



Dadansoddi  
Cyllid Cymru

Wales Fiscal  
Analysis

A photograph of the Welsh flag (Y Ddraig Goch) waving on a flagpole, set against a red background that transitions into the main title area.

# Wales' Fiscal Future: A path to sustainability?

GUTO IFAN, CIAN SIÔN & ED GARETH POOLE



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A path to sustainability?

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# Preface

## Declaration of funding

Wales Fiscal Analysis is hosted by the Wales Governance Centre and the School of Law and Politics at Cardiff University, and funded through a partnership between Cardiff University, the Welsh Government, the Welsh Local Government Association and Solace Wales. The programme continues the work of Wales Public Services 2025 hosted by Cardiff Business School, up to August 2018.

## About us

Wales Fiscal Analysis (WFA) is a research body within Cardiff University's Wales Governance Centre that undertakes authoritative and independent research into the public finances, taxation and public expenditures of Wales.

The WFA programme adds public value by commenting on the implications of fiscal events such as UK and Welsh budgets, monitoring and reporting on government expenditure and tax revenues in Wales, and publishing academic research and policy papers that investigate matters of importance to Welsh public finance, including the impact of Brexit on the Welsh budget and local services, options for tax policy, and the economics and future sustainability of health and social care services in Wales.

Working with partners in Scotland, Northern Ireland, the UK and other European countries, we also contribute to the wider UK and international debate on the fiscal dimension of devolution and decentralisation of government.

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# Executive Summary

As we enter the third decade of devolution, Wales' fiscal landscape is subject to considerable political and economic uncertainty, from the UK's recent departure from the European Union and second round of negotiations over future trading relations, to increased interest in questions relating to Wales' constitutional future.

This report is an attempt to provide a sober assessment of Wales' current fiscal position as part of the UK, considers what would need to change for the fiscal deficit to reduce, and finally explores some of the fiscal and economic implications of Welsh independence. While not a comprehensive assessment, it is hoped this report will stimulate an informed and wide-ranging debate.

## The Welsh fiscal deficit as part of the UK

Wales' notional net fiscal deficit – the gap between total public spending *for* Wales and public sector revenues *from* Wales – amounted to £13.5 billion in 2018–19. This equated to around 18.0% of estimated GDP for Wales, or £4,300 per head, compared with the UK average of £620.

Wales has the second highest fiscal deficit per person of the UK countries and English regions (Northern Ireland's being higher), primarily due to lower tax revenues rather than higher public spending. If Wales' revenues from Income Tax and National Insurance Contributions matched the UK per person average, an additional £5.3 billion would be raised. By contrast, the (much smaller) fiscal deficit per person in Scotland is primarily the result of higher public spending per person, while its public sector revenues per person are close to the UK average.

The fiscal balances of the UK's nations and regions reflect a very high level of regional inequality, as measured by output. However, the implicit transfers from the UK tax and benefit system have a significant dampening effect on regional inequality in disposable household income, allowing a higher level of consumption of goods and services in nations and regions like Wales.

Although no official data exists, our rough estimate suggests the value of Wales' imports exceed exports by some £13.1 billion, financed mostly by fiscal transfers from the rest of the UK, a share of UK government borrowing and partly by some private sector financial flows.

## Changing economic performance

Boosting tax revenues through economic growth would be essential for changing the relative fiscal position of Wales as part of the UK, but the scale of the challenge is considerable.

If GDP per person in Wales increased from its current level of 74% of the UK average to 80% by 2029–30, we project that the net fiscal deficit would fall from the projected 18.0% of GDP in 2018–19 to 9.4% in 2029–30. Per person growth would need to average 1.8% in real terms over this period (compared with a UK rate of 1.1%) and total Welsh GDP would be approximately £7.0 billion higher by 2029–30 (in today's

prices) than if it matched projected UK growth rates. Overturning decades of relative decline would still leave Wales with a substantial, albeit reduced, notional fiscal deficit.

Given trends in the Welsh economy, such a substantial increase in productivity and/or employment growth would be a significant turnaround. It would require radical policy changes alongside massive investment in areas such as Wales' education system, research and development spending and infrastructure, and a fundamental change in the UK's current London-centric economic model.

## Changing demographic trends

Wales has a larger share of its population over-65 (20.6%) than the UK average, a smaller share of its population aged 25–64 (50.2%) and a smaller under-16 cohort. Wales has proportionately more people in the age groups requiring the highest spending levels and fewer people in the age groups contributing the most in tax. However, this is only a partial explanation for Wales' deficit. If the age distribution mirrored the UK, public spending would be reduced by over £1 billion and tax revenues would increase by nearly £500 million.

In 2018, only 6.1% of Wales' population was born outside of the UK, a significantly smaller share than the UK average of 14.3% (or 10.7% if excluding London). Wales' working age population (16–64) is expected to fall by 2.6% by 2030 (assuming some inward migration). This will fall at a much faster rate if there is a decline in inward migration levels, as is likely given the recent proposals for immigration reform after Brexit.

Meanwhile, the over-65 population in Wales will continue to grow. An ageing population will increase state pension spending and other age-related benefits and increase demand for health and social care. This is particularly concerning for Wales in the context of a declining working-age population and the associated risk to the tax base.

## The fiscal deficit and independence

The notional fiscal deficit presented in GERW is not a direct reflection of the inherited fiscal position of an independent Wales. It does however offer a starting point for a discussion of some of the immediate challenges that would need to be met.

The inherited fiscal position of an independent Welsh state would depend on several factors including the terms agreed by the Welsh and UK governments on the treatment of assets and liabilities post-independence as well as 'day one' decisions that would have to be made.

Some of the factors that would influence the post-independence fiscal position include:

- **Defence:** In GERW, Wales is allocated a population share (4.7%) of UK defence spending, which amounts to £1.9 million, or 2.5% of GDP. An independent Welsh government would decide how much to spend on defence. Meeting the NATO target of spending at least 2.0% of GDP on defence would mean a saving of around £400 million, while spending 1% of GDP would bring spending down by £1.1 billion.

- **Government debt:** Wales' population share of the UK's public sector debt interest payments in 2018–19 amounted to £2.7 billion. Wales' share of interest payments on historic UK government debt would be decided by negotiation between both governments on the division of government assets and liabilities. Debt could be apportioned by population, or could reflect ability to repay, for example by applying Wales' GDP share. Decisions on the treatment of debt would shape how Wales was regarded as a financial actor internationally, its creditworthiness and resilience. This is one reason why the repudiation of a share of debt would be extremely difficult.
- **Pensions:** Pension spending represents by far the largest part of UK government spending for Wales. Currently, UK citizens who have fulfilled requirements (such as paying National Insurance) are entitled to a UK state pension regardless of whether they chose to retire within the UK. A continuation of this status post-independence could reduce the Welsh deficit by around £5 billion in the first year of independence. However, it is likely the government of an independent Wales would wish to have responsibility over pension payments made to pensioners living in Wales as the UK government could change entitlements unilaterally by Act of Parliament.
- **Expenditure outside Wales:** The fiscal deficit includes a population share of a range of UK government *non-identifiable* expenditure. This may not accurately reflect the share of spending actually spent *in* Wales. Additionally, out-of-Wales spending (e.g. London-based civil servants) does not generate tax revenues for Wales. The repatriation of some of this spending could potentially reduce the deficit by around half a per cent of GDP for Wales.

## Fiscal and monetary issues for an independent Wales

Although the inherited fiscal deficit could be different from the one presented in the GERW report, even under the most optimistic scenarios the deficit would remain large. An independent Wales would likely be inheriting an unsustainable fiscal position requiring immediate action.

While some of the deficit could be financed via borrowing, wide-ranging changes to tax and spending policies would need to be implemented – arguably the main challenge of independence. Currently, spending for Wales per person matches the level in Ireland while revenues per person are close to that of Portugal.

We illustratively model trends in public sector debt were Wales to become independent from 2022–23, with an initial fiscal deficit of 15% of GDP. If the fiscal deficit closed by 1.5% of GDP each year, total debt would peak at 73% of GDP in 2032–33 and fall thereafter, assuming Welsh GDP would continue growing in line with current UK forecasts. Such fiscal consolidation usually has negative effects on a country's economic growth, though this can depend on trade openness (which is high in Wales) and the composition of fiscal consolidation (tax increases can be less harmful than public spending reductions).

Fiscal policy and fiscal sustainability cannot be considered in isolation from a country's currency arrangements. Informed by the debate in Scotland, the currency options available would be:

- To use sterling, in a formal or informal currency union;
- To use the Euro, again by applying for Eurozone membership or by way of an informal currency union, or
- Wales could issue its own currency, with either a floating or fixed/pegged exchange rate.



The downside of continuing the use of sterling is that an independent Wales would have very little to no say over interest and exchange rates as policy tools and adjustment mechanisms. Given the likely inherited fiscal position of an independent Wales, the added flexibility over monetary policy and exchange rate adjustment would strengthen the case for the introduction of a Welsh currency. However, there would be significant challenges in investing in new financial institutions, earning credibility in money markets and managing disruption to cross-border trade, capital mobility and financial transactions.

Under any arrangements, Wales' fiscal and estimated balance of payments deficit would need to be addressed. Whether that economic adjustment is made through fiscal policy alone, or through a mixture of fiscal, monetary and exchange rate adjustment, it would ultimately require lower consumption of goods and services in Wales than is currently the case.

## Increasing public sector revenues

Wales currently produces significantly more electricity and water than it consumes. However, the ability to raise additional public sector revenues from these sources would be constrained by any post-independence single market arrangements with the rest of the UK and Europe. Furthermore, based on the market value of these exports, it is unlikely that any possible additional revenue raised would make a material difference to Wales' fiscal position. Similarly, the legislation and taxation of currently illicit activities could raise additional revenues, though not to a great degree. In both cases, independence would primarily offer levers to achieve policy objectives in these areas rather than additional revenue-raising potential.

It is likely that a wholesale reform of the tax system would be required to raise significantly more public sector revenue, particularly in the large revenue-raising areas relating to income, earnings and consumption, and potentially wealth.

Tax revenues as a share of GDP in Wales broadly match the average for OECD countries. Increasing revenues as a share of GDP to the average of Eurozone countries could generate an additional £4.7 billion in revenue.

European countries with a higher tax take primarily raise more revenue through income taxes and social security contributions. The UK Income Tax system is heavily dependent on a small number of very high earners, only a small share of whom reside in Wales. An independent Wales would need to introduce an Income Tax system that better reflects the Welsh income distribution, potentially by imposing higher tax rates across the income distribution and not just on the highest earners.

## The economic impact of independence

There is evidence that state separation can trigger economic shocks, some of which can be long-lasting, but such examples are likely to be very context specific. The long-term economic performance of an independent Wales is unknown but there are some experiences from other countries to draw upon. In the long-run it has been argued that small nations can enjoy more advantages over their more populous

counterparts as they tend to be more export-oriented, have stronger social cohesion, and are better at adapting and implementing reforms.

## Conclusion

This report poses challenges for both supporters of continued union with the UK and supporters of Welsh independence. For those supporting independence, it raises the question of how Wales should transition from its current fiscal and economic position. Choices around future fiscal and monetary policies would influence the type of economy and society an independent Wales would create.

Other small and independent countries have faced similar choices when determining their place in the world. Options include the Irish-style 'market-liberal' approach to government and the economy, involving low personal and corporate taxes, light regulation of labour and markets, small government and a residual welfare state. An alternative is the 'social investment state' in which the role of the state is much more prominent and instrumental. Achieving the former in Wales' case would likely entail large-scale cuts to already stretched public services or to social security. Moving towards the latter would likely require substantially increased tax rates.

This report also presents challenges for those who believe in staying a part of the UK – it bears consideration that the economic and fiscal risks of staying a part of the UK are perhaps greater than ever. Fiscal transfers from the rest of the UK to Wales may be allowing greater consumption of goods and services than is currently produced in Wales, but transfers are not currently paying for investments that would enable a turn-around in the relative performance of the Welsh economy and our fiscal position. After nine years of austerity, fiscal transfers are no longer delivering a compassionate and enabling social security system for everyone in Wales. A key challenge for those who want Wales to remain a part of the UK revolves around the likelihood of Wales' current economic, fiscal and social problems being alleviated under current constitutional arrangements. Although it may be a potentially difficult political sell, independence may open the possibility of transitioning to a more sustainable, equitable and – perhaps eventually – a more prosperous economy.

Enhanced discussion around Wales' constitutional future should coincide with a wide-ranging debate about what type of economy and society we want to see in Wales, and how that is best achieved.

# 1 Introduction

“Closing the fiscal gap is a proper ambition for any Welsh Government.”

Mark Drakeford, First Minister of Wales

“I am not worried about the deficit – it is big enough to take care of itself.”

Ronald Reagan, 40<sup>th</sup> President of the United States

The latest edition of *Government Expenditure and Revenue Wales* (Ifan, Siôn and Poole 2019) – GERW – was published against a backdrop of considerable political and economic uncertainty, not least due to the continued unknowns surrounding the terms of the UK’s future relationship with the European Union. It was also published at a time of increased interest in questions relating to Wales’ constitutional future. In recent months, there have been at least some signs of growing support for Welsh independence (The Economist 2019; Browne 2019; Kettle 2019). Traditionally opposed voices have engaged – albeit tentatively – with this possibility, including a former First Minister (BBC Wales 2019). This calls for a sober assessment of our current fiscal and economic position.

GERW presents a comprehensive analysis of Wales’ current fiscal position taking the current constitutional and fiscal settlement as a given. Necessarily, it is not a direct reflection of the inherited fiscal position of an independent Wales, nor an accurate reflection of the potential or limits of Wales’ fiscal ambition. Although GERW is unlikely to offer much insight into the *long-term* finances of an independent Wales, it does offer a starting point for a discussion of some of the *immediate* challenges that would need to be met by advocates of new constitutional arrangements.

The analysis presented in GERW is underpinned by the *Country and Regional Public Sector Finances* datasets published by the Office for National Statistics (ONS). Since the publication of GERW in July 2019, the ONS has published new data on Wales’ public sector finances. The latest release covers the 2018–19 financial year and includes revised data for previous years. This new data has been used to produce an updated estimate of Wales’ fiscal balance in Chapter 2.

This report has also benefitted from new country and regional GDP estimates produced by the ONS. At the time GERW 2019 was published, no official GDP estimates were produced at a sub-national level in the UK. We estimated Welsh GDP by assuming that Wales’ share of UK Gross Value Added was equivalent to its share of GDP. The ONS now estimate Wales’ GDP to be £73.1 billion in 2017–18. This is around £2.4 billion higher than the estimate used in GERW 2019. Throughout this report, we use the new ONS estimates of Welsh GDP. The modest improvement in Wales’ fiscal balance, when expressed as a share of the economy, can be partly attributed to this upward revision of Welsh GDP estimates.

This report analyses our current fiscal position, sets out what this implies about our economic performance, and considers what would need to change for the fiscal deficit to reduce with Wales as part

of the UK. It then goes beyond GERW and highlights some questions around what the fiscal position of an independent Welsh state might be and explores some of the monetary and economic implications.

This report is intended as a challenge to all readers, regardless of constitutional preferences. It is challenging for supporters of independence as it points to the large-scale changes to tax-and-spend policies that would be required to attain fiscal sustainability post-independence. But it also shines a light on a dysfunctional UK fiscal and economic model and increasingly, the risks posed by remaining a part of the UK. Due to the politically charged nature of the questions discussed, some of the findings may generate disagreement, but it is hoped that this report helps stimulate an informed debate on the topic.

The debate around Wales' constitutional and fiscal future will not be confined to the Welsh and UK parliaments but will likely be played out across the country. As such, it is important to take stock of some of the lessons learned from the Brexit referendum. First, economics is not the only debate that informs a polity's decision making; political, democratic and social debates can be just as important. As an aside, economic arguments have seldom been the main driver of successful independence movements throughout history. Second, and perhaps most importantly, any debate on Wales' fiscal and constitutional future should be informed by impartial evidence and analysis. It is in this spirit that this report is presented.

The remainder of the report proceeds as follows:

- **Chapter 2** offers an assessment of Wales' current fiscal position using the latest data for the 2018–19 financial year and places the fiscal and trade deficit in a historical context.
- **Chapter 3** considers options for closing the fiscal gap as part of the UK, either by improving economic performance or by changing demographic patterns.
- **Chapter 4** explores the potential options for narrowing the fiscal gap as an independent Welsh state and summarises the prospect for improving Wales' fiscal position.

# 2 The fiscal deficit and the Welsh economy

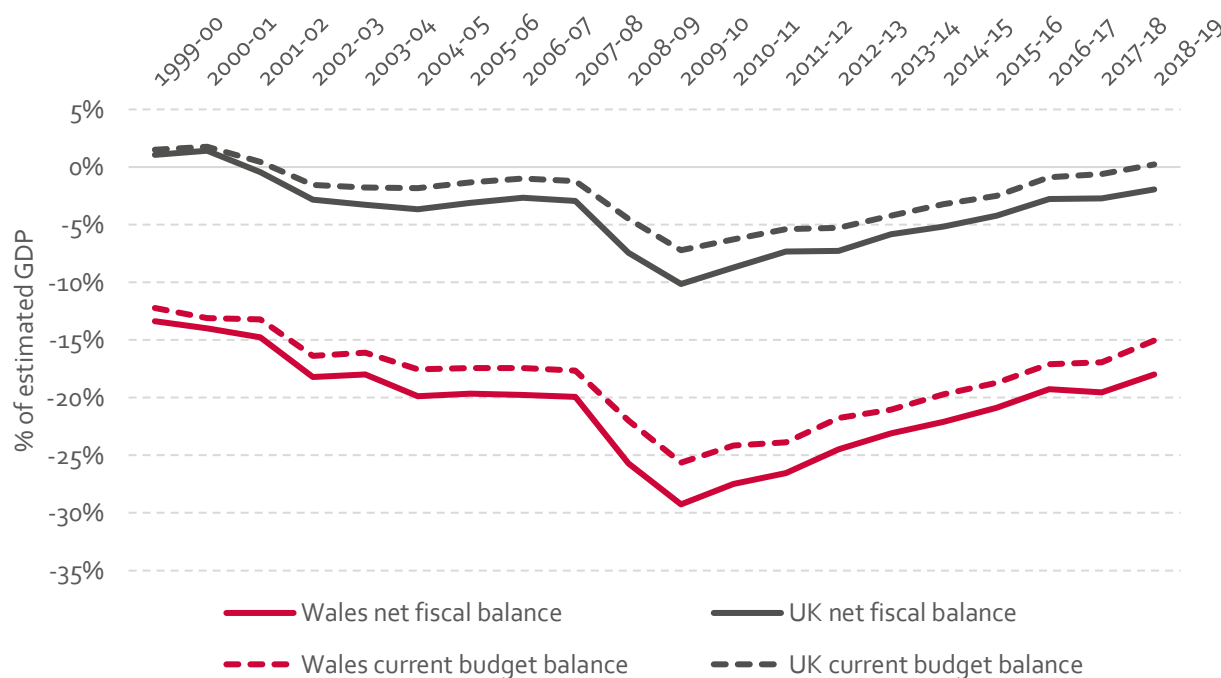
This chapter begins with an overview of Wales' current fiscal position using estimates of key fiscal aggregates. It provides an update to Chapter 2 of the *Government Expenditure and Revenue Wales* (2019) report using the latest data.

This is followed by a discussion of what Wales' fiscal position reveals about the nature of the Welsh economy as part of the UK. The second section also explores how the fiscal deficit relates to other private financial flows into and out of Wales and sets Wales' fiscal position in a wider historical perspective.

## 2.1 Wales' fiscal deficit

Wales' net fiscal deficit amounted to £13.5 billion in 2018–19. This difference between total managed expenditure for Wales (including an allocated share of UK central spending) and total public sector revenues equated to around 18.0% of estimated GDP.

**Figure 2.1**  
Net fiscal balance and current budget balance for Wales and UK, 1999–00 to 2018–19

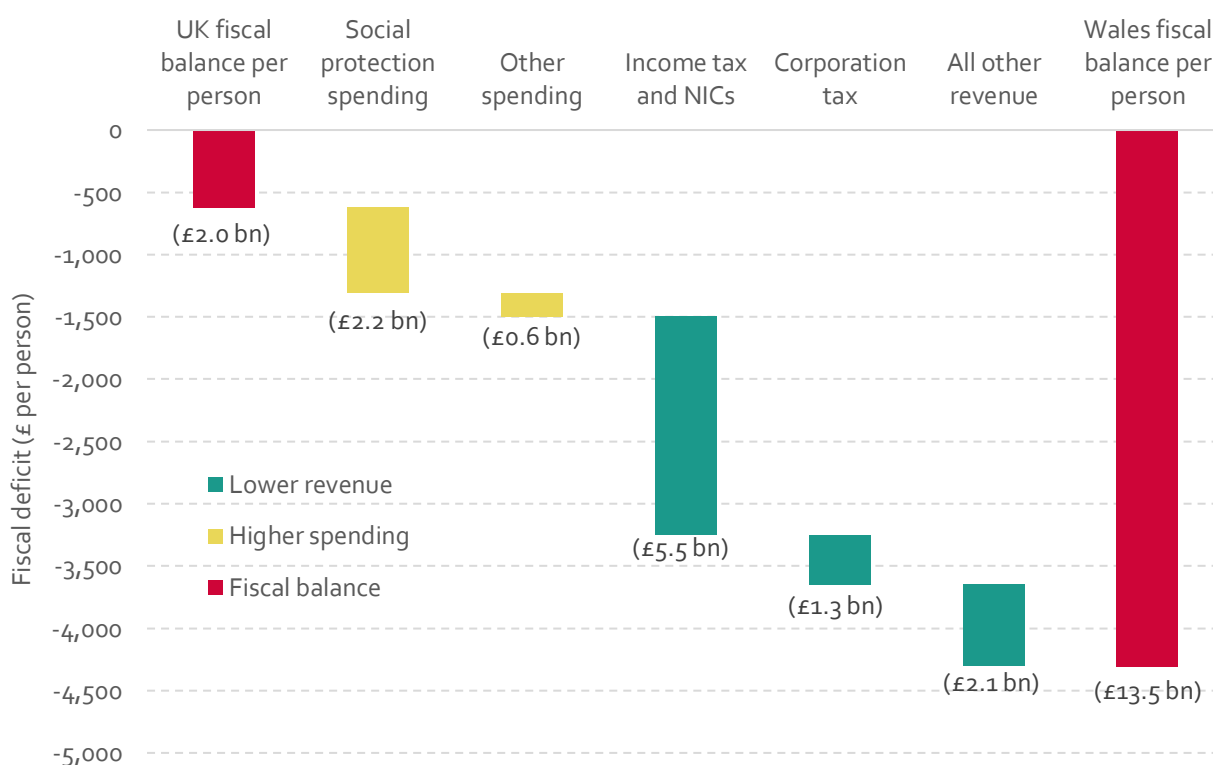


Source: ONS (2019) *Country and Regional Public Sector Finances*; ONS (2019) *Regional Gross Value Added*; and authors' calculations.

This deficit has fallen substantially since 2009–10, when it equated to 29% of GDP. This fiscal consolidation has mainly occurred through spending restraint, following the ‘austerity’ policies of the UK government, rather than by increasing revenue. Government spending as a share of the UK economy has fallen by 10 percentage points, whilst increasing VAT revenues have been offset by reduced Income Tax revenues. In 2018–19, the UK’s fiscal deficit, which corresponds to borrowing by the UK government, was 2% of GDP, down from 10% in 2019–20.<sup>1</sup>

Wales’ fiscal deficit per person in 2018–19 amounted to £4,305, compared with £622 across the UK. If revenues and spending per person in Wales had matched the UK average, Wales’ fiscal deficit would have been £2 billion, instead of £13.5 billion. Total spending is somewhat higher in Wales, with £690 per person more being spent on social protection spending. But by far the largest contributor to Wales’ weaker fiscal position is lower revenues. Revenues from Income Tax and National Insurance contributions were around £1,750 lower per person in Wales. If these revenues alone matched the UK per person average, total revenue would be £5.5 billion higher.

**Figure 2.2**  
Disaggregating Wales’ net fiscal balance compared with the UK average, 2018–19



Source: ONS (2019) *Country and Regional Public Sector Finances* and authors’ calculations.

<sup>1</sup> There is no formally agreed set of accounting concepts and definitions for the formulation of country and regional fiscal accounts in the UK. This report follows the approach taken in GERW and the ONS in their *Country and Regional Public Sector Finances Release* and apportions expenditure to Wales based on whether the benefit of that expenditure is accrued by residents of Wales. Further information about the methodology and our rationale for choosing it can be found in Chapter 1 of *Government Expenditure and Revenue Wales 2019*.

## 2.2 The fiscal deficit and the Welsh economy

### 2.2.1 Public sector finances of UK countries and regions

Wales is far from unique in having a fiscal deficit. Of the UK's three devolved countries and the nine English regions, only in three of the twelve did total public sector revenues exceed total spending in 2018–19, and only London has consistently been in this position over the last twenty years (Office for National Statistics 2019a). The relative fiscal positions of the countries and regions of the UK largely reflect regional economic inequalities, with public expenditure exceeding revenues in poorer regions and revenues exceeding expenditure in richer regions.

Comparing relative revenue and spending levels per person across countries and regions, tax revenues have a 'more consistent and substantial effect on transfer than variations in public expenditure' (Mackay 2001, 573). While spending per person ranges from 92% of the UK average in the East of England and 115% of the UK average in Northern Ireland, revenues per person ranges from 77% of the UK average in Wales to 149% in London.

In centralised states such as the UK, a large part of inter-regional redistribution is automatic and 'invisible', with higher incomes from earnings, profits and property leading to higher tax revenues, and lower incomes associated with higher levels of transfer payments and public services (Brown 1977, 37). In decentralised and federal countries, redistribution is often explicitly voted for or can be subject to political negotiations (ibid.). Claeys and Martire (2015) argue that side-payments and asymmetric fiscal arrangements are used to compensate regions that can credibly threaten to secede, and point to Valle d'Aosta in Italy and the Basque Country as examples. It could be argued that this also applies in the case of Scotland, with funding arrangements often resulting in higher levels of public spending (Heald 1994; Midwinter 2004; Phillips 2014). Unlike Wales and England's 'deficit' regions, Scotland's fiscal deficit is primarily the result of higher public spending per person, while its public sector revenues per person are close to the UK average.

### 2.2.2 Effect of fiscal transfers on incomes

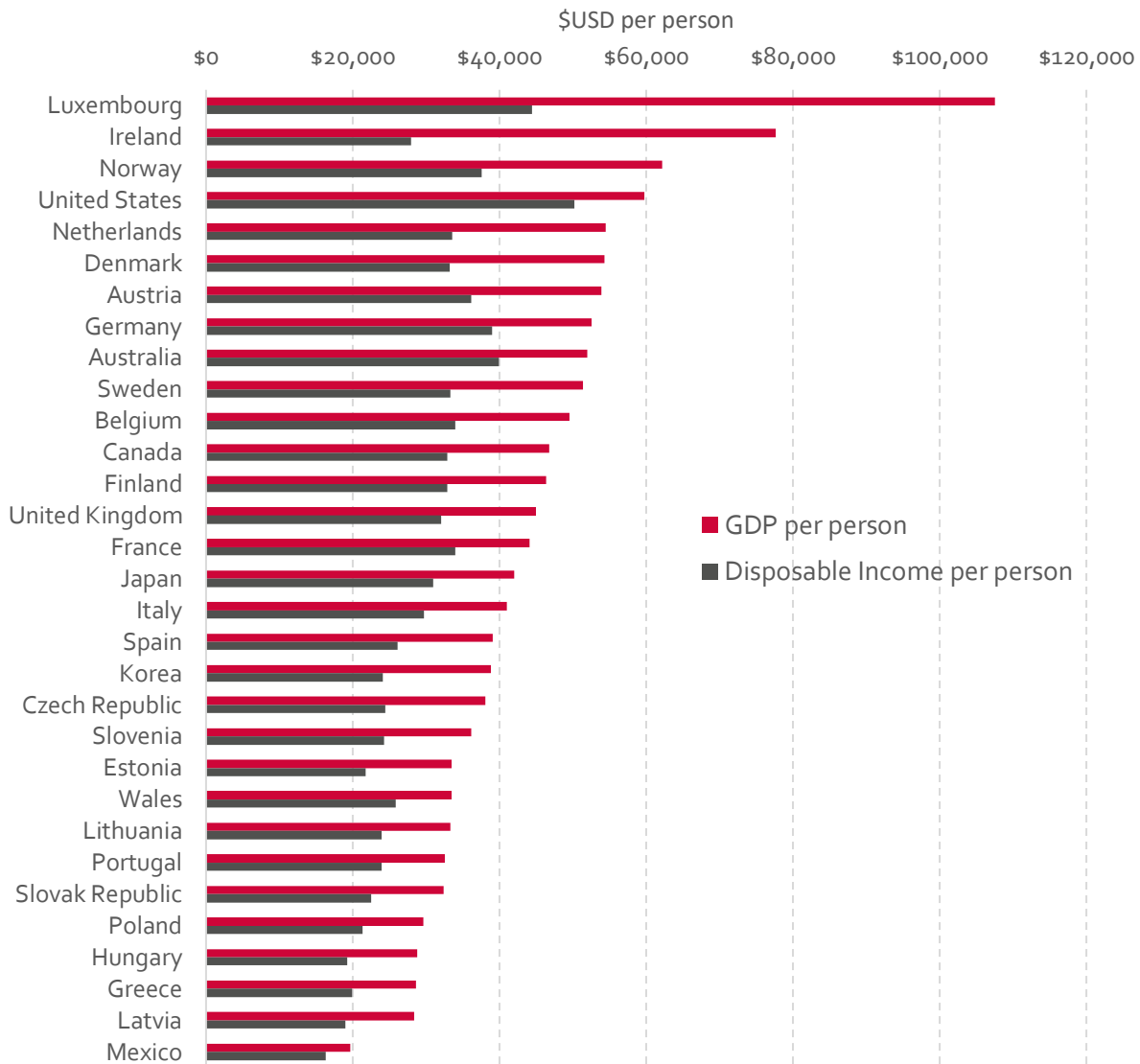
The UK has a very high level of regional inequality as measured by output and productivity (Gal and Egeland 2018). However, comparing disposable incomes after direct taxes and transfers, the UK has average levels of regional inequality in household income – lower than the USA, Spain, Canada, Italy and Australia when using a measure of regional income variance (OECD 2016). The implicit fiscal transfers through the UK tax and benefit system have a significant effect on relative income levels in Wales and other poorer countries and regions. Primary income per person in Wales – which consists of income from employment, profits and property – is around 74% of the UK average. After accounting for direct taxes and transfers, disposable income per person is around 81% of the UK level. Although this gap in disposable income has grown slightly over the last twenty years, the relative effect of the tax and benefits system has remained broadly constant.

As shown in **Figure 2.3** below, this effect of the tax and benefits system is also an important consideration when comparing Wales' economic position relative to other countries. Wales does relatively poorly on a GDP per person measure, coming 23<sup>rd</sup> out of 31 OECD countries, though in line with countries such as

Estonia, Lithuania, Portugal and Slovakia. However, on a measure of disposable income per person, Wales comes 19<sup>th</sup> out of the same group.

**Figure 2.3**

**GDP and Disposable Income per person across OECD countries, \$USD**



Source: OECD (2019) Household disposable income; OECD (2019) Productivity; and authors' calculations.

Comparisons are often drawn between levels of GDP per person in Wales and in Ireland, where GDP per person is around 2.3 times the Welsh level. However, average disposable income per person in Ireland is only around 8% higher, while general government spending per person is only slightly higher (Ifan, Siôn and Poole 2019, 62). Much of the profits from multinational company activities, which is counted in GDP, flows out of Ireland, whereas Wales relatively benefits from the UK's tax and benefit system. For similar reasons, the GDP per person measure broadly shows that West Wales and the Valleys is the poorest region of Western Europe, but this is not the case when applying the measure of disposable income per head.



### 2.2.3 Other financial flows

Fiscal transfers are also closely related to other financial flows into and out of the Welsh economy each year. While the GERW report deals with public sector financial flows, a fuller and integrated set of national accounts – such as those published in the ONS’ ‘Pink Book’ for the UK as a whole – would include all other financial flows too, which are just as important in the debate over the Welsh economy and its future.

What kind of financial flows would such a set of accounts cover? Cuthbert (2010) outlines a simple model of the Scottish economy, which can be applied to Wales’ case, with the following financial flows:

- A flow out of Wales of taxes paid to the UK government;
- A flow into Wales of government payments and transfers;
- A flow into Wales of payments for Welsh exports;
- A flow out of Wales to pay for Wales’ imports; and
- A net flow of private finance out of Wales (including borrowing and lending, investment and remitted profits etc.) on the current account and financial and capital accounts.

Making the basic assumption that financial flows out of Wales equal the financial flows into Wales, we get the following equation:

$$\text{Taxes + imports + Net outflow of private finance} = \text{Government payments + exports}$$

Rearranging, this implies:

$$\text{GERW deficit}^2 = \text{trade deficit in goods and services} - \text{net outflow of private finance}$$

This implies that the fiscal transfer to Wales is equivalent to the difference in the value of what Wales exports compared to what it imports, plus a net financial outflow of private finance from the Welsh economy.

Unfortunately, there is also a deficit in reliable and comprehensive data on the Welsh economy. Whilst HMRC produces estimates of Wales’ goods deficit with the rest of the world outside the UK, there is no data on international trade in services nor is there data on the trade of goods and services between Wales and the rest of the UK. There is also very little data on private financial flows into and out of the Welsh economy.

One way of approximating the Welsh balance of trade with the rest of the world would be to compare income from the Welsh economy with expenditure by the Welsh economy. Unfortunately, the expenditure-based approach to GDP is not currently published at a Welsh level. While not a statistically

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<sup>2</sup> It should be noted here that some of the government spending contained in the GERW report will not in fact represent a public sector financial flow into Wales, as some spending, such as spending on international services and debt interest payments, does not necessarily take place *in* Wales. This point is discussed in Chapter 4.

robust exercise, we can allocate the components of the UK's GDP expenditure to Wales by making various assumptions using available data.<sup>3</sup> The expenditure-based formula is given by:

$$Y = C \text{ (private consumption expenditure)} + I \text{ (Investment expenditure)} + G \text{ (Government consumption expenditure)} + X - M \text{ (Exports - Imports)}$$

**Figure 2.4** presents our estimates of each component for 2016. Further details of how each component are estimated, and a discussion around the high level of uncertainty surrounding these estimates, can be found in Annex A of this report.

These estimates suggest that consumption by households and government, and investment in Wales amounted to approximately £83.5 billion in 2016. This compares with estimated GDP for Wales of around £70.4 billion in the same year. Taking the difference between the two suggests the value of Wales' imports exceeded exports by some £13.1 billion, or around 19% of GDP.

**Figure 2.4**  
Expenditure-based GDP estimates of Wales, 2016 (£ million)

Component of expenditure GDP			Wales	UK	Wales as share of UK
Gross Domestic Product		Y	70,437	1,995,478	3.5%
Final consumption expenditure:	Households	C	50,492	1,252,934	4.0%
	Non-profit institutions		1,740	46,117	3.8%
	General Government	G	19,557	381,522	5.1%
Gross capital formation		I	11,764	347,227	3.4%
Total consumption and investment		C + G + I	83,553	2,027,800	
<b>Residual (implied trade imbalance)</b>		<b>(X - M)</b>	<b>- 13,116</b>	<b>- 32,322</b>	

Source: See Annex A

While these estimates should be viewed as only a very rough approximation, they provide an indication that Wales' trade deficit with the rest of the world (including the rest of the UK) is of a similar order of magnitude to Wales' fiscal deficit. These two deficits are related, and in some sense 'the two sides of the same coin' (ap Gwilym and Price 2012). The larger the current account deficit in Wales, the more central government funding is necessary for the private consumption of imported goods and services.

During the 2016 calendar year, the total estimated fiscal deficit for Wales was an estimated £13.8 billion. Subtracting international services and debt interest payments from this total – since these are unlikely to form an actual financial flow into Wales – gives an estimated fiscal deficit of £10.7 billion. The fact that

<sup>3</sup> In the words of Nevin (1966) when attempting to measure income and expenditure for Wales in the 1960s, 'the issue is one of such interest that ... a certain amount of chancing of one's arm may be justified'.

the estimated trade deficit for 2016 is slightly higher than this fiscal flow suggests that the Welsh trade deficit is financed mostly by fiscal transfers from the rest of the UK, a share of UK government borrowing and partly by some private sector financial flows.

### 2.2.4 Wales' deficits in an historical context

The public and private financial flows discussed above have been long-standing features of the Welsh economy, though their magnitude and nature have varied over time. For example, Brown (1977) estimated that Wales' public finance inflow in 1964 amounted to 7.8% of GDP. This fiscal transfer was sustaining a balance of payments deficit equal to an estimated 12.1% of GDP. This was typical of relatively poor regions across Europe, and close to the position of Umbria in Italy and Saarland in Germany. Lovering (1981) estimates that the net Welsh trade deficit averaged 11.8% of GDP from 1966 to 1972, which was financed by a disproportionately high level of public benefits caused by a higher proportion of dependants than the UK. This inflow of public funds likely dwarfed any inflow of private capital (Lovering 1983). In a later period, Short (1984) estimated that the net flow of government transfers to Wales between 1974–75 and 1977–78 averaged £719.1 million a year. Interestingly, on a per person basis this was a smaller deficit per person than Scotland and Northern Ireland and broadly in line with the South West and North of England.

However, the first estimates of the public and private flows into and out of the Welsh economy were produced by Nevin (1957) and showed a rather different picture. The Nevin reports estimated that the wealth used up in various ways in Wales – public and private consumption plus capital investment – exceeded the wealth produced in Wales by an average of £41 million a year between 1948 and 1956. However, Nevin (1966) noted this 'net import' or balance-of-payment deficit was not financed by a fiscal transfer from UK taxpayers, but by private capital finance from outside of Wales. This was a result of the much higher rate of investment for Wales' capital-intensive industries; for example, the steel industry was well over five times as important for the Welsh economy compared with the UK economy. The revenue account of the central government and National Insurance Funds – total central government revenue raised in Wales compared to central government current expenditure in Wales – showed a surplus of around 1% of GDP on average between 1948 and 1956 (Nevin 1957).

The worsening of Wales' fiscal position over time highlights an important difference between an economy being a constituent part of a larger state on the one hand and a sovereign state on the other. Brown (1977) describes this difference by giving an example of an economy experiencing a decline in demand for its exports. A sovereign state maintains its consumption of goods and services only by creating the necessary purchasing power for itself: it can maintain the resulting surplus of imports over exports only so long as it is able to borrow from abroad or draw on accumulated reserves. A region in an integrated economy on the other hand has most of the maintenance of its absorption of goods and services financed by national or federal sources, by way of fiscal transfers. It is in no position to contribute to the correction of its balance of trade by imposing trade-barriers or performing currency devaluation to shift demand from foreign goods and services to domestically produced ones (ibid). In this sense, fiscal transfers can be described as 'compensation for impotence' (Mackay 2001, 573). Brown (1977, 35) also points out that the openness of regional economies means other regions lose out in secondary income if this public finance compensation does not happen, highlighting the importance of fiscal transfers to both deficit and surplus regions of the UK.

Ap Gwilym and Price (2012) argue that such a change to Wales' terms of trade happened in the 1990s, with Wales' estimated trade deficit with the rest of the UK ballooning as a proportion of GDP to over 20%, up from 10% of GDP a decade earlier. Fiscal transfers from the rest of the UK meant that the relative decline in the fundamentals of the Welsh economy – in productivity, investment and profitability – did not lead to a corresponding collapse in relative incomes. There are arguably many other examples further back in time. The restoration of the gold-standard in 1925 effectively imposed a 10 per cent surcharge on the price of exported coal, which had a large impact on total Welsh exports (Lovering 1983). Since the limited size of the UK state at the time prevented substantial fiscal transfers to Wales, a form of regional stabilisation was brought about by flows of labour.

Between 1921 and 1939, Wales lost on balance 450,000 people through emigration (Thomas 1966). This had major effects on the size of Wales' population: had Wales' population grown by the same rate as England's since 1921, there would be over one million more people living in Wales today. In more recent times, Wales' population is again growing at a slower rate, and levels of net migration to Wales from the rest of the UK have been broadly stable. However, since labour is not a homogenous commodity, regional labour flows can underly and exacerbate economic problems of disadvantaged economies within a monetary union, even in the presence of large fiscal transfers (Cuthbert and Cuthbert 2002). Today, this is evidenced by the continued net outflow of the best-performing students (Boshier, Moran and Wilkes 2019) and of graduates from Wales (Bristow et al. 2011).

## 2.2.5 Conclusion

For many decades, the immediate effect of the British state on the Welsh economy has been to generate a net inflow of income. Moore and Rhodes (1975) described a 'disguised Central Government subsidy for an indefinite balance of payment deficit', which has detached the territorial pattern of consumption from that of the territorial pattern of production (Lovering 1983). The British state has also greatly influenced the territorial pattern of production (ibid). The war years and their immediate aftermath saw the UK government compel manufacturing to locate in Wales (Gooberman 2017). This facilitated faster economic growth in Wales than the UK throughout the 1950s according to the unofficial estimates produced by Nevin (1957). In the 1980s however, central government's regional policy 'virtually ceased to exist' (Gooberman 2017).

Since then, UK policy has made little progress in moving away from the high concentration of economic power in London and the South East of England, which in turn has necessitated fiscal transfers to other countries and regions. Today, capital spending per person is lower in Wales than the UK average, particularly in areas such as transport and research and development – such investment is heavily concentrated in the greater south east of England (Ifan, Siôn and Poole 2019, 48). UK government revenues have become ever more reliant on the highest earners in financial, professional and business services, who are disproportionately located in London and the South East of England (Joyce, Pope and Roantree 2019).

Setting the Welsh fiscal deficit in this wider and historical context underlines the fact that a change in the current fiscal position will require a fundamental change in either the nature of the UK economy, or indeed in Wales' constitutional settlement.

# 3

## Closing the fiscal gap as part of the UK

The previous chapter highlighted that Wales' fiscal position as part of the UK reflects wide-ranging and long-standing features of the Welsh and UK economies. Closing Wales' notional fiscal deficit as part of the UK will require a substantial turn-around in fiscal, economic and demographic trends. The primary cause of Wales' worse fiscal deficit – the weakness in its tax base – will need to be addressed.

Raising the relative performance of the Welsh tax base should be a key objective of the Welsh Government, since over £5 billion of tax revenues are already under devolved and local control. Faster relative growth in devolved revenues will now lead to extra funding for the Welsh Government to spend on devolved public services, and slower growth will lead to a shortfall.

However, the tax devolution measures implemented thus far are not likely to affect the size of the net fiscal deficit over time. For example, suppose that the Welsh Government increases Income Tax rates by 1p: this would reduce the gap in revenues per person. But since it would lead to an increase in the size of the Welsh budget, this also increases spending per person by an equivalent amount, leaving the size of the fiscal deficit unchanged.

Closing the fiscal gap will depend on relative trends in total revenues and spending for Wales. This section therefore looks at two factors which will influence these: firstly, relative economic growth, and secondly, demographic trends. Our aim here is to set out the scale of change that would be required to affect Wales' relative fiscal position as part of the UK. We also briefly discuss the likelihood that these changes may (or may not) occur and some of the policy changes that would be required.

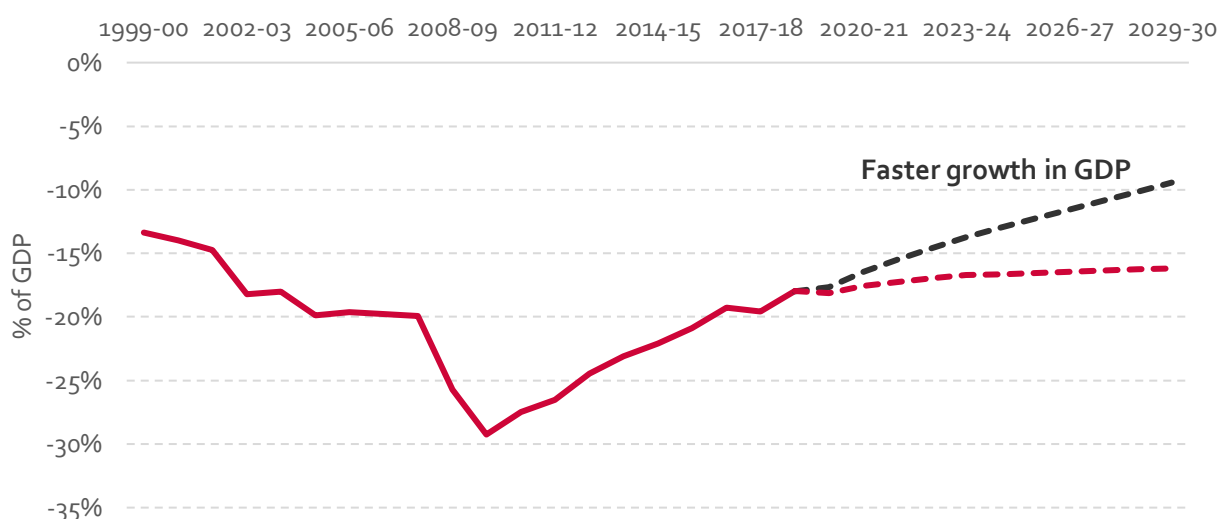
### 3.1 Economic performance

As explained in the previous chapter, Wales' fiscal deficit is primarily the result of lower tax revenues caused by lower levels of primary income. This section explores how a change in the relative economic position of Wales would influence its fiscal position. Specifically, we ask what might happen to the Welsh fiscal deficit if the gap in GDP per person between Wales and the UK were to be reduced?

**Figure 3.1** provides a simplified projection of Wales' fiscal deficit to 2029–30. We use Office for Budget Responsibility (2019) forecasts for revenues and spending to 2023–24, and thereafter assume revenues and spending grow in line with GDP. First, we assume that GDP per person in Wales grows in line with the UK as a whole (dotted red line). Our alternative projection (dotted grey line) projects that **GDP per person in Wales increases from 74% of the UK average (its current level) to 80% by 2029–30**. We assume government revenues increase in line with economic growth, while higher income levels lead to a slight fall in relative levels of social security spending in Wales. In such a scenario, the net fiscal deficit would fall from the projected 17.6% of GDP in 2019–20 to 9.4% of GDP in 2029–30.

**Figure 3.1**

**Net fiscal balance for Wales as share of GDP, 1999–00 to 2029–30, with varying assumptions of growth in GDP**



Source: ONS (2019) *Country and Regional Public Sector Finances*; ONS (2019) *Regional Gross Domestic Product*; Office for Budget Responsibility (2019) *Economic and Fiscal Outlook*; and authors' calculations.

Would such an improvement be possible? It should be noted that the OBR's economic and fiscal forecasts used in the projections assumed an orderly and non-disruptive Brexit outcome: the possibility of a 'no-deal Brexit' at the end of the transition period and the likely short-term economic effects associated with this outcome are not accounted for. It is therefore unlikely that UK GDP will follow this projected path, in which per person economic growth in real terms is projected to increase slightly to 1.1% by 2022–23 and stay at this level until 2029–30. However, under this illustrative scenario, per person growth would need to average 1.8% over this period for GDP per person in Wales to reach even 80% of the UK average by 2029–30. This would result in total Welsh GDP being approximately £7 billion higher in 2029–30 than if per-person growth matched the UK (in today's prices).

This modelled relative improvement would mark a departure from recent trends. Official data for economic output per head is available from around 1968. Since then, output per head fluctuated between 80% and 85% from the 1960s to the early 1990s (Gooberman 2017). The years before devolution saw a drop to around 75%. Early post-devolution economic development plans included the ambitious goal of raising GDP per head in Wales to 90% of the UK average by 2010 (ibid.: 193). The failure to achieve faster relative growth led to GDP targets being dropped as it dawned that such a movement would require an economic 'miracle' (Institute of Welsh Affairs 2015). Relative levels of GDP per head stayed broadly stable, falling to 69% in 2008 before recovering slightly.

However, the stability of the gap in GDP per person between Wales and the UK masks some significant trends in the underlying sources of the gap. The gap in GVA per person between Wales and the UK can be broken down into proximate sources (Crafts 2005) where HW is hours worked, E is employment, WAP is population of working age, and POP is population, in Wales relative to the UK average:

$$GVA / POP = GVA / HW * HW / E * E / WAP * WAP / POP$$

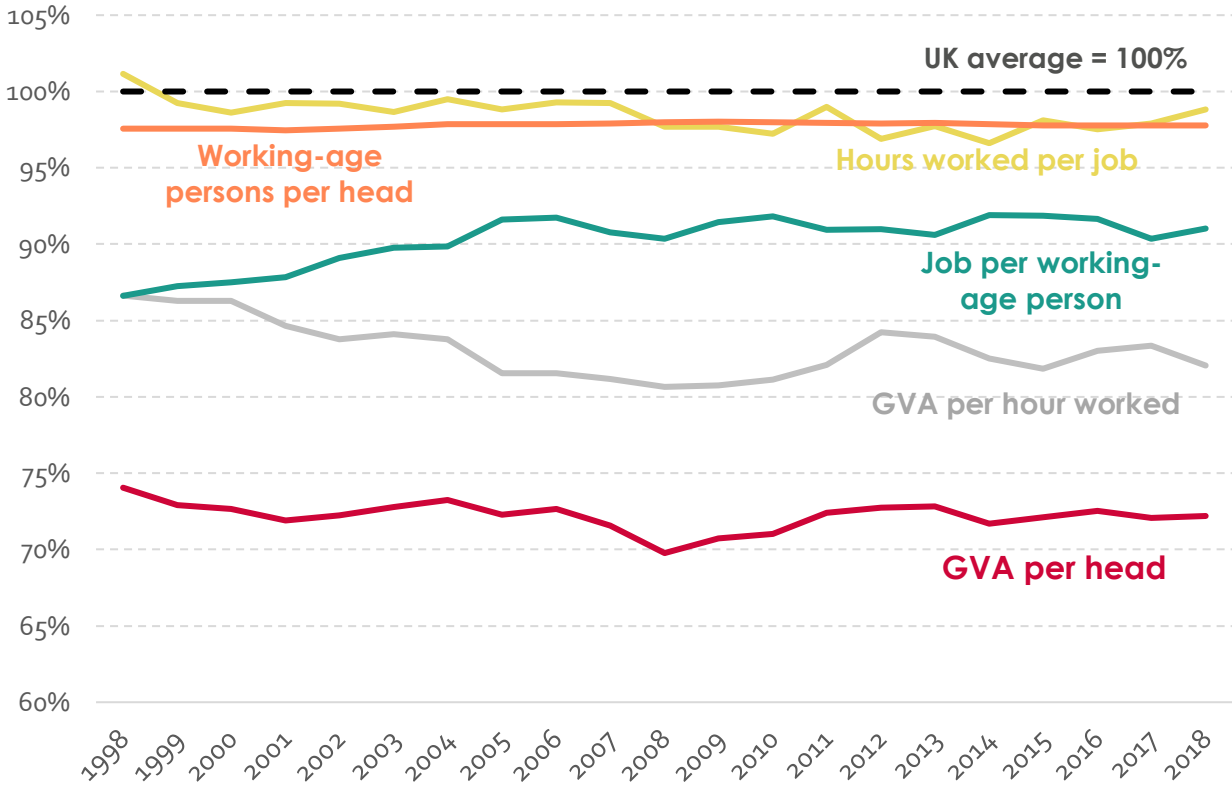
In other words, relative GVA per person will depend on relative trends in the share of the population of working age, the share in employment, how many hours those in employment are working, and their productivity.

For 2017, estimates of each component were:

$$0.722 = 0.821 * 0.988 * 0.910 * 0.978$$

Figure 3.2 shows the relative trends in each component of this gap from 1998. Reduced levels of economic inactivity in Wales has increased employment as a share of the working-age population. Jobs per working-age person grew from 0.65 in 1998 to 0.7 in 2005, a faster growth compared with the UK as a whole. This was a time when employment in the service sector, particularly within the public sector and related sectors, was growing rapidly. This offset continued falls in manufacturing per person. However, the improvement in employment levels was offset by falling relative levels of productivity (output per hour) and a slight relative fall in the number of hours worked in every job.

**Figure 3.2**  
The gap in GDP per person between Wales and UK by source, 1998 to 2018



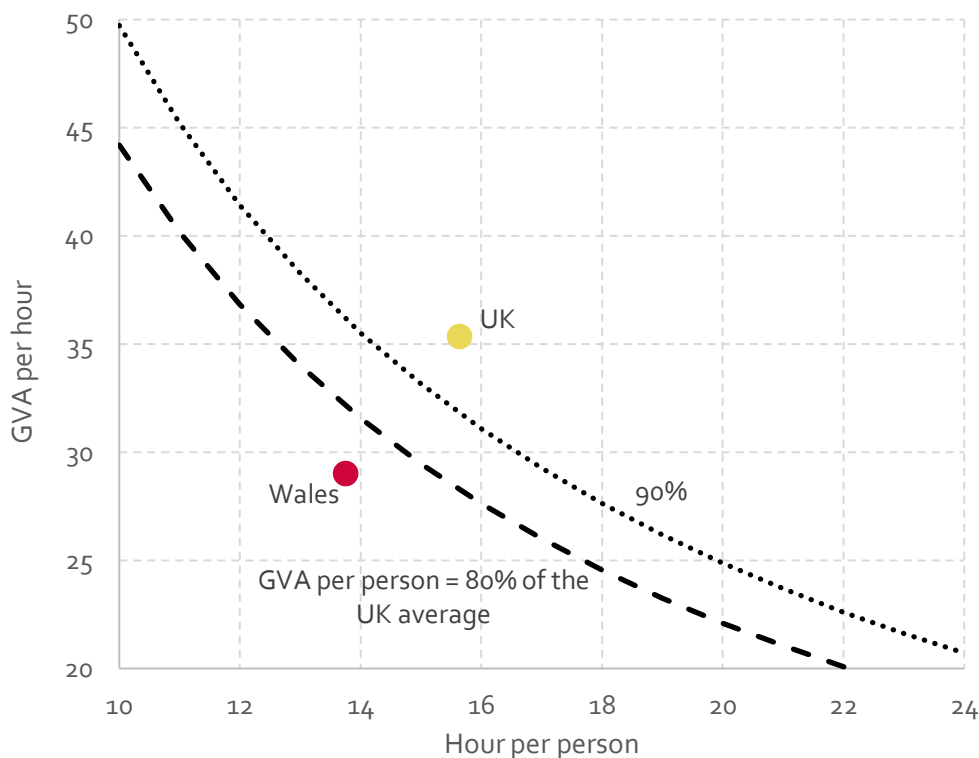
Source: ONS (2020) Regional and sub-regional productivity in the UK: February 2019; and authors' calculations.

Figure 3.3 plots GVA per hour worked and the number of hours worked per person in Wales and the UK. It also shows the movement which would need to take place for GVA per person in Wales to reach 80% of the UK average. Average weekly hours worked per person in Wales is currently 13.8, 88% of the UK average of 15.6. GVA per hour worked is currently £29 in Wales, 82% of the UK average of £35. From the current position, reaching 80% of the UK GVA per person would require either an 11% increase in GVA

per hour worked (to reach 91% of the UK average), or an 11% increase in weekly hours worked per person (to reach 97% of the UK average), or a combination of both.

**Figure 3.3**

GVA per hour and hours worked per person, Wales and UK, 2018



Source: Source: ONS (2020) *Regional and sub-regional productivity in the UK: February 2019*; and authors' calculations.

The stability of relative levels of GVA per person over the last twenty years also masks another important divergence. **Figure 3.4** breaks down relative levels of GVA per person by income source, namely income from *compensation of employees*, which represents the total remuneration payable to employees in cash or in-kind, as well as *gross operating income*, which comprises of gross trading profits and surpluses, rental income and holding gains.<sup>4</sup>

Compensation of employees per person in Wales grew faster than the UK average over this period. However, this masked a large relative drop in gross trading surplus per person in Wales compared to the UK level, from 75% in 1998 to 64% in 2008. Jones (2016, 7) notes that this may be due to the returns of capital increasingly flowing out of Wales and recorded to other regions of the UK.

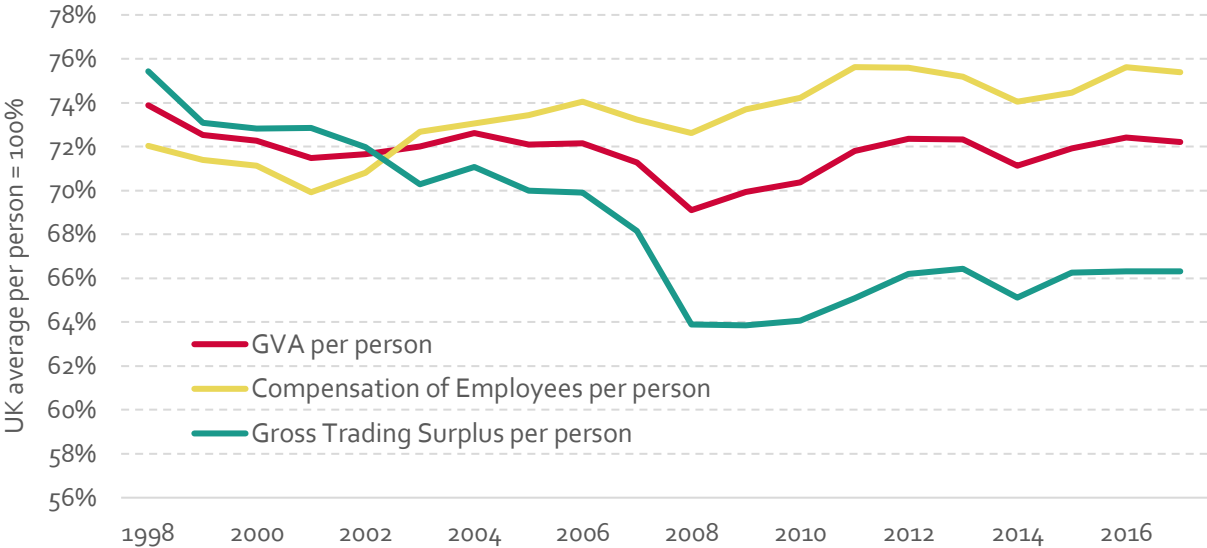
Given the relative trends in the Welsh economy since 1999, and for many decades before then, the required increase in productivity and/or employment growth would represent a significant turnaround. There must be a question mark around whether such a relative improvement is possible, let alone likely.

<sup>4</sup> For the non-market sector, this consists of capital consumption.



It is a rather sobering thought that such an improvement would still leave Wales with a substantial, albeit reduced, notional fiscal deficit.<sup>5</sup>

**Figure 3.4**  
Relative trends in GVA per person by income source, 1998 to 2017



Source: ONS (2018) Regional gross value added (balanced) per head and income components.

As explored by an Institute for Welsh Affairs (2015) report, such 'catch-up' growth would probably require various radical policy changes alongside massive investment in areas such as Wales' education system, research and development spending and infrastructure. This would require a fundamental change in recent spending patterns across the UK. Expenditure on Welsh schools and higher education institutions trails that of the UK average (Sibieta 2019), even though education expenditures are strongly associated with regional success (Holtham and Huggins 2017). Capital spending on transport per person for Wales is around 75% of the UK average. Wales' lower levels of capital investment spending is likely to be exacerbated if EU structural funding is not sufficiently replaced by new funding.

Closing the Welsh fiscal gap as part of the UK would therefore require a substantial change in the UK's current London-centric political and economic model. The Welsh Government could be empowered with increased capital borrowing powers to make such investments. If any further tax devolution is to be economically transformative for Wales, HM Treasury will need to drop its insistence that tax devolution in one area should not harm or draw investment away from other regions.<sup>6</sup> Such measures may well increase Wales' notional fiscal deficit in the short term before closing it over the longer term. The extent to which this would be politically palatable for English voters is uncertain. The Brexit referendum has led to increased awareness of regional economic inequality across the UK. For example, the UK2070 Commission has advocated far-reaching measures to tackle regional disparities. However, the extent to which this will translate to actual policy change at a UK level remains to be seen.

<sup>5</sup> A notional fiscal deficit of around 9% of GDP would make a significant difference to the independence scenarios discussed in the following section.

<sup>6</sup> See for example, the UK government response to the possibility of devolving Air Passenger Duty to Wales: <https://gov.wales/written-statement-uk-response-welsh-affairs-committee-report-devolution-air-passenger-duty-wales>

As well as questioning whether such a relative improvement in GDP would be possible, there are also legitimate concerns around the wider effects of such rapid growth. While the median taxpayer income in Wales is approximately 95% of the UK median, it is amongst the highest earning taxpayers that Wales trails the UK (Ifan and Poole 2018, 22). A taxpayer in the 90<sup>th</sup> percentile of Welsh taxpayers earns 84% of the income of a taxpayer in 90<sup>th</sup> percentile across the UK. Even more significantly, taxpayer income at the 99<sup>th</sup> percentile in Wales is only 62% of the income at the 99<sup>th</sup> percentile across the UK. Significantly closing the gap in Income Tax revenue per person would probably entail a large increase in income inequality in Wales. Given that framework for Income Tax policy will continue to be set at the UK level, economic growth which increases income inequality is likely to boost Welsh revenues faster than more equitable economic growth.

## 3.2 Population and demographic trends

In addition to economic performance and fiscal policy, the fiscal gap is also affected by the overall size, and individual components of, Wales' demographics. First, the overall size of the population has a direct bearing on the fiscal gap when it is expressed on a per capita basis. Second, because an individual's levels of need and taxable income varies across their lifespan, the distribution of the population across age cohorts influences government revenues and expenditure, and by extension, the net fiscal balance. In this section, we look at Wales' current demographic structure, analyse population projections over the next decade and discuss how total expenditure and revenue could change under various scenarios.

The population data used in this section is sourced from the ONS' 2018-based principal population projections and variants. Unless otherwise noted, the population figures used refer to the population size mid-calendar year.

### 3.2.1 Wales' current demographics

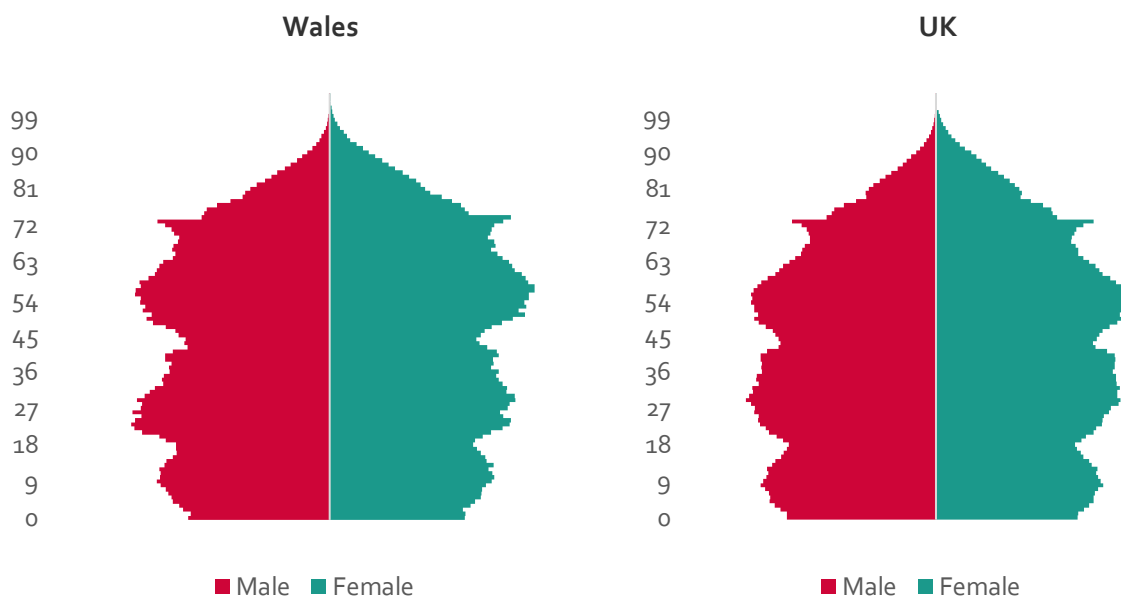
**Figure 3.5** presents Wales and the UK's population pyramids for 2019, based on the principal population projections published by the ONS. As with most advanced industrial economies, they are both characterised by a broad shape at the top, indicating long life expectancies. The peaks and troughs represent periods of high immigration and baby boom years. For instance, the bulge in both graphs around 70 years of age represent the generation of baby boomers born in the immediate aftermath of the Second World War.

Both pyramids are similarly shaped. This is to be expected given uniform immigration policy and shared circumstances. However, there are some notable differences between them. Wales has a higher share of its population in the over-65 cohort and a relatively smaller working age population than the UK as a whole. This is explained both by lower levels of international migration levels to Wales compared to the UK average and the fact that net migration into Wales from other UK countries is particularly high among 50–60 year olds.

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**Figure 3.5**

Population pyramids: Wales and UK, 2019



*Source: ONS (2018-based) Principal population projections; pyramids not to scale.*

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**Figure 3.6** shows the net change in Wales' population if it was distributed according to the UK average. In this hypothetical scenario, there would be 37,500 more children under 15, 46,100 additional working age adults (16–64), and 83,600 fewer adults over 65.

Wales has a significantly smaller share of its population in the under-16 cohort compared with the UK as a whole. This is due to a naturally slower-growing population and relatively low international migration into Wales. This has, at least in one way, worked in Wales' favour in recent years as it is one of the reasons why school spending per pupil has been relatively better protected in Wales compared with England (Sibieta 2018).

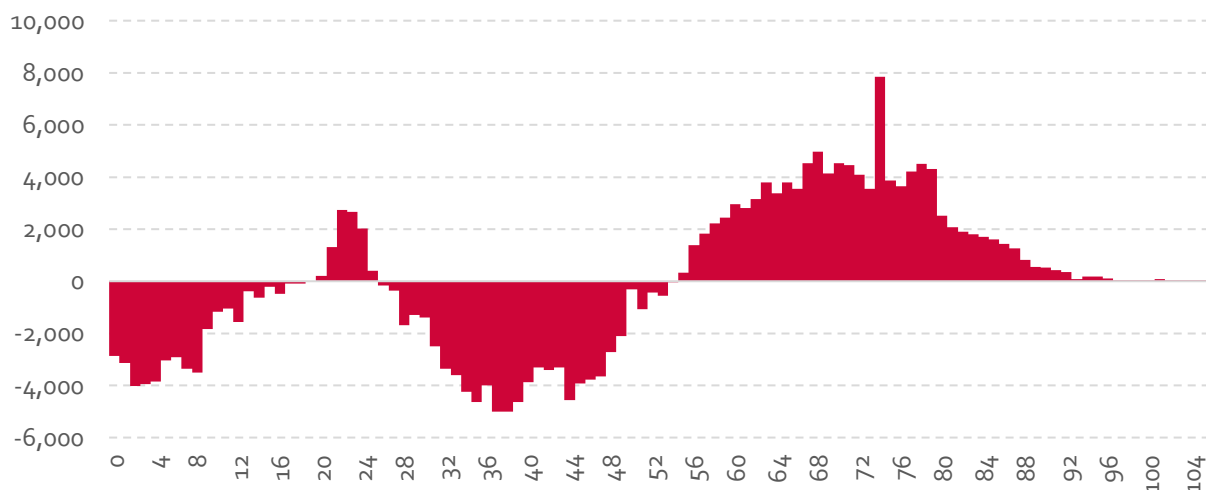
Wales imports more higher education students than it exports and the effect of this can be clearly seen in **Figure 3.6**. The share of the Welsh population aged 18 to 25 is higher than the UK average.

However, the net difference in Wales' population then drops sharply and is particularly low among 30- and 40-year-olds. This is particularly problematic if we are concerned about the size of the fiscal gap, since individuals in these age cohorts tend to be net contributors: paying more in taxes than they receive through government funded services. The net difference rises again among 50- and 60-year-olds, reflecting the fact that this age group makes up a larger share of Wales' population than the UK average.

Although Wales should not set matching the UK's demographic profile as its policy objective, these comparisons are useful in highlighting the nuances of Wales' population profile. In order to deliver good public services and ensure that people in old age can receive the standard of care that they need, it is imperative to have a healthy, wealthy tax base to fund this expenditure.

**Figure 3.6**

Difference between Wales' current population and its population if the age distribution matched the UK average, 2019



Source: Authors' calculations based on ONS (2018-based) Principal population projections.

In 2018, the share of Wales' population born outside of the UK was 6.1%, of which 2.8% originated from EU member countries. This amounts to a significantly smaller share of the total population compared to the UK average. On a UK-wide basis, fully 14.3% of the population were born outside the UK, including 5.5% from EU member countries. Even when London is excluded from the UK total, the share of the population born outside the UK remains significantly higher than the share for Wales at 10.7%. This data is presented in **Figure 3.7**.

**Figure 3.7**

Population of Wales and UK, by place of birth, 2018

	UK		EU		Non-EU	
	Population ('000s)	% of total	Population ('000s)	% of total	Population ('000s)	% of total
Wales	2,913	93.8%	87	2.8%	102	3.3%
UK	56,245	85.7%	3,599	5.5%	5,743	8.8%
UK (excl. London)	50,594	89.2%	2,576	4.5%	3,530	6.2%

Source: ONS (2018) Annual population survey and authors' calculations; figures may not add up due to rounding.

Even within Wales, there is substantial variation in the share of the population born outside of the UK and EU. As shown in **Figure 3.8**, most of the population born outside the UK are concentrated in Wales' major population centres such as Swansea, Cardiff and Newport. Even having accounted for the local

authority's low population density, the share of the population resident in Powys born outside the UK is significantly lower than the national average as well as the average across the UK.

**Figure 3.8**  
Population born outside of the UK by local authority, 2018 (1 dot = 100 people)



Source: ONS (2018) Annual population survey.

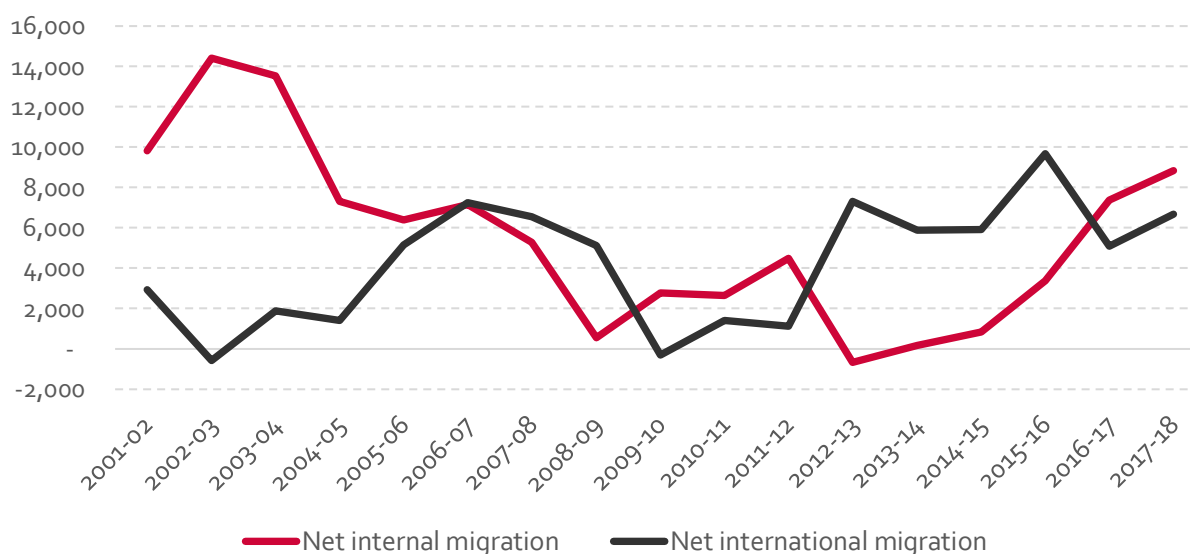
A recent report published by the Wales Centre for Public Policy concluded that the UK government's immigration white paper detailing immigration policy post-Brexit would mean that Wales would be less affected in absolute terms because it has lower levels of EU migration to begin with (Portes and Forte 2019, 24). However, given that Wales is likely to face the challenges associated with demographic change and an aging population earlier than other parts of the UK, Brexit is likely to exacerbate these challenges and make them even more acute.

**Figure 3.9** shows the net flow of migrants in and out of Wales since 2001–02, broken down by international migration and internal migration within the UK. Net internal and international migration has been positive nearly every year over this period, meaning that more people are moving into Wales than there are moving out.

Net internal migration peaked at over 14,000 in 2002–03 then fell sharply but has since started to increase again. There has been less variance in net international migration, but it also dipped in the years following the financial crisis before recovering. In 2016–17, net international migration stood at 5,000 whilst net internal migration was 7,400.

During the first half of the 2000s, internal migration into Wales was the largest component of population change from year-to-year. In more recent years, international net migration has been an increasingly important component of population change. In 2017–18, the natural population change in Wales was around –2,600, meaning that there were 2,600 more deaths than there were births. In the same year, the combined net effect of internal and international migration was 16,000. As fertility rates continue to fall, migration will need to play an increasingly important role in sustaining Welsh population growth and replenishing the tax base of an aging society.

**Figure 3.9**  
International and internal net migration: Wales, 2001–02 to 2016–17



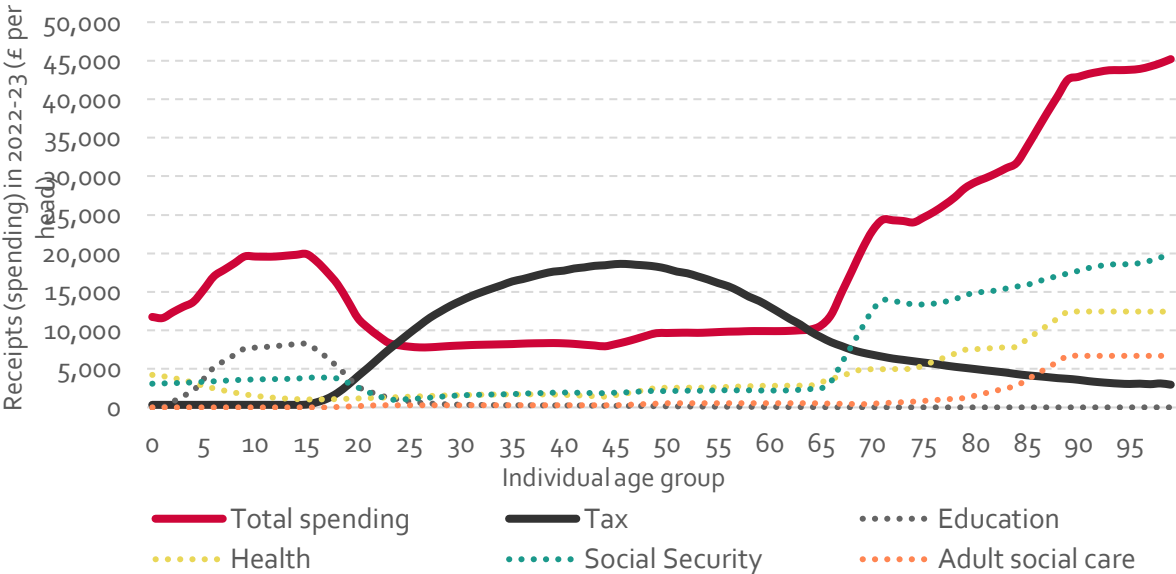
Source: ONS (2018 and previous) Mid-year population estimates; StatsWales (2018 and previous) Components of population change, by time period and component.

Peoples’ needs and ability to contribute through taxes vary across their lifespan. In their formative years, children tend to require a significant amount of healthcare. This, along with the cost of education provision, means that most people under the age of 21 are net beneficiaries of government (they receive more in public services than they contribute in tax revenue). This is also true among older generations who tend to have more complex health and social care needs. Conversely, members of the working age population tend to be net contributors to government (they contribute more in tax revenue than they receive through public services). This means that a country’s age profile impacts both its revenue and expenditure, and by consequence, the size of its fiscal balance.

**Figure 3.10** illustrates the estimated amount spent on individuals of each group in Wales in 2022–23 and the estimated amount of tax raised. Total spending is highest for the elderly, averaging £45,000 per head among those aged 100 or over. There is also a smaller peak of £20,000 in total expenditure among the school-age population due to the costs associated with education provision. This reflects trends on a UK level and internationally. Total tax revenues paid by the average person in Wales peaks at £18,600, by those aged 46.

As we have previously established, Wales has a larger share of its population over 65 (21.3%) and a smaller share of its population aged 25–64 (50.1%) compared to the UK average (18.7% and 51.9% respectively). This means that Wales has more people in the age groups requiring the highest spending levels and fewer people in the age groups contributing to the most in tax, when compared to the average age profile across the UK.

**Figure 3.10**  
**Representative age profiles for tax, public services and welfare spending: Wales, 2022–23 (£ per head)**



Source: Authors' calculations, based on OBR (2018) Fiscal Sustainability Report C3.10.

Higher graduate retention rates could help bolster the tax base. Policies to boost graduate retention benefit from an important temporal effect: if a young graduate chooses to settle and work in Wales during the years when they are most mobile, they are less likely to permanently move out of Wales in later years. Thus, policymakers ought not only consider the tax revenue foregone if a graduate decides to leave Wales after university, but the tax revenue that could have been earned twenty or thirty years down the line had our graduate chosen Wales as their home. This is particularly important given that earnings growth in Wales will need to keep up with England if Wales is not to lose out as a result of the tax devolution settlement.

Increased international migration tends to bring with it more people of working age. Wales currently has a much smaller share of its population born outside the UK compared with the UK average. Increasing inward international migration to Wales could be one way of providing a healthy stream of workers to bolster the tax base, compensating for declining fertility rates. It may also be possible to incentivise inward migration of working-age individuals from other parts of the UK. At the same time, a Social Care Levy that is contributory in character, similar to that proposed by Professor Gerald Holtham (2018), might mitigate some of the costs associated with delivering social care to individuals who move into Wales from other parts of the UK in later life.

If Wales' population was distributed across individual age groups in the same way as the UK average, total expenditure would be reduced by over £1 billion and tax revenues would increase by nearly £500 million (Ifan, Siôn and Poole 2019, 75). While this is not unsubstantial, it confirms that Wales' population profile is not the principal reason for Wales' worse fiscal position compared to the UK average. Nevertheless, it underlines the need in Wales for a healthy stream of working age taxpayers to fund public services for an ageing population.

### 3.2.2 Wales' future demographics

The principal population projection published by the ONS is a detailed forecast of how the population of the UK is expected to change over an extended period. The 2018-based projection released in 2019 showed that Wales is on the verge on its first period of sustained population decline in nearly a century (Siôn 2019). As has been previously remarked, Wales' natural population change has been negative for some years, meaning that there are more deaths than births in any given year. So far, population have been buoyed by inward international migration and migration into Wales from other parts of the UK. However, a projected drop in the net inward migration figures and a continued decline in fertility rates suggests that the net effect of inward migration will not be enough to offset the natural change in population from 2023 onwards.

Although a sustained decline in the population would be a historic development, even more important for Wales' fiscal future is the composition of Wales' demographics and the ratio of dependants (children and older adults) to the working age population. According to the principal population projection, Wales' working age population is expected to fall by nearly 50,000 (2.6%) between 2018 and 2030, whilst at the same time, the share of the population over 65 will continue to grow.

In addition to its principal population projection, the ONS produces variants of this release based on different scenarios. **Figure 3.11** shows how the size of the working age population, aged 16–64 is expected to change for Wales in each case.

Zero EU net migration would see Wales' working age population fall at a faster rate. By 2030, the working age population would be 65,900 (3.4%) smaller. The no international net migration scenario isolates the effect of natural changes and internal migration on population growth. No net migration would mean that there would be 96,000 (5.0%) fewer members of the working age population by 2030.

Even under the high net migration scenario, the working age population would continue to fall. This scenario assumes that inward international migration to the UK is at 100,000 above the principal population projection (290,000 people a year, compared with 190,000 in the central scenario). However, the UK government's proposed points-based system is set to increase barriers to immigration post-Brexit.<sup>7</sup> It therefore seems almost certain that the Welsh population aged 16–64 will continue to fall over the coming years.

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<sup>7</sup> See: <https://www.gov.uk/government/publications/the-uks-points-based-immigration-system-policy-statement/the-uks-points-based-immigration-system-policy-statement>



**Figure 3.11**

Projections of Wales' working-age population (16–64), under various scenarios, 2019–2030



Source: ONS (2018-based) Population projections and variants.

Generally, the term 'working age population' refers to the population aged 16 to 64. However, younger people are increasingly delaying their entry into the workforce by remaining in education for longer (Office for National Statistics 2019c). This does not necessarily mean that overall tax contributions across their lifetime will be lower. After all, individuals who achieve higher levels of qualification are more likely to have higher paying jobs and pay more in tax revenue (albeit over a shorter period). Conversely, more older people are remaining in the workforce past their 65<sup>th</sup> birthday, as discussed in the next section. Whilst these age thresholds are convenient shorthands, they may be less meaningful in terms of pinpointing the time when individuals transition from one stage of life into another than they once were.

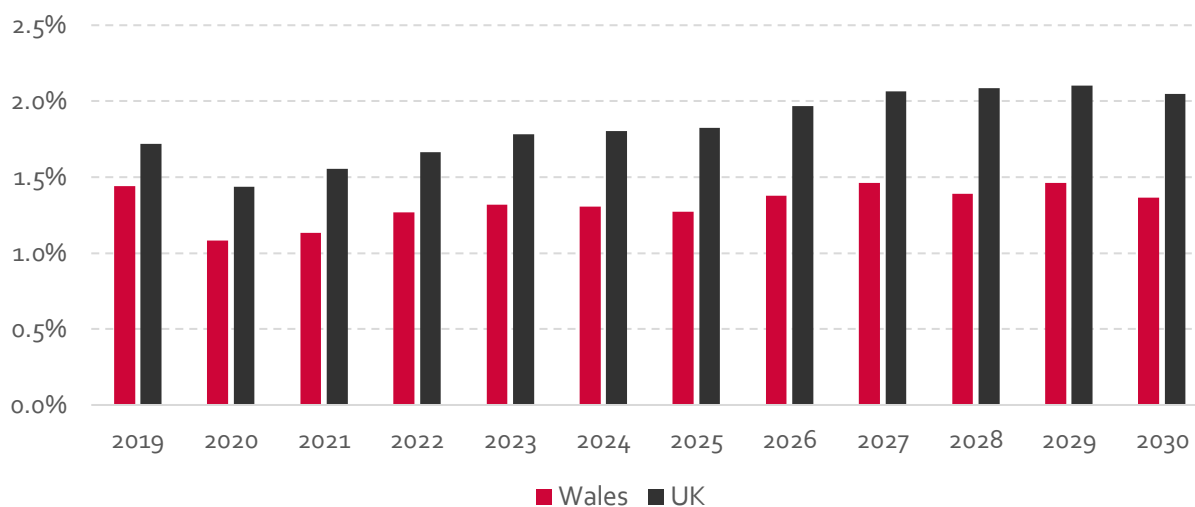
While the working age population is projected to fall in Wales, the recent growth in the over 65 population is expected to continue. As shown in **Figure 3.12**, the over-65 population has grown more quickly across the UK as a whole compared to Wales in recent years and this trend is set to continue over the next decade. Nevertheless, as a share of the total population, the over-65 cohort will continue to grow more rapidly in Wales, a direct consequence of Wales' declining working age population.

As alluded to in the previous section, those who reach their 65<sup>th</sup> birthday today are significantly more likely to still be in employment than the generation before them. Across the UK, the percentage of people aged 65 and older who are in employment has doubled since 1998 (Office for National Statistics 2019b). This trend is set to continue as the state pension age is increased to 66. It is set to increase further to 67 by the end of the decade. The increase to the state pension age will have a relatively larger impact on the size of the working age population in Wales compared with the UK as a whole, since 65- and 66-year olds make up a larger share of the Welsh population compared with the UK average.

When considering how an ageing population will affect expenditure on public services, it is important to recognise that the bulk of health and social care spending on older individuals happens in the last years of their lives, as highlighted in **Figure 3.10**. Therefore, an individual's transition to the over-65 cohort does not in itself lead to a spike in health spending. It does however lead to increased government expenditure on the state pension and certain age-related benefits such as the Winter Fuel Allowance and Attendance Allowance.

**Figure 3.12**

Projected annual year-on-year change in the size of over 65 population: Wales and UK, 2019 to 2030



Source: ONS (2018-based) Principal population projections and authors' calculations.

Nevertheless, health care costs are still likely to increase sharply over the coming years, in part due to the additional costs of new health care technologies and growing prevalence of chronic conditions (Tetlow and Marshall 2019, 31). Contrary to what one might believe, non-demographic cost pressures have been the biggest drivers of public health spending over the past twenty years, despite the fact that life expectancy has increased significantly over this time (International Monetary Fund 2018, 41). Given that recent indicators have suggested that life expectancy is now *falling* across the UK, it is reasonable to assume that non-demographic cost pressures will play an even bigger role in driving the cost of health spending in the future (Collinson 2019).

Of course, the challenges associated with having an ageing population are not unique to Wales and will need to be confronted by most developed countries over the coming years. Even if Wales had the same demographic structure as the UK, this certainly would not be a panacea to solving the challenges associated with demographic pressures. Nevertheless, trends in the population will continue to play a key role in determining demand for services, the tax take and Wales' overall fiscal account balance. It is imperative that an understanding of our demographic trajectory is embedded within the political discourse and actively informs policymaking in Wales.

### 3.3 Conclusion

Boosting tax revenues through economic growth would be essential in changing the relative fiscal position of Wales as part of the UK, but the scale of this challenge should not be underestimated.

The substantial increase in productivity and/or employment growth necessary to make some headway in narrowing the GDP per person gap would represent a significant turnaround in Wales' economic fortune. Realistically, this could only be realised through radical policy changes alongside massive investment in areas such as Wales' education system, research and development spending and infrastructure, and a departure from the UK's current London-centric economic model. Even then, overturning decades of relative decline would still leave Wales with a substantial, albeit reduced, notional fiscal deficit.

Wales' current population structure and future demographic trajectory will also play a role in determining whether such a turnaround in the country's fiscal position is achievable. Currently, Wales has proportionately more people in the age groups requiring the highest spending levels, and fewer people in the age groups contributing the most in tax. Although this is only a partial explanation for Wales' deficit, a projected decline in the working age population is likely to exacerbate the challenges associated with increasing the relative levels of revenue raised in Wales. Higher graduate retention rates could help bolster the tax base. So too could increased migration of working age adults from other parts of the UK or from further afield to Wales. Although the Welsh Government does not currently have powers over immigration policy, it may already have some tools within its legislative competence that could be used to incentivise skilled workers to settle in Wales.<sup>8</sup>

A key challenge for those who want Wales to remain a part of the UK revolves around the likelihood of Wales' current economic, fiscal and social problems being alleviated under current constitutional arrangements. Given the relative trends in the Welsh economy since 1999, there is certainly room to doubt whether such a relative improvement in Wales' economic performance is possible, let alone likely.

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<sup>8</sup> Powers over immigration policy are not always reserved to the central governments in federal states. For instance, in Canada, individual provinces can nominate individuals for visas through their Provincial Nominee Programme. The Scottish Government recently put forward plans to introduce a Scottish Visa but these were swiftly rejected by the UK government.

# 4 Closing the fiscal gap as an independent country

Having previously considered the prospects for closing the fiscal gap as part of the UK, this chapter examines the options available for closing the gap as an independent Welsh state. Although independence would doubtless increase flexibility to pursue policies conducive to reducing the size of the fiscal deficit, it would also make this task considerably more pressing.

The chapter begins with a discussion of the various factors impacting the inherited fiscal position of an independent Welsh state. Second, it considers the role that fiscal and monetary policy could play in reducing the size of Wales' deficit. Third, it explores the viability of some alternative proposals for increasing public sector revenue. The chapter ends with a brief discussion of the potential economic performance of an independent Wales and an assessment of the prospect for improving Wales' fiscal position.

## 4.1 What would be the inherited fiscal position of an independent Wales?

*Government Expenditure and Revenue Wales 2019* (GERW) presents a comprehensive analysis of Wales' current fiscal position, taking the current constitutional and fiscal settlement as a given. Necessarily, it is not a direct reflection of the inherited fiscal position of an independent Wales, nor is it an accurate reflection of the potential or limits of Wales' fiscal position. Although GERW is unlikely to offer much insight into the *long-term* finances of an independent Wales, it does offer a starting point for a discussion of some of the *immediate* challenges that would need to be met by advocates of new fiscal arrangements.<sup>9</sup> The scale of these challenges should not be underestimated.

This raises the question: what would be the inherited fiscal position of an independent Welsh state? There is no single response as this would depend on several factors, including the terms agreed by the Welsh and UK government on the treatment of assets and liabilities post-independence, and the day-one policy decisions that would have to be made by the government of an independent Wales. The discussion in this section seeks to highlight some of the areas that would play a key role in determining the inherited fiscal position of an independent Welsh state.

### 4.1.1 The different types of expenditure for Wales

In GERW, public spending for Wales is split into several components: identifiable expenditure by the UK government, Welsh government and local authorities, non-identifiable expenditure and expenditure

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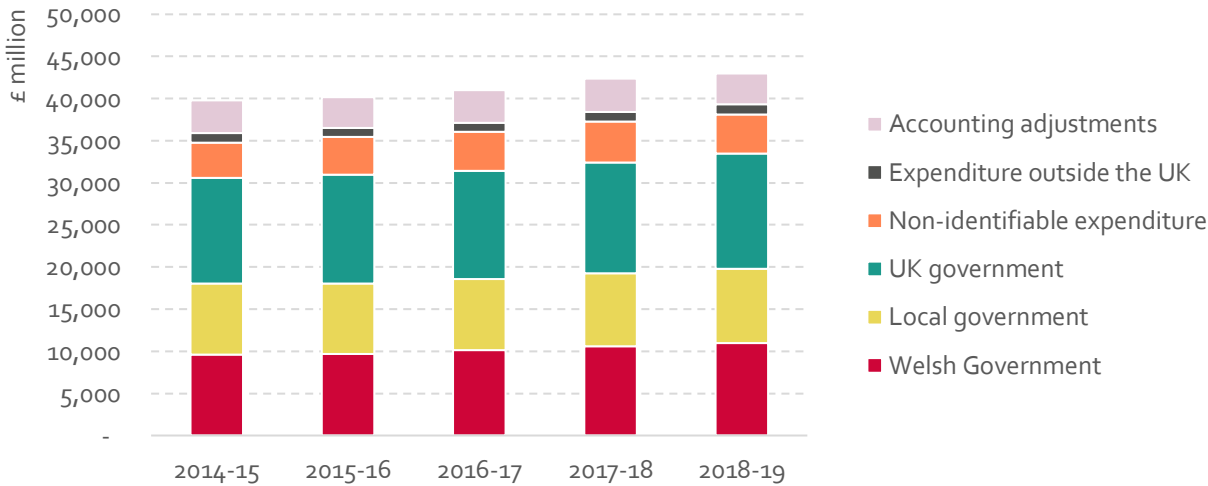
<sup>9</sup> The Fraser of Allander Institute (2019) offer a useful guide to the limitations of Government Expenditure and Revenue Scotland (GERS), on which GERW is based.

outside the UK.<sup>10</sup> The latter two categories include spending by the UK Government made outside of Wales that is deemed to be either 'on behalf of' Wales or in the shared interest of all nations and regions of the UK. These components and their respective totals are illustrated in **Figure 4.1**.

Identifiable expenditure by the Welsh Government and local governments would be a largely accurate reflection of public spending in Wales at the onset of independence (assuming no change in spending policies). By far the largest element of identifiable UK government expenditure is social protection spending. In the event of Welsh independence, responsibility for pension liabilities would be subject to negotiation between the Welsh and UK government, as discussed later in this chapter.

Identifiable UK government expenditure for Wales also includes spending on some projects outside of Wales. Although it is beyond the scope of this paper to itemise every single line of identifiable UK government expenditure that is spent 'on behalf of Wales' which is actually spent outside of Wales, it should be stressed that excluding these lines from the total would represent only a *marginal* saving on total identifiable UK government expenditure on Wales of £13.7 billion.

**Figure 4.1**  
**Estimated public sector expenditure for Wales, 2014–15 to 2018–19**



Source: ONS (December 2019) *Country and Regional Public Sector Finance*; ONS (2019) *Country and Regional analysis and authors' calculations*.

Non-identifiable expenditure refers to spending which cannot be apportioned to a particular country or region and is deemed to be on behalf of the UK as a whole. Wales is apportioned a share of this expenditure using various methodologies. Non-identifiable expenditure largely consists of defence spending and public sector debt interest payment. Wales is allocated its population share of UK expenditure on these items.

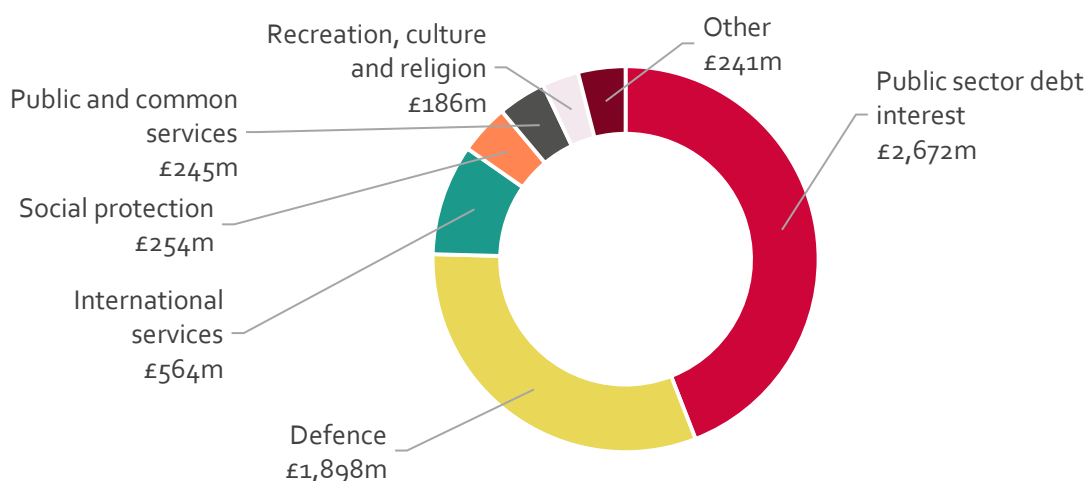
Expenditure outside the UK refers to spending made by the UK government outside of the UK. This includes, for example, the costs of international aid projects, memberships of international

<sup>10</sup> Total managed expenditure also includes an accounting adjustment. This accounting adjustment has a comparatively small effect on the size of the fiscal deficit. A full breakdown of the components of this accounting adjustment can be found in Appendix A of GERW (2019).

organisations, and the UK’s overseas diplomatic network. Again, Wales is allocated a proportion of total UK expenditure for these projects, using various methodologies.

**Figure 4.2** offers a breakdown of non-identifiable spending and spending outside the UK apportioned to Wales. Collectively, interest payments on government debt and spending on defence account for more than three quarters of this total. These components of spending are discussed in greater detail later in this chapter. Spending on international services reflects the UK government’s commitment to spending 0.7% of its GDP on international aid. The social protection component includes state pension payments for UK nationals living abroad. Spending on the BBC accounts for a significant share of the recreation, culture and religion category. Other spending includes UK border agency costs and transfers to European Economic Area countries to cover the cost of healthcare for British citizens who are admitted to hospital whilst abroad.

**Figure 4.2**  
Composition of non-identifiable spending and spending outside the UK apportioned to Wales, 2018–19



Source: ONS (2019) Country and Regional Public Sector Finances. Excludes EU transactions line.

### 4.1.2 Public sector debt

The largest component of non-identifiable expenditure apportioned to Wales is public sector debt interest payments. In 2018–19, the amount allocated to Wales for debt interest payments was £2.7 billion. In GERW, Wales’ allocation of public sector debt, like most non-identifiable expenditure items, is calculated based on the country’s population. In the event of Welsh independence, Wales’ share of interest payments on historic UK government debt would be decided by negotiations between both governments on how to split the UK’s assets and liabilities.

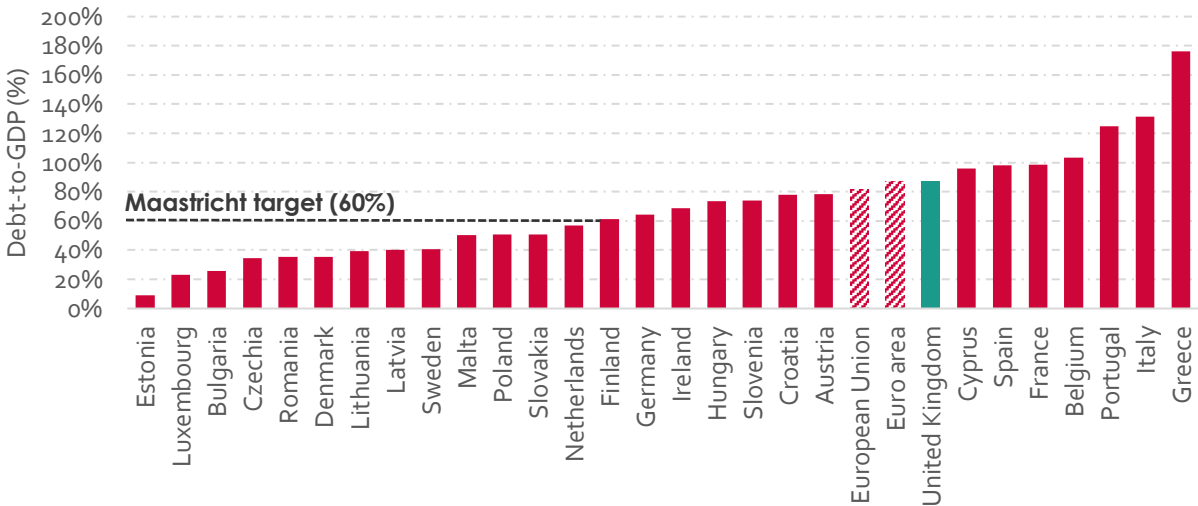
There is no consensus in the legal literature over how state debts get divided in the event of dissolution or secession. Rowlands (1997) summarises some of the views espoused on this matter by legal theorists. Woehrling (1991) interprets traditional law as saying that there is no obligation for the successor state to

inherit any debt. However, according to the terms agreed as part of the Vienna Convention, successor states formed as a result of decolonisation are expected to inherit an equitable portion of general debt when they secede (Rowlands 1997, 41).

Some historical examples exist where states have employed the zero-option when dividing their debt liabilities. That is, one of the successor states is freed from all debt liabilities at the point of independence whilst the other inherits all debt liabilities of the predecessor state. This was the method used when dividing debts among new countries that emerged from the dissolution of the USSR. There was one exception to this rule; Ukraine actively wanted to inherit a share of former USSR debt as it perceived that this would be a way of asserting the country’s sovereignty in areas of international finance.<sup>11</sup> Unless both parties agree to the zero-option, a decision by an independent Wales to repudiate its share of UK debt would carry a very high risk of jeopardising relations with the international community. The more likely question facing Wales in the event of independence is what would be an equitable share of UK debt that it would agree to take on and on what terms.

There is more than one way of measuring a nation’s level of debt. One commonly used measure of international debt is Maastricht defined debt, otherwise known as gross debt. This does not allow the debt to be offset by liquid assets and includes debts issued by other public bodies. It is widely regarded as a relatively conservative measure of a nation’s indebtedness. According to the Whole of Government Accounts published annually by the UK Treasury, the level of UK gross debt in 2017–18 was £1,764 billion, equivalent to 85% of GDP. This is considerably higher than the 60% threshold for excessive government debt as defined in the Maastricht Treaty but comparable with the average across Euro-area countries, as illustrated in **Figure 4.3**.

**Figure 4.3**  
General government gross (Maastricht) debt (% of GDP) of European Union member states, 2017



Source: Eurostat (2017) General government gross debt as a percentage of GDP. Figures are presented on a calendar year basis and are not adjusted for the 2017–18 financial year.

<sup>11</sup> Russia took on all of the USSR debt, minus the portion inherited by Ukraine.

Based on historical examples, de Aghion and Williamson (1993) identify three main methods for apportioning debt to the successor state upon independence. These are outlined in **Figure 4.4**, along with an estimate of Wales' hypothetical debt burden in each scenario.

**Figure 4.4**

Hypothetical Maastricht debt burdens for an independent Wales, 2017–18

Apportionment method	Historical examples	Share of UK total (%)	Wales' share of UK gross debt (£bn)	Debt-to-GDP ratio (%)
Population (GERW)	Czechoslovakia; Gran Colombia; Central American Federation.	4.7	82.9	113
Revenue contribution <sup>12</sup>	Austro-Hungarian Empire; Ottoman Empire.	3.6	63.5	87
Relative GDP	Central African Federation.	3.5	60.0	82

*Source: Authors' calculations. Estimates of GDP are based on ONS estimates (December 2019 release). Population figures are based on ONS mid-2017 estimates adjusted for the 2017–18 financial year. Total UK Gross Debt of £1,764 is sourced from HM Treasury (2019) Whole of Government Accounts 2017–18. Apportionment methods based on de Aghion and Williamson (1993).*

It is worth highlighting that the precise method by which UK debt is apportioned to Wales in the event of independence would have a significant effect on the country's level of indebtedness. In a sharp contrast to Scotland, there is significantly greater variation between Wales' share of UK GDP, revenue contribution and its population share. Although the Scottish Government (2013, 21) claimed that assigning the national debt based on population share might be a reasonable resolution for Scotland, this method would not be as desirable for Wales. It is likely that the method for apportioning the national debt would be subject to keen negotiations on both sides. As such, it is worth considering what the relative bargaining positions of each party to the negotiations might be.

Rowlands (1997, 48) has likened negotiations over the division of debt in the context of state secession to a Rubinstein game where the agreed method of division will reflect the relative penalties endured by either side. A country's trade-to-GDP ratio may be viewed as a proxy for international penalty costs. Given that the Welsh economy is relatively more exposed to disruption in trade flows between England and Wales than the English economy, Wales could be more vulnerable to sanctions imposed by England than vice versa. Moreover, since an independent Wales would likely need to rely on the support of the international community should it desire memberships of international organisations, the penalty costs associated with non-cooperation could be relatively greater than those faced by the UK. Of course, these negotiations cannot be viewed in isolation to the wider separation agreement. To give just one example, England's current reliance on energy and water imported from Wales may be an area where Wales has more bargaining power. As highlighted by Rowlands (1997, 48) delay imposes costs on both parties in the form of explicit diplomatic and financial pressure and due to costs associated with uncertainty. It would be in both parties' interest to resolve negotiations quickly.

<sup>12</sup> Revenue contribution is based on a single-year estimate from 2017-18, as published in GERW (2019). In practice, it may be more sensible to average Wales' contribution to total UK revenue over a period of time. Of course, the decision over how many years this period should span would be subject to an intense political debate.



Even if the UK had a stronger bargaining position, it would not be able to deviate too far from what would be a sustainable amount of debt for Wales to inherit, as deemed by creditors. Creditors of the UK government would likely want to maximise the likelihood of repayment. Assuming that GDP is an accurate proxy for a country's ability to repay, if Wales is allocated a higher share of debt than its share of UK GDP, investors could perceive their loans to be at a higher risk of default. Moreover, GDP post-independence may not be the same as relative GDP at the point of independence. If independence leads to a short-term economic shock, this could further reduce the share of the national debt inherited by Wales under any apportionment method based on GDP.

It is worth pausing briefly to consider the negotiations that took place over the amount of debt inherited by the Irish Free State when it separated from the UK in 1922. The Anglo-Irish Treaty signed in 1921 included Articles on how the Irish share of UK liabilities would be apportioned to the Irish Free State post-independence. However, the matter was not set to be finalised until a later date, once the final shape of the border was known. The final financial settlement agreed in 1925 included a provision that would see Ireland inherit a debt burden of roughly 10 to 15 per cent of its Gross National Product (GNP).<sup>13</sup> FitzGerald and Kenny (2017) have argued that if Ireland's share of UK debt had been apportioned based on its share of UK tax yield pre 1922, as had been originally proposed by Churchill, the newly independent state would have inherited a debt to GNP ratio of around 90 to 110 percent, which would have cast a doubt over the country's fiscal solvency. The precise reasons behind this particularly favourable outcome for Ireland cannot be decoupled from the historical context in which the negotiations took place. The publication of the Boundary Commission Report in November 1925 included very little concessions from an Irish point of view, therefore, the favourable settlement on the debt allowed the Irish Government to "save face domestically" (FitzGerald and Kenny 2017, 20). It also bears consideration that many members of the UK government were concerned that an excessively debt-burdened Ireland would not be in the UK's best interest. The paper's authors cite Prime Minister Baldwin's remarks that a fiscally solvent Ireland would provide a reliable market for UK exports and prevent the continuous stream of migration of "a poor class of people" across the Irish Sea into the UK (FitzGerald and Kenny 2017, 13).

As well as deciding how much debt should be apportioned to Wales, both parties would also need to come to an agreement over the method by which this amount should be repaid. The UK government has repeatedly asserted that it would continue to be solely responsible for its stock of UK-issued debt in the event of Scottish independence. Assuming that this position remains unchanged, this leaves Wales with two options. First, it could decide to pay its share of the UK debt in full at the point of independence, financed by issuing its own government bonds. Second, it could enter an agreement with the UK to continue to honour its share of the debt by repaying the interest and principal when it falls due. The second approach was the one favoured by the Scottish Growth Commission (The Sustainable Growth Commission 2018). This Committee mooted an Annual Solidarity Payment paid by the Scottish Government to the UK government to cover the ongoing costs of interest on the UK national debt.<sup>14</sup>

In addition to the amount of debt inherited by an independent Wales, it is also important to consider what impact this would have on the country's public sector balance sheet position. The public sector balance sheet reflects total public sector financial and non-financial assets net of the national debt and

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<sup>13</sup> Like Gross Domestic Product (GDP), Gross National Product (GNP) measures the value added in the production of goods and services within a country's borders. However, unlike GDP, GNP also includes the value of goods and services produced by a country's citizens abroad.

<sup>14</sup> The Annual Solidarity Payment was also expected to cover some of the costs already committed to international aid projects.

other government liabilities (e.g. pension costs). In the Scottish Growth Commission (2018) report, it was claimed that a 'fair and proportionate division of assets [as well as] liabilities should be negotiated' in the event of Scottish independence. An independent Wales would likely have a claim over a share of UK owned assets and may decide to offset the value of its share of UK assets against any inherited debt. Of course, the precise division of assets would ultimately hinge on the outcome of negotiations conducted by both governments.

Although an independent Wales may not be legally mandated to take on any of the servicing costs associated with the UK's public sector debt, it would be extremely difficult not to do so given that this could jeopardise relations with the international community. By taking on an equitable share of the UK government's public sector debt, Wales would be asserting its sovereignty in matters relating to international finance whilst also improving the nation's perceived creditworthiness in the eyes of prospective lenders. Although there are some reasons for thinking that the UK might have an upper hand in negotiations, any resolution would be bounded by the expectation of creditors that there would not be a material difference in the risk of default / non-payment. Therefore, Wales' revenue contribution or GDP might be a more appropriate and likely outcome in negotiations to determine the method for dividing the national debt, reflecting the country's ability to repay. If an independent Wales takes on a share of UK debt, it may reasonably be argued that the country would have a claim over a share of UK owned assets. This would also be subject to negotiations between both governments.

### 4.1.3 Defence

In GERW and the *Country and Regional Public Sector Finances* datasets published by the ONS, non-identifiable defence spending is apportioned to Wales on a population basis, therefore, Wales is allocated 4.7% of total UK defence expenditure for 2018–19. As a result, Wales is said to have spent £1.9 billion on defence (2.5% of GDP) in that year. This amounts to around £605 per person in Wales.

Since defence expenditure is divided equally among the UK population, the per capita figure is the same for all nations and regions of the UK. However, as Wales' estimated GDP per person is relatively lower, this same pounds-per-person spend equates to a higher share of GDP for Wales (2.5%) compared with the UK as a whole (1.9%). The underlying assumption is that all residents of the UK benefit equally from the UK government's defence spending. This may mean that some of this expenditure, allocated *for the benefit of* Wales, is spent outside of Wales. Such expenditure will have different effects to expenditure made inside Wales; namely, it will not lead to local economic multiplier effects and will not directly increase the tax revenues collected in Wales.

Wales' inherited fiscal position might be more accurately captured by only including defence expenditure that is currently spent *within* Wales. There is some evidence in the literature to suggest that Wales benefits by a relatively lesser amount from defence spending *within* the country compared to other countries and regions of the UK. Using data published by the Ministry of Defence's (MOD) Defence Analytical Services Agency, Gripiaios (2002) estimated that in 1997–98, less than 2% of UK defence expenditure was actually spent *in* Wales.

Unfortunately, there is limited recent regional data available on MOD expenditure across the UK. **Figure 4.5** outlines some of the possible ways of allocating UK defence spending to Wales using various methodologies.

**Figure 4.5**  
**Apportionment of UK defence spending to Wales using various methodologies, 2018–19**

Apportionment method	Share of spending allocated to Wales	Defence spending allocated to Wales	Percent of GDP
MOD expenditure with UK industry	5.1%	£2,049m	2.7%
Population share	4.7%	£1,902 m	2.5%
GDP share	3.5%	£1,405m	1.9%
Spending with industry + MOD personnel	3.4%	£1,360 m	1.8%
MOD personnel based in Wales	1.8%	£705 m	0.9%

*Source: ONS (2019) Country and Regional Public Sector Finances; MOD (2017) Quarterly location statistics (October 2017); MOD (2019) Regional expenditure with UK industry and supported employment, 2017–18 and authors’ calculations.*

In 2017–18, Wales received 5.1% of the MOD’s total expenditure of £18.9bn with UK industry. On the other hand, data from the same year shows that only 1.8% of UK-based MOD personnel were situated in Wales. In an attempt to reconcile these two figures, we have included an apportionment method which allocates 5.1% of total defence expenditure with UK industry to Wales and 1.8% of the remaining total. Under this method, Wales is allocated 3.4% of total UK spending on defence, equivalent to £1.36 million in 2018–19 (1.8% of estimated GDP). This is marginally lower than Wales’ share of UK GDP and significantly lower than the amount apportioned using the population share method.

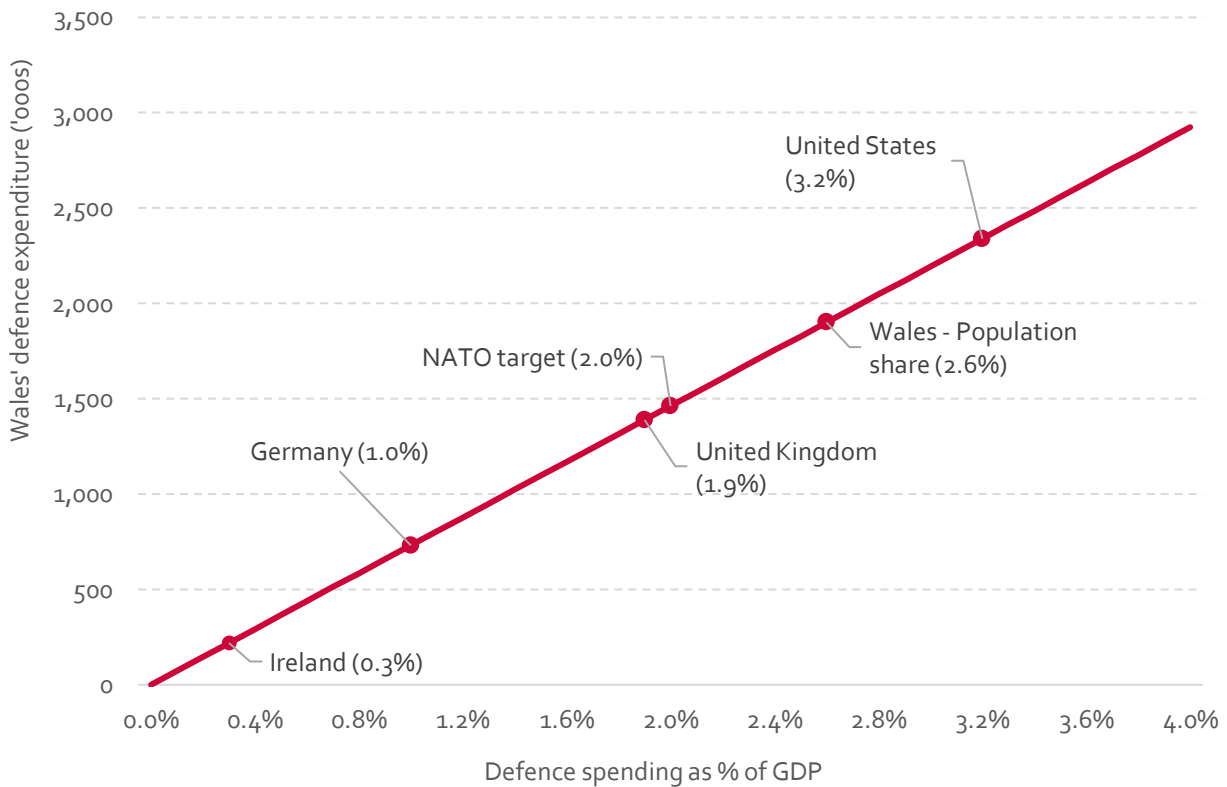
Of course, it would be a matter of government policy how much an independent Wales would spend on defence. **Figure 4.6** illustrates Wales’ defence expenditure depending on portion of GDP. NATO sets a target for member states to spend at least 2.0% of their GDP on defence. In practice, few member states reach this target. Ireland is not a member of NATO. Although Ireland spends only 0.3% of its GDP on defence, its levels of GDP per person are 2.5 times that of Wales. Taking this into account, as well as the principles underlying economies of scale – higher levels of spending are usually accompanied with lower costs per unit of output – it is likely that Wales would have to spend significantly more than 0.3% of its GDP if it wished to emulate the defence capacity of Ireland.

When calculating any potential savings compared to the baseline scenario presented in GERW, it is important to consider the additional economic and fiscal benefits that is associated with defence spending. Defence spending contributes to GDP and supports jobs in the local economy, thereby increasing the tax take. The IMF applies a standard fiscal multiplier of 0.6 to defence spending. This means that any decrease in defence expenditure below the amount currently spent in Wales would put downward pressure on GDP and tax revenues. Conversely, any increase in expenditure above the amount currently spent in Wales would boost GDP and tax revenues. The fiscal multiplier measures the size of these indirect effects.

Wales could feasibly narrow the fiscal gap by reducing, or perhaps even maintaining, current defence expenditure levels. The extent to which this would be possible depends on the effect of the fiscal

multiplier, how much of UK defence spending is currently spent *in* Wales in addition to the defence priorities of an independent Wales' government.

**Figure 4.6**  
Wales' defence spending as a percentage of GDP, 2017–18



Source: OECD (2017) General Government Spending and authors' calculations. Note that this graph refers to spending during 2017–18. GDP figures are based on ONS (December 2019) sub-national estimates for 2017–18.

#### 4.1.4 Pension liabilities

Pensions spending represents by far the largest part of UK government spending for Wales. The future financing of state pensions and benefits would need to be resolved before any state separation. Currently, the UK government pays the pension of British citizens who have fulfilled the requirements to receive the state pension, regardless of whether they choose to retire within the UK. This could be a subject of negotiation between both governments in the event of independence. A continuation of this status could reduce Wales' deficit by around £5 billion or 6.7% of GDP, though this would gradually re-accumulate onto the Welsh budget as new Welsh pensioners start claiming.

However, it is likely the Welsh Government would wish to have control over, and fund pension payments made to pensioners living in Wales as the UK government could change entitlements unilaterally by Act of Parliament. It is unlikely therefore that this is an area which would yield significant savings for the Welsh budget barring a very favourable outcome from negotiations.

### 4.1.5 Expenditure outside of Wales

As explained earlier in this chapter, Wales is currently assigned a population share for many lines of UK government non-identifiable expenditure. Again, such services may not accurately reflect the share of spending *actually* spent in Wales. Furthermore, any spending on such services spent outside of Wales (e.g. London-based civil servants) does not generate tax revenues for Wales. Thus, the repatriation of the civil service to Wales post-independence could bring with it some economic benefits. Following a similar approach to the Scottish Growth Commission, this could reduce the deficit by around half a per cent of GDP for Wales (The Sustainable Growth Commission 2018).

### 4.1.6 The inherited deficit of an independent Wales

Taking into account the factors already discussed, the inherited fiscal deficit of an independent Wales could potentially be lower than the one presented in the GERW report. However, even under the most optimistic scenario, this deficit would remain large and an independent Wales would be inheriting what would likely be an unsustainable fiscal position. Immediate and transformative changes to tax and spend policies would be required to ensure the sustainability of Wales' public finances from day one. The remainder of this chapter considers and assesses the options for closing the fiscal gap as an independent state.

## 4.2 What would be the fiscal and monetary policies of an independent Welsh state?

As set out in the previous section, an independent Welsh state would inherit a significant budget deficit at the point of independence, given current fiscal policies (largely set at a UK level). **Figure 4.7** shows levels of general government expenditure and revenues per person across a selection of OECD countries. The 45° line represents where expenditure matches revenues. While there are countries spread along this line, most countries are relatively close to it. This is not to say expenditure cannot exceed revenues substantially and persistently, or vice versa, as countries borrow by issuing government bonds and run surpluses.

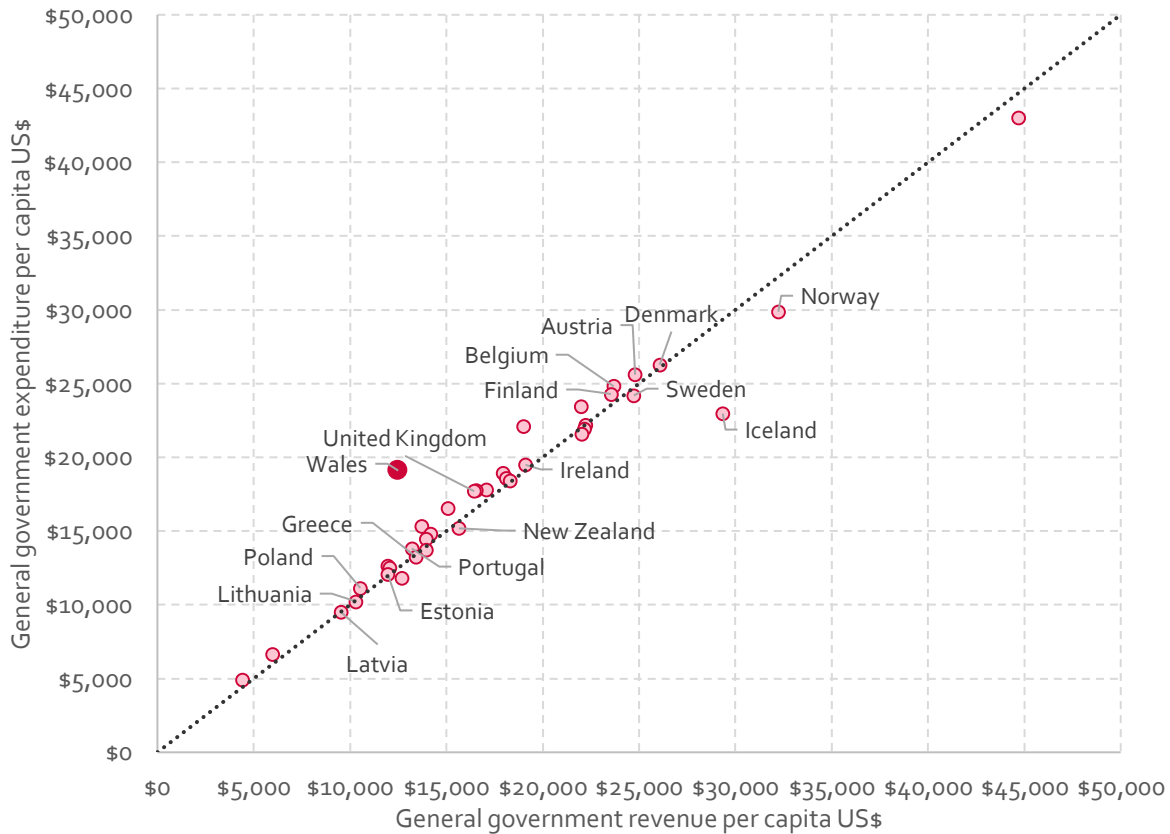
Wales' current fiscal position as a part of the UK places it significantly away from the 45° line – total spending per person matches the level in Ireland while revenues per person are close to the level in Portugal. While some of the deficit could be financed via borrowing, in the absence of fiscal transfers from the rest of the UK, Wales' present position suggests wide-ranging changes to taxation and spending policies would need to be implemented after independence. To put it bluntly, this would arguably be the main challenge of independence.

As explored in the previous section, the initial inherited fiscal position of an independent Wales, as well as the sustainability of the public finances, would be influenced by arrangements around the Welsh share of existing UK debt. Subject to negotiations, an independent Wales could start with a debt-to-GDP ratio of 0%. However, an independent Wales would likely agree to contribute to the debt servicing costs of a fair and reasonable share of UK debt, which will add to Wales' fiscal deficit. In practice, prospective

creditors would consider Wales' obligation to service the UK debt in their assessment of the country's ability to repay.

**Figure 4.7**

**General Government expenditure and revenue per capita across OECD countries, 2016**



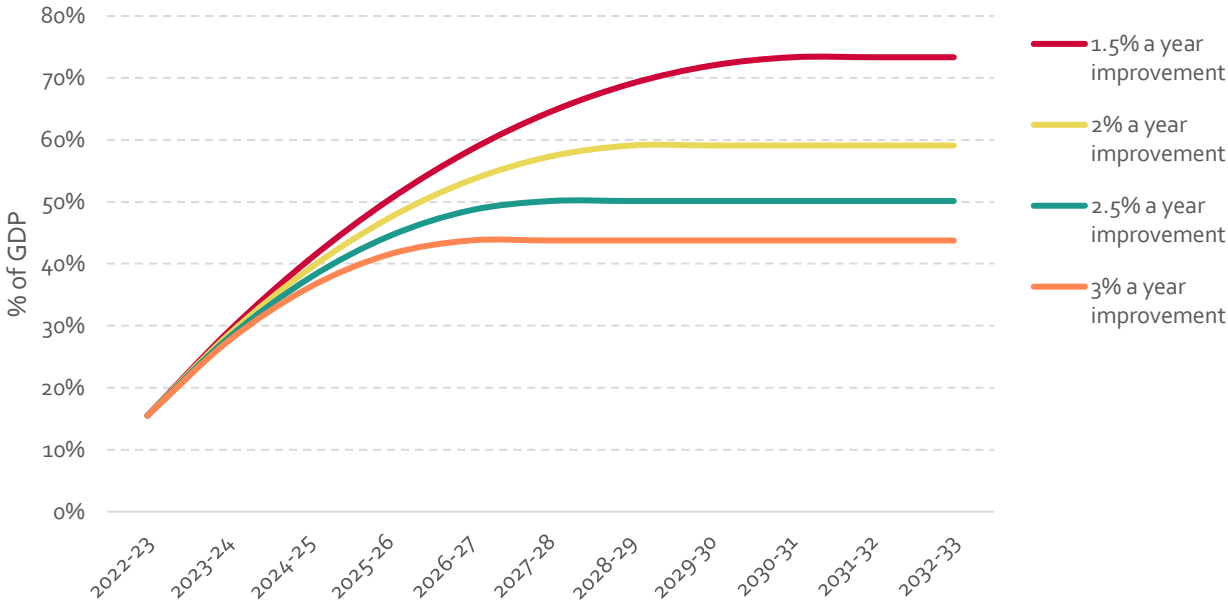
Source: OECD (2019).

There are many examples internationally of substantial fiscal consolidations. A common definition in the literature is an improvement in the structural fiscal balance of more than 1.5% in a year, sustained for at least three years. For illustrative purposes, we start with our central projection of Wales' net fiscal deficit for 2022-23 (see figure 3.1) and apply the same assumptions as the Scottish Sustainable Growth Commission (2018: 33) report on debt costs and other spending. Under these assumptions, supposing Wales become independent from 2022-23, the net fiscal deficit (financed by government borrowing) in the first year would equate to 15% of GDP.<sup>15</sup> We can model the trend in total new public sector debt, acquired after independence, as a share of GDP (starting from 0%), under various assumptions on the pace of fiscal consolidation. In our projections, we calculate the projected peak debt to GDP ratio and presume this level is maintained thereafter. If the fiscal deficit was closed by 1.5% a year, total debt would peak at 73% of GDP in 2030–31. As shown in **Figure 4.8**, closing the fiscal deficit at a faster pace would

<sup>15</sup> As explained in the previous section, the actual starting fiscal position of an independent Wales is unknowable. Factors which may reduce the fiscal deficit in the first year of independence (discussed previously) may be offset by higher initial set-up costs of independent Welsh public institutions.

mean public sector debt peaking at a lower share of GDP. For example, a 3% a year improvement in the fiscal deficit would see a public debt to GDP ratio of just under 44% by 2026–27. Note that the fiscal deficit figure contained in these projections include any costs of servicing the Welsh share of existing UK government debt as well as the cost of servicing borrowing after independence.

**Figure 4.8**  
**Illustrative path of total new net public sector debt under different fiscal consolidation paths**



Source: Authors' calculations.

The above projections assume that Welsh GDP grows in line with forecasts for the UK as a whole. Obviously, independence would change Wales' GDP performance, both in the immediate short term and the longer term (as explored in a later section of this report). Fiscal consolidations also have significant multiplier effects on economic growth; tightening has an amplifying negative effect on the economy. These multipliers can vary in size but are generally larger in bad times (e.g. during a recession), which is why the economic impact of the process has often been under-estimated in countries experiencing economic crises. Fiscal multipliers can be lower in more open economies, as the negative effect on aggregate demand is diluted through the trade channel (Cugnasca and Rother 2015). Given that the sum of imports and exports as a share of Welsh GDP is likely to be high, this would probably apply in the Welsh case. The economic literature also suggests that the composition of fiscal consolidation matters. Cuts to government consumption and investment are associated with higher fiscal multipliers than tax increases and reductions in transfers (Gechert and Will 2012). This suggests that increasing tax revenues may be less harmful for the Welsh economy than reducing public spending.

There have been instances of countries recording economic growth during a time of fiscal consolidation. Giavazzi and Pagano (1990) introduced the idea that severe fiscal contractions could be 'expansionary', taking the two examples of Denmark and Ireland in the 1980s, while Alesina and Perotti (1995) provided evidence from a panel of OECD countries. This 'expansionary fiscal contraction' hypothesis briefly gained renewed attention in the work of Alesina and Aragna (2009). However, the hypothesis has been disputed

by numerous other studies (Guajardo, Leigh and Pescatori 2011). Periods of economic growth coinciding with fiscal consolidation are likely to be very context specific. Perotti (2011) analyses the case study of four small countries which undertook fiscal consolidation policies in the 1990s (Denmark, Finland, Ireland and Sweden). Countries sustaining fiscal improvement were those benefitting from strong external demand, allowing offsetting growth in exports.

Recent European history has shown that fiscal policy and fiscal sustainability cannot be considered in isolation from a country's currency arrangements. It is therefore necessary to consider the currency options available and their implications; to a large degree, the choice would likely determine the economic governance of an independent Wales. The options for Wales closely match those of an independent Scotland, the benefits and negatives of which were widely discussed before and after the 2014 independence referendum (Armstrong and Ebell 2014; Dalzell 2018) Realistically, there would be three obvious currency options for Wales post-independence, each with different trade-offs:

- The government of an independent Wales could choose to continue to use sterling in an informal currency union or in a monetary union. An informal currency union would not necessarily require the agreement of the authority issuing the currency (in this case, the Bank of England);
- Another option would be to use the Euro, again either by applying for Eurozone membership or by way of an informal currency union (for example, Montenegro uses the Euro without being an Eurozone member) or
- The government of an independent Wales could issue its own currency, with either a floating or fixed/pegged exchange rate.

The main trade-off in choosing the currency option would be between minimising exchange costs to support transactions across the border versus the scope for setting independent economic policy.

Obviously, the currency option that would minimise transaction costs and disruption to existing contracts would be to continue to use sterling. It could be argued that maintaining prices of goods and services in Wales and the rest of the UK after independence would maintain and promote competition and trade. Due to the greater importance of Welsh trade with the rest of the UK compared to trade with the European Union, the trade benefits of maintaining sterling would probably outweigh those of adopting the Euro.<sup>16</sup>

The downside of continuing the use of sterling would be having very little or no say over interest rates and exchange rates as policy tools and adjustment mechanisms. This would be the case if the government of an independent Wales simply chose to use sterling as its legal tender without needing any formal permission from the UK government. Prior to the 2014 Scottish independence referendum, the Scottish Government suggested a formal monetary union between Scotland and the continuing UK, either by creation of a supranational central bank with the Bank of England and a Scottish central bank as members, or through a joint ownership and governance structure of the Bank of England based on population. In the case of Wales, assigning voting rights based on population would mean a one-sided monetary union. In either case, Wales' say over monetary policy would be negligible. Furthermore, in a

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<sup>16</sup> As an EU member, an independent Welsh state would be required to commit to joining the euro at some unspecified future date. This process would involve meeting the Maastricht convergence criteria on monetary and fiscal conditions, requiring a stable currency in an ERM II framework for at least two years before joining the union. This would therefore probably require Wales having its own currency for two years (as argued for in the case of Scotland by Armstrong and Ebell 2014).



formal currency union, the UK government would likely require strict and binding limits on Wales' fiscal policy, to avoid the moral hazard of the possibility of the UK government having to bail-out an independent Wales. The same would be true in the case of using the Euro.

The lack of policy control for a country using the currency of another country is best illustrated in the case of an economy which is hit by a negative economic shock which reduces tax revenues and/or increases spending. As part of the UK, adjustment and stabilisation to such circumstances in Wales has, over decades, mainly been achieved through fiscal transfers. Such fiscal transfers usually require political union, which would end after independence. Adjustment to such shocks for independent countries can be made through any combination of fiscal and monetary policy measures and allowing for the currency to adjust. When a country uses the currency of another country – or has insufficient say over the policy of a monetary union – the whole adjustment must be made through fiscal policy. These countries have no access to inflation finance, for example through central banks using seigniorage to fund government spending. The money supply can only increase if matched by a change in the value of foreign currency assets, which involves a country running a balance of payments surplus (which as explored in **Chapter 2** is currently far from being the case for Wales). There are many examples of indebted countries in currency unions, without the ability for monetary and exchange rate adjustment, that have endured destructive feedback loops and eventual severe recession (Armstrong and Ebell 2014).

Alternatively, a country with its own currency can stabilize its debt by either reducing the fiscal deficit or by printing money, as long as this does not create (too much) inflation. A Welsh currency therefore brings the greatest degree of autonomy and flexibility over economic policy. As expressed by the Fiscal Commission Working Group (2013, 11) in the case of Scotland, “in the long run, the creation of a new Scottish currency would represent a significant increase in economic sovereignty, with interest rate and exchange rate policy being two new policy tools and adjustment mechanisms to support the Scottish economy”. Given the likely inherited fiscal position of an independent Wales, and the scale of the adjustment required, the added flexibility over monetary policy and exchange rate adjustment strengthens the case for the introduction of a Welsh currency. This is particularly true if Wales inherits a relatively large share of public debt at the point of independence and the debt-to-GDP ratio increases rapidly after that.

This is not to say that the transition to a new Welsh currency would be costless, nor would it negate the need for fiscal consolidation after independence. First, it would require substantial investment in new institutions, including a payments system and local currency capital markets. Central banks which issue their own currency also play a role in supporting financial stability. The banking system of an independent Wales would likely resemble that of New Zealand, where most banks are headquartered outside of the country.<sup>17</sup> This would ease the regulatory burden and remove a potential fiscal liability that the government of an independent Wales could not afford. A redenomination law would be required to change most existing financial assets into a new currency.

Second, a newly independent country with no track record and substantial debt levels would need to earn credibility that the greater autonomy and flexibility will be used appropriately. This would involve providing reassurance that the government of an independent Wales would eventually intend to reduce

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<sup>17</sup> New Zealand's banking system is dominated by four big Australian lenders – Australia & New Zealand Banking Group Ltd., National Australia Bank Ltd., Westpac Banking Corp. and Commonwealth Bank of Australia – which together hold around 90% of deposits.

its debt burden by repayment rather than devaluation, to avoid an increase in borrowing costs associated with exchange rate risk. Armstrong and Ebell (2014, 2013) argue that in the case of Scotland, monetary and fiscal policy would therefore need to be similar under the various options. That said, the slight exchange rate risk may be much lower than a potential expensive credit risk associated with countries without their own currency. A small open economy in transition after independence would probably benefit from exchange rate certainty, for example through a link to another currency (probably sterling), to avoid the risk of capital flight during the transition period. However, this would require sufficient foreign reserves – an inherited share of the UK government’s net foreign reserves would likely not be enough, and Wales’ current estimated balance of payments position suggests they would be difficult to accumulate.

The option of a new Welsh currency also involves the highest transaction costs for trading, investing and spending across the border. However, the effect of common currencies on trade and welfare are perhaps not as strong as commonly thought. Santos Silva and Tenreyro (2010) found that adopting the Euro did not have a significant effect on trade compared to other EU and EEA countries which did not. Perhaps a relevant case study for Wales is the experience of Ireland ending the Irish pound link to sterling in 1979. Thom and Walsh (2002, 112-123) conclude that ending the link “did not slow the growth of Irish trade with Britain to any significant effect”. There is therefore reason to believe that the increased costs to trade from a new currency would probably be outweighed by the welfare costs from the absence of exchange rate and monetary policy adjustment mechanisms.

The optimal currency area (OCA) framework proposed by Mundell (1961) provides another way of assessing the alternative currency options. There are three criteria associated with optimal currency areas: first, common economic cycles in both countries so that monetary policy fit both countries; second, wage and price flexibility; and third, labour and capital market mobility. Kenen (1969) noted that in the absence of these conditions, common fiscal policy can support demand in different regions and offset imbalances when they occur. Wales’ long-standing relative economic decline as part of the UK monetary union suggests that Wales and the rest of the UK would not constitute an optimal currency area in the absence of fiscal transfers.

The choice of currency for an independent Wales would be a political choice, balancing the transition and transaction costs with the increased control over economic policy which a new currency could provide. In each case, the government of an independent Wales would need to put in place a credible plan to adjust from the currently unsustainable position it would inherit. Under any arrangements, Wales’ fiscal and estimated balance of payments deficit would need to be addressed. Whether that economic adjustment is made through fiscal policy only, or through a mixture of fiscal, monetary and exchange rate adjustment, it would probably ultimately require lower consumption of goods and services in Wales than is currently the case.

### **4.3 Could public sector revenues be increased?**

As discussed in **Chapter 2**, lower revenues are the primary driver of Wales’ relatively worse fiscal position compared to the rest of the UK. The Welsh Government already has powers to introduce new taxes in certain areas subject to UK government approval. However, under the current fiscal setup, increased

revenues from new taxes would necessarily be matched by an equivalent increase in spending and thus would not reduce the overall size of the fiscal deficit.

As an independent state, Wales would have full control over tax levers and could *potentially* use currently untapped revenue streams to increase public sector revenue and reduce the size of the fiscal gap. In this section, we briefly assess the viability of some of these proposals.

### 4.3.1 Taxes or levies on energy exports

A report published by *Regen* on behalf of the Welsh Government estimated that in 2018, Wales generated 30.2 TWh of electricity, around twice what it consumed (14.9 TWh) (Welsh Government 2018, 4). Energy generated over and above the amount consumed in Wales is exported to England, Ireland and the wider European network. Electricity generation in Wales fell by around 7% between 2017 and 2018. This is largely accounted for by an 83% reduction in Aberthaw's generation over the same period. Operations at this power plant are expected to cease completely in March 2020.

Under current arrangements, Wales is part of a fully integrated Great Britain energy market in both natural gas and electricity.<sup>18</sup> A single system operator – National Grid – and a single regulator – the Office of Gas and Electricity Markets (OFGEM) – are responsible for managing supply and demand across GB and ensuring that the energy markets remain competitive. Generally, energy generators sell electricity produced by their power plants on the wholesale market and energy suppliers buy this electricity to sell on to consumers.

Because of the way the energy market is set up, with suppliers operating across GB, it is difficult to envisage how a tax or levy on energy exports from Wales could be imposed without undermining the integrity of this integrated market. The Scottish Government has expressed its wish for continued participation in the GB-wide market for electricity and gas post-independence, “reflecting the integrated transmission networks between Scotland and the rest of the UK” and “in line with the trend of increasing integration of energy markets across Europe” (Scottish Government 2013, 295).

Even if Wales were to exit the energy single market and impose charges on energy exports, it is unlikely that much additional revenue could be raised. In 2018, Wales generated 15.3 TWh more electricity than it consumed. In the same year, the average price for a MWh of electricity based on day-ahead baseload contracts was £58.<sup>19</sup> Day ahead baseload contracts are only one measure of the price of electricity as suppliers often buy their electricity months or even years in advance of when it will be delivered, therefore this is not a reliable indicator of the actual price paid. Nevertheless, assuming that all electricity transfers out of Wales had been purchased at this market price, this would have sold for around £890 million on the wholesale market. It is fair to assume that the remaining UK would not pay significantly more than the market price for the energy in question given that they have plans for more interconnectors with Europe. Indeed, a report published by the UK government before the Scottish referendum noted that “the decision to import energy from an independent Scottish state would be taken on a commercial basis” and that the remaining UK would be “unlikely to pay more than the market

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<sup>18</sup> For a number of reasons, including geographic proximity, Northern Ireland is part of a shared energy market with the Republic of Ireland.

<sup>19</sup> Historical day-ahead baseload contract prices are available here: <https://www.ofgem.gov.uk/data-portal/electricity-prices-day-ahead-baseload-contracts-monthly-average-gb>

price” for that energy (HM Government 2014). A levy on exported energy sales could yield, *at most*, a couple of hundred million pounds, a fairly small share of Wales’ fiscal deficit.

Perhaps more problematically for this proposal, a European Court of Justice ruling from December 2018 found that Slovakia could not charge for the export of energy to member states as it would have an equivalent effect to a customs duty and contravene the principle of free movement of goods. The court also ruled that since member states have committed to conduct a common commercial policy, a member state cannot unilaterally impose a charge on exports to *non-member states* that has the equivalent effect to a customs duty (Court of Justice of the European Union 2018). If an independent Welsh state was a member of the European single market, this would likely constrain its ability to impose a tax or levy on energy exports.

This is not to say that there are no advantages to Wales of having greater autonomy over its energy policy and the wider sector. An independent Welsh state would have the option to develop new models of community ownership to ensure that Welsh citizens benefit from energy generation. One of the proposals highlighted in the *Scotland’s Future* report published by the Scottish Government (2013) involved re-investing proceeds from North Sea oil for the long-term benefit of future generations. It would also allow Wales to press ahead with large energy projects (>350MW) without having to secure consent from the UK government. However, it is unlikely that energy exports could provide a large-scale revenue stream for an independent Wales.

#### **4.3.2 Taxes or levies on water exports**

For historical reasons, the export of water from Wales to England is a politically charged topic. Under current arrangements, two water utility companies, Severn Trent Water and United Utilities Water require an abstraction license to pump water out of Wales. Utility companies pay an abstraction fee for this license which is calculated using many variables including where the water originates, its end use and the season of the year.

A 2018 article by the BBC reported that Welsh Water has a license to abstract 133 billion litres of water a year from Elan Valley reservoirs to supply Severn Trent customers and that United Utilities can take 110 billion litres of water a year from Lake Vyrnwy and the River Dee to serve its customers in Merseyside and the surrounding region (Frampton 2018).

The decision made by England on whether to continue importing water from Wales post-independence would presumably be made on a commercial basis. If current water transfers from Wales to England are to continue, the cost of doing so must be lower than the cheapest alternatives in the medium to long term. Possible alternatives could include the construction of desalination plants on the English coast, diverting water from reservoirs in the North of England or even importing water from other countries, including Scotland. It is beyond the scope of this report to estimate the cost of these alternative proposals but to take desalination as one example, estimates of current costs for desalinating seawater using high capacity plants range from \$0.50 to \$1.60 USD per cubic litre (Karagiannis and Soldatos 2008, 450). Even when we consider the upper end of this range, the yearly cost of desalinating the same volume of water exported from Wales to England would amount to just over £300 million. Of course, the construction of desalination plants would need to be accompanied by large-scale (and costly) infrastructure projects for transporting water to inland regions. However, if the UK government considers ensuring an adequate

supply of fresh water a matter of national security, it is likely that there would be political will to find a solution. Potential revenues from any levy or tax on water exports are therefore unlikely to place a big dent in the size of the fiscal deficit.

As was the case with energy exports, if Wales was part of the European single market, a decision to impose a tariff on water exports could be subject to a (potentially successful) challenge in the courts. More generally, it is worth recognising that an orderly departure from the United Kingdom would require good will on both sides of the negotiating table to secure the most mutually beneficial agreement.

Although the Welsh economy has historically relied on the export of natural resources such as coal, slate and copper, abundance of natural resources is less a measure of a nation’s wealth in today’s service economy. Of course, it is possible that as the climate emergency unfolds, the value and strategic importance of having fresh and abundant water supply will grow. The former Vice President of the World Bank Dr Ismail Serageldin is famously quoted as saying that the wars of the 21<sup>st</sup> Century will be fought over water. However, as it currently stands at least, exporting energy and water are unlikely to be a material source of revenue for an independent Welsh state.

**4.3.3 Taxes on currently illicit goods and services**

Since 2014, the UK has included sex work and illegal drugs in its national accounts and the value generated by these markets have been included in GDP estimates. The ONS publishes experimental statistics on consumption of narcotics and sex work broken down by country and region of the UK.

Figure 4.9 presents estimated final consumption expenditure on narcotics and sex work in Wales for each year from 2009 to 2016.

**Figure 4.9**  
Estimated final consumption expenditure on narcotics and sex work in Wales, 2009 to 2016

£ million	2009	2010	2011	2012	2013	2014	2015	2016
Narcotics	334	253	354	279	251	217	216	206
Sex work	206	213	218	223	228	234	243	230

Source: ONS (2016) Regional Household Final Consumption Expenditure.

In 2016, approximately £436 million was spent on narcotics and sex work in Wales. This sector of the economy does not officially generate tax revenue but it is likely that significant amounts of revenue arising from these activities are funnelled through the accounts of legitimate businesses and taxed accordingly in what is known as a money laundering process. If the sale of these goods and services was legalised, there may be a case for levying a higher rate of VAT or requiring sellers to purchase permits or licenses which could lead to higher tax revenues.

There is some international precedent for legalising and taxing some elements of the narcotics market. As of mid-2019, Uruguay, Canada and eleven US states have legalized the sale of recreational cannabis. In several other countries, such as Spain and the Netherlands, the sale of cannabis is tolerated at licensed establishments. There is also some international precedent for the legalisation and regulation of sex

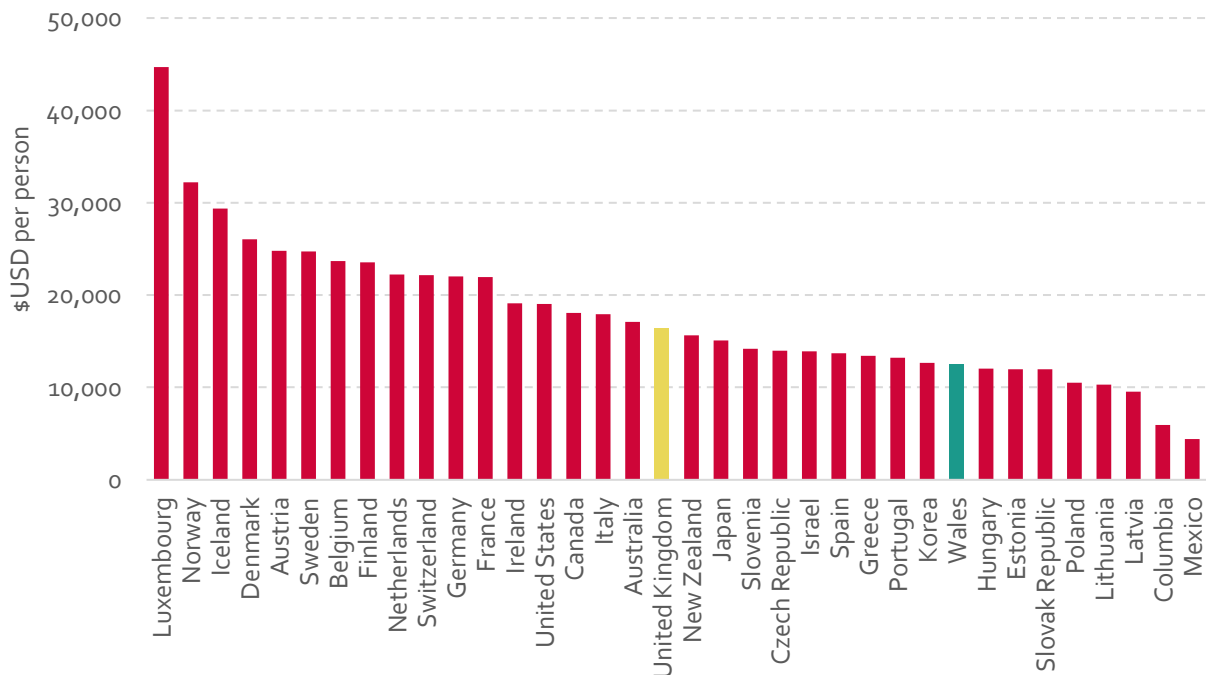
work. The list includes several European countries including Germany, Denmark, the Netherlands and Austria. Of course, the decision whether to legalise sex work or narcotics would *first and foremost* need to be driven by considerations of the impact on the welfare of those affected and only afterwards should the economic assessment be considered. Although we do not offer an indication of how much revenue could be raised by legalising and regulating these goods and activities, based on the consumption expenditure estimates outlined above, it is likely that any potential revenue from new taxes would again be around two orders of magnitude smaller than the size of the fiscal deficit.

#### 4.3.4 Tax design for an independent Wales

The proposals assessed so far would generate only a limited amount of additional tax revenue. In order to raise the substantial amounts required to make some headway towards closing the fiscal gap, it is likely that wholesale reform of the tax system would be required. Up until now, we have assumed that an independent Wales would retain the UK tax code and used this as a basis for calculating the fiscal deficit. Of course, an independent Wales would be free to set its own tax-and-spend policies. It is these decisions that would ultimately determine the size of the deficit, and indeed, whether it exists at the point of independence.

As has been previously established, the current fiscal deficit is largely the result of lower revenues. Therefore, this section briefly outlines some considerations that may impact the design of an optimal tax system for an independent Wales.

**Figure 4.10**  
Total revenues of OECD countries (\$USD per person)



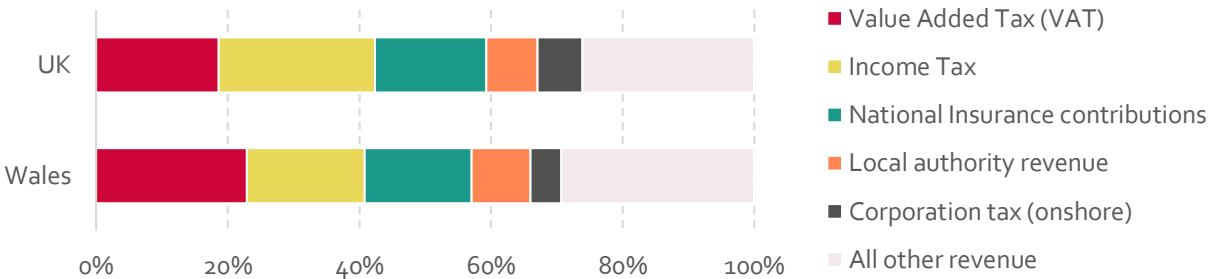
Source: OECD (2016) General Government Estimates and authors' calculations. See Annex A of GERW 2019 for full methodology.

As illustrated in **Figure 4.10**, revenues raised per head in Wales are significantly lower than the Euro average and are among the fourth quartile of OECD countries. Based on this measure, Wales could raise an additional £4.7 billion in tax each year just to meet the average among Eurozone countries. The UK also raises considerably less tax than most Euro-area countries. A recent report by the Institute for Fiscal Studies (Conte, Miller and Pope 2019) attributes this to the fact that Income Tax and Social Security Contributions (SSCs) tend to be higher in European countries with a higher tax take. This report also found that these countries tend to generate more revenue by imposing higher tax rates across the income distribution and not just on the highest earners (Conte, Miller and Pope 2019, 22).

In advanced economies, most tax revenue is collected from taxes levied on income, earnings and consumption; Wales is no exception to this rule. **Figures 4.11** illustrates the share of total revenue raised by source for Wales and the UK in 2018–19.

In 2018–19, Income Tax, National Insurance Contributions and Value Added Tax collectively accounted for £16.8 billion or 57.0% of total revenues to Wales. Although Income Tax has historically been the single largest source of public revenue in Wales, more recently this has been surpassed by Value Added Tax (VAT), which at £6.7 billion, accounted for 22.9% of all current revenues in 2018–19. On the other hand, Income Tax is the largest source of revenue for the UK as a whole, raising 23.7% of total revenues in 2018–19.

**Figure 4.11**  
Main revenues as % of total current (onshore) revenue: Wales and UK, 2018–19



Source: ONS (December 2019) Country and Regional Public Sector Finances and authors' calculations

The Welsh tax base markedly differs from the UK as a whole and this would be a crucial consideration when designing the optimal tax system for an independent Wales.<sup>20</sup> **Figure 4.12** records the share of the population aged 16 and over in each tax band during the 2018–19 financial year for Wales and the UK.

Nearly 46% of the population aged 16 and over in Wales pay no Income Tax at all because their earnings are below the personal allowance threshold. This is considerably higher than the equivalent figure for the UK at 41.5%. The explanation for this discrepancy is two-fold. First and foremost, people in Wales tend to earn less than the UK average. Second, a relatively larger share of the Welsh population have reached retirement age, when income tends to be lower. In the past, Wales' lower economic activity rate would

<sup>20</sup> The key features of the Welsh tax base are explored in-depth in a report by (Ifan and Poole 2018).

have also played a role in explaining this difference. However, in recent years, economic activity in Wales has nearly converged with the UK average.

On the other end of the scale, the proportion of the taxpayers who are higher rate or additional rate payers is significantly lower in Wales (4.8%) compared to the UK as a whole (8.7%).

Under current fiscal arrangements, responsibility for setting the personal allowance and tax thresholds lies with the UK government.<sup>21</sup> It could be argued that having complete control over its own tax levers would allow Wales to design a tax system more suited to Wales' income distribution.

**Figure 4.12**  
Population shares by Income Tax band, 2018–19

Income Tax Band	Wales	UK
Non-taxpayers	45.7%	41.5%
Basic rate <sup>22</sup>	49.5%	49.9%
Higher rate	4.6%	7.9%
Additional rate	0.2%	0.8%

Source: HMRC (2019) Number of taxpayers by country; ONS (2019) Mid-year population estimates 2018 and authors' calculations.

Although the mean and median income in Wales is lower than for the UK as a whole, there is less difference between the two countries according to measures of relative wealth. Net wealth captures the value of an individual's fixed assets (e.g. land or property), minus any liabilities (e.g. short-term loans, mortgages). Higher rates of homeownership in Wales compared to the rest of the UK may explain some of this difference. There is some international precedence for taxing an individual's net worth (wealth); however, many European countries have moved away from this approach in recent years.<sup>23</sup>

Until 2018, France imposed a wealth tax on its citizens with total taxes capped at 75% of an individual's income. This was abolished and replaced by a tax on real estate in 2018. Wealth taxes have also been proposed by several candidates seeking the Democratic nomination during the 2020 US presidential campaign (Rogers and Gal 2019). Proponents of wealth taxes emphasise their ability to reduce disparity in wealth holdings (Piketty 2013). They could also be conducive to intergenerational fairness given that the average young person today faces significantly more barriers to home ownership than generations before them (Office for National Statistics 2015). However, wealth taxes are not without their critics. It was reported that the introduction of the Annual Solidarity Payment in France led to capital flight as millionaires left the country (M. Moore 2016). When not properly designed, a wealth tax could be burdensome on low income households who own their house outright but lack the liquidity to pay the tax owed on the value of their fixed assets. In any case, France's Annual Solidarity Payment constituted only 1.5% of total tax receipts and there is no international precedent for a significant share of total revenues to be raised from taxes levied on wealth (Cahssany 2017).

<sup>21</sup> Since 2019–20, the Scottish Government has had powers to adjust Income Tax thresholds and introduce new tax bands.

<sup>22</sup> This figure includes people whose only taxable income is from savings.

<sup>23</sup> Finland, Luxembourg, Sweden and, less recently, Germany are among some European countries that have discontinued their wealth tax.



Any decision to change the tax rates in an independent Wales would need to be balanced by several other important considerations. Depending on border arrangements post-independence, Wales' geographic proximity to England could constrain Wales' ability to substantially increase tax rates.

It is not unreasonable to assume that if there was a substantial difference between the way the tax regimes in both countries treat income and earnings then, *ceteris paribus*, there would be an incentive for people to switch their tax residency to the lower taxed jurisdiction. Given that 90% of Wales' population live within 50 miles of the English border, any resultant behavioural effect could be substantial (Ifan and Poole 2018, 56). This effect may be more muted if higher tax rates were accompanied with enhanced or better-quality public services. In this case, individual agents would assess the trade-off between higher taxes and better or more enhanced public services based on their personal set of preferences.

Cross-border mobility would not only affect the optimal tax rate on earnings and income, it could also play a significant role in determining the optimal rates for other taxes as well. Lower VAT rates in one jurisdiction would generate an incentive for residents of the other jurisdiction to make their high value or highest taxed purchases where VAT rates are lower. Wales may have a stronger reason to reduce VAT given that more people live on the English side of the border; it would therefore have more customers to gain by undercutting England than England had to gain from undercutting Wales.<sup>24</sup> Clearly, this would apply to other taxes such as fuel, tobacco and alcohol duties as well. The UK currently has relatively high levels of alcohol and tobacco duties by European standards, perhaps in part because mainland Great Britain does not share a tax border with another tax jurisdiction.<sup>25</sup>

The UK Corporation Tax rate is one of the lowest in Europe, and yet, as a share of GDP, revenues are in line with the average among other European countries (Conte, Miller and Pope 2019, 11). Corporate profits are a very mobile tax base since they are not necessarily taxed in the same jurisdiction as business operations take place. Wales' smaller size may give it a stronger reason to reduce tax rates if a given reduction would attract more tax base from third countries, as a fraction of Wales' existing tax base than for the UK as a whole.<sup>26</sup>

Inevitably, this raises the prospect that independence could facilitate a "race to the bottom" scenario whereby both countries seek to undercut each other's rates in a bid to make their own country a more attractive place for inward investment. Indeed, a report on taxing an independent Scotland concluded that this was one of the reasons why the optimal tax rates in an independent Scotland would likely be lower than what would otherwise be the case if Scotland remained a part of the UK (Adam, Johnson and Roantree 2014, 344). Of course, this would partly depend on border and customs arrangements between the two countries post-independence.

Supposing that an independent Wales secures an arrangement with England that ensures free movement of people, similar to the Common Travel Area that currently exists for British and Irish

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<sup>24</sup> This observation stems from a point made in a paper considering the optimal tax system for an independent Scotland (Adam, Johnson and Roantree 2014)

<sup>25</sup> The Scottish Government introduced minimum pricing laws on alcohol in 2018, however, it does not have powers to set different rates for alcohol duties.

<sup>26</sup> As an example, one estimate suggests Ireland collects 65% of its corporate tax receipts by artificially attracting profits from higher taxed countries. See: <https://missingprofits.world/>

citizens, Wales may have to balance two counteracting forces when designing a tax system.<sup>27</sup> On the one hand, there would almost certainly be pressure to increase revenues if current levels of spending are to be sustained and a balanced budget is to be achieved. On the other hand, the optimal tax rates for Wales may be lower than those for the UK as a whole due to competition between the two countries to attract the most mobile tax bases. In this case, an independent Wales may have little choice but to target tax rises on less mobile tax bases such as land and property and away from the more mobile tax bases such as corporate profits.

In one paper assessing the initial fiscal position of an independent Scotland, the UK's tax gap was identified as an area where additional revenue could be raised (Dalzell 2016, 4). The tax gap refers to the difference between what should, in theory, be paid to HMRC and what is actually paid in tax. It is claimed that by redesigning the tax system from the ground up, this would provide an opportunity to eliminate some of the built-in inefficiencies, loopholes and exceptions that currently exist in the UK tax code. In 2017–18, estimates provided by HMRC suggest that the UK tax gap was around 5.6% of total revenue, roughly equating to £35 billion (HM Revenue & Customs 2019, 3). Taking Wales' share of total UK revenue (3.6%), this implies that the notional tax gap in Wales for this year was around £1.25 billion. In practice, Wales' tax gap could be considerably less than this given that Corporation Tax accounts for a disproportionate share of the tax gap and the fact that this tax accounts for a significantly smaller share of Wales' tax base.

However, it is important to stress that the UK's tax gap is comparatively small by international standards and has reduced considerably in recent years. Moreover, it is virtually impossible to eliminate the tax gap altogether as there will always be some scope for incorrect filing, avoidance or evasion in even the best designed tax systems. There may be instances where it is impossible to collect tax that is owed even if it has been identified by the relevant authorities; for instance, it is not possible to collect outstanding taxes from businesses that have since become insolvent. Any claim that significant amounts of revenue could be raised from closing or eliminating the tax gap ought to be subject to scrutiny.

Although it is beyond the scope of this paper to identify specific policy proposals for increasing revenues, it is worth highlighting one example where UK tax policy design has impacted on revenues collected in Wales. Since 2010, successive UK chancellors have abandoned the planned fuel duty escalator by repeatedly cancelling planned inflationary increases in fuel duty, at a total cost of around £9bn a year to the Exchequer (Adam and Waters 2018, 168). Given that Wales raises close to its population share in Fuel Duty, this equates to £430 million a year for Wales. An independent Wales government could decide to reverse this policy, recouping some of this foregone revenue. Of course, this could lead to unintended behavioural consequences with people in Wales travelling across the border to purchase fuel and availing from cheaper prices. One could also reasonably question whether it is sound economic policy to build a reliance on a source of revenue that is raised from an activity that the government actively seeks to curb.

The current fiscal deficit is largely the result of UK government policy. The fiscal deficit of an independent Wales would depend on tax-and-spend policy decisions made by the government of an independent Wales. There is scope for Wales to increase tax revenues and remain in line with the Euro area average but there is some evidence to suggest that optimal tax rates could be lower in an independent Wales,

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<sup>27</sup> The Common Travel Area facilitates free movement between the UK, Ireland and the Crown Dependencies (Jersey, Guernsey and the Isle of Man). Irish citizens can work, study, access welfare benefits and health services in the UK and vice versa.

particularly when the tax base is more mobile. It is also important to recognise that an increase in tax rates would reduce the income and wealth of Welsh consumers and businesses. If there was a significant increase in the median salary level in Wales, it might be possible to substantially increase revenues without having to increase tax rates, but this would require a fundamental change in the health of the Welsh economy. The next section considers the longer-term prospects for the economic performance of an independent Welsh state.

## 4.4 What could be Wales' economic performance as an independent country?

It is impossible to predict the future economic performance of an independent Wales. It is however briefly worth considering some international evidence examining the effects of state separation on a newly independent country's economic performance. Necessarily, none of the historical examples cited are a perfect reflection of how the economy of an independent Wales might perform. After all, it is often difficult to isolate the effects of state separation on economic growth from the broader historical and political context in which the process took place. Nevertheless, this section highlights some additional considerations to take onboard when thinking about what Wales' economic performance might look like beyond the first day of independence.

There is evidence in the literature to suggest that, in some cases, declaring independence can significantly lower per capita GDP. The breakup of Yugoslavia led to significant welfare losses for the emerging countries, although this was largely due to the process through which independence was achieved as opposed to its mere fact (Rodríguez-Pose and Stermšek 2014). This chimes with research in the political science literature which emphasises that independence often involves some degree of military conflict (Spolaore 2008).

However, even if state separation is a peaceful process, this does not necessarily protect newly independent countries from any shock to GDP. Although the breakup process was relatively peaceful, disrupted trade links meant that the fall in output experienced in the countries that emerged from the dissolution of the Soviet Union were as large as those experienced in former Yugoslavia (Suesse 2018). A study based on a large panel of countries covering the period 1950–2016 found that 30 years after newly formed states declared independence, their GDP levels were 23% below those of countries which most closely resembled their economic situation prior to independence (Reynaerts and Vanschoonbeek 2018, 14). Not only can state separation trigger economic shocks, this paper suggests that the effects of these shocks can be long-lasting.

On the other hand, there is evidence to suggest that as international economic integration increases, the benefits associated with having a larger population diminishes (Alesnia, Spolaore and Wacziarg 2005, 1513). Indeed, in a paper titled "The Flotilla Effect", smaller nations were identified as having four core advantages compared to their more populous counterparts (Price and Levinger 2011). First, they naturally tend to be more export-oriented than larger countries which in turn means they are more able to benefit from trade expansion, pursuing specialization in niche markets and internationalizing their businesses. Second, they tend to have stronger social cohesion, generally because of less ethno-linguistic division, which leads to more effective governance. Third, since smaller countries are generally more vulnerable to exogenous shocks, they tend to be better at adapting or implementing structural reform.

Fourth, smaller countries usually have larger governments which means that the government can act as a natural stabiliser in times of economic tumult. The authors of the paper claim that this results in a kind of socially inclusive supply-side economics, best exemplified by the Nordic countries.

The Sustainable Growth Commission set up by the Scottish Government heralded the virtues of small advanced economies citing data by the IMF showing that they have outperformed larger ones by around 0.7 percentage points per year over the last 25 years (The Sustainable Growth Commission 2018, A2 29). Among some of the reasons identified as playing a key role in their better performance were higher levels of labour productivity growth, an external environment that is supportive of small countries' performance and domestic characteristics that make smaller countries more resilient and adaptable. However, Cuthbert (2018) argues that the commission made a mistake by focusing on their ideal group of twelve small advanced countries in their current form and assuming that their current policies are what led them to their present status.

The long-term economic performance of an independent Wales is unknown. Although there is some evidence to suggest that small advanced European economies have outperformed their more populous counterparts in recent years, being a small independent country is not a sufficient condition for strong economic growth. Based on international evidence, it is quite possible that state separation could trigger an economic shock. Much would depend on the policies and governance of an independent Wales, in addition to the wider context in which state separation took place. What does seem clear is that if Wales were to capitalise on some of the purported benefits of being a small country in a globalised world, it would likely have to adopt an economic model characterised by trade openness. Beyond this, the question of whether Wales could outperform its current economic performance if it followed a different trajectory is inconclusive.

Lastly, it is worth pausing to reflect on the way economic performance is measured. In economic and political circles, GDP continues to be used as an indicator of social welfare (van den Bergh 2009, 117). This usage has come under increasing scrutiny in recent years as many alternative measures of social welfare have been put forward (Charles Jones and Klenow 2016; Fleurbaey 2009). Last year, for the first time, New Zealand based its budget on a measure of gross national well-being (Samuel 2019). In another line of research, some scholars have advocated for sustainable degrowth in response to the climate emergency, thereby challenging the premise underlying the current economic paradigm that "more is better" (Kallis 2011; Martínez-Alier et al. 2010). Under the current fiscal framework, Wales is bound to keep up with economic growth in England or risk losing out as a result of tax devolution. As an independent country, Wales would have increased flexibility when deciding what ought to constitute a desirable economic outcome.

## 4.5 Conclusion

Wales' current fiscal and economic position as part of the UK presents clear challenges to supporters of independence. This chapter has attempted to highlight the key questions surrounding the fiscal and economic implications of independence. The end of a political union with the rest of the UK would entail the end of fiscal transfers. While the inherited fiscal position of an independent Wales may be different from that presented in the GERW report, independence would likely require wide-ranging changes to current tax and spend policies. The key challenge for supporters of independence revolves around how

Wales transitions after becoming independent. Choices surrounding future fiscal and monetary policies would influence the type of economy and society an independent Wales would create. Enhanced discussion around independence should coincide with a wide-ranging debate about what type of economy Wales ought to have.

Keating and Harvey (2014) identify two economic models which small European states have adopted in the face of globalisation and other changes. Firstly, they outline the 'market-liberal mode', involving low personal corporate taxes, light regulation of labour and markets, small government and a residual welfare state. They contrast this with a 'social investment state', associated with Scandinavian economies, in which the role of the state is much more prominent and instrumental. Either strategy would involve specific choices on 'internal institutions, social relationships and modes of policymaking'. From Wales' current economic and fiscal position, achieving the former would likely entail large-scale cuts to already-stretched public services or to social security. Moving towards the latter would likely involve substantially increased tax rates.

However, there are also challenges for those who believe in staying a part of the UK – it bears consideration that the economic and fiscal risks of staying a part of the UK are perhaps greater than ever. The eventual outcome of the Brexit process is uncertain, and most economists agree that a failure to secure a comprehensive trade deal at the end of the transition period would have a major negative effect on the economy and public finances. Apart from this obvious uncertainty, overall economic growth since the great recession has been dire, and median weekly wages for Welsh employees remain below their pre-recession peak in real terms. The last nine years have seen the longest sustained period of public spending restraint in UK history and, as a result, the Welsh Government faces nearly two decades of no growth in its day-to-day spending on public services, after accounting for inflation and population growth. The extent to which the UK government will respond to the increased need for public spending arising from demographic changes and future pressures remains uncertain.

The fiscal transfer that Wales receives from the rest of the UK currently allows a higher level of consumption of goods and services than is currently produced in Wales. However, these fiscal transfers are not currently paying for investments in our infrastructure that would enable a turn-around in the relative performance of the Welsh economy and our fiscal position. Fiscal transfers are no longer delivering a compassionate and enabling social security system for everyone in Wales. After a decade of austerity policies, fiscal transfers are not currently ensuring comprehensive and sustainable public services. A key challenge for those who want Wales to remain a part of the UK revolves around the likelihood of Wales' current economic, fiscal and social problems being alleviated under current constitutional arrangements.

If these things were a priority for an independent Wales, this would come at a cost and would likely require a reduction in imports and lower levels of consumption of goods and services. This may prove to be a difficult political sell, but could open the possibility of transitioning to a more sustainable, equitable and – perhaps eventually – a more prosperous economy.

# A Methodology

## Estimating and forecasting Welsh GDP

Gross Domestic Product (GDP) measures the value added in the production of goods and services within a country's borders before providing for capital consumption (depreciation). By controlling for the size of the economy, these statistics can illustrate the relative size of fiscal aggregates between countries and between different years. Historically, there have been no official GDP estimates produced at a sub-national level in the UK. When compiling GERW, Welsh GDP has been estimated based on already available data on Welsh Gross Value Added (GVA). GVA is equivalent to GDP less taxes, plus subsidies on products. Our previous methodology for estimating Welsh GDP effectively assumed that Wales' share of UK taxes less subsidies on product equated to the Welsh share of UK GVA.

Since the publication of GERW in July 2019, new country and regional GDP estimates have been produced by the ONS using company VAT returns to estimate the value of taxes and subsidies. In 2017–18, these estimates suggest that Welsh GDP was £2.4 billion higher than the estimate used in the latest iteration of GERW. Throughout this report, we have used the new ONS estimates of Welsh GDP. The modest improvement in Wales' fiscal balance, when expressed as a share of the economy, can be partly attributed to this upward revision of Welsh GDP estimates.

Unless otherwise specified, GDP figures have been converted and are presented on a financial year basis. Projections for later years are calculated by assuming that per person growth in Welsh GDP tracks per person growth in forecast UK GDP.<sup>28</sup>

For transparency, the table below sets out the GDP estimates used in this report and the estimates used when compiling GERW 2019.

**Figure A1**  
Estimates of Welsh GDP, 2013–14 to 2019–20 (£ million)

	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19	2019–20
New estimates	64,366	66,127	68,288	70,954	73,105	75,155*	77,289*
GERW 2019	61,621	63,257	65,524	68,226	70,651	72,659*	74,860*

Source: ONS (December 2019) *GDP: UK regions and countries*; ONS (2019) *Regional Gross Value Added*; and authors' calculations.

\* Data for the 2018–19 and 2019–20 financial years are based on projections.

<sup>28</sup> Forecasts of UK GDP are taken from the latest *Economic and Fiscal Outlook* release, published by the Office for Budget Responsibility in March 2019.

## Estimating Wales' trade deficit

In Chapter 2, we produce a rough estimate of Wales' trade deficit, through comparing an estimate of expenditure and investment in the Welsh economy with estimated GDP.

Estimates of the UK's gross domestic product by expenditure category, including final consumption expenditure by households, non-profit institutions and general government, as well as gross capital formation, are sourced from the Office for National Statistics (2019). Each component of expenditure is then assigned to Wales using the following methodologies:

- Household final consumption expenditure – Wales' share taken from experimental statistics produced by the ONS.<sup>29</sup>
- Non-profit institutions serving households – no data available, so Wales' share estimated using Annual Survey of Hours and Earnings (ASHE) data on employment and annual pay in the non-profit sector.<sup>30</sup>
- General Government final consumption expenditure – Wales' share estimated by taking Wales' share of current government spending less social protection, international services, EU transactions and public sector debt interest payments. Data sourced from the ONS.<sup>31</sup>
- Gross fixed capital formation – Wales' share estimated from ONS user-requested data.<sup>32</sup> It should be noted that these are not official statistics and should be regarded only as estimates, as there are serious concerns over the quality of source data used to compile the estimates.

Estimates of GDP for Wales are taken from the Office for National Statistics (2019).<sup>33</sup>

The trade deficit (exports less imports) is estimated by subtracting the sum of expenditure components from Wales' estimated GDP. Residual estimates are prone to a higher level of uncertainty – any given error in the two main estimates have an amplified effect on the size of the residual. This means that the estimates produced in chapter 2 should be taken as only a very rough approximation of the size of Wales' trade deficit.

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<sup>29</sup> <https://www.ons.gov.uk/economy/regionalaccounts/grossdisposablehouseholdincome/datasets/regionalhouseholdfinalconsumptionexpenditure>

<sup>30</sup> <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/regionbypublicandprivatesectorashetable25>

<sup>31</sup> <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/articles/countryandregionalpublicsectorfinances/financialyearending2019>

<sup>32</sup> <https://www.ons.gov.uk/economy/regionalaccounts/grossdisposablehouseholdincome/adhocs/10949regionalgrossfixedcapitalformationnuts1andnuts22000to2018>

<sup>33</sup> <https://www.ons.gov.uk/economy/grossdomesticproductgdp/bulletins/regionaleconomicactivitybygrossdomesticproductuk/1998to2018>

# B Supplementary Tables

**Figure B1**  
Total managed expenditure: Wales and UK, 2018–19

	WALES		UK		Wales as % of UK
	£ million	% of total	£ million	% of total	
General public services					
<i>Public and common services</i>	777	1.8%	12,381	1.5%	6.3%
<i>International services</i>	569	1.3%	12,041	1.4%	4.7%
<i>Public sector debt interest</i>	2,672	6.2%	56,559	6.6%	4.7%
Defence	1,902	4.4%	40,243	4.7%	4.7%
Public order and safety	1,507	3.5%	32,400	3.8%	4.7%
Economic affairs					
<i>Enterprise and econ development</i>	714	1.7%	13,332	1.6%	5.4%
<i>Science and technology</i>	278	0.6%	6,433	0.8%	4.3%
<i>Employment policies</i>	131	0.3%	2,716	0.3%	4.8%
<i>Agriculture, forestry and fisheries</i>	524	1.2%	5,717	0.7%	9.2%
<i>Transport</i>	1,262	2.9%	32,514	3.8%	3.9%
Environment protection	634	1.5%	11,091	1.3%	5.7%
Housing and community amenities	816	1.9%	12,124	1.4%	6.7%
Health	7,573	17.6%	152,908	17.9%	5.0%
Recreation, culture and religion	705	1.6%	11,363	1.3%	6.2%
Education and training	4,285	10.0%	87,874	10.3%	4.9%
Social protection	15,161	35.3%	275,492	32.3%	5.5%
Accounting adjustments †	3,485	8.1%	87,531	10.3%	4.0%
<b>Total Managed Expenditure</b>	<b>42,994</b>	<b>100.0%</b>	<b>852,719</b>	<b>100.0%</b>	<b>5.0%</b>
of which:					
<i>Current Expenditure</i>	38,516	89.6%	757,155	88.8%	5.1%
<i>Capital Expenditure</i>	4,478	10.4%	95,564	11.2%	4.7%

Source: ONS (December 2019) Country and Regional Public Sector Finances and authors' calculations.

† Most items included in the accounting adjustments are offset by increased current revenue. EU transactions are included in this line (see GERW 2019 for further details on treatment of EU transactions).



**Figure B2**

Current revenue: Wales and UK, 2018–19

	WALES		UK		Wales as % of UK
	£ million	% of total	£ million	% of total	
VAT	6,741	22.9%	151,470	18.7%	4.5%
Income Tax	5,279	17.9%	192,526	23.8%	2.7%
National Insurance contributions	4,783	16.2%	137,257	16.9%	3.5%
Gross operating surplus	2,631	8.9%	52,884	6.5%	5.0%
Council Tax	1,582	5.4%	34,983	4.3%	4.5%
Fuel duties	1,393	4.7%	27,993	3.5%	5.0%
Corporation tax (excl. North Sea)	1,369	4.6%	55,606	6.9%	2.5%
Non-domestic rates	1,075	3.6%	29,308	3.6%	3.7%
Other taxes, royalties and adjustments	963	3.3%	23,522	2.9%	4.1%
Interest and dividends	950	3.2%	24,054	3.0%	3.9%
Tobacco duties	512	1.7%	9,152	1.1%	5.6%
Alcohol duties	496	1.7%	12,097	1.5%	4.1%
Vehicle excise duty	336	1.1%	6,751	0.8%	5.0%
Insurance premium tax	274	0.9%	6,309	0.8%	4.3%
Rent and other current transfers	232	0.8%	5,454	0.7%	4.3%
Stamp duty land tax	225	0.8%	12,749	1.6%	1.8%
Capital gains tax	164	0.6%	9,199	1.1%	1.8%
Inheritance tax	123	0.4%	5,450	0.7%	2.3%
Climate change levy	117	0.4%	1,947	0.2%	6.0%
Betting and gaming duties	106	0.4%	2,317	0.3%	4.6%
Landfill tax	44	0.1%	838	0.1%	5.3%
Other taxes on income and wealth	31	0.1%	642	0.1%	4.8%
Aggregates levy	27	0.1%	372	0.0%	7.3%
Air passenger duty	12	0.0%	3,636	0.4%	0.3%
Stamp duty on shares	10	0.0%	3,619	0.4%	0.3%
<b>Total current revenue (excluding North Sea revenue)</b>	<b>29,475</b>	<b>100.0%</b>	<b>810,135</b>	<b>100.0%</b>	<b>3.6%</b>
North Sea revenue					
<i>Per capita share</i>	57		1,212		4.7%
<i>Geographical share</i>	0		1,212		0.0%
<b>Total current revenue (including North Sea revenue)</b>					
<i>Per capita share</i>	29,532		811,347		3.6%
<i>Geographical share</i>	29,475		811,347		3.6%

Source: ONS (December 2019) Country and Regional Public Sector Finances and authors' calculations.

**Figure B3**

Net fiscal balance and current budget balance for Wales, 2014–15 to 2018–19

	£ million, current prices				
	2014–15	2015–16	2016–17	2017–18	2018–19
<b>Current budget</b>					
Current revenue	25,137	25,864	27,328	28,099	29,475
Current expenditure	36,010	36,449	37,202	38,218	38,516
Capital consumption	-2,144	-2,195	-2,258	-2,268	-2,270
<b>Current budget balance</b>	-13,017	-12,780	-12,132	-12,387	-11,311
<i>As share of estimated GDP</i>	19.7%	18.7%	17.1%	16.9%	15.1%
<b>Capital budget</b>					
Capital expenditure	3,740	3,680	3,791	4,182	4,478
Capital consumption	-2,144	-2,195	-2,258	-2,268	-2,270
Net investment	1,596	1,485	1,533	1,914	2,208
<b>Net fiscal balance</b>	14,613	14,265	13,665	14,301	13,519
<i>As share of estimated GDP</i>	22.1%	20.9%	19.3%	19.6%	18.0%

Source: ONS (December 2019) Country and Regional Public Sector Finances and authors' calculations

N.B. Changes since GERW 2019 reflect an updated methodology for estimating GDP, changes to how some key components of revenue and expenditure are treated in the National Accounts (including student loans), and standard revisions to previous year data points based on the latest available information.

# C Glossary

**Balance of payments:** the difference between the flow of payments into a country and the flow of payment out of a country over a given period. A country is said to have a balance of payments deficit if it imports more goods, services and capital than it exports – it must borrow from other countries to pay for its imports.

**Balance of trade:** the difference between imports into a country and exports out of a country over a given period. Balance of trade is a component of *balance of payments* but it is a narrower concept as it does not include financial transactions.

**Country and Regional Analysis (CRA):** an annual dataset published by HM Treasury aimed at identifying where resources were spent depending on where those who benefitted were located.

**Currency reserves:** cash and other reserve assets that are used to balance payments of the country, influence the foreign exchange rate of its currency, and to maintain confidence in financial markets.

**Currency union:** when two or more states share the same currency. In a formal currency union, this is done by virtue of a bilateral or multilateral agreement with the *monetary authority*. In an informal currency union, one or more states unilaterally decide to adopt a foreign currency.

**Current budget balance:** the difference between current revenues (including taxes on capital) and current expenditure (including depreciation). This measures the extent to which current Welsh taxpayers meet the cost of paying for the public services they consume in the current year. Excluded from this is capital investment by the public sector. The current budget balance is often seen as an indicator of intergenerational fairness and of the sustainability of current policies

**Customs duty:** a tax imposed on the imports and exports of goods.

**Debt servicing costs:** the ongoing cost of interest and principal repayments on outstanding debt.

**Devaluation:** a policy tool whereby a *monetary authority* lowers the exchange rate of its national currency in relation to a foreign country. This has the immediate effect of making imports more expensive and exports more competitive.

**Disposable income:** the amount of money available for spending or saving after income distribution measures (for example, taxes, social contributions and benefits) have taken effect.

**Economic inactivity:** the section of the working age population that is not in employment or actively seeking employment.

**Economic multiplier:** the economic factor that amplifies the effect of some other outcome. For instance, it is generally thought that additional spending on transport infrastructure is accompanied by growth in

tax revenues (e.g. through higher wages, house prices). The amount of additional revenue generated by a given unit of additional spending is measured by the economic multiplier.

**Fiscal balance:** the difference between government spending and revenue. At the UK level, this gap will be reflected by public sector borrowing (or saving). In Wales however, this gap reflects the country's place within the overall fiscal position of the UK public sector.

**Fiscal consolidation:** a set of policies aimed at reducing government deficits and debt accumulation.

**Fiscal policy:** the use of government spending and tax policies to influence economic outcomes.

**Fixed (pegged) exchange rate:** a monetary regime whereby a country ties the value of its national currency to another commodity or foreign currency.

**Floating exchange rate:** a monetary regime whereby the national currency price is set by the foreign exchange market based on supply and demand relative to other currencies. This contrasts with a *fixed exchange regime* where the government is largely or entirely responsible for determining the rate.

**Gold standard:** a monetary system where the national currency is defined in terms of – and could be exchanged for – gold. Most countries abandoned the gold standard in the 20th Century.

**Government bonds:** a promise issued by a government to repay borrowed money with interest over an agreed period of time.

**Government Expenditure and Revenue Wales (GERW):** a publication produced by the Wales Governance Centre that estimates the contribution of revenue raised in Wales towards the good and services provided for the benefit of Wales.

**Gross Domestic Product (GDP):** a measure of the value added in the production of goods and services within a country's borders before providing for capital consumption (depreciation). This includes the value added in the production of intermediate inputs, even if the final goods are produced outside of Wales. It is commonly used to measure the size of a country's economy.

**Gross National Product (GNP):** a measure of the value added in the production of goods and services within a country's borders and by a country's citizens abroad.

**Gross Value Added (GVA):** the value generated by any unit engaged in the production of goods and services.

**Identifiable expenditure:** spending which can be identified as benefitting particular countries or regions, as defined by HM Treasury in their *Country and Regional Analysis*.

**Monetary authority:** the entity which manages the money supply of the national currency by raising or reducing interest rates and overseeing exchange rate policy. In the UK, this role is performed by the Bank of England.

**Monetary policy:** policies aimed at managing money supply (the quantity of money) and interest rates.

**Net wealth:** the value of an individual's fixed assets (e.g. land or property), minus any liabilities (e.g. short-term loans, mortgages).

**Non-identifiable expenditure:** spending which is deemed to be incurred on behalf of the UK as a whole, as defined by HM Treasury in their *Country and Regional Analysis*.

**Optimal Currency Area (OCA):** a geographical region whereby economic efficiency would be maximised were the entire region to share a common currency.

**Primary income:** income directly related to the participation of households in the production process, primarily through wages.

**Productivity:** a measure of the output generated by any given unit of input. It is commonly used as a measure of how effectively labour is being used in an economy.

**Public sector balance sheet:** total public sector financial and non-financial assets minus the national debt and other government liabilities (e.g. pension costs).

**Public sector debt:** debt owed by the government to holders of government bonds.

**Total Managed Expenditure (TME):** a definition of total expenditure in the UK public finances that covers all current and capital spending carried out by the public sector. It comprises the sum of DEL, AME, less depreciation.

# D Bibliography

- Adam, Stuart, Paul Johnson, and Barra Roantree. 2014. "Taxing an independent Scotland." *Oxford Review of Economic Policy* 30 (2): 325-345.
- Adam, Stuart, and Tom Waters. 2018. "Options for Raising Taxes." In *The IFS Green Budget: October 2019*, edited by Carl Emmerson, Christine Farquharson and Paul Johnson. 153-193. London: Institute for Fiscal Studies.
- Alesina, Alberto, and Silvia Ardagna. 2009. "Large Changes in Fiscal Policy: Taxes Versus Spending." *NBER Working Paper No. 15438*. Cambridge, MA: The National Bureau of Economic Research. Accessed 20 August 2019. <https://www.nber.org/papers/w15438>.
- Alesina, Alberto, and Roberto Perotti. 1995. "Fiscal Expansions and Fiscal Adjustments in OECD Countries." *NBER Working Paper No. 5214*. Cambridge, MA: National Bureau of Economic Research. Accessed 22 September 2019. <https://www.nber.org/papers/w5214>.
- Alesina, Alberto, Enrico Spolaore, and Romain Wacziarg. 2005. "Trade, Growth and the Size of Countries." In *Handbook of Economic Growth*, edited by Philippe Aghion and Steven N. Durlauf. 1500-1542. Amsterdam, NL: Elsevier.
- ap Gwilym, Eurfyl, and Adam Price. 2012. "Offa's Gap: Roots and Remedies of the Welsh Growth Collapse." *Plaid Cymru's Economic Commission Discussion Paper*. Cardiff: Plaid Cymru. Accessed 13 August 2019. [http://www.english.plaidcymru.org/uploads/downloads/Offas\\_gap.pdf](http://www.english.plaidcymru.org/uploads/downloads/Offas_gap.pdf).
- Armstrong, Angus, and Monique Ebell. 2013. *Scotland's Currency Options NIESR Discussion Paper No. 415*. London: National Institute of Economic and Social Research. Accessed 23 September 2019. <https://journals.sagepub.com/doi/pdf/10.1177/002795011422700103>.
- . 2014. "Scotland: Currency Options and Public Debt." *National Institute Economic Review* 227: 14-20.
- BBC Wales. 2019. "Carwyn Jones: Wales 'not too poor to be independent'." Last Modified 07 August 2019. Accessed 27 August 2019. <https://www.bbc.co.uk/news/uk-wales-49262565>.
- Boshier, Phil, Sara Moran, and Joe Wilkes. 2019. "The latest UCAS data: Key messages for the higher education sector in Wales." Senedd Research In Brief. National Assembly Research Service. Accessed 22 October 2019. <https://senedresearch.blog/2019/08/19/the-latest-ucas-data-key-messages-for-the-higher-education-sector-in-wales/>
- Bristow, Gillian, Madeleine Pill, Rhys Davies, and Stephen Drinkwater. 2011. "Welsh Graduate Mobility." *SKOPE/WISERD research report*. Cardiff: Cardiff University. Accessed 21 October 2019. <https://wiserd.ac.uk/publications/welsh-graduate-mobility-full-report>.
- Brown, Arthur J. 1977. "The interregional role of public finance in the UK." In *Commission of the European Communities Report of the Study Group on the Role of Public Finance in European Intergration*, 2. 13-27. Brussels: CEC.
- Browne, Adrian. 2019. "Welsh independence: Is Wales becoming indy-curious?" *BBC Wales*, 18 July 2019. Accessed 29 August 2019. <https://www.bbc.co.uk/news/uk-wales-politics-49018127>.
- Cahssany, Anne-Sylvaine. 2017. "Macron slashes France's wealth tax in pro-business budget." *Financial Times*, 24 October 2017. Accessed 16 September 2019. <https://www.ft.com/content/3d907582-b893-11e7-9bfb-4a9c83ffa852>.
- Claeys, Peter, and Federico Martire. 2015. "'If You Want Me to Stay, Pay': A Model of Assymmetric Federalism in Centralised Countries." *Environment and Planning C: Politics and Space* 33 (2): 305-320.

- Collinson, Patrick. 2019. "Life expectancy falls by six months in biggest drop in UK forecasts." *The Guardian*, 07 March 2019. Accessed 16 July 2019. <https://www.theguardian.com/society/2019/mar/07/life-expectancy-slumps-by-five-months>.
- Conte, Maddalena, Helen Miller, and Thomas Pope. 2019. *How do other countries raise more in tax than the UK?* London: Institute for Fiscal Studies. Accessed 12 September 2019. <https://www.ifs.org.uk/publications/14256>.
- Court of Justice of the European Union. 2018. *Press Release: Judgment in Case C-305/17*. Luxembourg City: Court of Justice of the European Union. Accessed 09 August 2019. <https://curia.europa.eu/jcms/upload/docs/application/pdf/2018-12/cp180189en.pdf>.
- Crafts, Nicholas. 2005. "Productivity at the periphery: what can Wales do to compete?" *Sixth Annual Julian Hodge Institute of Applied Macroeconomics Lecture*. Cardiff.
- Cugnasca, Alessandro, and Philipp Rother. 2015. *Fiscal multipliers during consolidation: evidence from the European Union*. ECB Working Paper Series 1863. Frankfurt: European Central Bank.
- Cuthbert, Jim. 2010. "Time to Move Beyond GERS: An Approach to Estimating Flows of Private Finance for the Scottish Economy." Paper discussed at Scottish Economic Statistics Consultants' Group, Edinburgh, 18 October 2010. Accessed 28 August 2019. <http://jamcuthbert.co.uk/papers%201/SESCG%202010-1-2.doc>.
- . 2018. "Naively neo-liberal." *Scottish Left Review*, July/August 2018, 8-9.
- Cuthbert, Jim, and Margaret Cuthbert. 2002. "Can Fiscal Autonomy Improve a Devolved Scotland's Economic Prospects?" *Scottish Affairs* 41 (1): 86-101.
- Dalzell, Craig. 2016. *Beyond GERS: Scotland's fiscal position post-independence*. Glasgow: Common Weal Policy. Accessed 24 August 2019. <https://www.commonspace.scot/articles/9879/report-beyond-gers-scotlands-fiscal-position-post-independence>.
- . 2018. *A Silver Chain - A critique of the Sustainable Growth Commission's Monetary Policy Recommendations*. Glasgow: Common Weal. Accessed 01 October 2019. <https://commonweal.scot/library/a-silver-chain-a-critique-of-the-sustainable-growth-commission-280995-monetary-policy-recommendations/>
- de Aghion, Beatriz Armendariz, and John Williamson. 1993. *The G-7's Joint-And-Several Blunder: Essays in International Finance*. Princeton, NJ: Princeton University.
- Fiscal Commission Working Group. 2013. *First Report Macroeconomic Framework*. Edinburgh: Scottish Government. Accessed 31 October 2019. <http://www.scotland.gov.uk/Resource/0041/00414291.pdf>.
- FitzGerald, John, and Seán Kenny. 2017. "Till Debt Do Us Part": Financial Implications of the Divorce of the Irish Free State from the UK, 1922-6. *Lund Papers in Economic History*. Department of Economic History, Lund University.
- Fleurbaey, Marc. 2009. "Beyond GDP: The Quest for a Measure of Social Welfare." *Journal of Economic Literature* 47 (4): 1029-75.
- Frampton, Ben. 2018. "UK heatwave: How much water does Water pump to England?" *BBC News*, 28 July 2018. Accessed 30 July 2019. <https://www.bbc.co.uk/news/uk-wales-44966131>.
- Fraser of Allander Institute. 2019. "Back to school for GERS 2019." Fraser of Allander Institute Blog. Accessed 14 February 2020. <https://fraserofallander.org/scottish-economy/gers/back-to-school-for-gers-2019/>.
- Gal, Peter, and Jagoda Egeland. 2018. *Reducing regional disparities in productivity in the United Kingdom*. OECD Economics Department Working Papers No. 1465. Paris: Organisation for Economic Co-operation and Development. Accessed 31 October 2019. <https://doi.org/10.1787/54293958-en>.
- Gechert, Sebastian, and Henner Will. 2012. *Fiscal Multipliers: A Meta Regression Analysis*. IMF Working Paper 97. Accessed 31 October 2019. <http://hdl.handle.net/10419/105964>.
- Giavazzi, Francesco, and Marco Pagano. 1990. "Can Severe Fiscal Contractions be Expansionary? Tales of Two Small European Countries." *NBER Macroeconomics Annual* 5: 75-11.

- Gooberman, Leon. 2017. *From Depression to Devolution: Economy and Government in Wales, 1934-2006*. Cardiff: University of Wales Press.
- Gripaios, Peter. 2002. "Regional Spending: A Comment on MacKay." *Regional Studies* 36 (6): 685-689.
- Guajardo, Jaime, Daniel Leigh, and Andrea Pescatori. 2011. *Expansionary Austerity: New International Evidence*. Washington DC: International Monetary Fund.
- Heald, David. 1994. "Territorial public expenditure in the United Kingdom." *Public Administration* 72: 147-175.
- HM Government. 2014. *Scotland analysis: Energy*. London: HM Government. Accessed 16 July 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/301772/2901910\\_ScotlandAnalysis\\_Energy\\_acc.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/301772/2901910_ScotlandAnalysis_Energy_acc.pdf).
- . 2018. *The UK's future skills-based immigration system*. London: HM Government. Accessed 16 July 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/766465/The-UKs-future-skills-based-immigration-system-print-ready.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766465/The-UKs-future-skills-based-immigration-system-print-ready.pdf).
- HM Revenue & Customs. 2019. *Measuring Tax Gaps: Tax gap estimates for 2017-18*. London: HM Government. Accessed 12 September 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/820979/Measuring\\_tax\\_gaps\\_2019\\_edition.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820979/Measuring_tax_gaps_2019_edition.pdf).
- Holtham, Gerald. 2018. *Paying for Social Care*. Cardiff: Welsh Government. Accessed 17 September 2019. <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiU1o5nv9XkAhU7TxUIHQeNB3gQFjAAegQIAhAC&url=https%3A%2F%2Fgov.wales%2Fdocs%2Fcaecd%2Fpublications%2F180628-paying-for-social-care-en.pdf&usq=AOvVaw1SmcGzM53rKLbZPI6CS8B2>.
- Holtham, Gerald, and Robert Huggins. 2017. "What accounts for the success of regions? Examining the factors associated with economic development." *Welsh Economic Review* 25: 1-8. <https://doi.org/http://doi.org/10.18573/j.2017.10193> <https://wer.cardiffuniversitypress.org/articles/abstract/10.18573/j.2017.10193/>.
- Ifan, Guto, and Ed Gareth Poole. 2018. *The Welsh Tax Base: Risks and Opportunities after Fiscal Devolution*. Cardiff: Wales Centre for Public Policy. Accessed 30 July 2019. <https://www.wcpp.org.uk/publication/the-welsh-tax-base-risks-and-opportunities-after-fiscal-devolution/>.
- Ifan, Guto, Cian Siôn, and Ed Gareth Poole. 2019. *Government Expenditure and Revenue Wales 2019*. Cardiff: Wales Fiscal Analysis. Accessed 01 August 2019. [https://www.cardiff.ac.uk/\\_data/assets/pdf\\_file/0004/1540498/Government-Expenditure-and-Revenue-Wales-2019.pdf](https://www.cardiff.ac.uk/_data/assets/pdf_file/0004/1540498/Government-Expenditure-and-Revenue-Wales-2019.pdf).
- Institute of Welsh Affairs. 2015. "An economic strategy for Wales?". Cardiff: Institute of Welsh Affairs. [http://iwa.wales/wp-content/uploads/2016/01/IWA\\_EconomicStrategyforWales.pdf](http://iwa.wales/wp-content/uploads/2016/01/IWA_EconomicStrategyforWales.pdf)
- International Monetary Fund. 2018. *United Kingdom: IMF Country Report (November 2018)*. Washington DC: International Monetary Fund. Accessed 12 August 2019. <https://www.imf.org/~/media/Files/Publications/CR/2018/cr18317.ashx>.
- Jones, Calvin. 2016. "On Capital, Space and the World System: A response to Ron Martin." *Territory, Politics, Governance* 3 (3): 273-293.
- Jones, Charles, and Peter Klenow. 2016. "Beyond GDP? Welfare across Countries and Time." *American Economic Review* 106 (9): 2426-57.
- Joyce, Robert, Thomas Pope, and Barra Roantree. 2019. *The characteristics and incomes of the top 1%. IFS Briefing Note*. London: Institute for Fiscal Studies. Accessed 23 October 2019. <https://www.ifs.org.uk/publications/14303>.
- Kallis, Giorgos. 2011. "In defence of degrowth." *Ecological Economics* 70 (5): 873-880.
- Karagiannis, Ioannis C., and Petros G. Soldatos. 2008. "Water desalination cost literature: review and assessment." *Desalination* 223: 448-456.
- Keating, Michael, and Malcolm Harvey. 2014. "The political economy of small European states: and lessons for Scotland." *National Institute Economic Review* 227: 54-66.



- Kenen, Peter. 1969. "The Optimum Currency Area: An Eclectic View." In *Monetary Problems of the International Economy*, edited by R. Mundell and K. Swoboda. 41-60. Chicago IL: Chicago University Press
- Kettle, Martin. 2019. "How Boris Johnson could trigger the breakup of the United Kingdom." *The Guardian*, 01 August 2019. Accessed 29 August 2019. <https://www.theguardian.com/commentisfree/2019/aug/01/boris-johnson-trigger-breakup-united-kingdom-wales>.
- Lovering, John. 1981. *Dependence and the Welsh Economy. Economic Research Papers no. 22*. Bangor: University College of North Wales.
- . 1983. "Uneven development in Wales: the changing role of the British state." In *Crisis of Economy and Ideology: Essays on Welsh Society, 1840-1980*, edited by G. Williams. Durham: British Sociological Association.
- Mackay, R. Ross. 2001. "Regional Taxing and Spending: The Search for Balance." *Regional Studies* 35 (6): 563-575.
- Martínez-Aliera, Joan, Unai Pascual, Franck-Dominique Vivien, and Edwin Zaccaid. 2010. "Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm." *Ecological Economics* 69 (9).
- Midwinter, Arthur. 2004. "The changing distribution of territorial public expenditure in the UK." *Regional & Federal Studies* 14: 499-512.
- Moore, Barry, and John Rhodes. 1975. "Regional Policy and the Economy of Wales." Cardiff: Welsh Office.
- Moore, Molly. 2016. "Old Money, New Money Flee France and Its Wealth Tax." *The Washington Post*, 16 July 2006. Accessed 16 September 2019. <https://www.washingtonpost.com/archive/politics/2006/07/16/old-money-new-money-flee-france-and-its-wealth-tax/49ac2ec7-c1b2-423e-a89b-699750275cd4/?noredirect=on>.
- Mundell, R.A. 1961. "A theory of optimum currency areas." *The American Economic Review*, 51(4): 657-665
- Nevin, Edward T. 1957. "The Social Accounts of the Welsh Economy." *Welsh Economic Studies No. 2*. Aberystwyth: University of Wales Press.
- . 1966. "The Growth of the Welsh Economy." *The Transactions of the Honourable Society of Cymrodorion* 1966, no. 1: 134-148.
- OECD. 2016. "OECD Regions at a Glance 2016." Paris: Organisation for Economic Co-operation and Development.
- Office for Budget Responsibility. 2019. "Economic and fiscal outlook (March 2019)." London: OBR. Accessed 02 August 2019. <https://obr.uk/download/economic-and-fiscal-outlook-march-2019/>.
- Office for National Statistics. 2015. "Housing and home ownership in the UK." Accessed 16 September 2019. <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/housingandhomeownershipintheuk/2015-01-22>.
- . 2019a. "Country and regional public sector finances: financial year ending 2018." Last Modified 28 May 2019. Accessed 28 May 2019. <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/articles/countryandregionallpublicsectorfinances/financialyearending2018>.
- . 2019b. "How would you support our ageing population?". Last Modified 24 June 2019. Accessed 09 July 2019. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/howwouldyousupportourageingpopulation/2019-06-24>.
- . 2019c. "Milestones: journeying into adulthood." Last Modified 18 February 2019. Accessed 16 July 2019. <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/milestonesjourneyingintoadulthood/2019-02-18#school>.
- Perotti, Roberto. 2011. *The "Austerity Myth": Gain Without Pain? NBER Working Paper No. 17571*. Cambridge MA: National Bureau of Economic Research.
- Piketty, Thomas. 2013. *Capital in the Twenty-First Century*. Translated by Arthur Goldhammer. Boston, MA: Harvard University Press.

- Portes, Jonathan, and Giuseppe Forte. 2019. *Migration in Wales: The impact of post-Brexit policy changes*. Cardiff: Wales Centre for Public Policy. Accessed 19 July 2019. <https://www.wcpp.org.uk/publication/migration-in-wales/>.
- Price, Adam, and Ben Levinger. 2011. *The Flotilla Effect: Europe's small economies through the eye of the storm*. Strasbourg: Greens/EFA at European Parliament. Accessed 21 August 2019. [https://d3n8a8pro7vnm.cloudfront.net/plaid2016/pages/1256/attachments/original/1490110494/Flotilla\\_Effect\\_-\\_Adam\\_Price\\_and\\_Ben\\_Levinger.pdf?1490110494](https://d3n8a8pro7vnm.cloudfront.net/plaid2016/pages/1256/attachments/original/1490110494/Flotilla_Effect_-_Adam_Price_and_Ben_Levinger.pdf?1490110494).
- Phillips, David. 2014. *Business as usual? The Barnett formula, business rates and further tax devolution*. IFS Briefing Note. London: Institute for Fiscal Studies. Accessed 03 August 2019. [https://www.ifs.org.uk/uploads/publications/bns/BN155\\_Barnett.pdf](https://www.ifs.org.uk/uploads/publications/bns/BN155_Barnett.pdf).
- Reynaerts, Jo, and Jakob Vanschoonbeek. 2018. "The Economics of State Fragmentation: Assessing the Economic Impact of Secession." *VIVES Discussion Paper* 52: 1-75.
- Rodríguez-Pose, Andrés, and Marko Stermšek. 2014. "The economics of secession: Case of the former Yugoslavia." VOX CEPR Policy Portal. Last Modified 21 November 2014. Accessed 28 August 2019. <https://voxeu.org/article/economics-secession>.
- Rogers, Taylor Nicole, and Shayanne Gal. 2019. "The wealth gap took center stage at last night's debate. Here's a side-by-side comparison of how Elizabeth Warren's and Bernie Sanders' wealth tax plans stack up." *Business Insider*, 16 October. Accessed 27 January 2020. <https://www.businessinsider.com/wealth-tax-bernie-sanders-elizabeth-warren-difference-explained-chart-2019-10?r=US&IR=T>.
- Rowlands, Dane. 1997. "International Aspects of the Division of Debt under Secession: The Case of Quebec and Canada." *Canadian Public Policy / Analyse de Politiques* 23 (1): 40-54.
- Samuel, Sigal. 2019. "Forget GDP - New Zealand is prioritizing gross national well-being." *Vox*, 08 June 2019. Accessed 29 August 2019. <https://www.vox.com/future-perfect/2019/6/8/18656710/new-zealand-wellbeing-budget-bhutan-happiness>.
- Santos Silva, João, and Silvana Tenreyro. 2010. "Currency unions in prospect and retrospect." *Annual Review of Economics* 2 (1): 51-75.
- Scottish Government. 2013. *Scotland's Future*. Edinburgh: Scottish Government.
- Short, John. 1984. "Public Finance and Devolution: Money Flows Between Government and Regions in the United Kingdom." *Scottish Journal of Political Economy* 31 (2): 114-130.
- Sibieta, Luke. 2018. "Comparing schools spending per pupil in Wales and England." Wales Public Services 2025 Conference, Cardiff, 12 July 2018. Accessed 12 July 2019. <https://www.ifs.org.uk/publications/13144>.
- . 2019. *School Spending in Wales*. Sibieta Economics of Education. Accessed 02 October 2019. <https://sibieta-econ-ed.com/my-work/r1-school-spending-in-wales/>
- Siôn, Cian. 2019. "What do the latest population projections tell us about Wales?". Thinking Wales. Accessed 30 October. <https://blogs.cardiff.ac.uk/thinking-wales/2019/10/30/population-projections-wales/>.
- Spolaore, Enrico. 2008. "Civil conflict and secessions." *Economics of Governance* 9 (1): 45-63.
- Suesse, Marvin. 2018. "The Soviet economic collapse: New evidence on the potentially harmful effects of state breakup." VOX CEPR Policy Portal. Last Modified 17 December 2018. Accessed 28 August 2019. <https://voxeu.org/article/new-evidence-potentially-harmful-effects-state-breakup>.
- Tetlow, Gemma, and Joe Marshall. 2019. *Taxing Times: The need to reform the UK tax system*. London: Institute for Government. Accessed 20 August 2019. <https://www.instituteforgovernment.org.uk/publications/taxing-times-need-reform-uk-tax-system>.
- The Economist. 2019. "Wales watching: An act of vandalism sparks more talk of independence in Wales." *The Economist*, 22 August 2019, Britain. Accessed 24 August 2019. <https://www.economist.com/britain/2019/08/22/an-act-of-vandalism-sparks-more-talk-of-independence-in-wales>.

- The Sustainable Growth Commission. 2018. *Scotland - the new case for optimism: A strategy for inter-generational economic renaissance*. Edinburgh: The Sustainable Growth Commission. Accessed 31 July 2019.  
<https://www.sustainablegrowthcommission.scot/>.
- Thom, Rodney, and Brendan Walsh. 2002. "Effect of a common currency on trade: lessons from the Irish experience." *European Economic Review* 46 (6): 111-123.
- Thomas, Brinley. 1966. "Wales and the Atlantic Economy." In *The Welsh Economy: Studies in Expansion*, edited by B. Thomas. 1-29. Cardiff: University of Wales Press.
- van den Bergh, Jeroen C. J. M. 2009. "The GDP Paradox." *Journal of Economic Psychology* 30 (2): 117-135.
- Welsh Government. 2018. *Energy Generation in Wales*. Exeter: Regen. Accessed 27 January 2020.  
<https://gov.wales/sites/default/files/publications/2019-10/energy-generation-in-wales-2018.pdf>.
- Woehrling, José. 1991. "Les Aspects Juridiques de la Redéfinition du Statut Politique et Constitutionnel du Quebec." *Revue québécoise de droit international* 7 (1): 12-41.









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