



Development of a Primary Income Account and Gross National Income (GNI) for Scotland

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Overview

This paper describes work to produce the first set of annual GNI estimates for Scotland from 1998 to 2016. The purpose of the paper is to set out the proposed methodology for producing these statistics and to seek the views of users on the proposals. The results included are for the purpose of illustrating the outcome of this methodology. They are provisional and experimental and will be revised and updated when further developments are made.

This work complements the Experimental Statistics Development Paper “Development of Supply & Use Satellite Accounts for Extra-Regio Economic Activities”¹ published on 22 February 2018. All the GNI estimates in this paper relate to the same geographical definition of Scotland i.e. including Scottish adjacent waters and the underlying continental shelf, plus an illustrative population share of UK overseas enclaves.

Provisional experimental results are included in this paper along with details of the data sources and the methods used. The estimates are consistent with Scotland’s Quarterly National Accounts for 2017 Q3 (published on 7 February 2018) and the UK Economic Accounts for 2017 Q4 (published on 29 March 2018). The next phase of this project, which will be undertaken over 2018/19, will be to refine the data sources and methods underpinning the model, to consult users and to develop a system allowing for routine updates of the estimates.

Further information about the continuing development of Scottish economic statistics can be found in the Scottish Economic Statistics Plan for 2017-18².

Introduction

Many users of Scottish economic statistics have suggested that estimates of Scottish Gross Domestic Product (GDP) should be complemented by estimates of Gross National Income (GNI). GNI is an adjustment to the conventional GDP measure of economic activity to take account of financial flows into and out of the country due to ownership. For example, where profits made by Scottish companies outside Scotland are repatriated, this would be included in an estimate of Scottish GNI but is not included in Scottish GDP. Likewise, when non-Scottish companies repatriate profits made in Scotland, this is included in Scottish GDP but would be deducted from estimates of Scottish GNI.

¹ <http://www.gov.scot/Topics/Statistics/Browse/Economy/SNAP/satelliteaccounts>

² <http://www.gov.scot/Topics/Statistics/Browse/Economy/ScotStat/Planning/SESP-2017-18>

An estimate of Scottish GNI for 2010 was published in 2013³. This work was published as experimental statistics and has not been updated since.

The current project uses similar methods and assumptions, but uses an updated model which allows for more timely results and for more regular updates. The model is based on a quarterly data, with the majority of the UK data taken from the quarterly UK Economic Accounts, and much of the Scottish data used for apportionments are consistent with the Quarterly National Accounts for Scotland publication.

All results in this paper are designated as **experimental statistics**. These are defined as new official statistics undergoing development and testing. The methods, data sources and results in this paper are open for ongoing consultation with users, and we welcome feedback on all aspects of the release. All users should be aware that **the results in this paper are provisional and will be revised and updated** when further developments are made. They should therefore be used with appropriate caution at this time.

Note that much of the attention in this project to date has been for the years 2010 to 2016. The results prior to 2010 have been derived using similar apportionment techniques, however these estimates have not had the same levels of scrutiny. Care should be taken when analysing longer term trends.

We welcome any thoughts or views on this analysis.

Please contact us at economic.statistics@gov.scot

or write to:

The Scottish Government
National Accounts Unit
Office of the Chief Economic Adviser – Economic Analysis
St Andrew's House
Regent Road
Edinburgh
EH1 3DG

You can also follow up on Twitter to keep up to date with the economic statistics and wider economic analysis published by the Scottish Government - <https://twitter.com/scotgovocea>

³ Further details about these estimates and underpinning methods may be found here - <http://www.gov.scot/Topics/Statistics/Browse/Economy/SNAP>

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Background

Building on Previous Work

An exercise was carried out in 2013 to estimate a Primary Income Account and Gross National Income for Scotland for 2010. This was an ad-hoc experimental publication which has not been repeated since.

Three documents were published as part of the 2013 project – initial results, a methodology guide and a peer review document. All of these can be found on the Scottish Government website <http://www.gov.scot/Topics/Statistics/Browse/Economy/snap>.

The work had an extensive peer review carried out by Martin Kellaway, a former National Accounts expert in the Office for National Statistics (ONS). Many of his recommendations were adopted and reflected in the latest published methodology note (see links above) and have subsequently been adopted in the current work. Some of Martin's suggestions for further work will be considered more fully in the next stages of this exercise, balancing quality improvements with their resource implications.

Objectives

The principal aim of this project is to develop the statistical framework and methods for extending Scotland's national accounts to include estimates of Gross National Income (GNI) in addition to Gross Domestic Product (GDP) for the wider geographical area of Scotland (i.e. including the onshore and offshore economies). Specific objectives are:

- To apportion the UK Primary Income Account to Scotland – estimating the financial flows between Scotland and the (non-UK) Rest of the World (ROW).
- To estimate Scottish flows to and from the Rest of the UK (RUK).
- To estimate the secondary flows i.e. between Scotland and the ROW via RUK.
- To develop this work as a step in a wider project, along with the Whole of Scotland Economics Accounts Special Project, to try to ultimately estimate Scotland's Balance of Payments.

Producing GNI Estimates for Scotland

To establish GNI for Scotland we need to construct a Primary Income Account which provides the flows needed to adjust GDP to GNI.

Primary Income

Primary income represents the return that accrues to institutional units for their contribution to the production process or for the provision of financial assets and renting natural resources to other institutional units.

To estimate GNI from GDP the following flows need to be considered:

Compensation of Employees (CoE)

This includes wages and other benefits received by workers who cross national borders to reach their place of normal work or to seasonal or short-term workers who are resident in the country for less than a year.

Earnings on Direct Investment

This covers earnings made when Scottish residents have an equity interest of 10% or more in a foreign company (or vice versa). Changes in the stock of direct investment (i.e. mergers and acquisitions, etc.) are not included in GNI.

Earnings on Portfolio Investment

This includes earnings from investment in equity securities (shares) or debt securities where the investor owns less than 10% of the enterprise. This also includes UK Government debt interest payments to non-residents. Changes in the stocks held as portfolio investment (i.e. purchase or sale of shares, etc.) are not included in GNI.

Earnings on Other Investment

Other Investment primarily covers interest received from deposits or paid on a loan where one of the parties is not resident in Scotland.

Other Primary Income

Taxes paid (and subsidies received) on production from non-residents (e.g. EU import duties and VAT and receipts of EU production subsidies). Taxes on income and wealth, and the majority of EU budget contributions and funding are not included in GNI.

Reserve Assets

Interest received on official foreign exchange reserves and relating to the International Monetary Fund (IMF).

Challenges in Developing a Primary Income Account for Scotland

Whereas the System of National Accounts provides guidance for countries to produce sub-national GVA or GDP statistics, and some of these are required to be produced by Eurostat, there is no guidance or requirement in either the System of National Accounts⁴ (SNA) or Balance of Payments⁵ (BOP) for the equivalent production of sub-national GNI. We are unaware of any precedent for GNI being produced for sub-national areas (for

⁴ <https://unstats.un.org/unsd/nationalaccount/sna.asp>

⁵ <https://www.imf.org/external/pubs/ft/bop/2007/bop6comp.htm>

example, whereas regional accounts for GDP are commonplace, there are no Gross Regional Income statistics or similar). This highlights the boldness and novelty of this work, but also underlines why there are conceptual and practical challenges leading to uncertainty in the results.

Developing a Primary Income Account for Scotland involves several challenges not present in the production of estimates such as GDP for Scotland. Firstly, a different set of concepts is involved: in producing GDP, the focus is on collating information which measures the economic activity in Scotland, regardless of who is undertaking it. Production of a Primary Income Account requires the measures of economic activity to be disaggregated into activity undertaken by residents and non-residents (or businesses owned by non-residents); it therefore requires another level of information to be added to the data which inform GDP. In addition, a Primary Income Account requires information to be collected on the economic activities of Scottish residents, and the activities of any business that they own, in foreign countries. This information is not required in the production of GDP.

In producing a Primary Income Account for Scotland, there is the additional difficulty that UK firms reporting their activity in the UK or overseas are not required to report whether or not they are Scottish firms. This requires further work looking at which UK firms can be considered to be Scottish firms. Finally, there is the problem that for some income flows, no or only limited Scottish data are collected – such as when an income flow is assigned to the UK headquarters, the company could then reinvest the earnings in different sites. Where the ONS undertakes surveys of UK companies, Scottish companies are included in these surveys, but as the surveys are designed to represent the whole of the UK, the coverage in Scotland may be smaller than might be desired. These surveys also tend to only cover interactions between UK residents and foreign residents. Data on financial flows between Scotland and RUK are also limited.

Taken together, the challenges mean that it is inevitable that the estimates in the Primary Income Account will be subject to uncertainty. It also means that a range of different data sources and methodologies have to be used. For most flows with ROW, Scotland is allocated a share of the UK total, based on an apportionment method. Direct Investment flows with ROW have been derived from company level data, and these, which include flows associated with the North Sea, are considered the best quality estimates in the analysis. Flows with RUK have been estimated at the aggregate level from existing National Accounts and UK and Scottish business statistics data.

Key data sources and model parameters

The headline Primary Income Account figures for the UK are taken from two sources:

- Quarterly high-level results from the UK Economic Accounts⁶; and
- Annual detailed breakdowns - UK Pink Book⁷.

These provide the starting point for the Scottish estimate of Primary Income flow with ROW.

There are four main data sources used in estimating Scotland's Primary Income Account:

- ONS Foreign Direct Investment (FDI) Survey
- Annual Survey of Hours and Earnings (ASHE)
- ONS Regional GVA(B)
- Scottish Government Quarterly National Accounts Scotland

Other estimates are derived by using various apportionment methods, based on a range of sources including:

- ONS and NRS – mid-year population estimates
- Oil and Gas UK – Demographics Report
- FAME database
- Companies House databank
- London Stock Exchange – market capitalisation data
- ONS – Share Ownership survey
- Debt Management Office – debt holdings
- SG – EU subsidies

Further details are set out in Annexes A and B.

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<https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/datasets/unitedkingdomeconomicaccountsbalanceofpaymentscurrentaccount> (See table B4 - seasonally adjusted and table B4A – non seasonally adjusted)

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<https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/datasets/unitedkingdomeconomicaccountsbalanceofpaymentscurrentaccount> (See Chapter 4 - Primary Income)

Provisional Results (Experimental Statistics)

Key Results Summary

All results are designated as **experimental statistics**. Users should be aware that **the results in this paper are provisional and will be revised and updated** when further developments are made. They should therefore be used with appropriate caution at this time.

This first release contains estimates for calendar years 1998 to 2016. It is anticipated that future releases will include quarterly data with the next release likely to include quarterly data up to 2017 Q4.

Key findings include:

- In 2016 Scottish GNI (including a geographic share of UK extra-regio) was estimated to equal 94% of Scottish GDP. Scottish GNI was estimated at £150.8bn (£27,900 per head) compared to Scottish GDP of £159.9bn (£29,600 per head). (see e.g. chart 10)
- The gap between GNI and GDP initially widened between 1998 and 2007 with GNI falling from 94% of GDP in 1998 to 85% of GDP in 2007. Since 2007 the gap has narrowed again with GNI having returned to 94% of GDP in 2016. (Chart 12)
- In 2016 direct investment (-3.4% of GDP), portfolio investment (-1.8%), other investment (-0.7%) and compensation of employees (-0.1%) all made negative contributions to Scottish GNI. (Chart 11)
- Scottish GNI has remained below GDP throughout the period from 1998 to 2016. (Chart 12). This reflects in part a large insurance and pension sector with policy holders outside Scotland, a predominance of company headquarters in London and the South East and the high level of foreign ownership among North Sea operators.

The following table provides an annual summary of Credits, Debits and Balances for the key primary income components for each year for 1998 to 2016. Note: much of the attention in this project to date has been for the years 2010 to 2016. The results prior to 2010 have been derived using similar apportionment techniques, however these estimates have not had the same levels of scrutiny. Care should be taken when analysing longer term trends.

Table 1: Credits, Debits and Balances for key primary income components, Scotland, 1998 to 2016

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>£ million</i>																			
CREDITS																			
(Earnings of Scottish residents on investment in RUK / abroad)																			
Compensation of Employees	1,784	1,907	2,038	2,171	2,240	3,200	3,221	3,466	3,094	3,075	3,430	3,888	4,046	4,144	4,469	4,634	4,536	4,876	4,674
Investment income																			
Earnings on direct investment	975	962	1,115	1,103	1,261	1,367	1,458	1,771	1,890	2,022	1,928	1,638	1,895	3,932	4,806	4,452	1,764	4,609	2,318
Earnings on portfolio investment																			
Earnings on equity securities	1,101	1,357	1,324	1,377	1,703	1,583	1,760	1,863	2,434	2,438	2,676	2,312	1,997	2,146	2,441	2,496	2,417	2,665	2,853
Earnings on debt securities	3,447	3,016	3,405	3,453	3,156	3,300	3,533	3,776	4,244	4,887	5,081	4,606	4,590	5,033	4,613	3,980	3,510	3,781	4,073
Total portfolio investment	4,548	4,374	4,729	4,830	4,859	4,883	5,293	5,638	6,678	7,325	7,757	6,918	6,587	7,180	7,054	6,477	5,927	6,446	6,926
Earnings on other investment	9,752	9,461	11,323	11,417	10,955	10,872	12,223	13,432	18,147	19,938	19,121	12,504	12,854	11,897	10,797	10,216	11,406	9,899	10,426
Earnings on reserve assets	98	100	85	82	70	67	60	56	54	51	65	66	60	64	58	54	53	70	91
Total investment income	15,374	14,897	17,251	17,432	17,144	17,189	19,035	20,897	26,769	29,336	28,872	21,125	21,396	23,072	22,715	21,199	19,150	21,023	19,761
Other primary income	400	426	332	407	426	467	469	549	437	303	381	561	551	546	429	502	322	340	499
Total credits	17,557	17,230	19,621	20,010	19,810	20,855	22,725	24,913	30,300	32,715	32,683	25,575	25,993	27,761	27,613	26,335	24,008	26,239	24,934
DEBITS																			
(RUK / foreign earnings on investment in Scotland)																			
Compensation of Employees	1,520	1,542	2,195	3,339	1,725	2,808	4,094	4,830	4,943	4,068	3,166	4,716	3,767	4,559	3,824	3,551	5,044	5,240	4,820
Investment income																			
Earnings on direct investment	3,355	4,680	5,541	4,914	4,747	5,952	6,673	7,983	11,527	13,550	13,707	11,823	10,687	11,942	12,381	9,753	8,581	7,388	7,677
Earnings on portfolio investment																			
Earnings on equity securities	1,010	1,386	1,042	1,419	1,556	1,582	1,704	1,893	2,272	2,300	2,413	1,974	1,982	2,520	2,969	3,607	3,363	3,691	3,554
Earnings on debt securities	3,437	3,159	3,406	3,293	3,103	3,276	3,940	4,797	5,510	6,803	6,934	5,823	7,207	7,154	6,772	7,055	6,815	6,000	6,180
Total portfolio investment	4,447	4,544	4,447	4,713	4,659	4,858	5,644	6,689	7,782	9,103	9,347	7,797	9,189	9,674	9,741	10,662	10,178	9,691	9,734
Earnings on other investment	13,480	13,298	16,897	17,449	20,483	19,662	22,738	20,103	25,530	26,801	25,615	19,382	14,887	15,389	13,210	11,127	11,385	10,707	11,557
Total investment income	21,282	22,522	26,885	27,076	29,889	30,472	35,055	34,775	44,838	49,454	48,669	39,002	34,762	37,004	35,332	31,542	30,144	27,786	28,968
Other primary income	184	179	183	180	166	166	184	192	203	204	226	223	247	246	242	243	245	255	274
Total debits	22,985	24,244	29,263	30,595	31,780	33,446	39,334	39,798	49,985	53,726	52,062	43,941	38,776	41,809	39,397	35,337	35,433	33,280	34,062
BALANCES																			
(Net earnings)																			
Compensation of Employees	264	365	-157	-1,168	515	392	-873	-1,364	-1,850	-992	263	-828	280	-415	645	1,083	-508	-364	-146
Investment income																			
Earnings on direct investment abroad	-2,380	-3,718	-4,426	-3,812	-3,486	-4,585	-5,214	-6,212	-9,637	-11,528	-11,778	-10,186	-8,792	-8,010	-7,575	-5,301	-6,817	-2,779	-5,360
Earnings on portfolio investment abroad																			
Earnings on equity securities	91	-28	282	-42	147	1	56	-30	163	138	263	339	15	-374	-528	-1,111	-946	-1,026	-702
Earnings on debt securities	10	-142	-1	159	52	24	-407	-1,021	-1,266	-1,916	-1,854	-1,218	-2,617	-2,121	-2,159	-3,075	-3,304	-2,219	-2,107
Total portfolio investment	102	-171	281	117	200	25	-351	-1,051	-1,104	-1,778	-1,590	-879	-2,601	-2,494	-2,687	-4,186	-4,251	-3,245	-2,808
Earnings on other investment abroad	-3,728	-3,838	-5,574	-6,032	-9,528	-8,790	-10,515	-6,671	-7,383	-6,864	-6,494	-6,877	-2,034	-3,492	-2,413	-911	21	-808	-1,130
Earnings on reserve assets	98	100	85	82	70	67	60	56	54	51	65	66	60	64	58	54	53	70	91
Total investment income	-5,908	-7,626	-9,633	-9,644	-12,745	-13,283	-16,020	-13,878	-18,069	-20,118	-19,797	-17,876	-13,367	-13,932	-12,617	-10,343	-10,994	-6,762	-9,208
Other primary income	216	247	149	227	260	301	285	357	234	99	155	338	304	300	187	259	77	86	225
Total	-5,428	-7,014	-9,642	-10,584	-11,970	-12,590	-16,609	-14,885	-19,685	-21,011	-19,379	-18,366	-12,783	-14,048	-11,784	-9,002	-11,425	-7,041	-9,129

Detailed results

The charts in this section show the size of credits, debits and balances split between the rest of the world (ROW) and the rest of the UK (RUK) between 1998 and 2016. Bear in mind that results prior to 2010 have not received the same level of scrutiny as those for 2010 onwards and so should be treated with extra caution. These are complemented by the tables published alongside this document

here: www.gov.scot/Topics/Statistics/Browse/Economy/SNAP/GNI .

Credit Flows from RUK

Chart 1: Contribution of components to **credit** flows to Scotland from **the rest of the UK**, 1998 to 2016

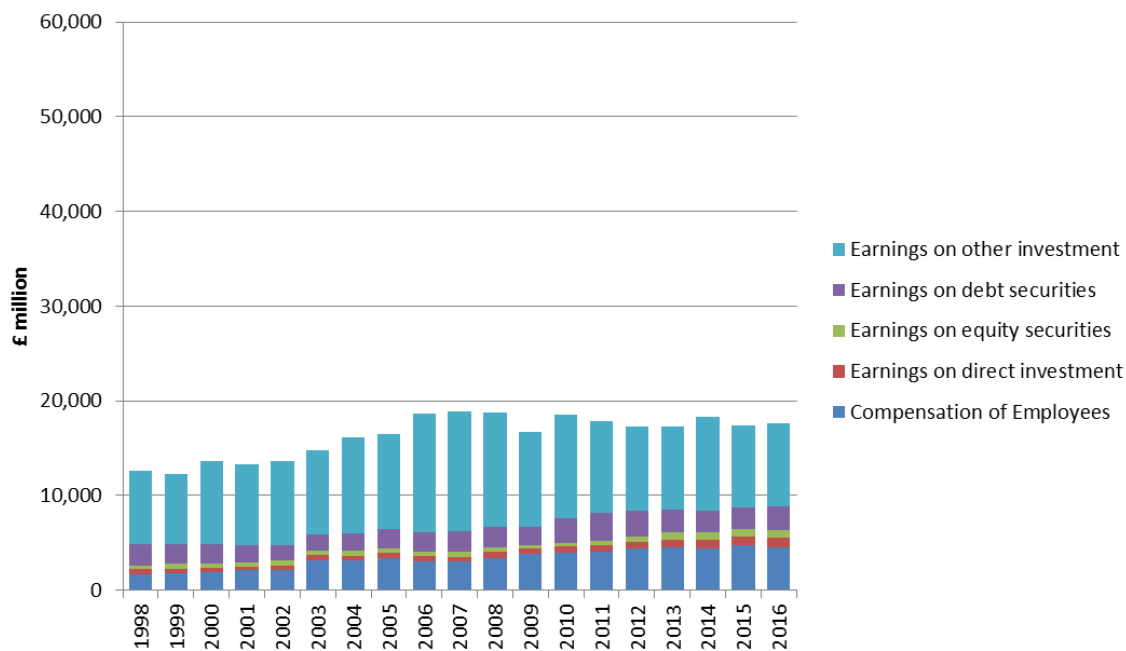
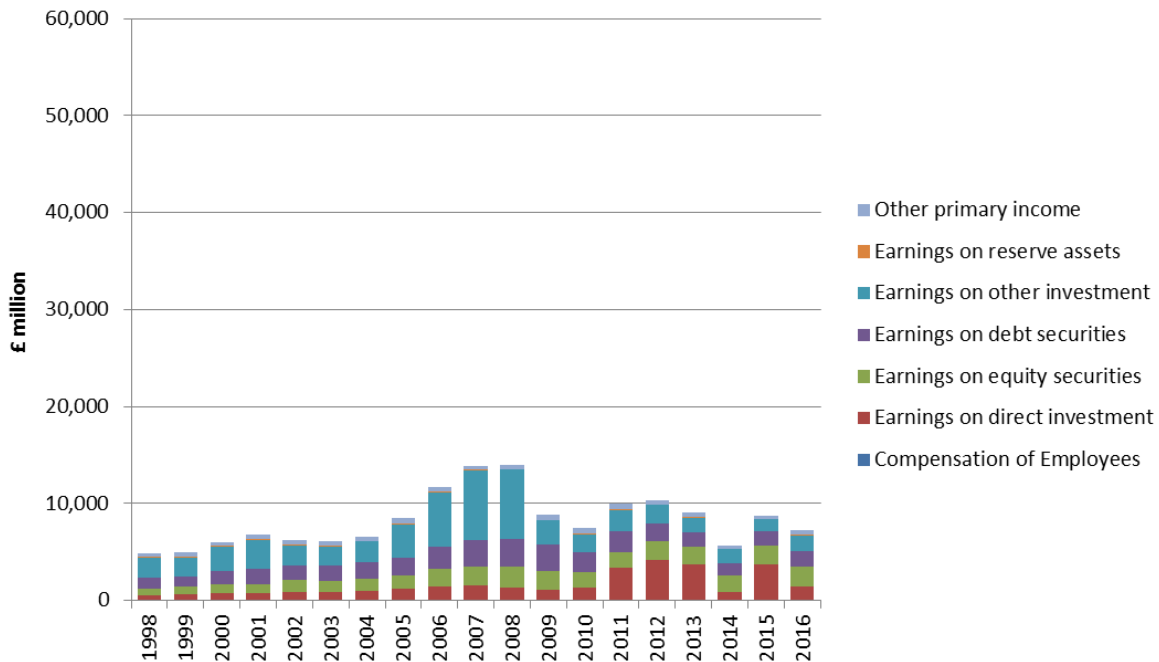


Chart 1 shows that earnings on other investment have formed the largest flow of income from the rest of the UK into Scotland each year since 1998 having formed at least 50 per cent of the overall inflow to Scotland from the rest of the UK in each year. The largest contribution to these other investment flows from the rest of the UK comes from pension entitlements paid by insurance corporations and pension funds in the rest of the UK to Scottish households.

In 2016, the total inflow to Scotland from the rest of the UK was estimated at £17.7bn. Other investment contributed £8.8bn (50%) followed by compensation of employees (£4.6bn, 26%). Portfolio investment (earnings on equity securities + earnings on debt securities) together accounted for £3.3bn (19% of the total inflow to Scotland from the rest of the UK). Equivalent figures for other years can be found in the accompanying tables (www.gov.scot/Topics/Statistics/Browse/Economy/SNAP/GNI).

Credit Flows from non-UK ROW

Chart 2: Contribution of components to credit flows to Scotland from the non-UK rest of the world, 1998 to 2016

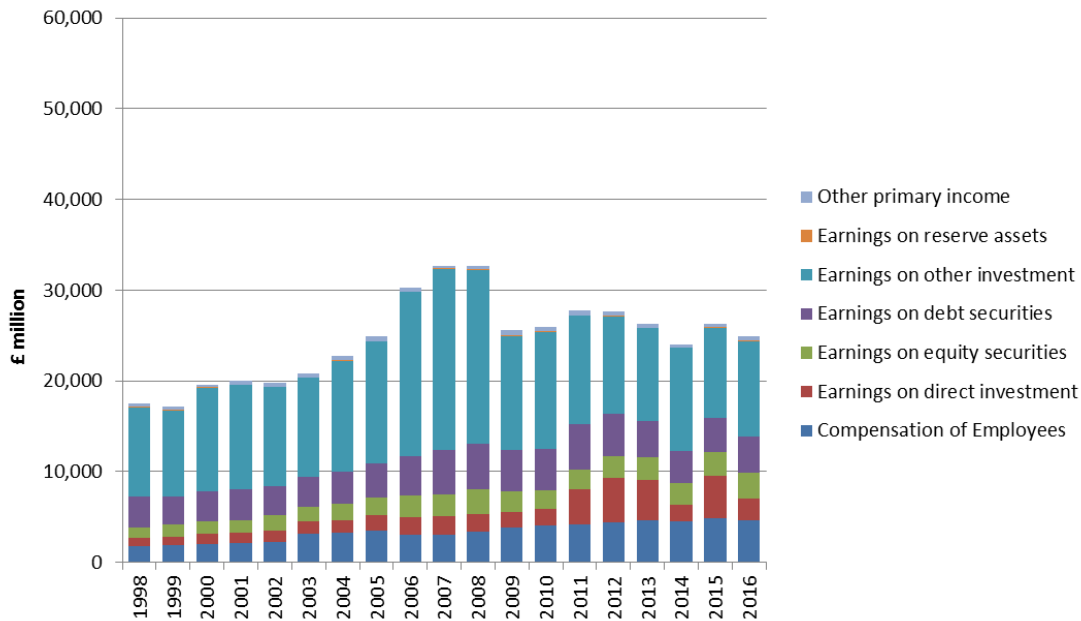


Flows into Scotland from the non-UK rest of the world were smaller than those from the rest of the UK. Direct investment and earnings on equity securities have tended to make the largest contributions since around 2009. Prior to that earnings on other investment made the largest contribution to flows into Scotland from overseas, particularly in 2007 and 2008 when (other sector) UK earnings on overseas deposits peaked.

In 2016, portfolio investment from the non-UK rest of the world contributed £3.6bn which equates to 50% of the total inflow to Scotland from the non-UK rest of the world.

Total Credit Flows from outside Scotland

Chart 3: Contribution of components to **total credit** flows to Scotland, 1998 to 2016

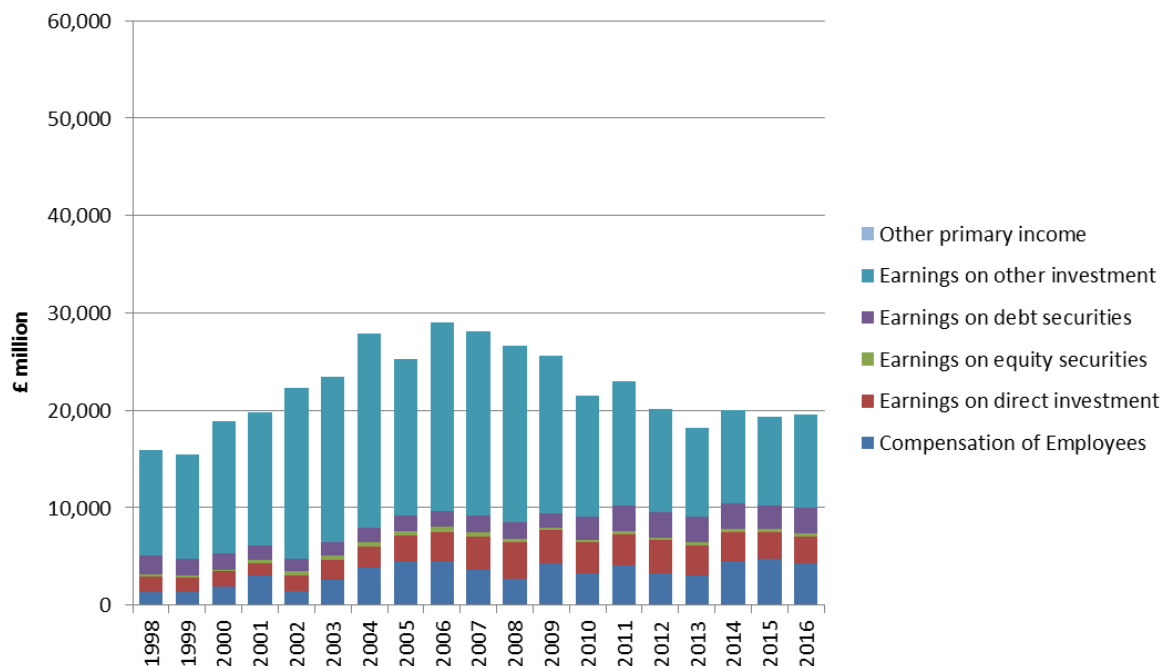


Combining flows into Scotland from both the rest of the UK and the non-UK rest of the world shows that credit flows into Scotland peaked in 2007 and 2008 when earnings on other investment reached their highest levels. As explained above, this was mainly due to a peak in UK earnings on overseas deposits. Since then these earnings and deposits have fallen back to more typical levels which has led to the reduction in total flows to Scotland since.

In 2016, £10.4bn (42%) of the total £24.9bn flow into Scotland came from earnings on other investment.

Debit Flows to RUK

Chart 4: Contribution of components to **debit** flows from Scotland to the **rest of the UK**, 1998 to 2016



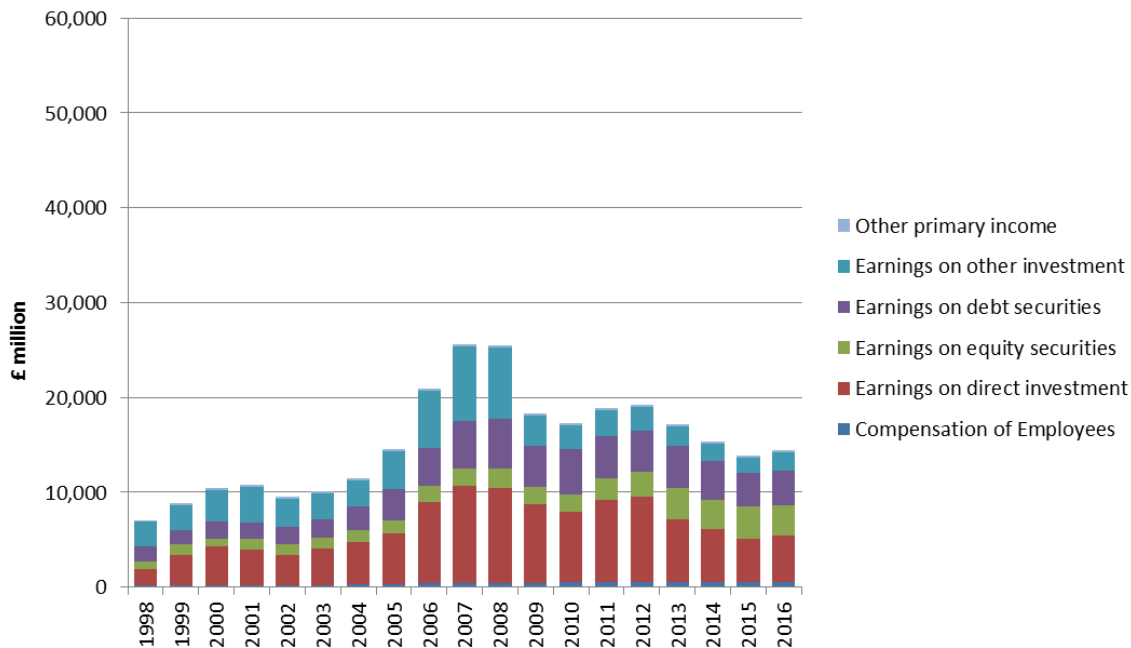
Flows out of Scotland to the rest of the UK were larger than flows in the other direction. They were again dominated by earnings on other investment and, in particular, by pension entitlements paid from Scottish insurance corporations and pension funds to residents in the rest of the UK. The size of these other investment outflows has reduced since around 2006 and this has led to a corresponding reduction in overall outflows from Scotland to the rest of the UK.

Scotland's relatively large other investment outflow to the rest of the UK occurs because Scotland has a relatively large share of the UK's insurance and pension industry. Insurance and pension policy holders are assumed to be distributed throughout the UK based on population. Flows from the Scottish insurance and pension industry to RUK households are therefore relatively large (in comparison to flows in the other direction). The fall in the size of the other investment outflow since 2006 reflects a fall in the UK series (i.e. the overall flow from UK investment and insurance companies to UK households has reduced in size) and a fall in the size of Scotland's share of the UK's insurance and pension industry.

In 2016, earnings on other investment contributed £9.6bn (49%) to the total outflow from Scotland to the rest of the UK.

Debit Flows to non-UK ROW

Chart 5: Contribution of components to **debit** flows from Scotland to the **non-UK rest of the world**, 1998 to 2016

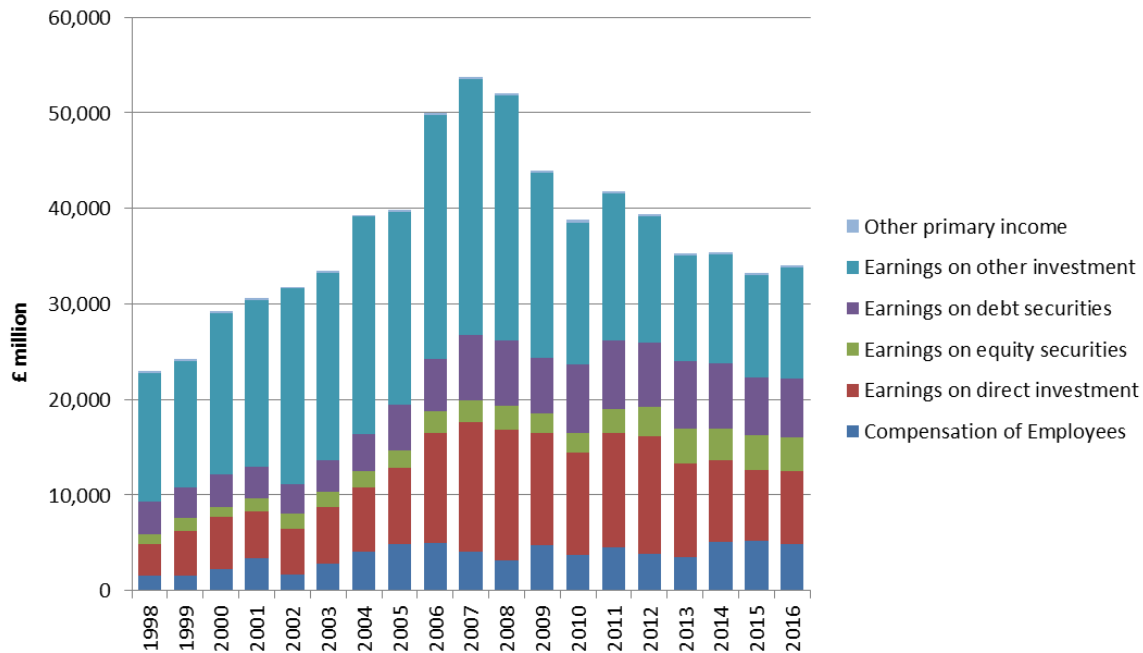


Outflows from Scotland to the rest of the world have generally been dominated by earnings on direct investment. Throughout much of this period, earnings on direct investment in the North Sea accounted for around half of the total direct investment flow. In recent years this has fallen to around one third in 2016. The overall level of outflows from Scotland to the rest of the world has fallen since a peak in 2007 and 2008 with this reduction due to the combination of a fall in earnings on other investment and on direct investment.

In 2016, portfolio investment made up almost half of the total outflow from Scotland to the non-UK rest of the world (£6.8bn, 47%). This was made up of earnings on equity securities (£3.2bn, 22% of the total outflow from Scotland to the non-UK rest of the world) and earnings on debt securities (£3.6bn, 25%).

Total Debit Flows to outside Scotland

Chart 6: Contribution of components to **total debit** flows from Scotland, 1998 to 2016



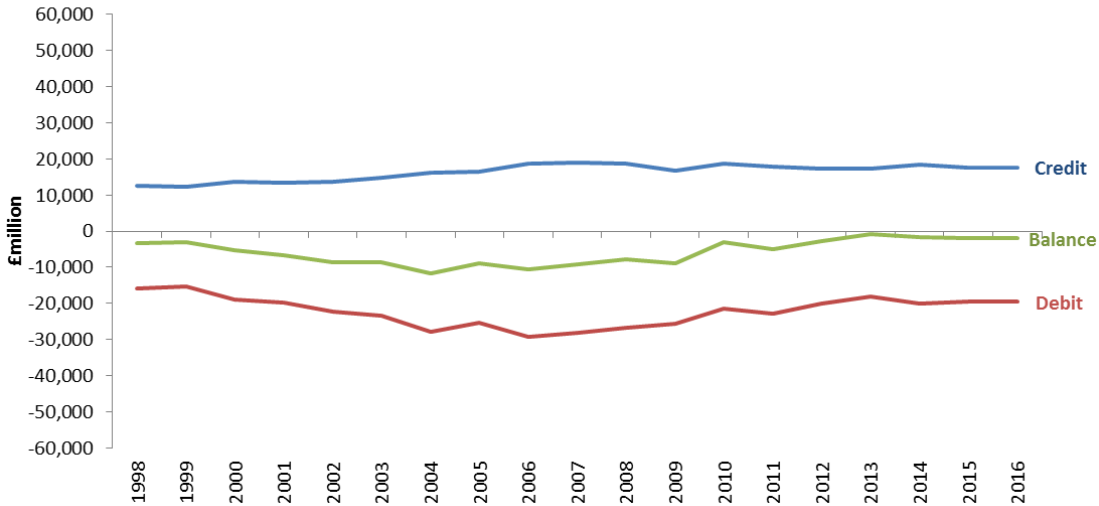
The overall outflows from Scotland peaked in 2007 mainly due to a combination of earnings on other investment and direct investment. Since then both of these components have reduced somewhat in size, particularly earnings on other investment and, as a result, the overall outflow from Scotland has reduced.

In 2016, earnings on other investment accounted for £11.6bn (34%) of the total £34.1bn outflow from Scotland whilst earnings on portfolio investment accounted for £9.7bn (29%).

Flow Balances

The charts below summarise the overall credit and debit flows and the net income flow between Scotland and elsewhere.

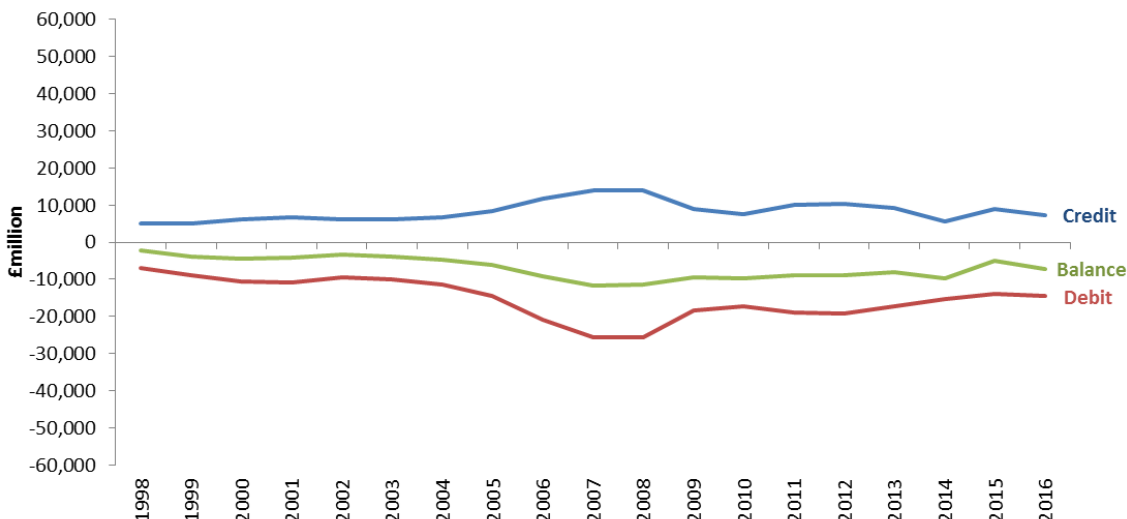
Chart 7 Total credit and debit flows and balance between Scotland and rest of UK, 1998-2016



Scotland has had a net outflow of income to the rest of the UK throughout the entire period covered by these statistics. This net outflow was largest around the mid-2000s but has fallen away in recent years. This reduction in the net outflow has been largely due to a fall in the size of the debit flow (from Scotland to the rest of the UK) and this in turn has been caused by a reduction in the size of earnings on other investment.

In 2016, an estimated £17.7bn came into Scotland from the rest of the UK whilst an estimated £19.6bn went in the other direction. This resulted in a net outflow from Scotland to the rest of the UK of around £1.9bn.

Chart 8 Total credit and debit flows and balance between Scotland and non-UK rest of the world, 1998-2016



Scotland has also had a net outflow of income to the non-UK rest of the world throughout the entire period covered by these statistics. Both credit and debit flows peaked in around 2007 and 2008 due mainly to high earnings on other investment which have subsequently reduced in size. In recent years this net outflow to the non-UK rest of the world has dominated Scotland's overall net outflow as the net outflow to the rest of the UK has reduced in magnitude.

In 2016, an estimated £7.3bn came into Scotland from the non-UK rest of the world whilst an estimated £14.5bn went in the other direction. This resulted in a net outflow from Scotland to the non-UK rest of the world of around £7.2bn.

Chart 9 Total credit and debit flows and balance, 1998-2016

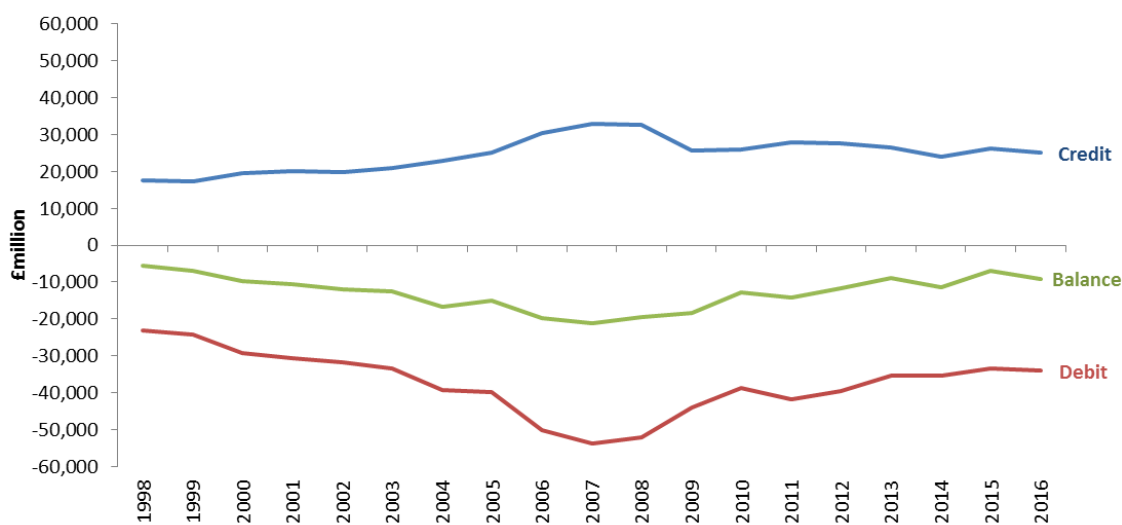


Chart 9 combines the flows with the rest of the UK with those with the non-UK rest of the world. In 2016 an estimated £24.9bn came into Scotland whilst an estimated £34.1bn went in the other direction. This resulted in a net outflow of around £9.1bn.

Flows between the Scottish North Sea and elsewhere

The total flows described above include flows between offshore and onshore Scotland and elsewhere (RUK and RoW).

Most of the flows involving offshore Scotland relate to foreign direct investment with foreign-owned companies operating in the North Sea earning money on their investment.

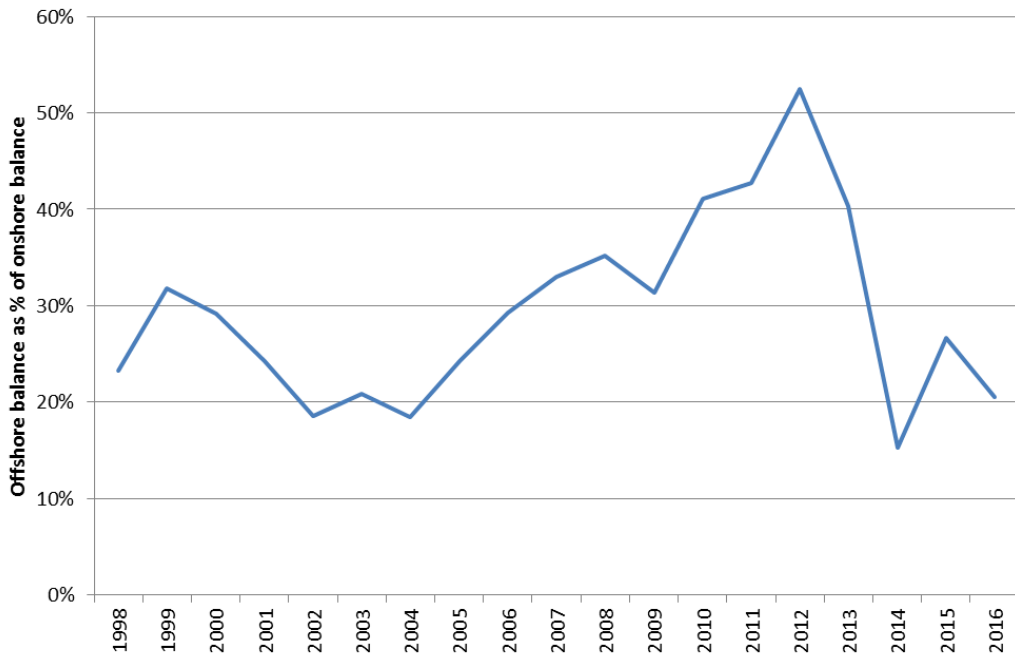
Between 1999 and 2012 offshore direct investment outflows accounted for between 41% and 48% of the total direct investment outflows from Scotland, reflecting a period of rising profitability in the sector. Since 2012 this has fallen, driven first by increased North Sea investment and subsequently by lower levels of profitability. By 2016, around one quarter (24%) of direct investment outflows were made up of flows from offshore Scotland.

These offshore flows clearly have a significant impact on the Scottish primary account balance and consequently on GNI. In 2016 the total net outflow of £9.1bn was made up of

a net outflow of £7.3bn from onshore Scotland and a net outflow of £1.9bn from offshore Scotland meaning that offshore Scotland accounted for around 20% of the total net outflow.

The chart below shows how this proportion has changed over time.

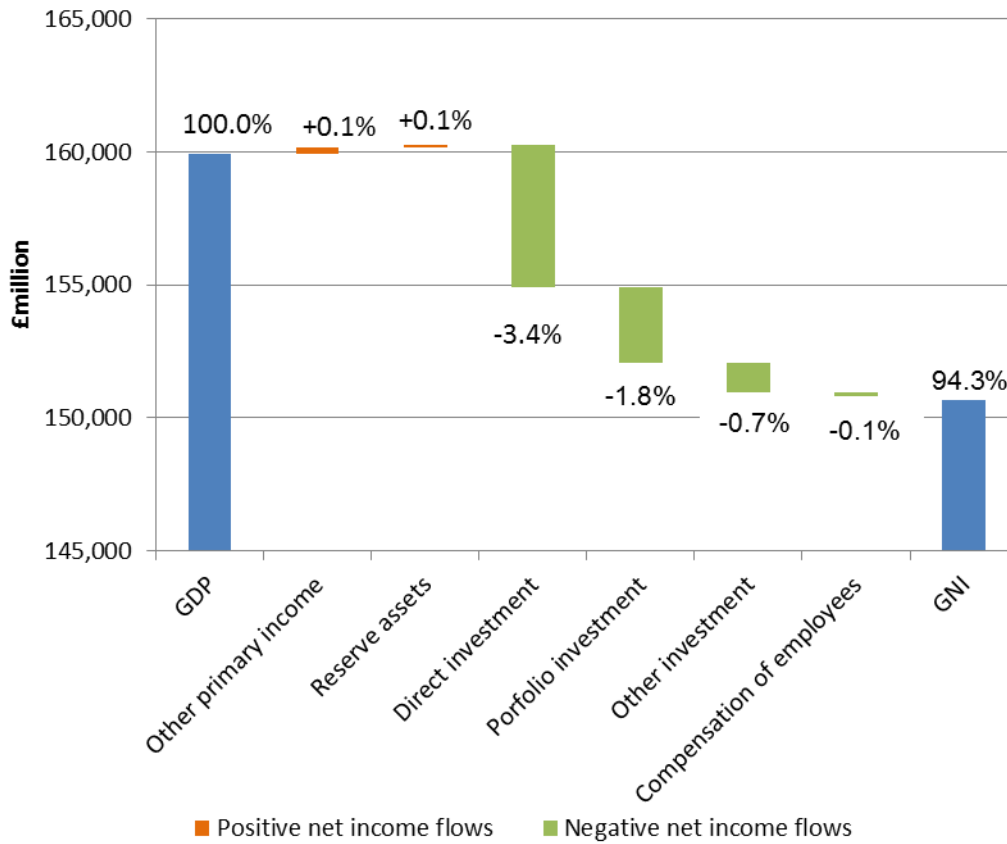
Chart 10 Proportion of total net outflow accounted for by flows between offshore Scotland and elsewhere, 1998 to 2016



The proportion of the total net outflow accounted for by flows between offshore Scotland and the rest of the UK / rest of the world increased from around 20% in 2004 to over 50% in 2012 before falling dramatically in 2013 and 2014.

Gross National Income

Chart 11: GDP and GNI, Scotland, 2016



In 2016, Scottish GDP (including a geographic share of UK extra-regio) was estimated at £159.9 billion. Other primary income and reserve assets made small positive contributions to GNI (+0.1% of GDP in each case). However direct investment (-3.4% of GDP), portfolio investment (-1.8%), other investment (-0.7%) and compensation of employees (-0.1%) all made negative contributions. As a result, in 2016, Scottish GNI is estimated at £150.8 billion or 94.3% of GDP.

Chart 12 GNI as % of GDP and contribution of primary income account components, 1998-2016

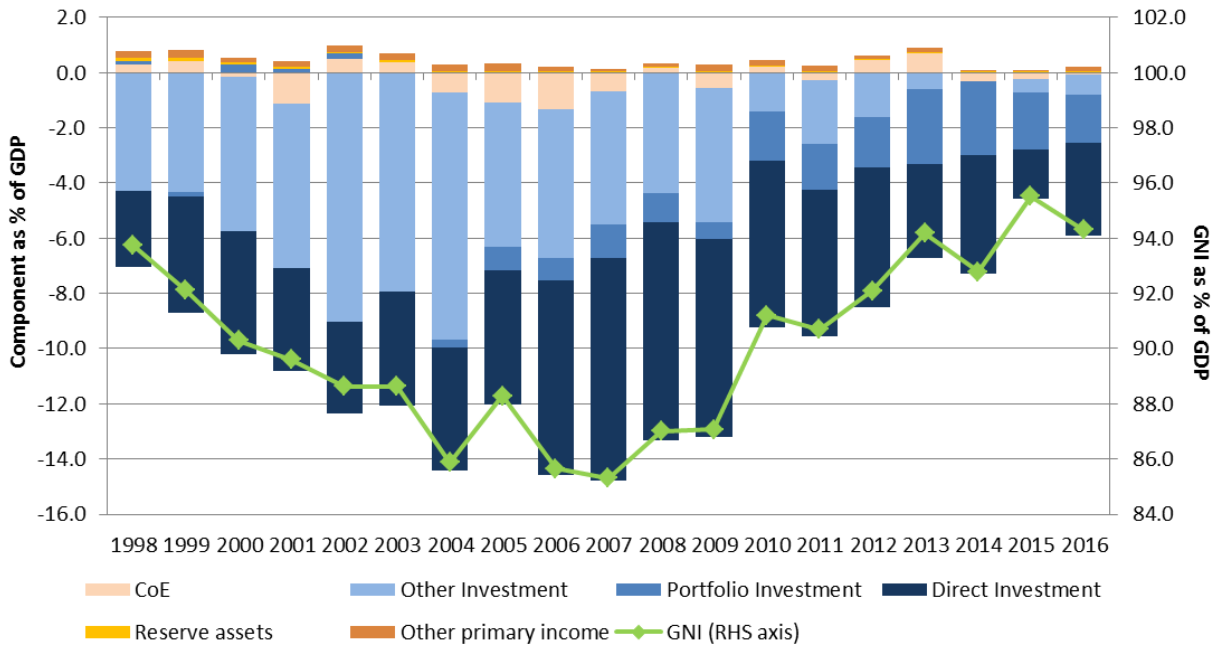


Chart 12 summarises the information provided in chart 10 for all years between 1998 and 2016. It shows that direct investment, portfolio investment and other investment have tended to make negative contributions to GNI throughout this period. The negative contribution of other investment increased at the start of the century but has fallen off since. This, coupled with a reduction in the negative contribution of direct investment, has led to the narrowing of the gap between GDP and GNI since 2007 despite an increase in the negative contribution of portfolio investment in recent years.

Chart 13 GDP and GNI per head and GNI as % of GDP, Scotland, 1998-2016

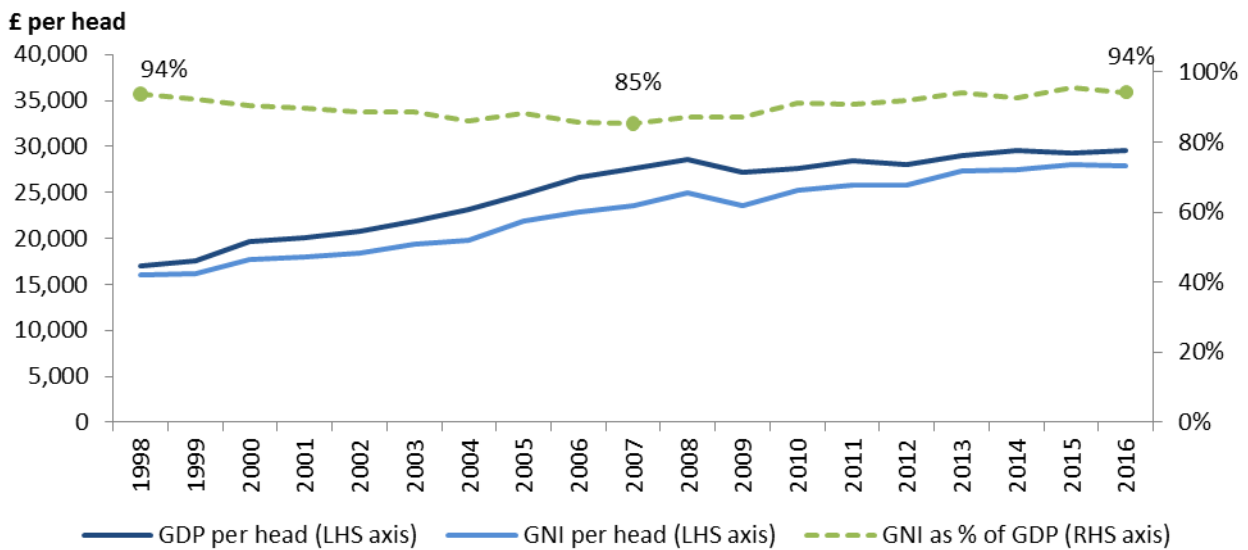


Chart 13 shows GNI per head alongside GDP per head as well as GNI as a percentage of GDP. Scottish GNI has remained below GDP throughout the period from 1998 to 2016. The gap between GNI and GDP initially widened between 1998 and 2007 with GNI falling

from 94% of GDP in 1998 to 85% of GDP in 2007. Since 2007 the gap has narrowed again with GNI having returned to 94% of GDP in 2016. Such a gap between GDP and GNI is not uncommon. For example, in New Zealand GNI was 94% of GDP in 2016, whilst in Ireland GNI was 83% of GDP in the same year.

Chart 14 GDP and GNI per head and GNI as % of GDP, UK, 1998-2017

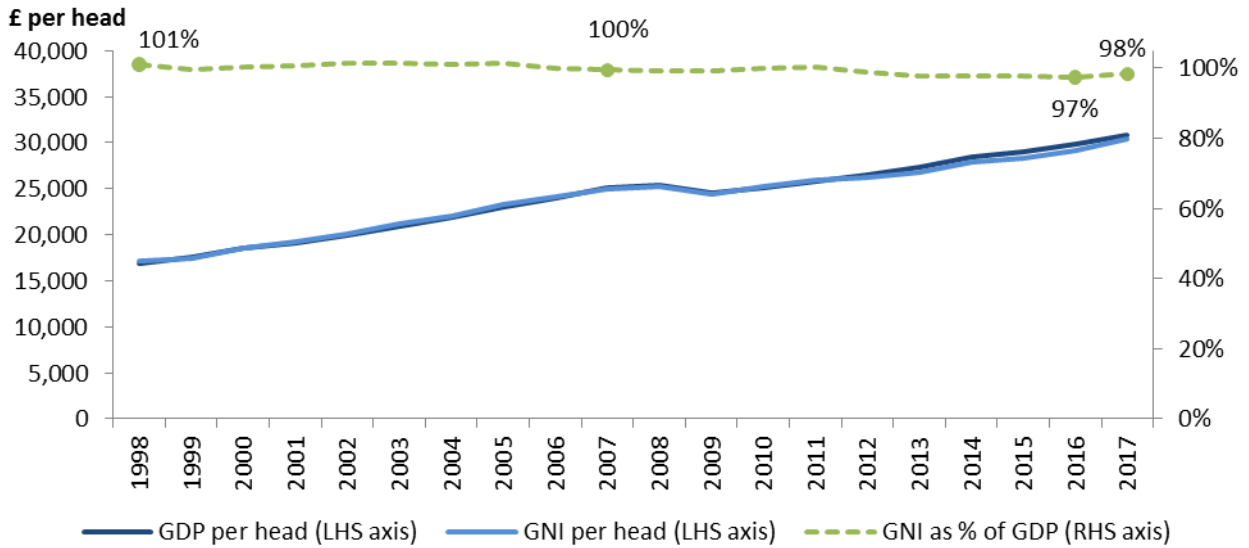


Chart 14 provides the same information for the UK as a whole. There is less of a discrepancy between GNI and GDP in the UK than in Scotland. This is due in part to the fact that the financial outflows associated with North Sea operators have a proportionately smaller impact on UK GNI than they do for Scotland.

Next Steps

Data Sources

The principal aim of this project to date has been the development of a Primary Income Account for the Whole of Scotland to provide the credit and debit flows required to derive an estimate of GNI from existing GDP estimates. This paper has demonstrated that this aim has been met, although there is still considerable work needed to refine the estimate over the coming year. The key data sources, modelling parameters and assumptions made have been discussed throughout this publication and in the annexes. The next steps are to challenge these assumptions and to explore whether there are additional data sources or industry intelligence that can be used to improve the quality of the estimates and reduce the uncertainty in components which are primarily based on modelling at this time of initial release.

We are keen to discuss the strengths and limitations of this analysis with stakeholders as part of the on-going development programme over the next year.

Stakeholder Engagement

Over the course of 2018/19, we will consult a range of users and data suppliers about the quality of the data sources used, the availability of any other data sources or industry intelligence, the robustness of the methodology and assumptions made, and the interpretation of trends in the initial results. This will shape the development of the analysis with a view to it being produced as a regular official statistics output and an extension to the current Scottish Government national accounts.

The initial results were presented and discussed at the last meeting of the Scottish Economic Statistics Consultation Group (SESCG) on 16 March 2018. We shall present and discuss the analysis with other experts across UK Government departments, industry experts and academics with an interest in the area.

Alongside that, we will consult all potential users of the analysis through a statistical consultation later in 2018.

Consultation and Feedback

We welcome any initial thoughts or views on this analysis. Please feel free to contact us and to let us know what you think or whether you would like to be alerted to the statistical consultation in due course.

Please contact us at economic.statistics@gov.scot

or write to:

The Scottish Government
National Accounts Unit
Office Of The Chief Economic Adviser – Economic Analysis
St Andrew's House
Regent Road
Edinburgh
EH1 3DG

Annex A – Detailed Methodology

Methodology

The methods used are generally similar to those developed in the 2013 work. The general approach is to calculate an appropriate Scottish share of the income flows between the UK and the rest of the world as published in the UK Pink Book⁸ and the Quarterly UK Economic Accounts⁹. The shares are usually based on population or Gross Value Added for a given industry. For direct investment detailed company level data from the Office for National Statistics (ONS) has been used with a range of measures used to determine Scottish data from this survey.

In order to produce quarterly estimates (for inclusion in future updates to this release) it is necessary to combine annual figures from the Blue Book and Pink Book publications with quarterly figures from the UK Economic Accounts. Some figures are only available annually and so these are used to apportion the more sparse quarterly information to the more detailed breakdowns required by the quarterly GNI model.

There are 2 additional complexities that need to be addressed.

Firstly, flows between Scotland and the rest of the UK need to be taken into account. Data on interactions between Scotland and the rest of the UK are extremely limited. Surveys of UK companies by the ONS include Scottish companies but (i) these companies are not always easy to identify, (ii) the coverage in Scotland may be smaller than might be desired and (iii) the surveys tend to cover solely interactions between UK residents and foreign residents and don't include interactions between Scottish residents and residents in the rest of the UK.

Secondly, a large share of UK Extra Regio (offshore and overseas) activity takes place in Scottish waters. This is complicated because data associated with the Scotland's offshore economy are limited and can be difficult to estimate.

Taken together, these challenges mean that it is inevitable that the estimates in the income account will be subject to uncertainty. It also means that a range of different data sources and methodologies have been used.

The Primary Income Account consists of the main components outlined below.

1. Compensation of Employees (CoE)

This includes wages and other benefits received by workers who cross national borders to reach their place of normal work, or to seasonal or short-term workers who are resident in the country for less than a year.

The overall net balance is controlled to match the difference between GDP CoE figures and GDHI CoE figures with the outflow from Scotland to RUK calculated to ensure this is

⁸ This is the UK balance of payments publication:
<https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/bulletins/unitedkingdombalanceofpaymentsthepinkbook/2017>

⁹ <https://www.ons.gov.uk/releases/unitedkingdomeconomicaccountsoctodec2017>

the case. This means that the inflows and outflows themselves, the methods used to describe which are outlined below, have no direct effect on GNI.

1.1. Estimating flows between onshore Scotland and the non-UK rest of the World

Outflows: Scottish onshore GDP as proportion of UK onshore GDP is calculated. This is then multiplied by CoE exports taken from the UK Economic Accounts.

Inflows: Scottish onshore GDP as proportion of UK onshore GDP is calculated. This is then multiplied by onshore CoE imports based on the UK Economic Accounts.

1.2. Estimating flows between offshore Scotland and the non-UK rest of the World

The measure of extra-regio COE from the mining and quarrying industry is taken from the regional accounts. A Scottish geographical share is applied to estimate the Scottish element. This in turn is multiplied by an estimate of the proportion of workers in the UK continental shelf who are non-UK nationals taken from the UK Continental Shelf offshore Demographics Report published by Oil & Gas UK.

1.3. Estimating flows between onshore Scotland and the rest of the UK

Inflow: The Annual Survey of Hours and earnings (ASHE) is used to estimate the proportion of employment income in the rest of the UK being earned by Scottish residents. This is then multiplied by an estimate of RUK onshore COE to estimate the flow from RUK to Scotland.

Outflow: This is effectively a balancing item, calculated to ensure that the overall net balance is consistent with the difference between GDP CoE and GDHI CoE.

1.4. Estimating flows between offshore Scotland and the rest of the UK

Flows between the Scottish offshore economy and the rest of the UK and between the rest of UK offshore economy and Scotland are again based on the measure of extra-regio CoE from the mining and quarrying industry in the regional accounts. A combination of Scotland's (/RUK's) geographic share of the north sea, the proportion of workers in the UK continental shelf who are UK nationals and the proportion of these workers estimated to be resident in the rest of the UK (/Scotland) are then used to estimate these flows.

2. Direct Investment

This covers earnings made when Scottish residents have an equity interest of 10% or more in a foreign company (or vice versa).

2.1. Estimating flows between onshore Scotland and the non-UK rest of the World

The figures for UK income flows associated with direct investment in the Pink Book are based on the Office for National Statistics' Foreign Direct Investment (FDI) survey. This same source has been used as the basis for estimates of Scottish flows with the non-UK rest of the world. In line with the approach taken in the Pink Book, FDI flows for Scotland have been calculated using the asset & liability approach. This is one of two FDI measurement principles details of which can be found here:

<http://www.oecd.org/daf/inv/FDI-statistics-asset-liability-vs-directional-presentation.pdf>.

Note that the alternative directional approach was used in the 2013 work making this one area of divergence between the method used in 2013 and that used in this more recent work.

The company level information in this survey has been mapped to the Government Office Region of the UK headquarters using the Inter Departmental Business Register (IDBR). Using this, a Scottish share of FDI flows was estimated. However this attributes the whole of an outflow to the location of the UK headquarters. In reality there would be an income flow from the company's operations in the rest of the UK to the headquarters and then the entire UK income flow would occur from the UK headquarters to the overseas parent company. These 'indirect income flows' have been calculated based on the share of the company's turnover generated in Scotland and in the rest of the UK.

The FDI survey does not include the banking sector. Instead, estimates are supplied by the Bank of England for UK flows only. This means it is not possible to map data associated with banks to a Government Office Region in the manner described above. Instead Scotland is attributed a Banking GVA share of the total UK FDI flows associated with banks.

2.2. Estimating flows between offshore Scotland and the non-UK rest of the World

North Sea flows are also dealt with separately. Scotland is assigned a share of UK North Sea outflows based on the estimated share of UK profits occurring in Scottish waters. This share is estimated on a company by company basis and is derived from the database underpinning the model used to produce Scottish Oil and Gas production Statistics¹⁰.

2.3. Estimating flows between onshore Scotland and the rest of the UK

Flows of direct investment between Scotland and the rest of the UK are calculated by estimating the proportion of Post Tax Operating Surplus (PTOS) generated in Scotland and owned by companies based in the rest of the UK and vice versa.

PTOS estimates are based on Gross Operating Surplus, Net Operating Surplus and tax data (from GERS). Turnover data from the Inter-Departmental Business Register (IDBR) is then used to estimate the proportion of PTOS generated in Scotland but owned by RUK companies and the proportion of PTOS generated in RUK but owned by Scottish companies.

2.4. Estimating flows between offshore Scotland and the rest of the UK

The flow between the Scottish part of the North Sea and the rest of the UK is calculated by applying an appropriate share/ratio to the flow between the Scottish North Sea and the non-UK rest of the world.

Firstly the country of ownership of the companies on the oil and gas database is determined. This is used to calculate a ratio of profits made in the Scottish North Sea by rest of UK companies to non-UK rest of world companies. This ratio is applied to the flow between the Scottish North Sea and the rest of the world to estimate the outflow from the Scottish North Sea to the rest of the UK. Note that it does not reflect changes in ownership

¹⁰ <http://www.gov.scot/Topics/Statistics/Browse/Economy/oilgas1617>

of companies over time. Note also that, at present Shell has been treated as half owned by RUK and half owned by non-UK rest of world.

Similarly a ratio of Scottish to rest of world profits in the rest of the UK North Sea has been calculated to determine the inflow to Scotland from the rest of the UK North Sea.

3. Portfolio Investment

This includes earnings from investment in equity securities (shares) or debt securities where the investor owns less than 10% of the enterprise. This also includes UK Government debt interest payments to non-residents.

3.1. Estimating flows between Scotland and the non-UK rest of the World

In line with the standard methodology, Scotland has been allocated appropriate shares of the flows between the UK and the rest of the world.

Various apportionments are used for different elements of the earnings on equity securities and earnings on bonds and notes and money market instruments. Further details of the apportionments used can be found in annex B.

3.2. Estimating flows between Scotland and the rest of the UK

3.2.1. *Income from equity securities*

The ONS Share Ownership Survey is used to identify the proportion of UK shares owned by UK individuals and by the rest of the world. Using data on foreign earnings on equity securities from the UK Economic Accounts it is possible to estimate the value of dividends paid to UK individuals.

The London Stock Exchange (LSE) publishes market capitalisation data on a company by company basis. This can be combined with the estimate of the value of dividends paid to UK individuals to estimate company level dividends.

By identifying which of these companies are based in Scotland (using Companies House and FAME databases) the data can be used to estimate Scottish and RUK dividend payments. These can then be split between those that stay in Scotland and those that are paid to RUK residents based on population share (assuming share ownership is broadly similar between Scottish and RUK residents).

3.2.2. *Income from debt securities*

Debt securities cover UK Central Government debt interest payments. Inflows relate to Scottish residents' receipt of debt interest payments from the rest of the UK.

Debt security outflows are based on the idea that some of the UK debt is in effect held on behalf of Scotland. Interest is then paid to residents in the rest of the UK on this theoretical share of UK debt.

The Debt Management Office publishes figures on who owns UK Government debt. Excluding the Bank of England and overseas residents, UK debt is owned by insurance companies and pension funds, monetary financial institutions, other financial institutions

and households. Scotland is assigned a share of each of these sectors based on the relevant GVA share or a population share. At the same time Scotland is assigned a notional (population) share of the UK debt. These are combined together to create estimated flows between Scotland and the rest of the UK.

4. Other Investment

Other Investment primarily covers interest received from deposits or paid on a loan where one of the parties is not resident in Scotland.

4.1. Estimating flows between Scotland and the non-UK rest of the World

In line with the standard methodology Scotland has been allocated appropriate shares of the flows between the UK and the rest of the world.

Various apportionments are used for different elements of the earnings on loans, earnings on deposits and other investments which make up this category. Further details of the apportionments used can be found in annex B.

4.2. Estimating flows between Scotland and the rest of the UK

It is assumed that there are no cross-border income flows between Scotland and the rest of the UK associated with deposits or loans. This follows the approach taken in the 2013 work which drew upon expert advice from Martin Kellaway. This remains an area for further work.

This leaves property income attributable to insurance policy holders, payable on pension entitlements and attributable to collective investment fund shareholders. The UK Blue Book shows flows under these 3 headings between one part of the economy and another (so for example, property income attributable to insurance policy holders is paid by insurance corporations and pension funds to households, financial corporations and other insurance corporations and pension funds). Scotland is allocated a share of each of these based on GVA or population and flows between Scotland and the rest of the UK can then be calculated.

5. Other Primary Income

Taxes paid and subsidies on products and production received from non-residents (e.g. contributions to EU and receipts of EU subsidies).

5.1. Estimating flows between Scotland and the non-UK rest of the World

In line with the standard methodology Scotland has been allocated appropriate shares of the flows between the UK and the rest of the world.

Various apportionments are used for the different elements which make up this category. Further details of the apportionments used can be found in annex B.

5.2. Estimating flows between Scotland and the rest of the UK

Taxes and subsidies within the National Accounts GNI framework relates to payments and receipts to and from EU institutions. It is therefore assumed that cross-border flows with the rest of the UK will be zero.

6. Reserve Assets

Interest received on official foreign exchange reserves and relating to the International Monetary Fund (IMF).

6.1. Estimating flows between Scotland and the non-UK rest of the World

Reserve assets have been apportioned to Scotland using a population share.

6.2. Estimating flows between Scotland and the rest of the UK

There are assumed to be no income flows associated with reserve assets between Scotland and the rest of the UK.

Annex B – Data Sources and Apportionment methods

Compensation of employees flows with the rest of the world

As outlined in Annex A, a number of sources are used to estimate CoE flows. These include estimates of CoE from GDP and GDHI, information on the North Sea workforce and the Annual Survey of Hours and Earnings.

Compensation of employees flows with the rest of the UK

As outlined in Annex A, a number of sources are used to estimate CoE flows. These include estimates of CoE from GDP and GDHI, information on the North Sea workforce and the Annual Survey of Hours and Earnings.

Direct Investment flows with the rest of the world

Category	Series code	Apportionment
Inflows		
Dividends	CNZN	FDI survey (direct)/ banking GVA share
Distributed branch profits	M79N	FDI survey (direct)/ banking GVA share
dummy variable	AAAA	FDI survey (direct)/ banking GVA share
Reinvested earnings	HDNY	FDI survey (direct)/ banking GVA share
Earnings on property investment	HHBW	FDI survey (direct)/ banking GVA share
Earnings on other capital	N2PH	FDI survey (direct)/ banking GVA share
Outflows		
Dividends	BCEA	FDI survey (direct + indirect) / banking GVA share / North sea profits
Distributed branch profits	M8LN	FDI survey (direct + indirect) / banking GVA share / North sea profits
dummy variable	BBBB	FDI survey (direct + indirect) / banking GVA share / North sea profits
Reinvested earnings	CYFV	FDI survey (direct + indirect) / banking GVA share / North sea profits
Earnings on property investment	HESG	FDI survey (direct + indirect) / banking GVA share / North sea profits
Earnings on other capital	N2OZ	FDI survey (direct + indirect) / banking GVA share / North sea profits

Direct Investment flows with the rest of the UK

As explained in Annex A, flows between Scotland and the rest of the UK are calculated by estimating Post Tax operating Surplus (PTOS) using Gross Operating Surplus, Net Operating Surplus, tax data and the Inter-Departmental Business register.

Portfolio Investment flows with rest of the world

Category	Series code	Apportionment
Inflows		
<u>Equity securities</u>		
Earnings on equities - MFIs	MT4A	Scottish share of banking GVA
Earnings on equities - Central Government	MT4B	Population share
Earnings on equities - Insurance and Pensions	MT4C	Scottish share of insurance company and pension trust GVA
Earnings on equities - Other Financial Intermediaries	MT4D	Scottish share of financial auxiliary company GVA
Earnings on equities - Private non-financial corps	MT4E	Scottish share of non-financial company GVA
Earnings on equities - Household Sector	MS8B	Population share
Earnings on investment funds - dividends	MT3O	Population share
Earnings on investment funds - re-invested earnings	MT3P	Population share
Inv Funds - Other Fin Intermediaries - dividends	MT3Q	Population share
Inv Funds - Other Fin Intermediaries - re-invested earnings	MT3R	Population share
Inv Funds - Households - dividends	MT3S	Population share
Inv Funds - Households - re-invested earnings	MT3T	Population share
<u>Debt securities</u>		
Debt Sec - MFIs	HBMX	Scottish share of banking GVA
Debt Sec - Central Government	LSPA	Population share
Debt Sec - Other Financial Intermediaries	NHQV	Scottish share of financial auxiliary company GVA
Debt Sec - Private non-financial corps	HGBX	Scottish share of non-financial company GVA
Long term Debt Sec - MFIs	HPCQ	Scottish share of banking GVA
Long term Debt Sec - Central Government	HF6Q	Population share
Long term Debt Sec - Insurance cos and pension funds	CGOZ	Scottish share of insurance company and pension trust GVA
Long term Debt Sec - Other Financial Intermediaries	CGPA	Scottish share of financial auxiliary company GVA
Long term Debt Sec - Private non-financial corps	EGNF	Scottish share of non-financial company GVA
Long term Debt Sec - Household sector	HEOH	Population share
Outflows		
<u>Equity securities</u>		
Earnings on equities - MFIs	HBQJ	Scottish share of banking GVA
Earnings on equities - Other Sectors	MS86	Scottish share of non-financial company GVA
Earnings on investment funds - dividends	MT3W	Population share
Earnings on investment funds - re-invested earnings	MT3X	Population share
<u>Debt securities</u>		
Short term debt - MFI - certificates of deposit	HCEE	Scottish share of banking GVA
Short term debt - MFI - other short term debt	HCEF	Scottish share of banking GVA
Short td - Issued by CG - Sterling Treasury Bills	XAMR	Population share
Short td - Issued by CG - Euro Treasury Bills	HHNV	Population share
Short td - Issued by CG - other short term debt	N447	Population share
Short td - Issued by other sectors	HHZT	Scottish share of non-financial company GVA
Long term debt - Issued by MFIs	HBOT	Scottish share of banking GVA
Long term debt - Issued by CG - Foreign currency	ZMRA	Population share
Long term debt - Issued by CG - Other long term debt	N448	Population share
Earnings on gilts - by foreign central banks	HESK	Population share
Earnings on gilts - by other	HCEV	Population share
Local authority bonds	HHGH	Population share
Public corporation bonds	HESY	Population share
Issues by other sectors	HGUW	Scottish share of non-financial company GVA

Portfolio Investment with rest of UK

Equity Securities

As explained in Annex A, a combination of data from the ONS Share Ownership Survey, UK Economic Accounts, London Stock Exchange and Companies House and FAME databases are used to estimate Portfolio Investment flows between Scotland and RUK.

Debt Securities

The Debt Management Office publishes figures on who owns UK Government debt. Scotland is assigned a share of each of these sectors based on the relevant GVA share or a population share as shown in the table below.

UK debt owned by:	Apportioned with:
Insurance companies & Pension funds	Insurance companies' and pension funds' GVA
Other financial institutions and other	Financial Auxiliary GVA
Monetary financial institutions	Banking GVA
Households	Population
Total	Weighted average

At the same time Scotland is assigned a notional (population) share of the UK debt. These are combined together to create estimated flows between Scotland and the rest of the UK.

Other Investment flows with the rest of the world

Category	Series code	Apportionment
Inflows		
<u>Deposits</u>		
Earnings on deposits - by MFIs - Sterling deposits	IFD7	Scottish share of banking GVA
Earnings on deposits - by MFIs - Foreign currency deposits	IFD8	Scottish share of banking GVA
Deposits by local authorities	L67O	Population share
Deposits by other fin corporations	MT8I	Scottish share of financial auxiliary company GVA
Deposits by other non-fin sectors	MT8J	Scottish share of non-financial company GVA
<u>Loans</u>		
Earnings on loans - short term	VTUN	Weighted average of SPI income from other investment and GVA
Long term loans - bank loans ECGD	AINM	Population share
Long term loans - Inter government loans	XBGI	Population share
Long term loans - by other financial intermediaries	MT8K	Scottish share of financial auxiliary company GVA
Long term loans - by public corporations - Commwth Dev Corp	HGEN	Population share
Long term loans - by public corporations - ECGD	CY95	Population share
<u>Other</u>		
Earnings on trade credit - CG	XBGJ	Population share
Earnings on trade credit - Other sectors	HGQD	Population share
Earnings on other assets - trusts and annuities	HHLF	Scottish share of insurance company and pension trust GVA
Earnings on other assets - foreign currency exchanges	HHKX	Population share
Earnings on other assets - misc central government	HPPK	Population share
Outflows		
<u>Deposits</u>		
Foreign earnings on deposits - MFI - sterling	JJT3	Scottish share of banking GVA
Foreign earnings on deposits - MFI - foreign currency	JJT4	Scottish share of banking GVA
<u>Loans</u>		
Foreign earnings on loans - Central government	CGLF	Population share
Foreign earnings on loans - Local authorities	CGLG	Population share
Foreign earnings on loans - Other fin corps	MT8L	Scottish share of financial auxiliary company GVA
Foreign earnings on loans - Public corps	CGLH	Population share
Foreign earnings on loans - other non-fin sectors	MT8M	Scottish share of financial auxiliary company GVA
<u>Other</u>		
Foreign earnings on investment income	MT8N	Scottish share of insurance company and pension trust GVA
Foreign earnings on trade credit - Public corps	XBGW	Population share
Foreign earnings on trade credit - other sectors	HHLW	Population share
Special drawing rights	MT8O	Population share
Earnings on other liabilities	CGME	Population share

Other Investment flows with the rest of the UK

Category	Series code	Flows calculated using
Investment income attributable to insurance policy holders, paid to households & NPISH	L8GL	Share of insurance company and pension trust GVA AND population share
Investment income attributable to insurance policy holders, paid to others	L8GN minus L8GL	Share of insurance company and pension trust GVA
Investment income payable on pension entitlements	L8GU	Share of insurance company and pension trust GVA AND population share
Investment income attributable to collective investment fund shareholders, paid to households & NPISH	L8GZ	Share of financial auxiliary company GVA AND population share
Investment income attributable to collective investment fund shareholders, paid to others	L8H3 minus L8GZ	Share of financial auxiliary company GVA AND Share of insurance company and pension trust

Other primary income flows with the rest of the world

Category	Series code	Apportionment
Inflows from EU institutions		
Agriculture Guarantee Fund - subsidies	MU24	Scottish share of EU agriculture subsidies
Outflows to EU institutions		
Customs duties and Agricultural levies	QYRD	Population share
Sugar levy	GTBA	Population share

Reserve Assets with the rest of the world

Reserve assets (series code HHCB) have been apportioned to Scotland using a population share.

Annex C – Comparison with UK and 2013 work

This Annex provides some simple comparisons between the GNI figures calculated in this work and (i) UK GNI and (ii) Scottish GNI for 2010 as calculated in 2013. The purpose is to provide some basic quality assurance by showing that the figures produced here look broadly comparable with these other, related figures.

Comparison with UK

Chart C1 compares Scottish and UK GNI per head. It shows that, until 2008 Scottish GNI per head was lower than that in the UK. Since 2008 the 2 measures have been at similar levels until 2016 when Scottish GNI per head fell slightly whilst the UK rate continued to grow.

Chart C1, GNI per head in Scotland and UK, 1998 - 2016

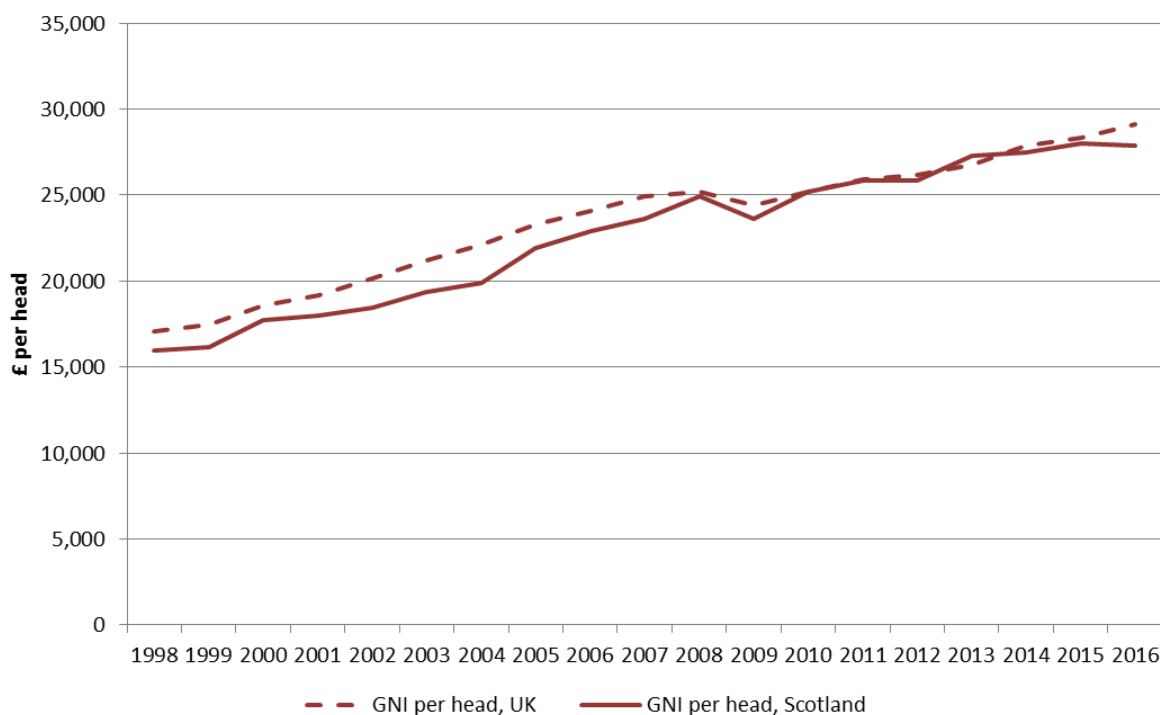


Table 5 in the accompanying tables

(www.gov.scot/Topics/Statistics/Browse/Economy/SNAP/GNI) shows how the inflows and outflows between Scotland and the non-UK rest of the world compare with the flows between the UK and the rest of the world for each component. Overall, from 1998 to 2016, Scottish inflows accounted for between 4% and 7% of inflows to the UK from abroad whilst Scottish outflows accounted for 7-10% of total UK outflows.

Comparison with 2013 work

The current work shows Scottish GNI at 91% of GDP in 2010. This compares to 94% in the analysis conducted in 2013. This difference is mainly due to portfolio investment income with the current work showing a debit balance whilst the 2013 work showed a credit balance.

There have been numerous changes since 2013 including revisions to the underlying data and methodological changes which mean that changes of this sort are to be expected.