounts for 82% of building sector emissions consideration may need to be given to future investments for increasing energy efficiency in residential buildings.
- 6.44 Emissions from the agriculture sector were above the 2020 target in 2017 and EU RDP funding is currently providing support to farmers to try and meet the target. Emissions from the transport sector will also need to reduce at a faster rate than they are currently to meet targets for 2020. A shift in consumer behaviours towards more sustainable travel have been highlighted by Welsh Government as a way to reduce GHG emissions in this sector. For many in Wales, distance to travel to work means that in addition to active travel solutions there will need to be a focus on shifting road journeys to electric vehicles. Focus now needs to shift towards what sectors need to do to meet their 2030 interim emission targets.

7 Priority Area:

Healthier, Fairer, and More Sustainable Communities

Key Points

- Economic indicators do not account for every factor that is important to individuals across Wales; standards of health, being treated equally and with dignity, and connection to community are integral to many as well.
- Having a disability increases the risk of being in poverty (for an individual and their household), decreases the chance of being in employment, and is a major cause of economic inactivity for men and women. The employment rate for those of working age that have a disability has been consistently lower in Wales than in the UK over the last six years.
- Reported mental-health problems do not affect all groups equally. The more deprived an area an individual lives in, the less likely they are to view their life as being highly worthwhile.
- Physical activity is essential for improving and maintaining physical and mental health. While active travel in Wales may be limited for those with disabilities or who live in remote areas, there should be scope to increase the low rates of active travel reported.
- The need to increase the provision of adult social care will rise as the share of the population over 65 increases, as it is projected to. In this context the importance of unpaid carers should not be understated, and understanding the pressures and nature of unpaid care is vitally important.
- In order for the Welsh Government to reach its target of one million Welsh speakers by 2050 the growth rate of additional speakers will need to increase from its current trend. Increasing the everyday use of Welsh amongst the population has been identified as one potential pathway towards achieving this goal.
- While development activity led by communities *may* lack the scope to make meaningful changes to headline indicators, two of the factors it has the power to influence (social capital and good local governance) have been identified as potentially reducing social problems such as crime, unemployment, and poverty.

- A sizable minority (14%) of Wales' population live in small settlement types, such as villages, hamlets, or isolated dwellings. These small settlements dominate the areas with the highest travel times to services. Travel times are generally much higher for travel by public transport rather than by car across all settlement types.

Why Focus on Creating Healthier, Fairer and More Sustainable Communities?

- 7.1 The performance of Wales' economy is of critical importance to our growth and prosperity, but it is also important to recognise that economic indicators do not account for everything that positively contributes to the well-being a population. Economic measurements, like GDP, may even be positively influenced by factors that have externalities that reduce well-being and community cohesion. On top of this areas often overlooked in traditional areas of economic development may have the capacity to positively influence factors such as productivity and reducing poverty.
- 7.2 This section begins by looking at a range of factors that relate to health. The Welsh Government is committed to becoming **a healthier Wales**, *"a society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood"*. In the UK, health has been identified as one of the most important factors influencing a person's subjective well-being,¹³⁶ while higher subjective well-being has been estimated to add between 4 to 10 years to an individual's life.¹³⁷ The employment rate of those in Wales with disabilities, indicators relating to mental health, and the potential benefits of active travel are some of the factors explored that relate to this area.
- 7.3 As of 2017 Wales had an older population than Scotland, Northern Ireland, and most English regions.¹³⁸ As Wales' population ages – as it is forecast to do – it will be important to consider the provision and quality of adult social-care. The presence and enormous contribution of unpaid carers in Wales is another area highlighted, and addressing how to alleviate some of the pressure on this sizable cohort of the population is one area to potentially consider.
- 7.4 The Welsh Government is committed to nurturing **a Wales of vibrant culture and thriving Welsh language**, defined as *"a society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation"*. The Welsh language is an important component in strengthening the cultural identity and confidence of the Welsh population, and the Welsh Government has set itself the goal of reaching one million Welsh speakers by 2050. This section of the socio-economic analysis lays out some of the trends and indicators that can inform this area.

¹³⁶ ONS (2013). *What matters most to personal well-being?* Office for National Statistics.

¹³⁷ UK Department of Health (2014). *Wellbeing and why it matters to health*. Crown copyright.

¹³⁸ Using median age per region as the indicator for comparison (see **Figure 2.4**).

- 7.5 Creating a **Wales of cohesive communities** is achieved by forming and maintaining “*attractive, viable, safe and well-connected communities*”. Programmes that are aimed at increasing community cohesion and reducing social isolation, such as community-led development programmes, are currently being encouraged and supported by the Welsh Government using EU funding. Their value is seen in increasing social capital and local governance, which is examined in more detail.
- 7.6 Finally, due to the distribution of the Welsh population across sparsely populated rural areas, some commentary has been provided on indicators that relate to access to services for individuals by settlement classification. This is framed in terms of time needed to reach a particular service, but other forms of access are equally relevant – such as ease of use and waiting times – however these will not be covered. People in Wales living in smaller settlement types and who lack the use of a private vehicle are severely disadvantaged should they wish to access a number of essential services.

Health Factors

Disability

- 7.7 Wales currently has one of the highest rates of disability across its population compared to other major UK nations and regions¹³⁹ (see **Figure 2.4**). According to the UK Equality Act 2010, being disabled is identified as having a physical or mental impairment that has a ‘substantial’ and ‘long-term’ negative effect on the ability to do normal daily activities.¹⁴⁰ In the most recent years for which there are data, having someone with a disability within a family has significantly increased the risk of that household being in relative poverty (see **Figure 7.1**).¹⁴¹ In the period 2015/16 to 2017/18, on average, the risk of being in relative poverty for a household was estimated to rise from 19% to 32% if someone within the family had a disability.

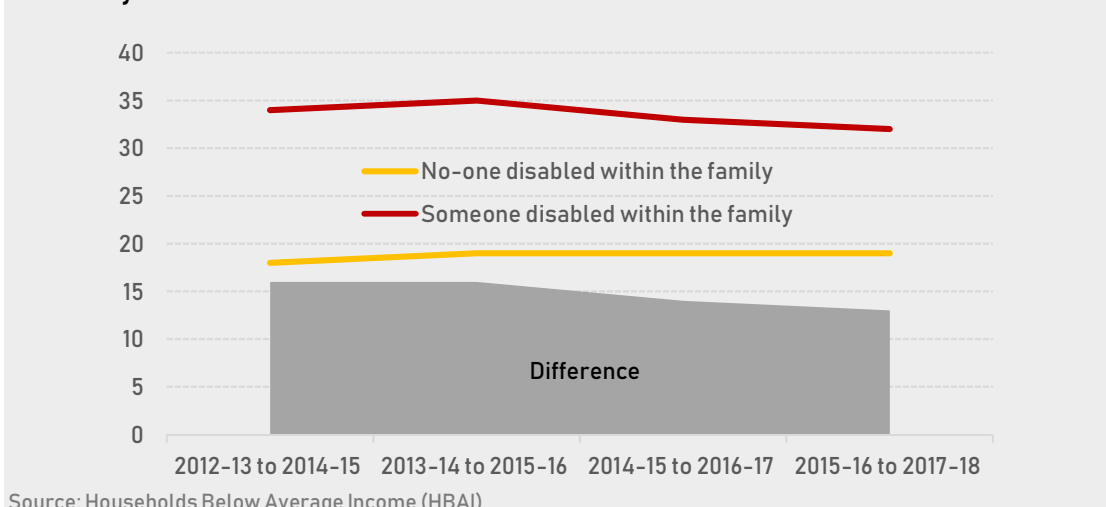
¹³⁹ This is likely influenced by the fact that it also has an older population.

¹⁴⁰ [UK Government \(n.d.\) Definition of disability under the Equality Act 2010. Website.](#)

¹⁴¹ As the definition of disability changed with the Equality Act it is not possible to make direct comparisons with data before 2012/13.

Figure 7.1

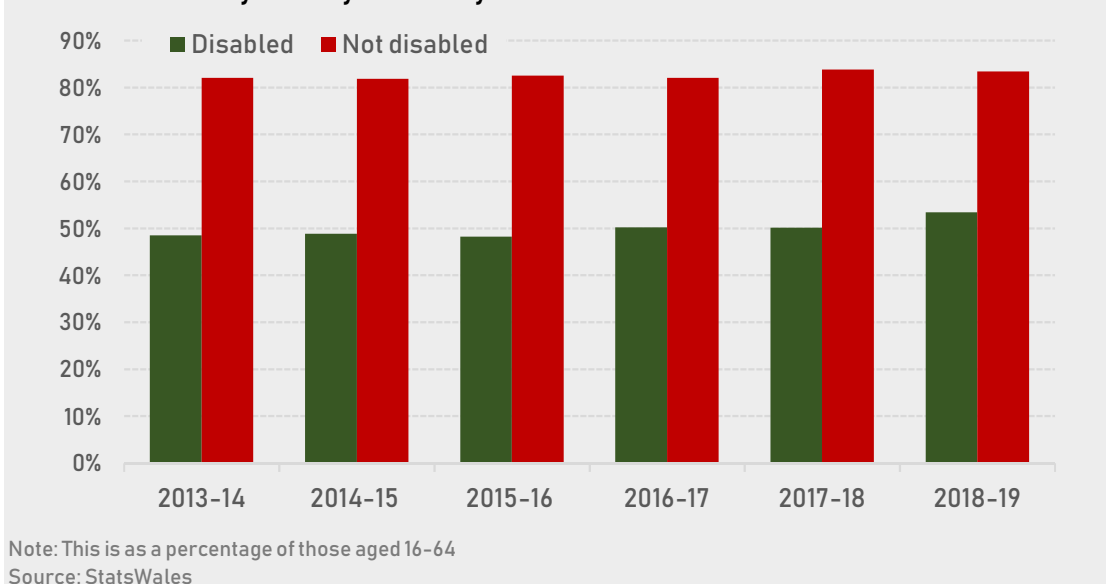
Risk of being in relative income poverty by whether someone in household has disability in Wales



7.8 Looking at the economic activity rates of those with a disability provides one explanation for the data shown in **Figure 7.1**. In Wales, the economic activity rate of those with a disability has been significantly lower than those who do not since at least 2013/14¹⁴² (see **Figure 7.2**). In 2018/19 there was a 30 percentage point difference between these two groups – 83% of those aged 16-64 who did not have a disability were economically active compared to 53% for those that do. For 2019, long-term sickness was cited as the cause of 32.5% of the economic inactivity of men and 25.9% of women (see **Figure 3.11**).

Figure 7.2

Economic activity rate by disability status in Wales

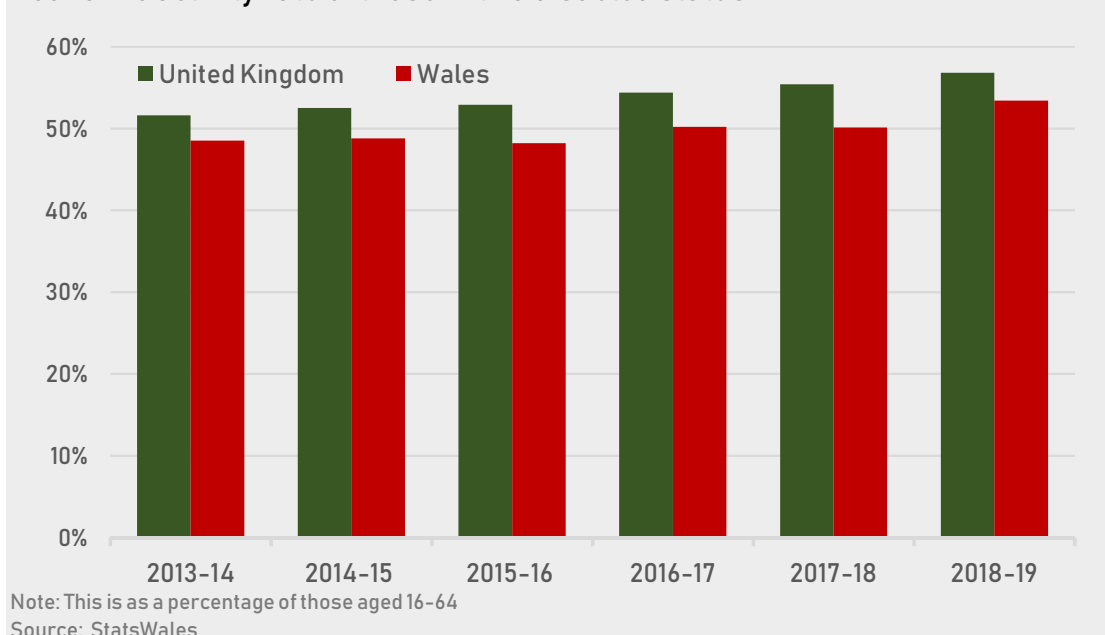


¹⁴² Earliest available comparable data.

7.9 While the economic activity rate of disabled people in Wales has risen since 2013/14, it has still been consistently lower when compared to the economic activity rate of those with a disability in the UK (see **Figure 7.3**). In the UK the economic activity rate was 52% in the year 2013/14 for those with a disability while it was 49% in Wales – a 3 percentage point difference. In 2018/19 the figure for the UK stood at 57% and in Wales was 53% - a 4 percentage point difference.

Figure 7.3

Economic activity rate of those with a disabled status



Mental well-being

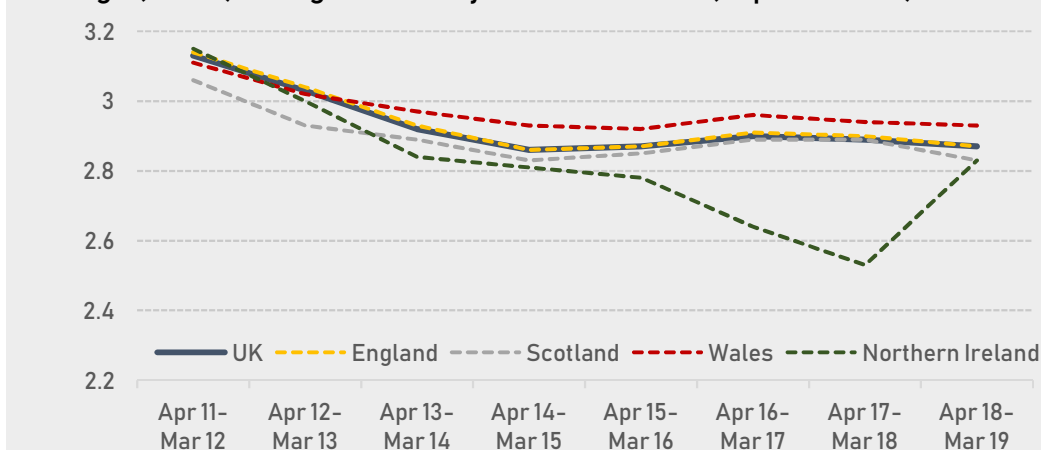
7.10 As well as physical health, mental health also plays an important role in the well-being of individuals, as well as the detrimental impact worse mental health has on the productive performance of individuals.¹⁴³ The ONS conducts a survey across the UK which measure personal well-being. **Figure 7.4** shows that Wales is in-line with the other nations when looking at wider measures of well-being such as life satisfaction or anxiety – however Wales does show higher percentages of people reporting high levels of anxiety compared to the UK.¹⁴⁴

¹⁴³ Lim, D., Sanderson, K., & Andrews, G. (2000). *Lost productivity among full-time workers with mental disorders*. The journal of mental health policy and economics, 3(3), 139-146.

¹⁴⁴ This is a 1 to 10 scale with 1 representing lower levels of anxiety and 10 representing higher levels.

Figure 7.4

Average (mean) ratings of anxiety in UK countries (10 point scale)

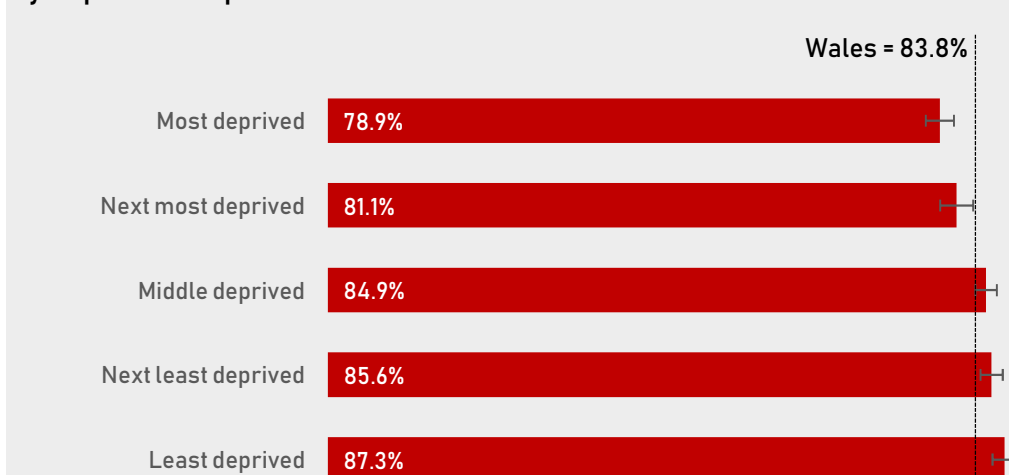


Source: ONS

- 7.11** Mental health problems and personal well-being are not expected to affect all socio-economic groups equally. For example, **Figure 7.5** shows the proportion of those who view the things they do in their life as being worthwhile. Groups in the most deprived quintile are the least likely to view their life as being worthwhile, with the proportion increasing for each quintile up to the least deprived.

Figure 7.5

High sense of life worthwhile for persons in Wales aged 16 and over, by deprivation quintiles



Note: Data shown are age-standardised percentage; Adults reporting a high or very high score (7-10) to the question, "Overall, to what extent do you feel the things you do in your life are worthwhile? Where 0 is 'not at all worthwhile' and 10 is 'completely worthwhile'."

Source: Public Health Wales Observatory

Active Travel

- 7.12** The World Health Organisation has attributed a lack of physical activity¹⁴⁵ to a range of noncommunicable diseases such as cancer, strokes, diabetes, and heart disease, and has also linked a lack of physical activity with depression. Engaging in physical activity however is associated with improved muscular and skeletal health, better weight regulation, and lower blood pressure, amongst other benefits.¹⁴⁶ Physical activity does not have to be achieved through sport and one way in which individuals can be physically active in their day-to-day lives is through active travel.
- 7.13** Active travel is defined as “...walking or cycling as a means of transport; that is walking or cycling in order to get to a particular destination such as work, the shops or to visit friends. It does not cover walking or cycling done purely for pleasure, for health reasons or for training.”¹⁴⁷ Of course active travel may not be possible for all individuals – those with mobility disabilities or who live in particularly remote locations – but where it is possible, it could have a positive impact, including those who do not currently achieve the recommended level of weekly physical activity. This is notwithstanding the effect that opting for active travel could have on positively reducing emission contributions from transport in Wales and creating generally healthier communities for people to live, particularly in more rural areas – see priority area [**Supporting the Transition to a Zero Carbon Economy**](#) for more detail on this topic.
- 7.14** The National Survey for Wales collects data on active travel. In 2018-19, a majority of respondents (57%) stated that they walked as a form of active travel for over 10 minutes at least once or twice a week, but only a quarter (24%) stated that they walked every day (see **Figure 7.6**). These figures were not noticeably different to the previous year.

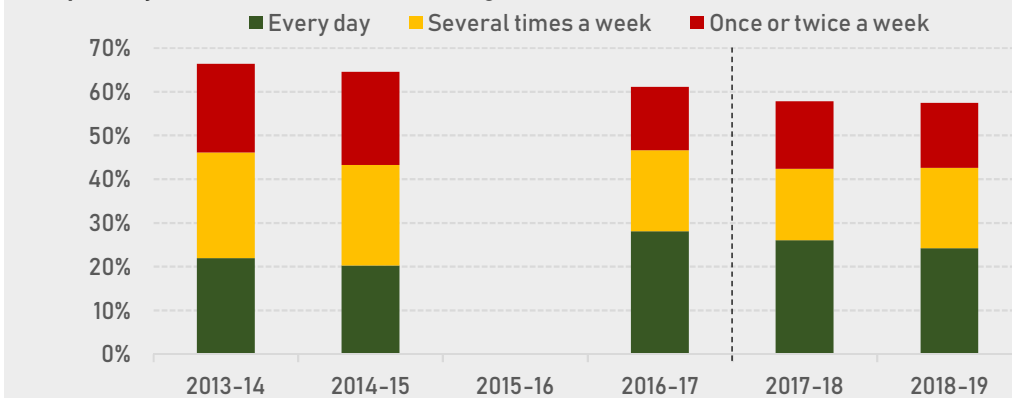
¹⁴⁵ Physical activity is defined as any bodily movement produced by the skeletal muscles that uses energy.

¹⁴⁶ [WHO \(February, 2018\) Newsroom: Physical Activity. World Health Organisation. Website.](#)

¹⁴⁷ Welsh Government (2018) *Walking and cycling in Wales: Active Travel, 2017-18*. Statistical bulletin.

Figure 7.6

Frequency of active travel (walking) in Wales

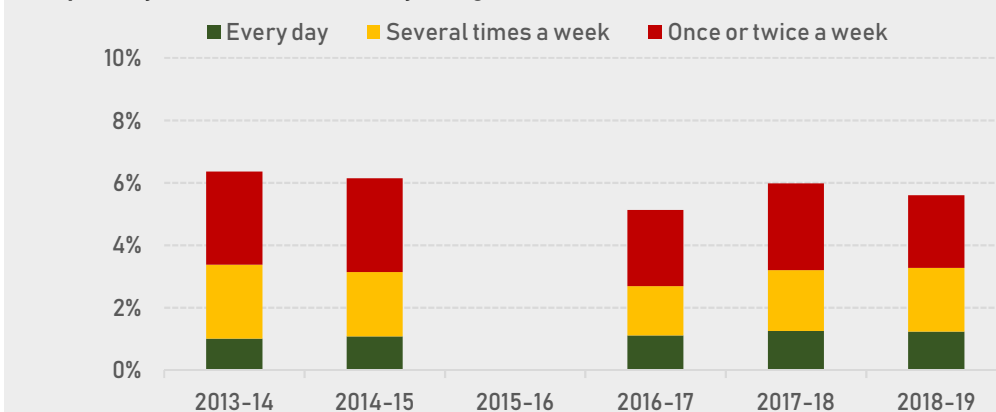


Note: The survey question changed in 2017-18 and the walking time was increased from 5 minutes to 10 minutes. This means that it is not possible to draw any comparisons with previous years; Survey was not carried out in 2015-16.
Source: Welsh Government

- 7.15** The proportion of those in Wales who engage in active travel using a bicycle at least once a week has remained fairly stable but low and stood at 5.6% for the year 2018/19. Only 3.3% cycled several times a week or more – which would be the frequency least expected for most people who use a bicycle to commute to work – in line with what could perhaps be expected given the modal share of those that bike/walk to work as seen in **Figure 6.10**. It is however worth considering if this could be improved given that approximately 68% of the Welsh population live in large towns (see **Table 7.1**).¹⁴⁸

Figure 7.7

Frequency of active travel (cycling) in Wales



Note: Survey was not carried out in 2015-16
Source: Welsh Government

Adult Social Care

- 7.16** There are a wide range of different activities that can be defined as social care services such as end-of-life care, adoption services, and harm protection, as well as day to day assistance for those who may have difficulty doing basic tasks by themselves. In

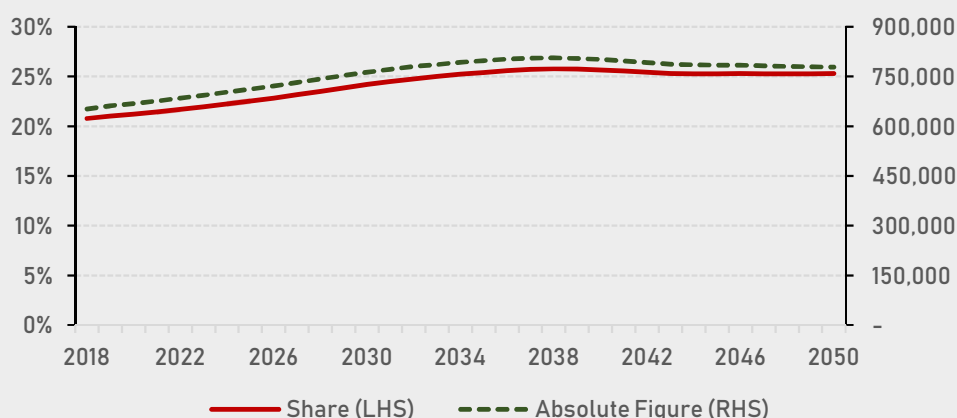
¹⁴⁸ Although cycling to work may be viewed as unfeasible for those who work outside of the settlement in which they live.

Wales, local authorities provide formal social care to both adults and children. This includes care for those with mental health needs, disabilities, and also for children who need to be taken into local authority care (as well as protecting them from neglect or abuse).¹⁴⁹

- 7.17 Of particular importance is adult social care. Wales already has one of the oldest populations in the UK with a median age of 42.5 years in 2018 (**Figure 2.4**) and there is evidence to suggest that this will increase in the next two decades. Population projections suggest that between 2018 and 2050 the share of the population that is aged 65 or over will increase by 5 percentage points from 21% to 25% (see **Figure 7.8**). In absolute figures this will be an approximate increase of 127,000 from 652,000 in 2018 to 779,000 in 2050 – a 19% increase. In line with what could be expected with these projections, the pressures of adult social care were forecast to rise by 4.1% a year on average (in real terms) up to the year 2030/31, faster than for the NHS.¹⁵⁰

Figure 7.8

Projection of Welsh population aged 65 and over



Source: ONS (2018 based population projections)

- 7.18 An absolute increase in the number of those aged over 65 will almost certainly increase the demand for adult social care in Wales, while an accompanying fall in those under the age of 65 could also reduce the ability of public bodies to fund it should the old-age dependency ratio increase.¹⁵¹
- 7.19 As well as state funded social care, unpaid carers provide vital care for family and friends that would otherwise likely need to be paid for by government (nationally or locally) or even by individuals themselves. Research by the ONS suggested that in 2014 unpaid carers in the UK provided social care worth £57 billion – more than the

¹⁴⁹ [Law Wales \(n.d.\) Social Care. Welsh Government. Website.](#)

¹⁵⁰ Watt, T., & Roberts, A. (2016). *The Path to Sustainability: Funding projections for the NHS in Wales to 2019/20 and 2030/31*. The Health Foundation.

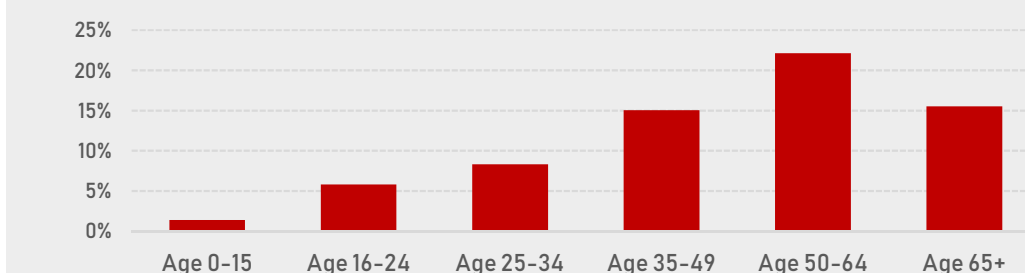
¹⁵¹ This represents the number of the population that are of retirement age divided by the number that are of working age.

total amount spent on social care in UK – demonstrating the enormous impact this could have should the care not be provided.¹⁵²

- 7.20** **Figure 7.9** shows the share of the population that provide unpaid care in Wales by age. Those aged 0-15 are the least likely to provide care with 1.4% doing so. The share then increases for each age cohort peaking for those aged 50 to 64 (22.1%) before falling for the oldest cohort, those aged over 65 (15.5%).

Figure 7.9

Share of the Welsh population that provide any unpaid care, by age (2011)

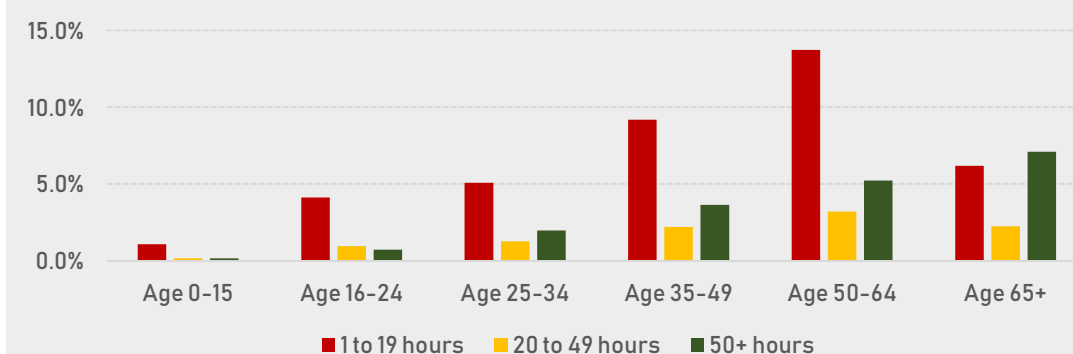


Source: 2011 Census

- 7.21** When broken down further by hours of care given (see **Figure 7.10**), the majority of all carers in every age cohort provided between 1 to 19 hours' worth of care per week except those aged 65 and over (with the majority providing 20 hours or more per week). For those who provide care aged 65 and over, 46% provide 50 hours or more a week.

Figure 7.10

Share of the Welsh population that provide unpaid care, by hours of care provided per week and age (2011)



Source: 2011 Census

- 7.22** There is some evidence, albeit dated, that a carer's health is negatively correlated with the more unpaid care hours they provide a week. This was true of younger carers as well as more elderly carers.¹⁵³ For younger people, being a carer has also been shown

¹⁵² [ONS \(10 July, 2017\) Unpaid carers provide social care worth £57 billion.](#)

¹⁵³ Doran, T., Drever, F., & Whitehead, M. (2003). *Health of young and elderly informal carers: analysis of UK census data*. *Bmj*, 327(7428), 1388.

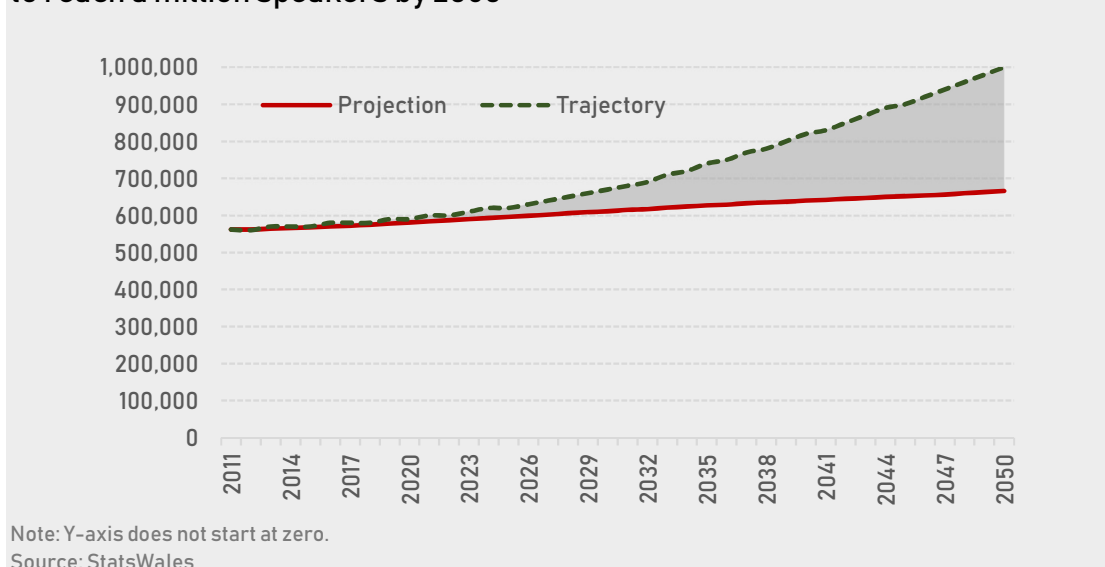
to be linked with lower life-satisfaction, a higher propensity to be bullied, and lower educational aspirations.¹⁵⁴

Welsh Language

- 7.23** In the 2011 census there were 562,000 people aged three or over, living in Wales, who responded that they were able to speak Welsh. The Welsh Government has laid out its vision for there to be one million Welsh speakers living in Wales by 2050 in its document **Cymraeg 2050**. The Welsh Government's own projection estimates (based on trends up to 2011) show that the number of Welsh speakers would fall short of the target by 334,000 (see **Figure 7.11**) should past trends continue, demonstrating the need to intensify efforts in order to reach this goal.¹⁵⁵

Figure 7.11

Projected number of Welsh speakers aged three and above & trajectory needed to reach a million speakers by 2050



- 7.24** The Welsh Government's **Cymraeg 2050** plan follows three key themes: increasing the number of Welsh speakers; increasing the use of Welsh; and creating favourable conditions for Welsh speaking (through infrastructure for example).¹⁵⁶
- 7.25** The Welsh Government has a number of policies and initiatives through which it currently seeks to increase the number of Welsh speakers in Wales, such as through its **Welsh in Education: Action Plan 2017-21** which sets out the development of compulsory Welsh-medium and Welsh language education. Initiatives include **Cymraeg for Kids** which promotes the transmission of Welsh in a child's earliest

¹⁵⁴ Lloyd, K. (2013). *Happiness and well-being of young carers: Extent, nature and correlates of caring among 10 and 11 year old school children*. Journal of Happiness Studies, 14(1), 67-80.

¹⁵⁵ It is worth noting that as the projection is based on pre-2011 trend it does not take into account potential impacts of policies/programmes designed to promote the Welsh language that have been brought into effect since 2011.

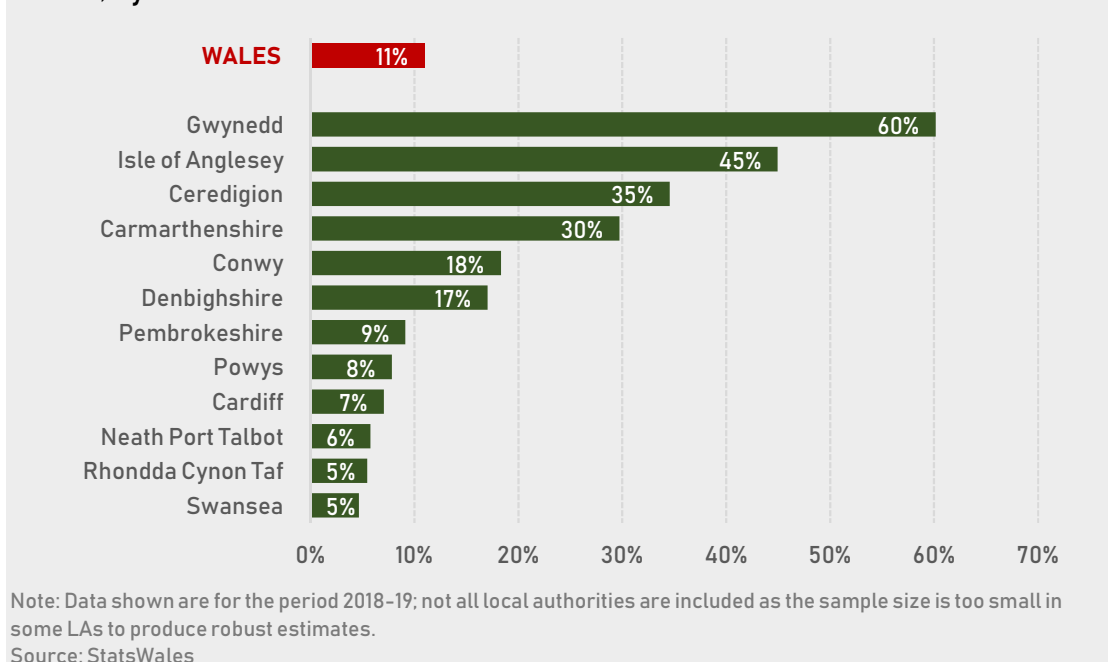
¹⁵⁶ Welsh Government (2019) *Cymraeg 2050: A million Welsh speakers*. Crown copyright.

stages of development by seeking to provide parents with advice and support on how their children can best learn the language. The **Childcare Offer for Wales**, which seeks to ease pressures on working parents, allows parents of 3 to 4 year olds to access up to 30 hours of childcare support and includes and promotes childcare that is provided in Welsh or bilingually.

- 7.26 The second target set forward in **Cymraeg 2050** is that 20% of the population will be speaking Welsh daily and can speak more than a few words. As of 2018-19 approximately 11% of the population aged 16 or over in Wales were speaking the language daily and were able to speak more than a few words (**Figure 7.12**). Welsh is also more widely used in some regions as opposed to others, with western areas (such as Gwynedd, the Isle of Anglesey and Ceredigion) having over 30% of their populations aged 16 or over speaking the language daily, while areas to the South generally see less than 10% of their population use the language with the same frequency.

Figure 7.12

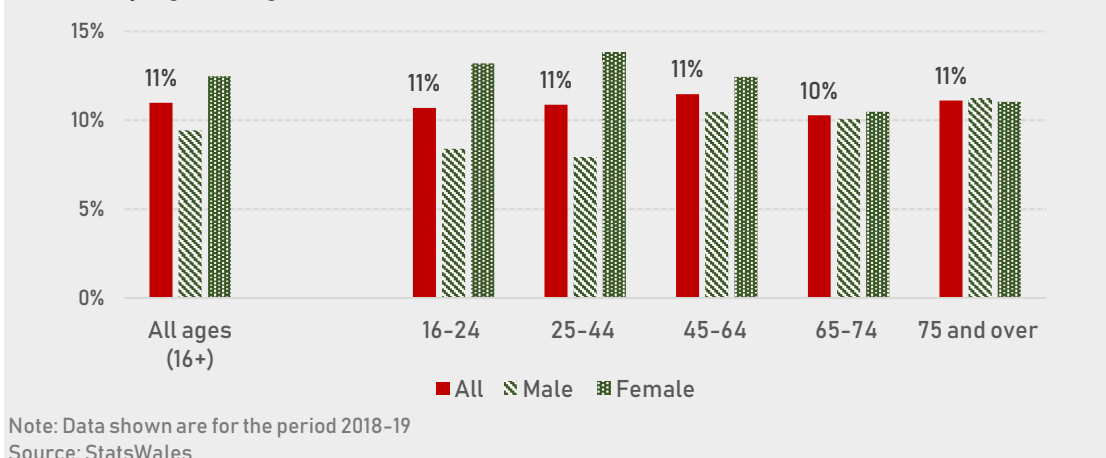
Share of population (16+) who speak Welsh daily and can speak more than a few words, by selected local authorities



- 7.27 **Figure 7.13** shows that Welsh is not significantly more/less used by one age cohort as opposed to others. There does however appear to be an observed gender difference for all cohorts below those aged 65 with females being more likely to use Welsh than males (for those aged 25 to 44, this difference was 6 percentage points).

Figure 7.13

Share of population (16+) who speak Welsh daily and can speak more than a few words, by age and gender



- 7.28** Currently the Welsh Government is aiming to increase the use of Welsh through a number of programmes. For example, the **Welsh language technology action plan** seeks to ensure that Welsh has a place in current and future digital development.¹⁵⁷ This will involve ensuring, amongst other areas, that Welsh is able to be utilised via emerging technologies, such as speech-to-text and machine learning and by promoting the creation and use of digital Welsh language products. The Welsh Government also seeks to make the positive business case of using Welsh to Welsh enterprises and supports them in their adoption and use of the language via the language support service **Helo Blod**.

Development Activity Being Led by Communities

- 7.29** Development activity being led by communities themselves could have a positive impact across all four priority areas – such as the local ownership energy production models mentioned in the priority section **Supporting the Transition to a Zero Carbon Economy** – a particular benefit is in its potential to strengthen community cohesion and local capacity.
- 7.30** This area can refer to a wide range of activity but, broadly speaking, it is development activity that adds (or is designed to in the long term) value to an area and which is led from the bottom-up – i.e. led by the community in which the activity takes place. Usually it is assumed that this activity should be inclusive and driven by all sectors of the community (public, private, voluntary, and community sectors).¹⁵⁸ It is regarded as an important component of local development not just for the immediate added value of the project it delivers (i.e. project associated outcomes) but also for the impact it has

¹⁵⁷ Welsh Government (2018) *Welsh language technology action plan*. Crown copyright.

¹⁵⁸ UK MHCLG (2016) *Guidance for the Development of Community Led Local Development Strategies*. Ministry of Housing, Communities & Local Government. Crown copyright.

in building capacity in the local areas by increasing social capital and networks, building local governance, and enhancing delivering outcomes.

- 7.31** The Welsh Government has experience of supporting community driven initiatives including past projects and programmes (e.g. **Communities First** and **URBAN**), and current projects and programmes such as **Communities for Work** and **LEADER** – both of which are being supported by existing EU funding.
- 7.32** Social capital can be defined as “the norms and networks that allow people to act collectively”¹⁵⁹ as well as the trust of, and concern for, members of a community or social group.¹⁶⁰ Social capital could therefore be viewed through the prism of the rate of engagement in informal networks and civic organisations of a community’s population. More importantly, low levels of social capital have been linked with a number of social issues such as crime, health, poverty and unemployment.¹⁶¹ Given that these issues are also viewed as having detrimental impacts on the economic performance of individuals, social capital can be an asset that positively contributes to economic performance.¹⁶²
- 7.33** Increasing community cohesion by empowering communities to better develop their own distinctive strengths and opportunities, is not, however, only justified from an economic perspective. Another potential benefit is its capacity to reduce the prevalence of social isolation within a community. Social isolation can be defined in terms of lack of number, frequency, and quality of contacts and is usually highlighted due to the negative attributable effects that are derived from it to those who are socially isolated (and, in some instances, the effects it has on those closest to them).¹⁶³ Social isolation may not affect all communities equally. In Wales, research has suggested that the extent of someone’s close friendship network is negatively correlated with income deprivation.¹⁶⁴

Access to services

- 7.34** Food shops, schools, post offices, libraries, leisure centres, GP surgeries, and dentists are a range of services that the Welsh population need to access with reasonable frequency or urgency in order to facilitate their day-to-day lives. When referring to “access” for services, it is important to note that there are different ways in which a service could be deemed accessible that can sometimes be overlooked. While this section will focus on service accessibility in terms of travel time it takes to reach

¹⁵⁹ Woolcock, M., & Narayan, D. (2000). *Social capital: Implications for development theory, research, and policy*. The World Bank Research Observer, 15(2), 225-249.

¹⁶⁰ Bowles, S., & Gintis, H. (2002). *Social capital and community governance*. The Economic Journal, 112(483), F419-F436.

¹⁶¹ Grootaert, C., Narayan, D., Jones, V. N., & Woolcock, M. (2004). *Measuring social capital: An integrated questionnaire*. The World Bank.

¹⁶² It should be noted that there are forms of social capital that can have negative consequences. Networks that exclude and/or favour certain groups are an example of such forms of social capital.

¹⁶³ Biordi, D. L., & Nicholson, N. R. (2013). *Social isolation*. Chronic illness: Impact and intervention, pp 85-115.

¹⁶⁴ JRF (2018) *Poverty in Wales 2018*. Joseph Rowntree Foundation.

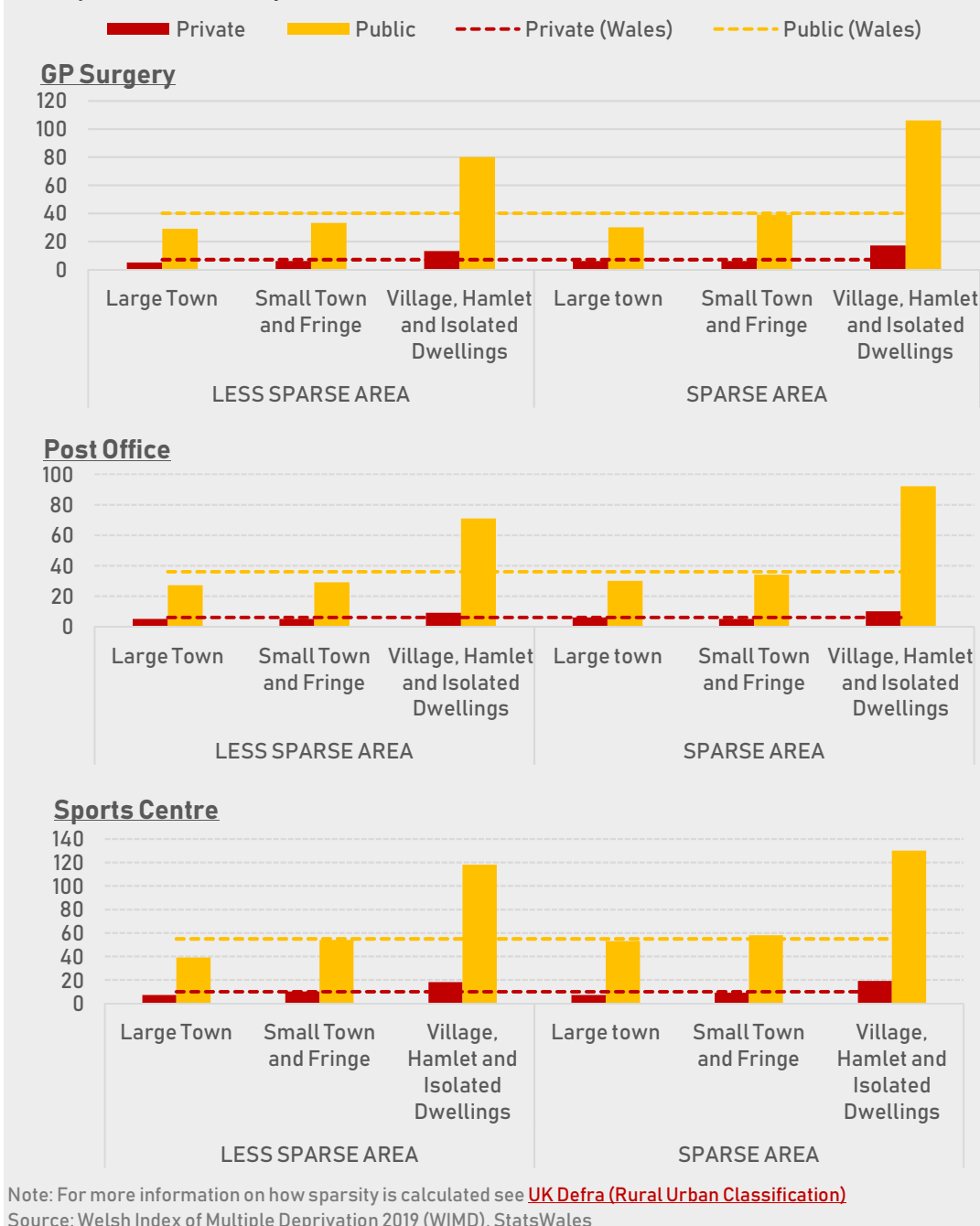
services (which can also generally be used as a proxy for “distance to a service”), other factors – such as the day/time at which services are able to be accessed and the ease of arranging access – are also especially relevant and important to individuals,¹⁶⁵ although in many cases, making changes to this type of access is outside the scope of regional investment interventions.

- 7.35** As could be predicted, the expected travel time to access various services is longer for individuals the smaller the settlement type in which they live (cities, towns, villages, etc.); with how densely populated the larger surrounding area is also a factor. However, the time it takes to access services when dependent on public transport rises by a much higher rate for smaller settlement sizes, as opposed to those who have access to a private vehicle (which is relatively low in every settlement type).
- 7.36** **Figure 7.14** shows the average time it takes to access the nearest of three different services – a GP Surgery, a post office, and a leisure centre – by settlement classification. Taking the figures for GP surgeries as an example, in a large town in a less sparse area the difference between public and private transport return travel times is expected to be 24 minutes. If living in a village, hamlet, or isolated dwelling in a sparsely populated area, this difference in the added travel time for public transportation is expected to be 89 minutes – with the total expected return travel time being 106 minutes.

¹⁶⁵ Winckler, V. (2019). *Access to GP Services by older people*. Bevan Foundation.

Figure 7.14

Average return travel time (in minutes) to access services by public/private transport in Wales, by urban/rural classifications (WIMD 2019)



7.37 Settlement size, as opposed to area sparsity, is a larger factor in increasing the time it takes to access services. **Table 7.1** gives an overview of the share of the population that were estimated to be living in each settlement classification type in 2017. While the majority of the population live in large towns (68%), 14% of the population live in villages, hamlets, or isolated dwellings. This is still a sizable minority that are severely disadvantaged should they not have access to a private vehicle.

Table 7.1

Where Welsh population live, by rural/urban classifications (2017)

Classification	number (‘000)	share of total
<u>Sparsest context</u>		
Villages, hamlets and isolated dwellings	238	8%
Small towns and fringes	123	4%
Large towns	57	2%
Total	419	13%
<u>Less sparse context</u>		
Villages, hamlets and isolated dwellings	211	7%
Small towns and fringes	414	13%
Large towns	2,081	67%
Total	2,706	87%
<u>All Wales</u>		
Villages, hamlets and isolated dwellings	449	14%
Small towns and fringes	537	17%
Large towns	2,138	68%
Total	3,125	100%

Source: Welsh Government

Summary

- 7.38** The Wellbeing of Future Generations Act illustrates how the Welsh Government has committed to ensuring the physical and mental wellbeing of its population is a key indicator for the country. Wales faces a number of challenges in the future to deliver on this priority area. Many of these challenges relate directly to the changing demography of Wales and associated effects of such changes. The population of Wales is older than other UK nations and, as a whole, is ageing. Projections show the proportion of the population aged over 65 rising by up to seven percentage points by 2041. Rates of disability in Wales are higher when compared to other UK nations and regions while the rate of economic activity of those with a disability is lower increasing the risk of living in relative poverty which negatively impacts mental well-being.
- 7.39** These factors will place added pressure on the healthcare system. Consideration will also be needed to factor in the demands that will be placed on the adult social care sector – both paid and unpaid. With an ageing population access to services, particularly in sparser rural areas, may become an increasing priority. However the potential for growth in community led initiatives to develop innovative new approaches to address these issues may lead to benefits that could strengthen social capital, address issues of social isolation, improve community cohesiveness and promote the daily use of the Welsh language.

Appendix

Figure A
House Price Affordability Ratio
– Median (Median House Price/Median Earnings by LA

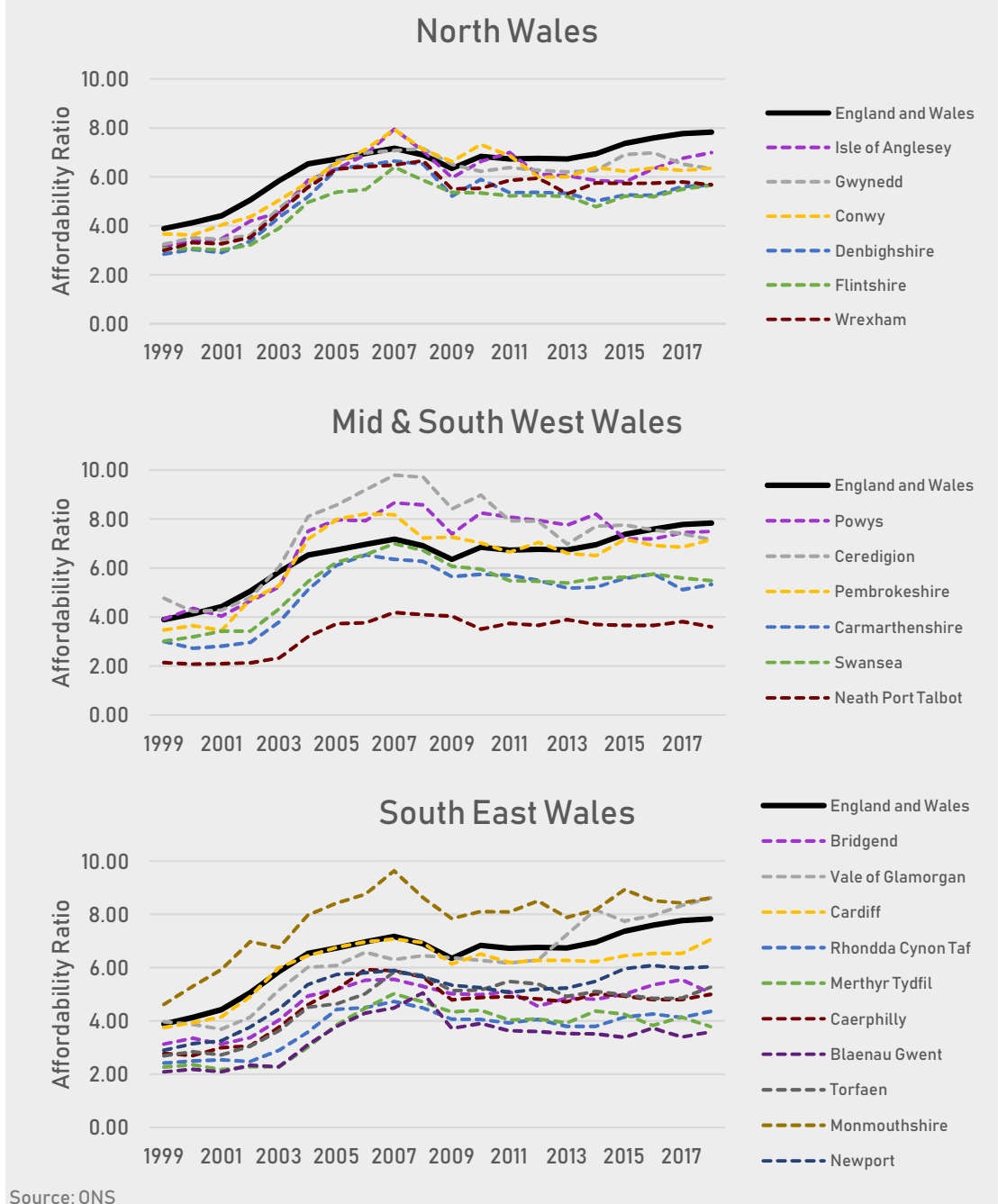


Figure B

House Price Affordability Ratio

- Lower Quartile (LQ House Prices/LQ Earnings), by LA

