

Monitoring Report

Official Statistics in the Context
of the Referendum on Scottish
Independence



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Editorial note:

Whilst the UK Statistics Authority has taken the advice of many experts in preparing this report, the guidance we offer is necessarily selective and may need to be extended or revised in the light of changes to the availability of statistics or feedback on the report itself. We may, therefore, update and re-issue the report in the coming months if we think it would be helpful to do so.

FOREWORD

“The people of Scotland will vote in a referendum on Thursday 18 September, 2014. They will be asked the question: Should Scotland be an independent country? Yes or No. Scottish Ministers support independence¹.”

“The UK Government ...believes that both Scotland and the UK are better served by maintaining their partnership.”²

Those are the stated positions of the elected administrations in Scotland and London. In the months ahead, we can expect to see these positions developed and promoted by politicians and commentators, and many will quote official statistics in support of their arguments. Inevitably, statistical comparisons will be drawn between Scotland and the rest of the UK.

Whether you are seeking to cite official statistics in support of your views or simply observing them being so used, it is important to keep in mind that whilst statistical comparisons between administrations can be illuminating and valuable, they can also be problematic and uncertain. Official statistics should always be the best estimates that can be made but are not always available on a consistent or comparable basis.

The UK Statistics Authority is entirely neutral on the substantive question of independence for Scotland, but we do care about the safe and effective use of official statistics in public debate. If those statistics are misrepresented or misinterpreted, not only does that lessen the integrity of the debate, it undermines confidence in the statistical system; and that in turn undermines confidence in the vast range of economic and social policies shaped by the statistics.

The intelligent and informed use of statistics is fundamental to modern democratic debate and the Statistics Authority wants to see official statistics widely used both before and after the 2014 referendum. But that use needs to be informed and guided by expert advice.

This report, prepared by Sandy Stewart and Richard Alldritt for the UK Statistics Authority, does not seek to present all the relevant figures but offers a wide range of advice for reference on sources and comparability. The Office for National Statistics will complement this with a compendium of comparable statistics for the four UK administrations ahead of the referendum. We will draw on all this material in responding publicly to any concerns about the use of official statistics.



Sir Andrew Dilnot

Chair of the UK Statistics Authority
October 2013

¹ <http://www.scotreferendum.com/>

² Scotland analysis: Devolution and the implications for Scottish independence, CM8554, February 2013, paragraph ii.

OFFICIAL STATISTICS IN THE CONTEXT OF THE REFERENDUM ON SCOTTISH INDEPENDENCE

The 2014 referendum is likely to prompt wide interest in patterns and trends in social and economic conditions in Scotland, viewed both as a distinct country and also in comparison with the rest of the UK.

Long-standing differences in law and public administration, and the more recent devolution of powers to Scotland, Wales and Northern Ireland, have led to differences in the availability and definition, and hence comparability, of official statistics between the four UK administrations. Some of these technical obstacles can be avoided or overcome, allowing meaningful comparisons to be made. Sometimes the comparisons are useful but only if their limitations are well understood. And sometimes it is best just to acknowledge that comparisons are unlikely to be valid.

The UK Statistics Authority has a statutory responsibility to monitor official statistics produced by all four UK administrations and to draw attention to any concerns it may have about their quality or comprehensiveness, or the observance of good practice. As part of this monitoring role, we will seek to ensure that sound advice is offered in relation to official statistics relevant to the referendum debate and that public statements which ignore this advice are challenged as appropriate. If, in the months leading up to the referendum, the Statistics Authority is approached about the use of official statistics, we will objectively and publicly point out whether we think the guidance in this report, or readily available elsewhere, has been observed.

The field of official statistics is very wide and we do not seek to present a comprehensive guide to all the relevant sources. However, in this report we have selected 13 areas of economic and social statistics in relation to which we are able to offer some advice, complementing and emphasising advice already available in official statistics publications.

This report is designed to serve as an impartial reference document of use both to those who wish to make statistical comparisons in the course of public discourse, and to those who read such comparisons and want to know about their validity. A companion report, currently being prepared by the Office for National Statistics, will bring together a wide range of relevant statistics. That is not the main focus of the current report although we do include some tables and charts for illustrative purposes.

Some summary points

Each of the 13 sections of this report ends with a short summary. Below, we offer some more general observations and a brief introduction to the different sections.

All UK official statistics are expected to conform to the Code of Practice for Official Statistics which requires, in essence, that they be the best statistics that can reasonably be produced on the topic, be free from any inappropriate interference, and that their strengths and weaknesses be well explained when they are published. However, being the best available does not necessarily mean they are ideal for every purpose and every comparison, a point well illustrated by this report.

All statistics, whether official or not, are subject to a degree of uncertainty. This can be due to the figures being derived from sample surveys or it can be due to incomplete records, approximation methods or ambiguity in concepts and definitions. We have sought in this report to draw attention to where this is likely to be an important consideration and to provide links to the original sources of the figures. The official source is usually the best place to find out more about the nature, extent and reasons for uncertainty associated with the estimates.

Expressing expenditure on a per capita basis allows comparisons to be made between countries or regions, and we quote such statistics extensively in this report. However, bear in mind that the per capita cost is the average cost to the whole population in an area, not the average cost per recipient of a particular service. So, for example, an area with more elderly people will likely have higher per capita expenditure on care for the elderly even if the cost per elderly person is the same.

Official statistics, by their nature, normally relate to the recent or historical past. However, commentators are also likely to seek information about how the outcome of the referendum might affect future trends. So the construction by economists and researchers of statistical models, and the production of estimates and projections based on them, will add to the mix of statistical data being quoted in debate. We offer some observations on forecasts and projections at appropriate points in this report.

There are some statistics from non-official sources quoted in debate and repeated in the news media. These can develop a life of their own, with the original source and all associated caveats and assumptions lost in the trail of repetition. We do not quote statistics of that kind in this report, and we do not normally comment on their validity. Our advice is to ask questions about where such statistics come from and on what assumptions they are based. If those questions are not answered, then the statistics should be regarded as suspect.

It is perhaps uncommon for reports about official statistics to expend a lot of words on statistics that do not currently exist. However, one purpose of this report is to contribute to ongoing discussions about priorities for improvement to the statistical infrastructure across the UK, and several sections of the report draw attention to the need for new or better data. Few of these developments are likely to be completed before the September 2014 referendum but it is nonetheless relevant to the debate that there are statistical gaps and that they are acknowledged as such.

Mostly, where we present statistics in this report, we do so for illustrative purposes and we compare figures for Scotland with the corresponding UK figures rather than with the 'rest of the UK'. In part this is because the 'rest of the UK' is not a standard statistical area but also because per capita rates for the UK will mostly be very close to per capita rates for the 'rest of the UK'. In some cases – where comparable data are available – we illustrate a point by tabulating data for each country of the UK.

Section 1 of the report explains the concept of the UK's Extra-Region territory. How this is treated in the economic statistics will often substantially affect the conclusions that are drawn. Anyone wishing to compare Scotland's economic statistics with those for the UK as a whole should ensure they take account of this.

Section 2 provides some basic demographic data. Scotland has a slightly higher proportion of working age and older people than the UK average but a lower proportion of young people (under 16). Consequently the dependency ratio in respect of children is lower, and projected to remain so, whilst the dependency ratio in respect of elderly people is projected to increase faster than for the UK.

Section 3 deals with National Accounts. Very few of the main National Accounts statistics for the UK are consistently available for the devolved administrations – for good technical reasons. However, the Regional Gross Value Added statistics offer a starting point. If the Extra-Region component is excluded, GVA per capita is not greatly different between Scotland and the UK. However, the picture is different if a geographical share of the Extra-Region component is added for Scotland. The Scottish National Accounts Project (SNAP) provides this and other related analyses.

Section 4 is about how to approach comparisons of public expenditure for Scotland and the UK. The Treasury's Public Expenditure Statistical Analysis (PESA) publication sets out comparative data for 'identifiable' expenditure. For an analysis including an apportioned share of other elements of public expenditure, the Scottish Government's publication Government Expenditure and Revenue Scotland (GERS) is a valuable source.

Section 5 on trade statistics discusses the problems associated with measuring the flows of goods and services into and out of Scotland. The concept of Scottish trade statistics depends on whether and how to record flows of goods and services between Scotland and other parts of the UK. Whilst this is a complex question there are nonetheless some relevant and useful official statistics.

Section 6 discusses the importance of the treatment of oil revenues in relation to Scotland's economic statistics. Whilst at the UK level, oil revenues constitute about 1.5% of tax revenues, if a geographical share of those revenues is apportioned to Scotland, they would amount to between 10% and 20% of Scotland's tax revenues (under various assumptions), and thus markedly affect the fiscal balance.

Section 7 looks at taxation more generally. Whilst there are many sources of official statistics on UK taxes, few offer a breakdown for the devolved administrations. However, the Government Expenditure and Revenue Scotland (GERS) report uses apportionment methods to offer an insight into Scotland's tax base. Given the nature of the statistical methods employed, the figures should be treated as having wide margins of uncertainty.

Section 8 is about statistics on deficit and debt. Under current constitutional arrangements, Scotland does not have a specific level of deficit or debt but there are some official statistics relevant to analysis of the historical balance of tax revenue and public expenditure and we consider the most relevant sources.

Section 9 covers employment and earnings, two areas for which good comparative statistics are readily available. We offer some advice on comparing the size of the public sector in Scotland with the UK average.

Section 10 looks at household income and expenditure. Again there is a good range of comparative statistics available. This section includes some statistics on both the levels of

household income and what it is spent on, comparing Scotland with the other countries and regions of the UK.

Section 11 gathers together information from statistical sources relevant to social protection – a collective term used internationally to cover personal social services, publicly funded benefits and pensions. Currently, many social protection programmes are managed on a Great Britain basis which means, in effect, that expenditure in Scotland is driven by need (or entitlement) rather than by budget allocation, and we compare patterns of spending between the four UK countries.

Section 12 is about public health and expenditure on health services. We draw together some comparative statistical data which shows that Scotland faces some particular public health challenges, spends more per head of population on healthcare than the UK average, and has relatively more NHS staff.

Section 13 looks at the available statistics on education and explains some of the constraints on making meaningful comparisons. The OECD statistics from the Programme for International Student Assessment provide some direct comparisons for school age children.

SECTION 1: DEFINING SCOTLAND

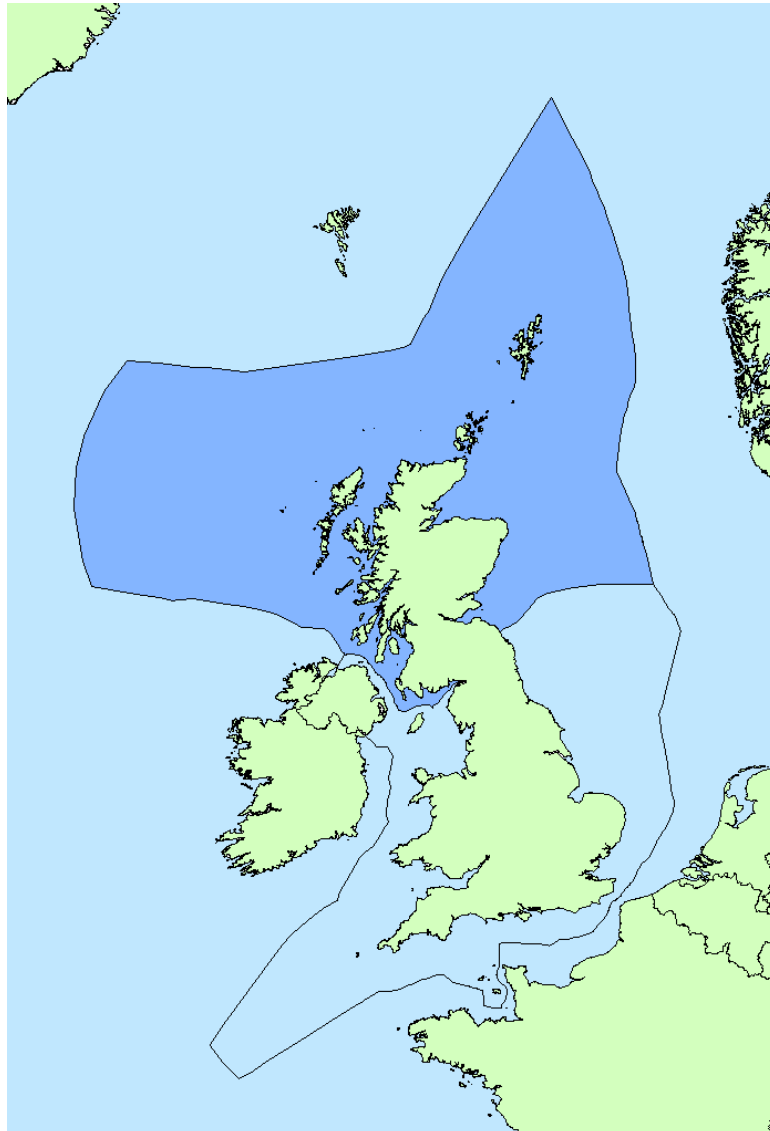
- 1.1 Comparisons of economic statistics between Scotland and other parts of the UK are substantially affected by the territorial concepts adopted. **Land-based territory** (the country as it appears on a conventional map) and **economic territory** are the two main options. The economic territory is defined in European guidelines³ as being the land-based territory plus the Scottish element of the UK Extra-Region territory. Extra-Region is a National Accounting concept, used in Regional Accounts, where economic activity that cannot be assigned to any specific region is treated as the thirteenth region of the UK. This consists mainly of offshore oil and gas extraction along with the activities of UK embassies and forces overseas and other overseas activities.
- 1.2 For brevity, these two concepts are also referred to as the 'onshore' and 'total' definitions; with 'offshore' as the difference between them. Currently there is no agreed definition of offshore economic activity for Scotland and that would only be given a formal definition in the event of independence. So, ahead of the referendum, any statistics for Scotland that purport to be on a total economy basis will involve some speculative assumptions, and this needs to be kept in mind.
- 1.3 In official statistics publications, a widely-adopted convention is to use the boundary definition established for the purposes of the demarcation of Fisheries Management responsibilities between the Scottish and UK Governments, where a median line extending the boundary between Scotland and England, to the north of Berwick-upon-Tweed, is used – see figure 1.1. This convention has also been used widely for analytical purposes and is the 'illustrative geographical' apportionment adopted in the Government Expenditure and Revenue Scotland (GERS) publication⁴ since it was reviewed in 2008. GERS is a National Statistics publication and has been the subject of formal assessment by the UK Statistics Authority⁵.
- 1.4 Official statistical publications and analyses do not always make clear whether they are on the basis of **onshore** or **total** economic activity. It is important that they should do so and the UK Statistics Authority will be asking the government departments and other bodies that produce the statistics to pay close attention to this point. Where it remains unclear, users should seek clarification before drawing conclusions. Ideally, all comparisons should be on the same basis, either onshore or total activity but with the proviso that 'total' is not uniquely defined for Scotland.

³ <http://circa.europa.eu/irc/dsis/nfaccount/info/data/esa95/en/een00485.htm> (relevant part of European System of Accounts 1995) and <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/regional-accounts/index.html> (Regional Accounts methodology guide).

⁴ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS>

⁵ <http://www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/index.html> (see Report 98)

Figure 1.1: UK Continental Shelf and the boundary between Scotland and the rest of the UK for fisheries management purposes



- 1.5 As well as checking the basis of statistical comparisons, whether from official sources or otherwise, readers should keep in mind that trends over time may be affected, to a non-trivial extent, by the territorial concept used.
- 1.6 Currently Scottish Government publications relating to Gross Domestic Product, Index of Manufactured Exports, Retail Sales Index, Global Connections Survey, Input-Output tables and the ONS Regional Gross Value Added (GVA) and Gross Disposable Household Income (GDHI) use the onshore definition. These can be found at the following links:
<http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/PubGDP>
<http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Exports/IMEIntroduction>
<http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/PubRSI>
<http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Exports/GCSIntroduction>
<http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Input-Output/Downloads>
<http://www.statistics.gov.uk/hub/economy/national-accounts/regional-accounts>

- 1.7 The Government Expenditure and Revenue Scotland (GERS) reports and experimental Scottish National Accounts Project (SNAP) provide estimates for Scotland on both the onshore and total economy definitions, for a range of statistics including Gross Value Added (GVA), Gross Domestic Product (GDP) and Tax revenues. These can be found at <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS> <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/SNAP>
- 1.8 In these publications the offshore elements of the UK economy are allocated pro-rata to Scotland using, a) a population share basis and b) an illustrative geographic basis, to give two alternative sets of figures. Either may reasonably be used to make comparisons with the UK total economy figures as long as a consistent basis is adopted and clearly stated.
- 1.9 In practice, commentators often end up comparing Scottish real-terms GDP (produced by the Scottish Government on a quarterly basis) with the latest UK series (published quarterly and updated monthly by the Office of National Statistics). This means that Scotland without oil revenues is compared to the UK with oil revenues. The ONS publication does, however, contain a series 'UK GDP less oil and gas' which is a close approximation to an Onshore UK GDP series (excluding Extra-Regio). At present, this UK less Extra-Regio GDP statistic is not published in real terms and so there is no direct UK counterpart to the Scottish real-terms GDP figures.
- 1.10 An alternative approach would be to compile a real-terms GDP statistic for Scotland including an estimated share of Extra-Regio. However, this would require a decision at a political level on the appropriate share of the Extra-Regio components to be associated with Scotland. While this would not replace the headline Onshore GDP estimate, it would be a useful additional statistic for understanding the Scottish economy.

Summary of advice

- Before comparing economic statistics between countries or regions it is important to be clear about how each economy has been defined.
- The concept of Extra-Regio in the UK National Accounts only appears explicitly in the annual Regional Gross Value Added (GVA) and Gross Disposable Household Income (GDHI) analysis.

Advice to the statistical service

- It would be helpful for comparative purposes to have official statistics relating to real-terms GDP on a 'UK less Extra-Regio' definition.
- Whilst nominal quarterly estimates of Scottish GDP including a share of Extra-Regio are available, real-terms estimates are not. This could be a consideration for future development of the SNAP statistics.

SECTION 2: POPULATION

- 2.1 Scotland's population was 5.3 million in mid-2012 (the latest available estimate), accounting for 8.3 per cent of the UK total. Scotland's total area is nearly 78,000 square kilometres, giving a population density of 68 people per sq km, compared to the UK average of 263 per sq km. Scotland has the lowest population density of any of the UK countries or English regions.
- 2.2 The populations of Scotland and the other UK countries are measured definitively in the Census: a 10-yearly UK-wide household survey, last conducted in 2011⁶. Annual Mid-Year Estimates (MYEs) are then produced by applying annual births, deaths and migration estimates cumulatively. MYEs are available on a consistent basis for Scotland and the rest of the UK. The latest are for 2012 and are based on the 2011 Census⁷.
- 2.3 Table 2.1 illustrates the total population and age composition of each UK country from the 2012 MYEs. Scotland has a slightly higher proportion of working age people than the UK, but a smaller proportion of young people (under 16s). The proportion of the population aged over 65 is higher in Scotland than in the UK as a whole, although the proportion over 75 is the same.

Table 2.1 – Percentage of Total Population by Age Band, 2012 MYE

Age band	England	Wales	Scotland	Northern Ireland	United Kingdom
Under 16 (%)	18.9	18.1	17.2	21.0	18.8
16 to 64 (%)	64.1	62.8	65.4	64.1	64.2
65 to 74 (%)	9.1	10.3	9.5	8.3	9.1
75+ (%)	7.9	8.7	7.9	6.7	7.9
Total population (000s)	53,494	3,074	5,314	1,824	63,705
Share of UK population 2012 (%)	84	4.8	8.3	2.9	100.0

Source: ONS, 2012 Mid-Year Estimates

Population trends

- 2.4 The 2011 population estimates have been re-based to be consistent with the latest Census across the UK. However, Scotland's MYEs for 2001 to 2010 are currently based on the 2001 Census, so direct comparisons between estimates up to 2010 and the 2011 and 2012 estimates are affected by this break in the time-series. The 2001 to 2010 estimates for Scotland are currently being rebased to the 2011 Census and are due to be published in December 2013.

⁶ England and Wales: <http://www.ons.gov.uk/ons/guide-method/census/2011/index.html> , Scotland: <http://www.gro-scotland.gov.uk/census/censushm2011/> , Northern Ireland: <http://www.nisra.gov.uk/census/2011census.html>

⁷ <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/mid-2011-and-mid-2012/stb---mid-2011---mid-2012-uk-population-estimates.html#tab-Mid-2011-and-mid-2012-UK-population-estimates->

- 2.5 There are three key components that are adjusted in the mid-year estimates between Census years: births, deaths and migration. Data on births and deaths are provided by local Registration Offices and the National Records for Scotland (NRS). Migration within the UK is estimated from the NHS Central Register and the Community Health Index, with some further adjustments for certain groups including armed forces, prisoners and students. International migration estimates are primarily taken from the International Passenger Survey (IPS)⁸, with some adjustments derived from Home Office (asylum seekers), Labour Force Survey (LFS) data and Northern Ireland international migration estimates. The IPS produces a relatively small sample of migrants and people do not always register with local health services, so the full extent of local migration may not always be well measured.

Population projections

- 2.6 The Office for National Statistics (ONS) produces UK National Population Projections every two years. Sub-national projections are then produced by ONS for England, the Welsh Government for Wales, National Records for Scotland (NRS) for Scotland and the Northern Ireland Statistics and Research Agency (NISRA) for Northern Ireland. Population projections are relevant to the referendum debate in that projections of the working age population will affect estimates of the available labour force and hence potential tax revenue. And projections of the number of children and retired people will affect assumptions about the dependency ratios and hence benefits calculations. The latest available projections are based on the 2010 population estimates⁹, which have not yet been rebased to the 2011 Census. The 2010-based projections are therefore not directly comparable to the 2011 Census or 2012 population estimates. This position is the same for Scotland and rest of the UK. Projections based on the 2012 population estimates, and rebased to the 2011 Census, are due to be published on 6 November 2013.
- 2.7 All statistical projections are based on an assumption of the continuation of current demographic trends. However, ONS also produces variant projections which adopt a range of plausible alternative scenarios: these include combinations of high and low trends for fertility, life expectancy and migration. The latest available variant projections are 2010-based and are consistently available for Scotland and the other UK administrations¹⁰.
- 2.8 Charts 2.1 and 2.2 present the projected dependency ratios (based on the total working age populations) for children and those of pension age in Scotland and the UK to 2035. Scotland is projected to have a consistently lower dependency ratio amongst children, but a higher and increasing dependency ratio amongst those of pension age.

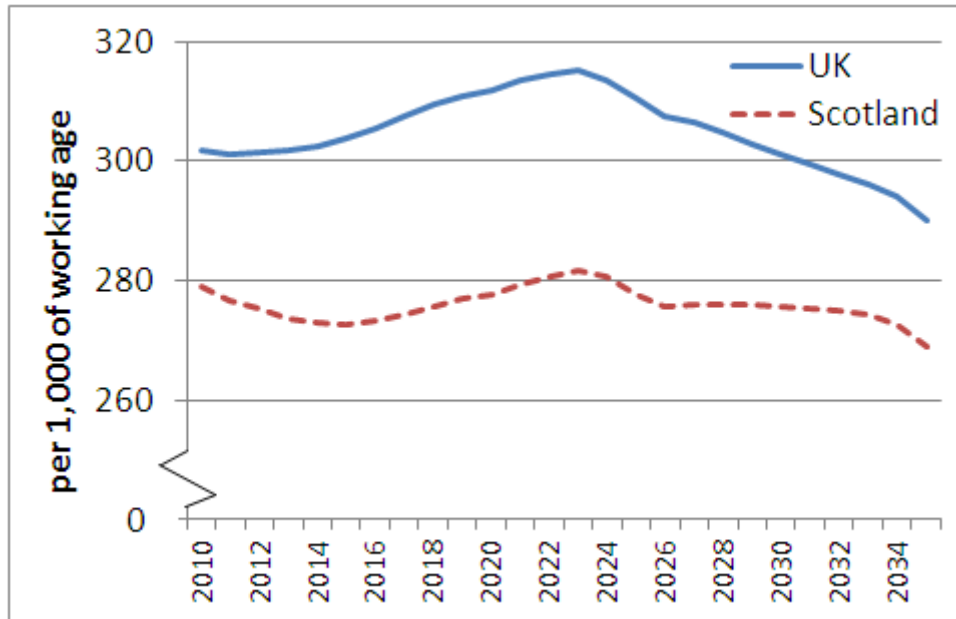
⁸ <http://www.ons.gov.uk/ons/guide-method/surveys/respondents/household/international-passenger-survey/index.html>

⁹ <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-229866>

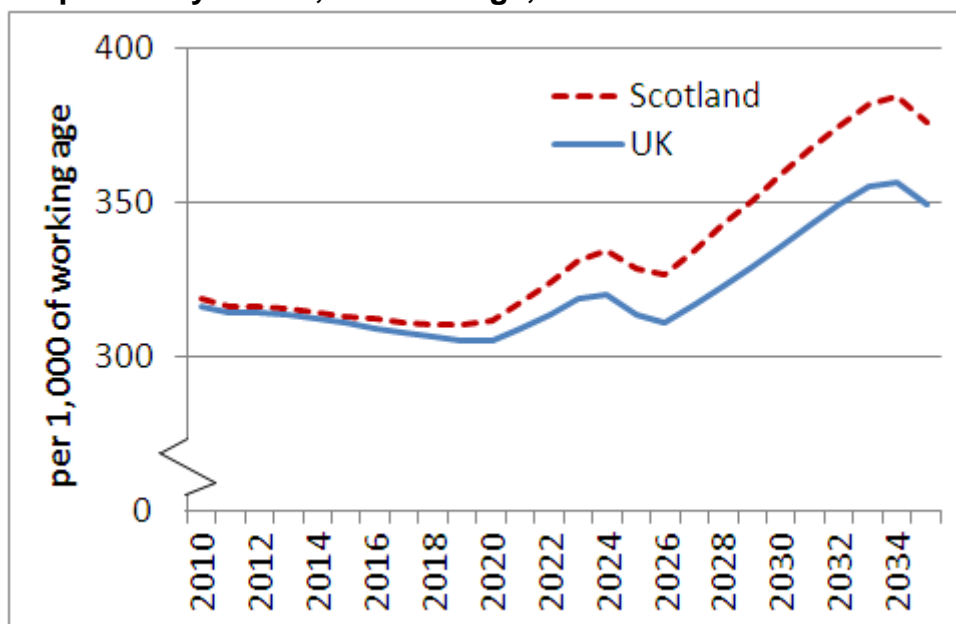
¹⁰ <http://www.ons.gov.uk/ons/rel/npp/national-population-projections/2010-based-extra-variants/index.html>

Chart 2.1 – Dependency Ratios, Children (under 16), 2010 to 2035

Dependents per 1,000 of total working age



Source: ONS, 2010-based Population Projections

Chart 2.2 – Dependency Ratios, Pension Age, 2010 to 2035

Source: ONS, 2010-based Population Projections

- 2.9 It should be noted that the definition of working age population has changed to include women up to 65. Between 2024 and 2046, State Pension age will increase in three stages from 65 years to 68 years for both sexes.

Urban-rural classifications

- 2.10 The Scottish Government has developed a classification of urban and rural areas¹¹, ranging from large urban areas to very remote rural areas. The areas are built up from postcodes which are classified and grouped into settlements. National Records for Scotland (NRS) publishes small area and settlement population estimates, the latest being for 2010¹². There is not a direct comparator available for the UK for this Urban/Rural classification, since England, Wales and Northern Ireland use a different system based on Census output areas.
- 2.11 ONS publishes population density estimates on a comparable basis in Region and Country Profiles¹³ - see Table 2.2.

Table 2.2 – Population Density, 2012

Country	Population mid-2012 (000s)	Area (Sq km)	Population density mid-2012 (People per sq km)
England	53,494	130,279	411
Wales	3,074	20,735	148
Scotland	5,314	77,933	68
Northern Ireland	1,824	13,562	134
United Kingdom	63,705	242,509	263

Source: ONS, Region and Country Profiles, August 2013

- 2.12 As well as having lower population density, Scotland's population is more widely dispersed than in the rest of the UK. There were 93 inhabited islands at the time of the 2011 Census with a total population of 103,700¹⁴ (2% of the Scottish population). Some 4.3 per cent of Scotland's population lives in areas classified as "very remote", while 3 of the 32 Local Authorities have their entire area classified as very remote¹⁵.

Summary of advice

- Population estimates and projections are available for Scotland and other parts of the UK on a directly comparable basis. Scotland accounted for 8.3 per cent of the UK population in 2012. Around 2 per cent of Scotland's population live on one of 93 inhabited islands.
- Trend analysis of population data can be problematic as estimates for earlier years have not yet been rebased to the 2011 Census: this is due to be resolved in December 2013.
- Bear in mind the changing definition of the working age population when using projections.

¹¹ The full list of classifications and definitions is available at:

<http://www.scotland.gov.uk/Topics/Statistics/About/Methodology/UrbanRuralClassification>

¹² <http://www.gro-scotland.gov.uk/statistics/theme/population/estimates/special-area/settlements-localities/index.html>

¹³ <http://www.ons.gov.uk/ons/rel/regional-trends/region-and-country-profiles/key-statistics--august-2013/index.html>

¹⁴ <http://www.gro-scotland.gov.uk/press/2013/census-2011-population-and-household-estimates-for-scotland-release-1c-part-ii.html>

¹⁵ <http://www.scotland.gov.uk/Topics/Statistics/About/Methodology/UrbanRuralClassification/Urban-Rural-Classification-2011-12/Other-Geographies>

- The available definitions of urban and rural areas for Scotland and the other UK administrations are not consistent. However, ONS publishes comparable population density estimates for the UK countries and English regions.

SECTION 3: NATIONAL ACCOUNTS

- 3.1 The Office for National Statistics (ONS) produces detailed National Accounts for the UK. These include estimates of nominal GDP using an output, expenditure and income approach, balanced using the Input-Output framework, on an annual basis, together with real and nominal estimates of GVA and GDP on a quarterly basis¹⁶. GDP is augmented with net income from abroad to estimate the UK Gross National Income (GNI) which is used to calculate the largest part of the UK's financial contribution to the EU budget.
- 3.2 Very little of this analysis is consistently available for the devolved administrations or English regions. ONS does however produce GVA in annual nominal terms for Scotland and the other devolved administrations and regions, but with Extra-Region (the offshore elements, see Section 1) treated as a separate region.
- 3.3 To compare Scotland with other parts of the UK, the Regional Gross Value Added figures¹⁷ produced by ONS are a useful starting point. To compare the relative size of each economy, one can use the GVA per capita figures.

Table 3.1 – Country and Regional GVA per Capita Comparisons and Growth Rates

	Gross Value Added - per capita (£)	Gross Value Added - per capita (£)	Annual average nominal growth rate
Country and Region	1998	2011	1998-2011
United Kingdom	13,435	21,368	4.2%
United Kingdom less Extra-Region	13,243	20,873	4.1%
North East	10,325	15,842	3.5%
North West	11,684	17,754	3.5%
Yorkshire and The Humber	11,759	17,037	3.5%
East Midlands	12,190	18,083	3.8%
West Midlands	11,949	17,486	3.3%
East of England	12,749	19,355	4.1%
London	20,957	35,638	5.1%
South East	13,979	22,369	4.4%
South West	12,187	19,093	4.2%
England	13,570	21,349	4.2%
Wales	10,254	15,696	3.6%
Scotland	12,672	20,571	4.1%
Northern Ireland	10,615	16,531	4.1%

Source: Regional GVA

- 3.4 Table 3.1 shows figures for nominal GVA per capita for 1998 and 2011 for the UK countries and regions. According to this analysis, Scotland's GVA per capita in 2011 was close to that of the UK less the Extra-Region component.

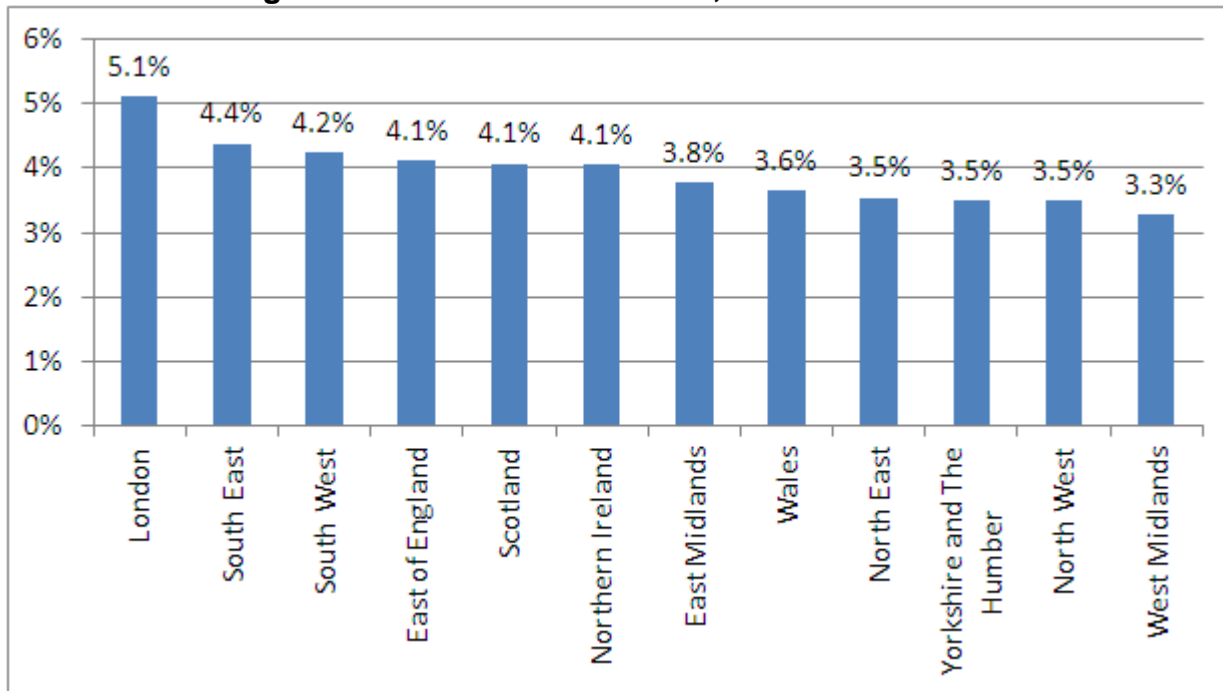
¹⁶ http://www.statistics.gov.uk/hub/release-calendar/index.html?newquery=*&uday=0&umonth=0&uyear=0&title=Quarterly+National+Accounts&pagetype=calendar-entry&lday=&lmonth=&lyear=

¹⁷ <http://www.ons.gov.uk/ons/rel/regional-accounts/regional-gross-value-added--income-approach-/index.html>

Nominal GVA growth

3.5 In terms of **nominal GVA growth** rates, Table 3.1 also shows the average annualised growth rates between 1998 and 2011 for each country and region of the UK. Chart 3.1 compares the growth rates for each country and region between 1998 and 2011 – 1998, as the year prior to devolution, was chosen as the benchmark year. It shows that, over this 13 year period, growth in London has been higher than in the other administrations and regions but that Scotland has experienced growth similar to that in some of the English regions and in Northern Ireland.

Chart 3.1 – Average Annual GVA Growth Rates, 1998-2011



Source: ONS Regional GVA

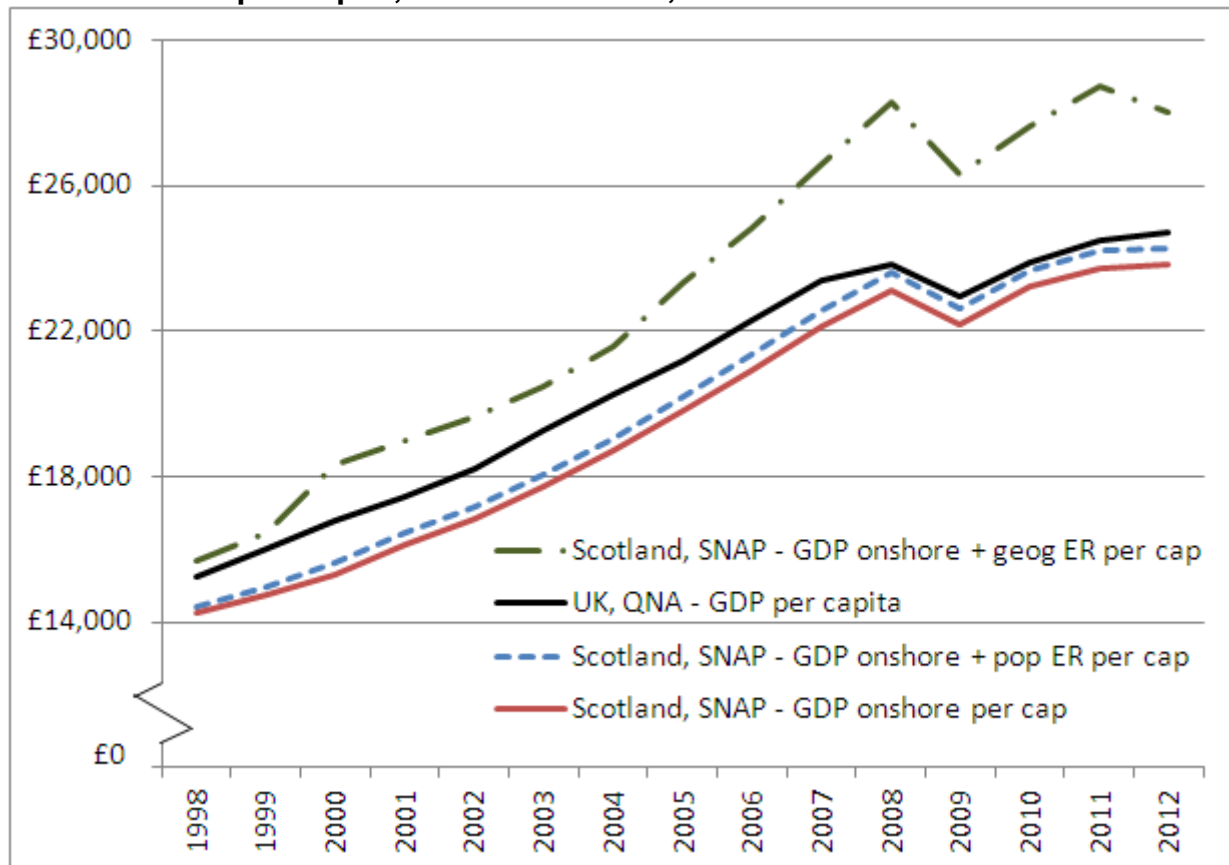
Nominal GDP for different measure of Scotland and its boundaries

3.6 GVA is conventionally used to make comparisons of economic output at an industrial sector level. GDP (which is GVA plus taxes less subsidies on products) is conventionally used to make comparisons of the size of the total economy between countries. SNAP GDP figures¹⁸ have been used to compare the size of the Scottish economy to that of OECD countries in the Scottish Government paper 'Scotland's International GDP per Capita Ranking'¹⁹.

3.7 Chart 3.2 shows how GDP per capita for Scotland - on various bases – compares with the corresponding UK figures. The UK GDP per capita figure is taken from ONS's Quarterly National Accounts. The treatment of the Extra-Region elements is critical both to levels and to trends.

¹⁸ The SNAP publication provides estimates of Scottish GDP including an 'illustrative geographical' share of Extra-Region GDP. This figure, expressed as per capita and converted to US dollars is then compared to other OECD countries on the same basis.

¹⁹ <http://www.scotland.gov.uk/Topics/Economy/Publications/GDP-Per-Capita>

Chart 3.2 – GDP per Capita, Scotland and UK, 1998-2012

Source: SNAP (Scottish Government) and Quarterly National Accounts (ONS)

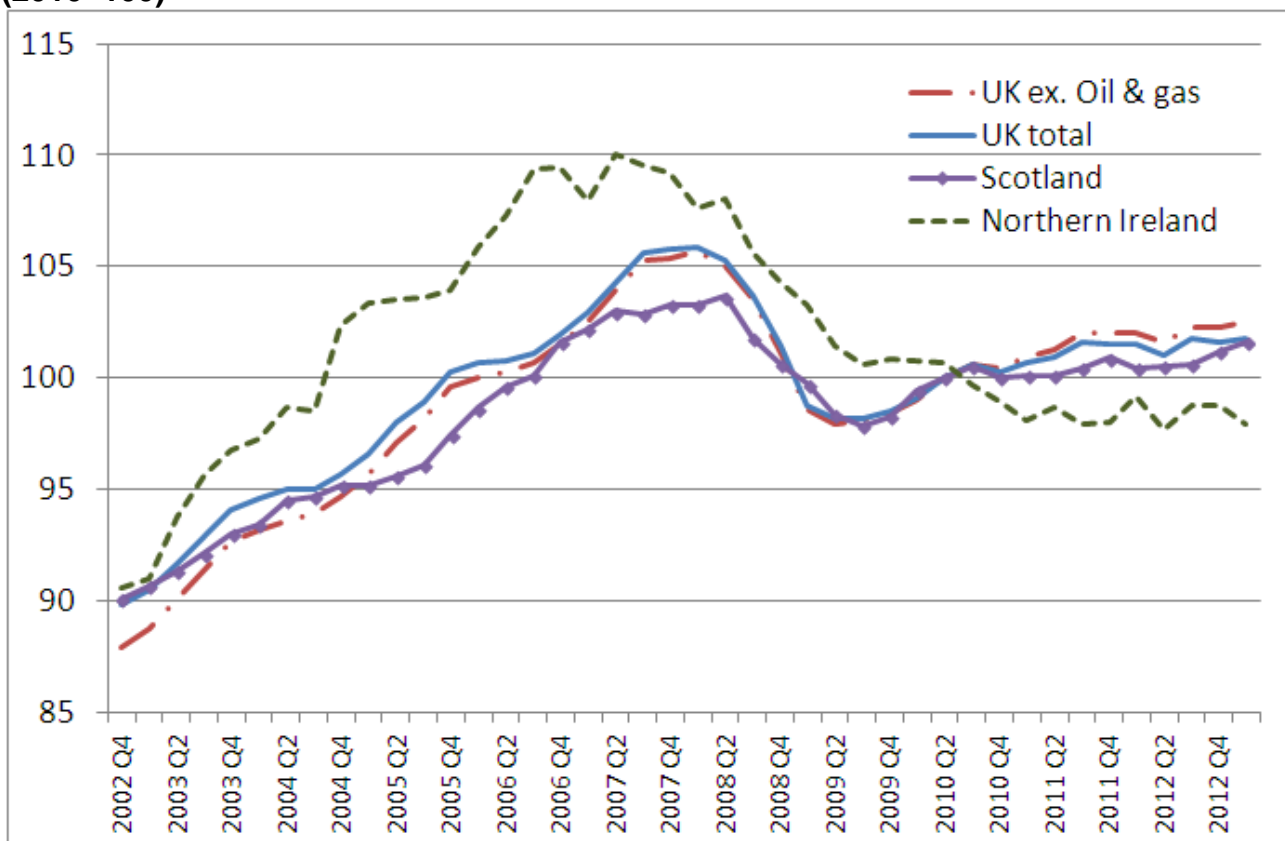
- 3.8 As a cautionary note, there is currently little information available about how much of the value added generated in Scotland actually benefits Scotland directly. To assess this, estimates of Scotland's Gross National Income (GNI), which is a measure of the market value of all final goods and services produced by enterprises owned by a country's citizens, would be required. Around two-thirds of the value added in Scotland, on an income basis, is explained by compensation of employees (paying workers) and most of the remainder is company profits. Almost all of the compensation of employees is 'retained' in Scotland, where workers are resident, but profits may be distributed far wider, depending on the ownership of the company, or resident location of shareholders. Much of the economic activity relating to North Sea output (as well as the alcoholic drinks and financial services industries) is carried out by overseas-owned companies, and may therefore have a less direct benefit to the Scottish economy. The Scottish Government is currently compiling estimates of Gross National Income (GNI)²⁰, but this is proving difficult due to the paucity of suitable regional data, particularly relating to intra-UK monetary transfers.

²⁰ For a presentation on these developments follow this link to "Exploring statistics beyond GDP": <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/ScotStat/Meetings>

Real-terms growth

3.9 For **real-terms GDP growth** (i.e. after removing inflation), statistics for the UK as a whole are published in successive monthly releases each quarter (the GDP Preliminary Estimate, the Second estimate of GDP, and the Quarterly National Accounts) and corresponding statistics for Scotland are published in the Scottish Gross Domestic Product²¹ publication on a quarterly basis. Strictly-speaking the latter figures are real-terms GVA estimates because regional deflators for taxes and subsidies on products are not available; however, the difference is likely to be minimal. Full sets of comparative statistics are not produced for other devolved administrations or regions, although some experimental figures are available on a quarterly basis for Northern Ireland²².

Chart 3.3: Real-terms GDP UK, Scotland and Northern Ireland – 2002-2013 (2010=100)



Note: the experimental NI Composite Index is a deflated output and employee jobs based measure and is therefore only partially comparable with the UK and Scottish estimates.

Source: UK QNA, SNAP, NI Composite Index

3.10 Chart 3.3 shows how real-terms GVA compares between the UK, the 'UK excluding oil and gas', Scotland, and Northern Ireland based on indices with 2010=100. Equivalent figures are not available for England or Wales. 'UK excluding oil and gas' is not quite the same as 'UK less Extra-Region' although they may be considered the same for most purposes.

3.11 Regional producer price indices are not available by industry on a quarterly basis. UK deflators are therefore used in the regional analysis as the best proxy for local deflators.

²¹ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/PubGDP>

²² <http://www.detini.gov.uk/deti-stats-index/stats-surveys/ni-composite-economic-index- nicei .htm>

- 3.12 We recognise that users²³ would like to have two alternative sets of real-terms growth rates for Scotland. First, as at present, for onshore activity only; and second, including the Extra-Regio activity. The latter would enable direct comparisons to be made with the UK as a whole but, in the absence of an agreed definition, any such statistics would require speculative assumptions. Currently, commentators frequently quote growth rates on the onshore basis alongside statements about the size of the economy on the total basis, which can be misleading. Making both sets of data available as official statistics would enable users to make valid comparisons on a consistent basis.
- 3.13 We were told by expert users that there was a demand for more information on Scotland's economic and business cycles. Analysts would need to estimate these on both onshore and total bases to fully understand the cycles. This would be of relevance if in future it was proposed to set fiscal rules for Scotland (see Section 7). The Scottish Government's Fiscal Commission Working Group has published an analysis of differences between the Scottish and UK economic cycle²⁴.

Sectoral statistics

- 3.14 Scotland's economic structure differs from the overall UK economy in a number of ways - both in terms of composition and rates of growth. The relatively larger sectors in Scotland include mining and quarrying (reflecting the auxiliary services to offshore mining), electricity and gas supply (where Scotland is a net 'exporter' to the rest of the UK), construction, and health and social work activities (where Scotland's expenditure is relatively high).
- 3.15 The relatively smaller sectors include information and communication, professional and technical services and financial services. Some sectors, such as the drinks industry, are particularly important with respect to international export markets. Changing circumstances in the wider world may also affect Scotland in a different way to the UK – positively or negatively.
- 3.16 Scotland has a larger public sector in terms of expenditure and employment per capita than that of the UK as a whole. A recent report by the Scottish Parliament Information Centre (SPICE) titled "The Size of the Public Sector"²⁵ draws on a range of official statistics. It looks at three possible measures:
- public spending as a percentage of GDP;
 - government consumption as a proportion of total consumption; and
 - public sector jobs as a proportion of all jobs.
- 3.17 All of these measures can be relevant to public debate on the subject. The third measure is often used as general indicator of the relative size of the public sector and has the advantage that it is not distorted by transfer payments or revenues.

²³ This is mentioned, for example, in an article by the Centre for Public Policy for Regions (CPPR – "Measuring an independent Scotland's economic performance"- http://www.gla.ac.uk/media/media_275906_en.pdf

²⁴ FCWG paper - <http://www.scotland.gov.uk/Resource/0041/00414366.pdf>

²⁵ http://www.scottish.parliament.uk/ResearchBriefingsAndFactsheets/S4/SB_13-36.pdf

- 3.18 There are some differences in the definition of the public sector between Scotland and the rest of the UK which, whilst small in terms of overall totals, can be relevant to some analyses: for example, Scottish Water is a public corporation in Scotland whereas the corresponding services are provided by the private sector elsewhere in the UK. Colleges are classified within the public sector in Scotland, but not in England. And more health services are provided by the private sector in the rest of the UK than in Scotland.
- 3.19 In preparing this report, we were told by experts to whom we spoke that more data on how the structure of the Scottish economy is changing, and reacting to policy change, would be of value. An example would be whether there are differences in trends in output and employment between small, medium and large companies. Users have also identified a need for more analysis on the location of company head-quarters and where companies have sites in more than one country and region within the UK.

Geographic variation

- 3.20 GVA per capita is not greatly different between Scotland and the UK as a whole if the Extra-Regio economy is excluded. On an index basis, if GVA per capita for the UK (less Extra-Regio) is set at 100 in 2010 (the most recent year for which data are available from the ONS Regional GVA estimates) then onshore Scotland is at 98.6. However, GVA per capita varies substantially within the sub-regions of Scotland, and similarly for the sub-regions of the UK as a whole²⁶.

Summary of advice

- To make broad comparisons between the four UK administrations and between regions, the ONS publication *Regional Gross Value Added* (GVA) is a valuable source. It provides GVA (and GVA per head) figures by region and sub-region and by industrial groups. However, these statistics do have some limitations, discussed in this section.
- For more precise comparisons between Scotland and the UK as a whole, the experimental estimates from the *Scottish National Accounts Project* (SNAP) publication may be helpful. In this publication, the Scottish Government estimates quarterly GVA and GDP figures in nominal terms. This analysis extends the GVA estimates to full GDP as well as apportioning Extra-Regio to Scotland on a population and geographical basis. GDP figures, rather than GVA, are conventionally used for international comparisons. However, equivalent figures are not available for England, Wales or Northern Ireland separately.
- For analysis in real-terms, i.e. after removing inflation, the Scottish Government produces real Gross Domestic Product (GDP) by industry on a quarterly basis. These figures are used to measure growth in the economy and are presented in the form of indices. These estimates are for Scottish onshore activity only, whereas the ONS publishes figures for the UK including Extra-Regio. The Northern Ireland Executive produces a similar set of figures on an experimental basis. Separate figures for England or Wales are not available.

²⁶ This can be demonstrated by the ONS Regional GVA estimates which provide sub-national and regional GVA per capita figures at both NUTS2 and NUTS3 levels.

Advice to the statistical service

- In preparing this report, we were told that more data on the structure of the Scottish economy, and how it is changing, would be of value. Users have also identified a need for more analysis on ownership, particularly regarding company head-quarters and where companies have sites in more than one country and region within the UK.
- No official Gross National Income (GNI) estimates are currently produced for Scotland. Users have identified this as an important gap in the range of economic statistics available for Scotland.

SECTION 4: PUBLIC EXPENDITURE

- 4.1 There are two main sources of official statistics for public sector outturn expenditure for Scotland. Firstly, HM Treasury's publication *Public Expenditure Statistical Analysis*²⁷ (PESA) incorporates a *Country and Regional Analysis* (CRA) which provides data on **identifiable expenditure** on services – that is expenditure that can be directly related to a country or region. UK Government Departments and the Devolved Administrations work closely with HM Treasury in peer reviewing the CRA analysis. And secondly, the Scottish Government's report, *Government Expenditure and Revenue Scotland*²⁸ (GERS), which provides additional analysis for Scotland by allocating a *share* of 'non-identifiable expenditure' and 'non-cash expenditure' to Scotland to produce estimates of Scottish Total Managed Expenditure.
- 4.2 It should be noted that:
- **Non-identifiable expenditure** is that which is not allocated by HM Treasury to countries or regions in the UK because it is considered to benefit everyone equally. It includes some 'collective services' such as defence and overseas aid, and some expenditure made for the benefit of the UK as a whole, such as public sector debt interest payments.
 - **Non-cash expenditure** includes items of expenditure where no money has changed hands. This includes items such as public sector depreciation.
 - **Total Managed Expenditure** refers to the total of all three classes of expenditure. This is the definition of public expenditure used in the Public Sector Finances²⁹ for the fiscal balance calculations and is consistent with National Accounting definitions.
- 4.3 The PESA publication is a good source for making comparisons (between UK administrations and between regions) of **identifiable expenditure** and associated per capita rates. But such comparisons do not take account of the non-identifiable and some non-cash elements, as defined above. For comparisons of **Total Managed Expenditure**, the GERS publication provides estimates for Scotland alongside those for the UK on the same basis. Both the GERS and PESA publications are fully consistent with public sector finances definitions but GERS covers the whole of total managed expenditure, including those elements which are treated as non-identifiable and depreciation. Some historic figures are available for Northern Ireland using broadly similar methods³⁰.
- 4.4 Looking at the headline figures (Table 4.1), public expenditure per capita in Scotland is higher than the UK average. Total Managed Expenditure figures are not available for England and Wales, but historic estimates are available for Northern Ireland.

²⁷ https://www.gov.uk/government/publications?departments%5B%5D=hm-treasury&publication_filter_option=statistics

²⁸ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS>

²⁹ See for example <http://www.ons.gov.uk/ons/rel/psa/public-sector-finances/index.html>

³⁰ <http://www.dfpni.gov.uk/northern-ireland-net-fiscal-balance-report-09-10-10-11.pdf>

**Table 4.1: Total Managed Expenditure per capita: Scotland and UK
2007-08 to 2011-12**

	2007/08	2008/09	2009/10	2010/11	2011/12
Scotland (£)	10,800	11,300	11,800	12,100	12,100
United Kingdom (£)	9,500	10,200	10,800	11,000	10,900
Relative Expenditure for Scotland (UK = 100)	114	111	110	110	111

Source: GERS 2011/12

Table 4.2 – Total Identifiable Expenditure on Services by Country and Region, per head 2007/08 to 2011/12

	£ per head					Index (UK identifiable expenditure = 100)				
	2007/08 outturn	2008/09 outturn	2009/10 outturn	2010/11 outturn	2011/12 outturn	2007/08 outturn	2008/09 outturn	2009/10 outturn	2010/11 outturn	2011/12 outturn
North East	8,220	8,890	9,480	9,470	9,390	108	109	108	108	107
North West	8,010	8,500	9,130	9,220	9,180	105	104	105	105	105
Yorkshire and The Humber	7,370	8,020	8,600	8,600	8,540	96	98	98	98	98
East Midlands	6,870	7,360	7,900	8,010	7,980	90	90	90	91	91
West Midlands	7,420	7,920	8,490	8,460	8,400	97	97	97	97	96
East of England	6,560	7,070	7,710	7,780	7,790	86	87	88	89	89
London	8,770	9,190	9,930	9,850	9,610	115	113	114	112	110
South East	6,520	7,090	7,510	7,500	7,570	85	87	86	86	87
South West	6,910	7,510	8,010	8,090	8,170	90	92	92	92	93
England	7,400	7,930	8,510	8,530	8,490	97	97	97	97	97
Wales	8,480	8,990	9,550	9,710	9,740	111	110	109	111	111
Scotland	9,030	9,400	9,930	9,970	10,090	118	115	114	114	115
Northern Ireland	9,520	10,010	10,520	10,530	10,620	125	123	120	120	121
United Kingdom	7,650	8,170	8,740	8,770	8,750	100	100	100	100	100

Source: PESA CRA 2011/12

4.5 Table 4.2 provides comparative information on expenditure per capita between the countries and regions of the UK. The available official statistics do not shed much light on *why* Scotland's identifiable expenditure per capita is higher than the English regions and Wales, but there are some specific factors that are often quoted:

- The 'public sector' is not defined in exactly the same way – for example, water and sewerage services in Scotland are provided by a public corporation, whereas those services in England are provided by the private sector. Whilst these differences are relatively small, they can be relevant when making comparisons.
- Scotland has large rural and remote areas which may affect the practicalities and costs of providing services.

We have not however been able to assess how much of the difference such factors explain.

4.6 Of the £55.5 billion identifiable expenditure in Scotland in 2011-12, nearly 70 per cent was spent by Scottish Government and Local Authorities rather than by UK government departments on services in Scotland. Of the expenditure by UK departments in Scotland, the vast majority (over 94 per cent) was for Social Protection (see Section 10).

- 4.7 In 2011-12, Social Protection accounted for over a third (34 per cent) of public sector total managed expenditure in Scotland (similar to the UK average); Health accounted for 17 per cent (and the same proportion in the UK); and Education and Training a further 12 per cent (again close to the UK average). These three categories which together account for nearly two-thirds of total managed expenditure in Scotland, are examined further in Sections 10, 11 and 12 below. UK and sub-UK comparisons are made in these sections.

Allocation of budgets to Scotland

- 4.8 The PESA and GERS publications provide statistics about public expenditure but not about how Scotland's overall budget is determined. The UK Government currently collects the majority of UK taxes and allocates Scotland a 'block grant'. Annual changes to this grant are calculated by the Barnett Formula³¹ under which the Scottish, Welsh and Northern Ireland administrations receive a population-based proportion of changes in planned spending on comparable Government services in England (or in Great Britain in some cases)³². It is important to note that this population-share formula determines the *changes* to each devolved administration's spending allocation, it does not determine the total allocation. These funding arrangements have been in place since 1979 and the current allocations reflect the accumulation of historic changes. Thus in practice official statistics play a small but specific role in determining Scotland's spending allocation – through the population share of changes.

Summary of advice

- For country and regional comparisons of identifiable expenditure on services HM Treasury's Country and Regional Analysis (CRA) from the annual publication *Public Expenditure Statistical Analysis* (PESA) gives figures separately for the devolved administrations and the English regions. This analysis relates only to identifiable expenditure on services.
- The Scottish Government's report, *Government Expenditure and Revenue Scotland*³³ (GERS), provides additional analysis for Scotland by allocating a share of 'non-identifiable expenditure' and 'non-cash expenditure' to Scotland to produce estimates of Scottish Total Managed Expenditure. These are consistent with the UK Public Sector Finance publication.
- The GERS publication and the CRA analysis only provide information on outturn expenditure (i.e. what has actually been spent) and not on how the budget figure was determined in the first place. Government departments are assigned their budgets by HM Treasury, and changes to the budgets of the devolved administrations are mostly derived on the basis of a formula (see paragraph 4.8).
- Currently there is no published official analysis of the relative 'need' or 'demand' for public expenditure.

³¹ HM Treasury's Statement of Funding Policy is the authoritative source for how the formula works http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/d/sr2010_fundingpolicy.pdf

³² Paragraph 4.3 of the Statement of Funding Policy, link above.

³³ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS>

SECTION 5: TRADE

- 5.1 There are a number of sets of official statistics available on UK trade, mainly produced by HM Revenue and Customs (HMRC) and the Office for National Statistics (ONS). These are used collectively to produce the ONS monthly publication UK Trade³⁴ and in the UK Balance of Payments. These sources include:
- International Trade in Goods data, published by HMRC as the 'Overseas Trade Statistics'³⁵
 - Trade in Services data, published by ONS within the National Accounts, collected via the International Trade in Services survey (ITIS)³⁶
 - Travel data relating to expenditure on goods and services by UK residents and non-residents travelling abroad via the International Passenger Survey (IPS)
 - Estimates for the total value of missing trade
 - Other sources including the Bank of England and Civil Aviation Authority.
- 5.2 However, the HMRC Regional Trade in Goods Statistics³⁷ (which only covers goods and not the services sector), is the only official source of regional trade estimates, covering all countries and regions of the UK.
- 5.3 The concept of **Scottish trade statistics** - as distinct from Scotland's share of the UK overseas trade statistics - raises some complex definitional questions, not least whether and how to record flows of goods and services between Scotland and other parts of the UK. Given the complex geographic footprint of many large companies and institutions, there are real challenges both in defining such flows and then in capturing data about them. There is thus currently no complete or consistent set of trade statistics, covering both imports and exports on a consistent basis, available for Scotland. There are, nonetheless, some useful official statistics relating to trade flows into and out of Scotland in various official statistics publications, together with some modelled analysis derived from these sources. Some of the main sources are mentioned elsewhere in this section.
- 5.4 The problems associated with measuring flows of goods and services into and out of Scotland need to be recognised by commentators: companies may not keep sub-UK records for flows of goods – they are under no obligation to do so; export goods may pass through several hands – and several places - before leaving the UK, so may not leave the UK shore from Scotland even if that is where they originated; goods produced in Scotland may be used in the UK in the production of a secondary good prior to export, and the final destination may not be known by the producer. Whilst tracking trade in goods is complex, trade in services can be harder still to associate clearly with a geographical footprint, and is becoming more so with increased use of the internet and other technological developments.
- 5.5 HM Revenue and Customs publishes estimates of Scottish exports and imports of manufactured goods on a quarterly basis in its *Regional Trade in Goods Statistics* reports. These data are compiled by linking trade data collected by HMRC with postcode data from the

³⁴ <http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Balance+of+Payments>

³⁵ <http://www.hmrc.gov.uk/statistics/trade-statistics.htm>

³⁶ <http://www.ons.gov.uk/ons/publications/all-releases.html?definition=tcm%3A77-21578>

³⁷ <http://www.hmrc.gov.uk/statistics/trade-statistics.htm>

Office for National Statistics (ONS) to obtain the region in which the VAT registered business (importer or exporter) is based. Because the trade is regionalised according to the location of the VAT registered business, some of the trade may be allocated to the region where the head office of the business is located rather than the place of manufacture. The definition of goods uses the Standard International Trade Classification, Rev. 4 (SITC), rather than the Standard Industrial Classification used elsewhere in the National Accounts and Balance of Payments estimates. The net effect of this is to produce some inconsistency between different sources (see Chart 5.1).

Table 5.1 – Value of Regional Trade Flows of Manufactured Goods (Exports & Imports), £ million

	Total Exports			Total Imports		
	2010	2011	2012	2010	2011	2012
United Kingdom	263,100	295,500	295,800	361,100	394,700	403,500
North East	12,100	13,700	13,900	9,600	11,500	9,200
North West	25,400	27,000	25,900	25,200	28,200	29,400
Yorkshire and The Humber	14,600	16,800	16,400	16,600	18,400	18,300
East Midlands	15,600	18,200	18,700	17,500	19,300	20,100
West Midlands	18,300	21,100	22,700	24,900	32,200	35,000
East of England	23,900	28,900	27,700	46,800	47,400	48,900
London	33,500	39,500	40,000	64,400	74,200	75,400
South East	46,200	46,700	45,400	84,300	89,800	90,700
South West	11,600	12,900	12,700	16,500	16,800	18,000
England	201,100	224,900	223,400	305,800	337,800	344,900
Wales	12,300	14,100	12,600	7,100	8,700	7,600
Scotland	16,900	18,700	18,200	12,200	13,200	14,700
Northern Ireland	5,500	6,000	5,700	5,400	5,800	5,700
Unknown	27,300	31,800	35,900	30,500	29,200	30,500

Source: HMRC Regional Trade in Goods Statistics

5.6 Table 5.1 shows the values of regional trade flows of goods (exports and imports) from each country and region in the UK to the rest of the world in 2012, from the HMRC Regional Trade in Goods Statistics publication. Whilst the UK as a whole imported more goods than it exported in 2012, the statistics in the table suggest that Scotland exported more than it imported. This reflects, inter alia, the nature of Scotland's manufacturing base, producing goods such as refined petroleum and chemicals, and whisky, for international markets. Note, however, the large 'unknown' region (accounting for 12.1 per cent of total UK exports and 7.6 per cent of total UK imports) where HMRC has been unable to allocate the trade flows to a region. Some of the unknown flows relate to the flows of oil and gas direct from pipelines, and other items where the goods could not be matched to a country or region.

5.7 The Scottish Government produces an annual **Global Connections Survey**³⁸, which provides estimates of Scottish exports for all industries (covering both goods and services), to the rest of the world (ROW) and to the rest of the UK (RUK). This survey does not collect any data on imports. The survey is annual and seeks information from some 3,000 exporters in Scotland on the value of sales, export sales and destinations of goods and services. The

³⁸ <http://www.scotland.gov.uk/topics/statistics/browse/economy/exports/GCSIntroduction>

survey results are augmented by data from other sources such as the International Trade in Services Survey³⁹ (ITIS), and some information directly from trade organisations (such as the Committee for Scottish Bankers). Oil exported directly by pipeline from the UK Continental Shelf is not included in these figures.

- 5.8 The annual Input-Output tables⁴⁰, produced by the Scottish Government, derive the estimated value of imports as a balancing item. They are estimated by subtracting domestic production and domestic exports from total domestic consumption. The credibility of these, inevitably broad, estimates is then checked by cross-referencing to other imports data (HMRC and UK Input-Output tables). Imports to Scotland specifically from the rest of the UK are harder to measure, and the best that is likely to be available is a broad approximation based on statistical modelling within the Input-Output framework.

Table 5.2 – Comparisons of Official Statistics on Scottish Exports to the Rest of the World, £ billion

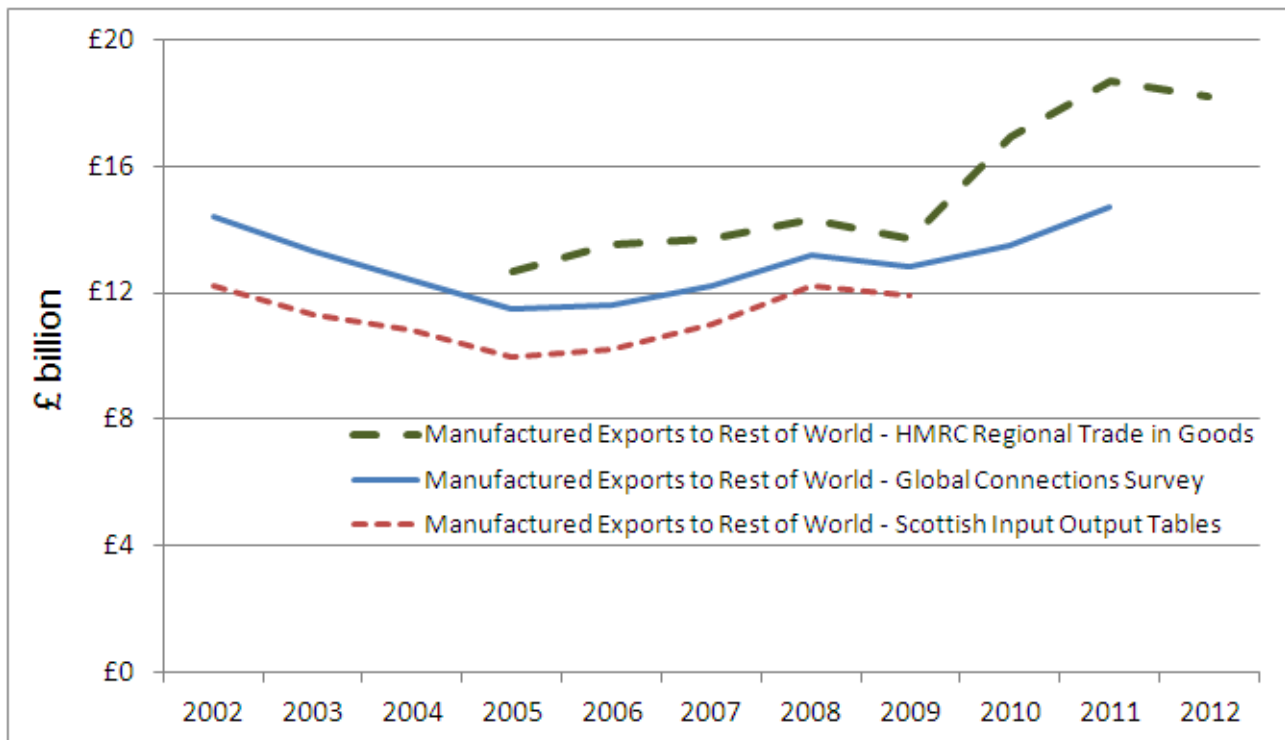
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Exports to Rest of World - Global Connections Survey	19.5	18.7	18.3	17.9	18.5	19.5	21.3	21.6	22.4	23.9	-
Exports to Rest of World - Scottish Input-Output Tables	16.5	16.0	15.7	15.3	15.7	17.2	19.1	19.2	-	-	-
Manufactured Exports to Rest of World - Global Connections Survey	14.4	13.3	12.4	11.5	11.6	12.2	13.2	12.8	13.5	14.7	-
Manufactured Exports to Rest of World - Scottish Input-Output Tables	12.2	11.3	10.8	10.0	10.2	11.0	12.2	11.9	-	-	-
Manufactured Exports to Rest of World - HMRC Regional Trade in Goods				12.7	13.5	13.7	14.3	13.7	16.9	18.7	18.2

Sources: various as detailed

³⁹ <http://www.ons.gov.uk/ons/rel/itis/international-trade-in-services/2011/stb-itis-2011.html>

⁴⁰ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/input-output>

Chart 5.1 – Comparison of Official Statistics on Scottish Exports of Goods to the Rest of the World - £ billion



Sources: various as detailed

5.9 Table 5.2 and chart 5.1 show how estimates of Scottish manufactured exports to the rest of the world differ between publications both in terms of scale and timeliness of provision. These differences are not explained in official statistics publications. The Input-Output analysis is shown in basic prices (i.e. with production taxes removed), whereas the GCS presents exports at market prices i.e. the price paid by the purchaser. The HMRC figures are generally higher than the Scottish onshore-only estimates as they include some direct exports of oil and gas where an oil platform is effectively operating as a port. The Global Connections Survey does not capture these flows.

5.10 The guidance notes⁴¹ to companies completing the Global Connections Survey clarify the position on exports to the rest of the UK including the Continental Shelf (such as goods and services to oil rigs). “Customers based in the rest of the UK are those that are not normally resident in Scotland. Direct transactions with companies and individuals in the rest of the UK, or sales to residents of another part of the UK while they are visiting Scotland are both counted. Exports to the UK Continental Shelf should be treated as exports to the rest of the UK as this survey relates to onshore activities.” This is consistent with the Onshore definition of Scotland as discussed in section 1.

⁴¹ <http://www.scotland.gov.uk/topics/statistics/browse/economy/exports/GCSIntroduction>

Scotland's Balance of Trade and Balance of Payments

- 5.11 The UK Balance of Payments (BoP) measures the economic transactions between UK residents and the rest of the world. It also draws a series of balances between inward and outward transactions, provides an overall net flow of transactions between UK residents and the rest of the world, and reports on how that flow is funded. These economic flows include: exports and imports of goods and services; income flows, such as dividends and interest earned by non-residents on investments and by UK residents investing abroad; financial flows such as investment in shares, debt securities and loans; and transfers, which are offsetting entries to any one-sided transaction listed above, such as foreign aid and funds brought by migrants to the UK.
- 5.12 Constructing a Balance of Payments for Scotland is complex, and not currently available as official statistics. Some users to whom we have spoken, have argued that this is a notable gap in the availability of official economic statistics for Scotland. However, some elements are available from official sources such as the Balance of Trade, and other elements could be estimated using suitable apportionment methods.
- 5.13 The only source of Balance of Trade estimates for Scotland is the Scottish Input-Output tables, but these relate only to trade in goods and services from onshore Scotland. Flows of oil and gas, directly from the UK Continental Shelf will not be included. It is clear that care needs to be taken with the interpretation of these results.
- 5.14 This highlights a further problem concerning the treatment of the UK Continental Shelf which is conventionally shown as being within 'the rest of the UK'. To provide reliable estimates of imports and exports to and from Scotland (including Scottish Extra-Regio) would require the construction of a "satellite" account for the UK Continental Shelf. We understand that research in this area is being undertaken by the Scottish Government, but is still at a very early development stage.

Summary of advice

- For estimates of **trends in exports** from Scotland to the rest of the UK and the rest of the World, the *Global Connections Survey*⁴² provides annual estimates back to 2002. This survey covers exports of both goods and services.
- For Scottish **Balance of Trade** estimates, i.e. for comparing exports and imports between Scotland and the rest of UK and the rest of the world on the same basis, the Scottish Government's annual Input-Output tables⁴³ provide some data.
- For **real-terms manufactured exports**, the Scottish Government's Index of Manufactured Exports (IME)⁴⁴ is a valuable source.
- The Scottish National Accounts Project (SNAP)⁴⁵ quarterly national accounts provide up to date estimates of **total imports and exports** to and from onshore Scotland in current prices.

⁴² <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Exports/GCSIntroduction>

⁴³ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Input-Output/Downloads>

⁴⁴ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Exports/IMEIntroduction>

These are based on a mix of survey and model-based estimates and are consistent with the Scottish annual Input-Output tables and multipliers publication.

- All these published statistics relate to onshore Scotland. This could lead to some misunderstanding if not made clear. For example, if an Aberdeen-based company exports goods or services to a platform in the North Sea, this would be counted as an export to the rest of the UK in the Global Connections Survey and in the Input-Output tables; and oil piped from the North Sea to the Scottish mainland would be an import from the rest of the UK. But if an economic territory concept were employed (see Section 1), there would be neither an import nor an export recorded.

Advice to the statistical service

- In preparing this report, users told us that the lack of good quality inter-regional trade data is a notable weakness in regional economic statistics, and that regional and inter-regional models rely too heavily on estimates and not real data. This is a long term challenge for official statistics but in the shorter term it serves as a warning to users to be cautious in basing statements on estimates of this kind⁴⁶.

⁴⁵ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/snap>

⁴⁶ The Scotsman newspaper carried an article in February 2013 called 'unreliable numbers don't add up' which readers may find helpful <http://www.scotsman.com/the-scotsman-2-7475/opinion/comment/peter-jones-unreliable-numbers-don-t-add-up-1-2798161>

SECTION 6: OIL AND GAS

- 6.1 In the context of the referendum debate, the way oil revenues are handled in official statistics needs to be understood. Many aspects of the debate have drawn on statistics from the GERS publication (see 1.7), in particular the analysis of Scotland's fiscal balance when a geographical share of the North Sea revenues is included.
- 6.2 Official statistics relating to the oil and gas industry are available from various government departments, reflecting their particular engagement with the sector. However, much of the existing economic analysis also draws on data directly from companies in the industry and on academic research. Some of the academic research has also been included or referenced in the official statistics publications, where information required by users is not currently available as official statistics. There are thus a lot of unofficial estimates in circulation from many and mixed sources.
- 6.3 The various official statistics relating to oil and gas production, value added, and tax revenues, are produced respectively by the Department of Energy and Climate Change (DECC), ONS, and HMRC. DECC produces detailed production figures by individual oilfield on a monthly basis⁴⁷. ONS produces tax revenue figures⁴⁸ on a National Accounting basis for Petroleum Revenue Tax (PRT) and licence fees and royalties on a quarterly basis but does not publish disaggregated statistics for North Sea Corporation Tax. HMRC publishes North Sea Corporation Tax on an annual (financial year) basis⁴⁹, and can supply quarterly data on request. ONS also produces quarterly profits data from the oil and gas industries as part of their profitability publication – these data are also available on request.
- 6.4 There is no single agreed method for allocating oil revenues to the UK administrations. This means that no official figures are available at a sub-UK level. However, approximation methods have been used by academic researchers⁵⁰ to allocate, for the purposes of statistical analysis, a share of oil production and tax revenues to Scotland. This allocation has been reflected in official statistics publications of the Scottish Government.
- 6.5 The GERS publication has a chapter devoted to oil revenues and contains official estimates of the Scottish share of tax revenues from the sector. Quarterly estimates from 1998 of the Scottish share of total oil revenues are available from the SNAP tables (see 1.7). For long term estimates of GDP⁵¹ and how oil-related tax revenues relate to Scotland's fiscal balance calculations⁵², experimental estimates are available on the SNAP website.
- 6.6 Many of these oil-related statistics are quoted in the media and in the Scottish and UK Parliaments. There is increasing demand for more analysis of this kind. The assumptions used in the SNAP and GERS publications are well documented. But users have indicated to

⁴⁷ https://www.og.decc.gov.uk/pprs/full_production.htm

⁴⁸ PSAT analysis – not officially published, but available on request

⁴⁹ <http://www.hmrc.gov.uk/statistics/prt.htm> (See table 11.11)

⁵⁰ See for example papers by Professor Alex Kemp, Aberdeen University, "The Hypothetical Scottish Shares of Revenues and Expenditures from the UK Continental Shelf 2000-2013"

<http://www.scotland.gov.uk/Resource/0039/00390421.pdf>

⁵¹ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/SNAP/expstats/aggregates/LRGDP2012Q3>

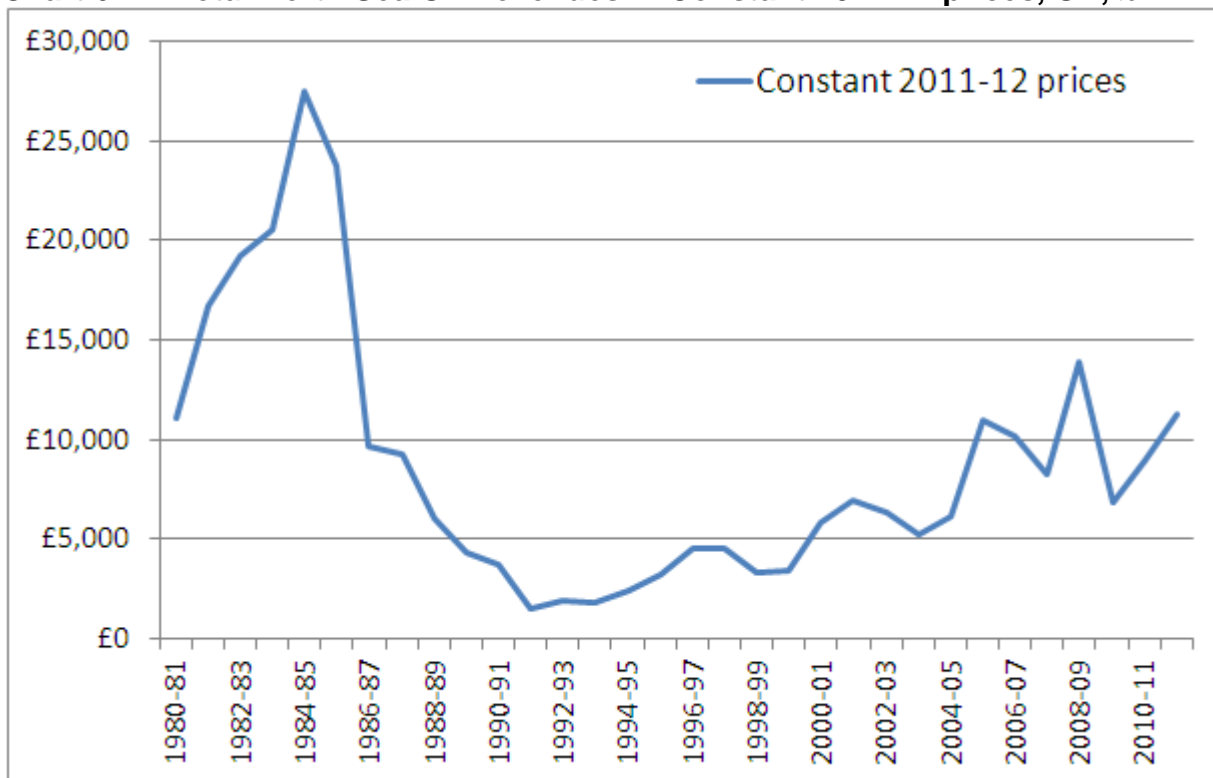
⁵² <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS/RelatedAreas/LRfiscalbalances2013>

us that they would like to see more information about the methods and assumptions used in related academic research.

Volatility of the sector

6.7 Revenues from the oil sector are volatile. Official statistics show that total UK oil revenues at 2011-12 prices, for example, have been as high as £27 billion in 1984-85, as low as £1.5 billion in 1991-2 and most recently at £11.2 billion in 2011-12 in current prices. The volatility is even more apparent especially in the 1980s (see chart 6.1).

Chart 6.1 – Total North Sea Oil Revenues in Constant 2011-12 prices, UK, £ million



Source: GERS 2011/12, HMT GDP deflators

6.8 This volatility could have a substantial effect on modelled estimates of Scotland's public sector finances under various future scenarios (see Section 7). At a UK level, oil revenues currently constitute only 1.5% of the total revenues received. However, using the geographical assumption adopted in the GERS analysis, oil revenues would constitute between 10 and 20 per cent of the total tax revenue in Scotland in recent years.

6.9 In practice, the tax revenues from a possible future Scottish oil and gas sector would depend on trends in oil and gas prices, in production, investment, operating and decommissioning costs. The Office of Budget Responsibility (OBR) produces a forecast of oil and gas revenues⁵³ as part of its total revenue forecast. A separate report is available on the expenditure assumptions used. These assumptions are not necessarily the same as those

⁵³ <http://budgetresponsibility.independent.gov.uk/category/topics/public-finance-forecasts-topics/>

adopted in academic studies and none of these forecasts are official statistics, so the user will need both to establish what assumptions have been made and be clear about that in using such forecasts in public debate.

6.10 The Office for National Statistics (ONS) has estimated the monetary value of untapped reserves to the Treasury in the paper “Monetary Valuation of UK Continental Shelf Oil and Gas Reserves”⁵⁴. ONS estimates that this monetary value is around £120 billion. There are many underpinning assumptions made in such a calculation and we are aware of other unofficial estimates that put a much higher figure on the value of the remaining reserves. Our advice to anyone using these figures in public debate is to look closely at the assumptions before quoting a figure and to be open about the large measure of uncertainty associated with them.

Summary of advice

- The oil sector is complex and official statistics cannot fully provide users with all the information they require. Academic research and analysis from the industry itself is often used and quoted in official documents but that should not be taken as official endorsement of those estimates.
- Users of these statistics need to keep in mind that oil revenues are volatile with production and revenues highly variable from year to year.
- Additionally, the future of oil production and related tax revenues is uncertain, and the estimates of the value of remaining reserves are subject to major assumptions which are not necessarily robust or agreed between experts.

Advice to the statistical service

- Users have indicated that they would like to see more information about the methods and assumptions used in producing estimates quoted in academic research that are then quoted in official publications.

⁵⁴ <http://www.ons.gov.uk/ons/guide-method/user-guidance/well-being/publications/monetary-valuation-of-uk-continental-shelf-oil-and-gas-reserves.pdf>

SECTION 7: TAXATION

7.1 Whilst there are many sources of official statistics on UK taxes, few of these provide a breakdown for the devolved administrations or English regions. However, the Scottish Government's *Government Expenditure and Revenue Scotland*⁵⁵ (GERS) report (see 1.7) incorporates estimates of tax receipts raised from tax payers in Scotland for the past five financial years. These are largely based on various apportionment methods, as documented in the report. Consequently, the estimates should be seen as being relatively uncertain, and as having wide confidence intervals around them.

Table 7.1 – Apportionment of UK Revenue Streams to Scotland, 2011/12

	£ million	Scotland as % of UK	Apportionment Method Used
Income tax	10,790	7.4%	Survey of Personal Incomes and SG analysis, HMRC tax credits
Corporation tax (excl North Sea)	2,976	9.0%	Regional GVA - profits less holding gains
Capital gains tax	246	5.7%	HMRC data for Scotland
Other taxes on income and wealth	265	8.9%	Various
National insurance contributions	8,393	8.3%	Supplied by HMRC
VAT	9,554	8.7%	Weighted household expenditure from Living Costs and Food Survey
Fuel duties	2,296	8.6%	DECC fuel consumption
Stamp duties	506	5.7%	HMRC figures direct
Tobacco duties	1,129	11.4%	Household consumption from LCFS
Alcohol duties	981	9.6%	Household consumption from LCFS
Betting and gaming and duties	115	9.4%	Household consumption from LCFS
Air passenger duty	213	8.1%	Civil Aviation Authority and HMRC
Insurance premium tax	251	8.4%	Population share, ONS and NRS
Landfill tax	97	9.0%	SEPA
Climate change levy	64	9.5%	DECC and ONS
Aggregates levy	52	18.4%	UK Minerals Yearbook
Inheritance tax	164	5.6%	Direct from HMRC
Vehicle excise duty	475	8.0%	DVLA registrations
Non-domestic rates ¹	1,933	8.1%	SLG Finance Stats
Council tax	1,987	7.7%	SLG Finance Stats
Other taxes, royalties and adjustments ²	1,028	8.0%	Various
Interest and dividends	237	8.4%	Population and GVA shares
Gross operating surplus	2,498	10.6%	Regional GVA - NMCC
Rent and other current transfers	47	8.8%	Various
Total current revenue (excluding North Sea revenue)	46,297	8.2%	
<p>1: Excludes non-domestic rates that local authorities pay themselves</p> <p>2: Although this group includes some 11 separate revenues (as set out in the detailed methodology paper on the GERS website), the two largest – TV Licences and National Lottery Distribution Fund - account for 43.2% (£444 million) of this estimate for Scotland.</p>			

Source: GERS 2011/12

7.2 Table 7.1 sets out the GERS estimates of taxes raised in Scotland separately for the different taxes, and in each case identifies the apportionment method used. Note that the estimate of

⁵⁵ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS>

8.2% of Scotland's share of the UK onshore tax revenues (see table 7.1) is close to Scotland's population share of 8.3% (see table 2.1).

- 7.3 As can be seen from Table 7.1, the apportionment metrics are varied. Council tax and non domestic rates are collected locally and thus the totals are calculated directly. In other cases where HMRC are able to provide specific Scottish disaggregation (such as inheritance tax) these figures are used. But, for the majority of revenue streams, an apportionment method is chosen (e.g. for income tax, Scottish estimates from the HMRC Survey of Personal Incomes are used; for corporation tax, profits less holding gains from detailed Regional GVA estimates are used; for fuel duties, estimated fuel consumption is used, and so on).
- 7.4 The GERS estimates of public expenditure and tax revenues for Scotland are often used in other reports as a basis for modelling and forecasting⁵⁶.
- 7.5 There are inevitably some important limitations associated with the apportionment methods currently used. The methods used are well documented and have been subject to consultation with experts and users. However, in some cases, the method might be the best available but still not be ideal – for example, a population share, as currently used for insurance premium tax, may overstate or understate what might in reality be collected in Scotland. The main message here is to use the resulting statistics with an awareness of the uncertainty that may be attached to them.
- 7.6 Also, the GERS estimates currently assume equivalence in terms of tax rates etc between Scotland and the rest of the UK. That assumption would not necessarily hold true in the future depending on the outcome of the referendum and future developments.
- 7.7 The Scottish Parliament has responsibility for two main taxes, council tax and non-domestic rates, as well as the ability, as yet unexercised, to vary the rate of income tax by up to 3p in the pound. From April 2016, the UK rate of income tax will be reduced by 10 percentage points for tax payers in Scotland, and the Scottish Parliament will then determine a Scottish rate of income tax through its own budget. Landfill tax and stamp duty land tax will be devolved to Scotland in April 2015, and it is expected that the aggregates levy will be devolved at some future date.
- 7.8 The current apportionment of total UK corporation tax is based on the Scottish share of profits of private corporations, with some adjustments, taken from the relevant component of the Regional GVA estimates. This implies an assumption that corporation tax *should* be shared between countries according to the profits accrued in each geographical area. However, if a different principle of apportionment was adopted then a different share might be derived. Again, the point for the user of statistics to keep in mind is that there are some big assumptions below the surface and those assumptions might well prove short-lived in the event of any constitutional change.

⁵⁶ See for example the 2012 Institute for Fiscal Studies paper "Scottish independence: the fiscal context".⁵⁶ That report notes that "There are real questions about whether the methods used in doing this are the most appropriate but... we take the figures from GERS and SNAP as given".

7.9 For consumption taxes - such as VAT, tobacco duties, alcohol duties, and the betting and gaming levy - the apportionment is based on household consumption of the related products. The data currently used to calculate the shares comes from a relatively small sample of households from the Living Costs and Food Survey (LCFS), and considerable uncertainty might therefore be associated with these estimates. A three-year moving average is therefore used in the apportionment methods consistent with the LCFS country and regional analysis. The potential effects of this uncertainty may be more than marginal. VAT, for example, contributes over a fifth of Scottish onshore tax revenue, so uncertainty in the Scottish share of UK VAT might translate as a substantial amount of revenue either way.

New country revenue analysis

7.10 HMRC has announced its intention to produce a new official statistics publication on UK tax receipts split by England, Scotland, Wales and Northern Ireland⁵⁷. This will extend UK-wide data that HMRC currently produces, and will be provided for all of HMRC's taxes plus tax credits and child benefit expenditure. It is intended to be an annual publication with estimates initially up to 2012-13. The first publication, to be released on 2 October 2013, will be classified as experimental. It will not contain breakdowns for the English Regions. The UK Statistics Authority will assess these new statistics against the Code of Practice for Official Statistics in due course.

Future revenues

7.11 Whatever the outcome of the referendum, there will be more tax raising powers transferred to Scotland under the terms of the Scotland Act. The Office for Budget Responsibility (OBR) provides a bi-annual forecast of the taxes included in the Scotland Act (income tax, landfill tax, aggregates levy, and stamp duty land tax) for the next five years as part of its economic and fiscal outlook set of publications⁵⁸. These are not official statistics publications, but are the most authoritative forecasts available.

Summary of advice

- Many of the revenue stream estimates are derived by applying an apportionment metric to the UK total, and users should therefore bear in mind that there are potentially substantial margins of error associated with any one estimate.
- The annual Government Expenditure and Revenue Scotland⁵⁹ (GERS) publication provides detailed revenue statistics for Scotland for the past five financial years. Users of these statistics should keep in mind that there are some big assumptions below the surface and those assumptions might well prove short-lived in the event of any constitutional change.
- Users should be aware that the revenue figures are revised each year to take account of definitional changes as well as developments in data sources and methods. Some of these revisions have been large in past years.

⁵⁷ <http://www.hmrc.gov.uk/statistics/announcements/22-07-13.htm>

⁵⁸ <http://budgetresponsibility.independent.gov.uk/economic-and-fiscal-outlook-march-2013/>

⁵⁹ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS>

- Estimated quarterly figures for total Scottish onshore and offshore revenues are available on the SNAP website⁶⁰ from 1998 Q1 to present. These figures are updated quarterly, but the SNAP figures for the Q2 publication will be equivalent, when aggregated up to financial years, to figures published in the GERS publication. In the case of the offshore revenues, a population share and illustrative geographical share are included in the SNAP statistics and either can reasonably be employed – provided the basis is specified and used consistently.
- Historical fiscal balance estimates for Scotland are also available on the SNAP website. These provide estimates of Scotland's onshore and offshore tax revenues for each financial year since 1980/81. These are produced annually and are consistent with the GERS release, see caveat above.

⁶⁰ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/snap>

SECTION 8: DEFICIT AND DEBT

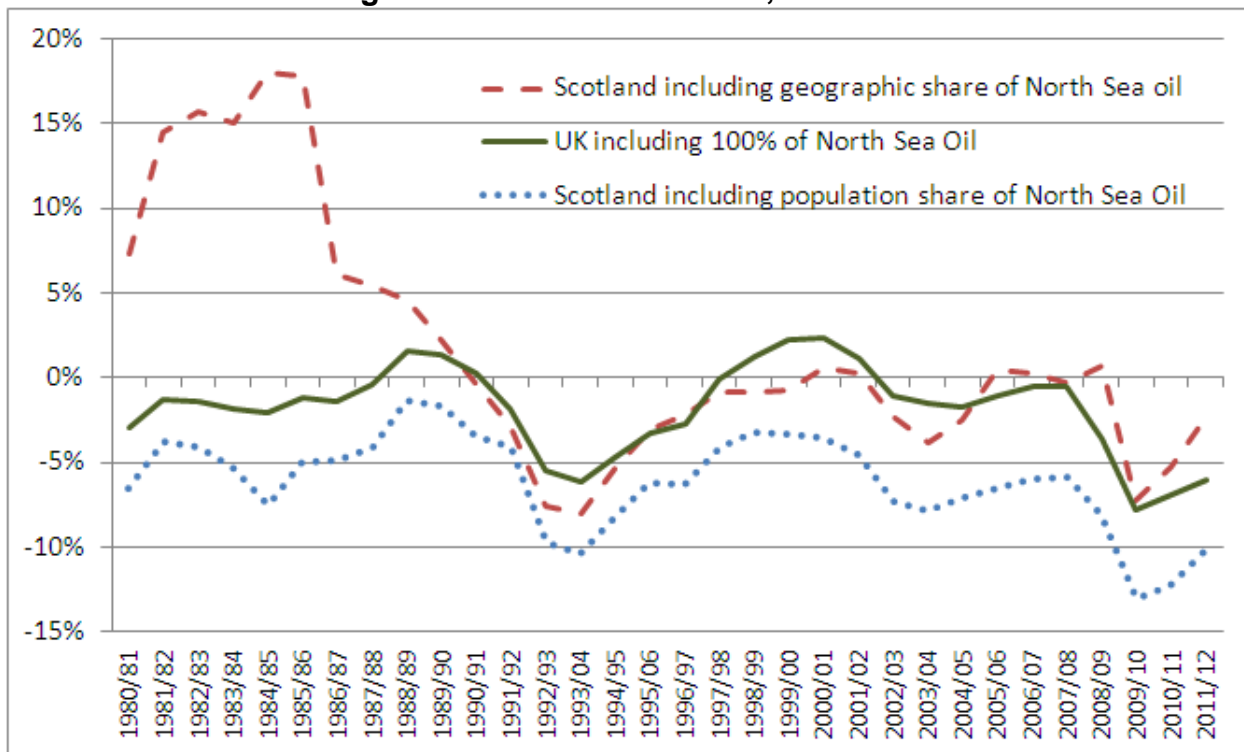
8.1 Under the current constitutional arrangements, Scotland does not have a specific deficit or debt of its own but, if the referendum led to independence, Scotland might accrue a share (currently unresolved) of the UK totals. There are some official statistics relevant to analysis of Scotland's possible deficit under different scenarios.

Deficit

8.2 Estimates of Scotland's deficit, presented as a net fiscal balance, are included in the annual GERS publication (see 1.7). This report sets out, for the last five financial years, estimates of taxes raised, current and capital managed expenditure and public sector depreciation, from which the Scottish current budget balance and net fiscal balance are derived. The latter is the difference between the estimated tax revenue (see section 7) and total managed expenditure (see section 4). Users should keep in mind that this is the difference between two large and uncertain quantities, and there is thus even more uncertainty associated with the derived fiscal balance. This uncertainty is not readily quantifiable but it is potentially large enough to affect the overall picture.

8.3 The SNAP publication provides two additional sets of analysis of the current budget balance and the net fiscal balance for Scotland and the UK: (i) a long term historic analysis going back annually to 1980/81 and (ii) quarterly estimates going back to 1998, around the time of the establishment of the Scottish Parliament.

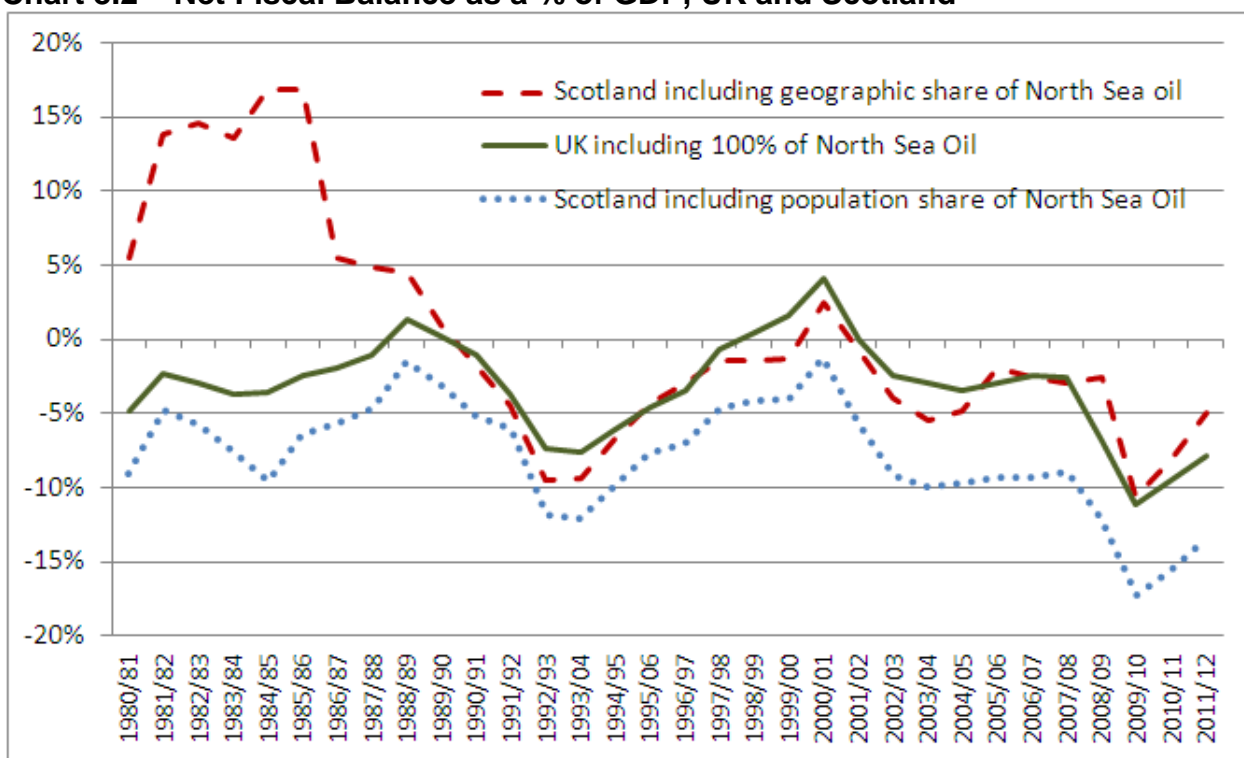
Chart 8.1 – Current Budget Balance as a % of GDP, UK and Scotland



Source: Scottish National Accounts Project, Scottish Government

- 8.4 Charts 8.1 and 8.2 show how the population based, and geographic based, current budget balance estimates and net fiscal balance estimates for Scotland compare with the UK position. With a population share of the offshore economy, Scotland has had a higher current budget deficit and net fiscal deficit relative to its GDP compared to the UK for every year since 1980-81. However, if allocated a geographical share of North Sea oil revenues, Scotland's budget balance on both bases is slightly more favourable than the UK.
- 8.5 In the context of the referendum debate, commentators might ask what these statistics tell us about how Scotland is performing with respect to the UK Government's 'fiscal rules'⁶¹. That analysis is not currently available and might require a greater understanding than currently exists of Scotland's business and economic cycles (as discussed briefly in Section 3).

Chart 8.2 – Net Fiscal Balance as a % of GDP, UK and Scotland



Source: Scottish National Accounts Project, Scottish Government

Debt

- 8.6 The definition of net debt, as used by the UK Government for budgeting and forecasting purposes, is calculated as the total stock of financial liabilities minus liquid assets.
- 8.7 As with deficit, Scotland might be seen as being liable for a share of UK debt but no particular percentage share has the status of an official estimate. A population share of the UK debt is often taken to be the 'starting point' for analysis, but there have been a number of speculative reports published providing estimates of Scotland's debt under various different scenarios and with different start dates. It is arguable that if Scotland has different **deficit**

⁶¹ Fiscal rules set out in the Charter for Budget Responsibility

<https://www.gov.uk/government/publications/charter-for-budget-responsibility>

patterns to the UK as a whole, then its derived **debt** position should be different from a population share, but that is about as far as we can take that line of reasoning.

- 8.8 The Scottish Government has used the GERS figures to produce an illustrative analysis of what Scotland's debt would be, based on its estimated revenues and expenditure since 1980/81 in its 'Scottish Budget'⁶² publication. This showed that the UK public sector net debt at the end of 2011-12 stood at £1,100 billion (72% of GDP). It provided two methods of assigning a notional share of this debt to Scotland in this report. Scotland's population share would have been equivalent to £92 billion (62% of Scottish GDP including a population share of Extra-Region value added). And when Scotland's notional share of UK debt is estimated by the Scottish Government based on Scotland's historical net fiscal balance (from the SNAP publication) it is estimated to be worth £56 billion (38 per cent of Scottish GDP including a geographical share of Extra-Region value added). Many alternative estimates may be calculated by making different assumptions.

Debt interest payments

- 8.9 Debt interest payments are payments to the private sector to cover the interest on outstanding UK government debt. This is an increasing element of UK total managed expenditure (TME) having risen from 5.4% of UK TME in 2007-08 to 7.0% in 2011-12, as shown in the GERS publication. The OBR forecasts⁶³ that UK debt interest payments as a proportion of GDP will rise each year up to 2017-18, despite a falling TME forecast over that period. As discussed in Section 4, debt is a UK-wide issue, and Scotland, for the purposes of the GERS publication, assumes a population share of UK debt interest.

Scotland's wealth, assets and liabilities

- 8.10 There are currently no official estimates of Scotland's total (public and private sector) wealth, nor its assets or liabilities. Any future determination of Scottish assets and liabilities would need to address a number of complex questions, including the apportionment of assets and liabilities in relation to oil, defence, nuclear decommissioning, state and public sector pensions, Bank of England assets and liabilities, and Public Corporations (including the publicly-owned banks) and the Crown Estate.

Summary of advice

- The GERS report provides estimates of Scotland's net fiscal balance (the Scottish equivalent to the net borrowing in the UK public sector finances). Users need to be aware that this estimate is derived by subtracting estimated revenues from total managed expenditure (both are large in value with wide margins of uncertainty – see earlier Sections). The estimate for net borrowing is likely to be particularly uncertain for this reason.
- There are no estimates in the GERS publication for Scotland's potential debt. Whilst a population share would be one way to apportion debt, it is not necessarily the case that (in

⁶² <http://www.scotland.gov.uk/Resource/0042/00425599.pdf>

⁶³ <http://budgetresponsibility.org.uk/economic-and-fiscal-outlook-march-2013/>

the event of independence) that method would be applied. In the course of the referendum debate so far, various analyses of Scotland's debt, based on GERS data, have been quoted. These are not official statistics.

- The currently available official statistics cannot provide a clear indication of what, in the event of independence, Scotland's debt, wealth, assets and liabilities would be.

SECTION 9: EMPLOYMENT AND EARNINGS

Employment

- 9.1 Most official statistics relating to employment, unemployment and earnings in the UK are collected using UK-wide surveys, from which country and regional analyses are derived. The statistics for Scotland are thus directly comparable with those for other parts of the UK. There are, however, a range of different sources available to users, and that may sometimes lead to confusion. It is important to use consistent sources when making country and regional comparisons. For example, Table 9.1 illustrates directly comparable employment and unemployment rates from the UK-wide Labour Force Survey, and gross weekly pay from the UK-wide Annual Survey of Hours and Earnings.

Table 9.1 - Selected Employment and Earnings Indicators, UK Comparison

Area	Employment Rate (%) March – May 2013	Unemployment Rate (%) March – May 2013	Gross weekly pay (£) Full time, 2012
United Kingdom	71.4	7.8	506
North East	66.1	10.4	455
North West	69.4	7.8	470
Yorkshire and The Humber	70.4	9.0	465
East Midlands	71.3	7.7	464
West Midlands	69.3	9.8	469
East of England	74.8	6.6	495
London	70.0	8.6	653
South East	75.1	6.3	537
South West	74.6	5.8	467
England	71.6	7.8	512
Wales	69.4	8.2	453
Scotland	71.9	7.5	498
Northern Ireland	66.7	7.8	459
Notes: Employment rates are a % of the population aged 16 – 64. Unemployment rates are a % of the economically active population. Gross weekly pay is the median earnings of employees working in the area			

Source: Employment and unemployment rates: ONS, Labour Force Survey

Earnings: ONS, Annual Survey of Hours and Earnings

- 9.2 ONS recommends using the annual Business Register and Employment Survey⁶⁴ (BRES) for information on employment by detailed geography and industry. It is a UK-wide survey providing workplace-based employment figures which are directly comparable between countries and regions. BRES is based on a sample of employers taken from the Inter-Departmental Business Register⁶⁵ (IDBR), which excludes self-employment and small businesses below the VAT threshold. BRES also excludes some farm and agricultural data, which are available separately from DEFRA, the Scottish Government and Department of

⁶⁴ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/labour-market/business-register-and-employment-survey--bres-/index.html>

⁶⁵ <http://www.ons.gov.uk/ons/about-ons/who-we-are/services/unpublished-data/business-data/idbr/index.html>

Agriculture and Rural Development Northern Ireland (DARDNI), and so is not a sufficiently comprehensive source for measurement or comparisons for this particular sector. For broad industry groups, Workforce Jobs⁶⁶ provides quarterly information for countries and regions.

- 9.3 The Labour Force Survey (LFS) and the Annual Population Survey (APS) (which is based on data collected for the LFS) is a UK-wide household survey. The LFS sample for Scotland is boosted in order to provide more reliable residence-based results for Scotland. ONS considers the LFS to provide the best indicator of total employment and unemployment in the economy. The Scottish Government produces *Local Area Labour Market Statistics*⁶⁷ based on the results of the LFS and APS. The estimates presented in the Scottish release are consistent with LFS results for the rest of UK.
- 9.4 Direct comparisons of the size of the public sector in Scotland and in the rest of the UK can be problematic. Data collected for *Public Sector Employment in Scotland*⁶⁸ (PSES) are shared between ONS and the Scottish Government, with ONS collecting some components (including employment in the devolved civil service, further education, NDPBs and public corporations) and the Scottish Government collecting the remainder. It is published quarterly on the same day and using the same sector definitions as the equivalent ONS publication for the UK. The Scottish Government notes that valid comparisons with the UK can only be made using the non-seasonally adjusted UK data.
- 9.5 Statistical sources covering Great Britain (England, Scotland and Wales) include ONS's *Quarterly Public Sector Employment Survey*⁶⁹ (QPSES) for employment counts in central government departments and public corporations, and DASA (the Defence Analytical Services Agency) which provides employment counts for defence services. Scotland-only sources, which are provided to ONS for inclusion in the QPSES release, include the Scottish Government's *Joint Staffing Watch*⁷⁰ for employment in Local Authorities and the Police, and the Information Services Division (part of NHS Scotland) for NHS employment⁷¹. Private sector employment is estimated in PSES as the difference between calculated public sector employment and the total employment figure from the LFS.
- 9.6 Some banks and other financial institutions are currently included in the definition of the public sector⁷². Total UK public sector employment in financial institutions (eg Lloyds Banking Group and RBS) is collected in the quarterly ONS public sector survey. This survey does not distinguish sub-UK employment in this sector. Scotland is allocated a fixed share of this UK total in each quarter. Scotland's share, based on employee numbers, is currently only revised once per year from employment estimates from the Inter Departmental Business

⁶⁶ <http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Workforce+Jobs>

⁶⁷ <http://www.scotland.gov.uk/Publications/2013/05/6728>

⁶⁸ <http://www.scotland.gov.uk/Publications/2013/06/9041>

⁶⁹ <http://www.ons.gov.uk/ons/rel/pse/public-sector-employment/q1-2013/stb-pse-2013q1.html#tab-background-notes>

⁷⁰ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Labour-Market/PublicSectorEmployment>

⁷¹ Information Services Division: <http://www.isdscotland.org/Health-Topics/Workforce/>

For England and Wales the corresponding sources are the ONS quarterly public sector employment survey and the Information Centre for Health and Social Care: <http://www.ons.gov.uk/ons/rel/pse/public-sector-employment/q1-2013/stb-pse-2013q1.html#tab-background-notes>

⁷² <http://www.scotland.gov.uk/Topics/Statistics/Browse/Labour-Market/PublicSectorEmployment/SourcesDef> (see paragraphs 29 to 33)

Register (IDBR). This re-weighting happens for the quarter 3 estimate, though we understand the Scottish Government is currently updating the methodology to update on a quarterly basis. Under the current system, a change in Scotland's share of UK public sector financial institutions after Q3 2013 may not be accurately reflected in PSES until the Q3 2014 results are available: this would be in January 2015, too late to inform the debate ahead of the referendum. This may be significant if some public sector financial institutions return to the private sector during this period.

- 9.7 The estimates of employment in the education sector differ between PSE and those published by the Department for Education (DfE) and Scottish Funding Council (SFC) due to definitional differences. This is mainly due to the treatment of the college sector which has been removed from the public sector in England, but remains in the sector in Scotland. The approach is consistent with the National Accounts definitions used in each country. Users may find the PSES most useful for comparisons of employment within the public sector, while bearing in mind the definitional differences in the structure of the sector.

Earnings

- 9.8 Official statistics about earnings are available from various UK-wide surveys, so direct comparisons can be made between Scotland and the rest of the UK. It is better not to attempt to make comparisons between results drawn from different surveys, as they are unlikely to capture the same content.
- 9.9 The *Annual Survey of Hours and Earnings*⁷³ (ASHE) is a UK-wide survey managed by ONS, and includes directly comparable results for Scotland and the rest of the UK. ASHE covers **earnings from employment**, but not from other sources of income, so does not provide estimates of total income, poverty, or reliance on public sector support. ASHE also excludes the earnings of self-employed workers, so does not give a comprehensive picture. It is however, based on the largest and most reliable sample available for earnings from employment across most industrial sectors and geographic areas.
- 9.10 Like ASHE, the *Family Resources Survey*⁷⁴ (FRS) is a UK-wide survey with consistent results for Scotland and the rest of UK. The FRS includes all sources of income, but does not offer the same level of industrial detail as ASHE. The LFS also includes earnings figures, but these are based on self-reported returns, and are therefore likely to be less reliable than the information from ASHE or FRS. The FRS is the more comprehensive source of incomes data.

Summary of advice

- When making comparisons between countries and regions of employment and earnings estimates, users are strongly advised always to use data from the same survey, rather than using a mixture of data sources.

⁷³ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/labour-market/annual-survey-of-hours-and-earnings/index.html>

⁷⁴ <http://www.ons.gov.uk/ons/guide-method/surveys/respondents/household/family-resources-survey/index.html>

- The Business Register and Employment Survey (BRES) is a source for employment analysis by sector and geographic area, but not for the agriculture, fishing and forestry sector.
- The Labour Force Survey (LFS) is good for analyses of total employment.
- The Public Sector Employment Survey (PSES) is the most suitable for analysis of the public sector, although Scotland vs UK comparisons must be treated with caution due to some differences (see 9.5 and 9.6).
- Earnings data for all 4 countries of the UK are available from the ASHE publication⁷⁵ and are directly comparable. However, this is based on survey information and can have wide confidence intervals for some indicators.
- NOMIS provides an easy access route to a range of labour market indicators including BRES, APS, LFS and ASHE. SNAP (see 1.7) includes an estimate of the total quarterly compensation (earnings) received by Scottish employees. This is derived from the average earnings data presented in ASHE and the total employment data presented in BRES. Compensation of employees accounts for some 60 per cent of Scotland's GDP when calculated using the income method: one of the three methods of calculating GDP in SNAP. SNAP only provides figures for Scotland.

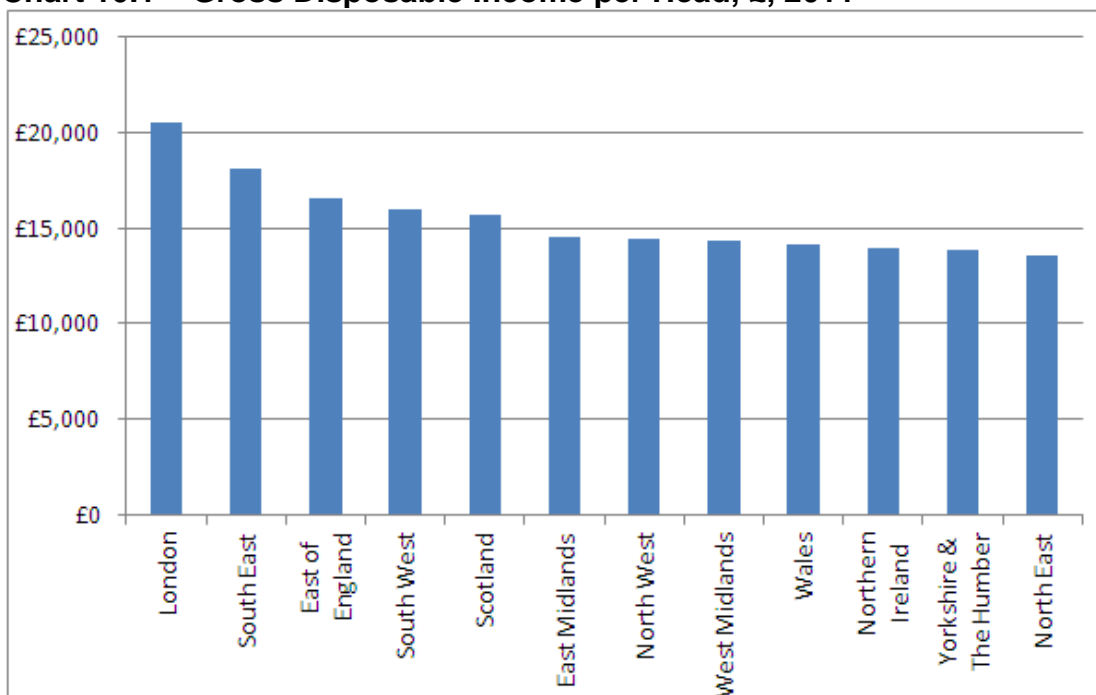
⁷⁵ <http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2012-provisional-results/index.html>

SECTION 10: HOUSEHOLD INCOME AND EXPENDITURE

Household income

- 10.1 The concept of ‘disposable income’ is often used to approximate the ‘material well-being’ of the household sector. Scotland’s Gross Disposable Household Income (GDHI) per capita in 2011 was 97.6 per cent of the UK average.
- 10.2 Gross Disposable Household Income is the amount of money that individuals in the household sector have available for spending or saving after income redistribution measures (for example taxes, social contributions and benefits) have taken effect. It should be noted that these estimates relate to totals for individuals within the household sector in a geographical area rather than to households or family units. So GDHI per head estimates give values for each person, not each household.
- 10.3 For regional household income figures, the GDHI⁷⁶ estimates that are published annually by the Office for National Statistics (ONS) are the most useful source. The figures are presented for areas according to the European classification of Nomenclature of Units for Territorial Statistics (NUTS). The NUTS1 areas equate to the devolved administrations and regions for England. NUTS2 and NUTS3 areas are lower level geographies – with Scotland having 4 and 23 sub-regions respectively. These figures are presented in cash values and income per capita.

Chart 10.1 – Gross Disposable Income per Head, £, 2011



Source: ONS, Gross Disposable Household Income

- 10.4 Chart 10.1 shows that among the twelve UK countries and regions, Scotland was close to the middle of the distribution in terms of Gross Disposable Income per capita.

⁷⁶ <http://www.ons.gov.uk/ons/rel/regional-accounts/regional-household-income/spring-2013/stb-regional-gdhi-2011.html>

10.5 Within Scotland, of the 23 NUTS 3 areas, there was significant variation in GDHI per capita – ranging from £13,500 in Glasgow City to £18,000 in the Shetland Isles (partly due to the impact of the oil industry) in 2011. Users should note, however, that the NUTS2 and 3 boundaries do not map directly to more familiar administrative boundaries such as local authorities.

Distribution of household income

10.6 The Family Resources Survey⁷⁷ (FRS), commissioned by the Department of Work and Pensions, collects information on the incomes and circumstances of private households in the United Kingdom. The statistics from the survey contain a wealth of important and useful statistics on household income and state support, tenure, disability and carers. Data from the survey are useful for regional analysis of income by household. The FRS sample size is boosted in Scotland to enable analysis at a Scottish level. Some disaggregations are available for Scotland such as age group (children, working age, and pensioners). Table 10.1 shows total average household weekly income for 2011/12 by country and region by income band. Note: these figures have not been adjusted to take into account household composition.

Table 10.1 – Total Weekly Household Income, 2011/12, by Region and Country

Region/ Country	Percentage of households in weekly income bracket										
	< £100	£100 - £200	£200 - £300	£300 - £400	£400 - £500	£500 - £600	£600 - £700	£700 - £800	£800 - £900	£900 - £1000	£1000 plus
North East	2	9	15	18	12	9	8	7	6	2	12
North West	1	8	17	16	11	10	7	5	5	3	16
Yorkshire and The Humber	2	9	15	14	12	9	8	6	5	4	17
East Midlands	1	10	16	14	11	8	9	6	5	4	16
West Midlands	2	9	14	15	11	9	7	7	5	4	17
East of England	2	7	11	12	10	8	9	7	5	5	24
London	1	7	13	12	9	7	7	5	5	4	28
<i>Inner London</i>	1	10	16	14	9	5	6	4	6	4	26
<i>Outer London</i>	1	5	10	12	9	9	8	7	5	5	29
South East	1	7	11	10	8	8	8	7	6	5	28
South West	2	9	13	12	11	9	8	7	7	3	19
England	2	8	14	13	10	9	8	6	5	4	21
Wales	2	11	16	14	12	10	6	7	4	4	16
Scotland	2	9	15	14	11	8	8	6	5	4	18
Northern Ireland	2	11	15	15	10	10	9	6	5	4	13
United Kingdom	2	8	14	13	10	9	8	6	5	4	20

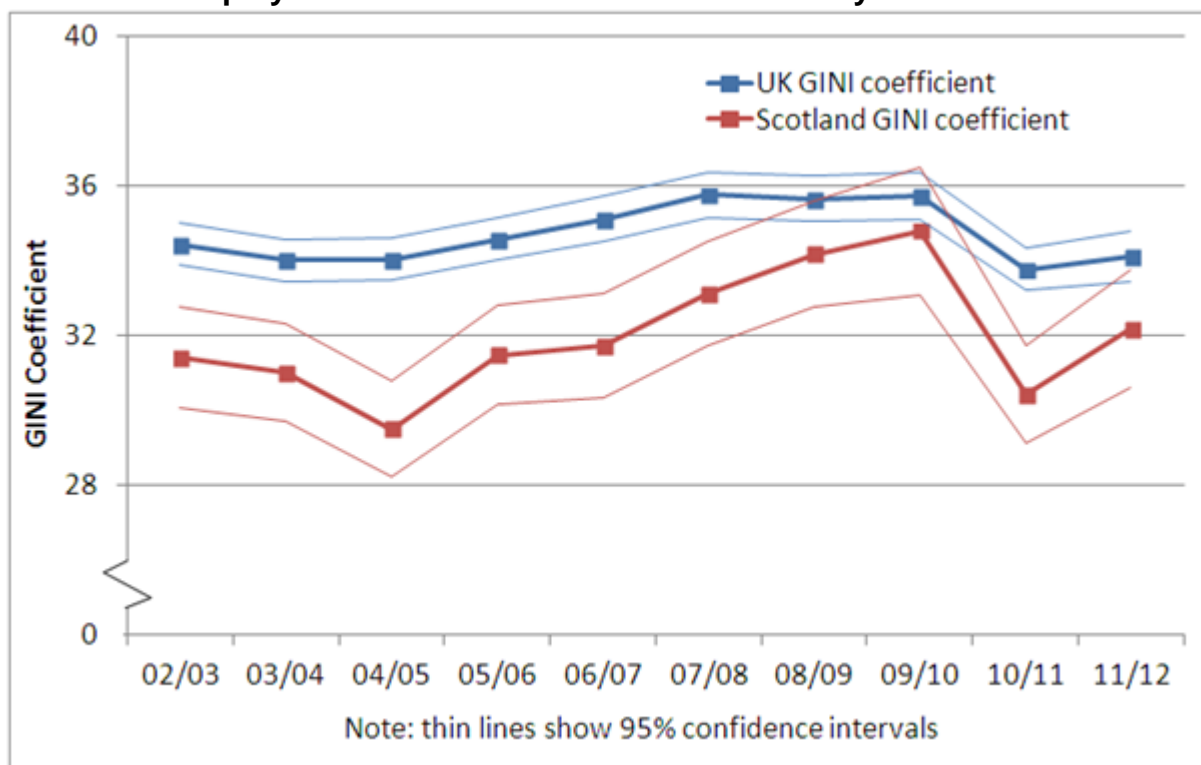
Source: DWP, Family Resources Survey 2011/12

⁷⁷ <https://www.gov.uk/government/organisations/department-for-work-pensions/series/family-resources-survey--2>

10.7 For detailed measures of income, which take into account indirect taxes (such as VAT, alcohol and fuel duties) and benefits in kind (such as education and the NHS), ONS's Effects of Taxes and Benefits⁷⁸ series, based on the Living Costs and Food Survey, is the primary source.

10.8 The GINI coefficient⁷⁹ is a measure of the dispersion of household incomes within the economy. A GINI coefficient of 0 reflects equality and 1 represents total inequality. This is derived from the distribution of 'equivalised'⁸⁰ household income from the Households Below Average Income⁸¹ (HBAI) analysis from the Family Resources Survey (FRS). Chart 10.2 shows how the Scottish GINI coefficient is below the UK average for each year since 2002-03, indicating that, over this period, Scotland's household income distribution is more narrowly spread than the UK distribution.

Chart 10.2 – Equity of Household Income as Measured by the GINI Coefficient



Source: DWP Family Resources Survey, Households Below Average Income

⁷⁸ <http://www.ons.gov.uk/ons/rel/household-income/the-effects-of-taxes-and-benefits-on-household-income/index.html>

⁷⁹ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/social-and-welfare-methodology/the-gini-coefficient/index.html>

⁸⁰ Equivalisation is a standard methodology that adjusts household income to account for different demands on resources, by considering the household size and composition.

⁸¹ <https://www.gov.uk/government/organisations/departments-for-work-pensions/series/households-below-average-income-hbai--2>

Household expenditure and savings

10.9 For household expenditure, the publication Family Spending⁸² provides a detailed analysis of the statistics from the Living Costs and Food Survey (LCFS). The LCFS is a voluntary household survey that collects details about the expenditure of the household and individuals within the household. It forms part of the Integrated Household Survey (IHS). The sample does not cover the Scottish inhabited islands or the Isles of Scilly. Achieved sample sizes are small, though a Scottish boost to the survey is under consideration. Table 10.2 shows the average weekly expenditure by country and region on a broad range of household expenditure items.

**Table 10.2 – Average Weekly Household Expenditure by Commodity
2009-2011 (3-year average)**

	Average weekly household expenditure (£)													
	North East	North West	Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Northern Ireland	United Kingdom
Food & non-alcoholic drinks	46	51	47	53	51	56	58	58	56	54	53	52	58	53
Alcoholic drinks, tobacco	11	13	11	11	11	11	10	12	11	11	11	13	17	12
Clothing & footwear	22	22	19	19	19	21	27	21	20	21	21	22	41	22
Housing (net) ¹ , fuel & power	46	56	53	55	54	59	91	63	61	62	54	53	50	60
Household goods & services	24	28	27	26	26	32	34	33	31	30	22	26	27	29
Health	5	4	4	6	4	6	8	9	6	6	3	4	6	6
Transport	50	56	54	64	62	69	67	75	69	64	54	61	63	63
Communication	11	12	11	13	12	14	16	14	13	13	11	12	13	13
Recreation & culture	51	58	57	58	54	65	61	71	62	61	54	55	60	60
Education	3	7	5	9	8	6	16	11	8	8	9	5	8	8
Restaurants & hotels	33	36	35	35	35	39	53	43	37	39	32	37	49	39
Misc. goods & services	28	37	31	36	32	40	43	44	37	37	28	32	38	37
All expenditure groups	330	378	355	385	369	416	484	453	410	406	351	372	429	401
Other expenditure items	54	66	55	62	56	81	91	87	70	71	48	69	60	70
Total expenditure	384	444	410	447	425	497	575	539	480	478	398	441	489	471
Average weekly expenditure per person	174	189	180	193	178	216	226	229	209	203	170	200	197	201

¹Excluding mortgage interest payments, council tax and Northern Ireland rates

Source: Living Costs and Food Survey, Family Spending 2011

10.10 Table 10.2 shows that Scottish households on average spend slightly less each week on food and non-alcoholic drinks than the UK as whole, but more per week on alcoholic drinks and tobacco. Housing (net) expenditure in Scotland is considerably less than the UK average, but this comparison is affected by the high figure for London. On the whole, for the

⁸² <http://www.ons.gov.uk/ons/rel/family-spending/family-spending/index.html>

range of goods covered in this survey, average weekly expenditure per person in Scotland was just slightly less than for the UK as a whole.

10.11 From the UK Quarterly National Accounts⁸³ and the Scottish National Accounts Project⁸⁴, users can get an impression of the relationship between income and expenditure and the household savings ratio.

Table 10.3 – Use of Disposable Income Account, £ million
Households and Non-Profit Institutions Serving Households Sector

	RESOURCES			USES			Households' saving ratio ²
	Gross Disposable Income	Adjustments ¹	Total available resources	Final consumption expenditure	Gross saving	Total uses	
United Kingdom							
2009	954,248	26,547	980,795	912,315	68,480	980,795	7.0%
2010	999,829	34,384	1,034,213	958,596	75,617	1,034,213	7.3%
2011	1,027,024	36,554	1,063,578	992,339	71,239	1,063,578	6.7%
2012	1,068,078	34,792	1,102,870	1,028,756	74,114	1,102,870	6.7%
Scotland							
2009	77,085	2,083	79,168	74,138	5,029	79,168	6.4%
2010	81,252	2,726	83,978	75,679	8,300	83,978	9.9%
2011	83,288	2,900	86,188	78,021	8,167	86,188	9.5%
2012	87,281	2,822	90,103	80,908	9,195	90,103	10.2%

¹ Adjustments for the change in net equity of households in pension funds

² Saving as a percentage of total available resources

Source: Quarterly National Accounts and SNAP

10.12 Table 10.3 shows that Scotland is estimated to have a larger Households' Saving Ratio than the UK average, based on the experimental SNAP statistics. Users should be aware, however, that estimated savings is derived by subtracting total expenditure from total income – both of which are relatively larger numbers with variability in the estimates. The differences are likely to have large confidence intervals, and so users should take this into account when making comparisons.

Summary of advice

- Total gross disposable household income figures are published in the Regional Gross Disposable Income publication.
- For detailed analysis of the distribution of disposable income, the Family Resources Survey data, which has been boosted for Scotland, provides estimates. For detailed measures of income, which take into account indirect taxes (such as VAT, alcohol and fuel duties) and benefits in kind (such as education and the NHS), ONS's Effects of Taxes and Benefits series, based on the Living Costs and Food Survey, is the primary source.

⁸³ <http://www.ons.gov.uk/ons/rel/naa2/quarterly-national-accounts/index.html>

⁸⁴ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/snap>

- For detailed expenditure by household, users can refer to the Living Costs and Food Survey.
- A households' saving ratio is available for Scotland as part of the experimental Scottish National Accounts Project. Users should be aware that these estimates will have large confidence intervals, and comparisons should be made with caution.

SECTION 11: SOCIAL PROTECTION

11.1 Social protection is a collective term – defined internationally in the UN Classification of Functions of Government (COFOG) - covering a range of expenditure programmes including personal social services, publicly funded benefits, state pensions and government and military pensions. Around 40 per cent of all identifiable public expenditure in Scotland relates to social protection so it is a major part of the social and economic infrastructure (this compares to 43 per cent for UK as a whole). Although Scotland's percentage is lower, actual spending per capita is higher. Many of the social protection programmes are currently managed on a GB basis (with similar arrangements for Northern Ireland). Decisions on pensions and benefits, in respect of Scotland, are thus mostly taken by the UK Government and are consistent with other parts of the UK.

Table 11.1 – Social Protection Identifiable Expenditure, 2007/08 to 2011/12

	2007-08	2008-09	2009-10	2010-11	2011-12
Social protection spending - Scotland (£ million)	17,100	18,400	19,900	20,600	21,400
Social protection spending - UK (£ million)	185,600	201,700	221,200	228,300	238,300
Social protection spending - Scotland as a % of UK	9.20%	9.12%	9.00%	9.00%	8.96%
Social protection spending per capita - Scotland (£)	3,320	3,560	3,830	3,940	4,060
Social protection spending per capita - UK (£)	3,030	3,260	3,550	3,640	3,770
Per head - indexed to UK=100	109.6	109.2	107.9	108.2	107.7

of which: Benefits

(sickness and disability, family and children, unemployment and social exclusion other)

	2007-08	2008-09	2009-10	2010-11	2011-12
Benefits spending - Scotland (£ million)	6,090	6,470	7,140	7,320	7,500
Benefits spending - UK (£ million)	65,400	71,700	80,000	82,200	85,800
Benefits spending - Scotland as a % of UK	9.32%	9.02%	8.93%	8.90%	8.75%
Benefits spending per capita - Scotland (£)	1,180	1,250	1,370	1,400	1,430
Benefits spending per capita - UK (£)	1,070	1,160	1,290	1,310	1,360
Per head - indexed to UK=100	111.0	107.8	106.9	106.9	105.2

of which: Old age related

(personal social services and pensions)

	2007-08	2008-09	2009-10	2010-11	2011-12
Old age spending - Scotland (£ million)	7,040	7,790	8,310	8,660	9,190
Old age spending - UK (£ million)	77,800	85,100	90,900	94,000	99,100
Old age spending - Scotland as a % of UK	9.05%	9.16%	9.15%	9.21%	9.28%
Old age spending per capita - Scotland (£)	1,370	1,510	1,600	1,660	1,750
Old age spending per capita - UK (£)	1,270	1,380	1,460	1,500	1,570
Per head - indexed to UK=100	107.8	109.5	109.6	110.6	111.6

Source: HMT, PESA CRA

11.2 Table 11.1 shows that, on a per capita basis, the Scottish outturn expenditure on social protection was 7.7 per cent higher than for the UK as a whole in 2011-12. Both expenditure on benefits and expenditure on old age related issues are also higher in Scotland, but the trends over time are different and move in opposite directions – in the case of benefits spending, the per capita Scottish figure has moved towards the UK average in the last five

years, whilst old age related per capita expenditure has risen in Scotland relative to the UK average.

11.3 Per capita comparisons can be affected by the age structure of the population. For example, Table 2.1 shows that 17.4 per cent of the Scottish population is over 65 compared with 17.0 per cent for the UK as a whole in mid-2012. However, this only partially explains the difference in expenditure.

11.4 The Country and Regional Analysis⁸⁵, provides data on a comparable basis for the four countries and the English Regions. Table 11.2 provides country comparisons for sub-components of the Social Protection programmes on a per capita basis. We advise caution when quoting figures in this form as there can be differences in the way departments classify expenditure programmes. Northern Ireland, for example, has aggregated all expenditure on personal social services to 'sickness and disability', whereas the other countries have disaggregated this expenditure to the full range of sub-functions. This does not affect the overall totals.

Table 11.2 – Social Protection Identifiable Expenditure Outturn Figures per Head, £, 2011/12

	England	Wales	Scotland	Northern Ireland	United Kingdom
Social protection					
<i>of which: personal social services</i>	460	560	610	530	480
Sickness and disability	620	930	750	1,470	670
<i>of which: personal social services</i>	150	180	160	530	160
<i>of which: incapacity, disability and injury benefits</i>	470	750	590	940	510
Old age	1,540	1,730	1,750	1,470	1,570
<i>of which: personal social services</i>	150	190	250	0	160
<i>of which: pensions</i>	1,390	1,550	1,500	1,470	1,410
Survivors	10	20	30	40	20
Family and children	460	480	520	280	460
<i>of which: personal social services</i>	110	120	160	10	110
<i>of which: family benefits, income support and tax credits</i>	350	360	360	270	350
Unemployment	100	100	110	110	100
<i>of which: personal social services</i>	10	10	10	0	10
<i>of which: other unemployment benefits</i>	90	90	100	110	90
Housing	410	340	390	350	410
Social exclusion other	440	500	410	480	440
<i>of which: personal social services</i>	40	60	30	0	40
<i>of which: family benefits, income support and tax credits</i>	400	430	380	480	400
Social protection other	100	130	100	20	100
Total social protection	3,700	4,240	4,060	4,210	3,770

Source: HMT, PESA CRA

⁸⁵ Public Expenditure Statistical Analyses (PESA) – Country and Regional Analysis (CRA)
<https://www.gov.uk/government/publications/public-expenditure-statistical-analyses-2013>

11.5 Table 11.2 shows how per capita expenditure in Scotland compares with the other countries of the UK. It indicates that expenditure on some of the programmes are broadly similar to the UK as a whole (e.g. unemployment, housing, social exclusion and social protection other). However, expenditure on sickness and disability, old age and family and children, are relatively higher in Scotland on a per capita basis. Expenditure per capita on personal social services, which is aggregated from a range of sub-functions, was 27 per cent higher in Scotland than in the UK in 2011-12, but lower than in Wales or Northern Ireland.

Summary of advice

- Social protection is mainly a reserved function (i.e. managed by a Whitehall department), and therefore Scotland is – in effect - allocated a share of the UK budget based on relative need to spend, rather than on the formula allocation for devolved functions.

SECTION 12: HEALTH

- 12.1 The provision of health and social care services is the responsibility of each of the devolved administrations and there are consequently differences in the way these services operate in Scotland compared with the other UK countries, and also in the methods used to monitor and report on them. For example, the ways in which waiting times and patient outcomes are measured are different. But there are also differences that affect funding requirements - Scotland does not charge for prescriptions or for some aspects of personal care that would be charged for in England.
- 12.2 Health and social care is a large topic. This section covers only some specific aspects – expenditure on health, the state of public health and factors affecting health.
- 12.3 Health care is intrinsically linked with the provision of social care, and some services may be provided in different ways by different providers in different countries and regions. In effect, some kinds of care could be health care in one place and social care in another. Users of the statistics need also to be aware that the presentation of this information may differ between publications – expenditure data, for example, relates to health as defined by the UN Classification of Function of Government (COFOG)⁸⁶ definition, whereas economic data are usually published for health and social care, as defined by the SIC industrial classification.

Expenditure on Health

- 12.4 Expressing expenditure on a per capita basis allows comparisons to be made between geographical areas but it should be remembered that the per capita cost is the average cost to the whole population in the area, but not the average cost per recipient of the service. So, for example, an area with more elderly people will likely have higher per capita expenditure on care for the elderly even if the cost per recipient is the same.
- 12.5 Table 12.1 shows that annual identifiable expenditure on health in Scotland per capita has been higher than in the UK as a whole for each of the past five years. These figures were taken from the Country and Regional analysis (CRA)⁸⁷ from the HM Treasury Public Expenditure Statistical Analyses (PESA) publication. For a comparison of Total Managed Expenditure for Scotland and the UK, users should refer to the GERS⁸⁸ publication, but this does not contain comparable figures for Wales, Northern Ireland and the English regions.

⁸⁶ <http://unstats.un.org/unsd/iiss/Classification-of-the-Functions-of-Government-COFOG.ashx>

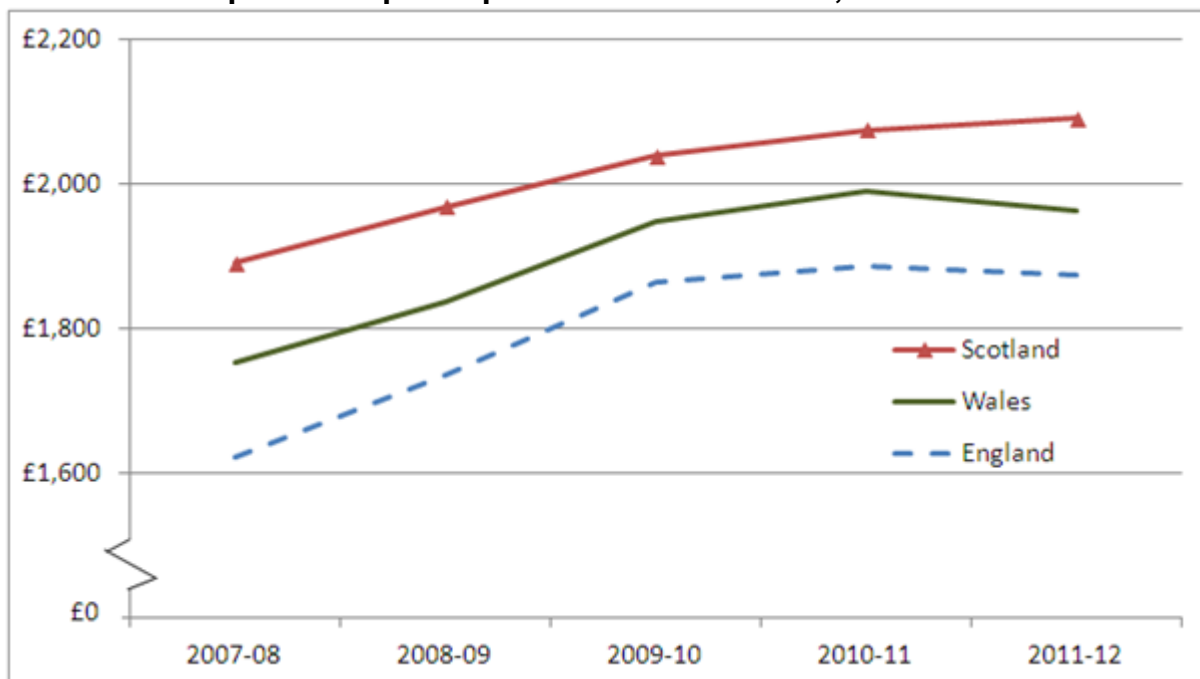
⁸⁷ <https://www.gov.uk/government/publications/public-expenditure-statistical-analyses-2013>

⁸⁸ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS>

Table 12.1 – UK Identifiable Expenditure on Health per Head, 2007/08 to 2011/12

	£ per capita					UK = 100				
	2007-08	2008-09	2009-10	2010-11	2011-12	2007-08	2008-09	2009-10	2010-11	2011-12
North East	1,789	1,971	2,076	2,110	2,095	108	112	110	110	110
North West	1,765	1,864	2,004	2,035	2,029	107	106	106	106	107
Yorkshire and The Humber	1,637	1,891	1,959	1,941	1,905	99	107	104	101	100
East Midlands	1,510	1,610	1,689	1,739	1,728	91	91	90	91	91
West Midlands	1,620	1,747	1,861	1,871	1,865	98	99	99	98	98
East of England	1,442	1,540	1,678	1,730	1,711	87	87	89	90	90
London	1,836	1,840	2,068	2,142	2,102	111	104	110	112	110
South East	1,479	1,603	1,714	1,699	1,702	89	91	91	89	89
South West	1,538	1,678	1,763	1,761	1,771	93	95	94	92	93
England	1,622	1,737	1,864	1,887	1,874	98	98	99	99	98
Wales	1,754	1,838	1,947	1,989	1,964	106	104	103	104	103
Scotland	1,891	1,969	2,040	2,075	2,091	114	112	108	108	110
Northern Ireland	1,738	1,854	1,919	2,097	2,114	105	105	102	110	111
United Kingdom	1,654	1,765	1,884	1,914	1,903	100	100	100	100	100

Source: PESA CRA 2011/12

Chart 12.1 – Expenditure per Capita on Health Services, £

Source: PESA CRA 2011/12

12.6 Chart 12.1 shows how the average per capita expenditure on health services (as defined by the COFOG classification) for England, Wales and Scotland have changed over the past five years. HM Treasury is currently unable to disaggregate this particular sector to its sub-functions (such as medical products, outpatient services, hospital services, public health services etc). This limits the usefulness of these data, as it would be valuable, in the context

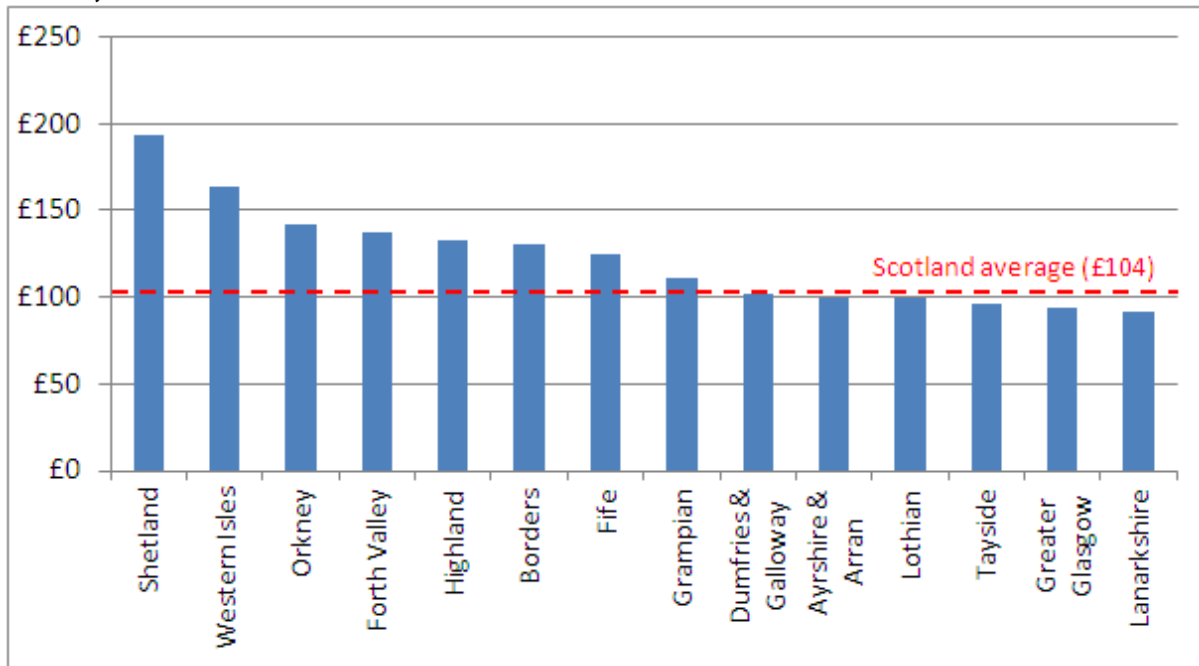
of the debate, to be able to make comparisons of expenditure in more detail on a consistent basis. Note: figures for Northern Ireland are not included in this chart as the published figures are expected to be revised. A National Audit Office (NAO) report⁸⁹ notes that the published PESA 2010/11 figures for Northern Ireland were wrong and there is a footnote to explain this.

- 12.7 Users should also note a technical point - that the CRA analysis is carried out using an earlier extract of the PESA database than that used for the other analyses in PESA, and data in tables throughout PESA may not be wholly consistent for this reason. This is not a major problem but explains occasional anomalies. For the departmental analysis in PESA, NHS England is identified as a separate department. However, NHS expenditure in Scotland is contained within the Scottish Government's department spend – similarly for Wales and Northern Ireland.
- 12.8 Scotland's higher relative expenditure may be partly explained by known factors – the high prevalence of deprived areas with chronic health problems and a much lower population density than the UK average, both of which tend to increase the per capita cost of services. But, given the non-comparability of the official Index of Multiple Deprivation for each country⁹⁰, the former cannot be proven.
- 12.9 Chart 12.2 is taken from the publication 'Summary of Scottish Health Service Costs'⁹¹ to illustrate an example of how health services costs (in this case A&E costs) vary between health boards in Scotland. This shows that costs per patient in the more remote areas (for example Highlands, Orkney, Western Isles and Shetland) are higher.

⁸⁹ <http://www.nao.org.uk/wp-content/uploads/2012/06/1213192.pdf>, page 4

⁹⁰ England: <https://www.gov.uk/government/publications/english-indices-of-deprivation-2010> , Wales: <http://new.wales.gov.uk/topics/statistics/theme/wimd/?lang=en> , Scotland: <http://www.scotland.gov.uk/Topics/Statistics/SIMD> , Northern Ireland: http://www.nisra.gov.uk/deprivation/nimdm_2010.htm

⁹¹ <http://www.isdscotland.org/Health-Topics/Finance/Costs/>

Chart 12.2 – Cost per Patient of an Accident & Emergency Visit by Scottish NHS Board, 2012

Source: ISD, Summary of Scottish Health Service Costs

12.10 Despite the volume of UK health data available, there is not much in the way of readily-available analysis, published as official statistics, that allows users to make meaningful comparisons between the countries and regions of the UK. The publication “United Kingdom Health Statistics” provided some such analyses, but this was last produced in 2010 by ONS and is now discontinued. Table 12.2, drawn from that publication, compares the relative staffing levels between countries for different staff types. On the basis of these statistics for 2009, the number of medical and hospital staff per 100,000 population is some 30% higher in Scotland than in England and some 6-10% above Wales and Northern Ireland.

Table 12.2 – Number of Staff per 100,000 population in 2009

	NHS			Hospital				Total
	GPs	Dentists	Opticians	Medical	Nursing	Non-clinical	Admin/other	
England	70	42	19	180	839	380	599	1,998
Wales	65	43	23	182	1,039	433	738	2,392
Scotland	80	42	26	217	1,125	474	798	2,615
Northern Ireland	65	47	36	202	1,001	403	853	2,460

Source: UK Health Statistics 2010, Northern Ireland DHSSPS

Public health

- 12.11 As indicated above, there is not a great amount of comparable health statistics across the four UK administrations. The UK Statistics Authority published a Monitoring Review in October 2012 concerning ‘The accessibility of official statistics on health’⁹². It observed that *“It is clear that a wealth of relevant official statistics exists, and that they serve a wide range of different user needs. But this review also points to the fragmented nature of those statistics, attributable partly (but only partly) to the devolution of health policy in the UK to England, Scotland, Wales and Northern Ireland. The statistics are produced by many different organisations, with different responsibilities and are provided by a range of NHS bodies but also by the private sector. Some statistics are drawn from surveys, but most are a by-product of administrative systems, and their quality is described variously.”*
- 12.12 To make some broad comparisons between the UK countries, a few public health examples have been identified below, where comparable statistics are available. These examples are intended mainly for illustrative purposes, and this is not an attempt to provide a comprehensive analysis in any way.
- 12.13 Official statistics are available from ONS and the Scottish Government on **life expectancy** and **healthy life expectancy**. Life expectancy (LE) predicts the number of years that a person can expect to live on average, and is used to monitor population mortality and to measure health trends and inequalities within the population. Healthy life expectancy (HLE) is a quality of health measure, which combines life expectancy and self-assessed health from survey data.

⁹² <http://www.statisticsauthority.gov.uk/assessment/monitoring/monitoring-reviews/index.html>

**Table 12.3 – Life Expectancy and Health Life Expectancy (HLE¹)
2005-07 and 2008-10**

		2005-2007				2008-2010			
		LE at birth	HLE at birth	LE at age 65	HLE at age 65	LE at birth	HLE at birth	LE at age 65	HLE at age 65
Men	England	77	62	17	10	78	64	18	10
	Wales	77	59	17	10	77	63	18	10
	Scotland	75	61	16	10	76	60	17	9
	Northern Ireland	76	61	17	10	77	59	17	10
	United Kingdom	77	61	17	10	78	64	18	10
Women	England	82	63	20	11	82	66	21	12
	Wales	81	62	20	10	82	63	20	10
	Scotland	80	63	19	11	80	64	19	11
	Northern Ireland	81	62	20	11	81	62	20	11
	United Kingdom	81	63	20	11	82	66	20	12

1. HLE based on a general health question with five response categories.

Source: ONS, NRS, NISRA

12.14 The latest estimated figures from ‘Health Expectancies at Birth and Age 65 in the UK’⁹³ suggest that men born in 2010 will live some 76 years on average in Scotland, about 60 in a healthy state. Women born in 2010 would expect to live 80 years on average in Scotland, and 64 years being healthy. These estimates of LE and HLE are both lower than for the UK as a whole. Scotland has among the shortest life expectancies in Western Europe⁹⁴.

12.15 Despite the volume of health statistics and data available across the UK, there is little on a consistent basis. Two useful sources of information, where statisticians have drawn together data from various sources and presented them on a consistent basis, where possible, are: United Kingdom Health Statistics⁹⁵ (now discontinued) and The Scottish Health Survey – Topic Report UK Comparisons⁹⁶.

⁹³ <http://www.ons.gov.uk/ons/rel/disability-and-health-measurement/health-expectancies-at-birth-and-age-65-in-the-united-kingdom/2008-10/stb-he-2008-2010.html>

⁹⁴ Note also that there is a large disparity between different areas within Scotland. For example, the World Health Organisation demonstrated that, over the period 1998 to 2002, life expectancy in Glasgow, Calton at birth was 54 years, whereas the equivalent figure for Glasgow, Lenzie was 84 years.

http://www.who.int/social_determinants/final_report/csdh_finalreport_2008.pdf

⁹⁵ <http://www.ons.gov.uk/ons/rel/ukhs/united-kingdom-health-statistics/2010/index.html>

⁹⁶ <http://www.scotland.gov.uk/Publications/2010/08/31093025/0>

Table 12.4 – Self Assessed General Health, Proportion as Good or Very Good, 2010

		Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
Men	England	88%	86%	82%	77%	68%	61%	52%	76%
	Scotland	88%	88%	82%	78%	66%	61%	55%	76%
	Northern Ireland	85%	87%	78%	64%	60%	60%	45%	72%
Women	England	88%	86%	82%	76%	70%	62%	49%	75%
	Scotland	86%	85%	82%	75%	69%	64%	51%	75%
	Northern Ireland	90%	84%	82%	70%	61%	58%	46%	73%

Note: the Welsh Health Survey's method of measuring health conditions is not comparable

Source: The Scottish Health Survey, UK comparisons 2010, NI DHSSPS

12.16 Table 12.4 shows how self assessed general health, by age and sex, differs between the three UK countries where broadly comparable survey data exist. For both men and women, there does not appear to be a significant difference between the countries for the adult population as a whole. In the over 75 population, Scotland has a higher proportion of people who consider their health to be good or very good than in England. However, self-assessed general health is not necessarily consistent between different areas and communities. People in one community may have a different perception of the state of health they can reasonably expect compared with another community.

Table 12.5 – Prevalence of any Cardio Vascular Disease, by Country, Age and Sex

		Age							Total
		16-24	25-34	35-44	45-54	55-64	65-74	75+	
Men	England	3.2%	4.7%	5.6%	10.9%	18.5%	34.1%	44.4%	13.6%
	Scotland	4.9%	5.9%	6.8%	10.3%	22.0%	35.8%	45.0%	15.1%
	Northern Ireland	4.4%	3.9%	4.7%	12.5%	24.4%	36.3%	43.6%	13.7%
Women	England	4.5%	5.7%	7.8%	10.3%	15.2%	21.2%	36.9%	13.0%
	Scotland	6.4%	5.7%	8.8%	12.9%	18.9%	30.9%	35.5%	15.5%
	Northern Ireland	2.1%	5.1%	7.1%	10.0%	14.8%	27.8%	40.3%	12.8%

Note: the Welsh Health Survey's method of measuring health conditions is not comparable

Source: The Scottish Health Survey, UK comparisons 2010

12.17 From table 12.5, for both men and women, Scotland has a higher prevalence of cardio vascular disease than England. This is the case for all the age-bands reported, but the difference is particularly noticeable for males aged 55-64 and for females, aged 65-74.

12.18 A recent report by the National Audit Office "Healthcare across the UK: A comparison of the NHS in England, Scotland, Wales and Northern Ireland"⁹⁷ sought to compare the four nations of the UK by setting out comparable data, where available, on health outcomes, and on the delivery and performance of the health services. It concluded that (paragraphs 22-24): *"We found limited availability and consistency of data across the four nations, restricting the extent to which meaningful comparisons can be made between the health services of the UK. For this reason, and without a single overarching measure of*

⁹⁷ <http://www.nao.org.uk/report/healthcare-across-the-uk-a-comparison-of-the-nhs-in-england-scotland-wales-and-northern-ireland/>

performance, we cannot draw conclusions about which health service is achieving the best value for money. Where comparative data are available, we found that no one nation has been consistently more economic, efficient or effective across the indicators we considered.”

Factors affecting health

12.19 There are numerous factors that may affect public health. Table 12.6 offers a few examples, derived from official statistics, to illustrate differences between the UK countries. Again, this is largely for illustrative purposes, and not intended as a comprehensive account.

Table 12.6 – Factors Affecting Health

	England	Wales	Scotland	Northern Ireland	United Kingdom
Proportion of population over 75 (2012)	7.9%	8.7%	7.9%	6.7%	7.9%
Proportion of population 16 to 64 (2012)	64.1%	62.8%	65.4%	64.1%	64.2%
Proportion of population under 16 (2012)	18.9%	18.1%	17.2%	21.0%	18.8%
Average Gross Disposable Household Income in 2011 (£ per head)	£16,300	£14,100	£15,700	£14,000	£16,000
Working Age Adults with a disability	14%	17%	15%	15%	14%
Current smokers (men) (E,W,S 2008; NI 2008/09)	21%	20%	23%	26%	21%
Current smokers (women) (E,W,S 2008; NI 2008/09)	20%	21%	24%	23%	20%
Mean alcohol units on heaviest drinking day in past week (men 16+), (2008)	4.3	-	6.2	-	-
Mean alcohol units on heaviest drinking day in past week (women 16+), (2008)	2.2	-	3.5	-	-
Proportion of adult men with a BMI classed as 'overweight or obese' (2008) – E and S only, NI (2011/12)	66%	-	69%	67%	-
Proportion of adult women with a BMI classed as 'overweight or obese' (2008) – E and S only, NI (2011/12)	57%	-	62%	53%	-
People with a disability (working age) (2008/09)	14%	17%	15%	15%	14%
People with a disability (over 75) (2008/09)	59%	60%	55%	62%	59%
Proportion of adults eating at least five portions of fruit and vegetables per day (men) (2008) – GB only, NI (2011/12)	25%	-	20%	27%	25%
Proportion of adults eating at least five portions of fruit and vegetables per day (women) (2008) – GB only, NI (2011/12)	29%	-	24%	36%	29%

Source: UK Health Statistics, SHS, ONS Regional GDHI, Health Survey Northern Ireland

12.20 Table 12.6 shows that, while Scotland does not have a significantly different gross disposable household income from the UK as a whole, there are lifestyle differences which may, in part, explain the nations' poorer health record. Scotland has a higher proportion of smokers than in the UK as a whole (and they tend to smoke more). Both males and females in Scotland drank more on average, on the heaviest drinking day in the past week, than in England. These two factors contribute to Scotland's higher relative tax intake for tobacco and alcohol duties (see Section 6). The Scottish population also suffers from relatively high overweight and obesity levels.

Summary of advice

- HM Treasury's Public Expenditure Statistical Analyses (PESA) report indicates that Scotland spends more per head on health than the UK as a whole. Various contributory factors, including poorer public health and lower population density (leading to higher per capita costs) have been cited but a full explanation would be likely to involve many factors.
- Comparable statistics exist for a range of health indicators, but not generally in one publication. Users trying to make comparisons between countries, or to collate data for the UK as a whole, need to access different web-sites and check carefully whether definitions are consistent. For many health and NHS indicators, comparable statistics do not currently exist.

Advice to the statistical service

- The analysis in Chapter 10 of PESA is valuable. However, unlike for other public services such as education and social protection, it does not have a full sub-function analysis. We note that there are plans to address this and that users are likely to find this valuable.

SECTION 13: EDUCATION

- 13.1 Scotland has its own distinct school education system and it is therefore difficult to make valid comparisons between Scotland and the other UK countries. There is little in the way of comparable data available in official statistics publications. This section largely focuses on expenditure on education and educational attainment, where comparable data do exist.
- 13.2 Under the Scottish system for primary and secondary education, pupils normally spend seven years in primary school compared with six in the rest of the UK, and have one fewer year in secondary school. Pupils who go on to higher education often leave school a year earlier in Scotland than in the rest of the UK, and then stay at a Scottish university for a four year course rather than go to a university elsewhere in the UK where, for most disciplines, a three year course is the norm. Funding arrangements for Scottish students are also different.

Pre-School Education

- 13.3 Statistics on pre-school children in Scotland are collected by the Care Inspectorate⁹⁸ and Scottish Government⁹⁹. The Care Inspectorate publish annual data on the provision and use of registered daycare of children and childminding services. The published Care Inspectorate figures provide service-level information on the full range of care services for children, including 6,000 childminding services and 4,000 daycare services. The Scottish Government only collects information from the subset of the 4,000 daycare services that also provide pre-school education (approximately 2,500 centres). The Scottish Government figures provide local authority level data on participation in pre-school education as well as some demographic child and teacher information.
- 13.4 Pre-school data are not comparable between Scotland and other UK countries. The key differences which make comparison problematic are:
- The age cut-off for children being assigned to a school year in Scotland is the end of February, rather than September in England and Wales;
 - Scotland has a more flexible system in terms of when a child starts primary school (with children born in January or February given the option to defer entry to primary school by a year); and
 - There are no key stages in Scotland and no attainment data for pre-school children, as is the case for England and Wales.

Expenditure on education

- 13.5 Identifiable expenditure on education for each country of the UK is published in HM Treasury's Public Expenditure Statistical Analyses (PESA) publication in the Country and Regional Analysis (CRA)¹⁰⁰. This provides information on the total identifiable expenditure disaggregated by sub-function for the past five years and is presented as cash outturn estimates and outturn per capita of the total population. We are not aware of any readily

⁹⁸ http://www.scswis.com/index.php?option=com_content&view=article&id=8146&Itemid=756

⁹⁹ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Children/Pubs-Pre-SchoolEducation>

¹⁰⁰ <https://www.gov.uk/government/publications/public-expenditure-statistical-analyses-2013>

available official figures that make comparisons on a per student basis, which would be useful in such analysis.

Table 13.1 – Education, Identifiable Expenditure

	2007-08	2008-09	2009-10	2010-11	2011-12
Education spending - Scotland (£ million)	7,370	7,580	7,750	7,690	7,700
Education spending - UK (£ million)	78,600	82,900	88,300	91,800	91,600
Education spending - Scotland as a % of UK	9.37%	9.13%	8.77%	8.38%	8.40%
Education spending per capita - Scotland (£)	1,432	1,466	1,492	1,473	1,466
Education spending per capita - UK (£)	1,283	1,342	1,420	1,464	1,449
Per head - indexed to UK=100	111.6	109.2	105.1	100.6	101.2

of which: pre-primary, primary and secondary

	2007-08	2008-09	2009-10	2010-11	2011-12
Education spending - Scotland (£ million)	5,390	5,570	5,580	5,600	5,740
Education spending - UK (£ million)	59,100	62,400	66,100	67,500	72,400
Education spending - Scotland as a % of UK	9.12%	8.92%	8.45%	8.29%	7.92%
Education spending per capita - Scotland (£)	1,048	1,077	1,075	1,073	1,092
Education spending per capita - UK (£)	964	1,009	1,062	1,077	1,145
Per head - indexed to UK=100	108.7	106.7	101.2	99.6	95.3

Source: PESA CRA

13.6 Table 13.1 shows that public expenditure on education in Scotland relative to the UK average has fallen over the past five years. This is partly due to demographic change in the school age population (see Section 2).

13.7 Table 13.2 provides country comparisons for sub-components of the Education function on a per capita population basis. Users are advised to be cautious when analysing data of this form as there are differences in the way departments define and report expenditure programmes. Additionally, there are differences in the structures of the education systems which could affect sub-functional analysis.

Table 13.2 – Education Outturn, £ per Head in 2011/12, Country Comparison

	England	Wales	Scotland	Northern Ireland	United Kingdom
Education					
Pre-primary and primary education	472	483	569	392	478
<i>of which: under fives</i>	88	25	58	62	82
<i>of which: primary education</i>	384	458	510	330	396
Secondary education	691	544	523	573	667
Post-secondary non-tertiary education	8	-	25	-	9
Tertiary education	171	188	257	221	180
Education not definable by level	3	112	15	67	11
Subsidiary services to education	62	116	42	102	64
R&D education	0	0	0	0	0
Education other	38	8	35	143	39
Total education	1,446	1,450	1,466	1,498	1,449

Source: HMT PESA CRA

- 13.8 Scotland had higher expenditure per head on primary education than England in 2011-12, but this was offset by lower expenditure per head on secondary education. This difference largely reflects the differences in education systems – Scotland has an extra year in primary schools and a year fewer in Secondary schools. Scotland spent more per capita on tertiary education than England, Wales and Northern Ireland in 2011-12 because Scottish students do not pay tuition fees in Scotland, and under-graduate courses are generally for four years duration in contrast to the more typical three year courses elsewhere in the UK.

Educational attainment

- 13.9 The Programme for International Student Assessment (PISA) exercise, carried out every three years, provides an international assessment of student attainment in reading, mathematics and science at age 15. It has been developed jointly by member countries of the Organisation for Economic Cooperation and Development (OECD) and is the world's biggest international education survey, involving schools and students in over 60 countries.
- 13.10 The four UK administrations participate in PISA separately. The results for Scotland, as published by the Scottish Government¹⁰¹, focus primarily on how Scotland compares with the OECD average rather than between the different countries of the UK. The latest survey, PISA 2009, showed that: in reading, Scotland's performance was above the OECD average; in mathematics, Scotland's performance was similar to the OECD average; and in science, Scotland's performance was above the OECD average.
- 13.11 The scores are used to rank the relative performance for each participating country, with a higher score signifying a better outcome. The scores are accompanied with standard errors to allow confidence intervals to be estimated.

¹⁰¹ <http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/PISA>

Table 13.3 – Programme for International Student Assessment, 2009

	Reading		Mathematics		Science	
	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
England	495	2.8	493	2.9	515	3.0
Wales	476	3.4	472	3.0	496	3.5
Scotland	500	3.2	499	3.3	514	3.5
Northern Ireland	499	4.1	492	3.1	511	4.4
United Kingdom	494	2.3	492	2.4	514	2.5
OECD total	492	1.2	488	1.2	496	1.2

Source: SG - PISA

13.12 Table 13.3 indicates that, based on the PISA methodology, Scotland has scored better than the other UK countries in reading and mathematics. However, given the published standard errors, we should conclude that there is no significant difference in the average scores for reading, maths or science between Scotland, Northern Ireland and England. The next PISA study reports in December 2013.

Further and Higher Education

13.13 The Higher Education Statistics Agency (HESA)¹⁰² provides UK-wide comparable data on Higher Education (HE) collected from UK universities. HESA publishes a range of indicators including: student enrolments by type and origin; qualifications obtained; destinations of leavers (via the annual Destinations of Leavers from Higher Education (DLHE) survey)¹⁰³; finance; and income from research (from the Higher Education Business and Community Interaction (HEBCI) survey)¹⁰⁴. HESA data currently only include universities, but they are developing future publications which will include HE provision delivered through Further Education (FE) colleges. There are a number of other publicly funded data sources available such as the National Student Survey (NSS) which measures student satisfaction in England, Wales, Scotland and Northern Ireland. The NSS is not, however, an official statistics publication.

13.14 There is no single source for UK-wide comparable data on further education. Collection and publication is conducted via different independent organisations: the Scottish Funding Council (Infact database¹⁰⁵) in Scotland, and the corresponding funding councils or governments in England, Wales and NI¹⁰⁶. These organisations publish data on a similar range of indicators, but these are not directly comparable due to the different role the college sector plays in each country. The key differences for users to be aware of are:

- School leaving age - for example, English students are more likely to take A levels in 6th form colleges;
- Scotland delivers a higher proportion of higher education courses through colleges than is the case elsewhere in the UK; and

¹⁰² <http://www.hesa.ac.uk/content/view/1897/239/>

¹⁰³ http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=1899&Itemid=239

¹⁰⁴ http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=2469&Itemid=278

¹⁰⁵ http://www.sfc.ac.uk/statistics/further_education_statistics/infact_database/infact_database.aspx

¹⁰⁶ England: <http://www.hefce.ac.uk/data/>, Wales:

<http://wales.gov.uk/topics/statistics/theme/post16ed/further-educa/?lang=en>, Northern Ireland: <http://www.delni.gov.uk/further-education-stats>

- Employment in the sector is counted within the public sector in Scotland, but not in England.

Summary of advice

- The education systems for the countries of the UK are different in important respects, and there are few comparable statistics in official statistics publications.
- Public expenditure on education is collected and published by HM Treasury as part the Public Expenditure Statistical Analyses (PESA) publication. This covers identifiable expenditure on education expressed in cash terms and as expenditure per capita of the whole population. No analysis is readily available on expenditure by client group (e.g. pupil) on a comparable basis.
- Scotland's relatively higher expenditure per capita on primary education in part reflects that primary schools in Scotland have an extra year compared to schools in England.
- From the PISA survey, last published for 2009, there appear to be no statistically significant differences in the average scores for reading, mathematics and science between Scotland, Northern Ireland and England.

ANNEX A**LIST OF ABBREVIATIONS**

APS	Annual Population Survey
ASHE	Annual Survey of Hours and Earnings
BoP	Balance of Payments
BRES	Business Register and Employment Survey
COFOG	Classification of the Functions of Government
CRA	Country and Regional Analysis
DARDNI	Department of Agriculture and Rural Development Northern Ireland
DASA	Defence Analytical Services and Advice
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
EU	European Union
FRS	Family Resources Survey
GCS	Global Connections Survey
GDHI	Gross Disposable Household Income
GDP	Gross Domestic Product
GERS	Government Expenditure and Revenue Scotland
GNI	Gross National Income
GVA	Gross Value Added
HBAI	Households Below Average Income
HBOS	Halifax Bank of Scotland
HLE	Healthy Life Expectancy
HMRC	Her Majesty's Revenue and Customs
IDBR	Interdepartmental Business Register
IHS	Integrated Household Survey
IME	Index of Manufactured Exports
IPS	International Passenger Survey
ITIS	International Trade in Services

LCFS	Labour Cost and Food Survey
LE	Life Expectancy
LFS	Labour Force Survey
MOD	Ministry Of Defence
MYE	Mid Year Estimate
NHS	National Health Service
ONS	Office for National Statistics
PESA	Public Expenditure Statistical Analysis
PISA	Programme for International Student Attainment
PRT	Petroleum Revenue Tax
PSES	Public Sector Employment in Scotland
QNA	Quarterly National Accounts
QPSES	Quarterly Public Sector Employment Survey
RBS	Royal Bank of Scotland
ROW	Rest of The World
RUK	Rest of The United Kingdom
SFC	Scottish Funding Council
SG	Scottish Government
SHS	Scottish Health Survey
SIC	Standard Industrial Classification
SITC	Standard International Trade Classification
SNAP	Scottish National Accounts Project
SPICE	Scottish Parliament Information Centre
TME	Total Managed Expenditure
UKCS	United Kingdom Continental Shelf
UKSA	United Kingdom Statistics Authority
UN	United Nations
VAT	Value Added Tax

ANNEX B**GLOSSARY**

Balance of Payments: the difference between payments for exports and imports of goods, services, financial capital, and financial transfers.

Balance of Trade: the difference between the monetary value of exports and imports of goods.

Business Cycle / Economic Cycle: refers to the period of expansions and contractions in the level of Gross Domestic Product (GDP) around its long-term growth trend.

Confidence Interval: a confidence interval gives an estimated range of values which is likely to include an unknown population parameter, the estimated range being calculated from a given set of sample data. The width of a confidence interval gives us some idea about how uncertain we are about the unknown parameter.

Debt: the total stock of debt owed by the government.

Deficit: the difference between government receipts and spending in a single year, when spending is greater than receipts.

Dependency Ratio: the number of people receiving benefits or support relative to the number of people of working age or paying taxes.

Depreciation: a decrease in the value of public assets.

Disposable Income: the amount of money that individuals in the household sector have available for spending or saving after income redistribution measures (for example taxes, social contributions and benefits) have taken effect.

Extra-Regio: the part of the UK economic activity that is not allocated to a specific region. Extra-Regio includes 'Continental Shelf' activity relating to offshore oil and gas extraction, UK embassies overseas and armed forces stationed abroad.

Fiscal Balance: the difference between government receipts and spending in a single year.

GINI Coefficient: a measure of statistical dispersion intended to represent the income distribution of a nation's residents. It measures the inequality among values of an income frequency distribution. A coefficient of zero expresses perfect equality, where all values are the same. A coefficient of one (100 on the percentile scale) expresses maximal inequality among values.

Gross Domestic Product: a measure of the value of goods and services produced before providing for capital consumption. It is equal to gross value added at basic prices plus taxes (less subsidies) on products. Alternatively, it is equal to the sum of the final domestic consumption expenditures less imports of goods and services.

- **Real Terms GDP:** GDP adjusted for inflation to give a time series that demonstrates structural growth without the effects of price changes.

Gross National Income: a measure of the market value of all final goods and services produced by enterprises owned by a country's citizens.

Gross Value Added: the contribution to the economy of each individual producer, industry or sector.

- **Real GVA Growth:** GVA adjusted for inflation to give a time series that demonstrates structural growth, excluding the effects of price changes.

Healthy Life Expectancy: a quality of health measure which predicts the number of years a person can expect to live on average, without major illnesses or impairments.

Household Savings Ratio: the value of a household's saving relative to its total income.

Identifiable Expenditure: expenditure that can be directly identified as having been spent for the benefit of a country or region within the UK.

Input-Output Balancing: a process of adjustments to ensure that estimates of GDP via the income, output and expenditure methods are equal in a given year or quarter.

Life Expectancy: predicts the number of years that a person can expect to live on average, and is used to monitor population mortality and to measure health trends and inequalities within the population.

Liquid Assets: assets that can quickly be turned into cash, including stocks, bonds and gold.

Non-Cash Expenditure: includes items of expenditure where no money has changed hands. This includes items such as public sector depreciation.

Non-Identifiable Expenditure: expenditure which is not allocated by HM Treasury to countries or regions in the UK because it is considered to benefit everyone equally. It includes some 'collective services' such as defence and overseas aid, and some expenditure made for the benefit of the UK as a whole, such as public sector debt interest payments.

Satellite Account: a framework which can be attached to the national accounts to allow more detailed analysis of a certain area of the economy.

Total Managed Expenditure: the total of identifiable, non-identifiable and non-cash expenditure. This is the definition of public expenditure used in the Public Sector Finances for the fiscal balance calculations and is consistent with National Accounting definitions.