University of Strathclyde Business School

Fraser of Allander Institute
Economic Commentary

Vol 39 No. 1

In association with

pwc

Fraser of Allander Institute Economic Commentary

Vol 39 No 1

ISSN 2046-5378

The Scottish economy

Economic perspectives*

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The Scottish economy

1 Outlook and appraisal

Brian Ashcroft, Economics Editor, Fraser of Allander Institute

Overview

The Scottish and UK economies are continuing to grow and recover from the Great Recession. With growth of 0.6% in the final quarter of last year (2014) – the latest data point - the Scottish economy has now enjoyed positive growth for the last 11 quarters (since 2012q1) while in the UK, also with growth of 0.6% in 2014q4, the sustained recovery period has been shorter at 8 quarters.

The introduction of a new system of accounts ESA 2010 has brought in to the production calculus some activities (such as research and development and military expenditure) that were not previously treated as outputs alongside the inclusion of previously uncounted ones (such as illegal activities). In consequence, the nominal value of GDP has risen by around 1 to 4% per year due to the addition of these new activities within the production boundary. A further consequence of these accounting changes is that the extent of the recovery from recession is now greater in both UK and Scotland but it is stronger in the UK. When oil and gas production is removed – to compare like with like, since offshore activity is included in the UK but not the Scottish GDP data - we find that the gap in the strength of the recovery widens further in the UK's favour. UK GDP stands 5.1% above the pre-recession peak compared to only 2.3% in Scotland. We speculate that the relatively stronger UK recovery under the new accounting system could be due to the recovery in R&D activity being stronger in the rest of the UK after the recession than in Scotland and, if so, may not augur well for Scotland's growth performance in the longer term. However, there may simply be a technical rather than an economic cause due, for example, to different sub-sectoral weights between Scotland and the UK.

When we examine the performance across different industries and sectors, we see that the pattern of growth between Scotland and the UK differed considerably in the fourth quarter. In the UK, the service sector was by far the main driver of growth, while in Scotland the sector made no contribution to growth. In contrast, the principal driver of growth in Scotland was the construction sector while the sector in the UK was a drag on growth. In addition, the production sector contributed about a third of the growth in Scotland but made no contribution to growth in the UK. Within production, manufacturing in both Scotland and the UK made no contribution to growth, while in Scotland it was mining & quarrying and electricity & gas that provided the contribution to growth.

The latest labour market data show that jobs continue to be created at a fairly fast pace, indeed in the latest February – April 2015 quarter at a faster rate in Scotland than the UK both in the quarter and over the year. However, the picture differs on unemployment with the numbers seeking work rising slightly in the latest quarter and the reduction over the year, while sizable, is proportionately less than in the UK. By the end of the fourth quarter, Scottish jobs as reported in the LFS household surveys were 2.6% above the pre-recession peak, while UK jobs were 4.6% higher than the peak. So, the latest data show the recovery in the labour market to be continuing but there is now some evidence that the rate of recovery is slowing in Scotland and despite recent stronger Scottish jobs growth overall the recovery remains stronger in the UK.

Now that the UK General Election is over and with the Holyrood elections less than a year away there may be a small window of opportunity for politicians, policymakers and others to reflect on the challenges facing the Scottish economy. One way of organising thoughts about the challenges is to separate them into short-term and long-term issues. More specifically we can distinguish between capacity utilisation and capacity growth. In the former, we are largely focusing on the issue of demand deficiency, while the longer-term capacity growth question is essentially about supply. In the present Commentary we focus on the short-term capacity utilisation issue returning to the more long-term capacity growth question in the next issue of the Commentary.

Our conclusion on capacity utilisation is that despite the recovery the Scottish economy still has spare capacity available, most notably in the labour market where the number of total weekly hours worked in Scotland was close to but still -0.4% below the pre-recession peak. Moreover, by January - March 2015, the ratio of employment to working population stood at -2.4% below the pre-recession peak, a worsening of the position in the final quarter of last year, compared to -6.7% at the trough of the recession. In the UK as a whole, in contrast the ratio is only -0.6% below its pre-recession peak but still below a peak that was attained 7 years ago. We note that there are clear positive influences boosting the demand for Scottish goods and services: domestic demand is still growing strongly, domestic inflation is close to zero, below nominal earnings/income growth and so boosting real income, and external demand remains reasonably strong, with growth in the euro area beginning to strengthen while US growth having faltered earlier in the year looks set to pick up again. Yet, there are continuing threats to the further recovery of demand which policy should seek to minimise.

First, growth remains unbalanced with household spending the key driver fuelled largely by rising household debt, which we fear may soon become unsustainable. The growth of imports continues to strongly outstrip the relatively weak growth of exports and so net trade acts as a drag on growth. Policy must seek ways to boost export performance because it is becoming clearer that a more competitive price through a lower sterling exchange rate is insufficient to boost export demand. Issues of product quality and marketing would appear to be at the root of this Scottish and UK problem. One bright spot in this picture of unbalanced growth of demand is the performance of capital investment, which is now contributing significantly to demand and the growth of output in Scotland. Infrastructure spending is playing a big role in Scotland – think of the new Forth Road Bridge – but also foreign direct investment where Scotland again enjoyed a successful year in 2014 with over 80 inward investment projects attracted.

Secondly, the victory of the Conservatives with a small majority in the May 2015 UK General Election appears likely to lead to a continuation and perhaps a tightening of the previous Conservative / Liberal Democrat Coalition austerity plans. We shall find out more in the Chancellor's forthcoming Budget. With more austerity households can expect a further reduction in their incomes, on average. What that means is that household spending will also be reduced and the fall is likely to be greater the more quickly the Chancellor seeks to bring the UK government's budget into balance. Austerity will continue to be a major drag on capacity utilisation and economic recovery in Scotland and the UK.

Finally, there is Greece. At the time of writing we do not know the outcome of the negotiations between the Greek government and its creditors. The risks of Greece both defaulting on its debt and leaving the euro have increased since we last reported. This issue is again fast becoming a major threat to the

recovery not simply in the eurozone but perhaps, with the possibility of contagion, in the rest of the world, including Scotland.

It is against this background that we have prepared our latest forecasts.

Our GDP forecast for 2015 is 2.5%, which is revised down slightly from our forecast of 2.6% in March of this year due to the evidence of a slowing of the rate of growth through the first half of the year. For 2016, we have also revised down our forecast to 2.3% from 2.4% in March, in recognition that while the recovery is continuing the growth of demand is now anticipated to be slightly weaker than previously thought. We also are prepared to acknowledge that the negative effects of the oil price fall on the oil production and services, may be a little greater than we anticipated in March. We are forecasting 2017 for the first time and the underlying determinants suggest that growth will be little different from 2016 and so we retain the forecast of 2.3% for 2017.

The number of total employee jobs is forecast to continue to increase in each year of the forecast horizon 2015 to 2017, and at a faster rate than that seen during 2014 (although not as strongly as in 2013). Our forecast for the number of jobs added in 2015 has been revised down marginally since March's forecast, from 51,350 to 51,250. The number of jobs at the end of 2015 is now forecast to be 2,444,250, an increase of 2.1% in 2014. Our current forecast is that the Scottish economy will add 49,600 jobs in 2016, down by 8,000 from our March forecast, while we forecast the addition of 51,700 jobs in 2017.

Given the small revisions to the growth in employee jobs over the next two years in our latest forecasts, there are only small revisions to the levels and rates of unemployment from our earlier forecasts. The improvement in the labour market is forecast to continue with unemployment rates and numbers falling to end 2017. Our projection for unemployment on the ILO measure at the end of 2015 is 138,200 (5.1%), falling further to 122,364 (4.5%) by the end of 2016, and 108,150 (3.9%) by end 2017. It is worth noting that our unemployment forecast for 2017 means that the unemployment rate finally falls to where it stood when the Great Recession started in 2008, nine long years ago.

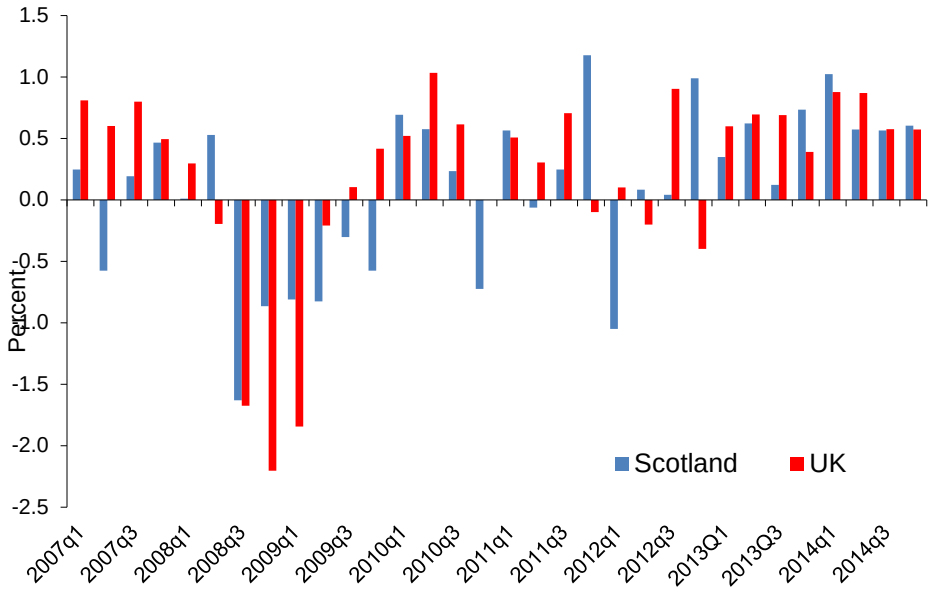
Recent GDP performance

Scottish GDP data are now based on the European System of Accounts 2010 (ESA 2010). The Scottish data are now comparable with the UK GDP data, which moved from ESA 1995 to ESA 2010 in 2014q2. The key changes between ESA 1995 and ESA 2010 that are relevant to the estimation of aggregate GDP include the treatment of some activities (such as research and development and military expenditure) as outputs alongside the inclusion of previously uncounted ones (such as illegal activities). As a result the revisions to the Scottish data are substantial. In general, the nominal value of GDP has risen by around 1 to 4% per year due to the addition of these new activities within the production boundary. The uplift to Scottish nominal GDP is less than for the UK because while illegal activities have been apportioned across the UK territories on a population share basis, the apportionment of R&D outputs reflects the lower level of R&D activity in Scotland compared to the UK as a whole.

The new data show that in the fourth quarter of last year (2014q4) GDP rose by 0.6% in Scotland in the quarter. UK GDP also rose by 0.6% in the quarter but a little faster over the year – four quarters on four

quarters – with growth of 2.8% compared to 2.7% in Scotland. The Scottish and UK quarterly growth rates back to 2007q1 are presented in Figure 1.

Figure 1: UK and Scottish Quarterly GDP Growth, 2007q1 - 2014q4

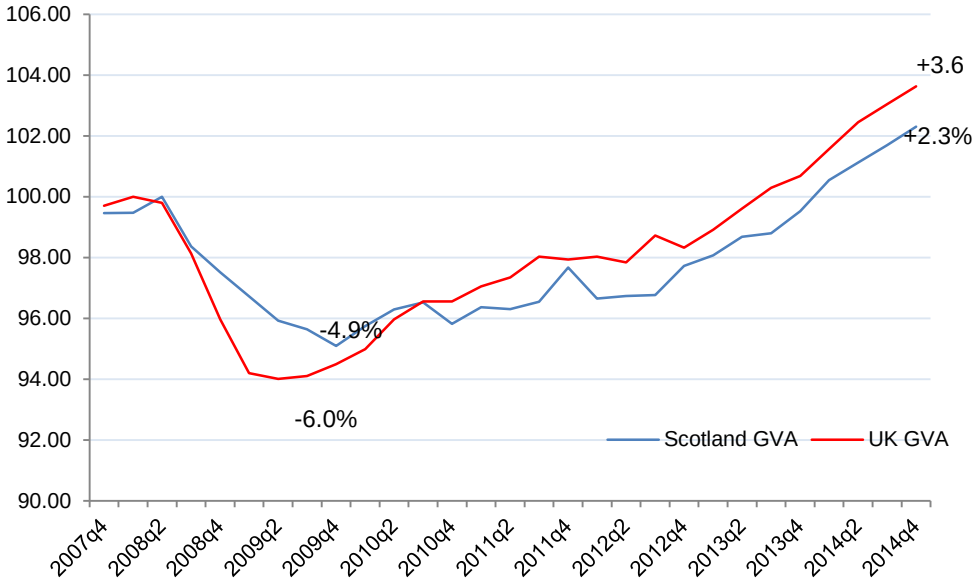


Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and Fraser of Allander Institute (FAI) calculations

The Scottish economy has now enjoyed positive growth for the last 11 quarters (since 2012q1) while in the UK the sustained recovery period has been shorter at 8 quarters. But still the UK recovery from the Great Recession has overall been stronger than in Scotland as is shown in Figure 2.

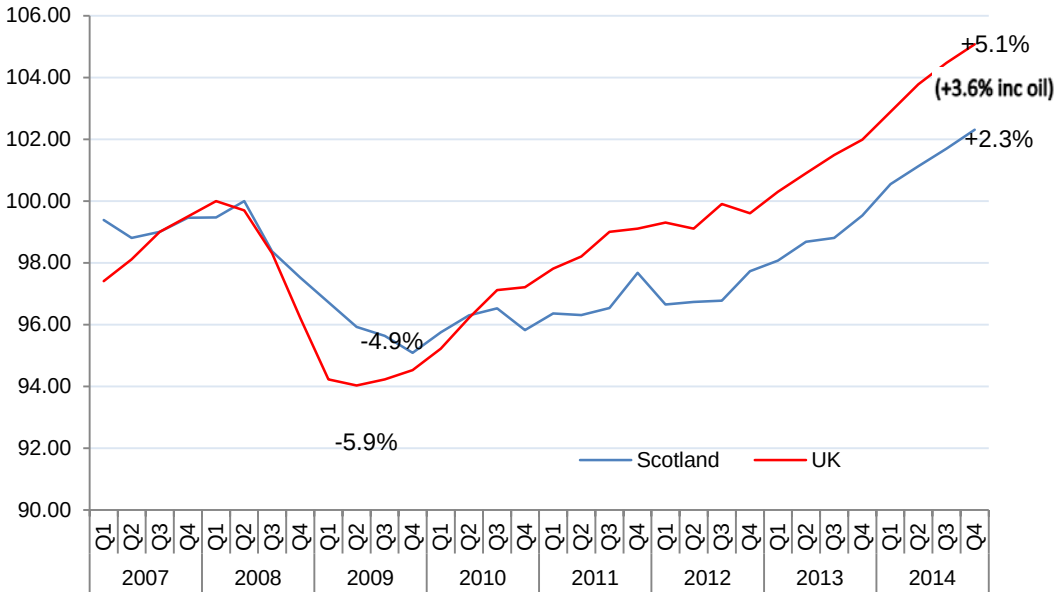
The impact of moving from ESA 1995 to ESA 2010 is clearly evident in Figure 2. Previously the peak to trough decline in GDP in the Great Recession was -5.4% in Scotland and -7.3% in the UK. Under the new accounting system, the contraction was less in both Scotland and especially in the UK with a loss of output of -4.9% in Scotland and -6.0% in the UK. Moreover, under the new system GDP was further above the pre-recession peak in recent quarters than under ESA 1995 in the UK but not in Scotland. So, for example, by the third quarter 2014, GDP was +2% and above the pre-recession peak in Scotland and +1% in the UK under EAS 1995 but was +1.7% and +3%, respectively, above the peak under ESA 2010. And by the latest fourth quarter GDP had risen further to 2.3% above the peak in Scotland and 3.6% in the UK. So, the recovery in GDP from recession was even stronger in the UK than Scotland under ESA 2010 than under ESA 1995, with GDP in Scotland rising by 7.6% from the trough to 2014q4 compared to 10.2% in the UK. This could be due to the recovery in R&D activity being stronger in the rest of the UK after the recession than in Scotland and, if so, does not augur well for Scotland's growth performance in the longer term. However, there may simply be a technical rather than an economic cause due, for example, to different sub-sectoral weights between Scotland and the UK.

Figure 2: GVA in recession and recovery: UK and Scotland to 2014q4 (Relative to pre-recession peak)



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Figure 3: GDP (ex oil & gas): Recession and Recovery to 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

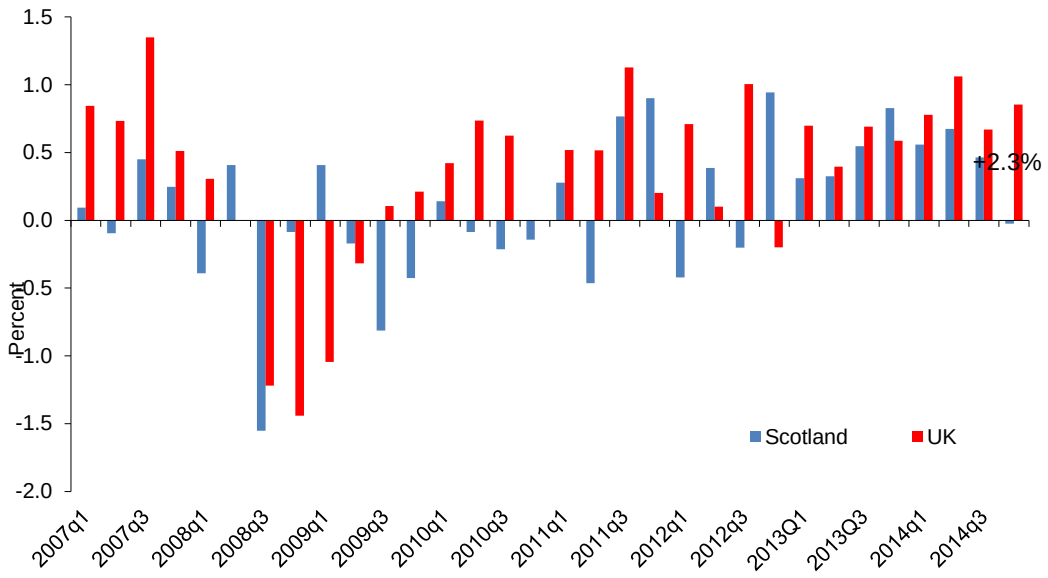
As noted in previous *Commentaries* there is, however, the complicating factor of oil and gas production which for offshore production is included in the UK GDP data but not in the Scottish data. Removing oil and gas production from UK GDP data gives us Figure 3.

When oil and gas production is removed, we find that the gap in the strength of the recovery widens in the UK's favour. UK GDP stands 5.1% above the pre-recession peak compared to 2.3% in Scotland. The long period of weak UKCS oil and gas production has slowed the recovery of UK GDP from recession. So, UK GDP - ex oil & gas - has had an even stronger recovery from recession than Scottish GDP. Scottish GDP has recovered by 7.6% since the trough of recession while UK GDP - ex oil & gas - recovered by 11.8% from its trough by 2014q4. In the latest quarter, UK GDP ex oil and gas rose by 0.6% and by 2.9% over the year – four quarters on four quarters.

Sectoral Components of GVA growth

Turning now to individual sectors of the economy, we see that the pattern of growth between Scotland and the UK differed considerably in the fourth quarter. In the UK, the service sector was by far the main driver of growth contributing +0.7% points, while in Scotland the sector made no contribution to growth. In contrast, the principal driver of growth in Scotland was the construction sector contributing +0.4% points while the sector in the UK was a drag on growth by -0.1% points. In addition, the production sector contributed +0.2% points to growth in Scotland but made no contribution to growth in the UK. Within production, manufacturing in both Scotland and the UK made no contribution to growth, while in Scotland it was mining & quarrying (+0.1% points) and electricity & gas (+0.1% points) that provided the contribution to growth.

Figure 4: UK and Scottish Services GVA Growth 2007q1 to 2014q4



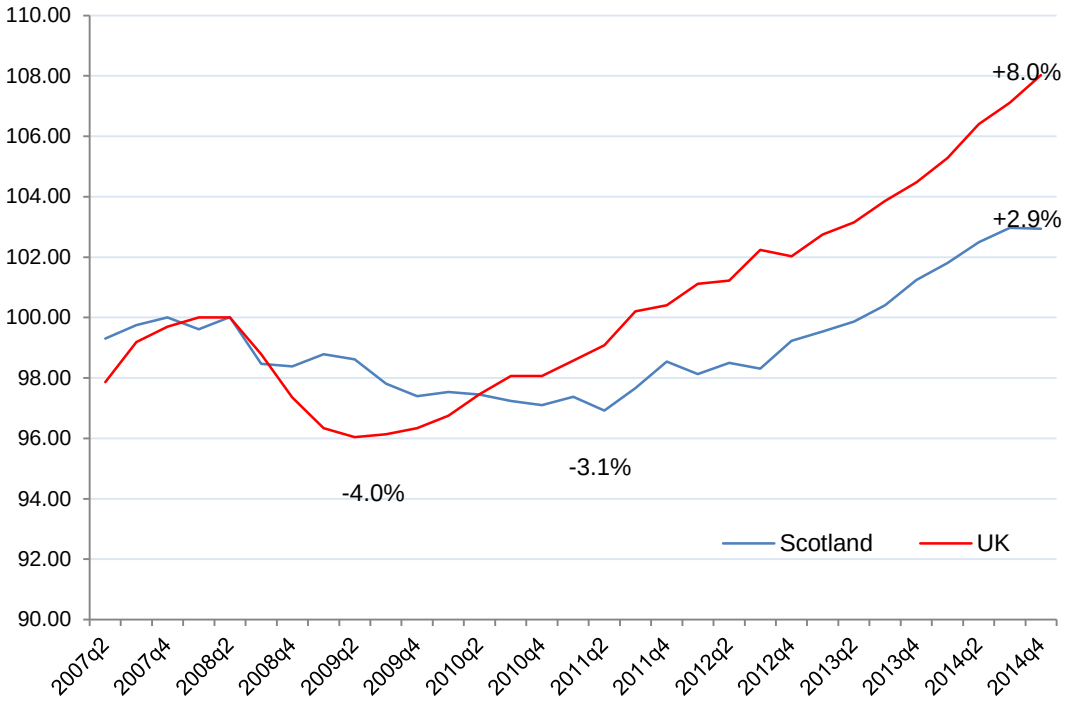
Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Services sector

The Scottish service sector, which – on 2012 weights - accounts for 75% of GDP in Scotland and 78% in the UK, exhibited zero growth in Scotland in the fourth quarter and produced 2.3% growth over the year. UK services output registered positive growth of 0.9% in the quarter - see Figure 4 – and 3% over the year.

The state of the recovery in Scottish and UK services is presented in Figure 5. The adoption of ESA 2010 has clearly widened significantly the gap between the recovery in services in the UK and Scotland, with the UK recovery now seen to be much stronger. The possible stronger performance of R&D activity in the rest of the UK during the recovery may be explanation. After experiencing as shallower but more drawn out recession in Scotland of -3.1% compared to -4% in the UK, output the sector stood at just under 3% above its pre-recession peak by the fourth quarter of last year significantly less than the 8% above peak attained in the UK.

Figure 5: Services GVA in recession and recovery, UK and Scotland to 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014 and FAI calculations

The data for the fourth quarter reveal that the recovery in Scottish services faltered. However, as the latest *State of the Economy* report from the Scottish Government's Chief Economist notes, this was partly due to the anticipated fallback in activity after the boost it received in the previous quarter from the Commonwealth Games and Ryder Cup. The recovery in the sector is - under ESA 2010 - now slightly stronger in Scotland than for GDP in the economy as a whole. In the UK, in contrast, the service sector

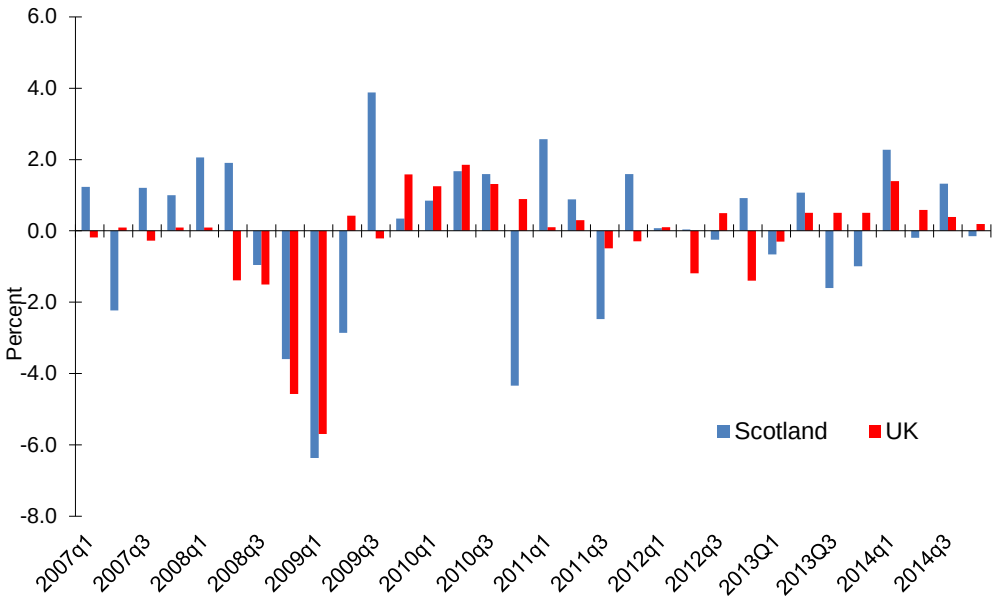
recovery continues to outstrip, by a fair margin, the overall recovery in GDP when oil and gas extraction is excluded and by a large margin when oil & gas is added back into the mix.

Production / Manufacturing sector

The production sector in Scotland further continued to boost Scottish growth, growing by nearly 10% over the recovery, compare to nearly 8% for overall GDP. In the UK the sector remains a drag on the recovery with growth of 1.5% to 2014q4 since the trough of the recession compared to the 10% growth of overall GDP. Scottish production output rose in the fourth quarter by 1% while UK production output grew by 0.2%. Over the year - four quarters on four quarters – Scottish production GVA rose by 1%, while UK production output rose by 1.6%.

Within production, Mining & quarrying GVA grew by 3.2% in the fourth quarter and rose by 5.4% over the year (UK mining & quarrying changed by 0.8% and -0.6%, respectively). Electricity & gas supply GVA rose by 4.1% in the fourth quarter but fell by -7.2% over the year (UK electricity & gas supply -2.6% and -5.5%, respectively). In the fourth quarter, GVA in Scottish manufacturing fell slightly by -0.1% but rose by 1.4% over the year, which is very weak given that we are in a supposedly strengthening recovery phase. UK manufacturing output rose by 0.2% in the quarter and by 2.9% over the year. Figure 6 charts the quarterly percentage changes in GVA in Scottish and UK manufacturing.

Figure 6: UK and Scottish Manufacturing GVA Growth at constant basic prices 2007q1 to 2014q4



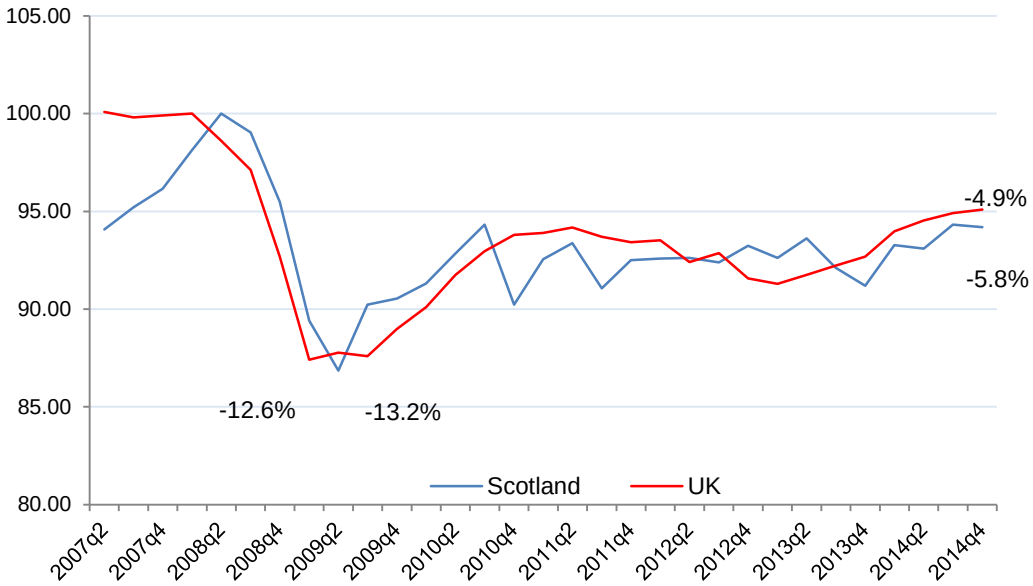
Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Under the new ESA2010 data system the recovery in manufacturing is now weaker in Scotland than in the UK compared to the situation under ESA 1995. By the fourth quarter Scottish manufacturing GVA was -5.8% below its pre-recession peak, compared to -4.9% for manufacturing in the UK. UK

manufacturing has enjoyed a more sustained recovery since the first quarter of 2013, while the recent performance of Scottish manufacturing has been more erratic, in part influenced by the shutdown and reopening of the Grangemouth refinery in the final quarter of 2013 and the first quarter of 2014. But the fact that manufacturing output in Scotland has exhibited no growth since 2010q3 must be a cause for concern. The UK is a little better with around 2% growth since the second half of 2010 but that too is worrying.

Figure 7 shows the impact of the latest data on the manufacturing sector's recovery from recession.

Figure 7: Manufacturing GVA in recession and recovery UK and Scotland to 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

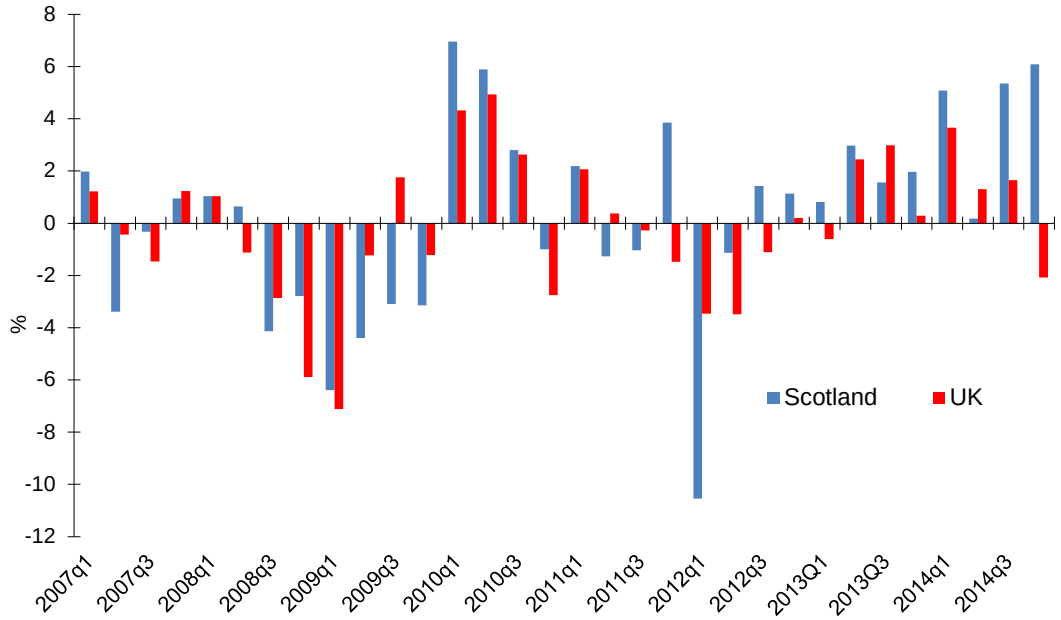
Within manufacturing, only three of the seven principal sectors experienced growth in the fourth quarter: food & drink (accounting for 27% of manufacturing GVA) grew by 2.7% in the quarter but contracted by -0.4% over the year; refined petroleum, chemical & pharmaceutical products (accounting for 13% of manufacturing GVA) which grew by 1.7% in the quarter and by 3% over the year; and transport equipment (accounting for 6% of manufacturing GVA) which grew by 1.2% in the quarter and by 0.1% over the year

The four manufacturing sub-sectors that contracted in the quarter were: clothing & leather products (accounting for 4% of manufacturing GVA) which contracted -0.3% and by -2.5% over the year; metals, metal products & machinery n.e.c. (which accounts for 17% of manufacturing GVA) contracted by -2% in the quarter but grew by 5.3% over the year; other manufacturing industries, repair & installation (accounting for 23% of manufacturing GVA) contracted by -0.9% in the quarter but grew by 1.4% over the year; and electrical and optical products (electronics) (accounting for 10% of manufacturing GVA), contracted by -5.1%% in the quarter and by -1.2% over the year.

Construction sector

Turning now to construction, the latest data are presented in Figure 8.

Figure 8: UK & Scottish Construction GVA Volume Growth 2007q1 - 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Scottish construction GVA grew strongly in 2014q4 by 6.1% and by 13% over the year, so that in the latest quarter it was the principal driver of growth in Scotland contributing +0.4% points. In contrast in the UK, construction contracted by -2.2% in the fourth quarter and grew by 7.4% over the year. Figure 9 displays the recession and recovery performance of both the Scottish and UK construction sectors.

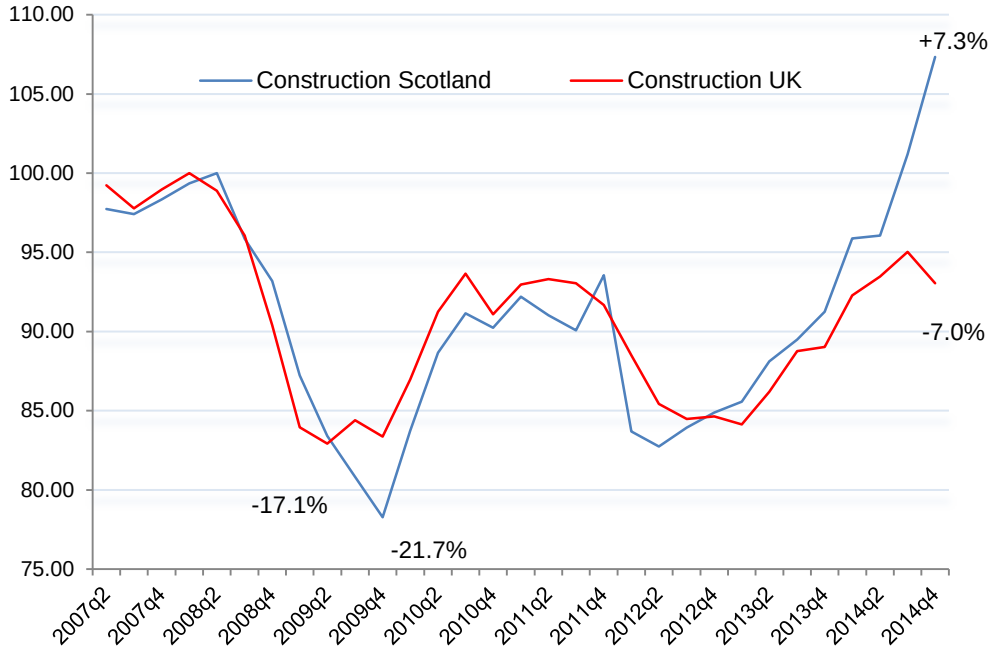
Figure 9 highlights the variability of construction sector output during and since the Great Recession. The adoption of ESA 2010 has changed both the scale of the recession and the scale and path of the recovery. Under the new system the decline in GVA in the recession of -21.7% was a little greater than the -20.2% recorded under ESA 1995. The contraction in GVA in the UK was broadly the same. Post recovery volatility is also more muted under the new system but with a stronger recent recovery. Clearly the 'lumpiness' of construction investments especially in structures makes volatility inevitable with some of the recent burst in growth in Scotland down to activity in building the second Forth road bridge (The Queensferry Crossing). By the 2014q4 Scottish construction had moved to 7.3% *above* its pre-recession peak compared to UK construction, which was -7% below its pre-recession level.

Components of private services sector growth

Within services, one of the three principal sub-sectors in the private sector displayed negative growth in the fourth quarter. Business and financial services unusually contracted by - 0.2% in the quarter but

grew by 3.4% over the year, compared respectively, to growth of 1.3% and 3.9% in the UK. Figure 10 shows the growth of the sector in Scotland and UK during the recession and recovery.

Figure 9: Construction, Recession and Recovery UK and Scotland to 2014q4

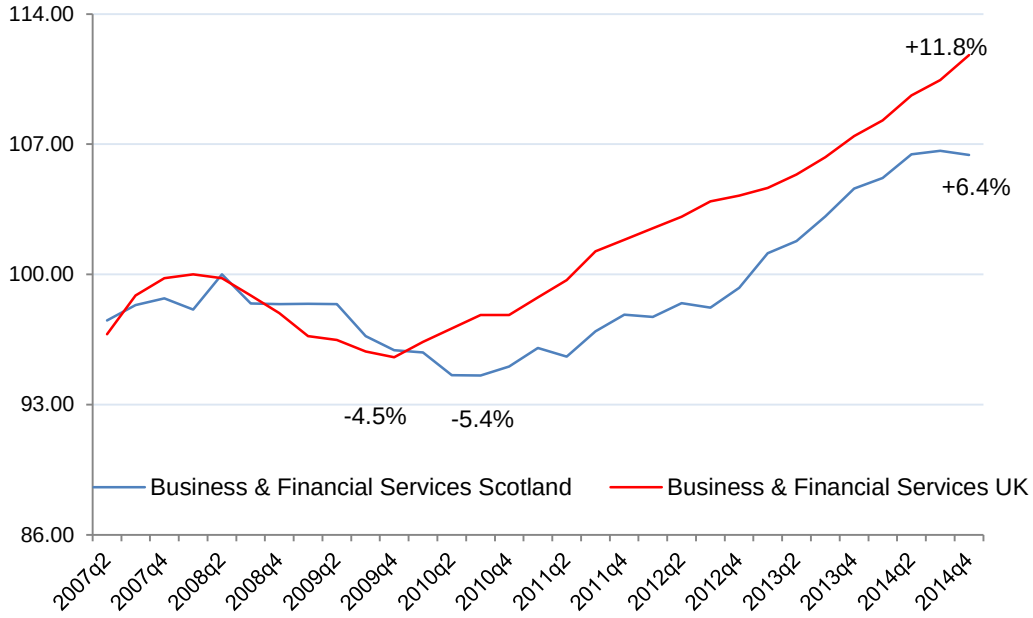


Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Under ESA 2010 there has been a significant improvement in UK business & financial services activity both absolutely and relative to the UK. Whereas under ESA 1995 the sector in Scotland had recovered much faster than in the UK, the new system almost reverses the position. The scale of the recession now looks to have been less severe in both Scotland and UK with the new data showing a fall in GVA of -5.4% in Scotland and -4.5% in the UK compared to -7.4% and -6.9%, respectively, under ESA 1995. By the fourth quarter, output or GVA in the sector had moved to +6.4% above its pre-recession peak in Scotland compared to +11.8% in the UK and the recovery in the sector in Scotland appears to have slowed in the last two quarters. As noted in previous Commentaries, the aggregate GVA data for business and financial services in Scotland have recently masked significant differences between the performances of financial services on the one hand and business services on the other, where the former has been doing considerably worse than the latter. Figure 11 shows what has been happening to financial services in Scotland since peak output in the second quarter of 2008.

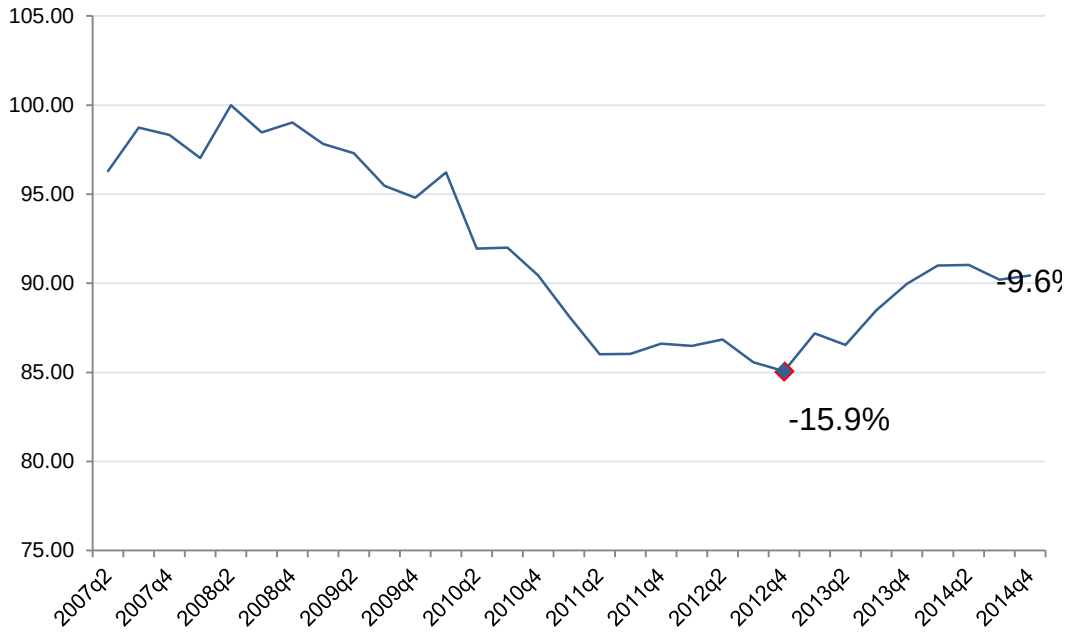
The chart shows that the latter recovery in the sector has faltered recently while the revisions under ESA 2010 now indicate that the sector is further away from its pre-recession peak than appeared to be the case under ESA 1995 e.g. -9.8% in 2014q3 on ESA 2010 compared to -7.8% in 2014q3 on ESA 1995. By the fourth quarter of last year GVA in the sector was -9.6% below the pre-recession peak compared to the trough of -15.9% in 2012q4.

Figure 10: Business & Financial Services UK and Scotland: Recession and Recovery to 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Figure 11: Financial Services in Scotland, Recession and Recovery 2007q2 to 2014q4

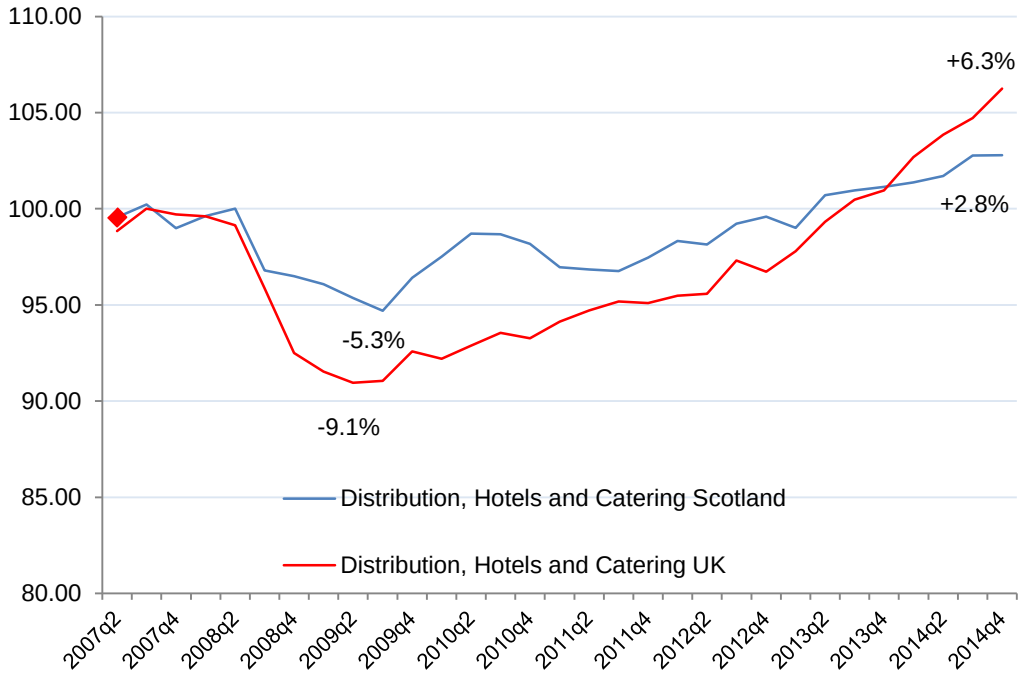


Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

The first of the two principal sub-sectors in private services *not* displaying negative growth in the fourth quarter was distribution, hotels and catering (accounting for 18% of services sector output in Scotland),

where output was unchanged. Over the year, the sector grew by 1.7%. In the UK, the sector grew by 1.4% in the quarter and by 4.8% over the year. Figure 12 shows the performance of the sector during recession and recovery.

Figure 12: Distribution, Hotels & Catering: Recession and Recovery to 2014q4



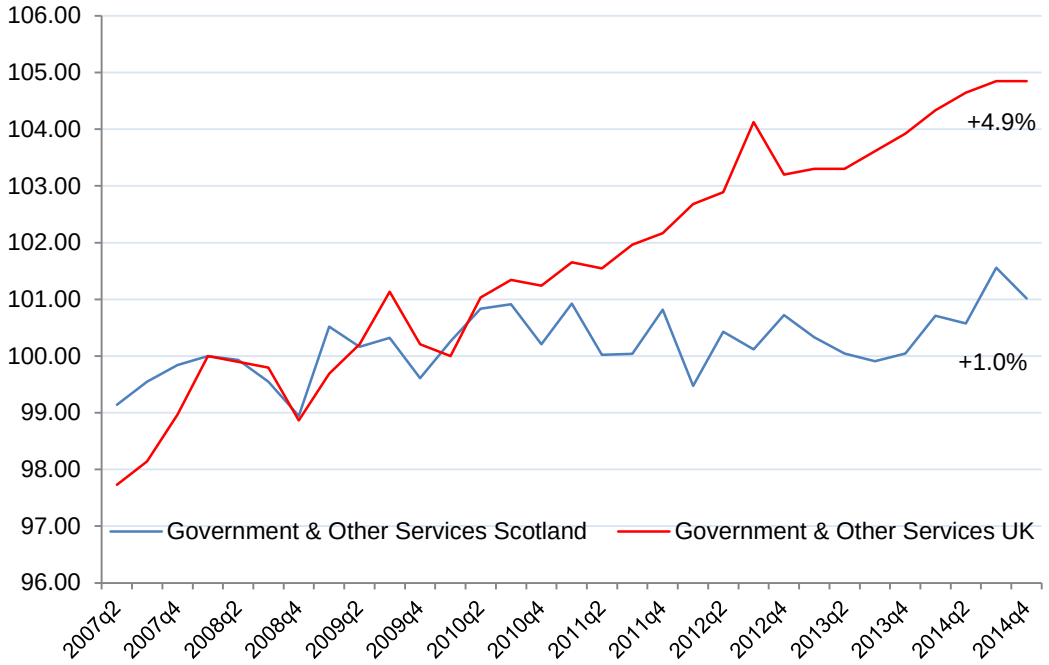
Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Figure 12 reveals that by the fourth quarter the sector in the UK was +6.3% above its peak, while the sector in Scotland was doing much worse at only +2.8% above peak. The introduction of ESA 2010 looks again to have favoured output more in the UK sector than in the sector in Scotland, so again under ESA 1995 2014q3 GVA in the sector was 1% above peak in the UK and only +0.6% above peak in Scotland but under ESA 2010 GVA was +4.7% above peak in the UK and +2.8% in Scotland. The scale of the recession in the sector in both Scotland and the UK is less under ESA 2010 than under ESA 1995 with output falling in Scotland by -5.3% compared to -7.4% and in the UK by -9.1% compared to -10.0%. The track of the recovery in the sector picked up in the UK during 2013 and 2014 but not in Scotland.

Output in Government & Other Services fell in Scotland in the fourth quarter fell by -0.5% compared to no change in the UK. Over the year, output in the public sector grew by 0.9% in Scotland and by 1.1% in the UK. Figure 13 shows the performance of GVA in the sector in recession and recovery.

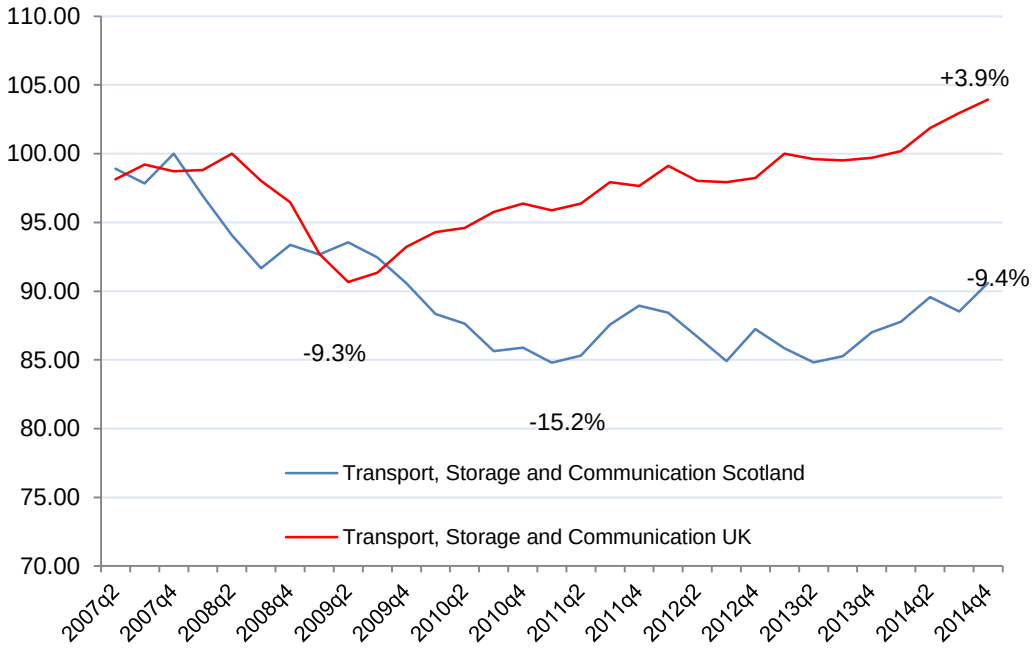
By the fourth quarter GVA in the government sector in the UK was 4.9% above the pre-recession peak, which as we have noted in many earlier *Commentaries* is difficult to understand at a time of fiscal consolidation, whereas output in the sector in Scotland was only 1% above its pre-recession peak.

Figure 13: Government & Other Services UK and Scotland: Recession and Recovery to 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

Figure 14: Transport, Storage & Communication UK and Scotland: Recession & Recovery to 2014q4



Source: Scottish Government GROSS DOMESTIC PRODUCT 4th QUARTER 2014, and FAI calculations

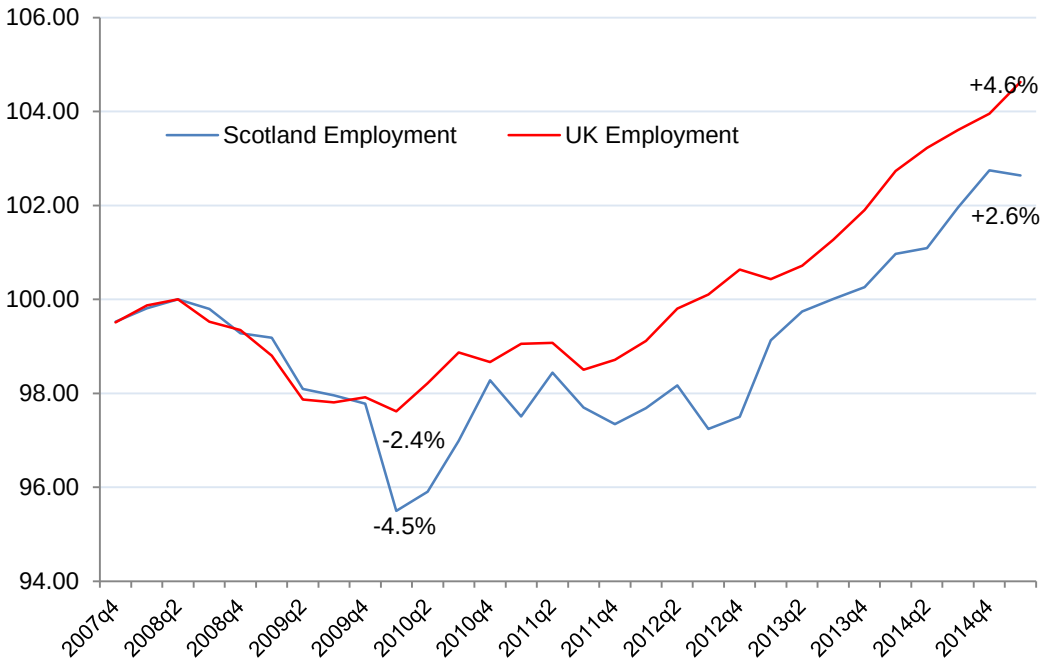
Finally, Figure 14 highlights the performance of transport, storage & communication in Scotland and UK in recession and recovery. The sector accounts for nearly 8% of total GVA and about 10% of service sector output.

The sector grew by 2.4% in Scotland in 2014q4 and by 0.9% in the UK. Over the year, growth was 3.9% in Scotland and 2.5% in the UK. On that basis it might appear that the sector is recovering more strongly in Scotland. However, under the new ESA 2010 system as Figure 14 shows, the sector has performed significantly differently than under ESA 1995 and much worse in Scotland. The recession was stronger and much more drawn out in the Scottish sector with output falling by -15.2% up to as late as 2011q1 whereas in the UK sector the recession was over by 2009q2. By the end of the fourth quarter GVA in the Scottish sector was -9.4% below its pre-recession peak compared to +3.9% above in the UK, a dramatic difference in the performance of the sector between Scotland and the UK.

The Labour Market

Figure 15 shows the performance employment in Scotland and the UK during recession and recovery to 2014q4.

Fig 15: Total Employment, UK and Scotland: Pre-recession peak to 2015q1



Source, ONS Regional Labour Statistics and FAI calculations

The latest labour market data for February – April 2015 published on 17 June 2015 (see *Scottish Labour Market* section below) show that the recovery has faltered slightly while employment rose as did unemployment. Specifically, employment rose by 14,000 (0.5%) in the quarter while unemployment rose again by 1,000 (0.7%) with the rate remaining unchanged at 5.9%. In the UK, employment rose a little more slowly, with 11,400 jobs created or a rise of 0.4%, while unemployment again fell by 43,000 (-2.3%) to a rate of 5.5%. Over the year, Scottish jobs rose by 53,000, a rise of 2%, while UK jobs rose

424,000, or 1.4%. Unemployment in Scotland fell by -19,000 over the year, or -10.6%, while in the UK unemployment also continued to fall even more strongly by -349,000, or -16.1%.

By the end of the fourth quarter, Scottish jobs as reported in the LFS household surveys were 2.6% *above* the pre-recession peak, while UK jobs were 4.6% higher than the peak. So, the latest data show the recovery in the labour market to be continuing but there is now some evidence that the rate of recovery is slowing in Scotland and overall the recovery remains stronger in the UK.

Challenges facing the Scottish economy

Now that the 2105 UK General Election is over and with the Holyrood elections less than a year away there may be a small window of opportunity for politicians and policymakers to reflect on the challenges facing the Scottish economy. It should not of course be concluded that any identified challenges confronting the economy are simply for the politicians and policymakers to deal with. Many of these challenges require a social consensus and community action or action by one or more key groups of actors in Scotland: for example, the business community, the unions, the voluntary sector etc. We would like to contribute to this process by highlighting some of the issues and challenges that we consider to be worthy of consideration and reflection.

One way of organising thoughts about the challenges is to separate them into the short-term and long-term. More specifically we can distinguish between capacity utilisation and capacity growth. In the former, we are largely focusing on the issue of demand deficiency, while the longer-term capacity growth question is essentially about supply. In the present *Commentary* we focus on the short-term capacity utilisation issue returning to the more long-term capacity growth question in the next issue of the *Commentary*.

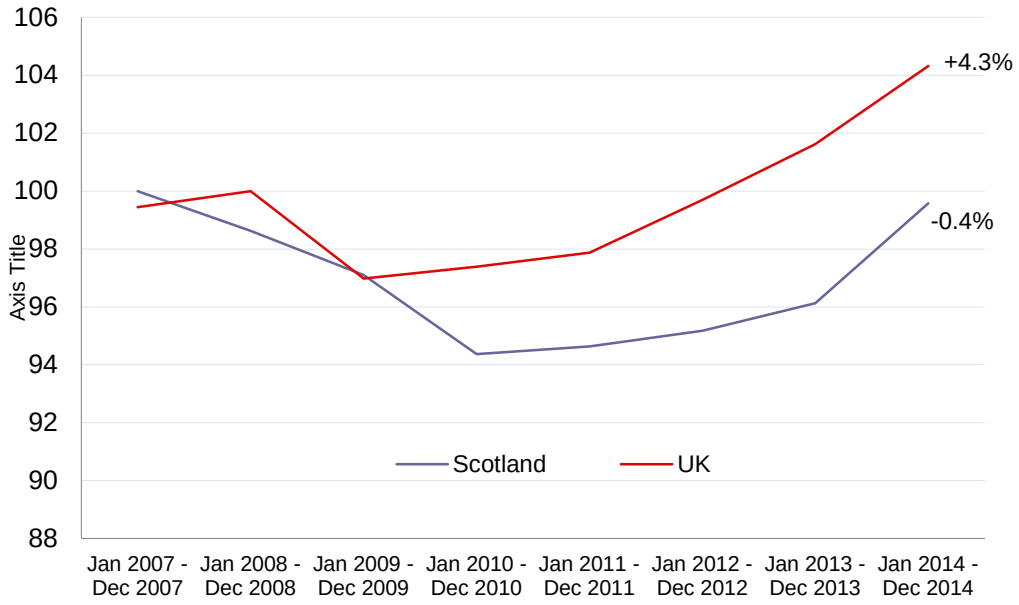
Capacity Utilisation

In considering the issue of capacity utilisation, we essentially seek to ask whether there is any room to expand output and create jobs before running up against a supply constraint and the risk of raised inflation. Once we hit that constraint then further growth with stable inflation can only be achieved by a sustained expansion of capacity. Despite the recovery taking hold more strongly after 2013 there is still spare capacity available in the Scottish economy and there are question marks about how sustainable the growth of demand is given that it still remains fairly unbalanced. A role for policy exists in both areas.

An indication that there is still a deficiency of demand in the economy comes from the Scottish labour market. We can look at the number of weekly hours being worked currently compared to the situation at the peak of capacity utilisation before the recession. Figure 16 charts this statistic from 2007 for the total weekly hours worked compared to the pre-recession peak for Scotland and the UK.

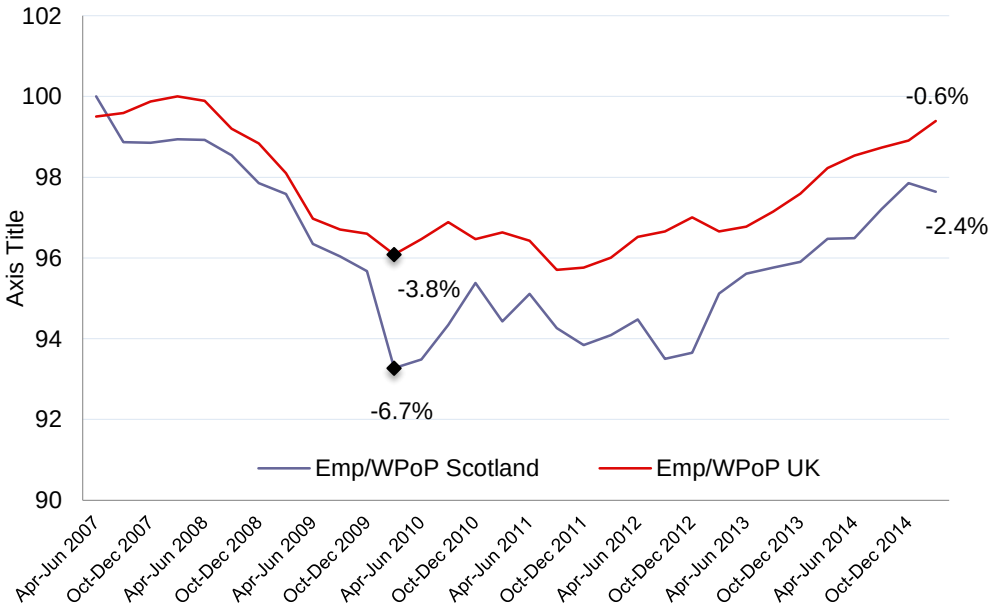
By the period January 2014 – December 2014, the number of total weekly hours worked in Scotland was close to but still -0.4% below the pre-recession peak. So despite the number of jobs being higher than before the recession, the demand for labour as measured by hours worked is still lower and appreciably lower relative to the UK which has expanded by 4.3%.

Figure 16: LFS Total weekly hours worked: UK and Scotland in recession & recovery (Compared to Pre-recession peak)



Source, ONS Regional Labour Statistics and FAI calculations

Figure 17: Employment to population (16 & over) ratio, UK and Scotland in recession & recovery (Compared to pre-recession peak)



Source, ONS Regional Labour Statistics and FAI calculations

But, of course, capacity utilisation depends not only on demand but also on demand in relation to supply. The demand for labour may be growing but if the supply of labour is growing more quickly then capacity utilisation will fall. One appropriate labour market measure is the employment to population (aged 16 and over) ratio. Figure 17 charts this ratio relative to pre-recession peak for Scotland and the UK to January - March 2015.

By January - March 2015, the ratio stood at -2.4% below the pre-recession peak, a worsening of the position in the final quarter of last year, compared to -6.7% at the trough of the recession. In the UK as a whole, in contrast the ratio is only -0.6% below its pre-recession peak but still below a peak that was attained 7 years ago. So while the jobs market has recovered substantially there is still a reasonable amount of slack in the labour market - especially in Scotland - and the need for a continuing growth of demand before capacity level are reached.

Yet, as we note above and have done in previous *Commentaries*, the growth of demand in the Scottish and UK economies continues to be unbalanced and because of that (and for other reasons) it may fail to be sustained. In the previous Commentary (Vol. 38, No. 3, March 2015), we highlighted the following positive and negative influences on the future growth of demand in the Scottish economy:

Positive influences:

- Currently strong and above-trend growth in Scotland and UK but now may be beginning to slow.
- Growth in the US is strong and improving.
- Inflation is falling, helped by a sharp fall in the price of oil and some other commodity prices, with the fall in the oil price being key.

Negative influences:

- Growth is unbalanced both domestically and across the globe, with demand growth depending on investment and household spending mainly fuelled by rising debt, which raises the risk that the recovery might falter.
- The fall in the price of oil will have a negative impact on the Scottish economy (as an oil producer) though overall it will have a favourable impact.
- Further planned austerity will, if implemented, act to slow growth unless the private sector grows more quickly to compensate.
- The continuing problems in the Eurozone, with the risks of deflation and a Greek exit (Grexit).
- A small downside risk of deflation of prices in the UK economy.

Continuing positive influences

There have been only small changes to these positive and negative influences since we last reported. On the positive side, growth in the Eurozone economy picked up in the first quarter of this year with GDP

rising by 0.4%, which while not fast growth may help to settle fears that a deflationary process has been set in train. US data offer a mixed picture with growth weak in the first quarter but evidence – retail sales - that household demand was strengthening in May 2015. The still low employment-population ratio and weak nominal wage growth all suggest that capacity utilisation is sub-optimal with clear evidence of spare capacity and that it will be a little time yet before the Fed raises interest rates in the US, although some are suggesting that the Fed rate could rise in September followed by a slow rise in small increments over several years. Against this background, the IMF has raised its forecast for GDP growth in the Eurozone in 2015 by 0.3% points to 1.5% and in 2016 by 0.2% points to 1.6%. Conversely, it has lowered its forecast for the United States in 2015 by -0.5% points to 3.1% and in 2016 by -0.2% points to 3.1%. Its forecast for overall world output remained unchanged for 2015 at 3.5% and rose very slightly – by 0.1% - to 3.8% for 2016. The latest UK CPI inflation data show that UK prices rose slightly – by 0.1% - over the year to May after the -0.1% fall in April, as fuel prices rose and falls in the price of food moderated. This also should put to rest the admittedly lesser deflationary concerns in the UK. House price growth appears to be moderating, especially in London, and inflation overall is expected to remain close to zero over the next few months until the large fall in fuel prices falls out of the annual calculation. Low inflation should help the growth of real wages to support household spending as nominal wages rise but only weakly by pre-recession standards with little productivity growth evident.

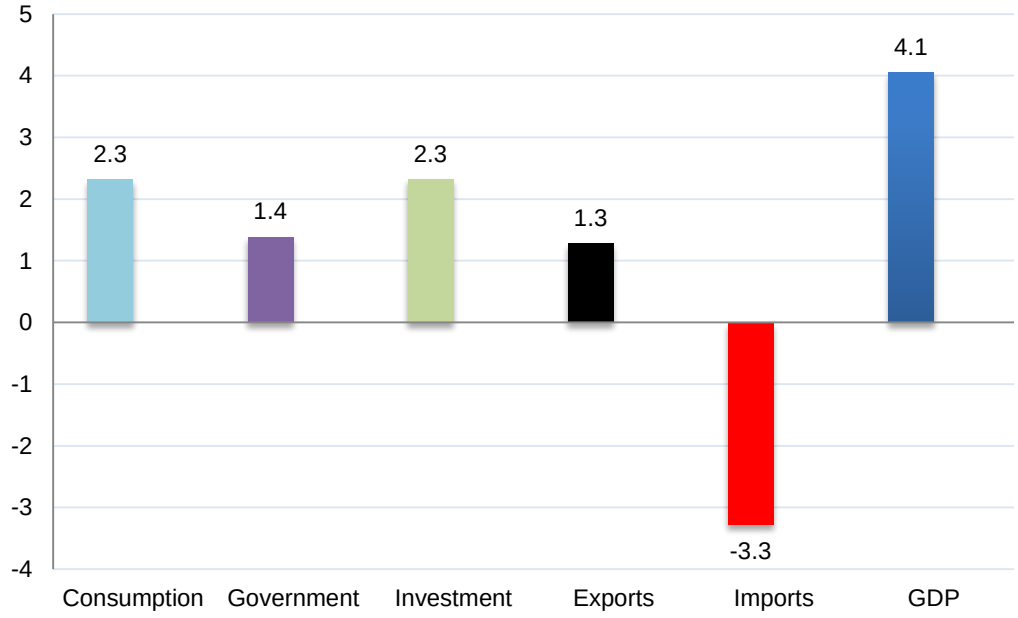
Continuing negative influences

On the negative side, the latest Scottish business surveys (see Business Surveys section) suggest that activity in the Scottish economy slowed in the first quarter of the year mirroring performance in the UK. The apparent slowdown may have been the result of the bad weather in January, the initial negative effects on the oil supply chain of the fall in the price of oil, and weakness in export markets exacerbated by the rise of sterling against the euro. However, expectations from the surveys remain positive and point to improved performance in the second quarter.

Growth remains unbalanced as Figure 18 shows and we have argued that the sustainability of the recovery will depend on a more balance recovery.

The data in Figure 18 are drawn from the latest *Quarterly National Accounts Scotland – Supplementary Tables*. The expenditure elements of these accounts are still based on ESA 1995 rather than ESA 2010 and so may be subject to change when they are so revised. However, it seems to us that it would be unlikely that the changes attendant upon the introduction of ESA 2010 would have much of an effect on the relative size and direction of the expenditure components, with the possible exception of investment. Household spending – consumption – and investment were the main drivers of Scottish nominal GDP growth in 2014. The significantly larger negative contribution of imports compared to the positive contribution from exports indicates that net trade was a major drag on Scottish growth in 2014. While exports are growing, they are not growing as quickly as other components of aggregate demand such as household spending and investment, a proportion of which is spent on imports, and so this effective net leakage in spending from the Scottish economy is a drag on growth. The continuing growth in consumption is to be welcomed but with the growth of real wages being close to zero spending is being sustained by rising household debt as noted in the previous Commentary. Figure 19 shows the latest OBR forecasts for the ratio of household gross debt to income.

Figure 18: Expenditure components of Scottish nominal GDP growth 2014: percentage contribution to GDP change



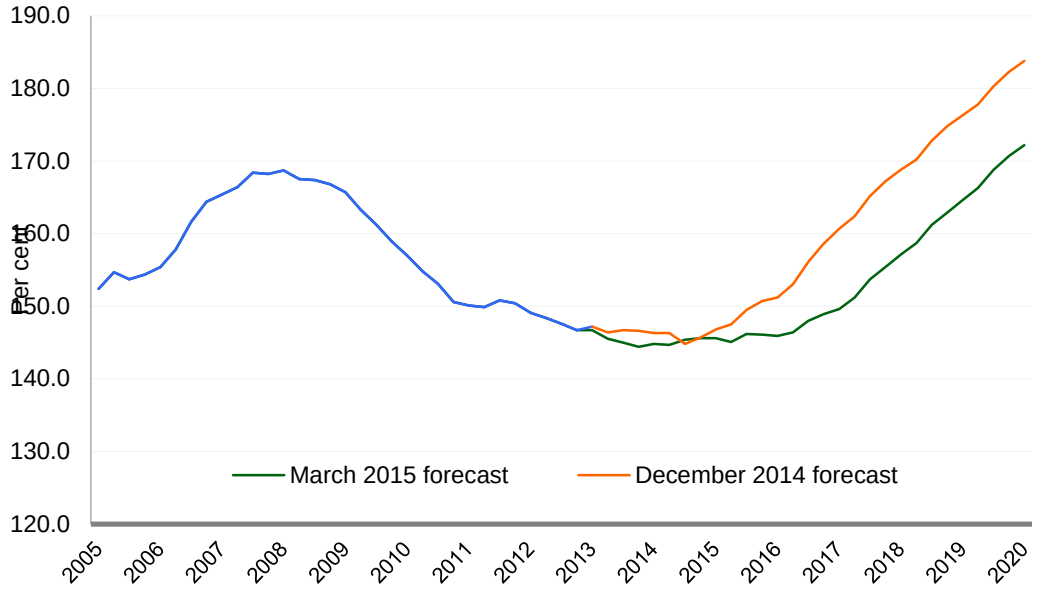
Source : Quarterly National Accounts Scotland - Supplementary Tables - ESA 1995 and FAI calculations.

What is clear from Figure 19 is that despite the downward revision between the December 2014 and March 2015 forecasts, the burden of gross household debt is still expected to rise *above* pre-crisis peak household debt before the end of the forecast period. While these are forecasts of gross debt and so take no account of the asset position of UK households it is nonetheless worrying that the Scotland and the UK's future growth over the medium term is forecast to depend on rising debt and debt that is predicted to rise above the level that was strongly associated with the financial crash and the onset of the Great Recession.

However, the one positive in the data presented in Figure 18 is that capital investment is recovering in Scotland. In 2014 there was strong investment in structures and particularly infrastructure as work intensified on the new Forth road bridge. In addition, the recent survey by Ernst and Young of investment into the UK including Scotland showed Scotland continued successfully to attract inward investment in 2014. According to the report, Scotland secured its third best year on record for Foreign Direct Investment:

- 80 projects in 2014, with scientific research, financial services and manufacturing the key activities (with interestingly manufacturing projects up from 15 to 31 projects)
- 2014 was Scotland's most successful year attracting investments from the US (46% - above trend), though the report suggests that Scotland needs a higher profile in Asia (particularly India and China where the UK performed well)

Figure 19: UK household gross debt to income: OBR forecasts (Dec. '14, March '15)



Source: Office of Budget Responsibility

An investor perception study also undertaken by Ernst and Young confirms Scotland's brand was boosted globally in 2014 by high-profile events such as the Commonwealth Games and the Ryder Cup. The report concludes that in an uncertain world, Scotland continues to punch above its weight in securing global FDI. Its challenge is to build further on its achievements to date, and tackle areas where it can do better.

In its latest State of the Economy Report, the Scottish Government's Chief Economist argues that its analysis suggests that the fall in the price of oil should have a broadly neutral effect on the Scottish economy in 2015 and 2016. This falls within the range of projected outcomes that we discussed in the March 2015 *Commentary*. Our feeling was that there was a strong chance there could be net benefits to the Scottish economy with the boost to real incomes and spending offsetting the negative effects on the oil industry supply chain and wider knock-on spending effects. The evidence to date is insufficient to draw any conclusions, although the softening of Scotland's economic growth suggested by the business surveys in the first quarter may be, in part, a reflection of the early incidence of the negative supply-side effects on the oil industry in Scotland.

The victory of the Conservatives with a small majority in the May UK General Election appears likely to lead to a continuation and perhaps a tightening of the previous Conservative / Liberal Democrat Coalition austerity plans. We shall find out more in the Chancellor's forthcoming Budget. The IFS noted in the its pre-election analysis of the parties' public finance plans for government that

"With significant deficit reduction still to come, households can expect the tax and benefit changes implemented over the next parliament to reduce their incomes, on average."

What that means is that household spending will also fall due to further austerity and the fall is likely to be greater the more quickly the Chancellor seeks to bring the UK government's budget into balance. Austerity will continue to be a major drag on capacity utilisation and economic recovery in Scotland and the UK.

Finally, a note about Greece. At the time of writing negotiations between the Greek government and its creditors appear to have broken down. The risk of Greece both defaulting on its debt and leaving the euro have increased since we last reported. This issue is again fast becoming a major risk to the recovery not simply in the eurozone but perhaps, with the threat of contagion effects, the rest of the world.

Forecasts

GVA Forecasts

For our latest GVA forecasts we continue the presentational procedure adopted in previous Commentaries. We present only a central forecast but use estimated forecast errors to establish the likely range that the true first estimate of the growth of Scottish GVA will lie between.

Table 1: Forecast Scottish GVA Growth, 2015-2017

GVA Growth (% per annum)	2015	2016	2017
Central forecast	**2.5**	**2.3**	**2.3**
March forecast	2.6	2.4	n.a.
UK mean independent new forecasts (June)	2.4	2.4	
Mean Absolute Error % points	+/- 0.41	+/- 0.95	+/- 1.11

Source: Fraser of Allander Institute forecasts ©

Table 1 presents our forecasts for Scottish GVA - GDP at basic prices - for 2015 to 2017. The forecasts are presented in more detail in the *Forecasts of the Scottish Economy* section of this Commentary.

Table 1 shows that our GDP forecast for 2015 is 2.5%, which is revised down slightly from our forecast of 2.6% in March of this year. The downward revision is due to the evidence of a slowing of the rate of growth through the first half of the year. For 2016, we have also revised down our forecast to 2.3% from 2.4% in March, in recognition that while the recovery is continuing the growth of demand is now anticipated to be slightly weaker than previously thought. We also are prepared to acknowledge that the negative effects of the oil price fall on the oil production and services, may be a little greater than we anticipated in March. We are forecasting 2017 for the first time and the underlying determinants suggest that growth will be little different from 2016 and so we retain the forecast of 2.3% for 2017.

Table 1, also compares our GVA forecasts with the median of latest independent forecasts for the UK as published by the UK Treasury in June 2015. These show that as forecasts are being generally revised down for the UK and Scotland we now expect Scottish growth to be slightly better this year than the UK,

reflecting the relatively stronger investment in infrastructure north of the border. So, we are now forecasting growth of 2.5% in 2015, 2.3% in 2016 and 2.3% in 2017. Given our previous forecast errors the lower and upper bounds for growth in 2015 are expected to be 2.1% and 2.9%, for 2016, 1.3% to 3.3%, and for 2016, 1.2% to 3.4%.

Production and manufacturing continue to be the major sectors exhibiting the fastest growth in 2015, 2016 and 2017. Growth of production is forecast to be 2.9% in 2015, 2.8% in 2016 and 2.6% in 2017. Service sector growth is projected to be 2.4% in 2015, 2.2% in 2016, and 2.2% in 2017. The construction sector again continues to lag with growth of 1.4% in 2015, 1.3% in 2016 and 1.4% in 2017.

Employment Forecasts

Table 2: Forecast Scottish Net Jobs Growth in Three Scenarios, 2015-2017

	2015	2016	2017
Upper	62,100	72,650	80,600
March forecast	*64,215*	*85,790*	*n.a.*
Central	**51,250**	**49,600**	**51,700**
March forecast	*51,350*	*57,600*	*n.a.*
Lower	40,400	26,550	22,800
March forecast	*38,500*	*30,750*	*n.a..*

Source: Fraser of Allander Institute forecasts ©

Table 2 presents our forecasts for net employee jobs for the years 2015 to 2017 in terms of a central and upper and lower forecast. Note that in forecasting employee jobs we are not forecasting self-employment, which has been an important component of the recent jobs recovery. Moreover, employee jobs can differ from the self-reported employment in the monthly Labour Force Survey.

The number of total employee jobs is forecast to continue to increase in each year, and at a faster rate than that seen during 2014 (although not as strongly as in 2013). Our forecast for the number of jobs added in 2015 has been revised down marginally since March's forecast, from 51,350 to 51,250. The number of jobs at the end of 2015 is now forecast to be 2,444,250, an increase of 2.1% in 2014 (the same percentage growth forecast as in March's Commentary). Our current forecast is that the Scottish economy will add 49,600 jobs in 2016, down by 8,000 from our March forecast, while we forecast the addition of 51,700 jobs in 2017. This year, we expect 28,150 service sector jobs to be created, with around 7,150 added in production, and growth of 950 in agriculture. Construction jobs are now forecast to rise this year by 14,962, reflecting the surge in activity in the sector. In 2016, the bulk of the jobs created are again expected to be in the service sector with an additional 41,000 jobs forecast, while 5,600 are added in production, 950 in agriculture and 2,050 in construction. In 2017, job creation in the service sector is projected to be even stronger at 43,300 jobs, with production adding 5,450, agriculture 700, and construction just under 2,200,

Unemployment Forecasts

The key unemployment forecasts are summarised in Table 3 below.

Table 3: Forecasts ILO unemployment 2015-2017

ILO unemployment	2015	2016	2017
Rate (ILO un/TEA 16+)	**5.1%**	**4.5%**	**3.9%**
March forecast	5.0%	4.6%	n.a.
Numbers	**138,200**	**122,364**	**108,150**

Source: Fraser of Allander Institute forecasts ©

The ILO rate is our preferred measure since it identifies those workers who are out of a job and are looking for work, whereas the claimant count simply records the unemployed who are in receipt of unemployment benefit. The most recent figures (published on 17th June 2015) show an ILO unemployment rate of 5.9% for the three months to April 2015 – down from 6.6% on the same period one year ago. The level of unemployment stands at 163,000 in the same period this year, up 1,000 on the previous three months and down 19,000 over the last year. Given the small revisions to the growth in employee jobs over the next two years in our latest forecasts, there are only small revisions to the levels and rates from our earlier forecasts. Yet, the improvement in the labour market is forecast to continue with unemployment rates and numbers falling to end 2017. Our projection for unemployment on the ILO measure at the end of 2015 is 138,200 (5.1%), falling further to 122,364 (4.5%) by the end of 2016, and 108,150 (3.9%) by end 2017. It is worth noting that in our unemployment forecast for 2017, the unemployment rate finally falls to the rate it stood at when the Great Recession started in 2008, nine long years previously.

Brian Ashcroft
18 June 2015

2 Forecasts of the Scottish economy

Grant Allan, Fraser of Allander Institute

Abstract

The latest figures on economic growth in Scotland confirm that the Scottish economy grew by 2.7% during 2014: the fastest annual rate of growth since 2006. Recent evidence supports the view that much of the growth during 2014 was however from increases in household consumption, although there were signs of much welcomed growth in investment (largely from public infrastructure projects). Surveys point to a slowing of growth in the first half of 2015, while the extent to which growth will be sustained through 2016 and 2017 is critically dependent on the return of stronger real wage growth and an easing of household debt to income ratios, and the measures announced in the UK Government budget in July (and the outcomes of progress of further powers to the Scottish parliament). On the back of recent evidence, we have slightly revised down our forecasts for growth in 2015 and 2016 by 0.1 percentage points since March. Critically, Scottish export performance remains weak, and the possibility of fundamental change in the Eurozone driven by the outcome of Greek debt discussions - which are coming to a head at the time of writing - will be critical for the external economic environment facing Scotland in the short and medium term.

Survey context and recent trends

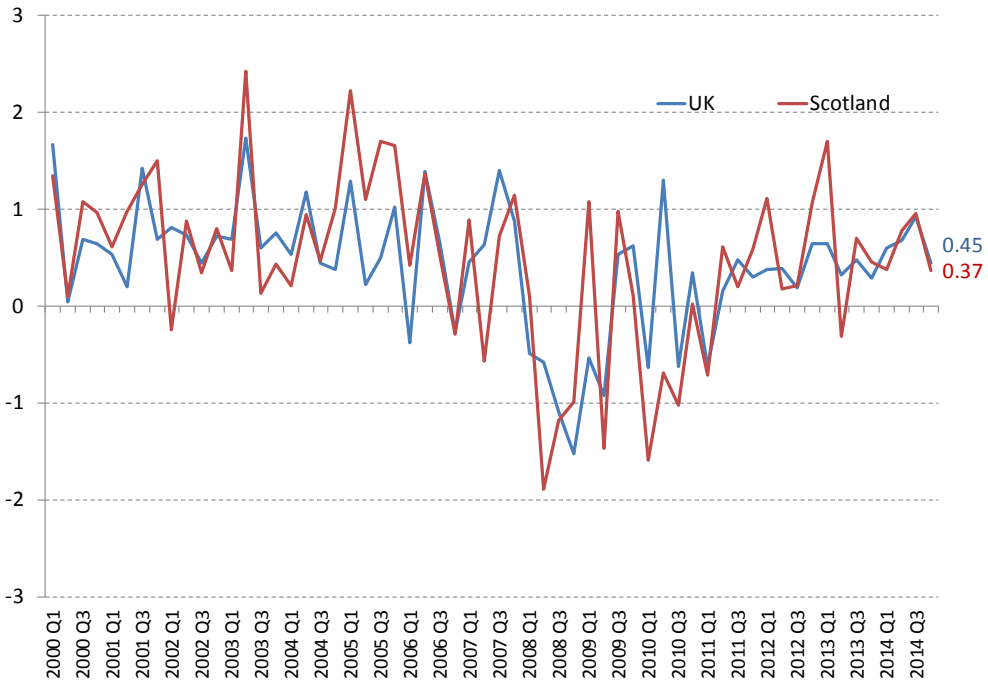
Households

Household spending continues to be important for the level of activity in the Scottish economy. On average, between 2013 and 2014, household spending contributed 0.60 percentage points to nominal quarterly growth, with Gross Fixed Capital Formation and Government contributing 0.47 and 0.15 points respectively per quarter. Net trade has contributed an average of *minus* 0.1 percentage points over the same period indicating issues both of Scotland's narrow export base and the economic health particularly of the Eurozone economies. The data on which these calculations are based – produced by the Scottish Government – are currently not available on the same basis as previously, so we will further examine trends in the Commentary later this year, when these data are available. The data that we do have suggests that the household element is diminishing as a source of growth, but that the domestic household sector remains the major driver of Scottish growth.

What is also clear from Figure 1 is that consumption expenditure since the start of 2011 has grown reasonably strongly – only in the second quarter of 2013 does there appear to have been a quarterly (real terms) fall in household spending. Most recently, it appears that Scottish consumption has grown almost identically to the UK as a whole, with growth of 0.37% in the most recent quarter in Scotland, and 0.45% in the UK. The household savings ratio for the UK has continued to remain below historic averages for the last twenty years, and for the UK was 5.9% in the fourth quarter of 2014. Comparable data for the fourth quarter in Scotland are not available, but Figure 2 shows that the lower savings rate of the UK as a whole through 2013 and 2014 has been mirrored in Scotland. Recent data on household spending, for instance the Retail Sales Index for Scotland, show that in the first quarter of 2015,

spending in Scotland grew by less than in Great Britain as a whole, and fell in nominal terms over the year (while GB consumer spending in nominal terms increased). The latest figures on house price growth in the UK show a slowing from the previously high rates of growth, led by a weakening in price growth in London after a sustained period of significant growth. Transactions and therefore house price indices in Scotland were affected by the introduction of Land and Buildings Transactions Tax from the 1 April 2015 (with a greater number of high value house sales seeming to be brought forward in advance of its introduction).

Figure 1: Household real consumption spending growth, Scotland and UK, Q1 2000 to Q4 2014, (% quarter-on-quarter)



Sources: Scottish National Accounts Project (SNAP) data (Scottish Government) and UK Quarterly National Accounts (National Statistics) and FAI calculations.

Investment

Figure 3 shows comparable figures for Scotland and the UK for investment spending between Q1 2010 and Q4 2014. These suggest that investment spending in real terms in Scotland and UK are, respectively, 13.3% and 14.1% above their 2011 value. This compares broadly with the GDP figures for the Construction sector in Scotland, which has risen sharply through the second half of 2014 and were 17.0% higher at the end of 2014 than their average during 2011. As noted above, investment spending is contributing positively to overall growth in Scottish economy, and in greater amounts than in the immediate aftermath of the recession period. Over a longer time horizon, investment spending remains broadly at the same level as in 2007. Recent survey evidence – covered in the *Review of Business Surveys* section – suggests that a number of sectors are bullish about investment plans for 2015. The Bank of England's November Inflation Report (Bank of England, 2014, p. 20) noted that the outlook for business investment was robust, supported by "conducive financing decisions and expanding domestic

demand". Though demand uncertainty was again important, it appeared to have "receded" over 2014. The Bank had previously warned of the chance that excess capital in firms was potentially holding back new investment. Recent survey results however suggest that this fear is not restraining investment. Confidence levels from recent surveys, for instance, the Scottish Construction Monitor, show high levels of confidence.

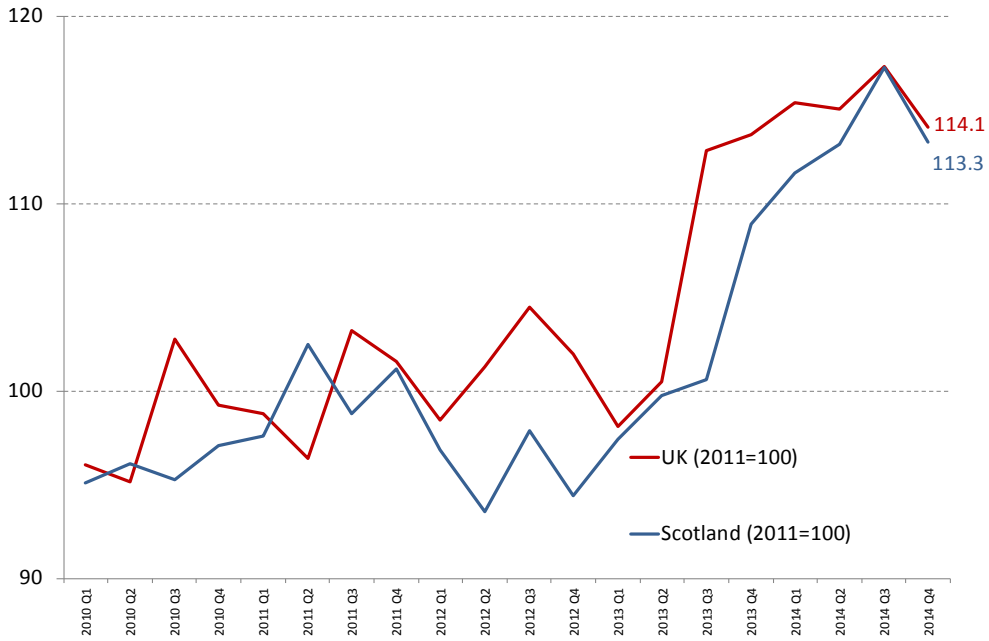
Figure 2: Household saving ratio, Scotland and UK, Q1 2008 to Q4 2014, %

Sources: *Scottish National Accounts Project (SNAP) data (Scottish Government) and UK Quarterly National Accounts (National Statistics) and FAI calculations. Note: Comparable Scottish saving ratio figures are only currently available to Q3 2014.*

Trade

The most recent statistics on Scottish exports to the rest of the world – covering manufacturing exports alone (roughly 60% of Scottish exports outside of the UK) – were published on the 22 April 2015, and cover the last three months of 2014. They show that on a quarterly basis, the volume of exports fell by -0.8% in the quarter (2014q3), and that on an annual basis (i.e. the four quarters of 2014 compared to the four quarters of 2013) there had been growth of this key measure of only 1.0%. This quarterly contraction was caused chiefly by disappointing figures that showed a fall of -1.5% in Food and Drink exports, with Drink exports – worth some 28% of all Scottish manufactured exports - falling by -2.0% in the quarter, and by -3.0% on an annual basis. Much of this decline was however caused by a sharp contraction during the first three quarters of 2013; since then the exports of the Drinks sector has been showing small increases before the most recent quarterly fall. There was also a continued quarterly contraction in Engineering exports from Scotland (down by almost -2% in the quarter, and in volume terms worth about one-quarter of all manufactured exports).

Figure 3: Real gross fixed capital formation, Scotland and the UK, Q1 2010 to Q3 2014



Sources: *Scottish National Accounts Project (SNAP) data (Scottish Government) and UK Quarterly National Accounts (National Statistics) and FAI calculations*.

In terms of key markets for Scottish products, the latest figures suggest positive growth is continuing, but with major downside risks largely from the political discussions about the future of the Eurozone. On a number of measures, including Markit's PMI for the Eurozone in April 2015, suggest a slight weakening of activity, however it is an economy which is on average displaying "growth" signals. Clearly, as noted elsewhere in this *Commentary*, the massive "elephant" in discussions of the Eurozone's future is the outcome of current Greek debt negotiations. For the reasons noted in earlier Commentaries, these decisions will have a major impact on the economic future of major trading partners of Scottish firms, and not directly on the sales of exports from Scotland *per se*. Additionally, Scottish banks have major exposure to Eurozone borrowing, and will feel the outcome of any significant movements on this front. Writing in mid-June (and with a "immoveable object" of Greece "bundling up" debt repayments from throughout the month into one single payment at the end of the month) it seems likely that any movement on Greece and the Eurozone will occur quickly and will have profound consequences firstly for the Greek economy, the economies of the Eurozone – absent a major plan to move faster on greater sharing of debt risks – and the UK and Scottish economies.

Growth in the US is forecast to continue to strengthen, with continued strong business and consumer confidence and positive labour market signals including, in the IMF's language, "steady job growth". The low oil price – although massively damaging for shale producers and specific regions across the US that had previously enjoyed an energy "boom" - is likely to aid production and consumer spending through 2015. In the longer term in the US, however there is uncertainty around the pace and trajectory for interest rates. "Liftoff" – the point at which interest rates are expected to begin to be raised – is forecast by many to occur in the third quarter of 2015, and will have consequences for the continued growth

through 2016. As the single largest destination for Scottish exports outside the UK, this will have a direct consequence for many of Scotland's key exporting companies.

The IMF also noted there was scope for advanced economies to bolster policy support for growth, highlighting opportunities for infrastructure investment and supply-side policies to speed up medium-term prospects. Developing countries, on the other hand, continue to see a slowing of growth prospects, and while a number will be affected significantly as major oil producers, the factors affecting the oil price do not affect other commodities and reflect market specific consequences. Overall, the IMF model that global output could be between 0.5% and 1% higher during 2016 as a result of the lower price of oil – although this depends crucially on the extent to which low oil prices translate into lower costs of energy to households and industries. As we noted in our March 2015 *Commentary*, the consequences for Scotland – while likely to be less positive than for the UK as a whole – will not be uniform, with already signs of lower activity in the North East of Scotland, where many firms active in the UK Continental Shelf are based. The Scottish Government's Chief Economic Advisor argued in June 2015's State of the Economy publication that its economic modelling work found that the "overall net effect on the economy in 2015 and 2016 should be broadly neutral".

Table 1: Economic growth forecasts for 2015 and 2016 for Scotland's major export markets, plus UK, China, Japan and the Euro area, % p.a.

		2015		2016	
	Share of total (i.e. international and rest of the UK) exports, % 2013	IMF (April 2015)	Revision since January 2015	IMF (April 2015)	Revision since January 2015
USA	5.3	3.1	-0.5	3.1	-0.2
Netherlands	2.8	1.6	-	1.6	-
Germany	2.6	1.6	+0.3	1.7	+0.2
France	2.5	1.2	+0.3	1.5	+0.2
Denmark	1.9	1.6	-	2.0	-
Norway	1.5	1.0	-	1.5	-
UK	62.4	2.7	0.0	2.3	-0.1
China	0.8	6.8	0.0	6.3	0.0
Japan	0.4	1.0	+0.4	1.2	+0.4
Euro area	-	1.5	+0.3	1.6	+0.2

Sources: *World Economic Outlook (International Monetary Fund, IMF, April 2015). Notes: "-" indicates a country forecast is not produced, "n/a" indicates that the share of exports from Scotland to Euro area countries is not available from official sources.*.

Table 1 shows the forecasts for growth in key markets for Scottish exports through 2015 and 2016. Since our previous forecasts in March 2015, economic forecasts for the UK this year have remained

broadly flat. The average of 2015 forecasts in February 2015 was 2.6%, and range between 2.0% and 3.0%. The Office for Budget Responsibility forecast growth in this year of 2.5% in March 2015. Forecasts for 2016 averaged 2.3% in March, with a range between 1.2% and 3.0% (HM Treasury, 2015), while in May the average of forecasts made in the last 3 months is 2.4% (with the range the same as earlier in the year).

Forecasts for the Scottish economy: in detail

In June 2014 we identified that there was an apparent cooling of the Scottish economy as it entered the second half of the year. This has been borne out by the data we now have on the performance of the Scottish economy in 2014. The first release, published on the 15 April 2015, shows that growth in the final quarter of 2014 was 0.6% and annual growth in 2014 was 2.7%: the fastest annual growth rate for the Scottish economy since 2006. This meant that after Q1 2014 there were three consecutive quarters of 0.6% growth for Scotland during 2014. The annual growth outturn figure was therefore slightly higher than our forecast made in March 2015, with an absolute forecast error of 0.2 percentage points, and so slightly higher than our forecast error over that forecast horizon (0.164 percentage points) for all FAI forecasts since 2000.

Moving to 2015, for the UK as a whole the official “Preliminary estimate” of UK growth in the first quarter (published on the 28 April 2015) was 0.3%, down from 0.6% in the final quarter of 2014. In a separate and new ongoing piece of research, Fraser of Allander Institute “Nowcasts” of the Scottish economy also reveal a slight slowing in Scottish growth for the first half of the year compared to the end of 2015. This research currently “nowcasts” quarterly growth of 0.52 per cent for both Q1 and Q2. As well as suggesting a pattern of growth in the first half of 2015 consistent with the second half of 2014, they are also consistent with no significant adjustments to the growth outlook since our forecasts in March 2015.

Looking to the longer term, it appears that household spending will continue to play a major role in the next year, although since March, the figures on the growth in investment appear to have improved: in line with earlier surveys of investment intentions. On the consumption side, the Monetary Policy Committee noted at its May meeting that the inflation rate on the CPI measure was precisely zero (0.0%) in March, largely due to persisting low energy prices. It also noted that it was likely that productivity and hence real wage growth would remain low during 2015, with total pay growth likely to return to levels of around 4% seen prior to the great recession from mid-2016 onwards. Private sector pay growth has risen in the recent figures, but at 2.2% is around half of its pre-2008 level. The recent Markit Economics Report on Jobs provides some evidence of higher growth in salaries in Scotland than in the UK, driven as much by worsening labour availability as by increased demand. The Bank of England noted that there was little evidence that low inflation was feeding into inflation expectations.

Early in February 2015, the Cabinet Secretary for Finance and Sustainable Growth John Swinney MSP set out the Scottish Government’s final budget plans for year 2015-6, including (a headline measure) total spending about 1.6% less in real terms than the previous year. Fiscal Affairs Scotland has examined the long-term projections to the Scottish budget over the coming years, and concluded that 2015-16 is likely to be one of the “milder” years for the Scottish budget which will see three years of accelerated real terms reductions from 2016-17 (Fiscal Affairs Scotland, 2014). More recent work however examining the funding for Scottish local authorities – which is around 10% lower in the current

financial year than compared to 2009-10, and in (indicative) real terms, comparable to financial year 2003-4 (Fiscal Affairs Scotland, 2015). (This is only indicative as much activity which was previously within Local Government budgets – such as police and fire and rescue services – is now funded separately).

The outlook for overall UK government spending will be confirmed in the new Conservative government's Budget on 8 July 2015. Some measures have already been announced, including a reduction of £12 billion to the social security budget which could include reductions in tax credits and housing benefits for both private and social tenants. Additionally, reductions in (non-protected) areas of Department spending will have consequences for public spending in Scotland – although the powers devolved through the Scotland Act and Smith Commission proposals could lead to policy divergence between Scotland and UK over the longer term. The IFS for example project a fall in the block grant to Scotland of less than 6.6% between 2015-16 and 2018-19. More will be known on the specific immediate path of spending in Scotland after July's Budget, and this will continue to have an impact upon economic activity in Scotland.

Results

In this section of the *Commentary*, we forecast year-on-year real growth in Scotland's key economic and labour market variables. In this issue, we forecast all variables for 2015, 2016 and 2017. This is the first time that we have forecast growth for 2017. Our forecasts cover Scotland's Gross Value Added (GVA), employee jobs and unemployment. The model used is multi-sectoral, and where useful, results are reported to broad sectoral categories.

We begin with the forecasts for GVA growth in the Scottish economy. The growth performance of Scotland between 2010 and 2014 and our forecasts for the period 2015 to 2017 are shown in Figure 4. This also includes our upper and lower forecasts of growth. As previously, the range around the central forecast is based on our past forecast accuracy of the first release of growth data for the year.

Based on FAI forecasts since 2000, the mean absolute error of forecasts (i.e. the difference between forecast and "outturn" annual growth) made in the summer for growth in that same year is 0.41 percentage points, while for the following year the average absolute forecast error is 0.95 percentage points. This gives the range for the upper and lower bands in 2015 and 2016. Our past forecast errors for the longest forecast horizon is 1.111 percentage points, so this is used to give the range around our central forecast for 2017.

Relative to our March 2015 forecasts we have now revised down slightly our central forecast for GVA growth in 2015 from 2.6% to 2.5% (i.e. a downward revision of 0.1 percentage points since our March 2015 Commentary) and this is largely driven by evidence of a slightly slowing of the rate of growth through the first half of the year so far. Our forecast for 2016 was 2.4% and we have similarly revised this down by 0.1 percentage points, to 2.3% annual growth. Our first forecast for 2017 is 2.3%. We are therefore, on our central forecast predicting the same rate of growth in both 2016 and 2017.

For comparison purposes, the UK's Office for Budgetary Responsibility (OBR) forecast for growth in 2015 (made in March 2015) and the median of new independent growth forecasts for the UK in 2015 are 2.5% and 2.6% respectively, while for 2016 the respective figures are of 2.3% and 2.4%.

Figure 4: Actual and forecasts of annual real GVA (%) growth for Scotland, 2015 to 2017

Sources: *Fraser of Allander Institute forecasts, June 2015 ©*

In addition to the aggregate growth forecasts in our central scenario, Table 2 presents our forecasts for GVA growth in 2015, 2016 and 2017 for three broad sectoral groupings: the "production", "construction" and "services" sectors of the Scottish economy.

Table 2: Forecast Scottish GVA growth (%) by sector, 2015 to 2017

	2015	2016	2017
GVA	2.5	2.3	2.3
Production	2.9	2.8	2.6
Construction	1.4	1.3	1.4
Services	2.4	2.2	2.2

Source: Fraser of Allander Institute forecasts, June 2015 ©

Employment and unemployment

Detailed commentary on recent developments in the Scottish labour markets can be found in the Overview of the Scottish Labour Market section of this *Commentary.* Here we present our forecasts for the number of employee jobs in the Scottish economy. We forecast the number, sectoral breakdown and percentage changes in employee jobs at the end of 2015, 2016 and 2017 respectively, as well as the ILO measure of unemployment over the same period.

The most up to date employee jobs series for Scotland shows that there were 2,393,000 employee jobs in Scotland in the final quarter of 2014, an increase of 37,000 jobs from the end of 2013, only slightly lower than the number of jobs forecast in March 2014 to be added during the year (39,000). This follows the addition of 76,000 jobs in the Scottish economy during 2013.

Our new forecasts for employee jobs are shown in Table 3, alongside a sectoral breakdown of employee job numbers. The number of total employee jobs is forecast to continue to increase in each year, and at a faster rate than that seen during 2014 (although not as strongly as in 2013). Our forecast for the number of jobs added in 2015 has been revised down marginally since March's forecast, from 51,350 to 51,250. The number of jobs at the end of 2015 is now forecast to be 2,444,250, an increase of 2.1% in 2014 (the same percentage growth forecast in March's Commentary). Our current forecast is that the Scottish economy will add 49,600 jobs in 2016, down by 8,000 from our March forecast, while we forecast the addition of 51,700 jobs in 2017. The net change in employee jobs, consistent with our upper, central and lower forecasts for GDP growth, is shown in Table 4.

Table 3: Forecasts of Scottish employee jobs ('000s, except where stated) and net change in employee jobs in central forecast, 2015 to 2017

	2015	2016	2017
Total employee jobs, Dec	2,444,250	2,493,850	2,545,550
Net annual change (jobs)	51,300	49.600	51,700
% change from previous year	2.1	2.0	2.1
Agriculture (jobs,000s)	26	27	30
Annual change	950	950	700
Production (jobs, 000s)	244	250	255
Annual change	7,150	5,600	5,450
Construction (jobs, 000s)	149	151	153
Annual change	14,962	2,050	2,199
Services (jobs, 000s)	2,025	2,066	2,110
Annual change	28,150	41,000	43,342

Note: Absolute job numbers are rounded to the nearest 50.
***Source:** Fraser of Allander Institute forecasts, June 2015 ©*

We present out forecasts for unemployment at the end 2016 and 2017 in our central scenario in our central forecasts in Table 5. We report the forecast number (and rate) of those unemployed using the International Labour Organisation definition of unemployment. This is preferred to the claimant count measure as it gives a more complete picture of the extent of labour resources available for work but unable to find work, and so is a better measures of the level of spare capacity in the Scottish labour market.

Table 4: Net annual change in employee jobs in central, upper and lower forecast, 2014 to 2016

	2015	2016	2017
Upper	62,100	72,650	80,600
Central	51,250	49,600	51,700
Lower	40,400	26,550	22,800

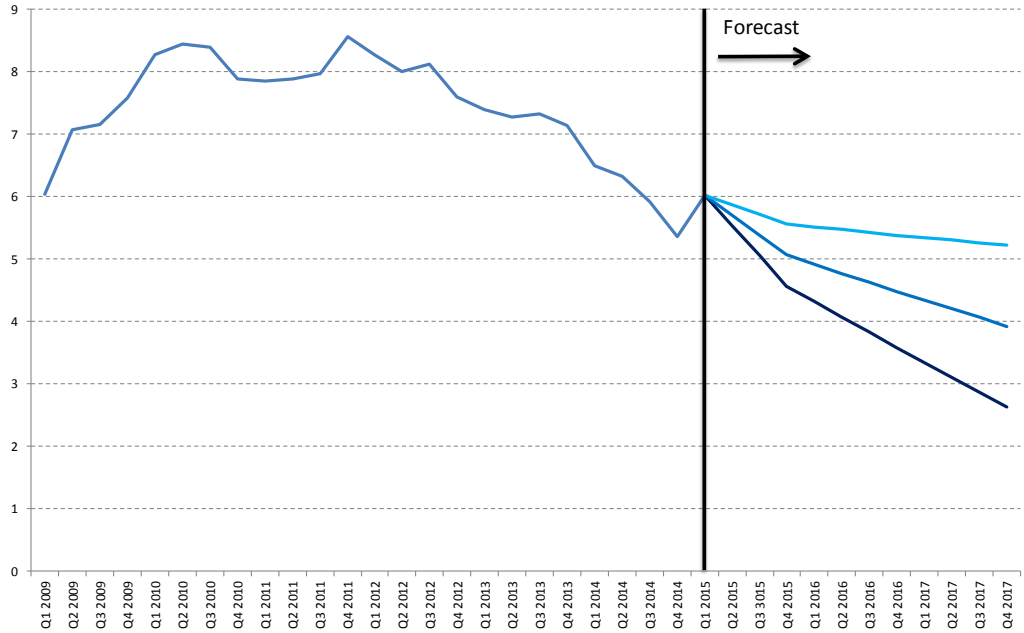
Note: Absolute job numbers are rounded to the nearest 50.
Source: Fraser of Allander Institute forecasts, June 2015 ©

Table 5: Forecasts of Scottish unemployment in central forecasts, 2015 to 2017

	2015	2016	2017
ILO unemployment	138,200	122,364	108,150
Rate (%)[1]	5.1	4.5	3.9

Note: Absolute numbers are rounded to the nearest 50. 1 = Rate calculated as total ILO unemployment divided by total of economically active population aged 16 and over. The most recent labour market statistics are detailed in the Labour Market section.
Source: Fraser of Allander Institute forecasts, June 2015 ©

Figure 4: Scottish ILO unemployment rate, 2009 to 2017 including forecasts from 2015



Sources: *ONS and Fraser of Allander Institute forecasts, June 2015 ©*

More detail on recent trends in the Scottish labour market can be found in the Labour Market Section of this *Commentary*. In March 2015, we forecast that the unemployment rate would fall to 5.0% by the end of 2015, and 4.6% at the end of 2016 in our central scenario. Given the small revisions to the growth in employee jobs over the next two years in our latest forecasts, there are only small revisions to the levels and rates from our earlier forecasts. The most recent figures (published on 17 June 2015) show an ILO unemployment rate of 5.9% for the three months to April 2015 – down from 6.6% on the same period one year ago. The level of unemployment stands at 163,000 in the same period this year, up 1,000 on the previous three months and down 19,000 over the last year. Our new forecasts for the unemployment rate in Scotland at the end of 2015 and 2016 are 5.1% and 4.5% respectively. We forecast the improvement in labour market outcomes to continue, with the level and rate of unemployment falling to the end of 2017, but the decline in absolute numbers unemployed falling by less than in 2016. Figure 4 shows both the performance of ILO Scottish unemployment rate since 2006 as well as our ILO unemployment rate central, upper and lower forecasts to 2016.

Grant Allan
16th June 2015

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3 Review of Scottish Business Surveys

Eleanor Malloy, Fraser of Allander Institute

Abstract

Business surveys are a useful tool and provide accurate and timely data that are extremely helpful in pinpointing subtle movements in the economy. Business surveys collect information on a wide range of topics such as business confidence, orders, turnover, exports, investment, employment etc. and when analysed provide a view of the overall economy. They are also useful for short term forecasting and pinpointing turning points. Many business surveys use net balances, determined by subtracting the percentage reporting declines from the percentages reporting increases. A number of recent surveys continue to show that more and more businesses report that net trends, although remaining positive, have eased somewhat (with a growing number of respondents reporting 'no change') and despite many of the trends reported not being quite as high as recent quarters, most remain positive and more importantly for many of the respondents to recent Business Surveys, expectations remain strong and at pre-recession levels.

Bank of Scotland Purchasing Managers' Index (PMI)

The Purchasing Managers Index (PMI) for Scotland (a single-figure measure of the month-on-month change in combined manufacturing and services output) saw activity levels dip marginally lower during March 2105 (49.4) compared to 50.2 in the previous month. Growth in the manufacturing sector was offset by a decline in services. January 2015 saw output fall for the first time in 28 months from 52.8 in December 2014 to 47.7; this was the first sub-50 reading since September 2012, indicating a contraction, with output declines recorded for both manufacturing and service firms. The December PMI showed that Scotland's private sector economy ended 2014 in a fairly strong position with the index unchanged in December from November's 52.8. The November index indicated weakening growth, with the index easing from 54.2 in October to 52.8.

Bank of Scotland Business Monitor

The latest Bank of Scotland Business Monitor, December 2014, January and February 2015 (with expectations to August 2015) shows that despite the economy slowing significantly in the survey period, that expectations remain high.

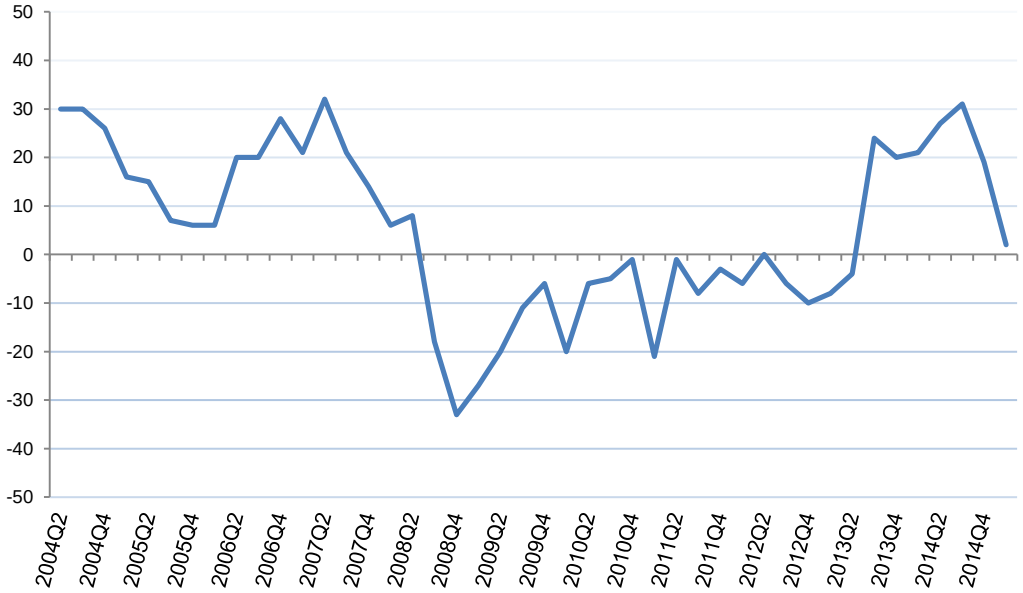
In the three months ending February 2015, turnover, on balance, remained static with a third of firms each reporting an increase, a decrease and no change resulting a zero net balance, down somewhat on the +16% reported in the previous survey and the worst result for seven quarters. Firms in both the production and service sectors reported sharp declines with service firms reporting +19% in the previous quarter and +4% in the current quarter and production firms declining from +12% to -4%. A net of 14% expect an increase in turnover in the 6 months to the end of August, slightly down from the +19% of the previous quarter and significantly lower than the net balance of +37% in the same quarter a year ago.

Services firms (+19% expect a rise in turnover) remain more confident than production firms (+8% expect a rise in turnover).

Volumes of total business generally eased compared to the previous quarter and the same quarter of previous year with the downward trends again more apparent in production rather than service firms. The trend in the volumes of repeat business eased to +1%, down from the +15% of the previous quarter and the +10% of the same quarter one year ago. Expectations for the volume of repeat business also eased, dropping to +10% compared to +13% for the previous quarter +27% for the same quarter one year ago.

Similarly trends in the volume of new business eased to +2% compared to +18% of the previous quarter and the +22% of the same quarter one year ago. Also expectations for new business volumes during next six months to the end of August were optimistic but again slightly down compared to last quarter's +14% and as compared to +19% in the previous quarter and down on the +34% of the same quarter one year ago.

Figure 1: Total volume of business Scotland, 2004-2015 (net balance of SBM respondents)



Source: Bank of Scotland Business Monitor

Export activity improved in this latest survey rising from a net balance of -4% in the previous survey to a net of +6%, although it remains below the +12% recorded in the same quarter one year ago. A net balance of 2% expect a rise in exports, down on the +5% last quarter and the +42% a year earlier.

Cost pressures eased in the latest quarter falling to +23% from +35% in the previous net of 26 expect pressures to increase in the three months to May. Concerns over credit availability increased slightly for production firms while easing for services firms. The importance of the sterling exchange rate increased for production businesses but eased for services. The importance of late payment eased for both production and services firms in the three months to the end of February 2015, whereas concerns

over cash flow increased. The importance of staff availability in the three months to the end of May declined for production firms but increased for services firms.

Capital investment appears to be declining as in the three months to the end of February a net balance of 1% reported a decline in the levels of capital investment compared to a net rise of +7% in the previous quarter.

In the recent past the Business Monitor indicated that the economy began to slow around the second half of 2008 and slowed significantly at the end of 2008 before steadily improving until 2010. During the following 2 years, respondents to the SBM showed no real change in the economy until the middle of 2014 when respondents indicated some growth. This continued until the current survey where firms reported no overall change, however expectations remain buoyant. Professor Donald MacRae of the Bank of Scotland noted that "These expectation levels suggest the private sector of the Scottish economy will show trend level growth in the second quarter of 2015 recovering from a slowdown at the start of the year."

Manufacturing

Sales revenue among rest of UK and export business improved during Q1 for a net balance of Scottish Chamber of Commerce members responding to the latest QEI survey whereas domestic sales revenue, on balance, declined. Domestic sales and orders both declined over the quarter (net balances of -7% and -8% respectively). A net balance of 30% of firms increased total investment during Q1 2015 and 37% of these firms did so in order to expand capacity. Average capacity utilisation was at the highest point in 10 years at 83%. Almost two thirds of firms reported no change to total employment nevertheless a net balance reported a rise (+10%).

Respondents to the Q1 2015 Scottish Engineering Review reported that for the first time in 10 years firms of all sizes reported a negative balance of optimism with only firms in the electronics sector reporting a positive net balance. Following seven consecutive positive quarters the trend in output volumes contracted in the first quarter of this year, however small and medium firms are forecasting a rise in Q2 although large firms continue to expect a negative trend. Most firms reported that prices were unchanged from the previous quarter however small firms reported that UK prices continued to improve. Small and medium companies continued to report upward trends in both capital and training investment during Q1 2015. For the first time since Q2 2010 a net balance of engineering firms reported a decline in total employee numbers. Medium and large companies reported a decline although small firms continued to report employment growth. Nevertheless, the outlook for manufacturing employment is generally positive.

Construction

Optimism in the construction sector increased during Q1 for a net balance of Scottish Chamber of Commerce members responding to the latest QEI survey (a net balance of +8%), lower than in the previous quarter (+23%) and also lower than the same quarter of last year (+21%). Total sales unexpectedly declined for a net of 13% of construction respondents. Contracts were also down

compared to the same time last year, particularly public sector contracts, which declined for a net balance of 11% of respondents. Investment trends remained broadly positive although most firms reported no change to overall levels. Investment is expected to continue to grow in Q2 2015 for 22.2% of construction firms. Almost half of all firms experienced a decline in profits during Q1 2015 but fewer than a quarter expect profits to decline in Q2 2015.

The latest Scottish Construction Monitor, a quarterly survey of the membership of the leading trade body, the Scottish Building Federation reported that business confidence rose to a record high to +29% in Q1 2015. The Scottish Construction Monitor survey asked a number of questions focusing on how the 2015 Construction Design and Management regulations would impact on Scottish Construction. More than half of the respondents reported that they would face additional costs associated with the health and safety changes and more than 90% reported that although they were aware of the new changes they were unprepared for their implementation.

Retail

The Scottish Retail Sales Monitor conducted by The Scottish Retail Consortium and KPMG reported that total Scottish sales decreased by -3.1% in May 2015 compared to May 2014 when they had decreased by -1.6%. Additionally footfall in May was -1.8% lower than May 2014 and also down on the 1.1% increase in April this year. The report indicated that like-for-like sales decreased by -2.1% in May 2015 compared to May 2014 with food sales declining by -2.1 and non-food sales by -3.9%.

The Scottish Chambers Quarterly Business Survey reported that business optimism in the wholesale/retail sector returned to positive territory following a spell of negative balances in 2014. A net balance of 3% of firms reported a rise in sales, a significant improvement over the same quarter of 2014 (-19%). Investment figures were fairly strong with fewer than 10 reporting downward trends in either capital or training investment. Employment trends, on balance, declined for a net balance of 3% however most firms (71.1%) reported no change. 39% of firms actively sought to recruit compared to 23% last year. Future expectations of sales revenue and profits remain strong.

Tourism

QEI firms reported that net balances in the tourism sector generally remain in positive territory although the rate of increase has slowed since last year. A net balance of 7% of hotels reported an increase in optimism in Q1; lower than the +21% of the previous quarter and the +28% in Q1 2014. A net balance of 9% of Scottish hotels reported a rise in the total number of customers/guests during Q1 (the lowest rate Q4 2013 and also lower than the +21% reported in the same quarter of the previous year). Overseas visitors increased on balance whereas rest-of-UK visitors declined by a net % balance of -4. Investment expenditure increased during Q1 2015, with a net % balance of +22% reporting increased investment expenditure, and 40% of businesses increasing investment did so in order to expand capacity. Almost half of hotels decreased their average room rate, therefore despite the overall increase in customers & guests, a net balance of hotels reported a decline in both sales revenue and profits.

Outlook

This latest set of Scottish business surveys continue to show a more cautious outlook, with many trends being well below the recent near record highs; but they still remain positive. Many expectations suggest that economic activity will increase, albeit at a more modest pace in 2015. Expectations for 2015 are generally higher than their pre-recession levels but more and more firms are expressing a degree of caution reflecting an increasing uncertainty caused by a slowing in the world economy.

Fewer businesses are as confident about their prospects as they were last quarter. Inevitably the UK General Election caused a degree of uncertainty in the economy with many of the surveys conducted during the pre-election period. Another reason for the easing of trends could be because the euro has only appreciated slightly despite the uncertainly (and potential impact) of the current situation in Greece. However notwithstanding this, overall expectations remained at a very good level. Slow growth in the Eurozone, rising sterling prices plus restrained growth in the global economy, has clearly affected Scottish exporters However on a more positive note, the fall in oil and other commodity prices should help ease businesses' cost pressures and, by boosting consumer incomes, help boost economic growth.

In conclusion, recent Scottish business surveys show that firms remain broadly upbeat about recent and near future business prospects with many trends still rising albeit more slowly than in recent quarters. . Though the pace of recovery may be slowing and the degree of uncertainly in both the UK and the rest of the global economy is having an effect on Scottish businesses, expectations remain at or above pre-recession levels

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4 Scottish labour market

Andrew Ross, Fraser of Allander Institute

This section provides an overview of key labour market data in Scotland and contrasts these with both UK performance and changes over time. These data are from a range of the latest labour market data available for Scotland and the UK, to April 2015. The Scottish unemployment rate stands at 5.9%, above the UK rate of 5.5%. The employment rate in Scotland is 74.4%, with the UK figure 73.4%. Growth in employment is still sustained by part-time workers and self-employment. Full-time employment, however, has started to gain momentum.

Recent trends and statistics

The latest comparable figures on the labour market for Scotland and the United Kingdom are summarised in Table 1. Labour Force Survey (LFS) data show that in the quarter to April 2015 the level of employment in Scotland rose by 14 thousand, to 2,624 thousand and over the year by 53 thousand. For the same period, UK employment rose by 114 thousand and 424 thousand respectively. The Scottish employment rate (16 – 64) – i.e. those in employment as a percentage of the working age population – was 74.4%, up 1.2% from one year earlier. For the same period the UK employment rate was 73.4%, up 0.7% compared to a year earlier. Scottish unemployment, in the quarter to April 2015, increased by 1 thousand to 163 thousand, a fall of 19 thousand over the year. The unemployment rate fell in the months to April 2015 and now stands at 5.9%. The comparable unemployment rate for the UK stands at 5.5%.

Table 1: Headline indicators of the Scottish and UK labour markets, February – April 2015

		Scotland	Change on quarter	Change on year	United Kingdom	Change on quarter	Change on year
Employment*	Level (000s)	2,625	14	53	31,053	114	424
	Rate (%)	*74.4*	*0.4*	*1.2*	*73.4*	*0.1*	*0.7*
Unemployment**	Level (000s)	163	1	-19	1,813	-43	-349
	Rate (%)	*5.9*	*0.0*	*-0.7*	*5.7*	*-0.1*	*-1.1*
Inactivity***	Level (000s)	711	-15	-21	9,016	-10	60
	Rate (%)	*20.8*	*-0.4*	*-0.6*	*22.2*	*0.0*	*0.1*

Source: *ONS Labour Market Statistics, Scotland and UK, June 2015.*
Notes: ** Levels are for those aged 16+, while rates are for those of working age (16-59/64).*
*** Levels and rates are for those aged 16+, rates are proportion of economically active.*
**** Levels and rates for those of working age (16-59/64).*

Note: In considering employment, activity and unemployment rates it is important to remember the bases and relationships of these figures. LFS data (estimated) is provided for: (1) all aged 16 and over and (2) for all aged 59/64. The first measure (all aged 16 and over) leads to higher numbers in employment, in the total economically active and economically inactive – but reduces the economic activity rates and unemployment rates, but at the same time increases the economically inactive rate. Conversely the second measure (all aged 16 to 59/64) leads to lower numbers economically active, in employment and economically inactive – but leads to a higher economically active, employment and unemployment rates but lower economically inactive rates. See Scottish Parliament Information Centre briefing on Scottish labour market statistics:

https://www.scottish.parliament.uk/parliamentarybusiness/70894.aspx

The relationships between employment, unemployment, total economically active and inactive are important in discerning the reaction of the labour market to overall economic conditions. It is important to appreciate that changing levels of employment and unemployment, and changes in employment rates should be seen in conjunction with changes in activity rates. For example, if people leave employment and become unemployed (i.e. are actively seeking work they remain economically active) the unemployment rate will increase, but the rate of those economically active will remain unchanged.

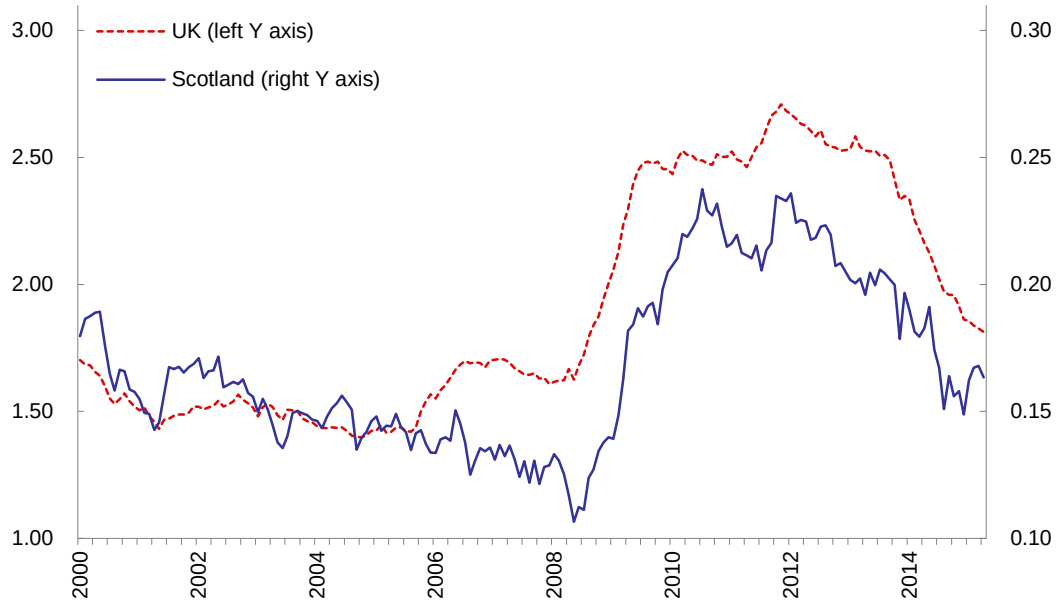
However, if people leave employment and do not seek further employment, as seems to be a continuing pattern, they are then categorised as economically inactive, and as such the unemployment rate will remain unchanged, whilst the activity and inactivity rates will change. Equally, the changing pattern between full and part time employment is of interest as we uncover how the labour market is reacting to the overall economic conditions. We return to this issue later in this section.

Figure 1 illustrates the trend in unemployment in Scotland and the UK since 2000. Between 2000 and 2014 unemployment in Scotland was at its lowest (106 thousand) in March – May 2008, immediately preceding the worldwide financial crash and the subsequent Great Recession.

In contrast, unemployment was at its lowest (1,396 thousand) in the UK beween August – October 2004. The highest number of unemployed in Scotland was in the period May – July 2010 (237 thousand) and in the UK in the period from September – November 2011 (2,708 thousand). Unlike the pattern of previous recessions, unemployment has fallen in Scotland (and the UK) more rapidly than expected to just below 150 thousand, reflecting in part the more rapid rise in part time and self-employment (see Figure 2 and Table 5) and the development – temporary or permanent – of a more flexible labour market.

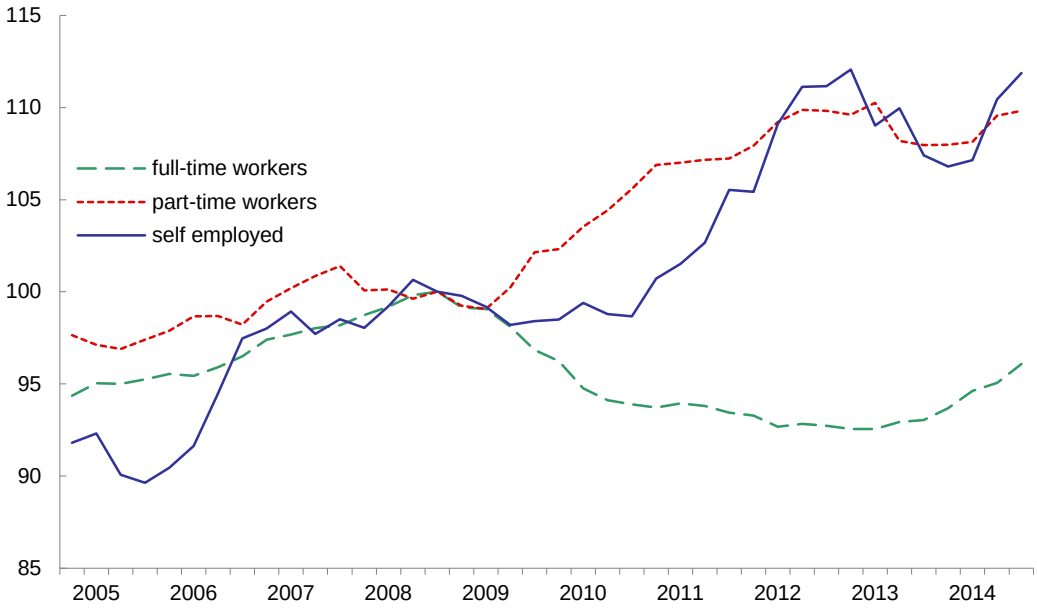
Figure 2 illustrates how the employment ‘recovery’ continues to be driven by an increase in part time work and self-employment. Growth in full-time workers remains subdued but has started to gain some momentum since 2014. However, a strong, sustained, and balanced recovery in the labour market requires a more robust growth in full-time workers.

Figure 1: Unemployment (in millions) in Scotland and the UK 2000 – April 2015



Source: *ONS Labour Market Statistics, Scotland and UK, June 2015.*

Figure 2: Index of full, part time and self-employment in Scotland, January 2004 – December 2015



Source: *ONS Labour Market Statistics, Scotland, June 2015.*
Notes: *Index - October 2007 – September 2008 = 100.*

The economically active workforce includes all individuals actively seeking employment and those currently in employment (i.e. self-employed, private sector and government employed, unpaid family workers and those in training programmes). Between February – April 2015 the number of economically active (16+) in Scotland increased by 5 thousand, and the activity rate increased by 0.3% to 63.6%. There were 2,788 thousand economically active in Scotland during that period. This comprised 2,624 thousand in employment (2,541 thousand aged 16–64) and 163 thousand ILO unemployed. The level for those of working age but economically inactive decreased by 10 thousand over the latest quarter, and decreased by 15 thousand (-0.9%) over the year to 1,592 thousand.

The economic inactivity rate for men aged 16 – 64 increased by 0.9% over the year, and decreased by 2.1% for women over the year to April 2015. In the year from January 2014 to December 2015 the key components of change in inactivity were more students, up by 5 thousand; fewer people looking after family members and/or home, down 1 thousand; retirees, down 2 thousand; long-term sick, down 17 thousand; and those temporarily sick down 1 thousand. Though the majority of the inactive (578 thousand) did not want a job, a third (191 thousand) did want employment.

Data on employment by age, derived from the Annual Population Survey, is available up to January – December 2014. Table 2 illustrates the changing employment rates by age group from January 2006 onwards. In the year to December 2014, employment rates decreased for the youngest age group (16-17) by -2.2%. All other age groups saw an increase in employment rates. The largest increase in the employment rate was in the age group 35-49 (+3.1%), followed by that of the age group 25-34 (+2.2%). The employment rate for all workers aged 16 and over increased by 1.4% over the year to December 2014 to 58.6%.

Table 2: Employment rates (%) by age, Scotland January 2006 – December 2014

(In %) Oct-Sep.	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Dec-13	Dec-14
All 16+	60.4	60.5	60.2	58.9	58.0	57.4	57.3	57.4	58.6
16 - 64	73.7	73.9	73.6	72.0	71.0	70.5	70.5	70.8	72.6
16 - 17	43.3	38.9	40.6	34.2	32.0	30.9	29.8	26.8	24.9
18 - 24	68.5	69.0	66.2	63.9	61.6	60.0	58.9	59.0	60.1
16-24	63.1	62.6	60.7	57.6	55.5	54.2	53.2	52.6	53.2
25 - 34	80.4	81.4	81.1	79.6	78.1	79.0	78.9	78.8	81.0
35 - 49	83.8	83.5	83.2	81.9	81.6	80.9	81.5	81.8	83.5
50 - 64	63.7	64.4	65.2	64.5	64.1	63.6	63.9	64.9	67.4
65+	5.4	5.7	5.9	6.4	6.6	6.4	7.6	8.2	8.4

Source: *ONS Labour Market Statistics, Scotland, June 2015.*
Note: *Denominator = all persons in the relevant age group.*

Total workforce job figures are a measure of jobs rather than people. Total seasonally adjusted workforce jobs in Scotland for March 2015 (the latest available figures) stood at 2,704 thousand, (i.e. 2,405 thousand employee jobs, 286 thousand self-employed jobs, HM forces and supported trainees 14 thousand). Table 3 indicates the sectoral breakdown and provides some indication of both the impact of the recession and the differential recovery in jobs across sectors.

As noted above, these trends need to be considered with some caution as workforce jobs measure jobs rather than people in employment i.e. the estimates of self-employment jobs and government supported trainee jobs differ from the estimates of people in self-employment and in government supported training and employment programmes.

Table 3: Total workforce jobs by industry, Scotland, March 2010 – March 2015

Industry (in thousands, SIC07)	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
All jobs	2,570	2,631	2,630	2,591	2,665	2,704
Agriculture, forestry & fishing	62	54	50	53	67	44
Mining & quarrying	32	30	33	35	35	38
Manufacturing	187	183	192	185	183	195
Electricity & gas	20	20	17	16	17	21
Water supply, sewerage, waste	14	17	16	17	16	17
Construction	154	180	167	168	179	168
Wholesale & retail trade	376	378	379	373	368	375
Transport & storage	117	110	127	111	111	116
Accommodation & food service	176	171	183	176	202	202
Information & communication	67	65	73	75	70	74
Financial & insurance activities	93	97	92	87	94	87
Real estate activities	30	30	34	36	39	44
Professional scientific & technical	171	196	176	186	188	195
Administrative & support service	197	195	198	218	205	196
Public admin & defence	161	156	155	153	151	152
Education	196	213	203	195	202	222
Human health & social work	380	390	381	376	384	398
Arts, entertainment & recreation	71	85	95	71	85	86
Other service activities	60	58	58	60	67	70
People employed by households	4	3	3	2	3	3

Source: *ONS Labour Market Statistics, Scotland, June 2015.*
Notes: ******* *Workforce jobs are a measure of jobs rather than people**.** There are extensive revisions from previous figures.*

The data in Table 3 suggest that the Agriculture, forestry & fishing sector has experienced a significant contraction of workforce jobs. Over the quarter to March 2015 this sector has seen a decrease of 7 thousand (-14% change) workforce jobs. This is a 23 thousand (-34.5% change) decrease over the year.

Table 4 outlines the changing patterns of full time and part time employment. The latest data indicates that from January 2014 to December 2014, the number of employees increased by 55 thousand (2.5%), and the numbers of self-employed increased by 14 thousand (4.8%). The number of part-time workers increased by 19 thousand (2.8%) over the year, and the number of temporary employees increased by 1 thousand (0.8%).

Table 4 also indicates that the numbers of full-time workers in Scotland increased by 52 thousand (2.9%) over the year from January 2014 to December 2014. Part-time employment numbers have grown through the recession, and have increased by 19 thousand over the year to December 2014.

The number of those working part-time because they could not find a full time job is 112 thousand, a decrease of 10 thousand (8.1%) over the year to December 2014. The number of people who cannot find a full-time job is still almost double that of the pre-recession numbers. This reflects continuing issues in the wider economy.

Table 4: Trends in Scottish employment statuses, January 2007 – December 2014

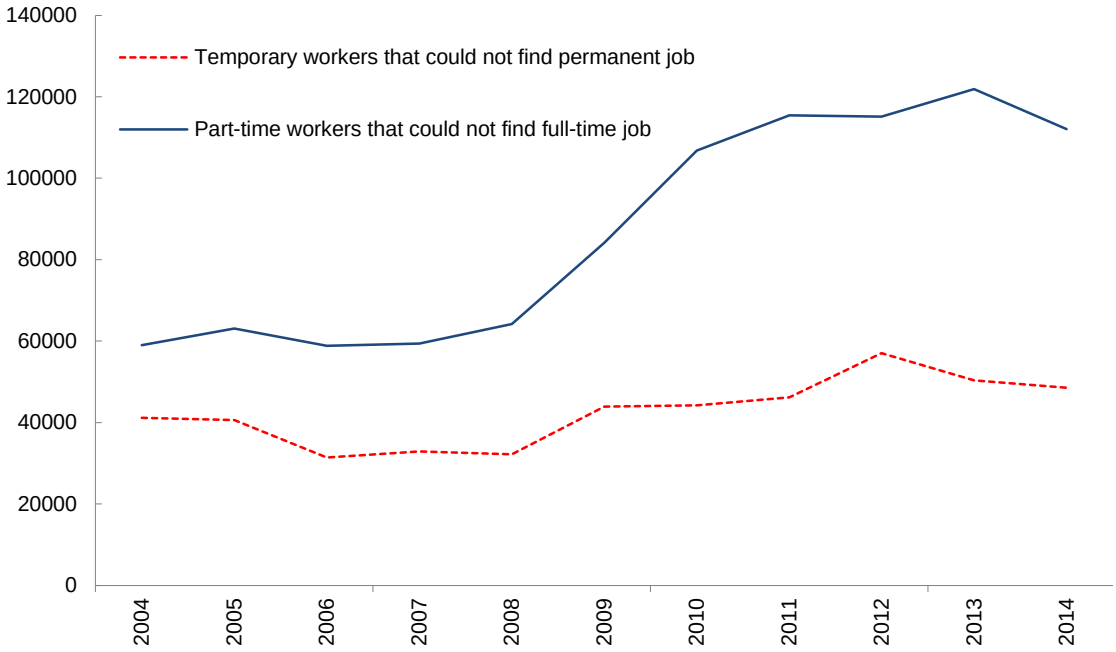
All in employment (in thousands)	Dec-07	Dec - 08	Dec - 09	Dec-10	Dec-11	Dec-12	Dec-13	Dec-14
Employees *	2,247	2,248	2,215	2,189	2,178	2,159	2,182	2,237
Self-employed *	264	269	265	271	284	302	288	301
Full-time workers **	1,895	1,903	1,847	1,799	1,790	1,776	1,798	1,850
Part-time workers **	632	628	648	677	683	694	684	703
Workers with 2nd job	94	99	102	98	96	101	96	103
Temporary employees	128	116	132	125	123	128	134	133
Could not find full-time job	59	64	84	107	115	115	122	112
Total *	2,528	2,535	2,498	2,480	2,476	2,481	2,494	2,559

Source: *ONS Labour Market Statistics, Scotland, June 2015*
Notes: ** Includes people who did not state whether they worked part time or full time*
*** The split between full time and part time employment is based on respondents' self-classification*

Figure 3 shows the number of part-time workers that could not find a full-time job and temporary workers that could not find a permanent job from January 2004 – December 2014. Given that recent growth in employment has largely been fuelled by part-time workers and self employment (see Figure 2) it is positive to see that the number of part-time workers that could not find full-time jobs is (ever so slightly) decreasing.

However, the remaining high number of involuntary part-time workers (112 thousand) shows that there is still significant slack in the Scottish labour market. The same, even though to a lesser extent, holds true for temporary workers that could not find a permanent job.

Figure 3: Trends in full, part time and self-employment January 2004 – December 2014



Source: *ONS Labour Market Statistics, Scotland, June 2015*

Public sector employment in Scotland continues to decline, although at a slower rate than previously. The latest data at the time of writing is for Q1 2015; it indicates that there were 546,800 employed in the public sector in Scotland, a decrease of 1,000 (-0.2%) since Q1 2014. This level is 1,300 (+0.2%) higher than in 1999, when the series began. In Q1 2015, public sector employment accounted for 20.9% of total employment, down from 21.4% in the previous year. In Q1 2015, there were an estimated 2,067,900 people employed in the private sector in Scotland, an increase of 59,400 (+3.0%) over the year. Private sector employment in Scotland accounts for 79.1% of total employment (Scottish Government, 2015).

FRASER OF ALLANDER INSTITUTE

Editorial Introduction

In this volume of the Fraser Economic Commentary we continue to mark the fortieth anniversary of Scotland's leading commentary on the Scottish economy; the **Fraser of Allander Institute** and the **Fraser Economic Commentary.** We publish Part II of the Fraser Economic Commentary Catalogue for the years 1991 – 2000. This includes all forecasts, outlook and reviews and articles published by the Commentary over the period which are now available on the Fraser Economic Commentary Digital Archive created by the Andersonian Library at the University of Strathclyde. The Archive can be searched by author, title, and key words on any search engine.

We also publish the second instalment of **Alf Young's 'Forty Turbulent Years': from recession to democratic renewal via privatisation and fading silicon dreams (1991-2000)**, a history of the Scottish economy and economic policy issues, as seen through the pages of the Fraser Economic Commentary. The concluding installment, bringing Scotland's economic story up to date, will be published in October 2015.

The Scottish economy is fundamentally part of the wider, global economy. The implications for the Scottish economy of the on-going US / EU negotiations over what is known as **TTIP, the Transatlantic Trade and Investment Partnership** is outlined by **Ian Wooton of The Department of Economics at Strathclyde Business School** and a leading international trade specialist. He provides a guide to TTIP (and its cousin TPP, the Trans-Pacific Partnership), what its aims are, how it fits into the global agreement on trade and how it might impact on the Scottish economy and individual sectors.

In 'Ageing, health status, and economic activity in Scotland: a 20 year view' Robyn Millar, Professor Sir Harry Burns and **Alec Morton of the University of Strathclyde's International Public Policy Institute's Centre for Health Policy** analyse the health and economic activity status of Scotland's population over the next 20 years. Their analysis provides further evidence of the economic value of moving toward social public expenditure prevention – in health, economic inactivity etc. – and away from the high acute spend associated with accommodating ill health, economic inactivity and home-based living for the old and the 'old, old'.

As noted in this Commentary's Scottish Labour Market overview, the changes in Scotland's labour market reflect responses to the Great Recession and its jobs aftermath. In '**Scotland's labour market, 'jobs polarisation' and inclusive growth'**, **Gail Rogers** and **Kenny Richmond of Scottish** focus on the squeeze on middle-skilled and middle-waged occupations. They note that these changes pre-date the Great Recession and have significant implications for both the scale and nature of future job opportunities and on the nature of inequality in Scotland.

Finally, with the Smith Commission now being enacted by the new UK Government, Jim Cuthbert analyses **The Barnett formula under the Smith Reforms.** He models Barnett using Holtham indexation and shows the Smith Reforms may make the Barnett formula produce untenable fiscal outcomes that will necessitate corrective action, either by Westminster (most likely) or by the Scottish Parliament. He also proposes a practical adjustment method to take account of relative changes in the rate of population growth as between Scotland the UK, to help both forestall some of its wilder fiscal excesses.

Kevin D Kane
Managing Editor, Economic Commentary
Fraser of Allander Institute
March 2015
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Economic perspectives

Fraser Economic Commentary: Catalogue of all reviews, outlooks and articles, Part 2 1991 - 2000

George Macgregor and Isobel Sheppard, University of Strathclyde

To coincide with the 40th anniversary of the Fraser of Allander Institute and the Fraser of Allander Economic Commentary, the University of Strathclyde Andersonian Library has completed the necessary work to create a fully annotated and accessible digital archive of entire Fraser of Allander Economic Commentary, 1975 - 2015. The archive is the single most complete, publically accessible archive of detailed analyses and commentary on Scotland's economy and economic development from 1975 to the present day. The archive includes all economic forecasts, Scottish, UK and international outlooks plus all articles published by the Fraser Economic Quarterly (1975 - 2007) and then the Fraser of Allander Economic Commentary (2008 onwards).

The archive is available at ***Strathprints*** *(*http://strathprints.strath.ac.uk/*)*, the digital repository of research publications of the University of Strathclyde. Articles can be searched using the Strathprints search interface. All articles are also discoverable by searching your favourite Web search engine. If required, greater specificity in searching Strathprints from your favourite search engine can be achieved by using the following syntax:

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Scottish financial sector site:strathprints.strath.ac.uk
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Where `Scottish financial sector` is the search query and `site:strathprints.strath.ac.uk` specifies which Web domain is to be searched by the search engine (i.e. strathprints.strath.ac.uk).

Browsing is often preferable when perusing an archive for possible items of interest and a list of all articles published under the Quarterly Economic Commentary and Fraser of Allander Economic Commentary is therefore also available from Strathprints.

The following is Part 2 of a three-part catalogue of the entire archive. This catalogue covers the period from Vol. 17 No. 2 (1991) to Vol. 25 No. 4 (2000). Each substantive part of the Commentary, including all international, UK and Scottish outlooks and analyses plus all published articles are included in the catalogue. The catalogue provides the item / article title, its author/s and the Commentary volume and number.

As of June 2015, the entire digital archive of the Fraser Economic Commentary is available via Strathprints. Please note all items and articles have full abstracts plus keywords to better enable them to be located by researchers.

Part 3 of the Fraser Economic Commentary catalogue, for items from 2001 (Vol. 26 No. 1) to present (Vol. 40 No. 1), will be published in the forthcoming October 2015 edition of the Fraser of Allander Economic Commentary as part of the full catalogue.

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A finance policy for Scotland	Dow, Sheila C.	1991	17	2
A sketch of the economic consequences of the Gulf War	Hallett, A H; Ma, Y	1991	16	3
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Agency restructuring in the Highlands and Islands : a preliminary evaluation of the Local Enterprise Companies	Black, Stuart	1993	18	3
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Telecommunications in Scotland : auditing the issues	Taylor, J. A.; Williams, H.; McLeod, B	1993	18	3
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Local enterprise companies in the Highlands and Islands : further responses to the enterprise network	Black, Stuart	1994	19	4
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The ERM, Sterling depreciation and Scottish industry : effects on company costs	Struthers, John	1994	20	1
The Scottish housing market : past, present and prospects	MacRae, D J R; Bell, J	1994	19	4
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Transport and tourism in the Hebrides : the impact of ferry improvements on tourism in Mull	Jackson, Tony; Lynch, Bill	1994	20	2
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Forty turbulent years: How the Fraser Economic Commentary recorded the evolution of the modern Scottish economy

Part 2: From recession to democratic renewal via privatisation and fading silicon dreams, 1991 – 2000

Alf Young

Abstract

The recent economic history of Scotland, its performance and place within the UK and international economy can be traced through the pages of the Fraser of Allander Economic Commentary. Created in 1975 by a private bequest from Sir Hugh Fraser, a prominent Scottish businessman, the Fraser of Allander Institute has provided a continuous commentary on the economic and related policy issues facing Scotland over the period. In this the fortieth anniversary of the Fraser of Allander Institute, this is the second of three articles which chart Scotland's transformation from an economy significantly based on manufacturing (and mining) to one that saw rapid deindustrialisation (in terms of output), the discovery of oil and the rapid transformation of its business base with the impact of both merger and acquisition (M&A) activity as well as the varied impacts of successive governments' industrial and regional policies.

For the UK as a whole, the recession foreseen by Dr John Hall, TSB Scotland's Treasury Economist, at the end of part one of this series, duly arrived. The Lawson boom of the late eighties had pushed inflation close to 10%. As chancellor, Nigel Lawson had tried to persuade Margaret Thatcher to take sterling into the European Exchange Rate Mechanism (ERM). All he managed was an informal shadowing, by value, of the Deutschmark. With the UK economy embarked on an unsustainable credit boom, interest rates hitting 15% and an inflationary wage spiral in full swing, it was left to Lawson's successor as chancellor, John Major, to persuade an increasingly-beleaguered prime minister to formally join the ERM, in October 1990, However a day - or rather, days - of reckoning still beckoned. Thatcher herself was ousted by her own party within weeks, with Major taking her place. The ERM experiment lasted less than two years, sterling crashing out under speculative pressure, on Black Wednesday, September 16, 1992. With commendable Scottish understatement, the then-chancellor, Norman Lamont, confessed it had been a "difficult day".

In the first Fraser of Allander Economic Commentary of 1991, editor Jim Love noted "As late as November the Government was still denying there would be a recession, despite the mounting evidence to the contrary. The GDP figures for the third quarter of 1990 and provisional figures for the fourth quarter removed any lingering doubt." (Vol. 16, No. 3) In previous recessions, the Scottish economy had taken its full share - sometimes more - of the resultant pain. And this time one of the last remaining mainstays of Scottish heavy industry, the Ravenscraig steel works in North Lanarkshire, was already under threat. In May 1990 British Steel had announced its intention to close the hot strip mill at the plant

in the first half of 1991. By the end of 1991 it went on to tell horrified Scottish ministers the rest of the complex, including its giant furnaces, would close too, in January 1992. Yet despite what was happening to Scotland's biggest steel plant, Jim Love questioned whether this recession would hit Scotland as hard as the rest of the UK. While recent evidence did not "inspire much optimism", there were reasons for believing any falls in output north of the border were "unlikely to be of the scale experienced in the UK as a whole". Lower levels of borrowings by Scottish consumers left them more immune to high interest rates. Scotland had some export-intensive industries, like the burgeoning electronics sector in Silicon Glen, which were still enjoying growth in overseas demand. And the North Sea was going through a mini-boom in the wake of the first Gulf War.

Love's contrarian prediction proved a shrewd one. For the UK as a whole the 1990/91 recession proved shallower than those of the mid-1970s and early 1980s. Overall, output contracted by 2.4% over five quarters and took twice that time to recover that loss in full. Yet, despite Ravenscraig's fate, the Scottish economy barely contracted at all. Another manufacturing sector, that cluster of modern electronic assembly plants, collectively known as Silicon Glen, was booming. Between the first quarter of 1991 and the first quarter of 1998 its collective output tripled. In part that was down to growing capacity, as more American, Japanese and other overseas corporations were persuaded to invest in Scotland.

But Silicon Glen's competitiveness in these new digital export markets was also helped by the sharp depreciation of sterling that followed the UK's abrupt departure from the ERM. The Fraser commentary had sensed that prospect too. "One of the expected effects of ERM entry is to remove the 'easy option' of maintaining competitiveness by devaluation, and the government sees this as a means of imposing discipline on firms to keep costs - especially wage costs - down," wrote its editor at the end of 1990. "Entering the ERM at a fairly high rate and at a time of rising unit labour costs was bound to put a great deal of pressure on manufacturing industry, particularly those sectors geared towards exports which are crucial to in providing an outlet for UK-produced goods at a time of faltering domestic demand. In the long-run the entry mid-point level of DM2.95 may prove unsustainable." (Vol. 16, No. 2)

While Scotland's economy, as a whole, emerged relatively unscathed from the early 1990s recession, its two biggest banks were not so fortunate. Injudicious lending at both the Royal Bank of Scotland and Bank of Scotland undermined profitability. Bank of Scotland had recorded pre-tax profits £194m in 1990. These fell sharply to £134m the following year before recovering marginally to £141m in 1992. In 1993 they fell again to £125m. Its larger rival, RBS initially took a much more serious hit. Profits of £262m at the start of the decade fell 78% to £58m in 1991 and collapsed a further 64% to just £21m in 1992. By 1993 RBS profits had rebounded to £265m. The Fraser commentary was alert to the dangers. "Fuelled by poor lending decisions and consequent bad debts, the banks have an urgent need to cut costs if they are to restore profitability. The bad debts, although severe, do not appear to threaten the existence of the companies at present but they must inevitably raise questions about how banking is organised in the UK." (Vol. 18, No. 2)

Indeed RBS was already well embarked on an internal revolution in how it did business. George Mathewson, an expatriate engineer by training who had been running the Scottish Development Agency since 1981, had joined the Royal in October 1987 as director of strategy and development. By 1992, surrounded by a hand-picked group of former SDA colleagues he had taken with him, Mathewson was the Royal's chief executive, implementing Project Columbus to root out the banking "dead wood" he

thought was clogging the Royal's decision making. Over at Bank of Scotland another unconventional banker, Peter Burt, who had started his business life in the computer industry, was taking over the leadership role. By the end of the decade these two men would lock horns over which of their banks would acquire the English clearer NatWest. The first seeds of what would eventually become the biggest banking crisis in UK banking history were already being sown.

The SDA Mathewson left behind in 1987, to sort out RBS, was also approaching its political endgame. As we saw in Part 1, in 1988 Bill Hughes, a Scottish businessman with the ear of Margaret Thatcher, had proposed a much more balkanised model of economic development for Scotland, integrating skills training, stressing enterprise and innovation, and giving business people a much more powerful, localised voice in how the state helps grow an economy. Scottish Enterprise (SE), with its network of local enterprise companies (LECs), and its similarly configured northern counterpart, Highlands and Islands Enterprise (HIE), which replaced the even older Highlands and Islands Development Board, first opened their doors at the beginning of April 1991. The man recruited to head SE was an ex-patriate Scot from California's Silicon Valley, a human resources specialist called Crawford Beveridge.

In the pages of the Fraser commentary, the advent of SE was greeted with plenty of healthy scepticism, notably from Neil Hood, Professor of Business Policy at Strathclyde Business School. (Vol. 16 Nos. 2 and 3) Hood was also an insider who had been Director of Locate in Scotland from 1987-89 and then Director of Employment and Special Initiatives, SDA during the run up to its merger with the Training Agency in Scotland and the launch of SE. He was concerned that, while in principle the SE core had been given a strong strategic role by ministers, the way its relationship with its network of 13 business-led LECs developed in practice could leave it "strong and powerful" or "weak and impotent". That SE core, he argued, should continue to be recognised as "a national development agency in it own right". Were it to become either a channel through which more localised funding and support was negotiated, or simply a facilitator of the work of the LECs, any strategic benefits from the reforms would soon be "frittered away".

There were plenty of early tensions between the SE core and its LEC network. In another contribution to the commentary, Keith Hayton of Strathclyde's Centre for Planning considered the local development pressures resulting from British Steel's decision to close down its Ravenscraig site. Hayton cited one estimate of the funds needed by Lanarkshire Development Agency's Chief Executive. It came to £650m spread over ten years! SE's entire annual budget at the time was around £420m. "It is difficult to see funding on this scale being provided," he observed. "A more likely scenario is that money will be diverted from the other LECs' budgets. It may be that those LECs that have below average unemployment levels will be particularly at risk." (Vol. 16, No. 3) The more prosaic reality is that, more than twenty years after the event, much of the Ravenscraig site has yet to be redeveloped.

Even in its formative years, under Crawford Beveridge's leadership, Scottish Enterprise did manage to pursue some bold new national strategic goals. Swopping California for the west of Scotland, Beveridge quickly grew concerned about the relatively low rate of new business formation in his homeland, even compared with other parts of the UK. In 1993, at his instigation, SE launched its Business Birth Rate Strategy, designed to close that yawning enterprise gap. A whole suite of interventions were launched - from personal enterprise shows to new materials to support enterprise education in schools; new business network groups and funding forums; a higher education entrepreneurship programme and

mentoring support. The strategy had a target of helping create 25,000 new start-ups by the end of 1999. However when the Fraser of Allander Institute was commissioned to review the Strategy's impact over those seven years, it estimated the number of additional start-ups achieved was just 2124. At a cost of some £20m a year, the strategy had eaten up some £140m. And over its life, Scotland's business birth rate had actually fallen from 30.4 per 10,000 of the adult population (using VAT registration data) in 1993 to just 27.5 by 1999.

The political rationale behind creating Scottish Enterprise's devolved, business-led structure was that it would deliver better Scottish solutions to distinctively Scottish problems. However even Conservative governments of the 1980s and early 1990s could not resist the lure of prestigious international projects that promised large numbers of skilled jobs. Health Care International, a £180m private hospital, built on derelict industrial land on the north bank of the River Clyde between Clydebank and Dalmuir, was the showpiece project of that type, when it opened in June 1994. The brainchild of two Boston-based doctors, Ray Levey and Angelo Eraklis, the 260-bed HCI offered advanced medical treatments to patients from southern Europe, North Africa and the Middle East. Costs would be met by their own health systems or out of their own pockets. The complex incorporated a four star hotel so that relatives could travel to Scotland to be with patients. The project had started under the old SDA which spent £7m clearing asbestos and other pollutants from the site. SE invested in the hospital, alongside its builder, John Laing, British Aerospace, an investment arm of Harvard University and a consortium of Dutch, French and UK banks (including Scotland's RBS).

Less than three months after its official opening, at least one of HCI's banks (IMG) was already very nervous. Only 400 of the promised 1800 jobs had been created. Patient numbers had fallen even more dramatically behind forecasts. Peak bed occupancy at that stage barely topped twenty. The Scottish Office and the Bank of England cracked the whip and support payments, from public sources and from the banking consortium, were accelerated. But to no avail. By November 1994 HCI had called in the receivers. In early 1995, the assets were acquired by the London-based Abu Dhabi Investment Company and the hospital relaunched with fresh investment and a plan to treat a steady stream of patients from the Emirate. But even this intervention, involving a son of Abu Dhabi's crown prince, did not resolve HCI's destiny. Increasingly it was used to treat urgent NHS cases from across the UK. In 2002 it was acquired outright by NHS Scotland to help address lengthening waiting times and is now the Golden Jubilee National Hospital, specialising in heart and lung treatments, but also carrying out a significant proportion on orthopaedic procedures for NHS patients from across Scotland.

What happened to HCI in the 1990s - a state-supported private health care initiative being turned on its head, through abject market failure, into much-needed additional capacity for Scotland's domestic state-provided health service - ran completely counter to what successive Conservative governments thought they were about at that time. Privatisation of state assets and utilities was one of the defining drivers of the Thatcher and Major years. British Telecom and British Gas were sold to the public in 1984 and 1986 respectively. British Airways and water supply, in England and Wales, were disposed of too. While the HCI hospital was being built it was still full steam ahead on privatisation. In 1991 the Scottish Bus Group was privatised. At the beginning of 1993, the process of breaking British Rail up started, replacing it with a track, signals and stations operator; a series of privatised regional train operating companies, including

ScotRail; and three rolling stock leasing companies. the first of these three groups, Railtrack, was effectively renationalised after the Hatfield Rail Crash in 2000 and is now Network Rail.

In 1991 along with the rest of the UK electricity supply industry, shares in Scotland's electricity suppliers were offered to the public. However there was room for a specifically Scottish solution for those parts of the network operating north of Hardian's Wall. Both the South of Scotland Electricity Board (SSEB) and the North of Scotland Hydro-Electric Board were privatised as vertically-integrated businesses - Scottish Power and Scottish Hydro-Electric respectively - controlling everything from generation and transmission to distribution and supply in their designated areas. Only SSEB's nuclear assets were ring-fenced from the sale, later to be merged into British Energy and sold to the French utility EDF. In England and Wales the old Central Electricity Generating Board was broken up into four - a National Grid company, responsible for the entire high voltage transmission system south of the border and three electricity generators, National Power, Powergen and Nuclear Electric (later British Energy). In addition twelve regional electricity companies were created, responsible for distribution and supply in their areas.

Even before the privatisation process was complete, the commentary was noting (Vol. 15, No.4 and Vol. 16, No.1) that both Scottish companies had much to gain by exporting more of their excess power south and exploring new collaborative generating opportunities and commercial supply deals there too. As the post-privatisation environment matured, both Scottish companies exploited their integrated structure to acquire regional supply companies over the border and develop their generating capacity there too. Hydro-Electric, now SSE, after its 1998 merger with Southern Electric, remains a listed company, headquartered in Perth. Scottish Power was acquired by the Spanish group Iberdrola in 2007. Like all their main competitors, SSE and ScottishPower now supply gas as well as electricity. Today, of the six biggest players, two are German-owned, one French and one Spanish. Only SSE and British Gas (owned by Centrica) remain in UK ownership.

What happened to the electricity sector through privatisation has left one competitive wrinkle, causing tensions to this day. National Grid still owns the high-voltage network south of the border. Under BETTA (the British Electricity Trading and Transmission Arrangements), it is also the system operator for the entire UK-wide high-voltage grid. In effect it regulates flows of electricity around the whole UK and the terms under which these flows take place. However National Grid is a major commercial player in that market, just like SSE and Spanish-owned Scottish Power, who still own and operate their own parts of the high-voltage wires in Scotland. So when it comes to moving away from fossil fuel generation towards greener forms of generation (most notably onshore wind) there is growing political tension.

Scotland wants to export as much green electricity south as it can. But its own baseload generating capacity is diminishing, now that Scottish Power is closing its massive coal-fired Longannet station next March. And no one, not even Scottish Power or SSE, seems interested in building new base-load capacity north of the border. The SNP-controlled devolved Scottish government has an embargo on any new nuclear generating capacity here too. And now the new majority Conservative government at Westminster is talking about cutting back on subsidies for renewable generators, like onshore wind farms. The future of BETTA, which the SNP, in its 2014 Scotland's Future white paper, said it would continue to support, were Scotland to vote yes to independence, looks like becoming a growing source of political friction between Edinburgh and London over the next few years.

While the final decade of the 20th century was marked, right across the UK, by a very significant re-drawing of the boundaries between what the state could best provide and what should be vested in market competition, it was also a time of significant political and constitutional upheaval, especially in Scotland. In 1994 the Major government legislated to abolish the two-tier structure of regions and districts across Scotland, introduced in the 1970s, and replace them with 32 unitary authorities. When the new Act came into force in 1995, the vast Strathclyde Region, centred on the City of Glasgow and the Clyde estuary, was no more. Water and sewerage services were taken away from local democratic control. However in the wake of a political campaign which included a 'water referendum' organised by Strathclyde Region, the Conservative government baulked at privatising these services the way it had in England and Wales. Instead three public water and sewerage authorities were created, covering the west, east and north of the country. In 2002 these would be merged into a single body, Scottish Water, created by an act of the new devolved Scottish parliament.

Against all the predicted odds, the Major government had retained power in the 1992 UK general election. That gave it a mandate to continue to pursue its wide-ranging programme of privatisation and advance the wholesale restructuring of the architecture of the British state. But as the next general election loomed, in 1997, there were growing signs that eighteen years of Tory rule were coming to an end. The choice facing voters was particularly acute in Scotland, where the Labour opposition, now under Tony Blair's leadership, was committed to holding another referendum on Scottish home rule and - if it proved to be the settled will of the Scottish people - the creation of a devolved Scottish parliament in Edinburgh for the first time since the Act of Union in 1707.

A month before the 1992 general election, the Scottish Office published, for the very first time, what its press release of the time rather prosaically called a "booklet" on Government Expenditure and Revenues in Scotland. "In reading this booklet, the people of Scotland will be able to judge for themselves the extent to which Scotland derives economic benefit from being a part of the United Kingdom," explained Ian Lang, the Secretary of State for Scotland at the time. That first booklet showed total public expenditure per head in Scotland just over 12% higher than in the UK as a whole, and identifiable general government expenditure 19% higher than its UK equivalent and 24% higher than in England. On the revenue side, over the four main classes of revenue raised in Scotland - income tax, national insurance, VAT and local authority revenue - Scotland's contribution was below its population share. "In short," claimed Lang, "we contribute less than our population share to the UK Exchequer, and receive more from it."

That analysis, now known universally by its acronym GERS, has appeared annually ever since. It has been refined. Since the start it has been the work of Scottish civil servants. It has proved contentious and sometimes inflammatory fuel for the ongoing political debate about Scotland's constitutional future. A strong flavour of that controversy is evident in three linked pieces which appeared in the Fraser commentary in 1997 (Vol. 22, No. 3). The first is a comment on the SNP Budget for Scotland by the Institute's Jim Stevens. The second is a riposte by Andrew Wilson, an economist, speaking for the SNP, later a list MSP for the party in the very first Scottish devolved parliament. The final piece is an analysis of the SNP budget, which formed part of the party's manifesto for the 1997 UK general election, by Peter Wood, of the independent Scottish consultancy group Pieda. Intriguingly the pieces only appeared in the June edition of the commentary, six weeks after the votes cast on May 1 had been counted and Labour

had swept to power with a 179-seat majority. The SNP had doubled its Scottish seats tally from three to six.

Stevens based some of his analysis on the latest GERS figures. He rejected the charge that, by doing so, he was accepting “Tory fiddled figures”. That was a “puerile slur on the professional integrity of government economists”. The SNP’s view of our fiscal prospects, Stevens concluded, was “ludicrously optimistic and fatally flawed”. Oil revenues would endure for a long time “but on a declining trend and would not be sufficient to ensure that we did not have to borrow more or tax more to enjoy the same level of public services that we would have enjoyed inside the Union.” If we are to opt for independence, he went on, “It will not be an easy ride and we should only do so with our eyes wide open. Suspect and inaccurate appraisals of our fiscal prospects are about as much use in the Scottish constitutional debate .... as a chocolate fireguard.”

Wilson’s response, on behalf of the SNP, didn’t pull any punches either. He opened by recalling that, in 1970, David Simpson and Kenneth Alexander had contributed essays to an OUP book, respectively for and against the economic case for Scottish independence. Simpson was the founder director of the FAI and Alexander professor of economics at Strathclyde. Alexander was, Wilson quipped, in “the grey corner” while Simpson occupied “the sunshine corner”. Clearly the gloves were off. Scotland’s inherited fiscal position on independence, Wilson argued, “is of less importance to the economics of independence than the dynamics. It is not the starting point but what happens through time that is of greater importance.” If an independent government proved better for the Scottish economy than London government, delivering faster growth and releasing latent enterprise, then any initial fiscal deficit would quickly diminish. Stevens’s contribution to the debate was “welcome”. But it contained “unsustainable arguments couched in pejorative language.’

It was left to Peter Wood of Pieda to offer a view from outside the ring. “Few, if any, economists would dispute that Scotland would be economically viable as an independent country,” he observed. “It is quite evident that Scotland’s economy is larger, more prosperous and more soundly based than many existing independent states. However there is much less agreement as to whether an independent Scotland would be more or less prosperous than a Scotland which remained within the UK.” He went on to point out that the budget the SNP proposed involved spending increases that, by 2001, would push Scotland’s budget deficit to almost £7bn, or nearly 10% of GDP. “With some determined belt tightening in terms of reduced public spending and/or tax increases” an independent Scotland could reach the Maastricht criteria for joining European Monetary Union. Whether it might become another Celtic Tiger in the longer term was, Wood judged, “far less certain”. And the idea that independence would deliver an instant public spending bonus he dismissed as “untenable”.

The really striking thing about these exchanges, reading them again now in 2015, is how little has been resolved in this core economic argument about Scotland’s constitutional future over the eighteen years since they took place. Next year the devolved Scottish parliament and government will complete its fourth full term. We have had a referendum on Scottish independence where the yes side lost by a margin of more than ten percentage points. We have had another UK general election in which the SNP swept the board in Scotland in unprecedented fashion. The Smith Commission proposals have led to another Scotland Bill, offering more devolved fiscal powers to Edinburgh, currently being debated at Westminster. But, in tone, texture and temper, the economic arguments for and against further

constitutional change seem as entrenched and unresolved as ever they were. Even debates about the prospect of something short of outright independence - full fiscal autonomy within the existing Union - suffers from the same statistical trench warfare.

In the final years of the old century, constitutional preoccupations were more about whether Scotland would vote for the new devolved parliament Labour had promised and whether Scots would also vote to give that parliament modest powers over tax. Labour, led by Tony Blair, won its huge 1997 majority in part on a pledge of strict fiscal rectitude. Blair's chancellor, Gordon Brown, would stick, for their first two years in office, with the same tight spending plans already set by the outgoing Tory administration. Even Brown's Treasury predecessor, Ken Clarke, later admitted he didn't really think his party could have delivered on those legacy spending plans had they won. But Brown stuck with Clarke's hair shirt. In each of its first three years in office, New Labour generated increasingly large budget surpluses, thanks to that squeeze on public spending. Such budget surpluses had only happened in four other years since the mid-sixties. For the vast majority of the past half century, annual budget deficits have been the norm in the UK whoever was in power. Against that backdrop, it is no surprise that the modest fiscal powers vested in the new parliament in Edinburgh in 1999 - to vary the basic rate of income tax up or down by up to three pence in the pound - has withered unused on the fiscal vine ever since.

As the new millennium approached, did that tight squeeze on public spending have any significant impact on the real economy on terms of output and jobs? As we have seen, the 1990s had started with the Scottish economy narrowly escaping the recession that hit the rest of the UK. At the start of the decade unemployment, in both Scotland and the UK as a whole, had been on a downward trend for nearly three years. The Scottish jobless rate, while not as far adrift as it had been at the end of the 1970s, was still a full three percentage points higher than the UK equivalent. However that gap narrowed when the recession was felt more keenly south of the border. Scotland's unemployment rate even dipped below the UK rate in 1992/3 and stayed much the same until the middle of the decade. Then it began to drift higher again.

Two contrasting forces were at work. Scotland's push to attract more electronics assembly plants to its shores appeared, for much of the decade, to be paying dividends. Successive Fraser commentaries charted the way output from Scottish manufacturing plants caught up with equivalent UK output by late 1994, then to soar higher right through to the end of the decade. There's a chart on page 7 of the January 2000 edition (Vol. 25, No. 1) that captures that clear trend. However New Labour's squeeze on public spending was also having its impact, in sectors where the Scottish economy was already more dependent, in employment terms, than its southern counterpart. On top of that, there were already clear signs, despite that soaring manufacturing output, that the silicon dreams fostered in Scotland through the 1980s and 1990s might be beginning to fade.

Motorola had built a massive complex to assemble mobile phones at Bathgate which opened in 1990 and employed more than 3000 people. By 2001 it was closing down and shipping the assembly work off to cheaper host economies in eastern Europe. In 1996 the Taiwanese group Chungwha arrived at Mossend in Lanarkshire promising even more jobs, 3300, assembling cathode ray tubes. But that was yesterday's technology. The advent of flat screens changed all that and Chungwha was gone in six years. The Korean group Hyundai agreed to come to Fife to fabricate silicon chips. A hugely expensive wafer fab was built, with lots of support from Scottish Enterprise and government. But Hyundai changed

its mind. And with other established wafer fabs, like the Japanese group NEC's plant at Livingston, also closing. the Fife site never produced a single wafer. It has since been demolished.

The Outlook and Appraisal in the last Fraser commentary of 2000 (Vol. 25, No. 4) caught the mood. "The Scottish economy experienced a further contraction in output in the first quarter of the year. Growth was considerably weaker than in the UK," it noted. "The service sector exhibited no growth, while manufacturing output fell markedly..... the fall in electronics output appears to be a key reason for the overall weakness." Some in the Scottish media were already talking of another recession. The Fraser team disagreed. But with trouble in Silicon Glen, a stronger pound hitting exports and growth in public expenditure tightly constrained, the new century was starting on an uncertain note. In the final part of this series we will bring this story up to date.

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The Transatlantic Trade and Investment Partnership (TTIP): The devil will be in the detail

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Abstract

The European Union and the United States of America are currently engaged in negotiations on a comprehensive bilateral trade agreement, known as the Trans-Atlantic Trade and Investment Partnership (TTIP). According to the European Commission (2015), the resulting bilateral agreement should "help people and businesses large and small, by: opening up the US to EU firms; helping cut red tape that firms face when exporting; setting new rules to make it easier and fairer to export, import and invest overseas." Despite these ideals, the proposed agreement and the negotiations to achieve it have been subject to criticism by many people and organisations across Europe. This article attempts to shed some light on the issues and the potential benefits (or otherwise) of TTIP with a particular focus on Scottish interests.

I Introduction and background

It may be helpful to provide some background to the current negotiations. The first question that might be asked is why the US and EU, both strong advocates of multilateral negotiations, have turned to these bilateral trade talks.

Since the end of World War 2, barriers to international commerce have fallen dramatically across the globe. This has been achieved largely under the aegis of the World Trade Organisation (WTO) and its pre-1995 predecessor, the General Agreement on Tariffs and Trade (GATT). These institutions are multilateral in nature, such that that member states (currently numbering 161 countries) are required to give equal treatment to imports from all of the other members. Countries therefore set a single, "Most-Favoured Nation" (MFN) tariff (import tax) on a product regardless of its source (though countries outside of the WTO can face less-favourable access). The major advantage of multilateralism in trade negotiations is that, while larger countries generally focus on resolving trade issues between themselves, the benefits of improved market access in the resulting trade deal are extended to smaller countries. These nations would probably not have the clout to wring similar concessions out of their big trading partners on their own. Consequently small countries may be the collateral damage if large countries switch from multilateral to bilateral trade negotiations.

Bilateral trade talks are nothing new. Prior to the establishment of the GATT in 1948, trade talks would generally occur between small groups of countries. Despite the benefits of engaging in trade negotiations at a global scale, the multilateral nature of the GATT left it unable to address political and economic conditions specific to some of its member countries. Thus, almost from its inception, the GATT had to accommodate special deals arranged amongst smaller groupings of nations. Article XXIV of the GATT permits free-trade agreements amongst its members, whereby groups of countries can offer preferential access to each other's markets with tariff rates less than their MFN rates. Indeed, the strict

interpretation of Article XXIV is that the alternative to MFN is free trade and these bilateral tariffs should be zero.

Article XXIV reconciles the trading regime within the EU with its membership of the WTO. The current 28 member countries of the EU trade freely amongst themselves, with the MFN tariffs on imports only applying to goods from outwith the EU (although many of these exporters also enjoy preferential access thanks to the EU's participation in additional free-trade agreements). Equally, though more recently, the US has availed itself of Article XXIV, most notably in the establishment of the North American Free Trade Agreement (NATFA) which, though less comprehensive than European integration, allows goods manufactured by Canada, Mexico and the US to move across their borders without import tariffs.

While deeper integration in Europe is motivated by much more than mere economics, many of the other bilateral deals, including NAFTA, were in part a result of the perception that the central mechanism driving trade liberalisation, GATT/WTO, was running out of steam. In a respect, the multilateral trading system is a victim of its own success. Average tariffs have declined quite sharply, while an increasing share of the world's trade is accounted for by members of the WTO as their numbers have grown. In a respect, the earliest rounds of tariff-cutting addressed the "low-hanging fruit", products for which increasing market access did not present any great domestic concerns or political controversy. However, eliminating trade barriers on remaining products and services might be more politically charged, with strong domestic lobbies opposing further trade liberalisation. This issue might have been easier to resolve had the expansion of membership of the WTO not have also increased the diversity of the member countries. The increasing numbers and influence of developing nations has raised issues that the older membership of industrialised countries did not have to address. The larger and more diverse the membership of the WTO, the harder it has become for it to reach agreement on new trade deals. Indeed, the current, Doha Round of multilateral negotiations has been stalled for several years with little hope of an imminent breakthrough. Consequently, it is little surprise that many countries have lost patience with the WTO and have decided to pursue free-trade deals with their biggest trading partners.

II Bilateral trade agreements: the Trans-Pacific Partnership (TPP) and Trans-Atlantic Trade Investment Partnership (TTIP)

The US is seeking to develop two major bilateral trade agreements on a grand scale. Not only is it in talks with the EU over TTIP but it has been engaged in negotiations for the Trans-Pacific Partnership (TPP) for much longer. Success with the TPP negotiations would result in a trade deal with eleven other countries on the Pacific Rim (Australia, New Zealand, Malaysia, Brunei, Singapore, Vietnam, Japan plus Canada, Mexico, Peru and Chile). In order to negotiate international trade agreements, the US President has to receive Trade Promotion Authority (TPA), more commonly referred to as Fast-Track negotiating authority, from the US Congress. This delegates to the executive branch of the US government the responsibility to negotiate trade deals which are then presented to Congress for approval in their entirety, preventing them from being picked apart on the floor of the House of Representatives or the Senate. TPA expired in 2007 and trade negotiations have been conducted as is if it were in place but it will have to be renewed before either TPP or TTIP can be presented to Congress.

The Obama administration has faced an uphill battle to get Congress to agree to a renewal and at the time of writing this is still in active debate in the US Congress. In part, this difficulty in getting renewed

TPA is a reflection of the concerns regarding the specific trade deals in the pipeline. These proposed deals go beyond the conventional trade issues of tariff rates and product standards and extend into the areas of labour laws, environmental laws, Intellectual property (IP), state-owned enterprises and government procurement.

From a European perspective it is worth noting that commentators in the US view TPP as the more controversial of the two prospective trade deals. Thus, while TTIP is the focus of this article, it is worth noting briefly the opposition to TPP. The negotiations for TPP have been shrouded in secrecy (an accusation that has also been levelled at TTIP) but there have been a number of leaks that indicate where some of the opposition lies. These include objections to: Hollywood studies that wish to extend copyright protection to the life of the author plus 70 years; pharmaceutical companies that want to make it harder to introduce generic versions of brand-name drugs; and international investors who want better ways to challenge alleged government expropriation of their investments (Timothy Lee, 2015). As Paul Krugman has said on TPP: "(T)his is not a trade agreement. It's about intellectual property and dispute settlement; the big beneficiaries are likely to be pharma companies and firms that want to sue governments." (Paul Krugman, 2015).

Given this damning assessment of TPP, does the same hold true for TTIP? One popular myth can be immediately disposed. The claims of secrecy levelled against TTIP are largely unsubstantiated. The European Commission maintains a comprehensive website on TTIP objectives and negotiations (http://ec.europa.eu/trade/policy/in-focus/ttip/). Hence, what is up for discussion is not in much doubt. The gains or losses from TTIP will arise from the specifics of the agreement.

The remainder of this article will look at the current state-of–play as regards trade relations between the two economic giants, the prospects for further liberalisation and harmonisation, and the other aspects that might be included in a comprehensive trade deal.

Table 1: Shares in world trade US, EU and TTIP (2013)

Shares in world trade 2013	USA	EU	TTIP
Goods trade			
Share of world exports	8.39%	25.19%	33.58%
Share of world imports	12.33%	19.74%	32.07%
Services trade			
Share of world exports	14.25%	15.33%	29.58%
Share of world imports	9.85%	14.78%	24.63

Source: WTO, stat.wto.org

Table 1 shows the importance of the US and the EU to the world economy. Collectively, the two contribute around one third of global trade in goods and around one quarter of trade in commercial services.

Not surprisingly, both the US and EU are very important trading partners to each other, even before any bilateral agreement is reached. This is shown in Table 2. From the perspective of the USA, the EU is its 2nd-most important source of imports and destination for exports. The USA is the most important market for EU exports and is the EU's 3rd largest source of imports.

Table 2: Bilateral goods trade, EU and US imports / exports, by rank and % share, 2013

Bilateral goods trade 2013	Ranking	Share
Ranking as export destination		
EU exports for US	2	16.7%
US exports for EU	1	16.4%
Ranking as import origin		
EU imports for US	2	17.0%
US imports for EU	3	11.6%

Source: WTO, stat.wto.org

III TTIP - Trade in Goods

Given that the US and many of the constituent countries of the EU have engaged in every round of the GATT multilateral negotiations, their MFN tariffs have already been driven to low levels. Looking at the trade-weighted tariffs (averages based upon the volumes of trade in the products imported), the US imposes an average tariff of 2.1% and the corresponding average tariff of the EU is 2.6%. While the trading partners have good access to each other's market, there is room for further bilateral trade liberalisation that could have important effects for producers and consumers. The difficulty in looking at average tariffs is that they can mask high import taxes on individual products, so there may be some industries for which trade liberalisation under TTIP may have significant effects.

For many sectors of the economy, TTIP will have no direct impact. Over half of the goods traded between the US and the EU are freely traded with no tariffs. This is the case for Scotland's most famous export to the US, whisky. The US has an MFN tariff on whiskies of zero, so TTIP will not improve distillers' market access.

The tariffs are higher between the US and EU for some traditional manufactures. Both have high average tariffs on Clothing: the US charging 11.6% and the EU 11.5%. Consequently, trade

liberalisation under TTIP could make a significant difference to textile companies in Scotland if they were granted preferential access to the market in the USA.

Imports of cars into the US are subject to a tariff of 2.5%, while the EU's tariff on cars is the significantly higher rate of 10%. While there is no longer any production of cars in Scotland, TTIP could have a beneficial effect on Scottish consumers if imports from the US were not subject to the EU's MFN tariff on cars.

Establishing a free-trade area between the EU and US should allow substantially all of their products to cross the Atlantic without customs duties. But this is not as straightforward as it sounds and the gains from further trade liberalisation may be muted. The issue is to identify where goods are actually manufactured. Modern production processes often involve extended global supply chains where production takes place in different countries using inputs from a wide range of international sources. Hence, what is the "nationality" of a car that is assembled in England by a Japanese manufacturer using parts are manufactured in plants located throughout Europe and the rest of the world? There are few modern goods that could claim to be the product of a single country in every respect. The globalisation of manufacturing means that EU products are likely to have inputs from countries outside its 28 member nations while production in North America – Canada, the US and Mexico – is heavily integrated through NAFTA.

If no good can claim to be 100% from a single country, what proportion of its production has to take place within the borders of that country in order for it to be deemed to be a product of that nation? The EU and the US have to decide upon the minimum domestic content of a product that will allow them to treat the good preferentially, letting in imports from each other without charging the MFN tariff. These Rules of Origin (ROO) are quite contentious to negotiate and are expensive to monitor. Given the nature of existing trade agreements, all goods can move freely across the internal borders of the EU regardless of origin, but this is not the case for trade amongst the member countries of NAFTA. Nor will it happen even if TTIP successfully eliminates all tariffs on the products of the US and the EU. Customs inspection will still be needed to ensure that traded goods meet the ROO and can enter freely or, if they do not, are subject to the appropriate MFN tariffs.

In summary, eliminating the tariffs remaining between the EU and US will bring benefits to consumers but, given that the trade taxes are low to start with, the gains will likely be modest.

IV TTIP and trade in services

The EU's expressed goals for TTIP with respect to services trade is to ensure that EU firms are able to compete in the US on the same terms as US firms, while safeguarding public services. A successful agreement from the point of view of the EU would be one that improved access to the US market for EU businesses and professionals, achieving mutual recognition of some professional qualifications (such as for architects) and enhancing the ability of firms to get licences or formal approval to provide consultancy services (accountancy, legal, management consultancy, etc.). This will promote opportunities for suitably qualified professionals to enter new markets while ensuring that there is less contagion resulting from the activities of underqualified professionals, particularly in the light of the recent financial crisis.

Improving access in services is more controversial that liberalising trade in goods. The EU is adamant that TTIP will not involve any commitments with respect to the provision of services in sensitive areas, such as publicly-funded health, education, or social services. Nor will public authorities be forced to outsource public services that are currently produced in-house. Furthermore, EU member states will still be free to maintain any restrictions in film, television and radio to protect EU media production. This is the area where the details in the final draft treaty will be crucial in determining whether TTIP will bring benefits. TPP has already been condemned for promoting the interests of Hollywood to the detriment of local cultural industries and there are concerns that service providers in the US will be seeking to enhance their position in the EU through TTIP.

V TTIP and customs and trade facilitation

The general goal of this is to streamline customs rules and controls to make exporting easier. This would save time and money for all exporters but might have greater impact on some sectors of the economy. The task is to avoid unnecessary technical differences between the two markets, which often involves determining when standards are actually the same. When they differ, finding commons standards will reduce firms' costs in selling in foreign markets. There is, indeed, an aspiration that the standards that TTIP establishes will become the global norm, giving EU and US firms an advantage in global markets.

The fear about deepening regulatory cooperation is that the lowest standards will prevail, resulting in a detrimental impact on consumers to the advantage of large corporations. Negotiators have tried to re-assure the public that EU restrictions on, for example, genetically modified crops and hormone-fed beef are not on the table. Once again, the final draft will reveal what compromises have been reached.

Engineering goods account for around 25% of the bilateral trade volume between the US and the EU. This sector is characterised by big differences in technical regulations and the procedures used to check that products are in conformance with them. This is a particular problem given that the volumes of products traded are relatively small, meaning that the fixed costs of meeting another country's standards can have a significant impact on the firms' average costs of serving the market. Scottish companies, in particular, have a big presence in this sector and stand to benefit from successful negotiations that establish common standards on both sides of the Atlantic.

VI Issues facing SMEs

Small and medium-sized enterprises (SMEs) are at a particular disadvantage in selling into foreign markets. These are firms that employ fewer than 250 staff but account for two-thirds of private-sector employment. However, their production levels are generally so small that even small trade costs or minor differentials in product standards can create insuperable hurdles to their ability to export.

TTIP negotiations are attempting to address the problems of SMEs by making progress on removing remaining customs duties, simplifying the custom procedures, sorting out differences in technical standards, and improving the protection of firms' intellectual property rights.

One goal of the TTIP negotiations is to have the US provide a free, online helpdesk to small firms that addresses questions of doing business across the Atlantic. This may sound trivial, but it could be of

great significance to small firms that do not enjoy access to the consultants and advisors at the beck and call of larger firms (and would mirror a similar facility offered by the EU).

VII Conclusions

Much of the proposed TTIP treaty is uncontroversial in promising to lower the remaining barriers to trade in goods and services that prevent consumers from benefitting from the variety of goods and services that are available on both sides of the Atlantic. We are looking at two of the world's largest trading partners taking the opportunity to deepen their trading relationship and this should provide dividends to firms and consumers on both sides of the Atlantic. It may even have knock-on effects and reinvigorate the multilateral negotiations within the WTO.

For Scotland, TTIP has some clear implications. If successful, TTIP may create opportunities for the textile and engineering sectors by way of reduced clothing tariffs and an agreement on common technical standards. Further trade liberalisation in services may have positive impacts for Scotland's important financial services sector, while any decrease in red-tape and other regulatory burdens may help more of Scotland's SMEs to enter the US market. However, TTIP will have little or no impact on perhaps Scotland's most iconic export, Scotch whisky, given that it already benefits in the US market from a zero-rated Most Favoured Nation (MFN) tariff.

As noted, the caveats are largely in the realm of the non-traditional areas of trade agreements, where TTIP might be used to force the partners to accept standards or behaviours that are unpalatable to their citizens. However, the EU is clearly aware of these issues. The question remains as to whether EU negotiators are able to provide a sufficiently robust defence of European wishes and values.

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Ageing, health status, and economic activity in Scotland: a twenty year view

Robyn Millar, Sir Harry Burns, Alec Morton

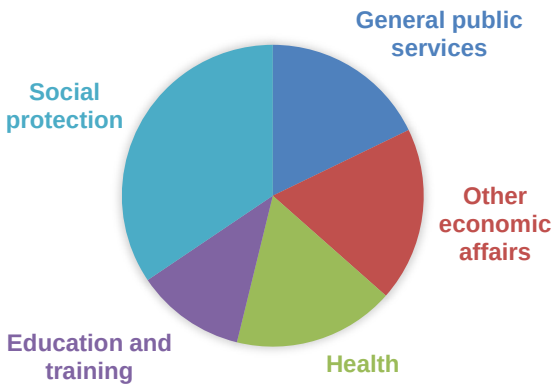
Abstract

Countries worldwide face the economic and public expenditure challenges of an ageing population. However, ageing per se is but one part of the challenge. The forecast for Scotland's population health and labour market status will further impact on the scale of required public spending – in health and social protection - as well as on the base of those who are economically active and capable of bearing the scale of such expenditure (by way of taxation). This analysis points to the value on the public expenditure side of early health, education and social protection interventions to reduce future forecast expenditure in health and social protection. On the revenue raising side, it points to the need to expand Scotland's future effective working age population by way of reducing those considered NEET, expanding female and post age 65/67 labour market participation, and of attracting new working age migrants to Scotland.

I Introduction and background

Scotland, like many countries worldwide, faces a future of dynamic demographic change (Scottish Government, 2010), amid recovery from economic crisis and the Great Recession. The latter has thrown into sharp relief the uncertainty over the future level – and nature - of public spending. This is now an increasing matter of public concern and debate and it is becoming ever more important to analyse how and why public spending might change in the coming decades. In this paper we survey some of the key variables which will drive future public spending levels in Scotland and discuss appropriate policy responses.

Figure 1: **Total Managed Expenditure 2012/2013 (Scottish Government, 2014b)**



Changes in the size and age structure of the population will have particularly important implications for economic growth performance, the demand for public services, and overall levels of public spending in coming years (Scottish Government, 2010). As such, the future size and age structure of the population

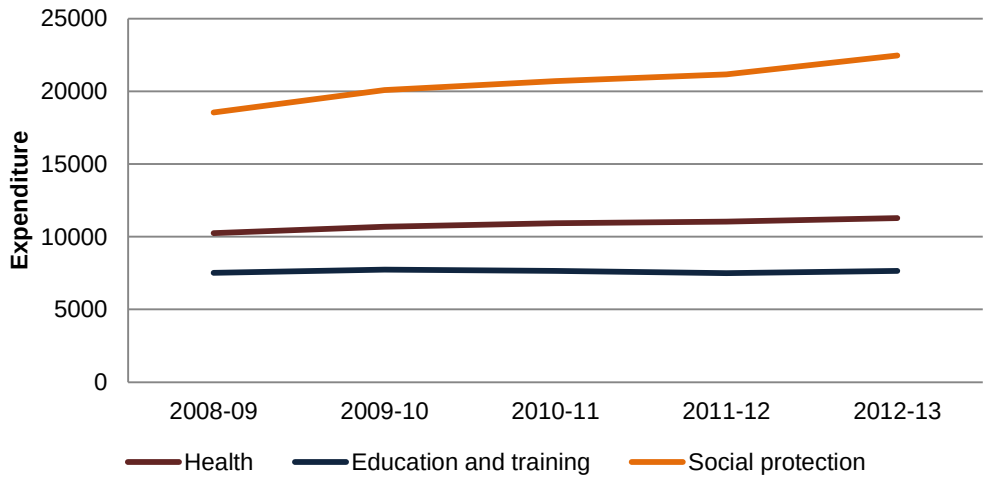
is an important perspective from which to consider future spending, and consequent areas for investment.

Figure 1 and Table 1 show that 51% of total managed expenditure in Scotland relates to social protection[1] and health, at 34% and 17% respectively. In 2012/13 this accounted for £33,742 million out of a total managed expenditure of £65,206 million. With spending on education and training, these three areas account for nearly two-thirds of public expenditure in Scotland. Figure 2 shows changes in the top three areas of public spending from 2008/09 to 2012/13. Though all post-2008 increases, social protection increased over the period by 21.0%; health spending by 10.0%; and education and training, the smallest increase of the three, by only 1.6%.

Table 1 Total Managed Expenditure 2008-09 - 2012-13 (Scottish Government, 2014b)

(£ million nominal terms)	2008-09	2009-10	2010-11	2011-12	2012-13
General public services	10582	10641	12220	12484	11624
Other economic affairs	12533	12963	12589	12695	12189
Health	10255	10679	10938	11046	11284
Education and training	7528	7729	7651	7490	7651
Social protection	18543	20076	20692	21159	22458

Figure 2: Total Managed Expenditure 2008/09 - 2012/13 top three areas (Scottish Government, 2014b)



[1] *Social Protection accounts for both personal social services and social security while personal social services covers both social work and social care services (residential homes etc.). Social security primarily covers cash benefits given to individuals (pensions; employment-related benefits) (Scottish Government, 2010)*

There are three key variables that have a key influence on overall levels of such public spending; one, the number of those in receipt of social protection; two, the number of those in receipt of healthcare services; and, three the number of those in education and training. However all of these are impacted by demographic change including ageing as well as health status and economic (in) activity. All three of these factors impact directly on Scotland's top three spending areas noted above (SHARE, 2014; and European Commission, 2012).

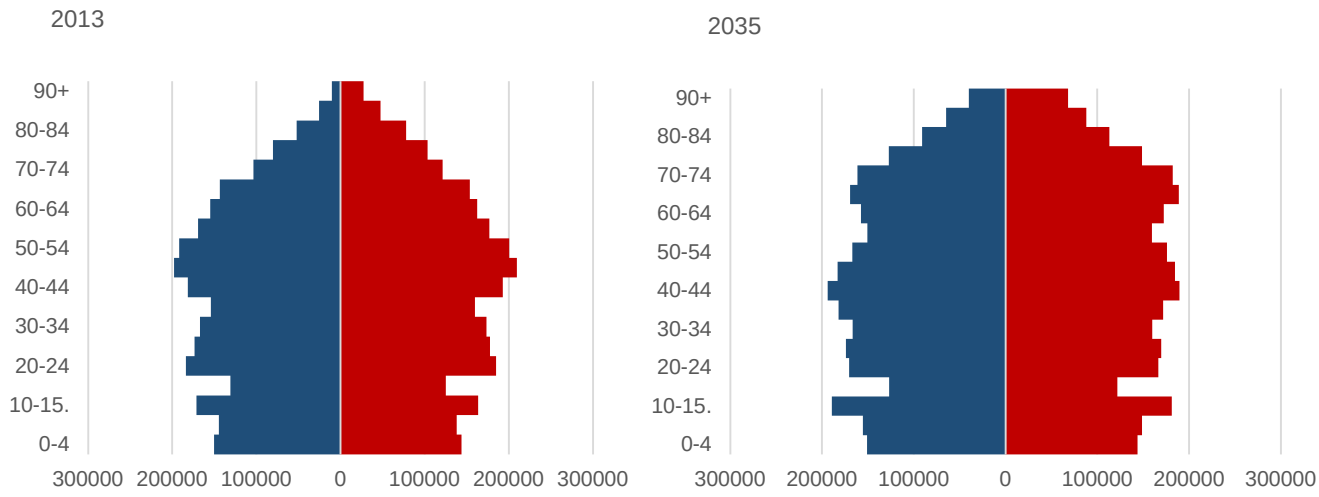
The implications for this in terms of the public finances can be captured in the following inequality:

$$Cost_{Ageing} + Cost_{Health\ status} + Cost_{Economic\ Inactivity} \leq Surplus$$

The logic of this expression is that the costs of ageing (social protection) and health status (health spending) plus the costs of economic inactivity (social protection and health) need to be less than, or equal to that which can be generated from those of working age able to support those dependent upon society[2] if budget balance is to be preserved. Hence, much hangs upon an economically active workforce to provide sufficient support – via taxation - for forthcoming demographic change (Allen, 2011). In this paper we consider ageing, health status, and economic activity in terms of their economic consequences for future public spending in Scotland.

II Economic consequences of demographic change

Figure 3: Current and Projected Population Pyramids 2013 and 2035 (GRO, 2014)



We now consider trends in ageing, health status, and economic activity and how these might impact upon potential future levels of public spending in Scotland.

[2] *In this analysis we assume no changes / increases in taxation.*

We use trend-based forecasts as our primary method of analysis. These forecasts are based solely on past trends and as such, do not include future policy interventions i.e. they do not take into account the future impacts of policy implemented during the given time frame. However, trend-based forecasts do allow us to envisage what might happen in the coming years in Scotland if things continue on their current trajectory.

Overall Demographic Change

Figure 3 illustrates the General Registry Office's (2014) current and projected Scotland population levels per age cohort for 2013 and 2035. Over the period 2013 to 2035 Scotland is expected to see the following changes in population ; an 8% increase in population; and 0.47% increase in the working age population and a 37.4% increase in the 65+/67+ age population (refer to Table 1).

Table 2: Population Change 2013 - 2035 (GRO, 2014)

Year	Overall population		Working-age (16-pensionable age)			65+(2013)/67+(2035)		
	Level	%change	Level	% change	% of total population	Level	% change	% total population
2013	5,327,700	8.03%	3,469,159	0.47%	65.1%	946,862	37.4%	17.8%
2035	5,755,558		3,485,596		60.6%	1,300,742		22.6%

1. Ageing

In any welfare state, increasing numbers of those of pensionable age, mean increasing expenditure required to fund the state pension system, and also indicates a lesser proportion of the population contributing to the economy in terms of tax revenues. In fact, the UK Department of Work and Pension (DWP (2014b) figures show that social security benefit[3] expenditure per head in Scotland has increased steadily since 1996/97, especially expenditure per pensioner.

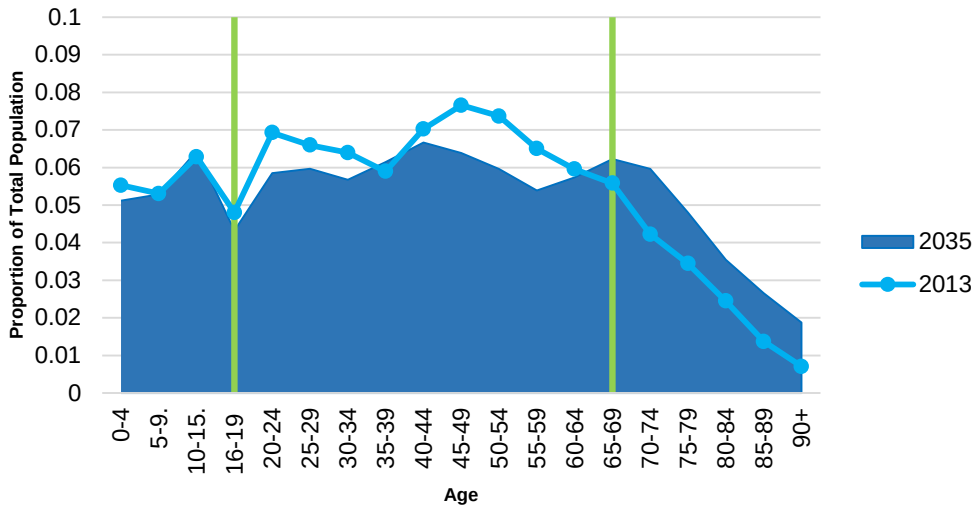
Those of pensionable age are reliant upon society[4] in this way to have their pensions paid, and do not contribute to tax revenue. The extent of reliance can be measured by the dependency ratio: the ratio of those not in the labour force (dependents: <16 and those of pensionable age) to those typically in the labour force (working-age population) (Scottish Government, 2010). Although the dependency ratio also includes those <16, it can still be deemed representative of dependency due to ageing, as the proportion of total population <16 is not forecast to change greatly over the given time frame (2013 – 2035) (refer to Figure 4).

Using General Registry Office (2014) projections, figure 4 also illustrates how we can expect the dependency in Scotland to change by Taking those of pensionable age in 2013 and 2035 to be 65+ and 67+ respectively, we can see a dependency ratio of 54 'dependents' per 100 working-age people in

[3] *Social Security primarily covers cash benefits given to individuals (DWP, 2013).*
[4] *The state pension is paid weekly by the UK government to all citizens of state pension age (HM Government, 2014)*

2013 rising to 65 'dependents' per 100 working-age people by 2035. This 17% increase in dependency can be considered as a conservative estimate given the assumptions implicit in constructing the dependency ratio[5]. Nevertheless, it serves to highlight the magnitude of changes in dependency Scotland might expect.

Figure 4: Proportion of Total Population/Age Cohort 2013 and 2035 (GRO, 2014)



2. Health Status

The health of the population also indicates how dependent people might become upon society, in terms of the health care needs and utilisation, their call on social security benefits[2], and on their ability to remain economically active over a longer period.

Self-reported health is used to measure how the health of Scotland's population might develop. There are criticisms of this measure that state that it does not reflect actual health; however much literature supports the measure's validity[6]. Moreover, self-reported health is a commonly used measure among international studies of demographic change and ageing (SHARE; and the European Commission).

The Scottish Health Survey results from 2003 to 2013 provide the data upon which to conduct a trend-based forecast. Use of the logit function allows us to rate health status as good, fair and bad health and to forecast it by gender and age cohort. As such, we can formulate the population pyramids set out in Figure 5.

The data (refer to Table 3) shows that although the overall percentage of the population in fair or bad health increases only slightly in the 2035 estimates, by 0.9 percentage points, distribution of fair or bad

[5] *Scottish Government (2010) and Spijker and MacInnes (2013) state that the dependency ratio takes no account of labour market or education participation rates. Börsch-Supan, Chłoń-Domińczak, and Skirbekk (2012) note that the ratio assume all those above pensionable age are economically inactive.*
[6] *Miilunpalo et al. (1997) found a strong and nearly linear relationship between self-rated health status and the use of physicians during the year following the survey. Self-reported health is inherently subjective and contextual; however Jylha (2009) states that the basis of self-reported health lies in the biological and physiological state of the individual organism.*

health does change somewhat. In 2035, we see a greater proportion of elderly age cohorts in fair- or bad health, with less fair or bad health in the working-age population. The net result is an increase in dependency due to an increasing ageing population suffering from ill-health, and hence placing greater demands on health care services and social care. Figure 3 and Figure 4 highlight that this might follow from a change in the population mix (i.e. an increase in the number of *'old old'*[7]).

Figure 5: Scottish population pyramids, based on self-reported health for 2013 and 2035 (Scottish Health Survey, 2003- 2013)

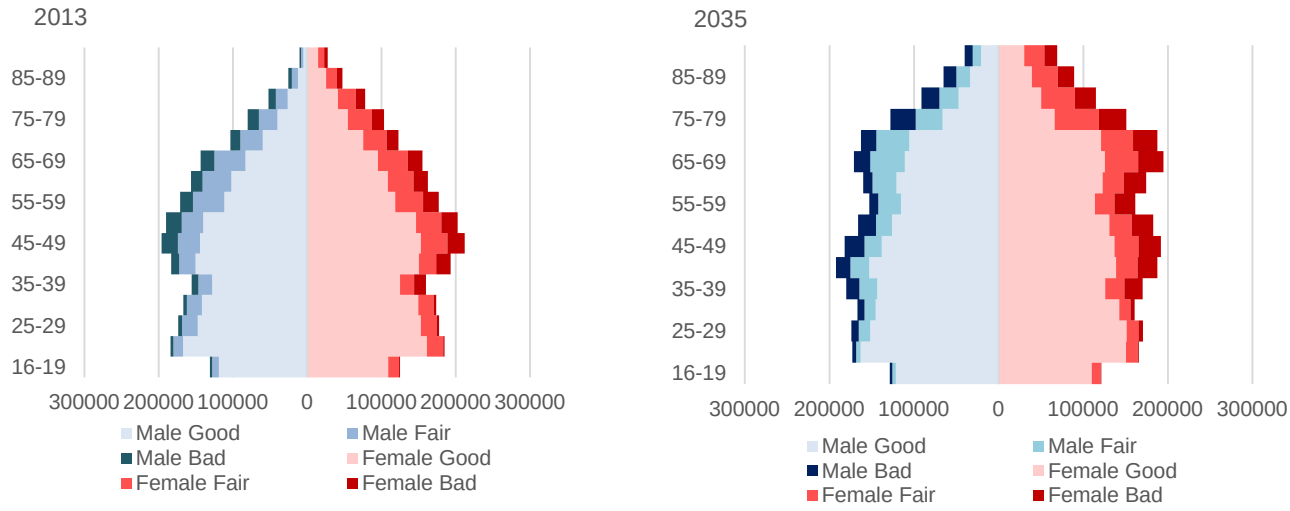


Table 3: Forecasted changes in good, fair, and bad health 2013 and 2035 (Scottish Health Survey, 2003-2013)

Measure	2013		2035	
	Good	Fair/Bad	Good	Fair/Bad
% population 16+	*73.8%*	*26.4%*	*73.5%*	*27.3%*
% population 16+ of working-age	61.8%	17.0%	56.5%	13.8%
% population 16+, 65+	12.1%	9.4%	17.1%	13.5%

Figures may not add due to rounding

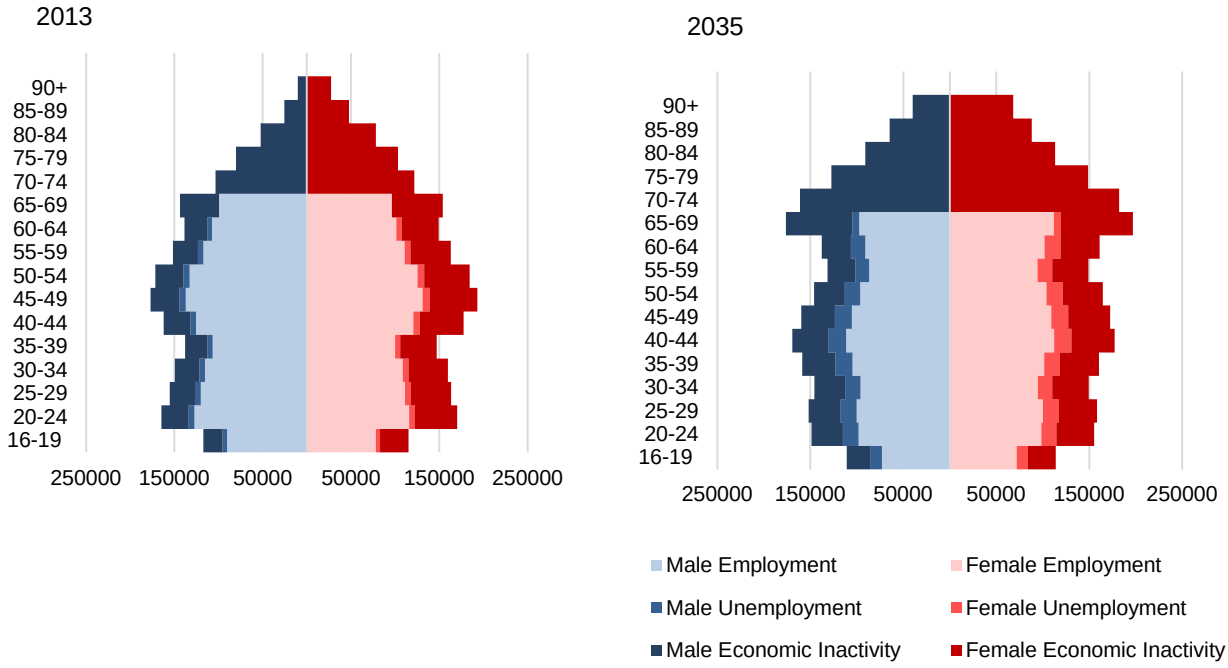
Source: based on Scottish Health Survey results, 2003-2013

[7] *This paper defines an increase in 'old old' as increases in the numbers of those aged 75+*

3. Economic Activity

Population growth, particularly increases in the working-age population, is a key supply side driver of GDP growth, along with labour market participation and productivity (Scottish Government, 2010). Lisenkova et al. (2010) note the economic impact of the working-age cohort as a *decreasing* proportion of total population (expected case in 2035 – see Figure 4). As such, a shrinking number of the economically active working-age will have to support a growing number of economically dependent people (SHARE, 2014), not only in terms of state pension, but also in terms of public service demands.

Figure 6: Economic activity vs economic inactivity 2013 and 2035 (Scottish Government, 2014a)



Hence, we need to consider the levels of economic inactivity which can be expected over the next twenty years, both in terms of those of pensionable age, but also those considered economically inactive within the working-age population itself. The same trend-based forecasting methods are used to formulate the population pyramids for economic in/activity[8] in Figure 6

As for between males and females (aged 16+) overall levels of economic inactivity (including unemployment rates) are higher for females – and may reflect the fact that informal care is not classified as formal economic activity – and that the impact of this continues throughout the working age life course.

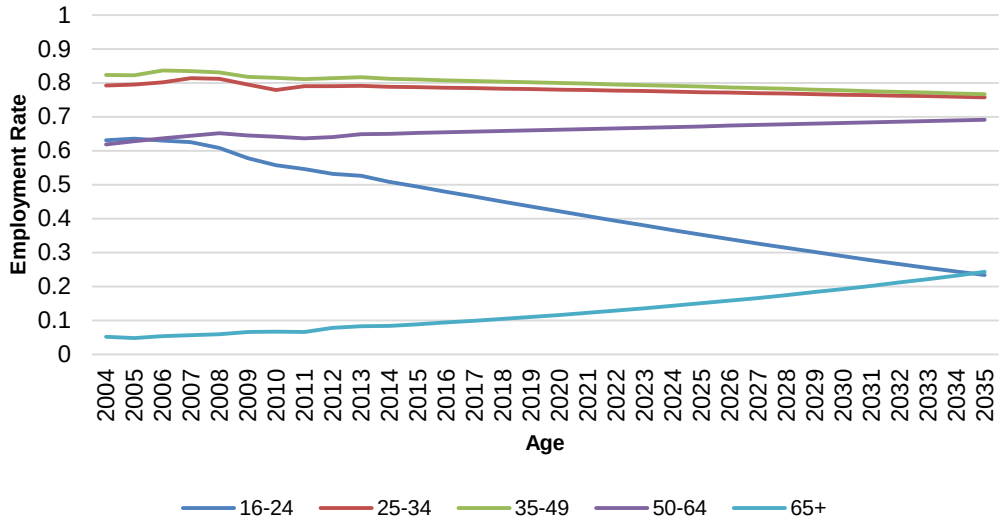
[8] *Data on economic inactivity and employment rates is available on a national basis; however, some rates are not available disaggregated by age cohort. This makes graphical representation within the population pyramid difficult – the pyramids in this instance do not account for differing levels of economic activity at different ages. This is dealt with separately, as it does in fact have important economic implications.*

The only available labour market data disaggregated by age are employment rates. Employment rates from 2004 – 2013 (Scottish Government, 2014a) show the three age cohorts displaying potential decreases in employment rates are: 16-24; 25-34; and 35-49, with the 16-24 cohort seeing by far the largest decreases. Projecting these trends forward shows that by 2035, the 16-24 age group would have the same employment rate as the 65+ age cohorts. A caveat concerning this forecast is that in doing so this extrapolation carries forward the labour market effects of employment rates that have been significantly impacted by post-2008 financial / Great Recession.

Table 4 Economic activity vs economic inactivity 2013 and 2035 (Scottish Government, 2014a)

Measure	Year	Male	Female	Overall
Employment Rate	2013	75%	68%	71%
	2035	61%	63%	63%
Unemployment Rate	2013	4%	4%	8%
	2035	10%	10%	21%
Economic Inactivity	2013	18%	28%	23%
	2035	21%	26%	24%

Figure 7: Employment rate forecasts by age cohort (Scottish Government, 2004-2014)



Taking the trend among the 16-24 cohort, we can disaggregate economic inactivity further to account for those who are so-called 'NEET' (not in education, employment, or training)(refer to Figure 8). Much of the NEET literature focus on the lifetime economic impact of being NEET at a young age (Coles et al., 2011; Scott, et al., 2001; and Eurofound, 2012). In fact, being NEET at 16-19, has lifetime impacts for

both the individual *and* for society, in terms of the cost of economic inactivity over long periods, and in terms of their own health and well-being. Trend-based forecasts of those considered NEET in Scotland (16-19) are given in Table 5 (though it should be noted that there is a lot of volatility in the data).

Figure 8: NEET population in Scotland (Scottish Government, 2014a)

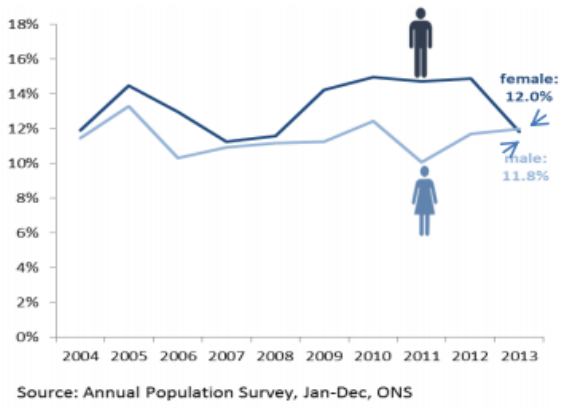


Table 5: Levels and rates of NEET 2013 and forecasted 2035 (Scottish Government, 2014a)

Year	% of 16-19 NEET	Total 16-19	Level NEET
2013	11.9%	255920	30454
2035	19.9%	248771	49520

Despite a decreasing number of those aged 16-19, trend-based forecasts[9] estimate an increase in the absolute numbers of those who are considered NEET.

At 0.5% and 0.9% of *total* population in 2013 and 2035 respectively, the NEET group, although proportionally extremely small, is an easily identified group and represent a challenge both for future economic activity levels (and hence tax / revenue raising potential) and from a service utilisation / public expenditure perspective, given the known lifetime health and wellbeing impacts of being NEET at such formative stages in one's adult life.

[9] *A drawback of these forecasts comes from the volatility surrounding past rates of NEET (Scottish Government, 2014a)*

III Conclusions

Scotland faces a future of dynamic demographic change which, as the literature shows, has a wide range of economic, health and public expenditure consequences. We have used trend-based forecasts to allow us to analyse Scotland's future demography, with particular focus on those trends that have a notable economic and public spending impacts. Although trend-based forecasts take no account of any planned policy or economic changes, they do present a picture of how things might be in the future if present trends continue and *if nothing were to change*.

As noted, the top three areas of public spending in Scotland are social protection, health and education and training – and all these areas are impacted by key known demographic trends that will have significant economic impact for Scotland into the future: ageing, health status and economic activity. For the system to remain in financial balance, the costs associated with ageing, health status and economic inactivity must be less than or equal to that which need be generated via the economically active, to support those dependent upon society.

$$Cost_{Ageing} + Cost_{Health\ status} + Cost_{Economic\ Inactivity} \leq Surplus$$

Our analysis shows a systemic increase in dependency due to increasing numbers of 'old old'[10], both through state pension/social protection recipients and prevalence of ill-health among the elderly. Although overall levels of fair or bad health do not increase much, the prevalence of chronic disease due to ageing will heighten the pressure and demand on public services.

We also anticipate, given present trends, that there will be an increase in economic inactivity, particularly among the youngest age cohorts, the 'cost' of which can therefore be anticipated to rise – both in terms of foregone lifetime earnings (and tax revenues) but also the health and wellbeing impacts which will raise their demand for health and social protection of the youngest age cohorts across their life-course.

"Our economic future depends on providing the tools for upward mobility, and building a highly educated, skilled workforce" Heckman (2012) – picking up the costs of those, say NEET and economically inactive, can have long-term costs spanning the life-course, as opposed to investing to prevent those individuals realising such states in the first place.

Changes in Scotland's forecast demography have significant impacts on future public spending in Scotland (as well as impacts of foregone tax revenue due to labour market inactivity). If Scotland wishes to remain a welfare state, caring for those most in need, policy must engineer a sustainable financial balance. This paper concludes that to generate sufficient surplus to cope with forthcoming demographic change, policy in Scotland needs to be targeted in order to ensure that the working-age population (and beyond) is economically active, skilled, healthy, and sufficiently supported to cope with the impacts of known forthcoming demographic change.

Policy Options

I. Increase economic activity amongst the working age population (as well as amongst those of pensionable age)

[10] *This paper defines an increase in 'old old' as increases in the numbers of those aged 75+*

a. Increase in retirement age – increase economically active as a proportion of total population (as demonstrated by dependency ratio).

b. Investment in education and learning (particularly in early and formative years of life) to prevent realisation of NEET states.

c. Increases in immigration levels (Lisenkova et al., 2010) to sustain such large increases in 'old old' and subsequent dependency.

II. Decrease future demands for health care services and social protection

a. Finding new models to provide cost effective care for 'old old' due to prevalence of chronic illness. As the analysis shows, relatively small numbers of 'old old' consider themselves to be in poor health – so there is no reason to suppose that people in this life stage cannot have a rich a fulfilling quality of life.

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Appendices

Appendix I – Key assumptions and clarifications with regard to sources of data and their respective data sets

Demographic Trend	Assumption/clarification
Dependency Ratio	2013 – working age population 16-64 2035 – working age population 16-66 (planned changes in retirement age) Dependents – those <16; and 65+/67+ Assumes those <16 and of pensionable age are economically inactive Assumes those of working age are economically active
Self-Reported Health	Scottish Health Survey: covers health of those 16+; living in private households (might not represent reality); in 2012/2013, 4815 adults took part in the survey; monitors trends in population health over time. Assumes those stating bad/fair health will require some form of health care expenditure, and are therefore dependent in that way Self-reported health accounts for only those 16+ as the Scottish Health Survey cover age cohorts 16+ Scottish Health Survey officially published every 5 years therefore forecasts are made for the time frame 2033-37, but applied to 2035 population estimates Some rates are given for larger age bands than 5 year cohorts so when this is the case, this paper analyses the proportion in the smaller age cohort and applies it to the overall number of people the rate applies to. Self-reported health is subjective however this paper only illustrates health using this measure as a proxy – it is realised that this is not fully representative.
Economic Activity	Annual Population Survey: covers the year ending 31 December 2013; it combines results from Labour Force Survey; primary source of information on local labour markets providing headline estimates on employment, unemployment and economic activity; largest annual household survey in Scotland 2013 – working age population 16-64 2035 – working age population 16-66 2013 – average age of retirement 65 (AGE UK, 2014) 2035 – average age of retirement 67 (AGE, UK, 2014) Forecasts allows rates to be projected for cohorts up to 60-64; in 2035 estimate, those 65-66 are assumed the same employment rates as those 60-64 Those classified by Annual Population Survey results as Unemployed/Economically Inactive are all considered economically inactive in the case of this paper as, at that specific point in time, the people in question present a cost in terms of public spending (social security). Not all employment based rates are given by age cohort and therefore cannot be aggregated in this respect. In this case, the same rate is applied to all age cohorts. It is deemed too unreliable to change/manipulate this data.
Overall	Projections are trend based, not policy forecasts and therefore do not take account of policy change; and also ignore any economic upturns etc. Uncertainty and inaccuracy in this respect hampers analysis As population projections are trend-based and not policy forecasts, the reliability of projections decreases over time, since the process of change is cumulative (General Registry Office, 2014) i.e. if new policies are introduced, they may result in the original projections not being realised; a key justification for the relatively short time horizon that this paper adopts.

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Scotland's labour market: 'job polarisation' and inclusive growth

Gail Rogers and Kenny Richmond, Scottish Enterprise

1. Introduction

The phenomenon of 'job polarisation', or the 'hollowing-out' of the labour market, is well documented across many advanced economies[1]. Job polarisation is the process by which the shares of total employment accounted for by both high skill/high wage (and non-routine cognitive/interactive) and low skill/low wage (or non-routine, non-skilled) jobs have expanded relative to that of middle-ranked jobs. Job polarisation is seen to be a major factor in rising household income inequality.

This paper focuses on Scotland's changing labour market, and in particular on recent trends in occupational structure and the impact these are having on job polarisation and on particular occupational groups, such as administration and lower skilled production. The paper also considers future labour market trends, and discusses potential approaches to address the negative impacts of jobs polarisation.

2. Scotland's changing labour market

To measure job polarisation, the methodology used in this paper (and commonly used in other research) is to rank occupations by their weekly median wage in a base year, and to then divide these into ten deciles, where decile 1 is the 10% of occupations paying the lowest median wage and decile 10 the highest. Changes in the number of jobs per occupation over time are then measured.

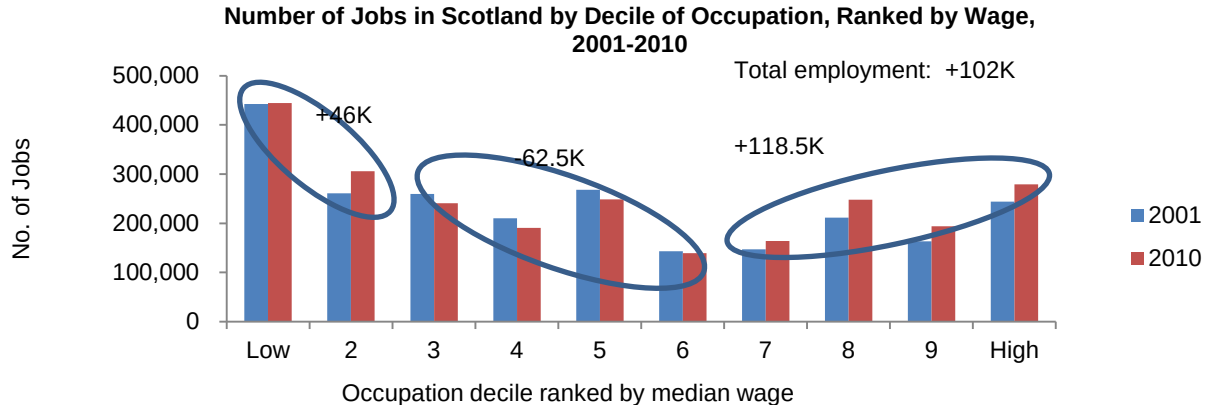
Figure 1 shows that over the 2001 to 2010[2] period the number of jobs in Scotland in medium skilled/medium paid occupations declined (by -62,500), and the number in both the lower (+46,000) and higher skilled (+118,500) occupation deciles increased, leading to a more polarised labour market (see Appendix One for a list of occupations in each decile). Jobs polarisation was evident in the period prior to the recession (2001 to 2008), so the downturn did not significantly impact the overall trend.

In terms of share of total employment, the proportion of all jobs in the middle deciles (deciles 3 – 6) declined by 4 percentage points, the proportion in the top three deciles rising by 3 percentage points and that in the lowest two deciles falling by 1 percentage point (Table 1).

While this pattern of job polarisation has been found throughout Europe, the growth in the number of lower skilled /lower paid service jobs has been greater in the UK than in many other European countries[3].

[1] [1] *See for example Are Middle-Paid Jobs in OECD Countries Disappearing? An Overview, ILO Working paper (2010) and the EU's Employment polarisation and job quality in the crisis, EU (2013)*
[2] *Data for later years is based on a different occupational structure and so cannot be used to show long-term trends*
[3] *Hollowing out and the future of the labour market, Department for Business, Innovation & Skills (2013)*

Figure 1: Job polarisation in Scotland, 2001-2010[4]



Source: Stirling University (Annual Survey of Household Earnings and Labour Force Survey). Based on SOC 2000 classifications. See Appendix 3 for figure data

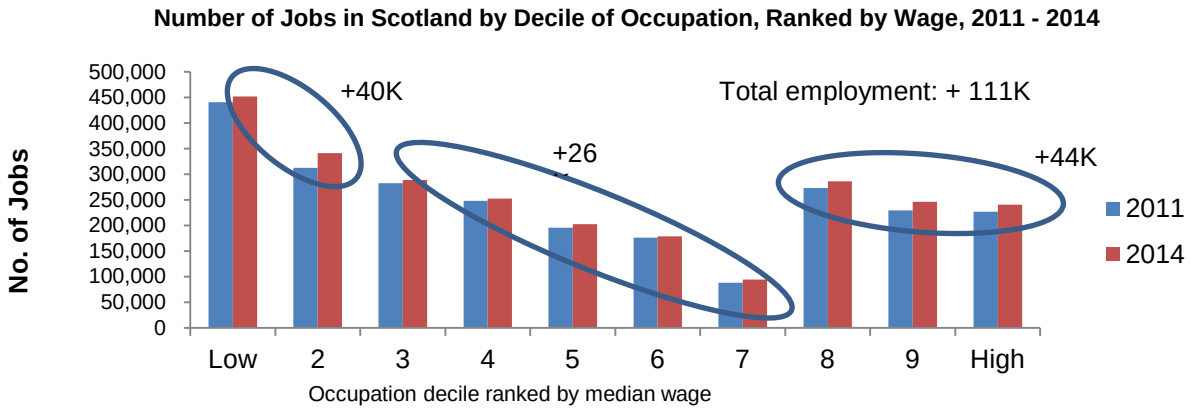
Table 1: Proportion of jobs in Scotland by Occupation Decile (ranked by wage)

	Deciles 1-2	Deciles 3-6	Deciles 7-10
2001	30%	37%	33%
2010	31%	33%	36%
Percentage point change	+1	-4	+3

Source: Stirling University (Annual Survey of Household Earnings and Labour Force Survey). Based on SOC 2000 Classifications.

Data from 2011 onwards is classified under a different occupational structure and cannot be directly compared with data from 2001-10. Over the period 2011-2014 (Figure 2), the number of jobs rose across all deciles, but the rises were highest in deciles 1 and 2 and in deciles 8 to 10 (see Appendix Two for a list of occupations in each decile). This suggests that the trend of job polarisation has continued in the post recession years.

Figure 2: Job polarisation in Scotland, 2011-2014



Source: Stirling University (Annual Survey of Household Earnings and Labour Force Survey). Based on SOC 2010. See Appendix 3 for figure data

[4] *Excludes self employed*

It is important to note that that although intermediate jobs (ranked by wage) are declining in number, they are not disappearing completely. Large numbers of intermediate-level jobs remain (there were 1 million such jobs in deciles 3 to 7 in 2014) and, due to replacement demand (e.g. as people retire or move occupation), significant numbers of job openings / opportunities will still be available. However, the challenge is that, relative to higher and lower skilled occupations, the proportion of all jobs in intermediate level occupations is declining.

This changing labour market structure, in terms of employment share and numbers, has contributed to growing household income inequality over the 2000s (prior to the recession)[5]. In addition, the characteristics of jobs in lower paid occupations are also a cause of rising inequality. Lower paid occupations tend to have a higher proportion of part-time workers and self-employment (especially in elementary, sales and customer services occupations), and a higher proportion of workers on zero hours contracts (especially cleaners, care workers and call centre/customer services workers plus those in accommodation and food occupations)[6].

3. The causes of jobs polarisation?

The most frequently cited reason for the hollowing-out of the labour market is technological change. The Scottish Government's latest Economic Strategy (SES, 2015) notes that technological change has been *'one factor which has changed the composition of the labour market. The process where labour is substituted for technology in many countries, including Scotland has tended to impact on semi-skilled jobs that are medium-paid. This has resulted in the share of people employed in high-paid and low-paid jobs increasing relative to those in medium-paid jobs, creating 'job polarisation'*[7]. SES also highlights that jobs polarisation has been one of the main factors driving income inequality across countries.

Technological advances and the falling cost of computing power has led to technology replacing jobs involving routine tasks that can be easily 'programmed' or automated, such as administrative and production jobs. These jobs are often found in the middle of the job distribution, when ranked by wages (see Appendices 1 and 2).

The changing characteristics of jobs are also a cause of polarisation. In a majority of OECD countries, the number of 'standard jobs' (defined as full time and permanent) has declined in the occupations in the mid-occupation deciles (in terms of wage), while non-standard jobs (defined as either part-time, self employed or temporary) have contributed to an increase in jobs at both ends of the occupational distribution. Scotland has experienced a significant increase in the number of people self-employed in recent years[8] (an increase of 83,000 between 2000 and 2014, 88% of the total growth in employment)[9].

A further cause of job polarisation is 'offshoring', whereby firms take advantage of lower labour costs in other countries to 'offshore' part of their production process or service provision to cheaper locations. The most likely jobs to be offshored are lower skilled technical production jobs or administrative tasks (for example, customer call centres) – again activities that tend to be mid-paid occupations.

[5] *Gini co-efficient in Scotland, Scottish Government*
[6] *Zero Hours Contracts: Myth and Reality, CIPD (2013) and Analysis of Employee Contracts that do not Guarantee a Minimum Number of Hours, ONS (2015)*
[7] *Scotland's Economic Strategy, Scottish Government (2015)*
[8] *In It Together: Why Less Inequality Benefits All, OECD (2015)*
[9] *Businesses in Scotland, Scottish Government, Time Series 1*

4. Does jobs polarisation disproportionately affect particular groups?

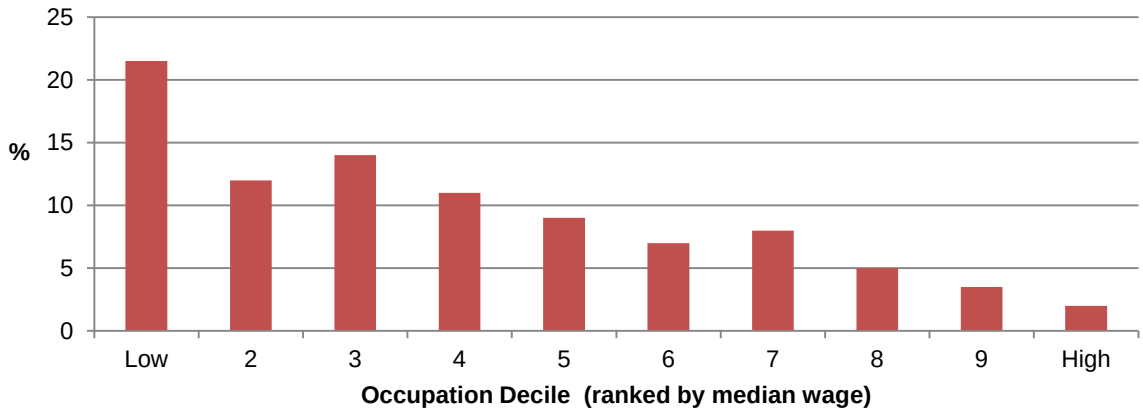
Young people

Recent research at the UK[10] level has considered the effects of job polarisation on young workers (and its findings are broadly consistent with the data for Scotland[11]). Data shows that lower paid occupations tend to have a higher proportion of young workers, for example over 20% of those employed in occupations in the lowest earnings decile were aged 16-24, compared to 2.2% of occupations in the highest paid decile.

This highlights a key difficulty for young people. Most enter the labour market in fairly low-paying occupations, where there has been a modest growth in employment. They may then aspire to move into better paying occupations but the 'bridge' between lower-level and higher-level jobs is disappearing, as the number of jobs in the middle wage occupations falls. So the chances to make that transition are becoming harder. The research's authors conclude that young people 'face an increasingly polarised labour market'.

According the *Employer Skills Survey 2013*[12] the main obstacle to young people in Scotland getting new jobs and progressing into higher paid jobs is competition in the market place rather than perceptions that young applicants do not have the capability to perform in the job role. Where the choice not to recruit a young applicant was due to the young person not having the capabilities to do the job, the main things lacking were skills (65% of applicants) and experience (73% of applicants), and sometimes both (55% of applicants). This is also reflected in the Employers Perspective Survey[13] for Scotland in 2014 which identified relevant work experience as the most important factor in the recruitment of young people, with 66% of employers rating it as significant or critical.

Figure 3: Proportion of jobs in occupation deciles taken by 16-24 Year Olds (UK, 2008)



Source: "What should be done about rising unemployment in the UK?"
Note: Scottish trends likely to be very similar

These surveys highlight the important role that work experience (and 'world of work' skills) play, along with relevant skills, in helping young people transition into work, and transition between jobs/occupations. The

[10] *What should be done about rising unemployment in the UK? David N.F. Bell and David G. Blanchflower (2009)*
[11] *Inequality in Scotland: New Perspectives, David Bell, David Eiser and Michael McGoldrick (2014)*
[12] *UKCES Employer Skills Survey 2013 Scotland , UKCES (2013)*
[13] *Employer Perspective Survey 2014, UKCES (2014)*

Employer Perspective Survey also found that although employers are increasingly looking for work experience when recruiting young people, most do not offer such work placements themselves. This highlights the challenge that young people may struggle to get jobs without work experience, but cannot develop work experience without access to jobs or work placements to help build up evidence of work experience.

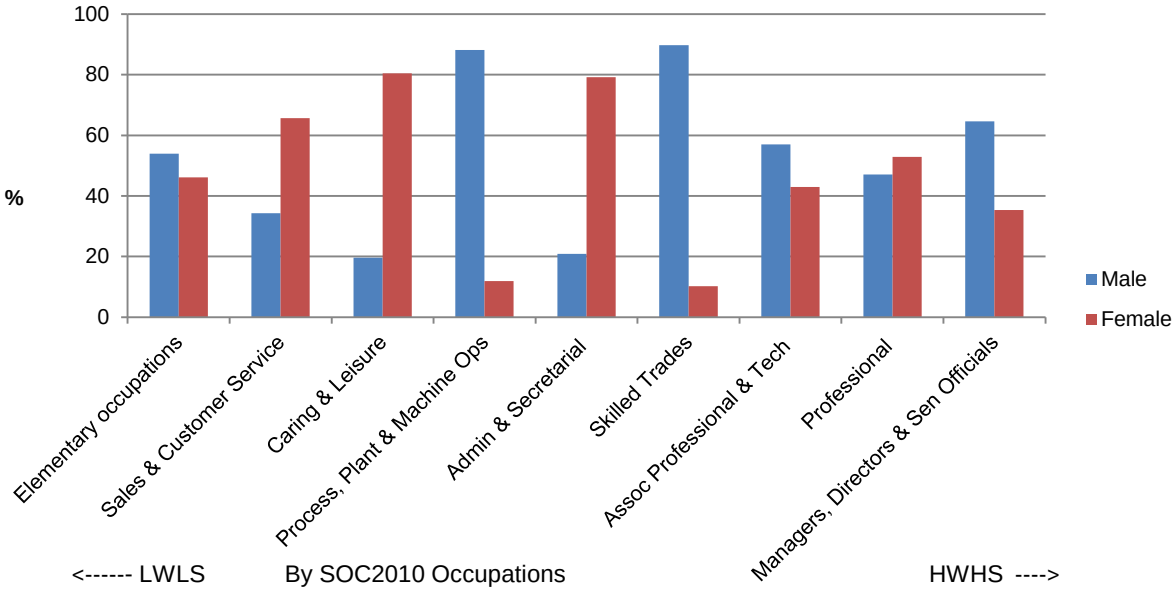
However, it is likely that the situation is different for qualified young people, especially graduates, who are more likely to enter employment towards the higher skilled/higher wage end of the occupation spectrum.

Women

Analysis by the University of Stirling[14] shows a substantial decrease for the period 1984-2013 in the number of people who choose to stay at home, primarily to look after children. The report assumes that this relates mainly to women, and that many of the new entrants to the labour market over the past twenty years are women who may, through choice, be working part-time. As part-time jobs are more likely to be in lower wage, lower skilled occupations, this may result in women being more prevalent at the lower wage jobs end of the spectrum, with opportunities for progression to higher paid occupations limited.

The Joseph Rowantree Foundation report *Future of the UK Labour Market* also identifies women as the group most likely to experience low pay and to find themselves stuck in low-paying occupations[15]. Part of the reason for this lies in the industries in which they work, for example in hospitality and food service, retail and customer services, all of which have a high proportion of lower skilled/paid occupations.

Figure 4: Male / Female employment by broad occupation 2014 (%)



Source: NOMIS, Annual Population Survey. (LWLS = lower wage, lower skilled; HWHS = higher wage, higher skilled)

The latest data from the Annual Population Survey suggests that women make up the significant majority of employment in Sales & Customer Service (66%), Caring & Leisure (80%) and Admin & Secretarial (79%)

[14] *Inequality in Scotland: New Perspectives, David Bell, David Eiser and Michael McGoldrick (2014)*
[15] *Future of the UK Labour Market, Joseph Rowntree Foundation (2014)*

occupations. In the higher skilled occupations, women do have a slight majority in Professional Occupations (53%) and a slight minority in Associate Professional & Technical occupations; however they are a significant minority in Managers, Directors and Senior Official occupations.

This suggests that women are more predominantly employed in a number of middle ranked occupations which are forecast to decline in number in the future, as discussed in Section 5.

4. Potential impact of job polarisation on worker mobility

The Work Foundation's research paper *The Hourglass and the Escalator*[16] notes that one of the potentially damaging aspects of growing polarisation in the labour market is that it may create additional barriers to earnings mobility, as a high proportion of people stay in low wage/low skilled jobs. Estimates from the British Household Panel Survey (BHPS) suggest that around a third of those in the bottom ten per cent of earners in Britain in 2001/02 were still there in 2008/9, and that more than 60% remained in the bottom three deciles of earnings. The BHPS also shows that women and those with no qualifications were significantly more likely to remain stuck at the bottom of the earnings distribution (although those with no qualifications may be likely to remain there even if there were more medium skilled jobs). While there are fears that growing polarisation in the labour market may create even more barriers to occupational mobility as there are fewer jobs in mid-paid occupations, there has been no specific research undertaken on this key question.

However, research by the UK Commission for Employment and Skills (UKES) highlights that progression is more likely in low-and semi-skilled occupations in some sectors than compared to others. In particular, progression is more likely in construction, manufacturing, transportation and health service sectors, but less likely in lower-paying service sectors[17]. This may reflect a greater culture of training, such as the use of apprenticeships and the need for continuous professional development, in these sectors. The report also notes that workers in elementary occupations are significantly less likely to receive workplace training, further decreasing the ability to progress.
The *Hollowing out and the future of the labour market* report[18] also suggests that the large fall in the number of jobs in certain types of intermediate skilled/wage occupations, particularly in skilled production, has implications for worker mobility. Although the report did not find any research that has explicitly studied the effect that labour market hollowing-out has had on the probability of progression from low-level jobs, the researchers argue that progression within a firm to higher paid jobs, or progression within 'occupational types' in an industry (e.g. from elementary process/plant occupations to higher skilled plant & machine operatives) requires continued job tenure. However, a key feature of low-wage jobs is short tenure and high employee turnover. Rather than progression to higher occupation levels, the most frequent change in job status for those in low-pay jobs is movement into unemployment, as part of a 'low-pay-no-pay cycle'. Such insecurity reduces the opportunity to acquire skills and experience or the likelihood of receiving training, all of which further reduce the chances of future progression into higher paid jobs. The authors argue that the characteristics of the firm are also relevant, with progression more likely in larger companies than in SMEs.

However, another perspective is that the growth in higher paid occupations may offer more opportunities for those in mid-ranked occupations to progress, for example from mid-management to senior management, or from science technician to science professional.

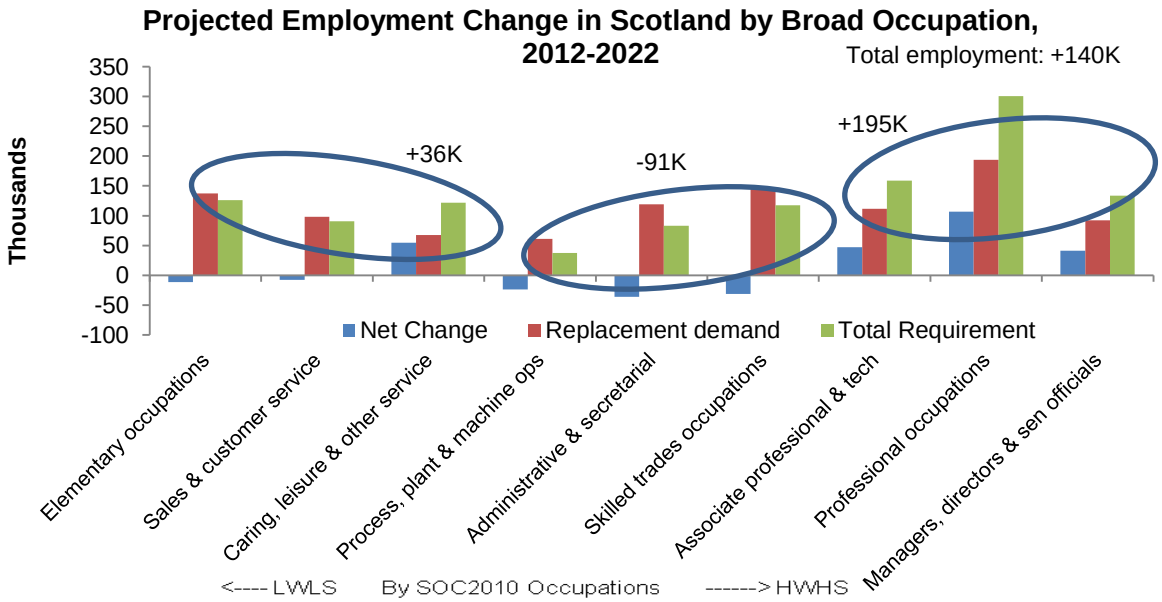
[16] *The Hourglass and the Escalator - Labour market change and mobility, The Work Foundation (2011)*
[17] *The Role of Skills from Worklessness to Sustainable Employment with Progression, UKCES (2011)*
[18] *Hollowing out and the future of the labour market, Department for Business, Innovation & Skills (2013)*

5. Will job polarisation continue?

Research by UKCES[19] has assessed employment and occupation prospects over a ten year horizon, 2012 to 2022. Data is available to forecast net change in employment and 'replacement demand', and the occupation analysis is based on skill levels rather than wage levels. In Scotland, for the period up until 2022, key forecast trends are:

- Jobs growth in each of the highest skilled (and so highest paid) occupations (manager, professionals and associate professional/technicians)
- A decline in the number of jobs in some of the more intermediate skilled occupations, such as skilled trades, process & plant operatives and admin/secretarial
- A fall in the number of jobs in some lower skilled occupations (elementary and sales/customer services) with a rise in others (e.g. caring, leisure and other services occupations where jobs increases are expected).

Figure 5: Forecast employment change by occupation in Scotland, 2012-2022



Source: UKES (LWLS = lower wage, lower skilled; HWHS = higher wage, higher skilled)
See Appendix 3 for figure data

Figure 5 suggests that the trend in recent years of a decline in the number of medium-skilled and waged jobs, and a rise in the number of higher skilled and waged jobs, is likely to continue. However, the projections also suggest that the number of jobs in some of the lower skilled/lower paid occupations, such as elementary occupations and sales/retail, will also fall.

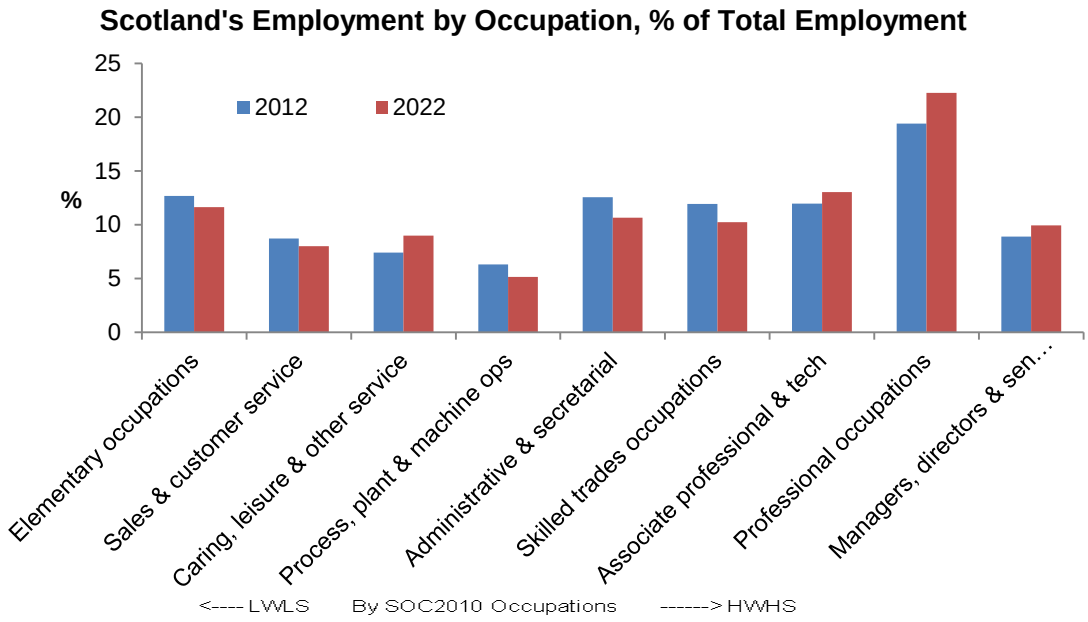
As highlighted earlier, although the number of jobs in the more intermediate skilled and paid occupations is expected to decline, replacement demand will mean that there will still be job openings / opportunities for these types of job.

[19] *Working Futures 2012-2022 and Scotland Report, UKCES (2014)*

In terms of Scotland's overall occupational structure, the percentage share of the three highest skilled/paid occupations is expected to rise by 5 percentage points (to 45%), to fall by 5 percentage points (to 26%) for the intermediate skilled/paid occupations, and remain stable (at 29%) for the lower skilled/paid occupations.

Therefore, future projections suggest continued job polarisation in Scotland's labour market.

Figure 6: Scotland's changing employment structure, 2012-2022



Source: UKES (LWLS = lower wage, lower skilled; HWHS = higher wage, higher skilled)

6. Growth sectors and job polarisation

In-depth data on the breakdown of occupations by sector is not currently publicly available for Scotland, but information has been published for England and Wales based on the 2011 Census, and it is assumed that the pattern will be very similar for Scotland.

In Table 2 below, the proportion of growth sector[20] employment by low / medium / high skill occupational group is shown with low defined as 0-10% of sector occupations, medium as 11-20% of sector occupations and high as 21% plus. Those occupations where job numbers are expected to decline in Scotland up to 2022, and that account for 11% or more of a sector's overall employment, are highlighted. In additional to the Growth Sectors, retail has also been included as an example of a locally-traded sector that is highlighted in Scotland's Economic Strategy as an emerging policy focus.

The data suggests that sectors most likely to be negatively affected by future changes in Scotland's occupational structure are Food & Drink, Tourism, Energy, Textiles, Engineering and retail, all of which have higher proportions of occupations that are expected to decline in numbers up to 2022 (Table 2).

[20] *These are sectors identified by the Scottish Government and Scottish Enterprise where Scotland has a distinct comparative advantage.*

Table 2: Estimated percentage occupational split, by growth sector

	< Lower wage/lower skilled						Higher wage/higher skilled >		
	Elementary	Sales and customer service	Caring, leisure and other service	Process, plant and machine operators	Skilled trades	Admin & secretarial	Associate professional & technical	Profess-ional	Managers directors and senior officials
Chemicals	Low	Low	Low	Med	Low	Low	Med	Med	Med
Construction	Low	Low	Low	Low	High	Low	Low	Low	Med
Creative Industries	Low	Low	Low	Low	Low	Low	High	High	Med
Energy	Med	Low	Low	Med	Med	Low	Med	Med	Med
Financial Services	Low	Low	Low	Low	Low	High	High	High	Med
Food & Drink	Med	Low	Low	High	High	Low	Low	Low	Med
Life sciences	Low	Low	Low	Low	Low	Low	Med	High	Med
Engineering	Low	Low	Low	Med	Med	Low	Med	High	Med
Textiles	Low	Low	Low	High	High	Low	Low	Low	Med
Tourism	High	Low	Low	Low	Med	Low	Med	Low	Med
Retail	Low	High	Low	Low	Low	Low	Low	Low	Med

Note: Occupations within each sector Low = 0-10% of total sector jobs in the occupation, Med = 11-20%, High = 21+%
This table shows occupational categories rather than wage level deciles. It assumes that wages and skills rise from LWLS at Elementary to HWHS for Managers, Directors & Senior Officials
Source: NOMIS Census data 2011, England & Wales

7. Conclusions

This paper seeks to provide a deeper understanding of the changing nature of Scotland's contemporary labour market.

The number of jobs in both the lower skilled/paid and higher skilled/paid occupations has risen, and the number in the intermediate skilled/paid occupations has fallen, contributing to jobs polarisation and to growing income inequality, and negatively affecting specific groups such as young people and women. These trends have been driven by global technological changes, and so affect many other advanced economies. Labour market projections for Scotland suggest these trends will continue, and are likely to impact on a number of Scotland's Growth Sectors.

Job polarisation appears to have a disproportionate effect on already disadvantaged groups – specifically young people and women as they tend to make up a higher proportion of workers in low wage, low skill occupations. It also has implications for potential career progression for those in lower paid occupations, due to the decline of mid-range occupations (although there may be increasing opportunities for those in mid-range occupations to progress into higher ones).

The UKCES report *Growth Through People: Evidence and Analysis* highlights that improving workplace productivity should be recognised as the key route to increasing pay and prosperity[21].

[21] Growth Through People: Evidence and Analysis, UKCES (2014)

Workplace innovation is a key driver of improved workplace practices and productivity, and BIS research has shown that workplaces with 'very satisfied' employees have higher labour productivity, higher quality of output, and higher overall performance[22]. There is a significant amount of evidence to support the argument that job design ('good jobs'), employee health, and an employee's ability to perform productively at work, are closely linked[23]. However, data suggests that only 12% of Scottish employers are 'higher performance working' employers (defined as 'a general approach to managing organisations that aims to stimulate more effective employee involvement and commitment in order to achieve high levels of performance), the same proportion as the UK as a whole[24]. This suggests that there is very considerable scope to increase the number of employers in Scotland adopting high performance working practices that in turn could boost productivity levels and increase wage levels.

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[22] *Does Worker Wellbeing Affect Workplace Performance? Department for Business, Innovation & Skills (2013)*

[23] *Good jobs, The Work Foundation (2009)*
[24] UKCES Employer Skills Survey 2013 Scotland, UKCES (2013)

Appendix One: Standard Occupation Classifications 2000

Decile 1	Decile2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
housekeeping	elementary construction	personal services	plant and machine operatives	construction operatives	librarians and related professional	public service and other assoc professions	managers in other service industries	transport associate professionals	corporate managers & senior officials
food preparation trades	customer service	administrative : records	administrative: government & relate	construction trades	mangers in farming, horticulture, forestry etc	conservation associate professional	therapists	production managers	legal professionals
childcare & related personal services	transport drivers and operatives	textiles and garment trades	building trades	printing trades	electrical trades	artistic and literary	protective service	business & finance assoc professionals	health professionals
elementary security	elementary goods storage occupation	administrative : general	administrative: communications	sports and fitness	science and engineering technicians	health associate professionals	IT service delivery	engineering professionals	protective service officers
hairdressers and related occupation	agricultural trades	mobile machine drivers & operatives	process operatives	metal forming, welding and related	metal machining, fitting, instrument mkrs	sales & related assoc professionals	media associate professionals	financial institution and office manager	functional managers
sales assistants and retail cashier	healthcare & related personal service	assemblers and routine operatives	elementary administration	vehicle trades	managers in distrib, storage and retail	design associate professionals	research professionals	quality and customer care managers	business & statistical professional
elementary sales	elementary process plant occupation	animal care services	skilled trades n.e.c	sales related	social welfare assoc professionals	public service professionals	health and social services managers	architects, town planners, surveyor	teaching professionals
elementary cleaning	elementary agricultural	leisure & travel service occupation	secretarial and related	administrative : finance	managers in hospitality and leisure	draughtspersons & building inspectors	legal associate professionals	science professionals	info & communication technology
elementary personal service									

Occupations highlighted in green posted an increase in employment over 2001-2010, while those in red posted a decline

Appendix Two: Standard Occupation Classifications 2010

Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Food preparation & hospitality trades	Childcare & related personal services	Other administrative	Administrative : Government & related organisations	Managers & directors in retail & wholesale	Managers & proprietors in agriculture related servs	Managers & directors in transport & logistics	Managers & proprietors in other services	Production managers & directors	Chief executives & senior officials
Hairdressers & related services	Animal care & control services	Secretarial & related	Administrative : Finance	Managers & proprietors in hospitality & leisure services	Librarians & related professionals	Managers & proprietors in health & care services	Conservation & environment professionals	Health & social services managers & directors	Functional managers & directors
Cleaning & housekeeping managers & supervisors	Caring personal services	Agricultural & related trades	Administrative : Records	Welfare & housing associate professionals	Science, engineering & production technicians	Draughtspersons & related architectural technicians	Nursing & midwifery professionals	Natural & social science professionals	Financial institution managers & directors
Sales assistants & retail cashiers	Housekeeping & related services	Textiles & garments trades	Building finishing trades	Sports & fitness	Design	Information technology technicians	Welfare professionals	Engineering professionals	Senior officers in protective services
Sales supervisors	Customer service	Other skilled trades	Plant & machine operatives	Conservation & environmental assoc profs	Public services & other associate professionals	Health associate professionals	Media professionals	Information technology & telecommunications professionals	Research & development managers
Elementary process plant	Process operatives	Leisure & travel services	Assemblers & routine operatives	Metal forming, welding & related trades	Administrative : Office managers & supervisors	Artistic, literary & media	Protective service	Therapy professionals	Health professionals
Elementary cleaning	Elementary agricultural	Sales related	Construction operatives	Vehicle trades	Metal machining, fitting & instrument making trades	Legal associate professionals	Business, finance & related associate professionals	Business, research & administrative professionals	Teaching & educational professionals
Elementary security	Elementary sales	Road transport drivers	Mobile machine drivers & operatives	Construction & building trades	Electrical & electronic trades	Skilled metal, electrical & electronic trades supervisors	Sales, marketing & related associate profs	Architects, town planners & surveyors	Legal professionals
Other elementary services	Elementary storage	Elementary construction	Elementary administration	Printing trades	Construction & building trades supervisors	Customer service managers & supervisors	Other drivers & transport operatives	Quality & regulatory professionals	Transport associate professionals

Occupations highlighted in green posted an increase in employment over 2011-14, while those in red posted a decline.

Appendix 3: Data Tables

Data for Figure 1: Job polarisation in Scotland, 2001-2010

	Decile of occupation wage										
	Low	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**High**	**Total**
2001	442644	260967	259731	210113	268365	143395	146935	211428	163125	244278	2350980
2010	444362	305461	240967	190288	248375	139510	163857	248033	193545	278967	2453363
Change	1717	44494	-18764	-19825	-19990	-3886	16922	36605	30420	34689	102383
% change	0.4	17.0	-7.2	-9.4	-7.4	-2.7	11.5	17.3	18.6	14.2	4.4

Source: Stirling University (Annual Survey of Household Earnings and Labour Force Survey). Based on SOC 2000 classifications.

Data for Figure 2: Job polarisation in Scotland, 2011-2014

	Decile of occupation wage										
	Low	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**High**	**Total**
2011	440803	312268	282256	248214	195608	176295	88300	273251	229021	226579	2472594
2014	452026	341108	288885	252551	202731	178440	94242	286071	246496	240657	2583207
Change	11223	28839	6629	4337	7123	2145	5942	12821	17475	14079	110613
%change	2.5	9.2	2.3	1.7	3.6	1.2	6.7	4.7	7.6	6.2	4.5

Source: Stirling University (Annual Survey of Household Earnings and Labour Force Survey). Based on SOC 2010.

Data for Figure 5: Forecast employment change (000s) by occupation in Scotland, 2012-2022

	Net Change	Replacement demand	Total Requirement
Elementary occupations	-11	137	126
Sales & customer service	-7	98	91
Caring, leisure & other service	55	67	122
Process, plant & machine ops	-24	61	37
Administrative & secretarial	-36	119	83
Skilled trades occupations	-31	148	117
Associate professional & tech	47	112	159
Professional occupations	107	194	301
Managers, directors & senior officials	41	92	134
Total	140	0	140

Source: UKES

The Barnett formula under the Smith Reforms

Jim Cuthbert

Abstract:

With the implementation of the Smith Commission reforms, there will be abatements to the Scottish government's block grant as calculated by the Barnett formula, to allow for the tax revenues which Westminster will forego. The income tax abatement will be increased through time in an arrangement known as Holtham indexation. The purpose of this paper is to model these new fiscal arrangements. The modelling implies that, other than in an unlikely special case, the system cannot run on indefinitely with fixed parameter values, without reaching relative values of per capita public expenditure in Scotland and England which would be politically unacceptable. Moreover, there is a likelihood of adverse dynamic effects which would further destabilise the system. The paper also puts forward an adjustment to the original form of Holtham indexation, to take account of relative population growth. While not answering every problem, this adjustment has strong equity arguments in its favour, and would also significantly stabilise the system. It is particularly important that the implications of this type of modelling should be taken on board by policy makers and parliamentarians just now, when the detailed legislative and other arrangements for implementing the Smith reforms are about to be finalised.

I Introduction

An earlier paper in the Fraser of Allander Commentary, (Cuthbert, 2001), modelled the way in which relative population change between England and Scotland interacted with the Barnett formula. It was shown there how relative population growth in England compared to Scotland could have a very marked effect on the limiting ratio of per capita public expenditure between England and Scotland, and on the trajectory towards that limit.

This paper extends the modelling in that earlier paper, to incorporate the effects of the proposed method of indexation, (Holtham indexation), of the abatement to the Barnett block grant which will come into effect as the Smith Commission reforms are implemented. It turns out that both relative population growth, and the relative rate of growth in the relevant tax base between England and Scotland, will play an important part in determining the behaviour of the Barnett formula as modified by the Smith Commission proposals. In particular, the modelling indicates the potential for the emergence of dynamic effects, in which relative population growth could interact with growth in the tax base, in a way which could adversely affect Scotland.

The paper also puts forward a suggested modification of Holtham indexation: not only is there a strong equity argument for this modification, but it would also correct some of the worst effects of unadjusted Holtham indexation.

II Background (1): The Smith Commission proposals on tax, and Holtham indexation

The Smith Commission reported on 24 November 2014, (Smith Commission, 2014), and on 21 January 2015 the then coalition government put forward its proposals for implementation in "Scotland in the United Kingdom: An Enduring Settlement", (Cm8990).This paper is concerned with the Smith proposals relating to tax. What is proposed in the light of Cm8990 is that Scotland would be given control of certain taxes - principally non-savings, non-dividend income tax, together with air passenger duty, and the aggregates levy: and that the Scottish government would receive the revenues from these taxes. In addition, while Scotland would have no control over the rates of VAT, about half of the VAT revenues attributed to Scotland would be assigned to the Scottish government. In total, Cm8990 estimates that about half of the Scottish budget would come from these tax resources, or those which Scotland already controlled.

In line with pledges made during the Scottish independence referendum campaign, however, a commitment was made to retain the Barnett formula. What would happen after the implementation of Smith is that there would be an abatement to the Scottish government's block grant as calculated by the Barnett formula, to allow for the tax revenues foregone by Westminster in relation to the various taxes to be devolved or hypothecated to Scotland. In line with the 'no-detriment' principle of Smith, the initial size of the abatements would be equal to the tax revenues raised by the various taxes at the then current UK rates of tax.

It was recognised, however, that the size of the abatements would need to be increased each year by an appropriate form of indexation. For income tax, what is proposed in Cm8990 is that indexation should be carried out using a method proposed by the Holtham Commission for Wales: (Holtham Commission, 2010). Under this "Holtham" approach, the abatement for income tax would be increased each year in line with the increase in the overall income tax base for the UK.

At time of writing, the precise details of Holtham indexation have not been specified: but it was recognised by Holtham himself that the method could penalise Scotland if the Scottish tax base did not grow as fast as that for the UK as a whole. As Professor Holtham himself said, in evidence to the Scottish Parliament Finance Committee in April 2013, the method "*might not be in Scotland's interest if [the Scottish] tax base grows more slowly than that of the UK*": (Scottish Parliament Finance Committee, 2013).

No detail is available at present on the proposed indexation methods for the abatements to the Scottish block grant for the other devolved taxes: this paper will concentrate solely on the approach currently proposed for income tax, (which is, by a good margin, the largest of the taxes to be devolved.)

III Background (2): The effect of relative population change on the Barnett formula

As already noted, a previous paper in this commentary, (Cuthbert, 2001), analysed what the effect would be on the Barnett formula if population was growing in England relative to Scotland - as has been the

case for many years. This section recapitulates, (without going into any proofs), on the notation and formulae established in that paper.

Under the Barnett formula, the change in the Scottish government's Departmental Expenditure Limit (DEL) each year is determined as a per capita share of the change in expenditure on corresponding services in England. In Cuthbert (2001) a simplified model of Barnett was developed, under which the Scottish DEL for any given year is adjusted only once by Barnett, when the new baseline for that year is first established. Another simplification is the assumption that public expenditure in England is growing by a constant percentage each year.

Specifically, the following notation and assumptions were used:-

Let E_t denote expenditure in England in year t, and E^S_t expenditure in Scotland: (strictly, "expenditure" here is that covered in the relevant DEL).

Let p_t denote population in England in year t, and p^S_t population in Scotland.

Let R_t denote the ratio of per capita expenditures between Scotland and England at time t.

Let k denote lag, (in years).

It was assumed that

a) $E_{t+1} = \theta E_t$: (i.e. expenditure in England grows at a constant rate.)

b) $\frac{p_{t+1}}{p_t} = \lambda \frac{p^S_{t+1}}{p^S_t}$ for all t, where $\lambda \geq 1$: (i.e., there is a constant relative rate of growth of population in England relative to Scotland).

c) In the annual public expenditure planning round, the new final year baseline is determined as being equal to the previous end year figure: and Barnett applies only to that end year, with population shares determined at a lag k.

The above model was solved, to show how the per capita spending relativity between Scotland and England, denoted by R_t, evolves through time from its initial starting value in year 0.

The relevant formula for R_t is as follows:

$$R_t = (\frac{\lambda}{\theta})^t [R_0 - \lambda^k \frac{(\theta - 1)}{(\theta - \lambda)}] + \lambda^k \frac{(\theta - 1)}{(\theta - \lambda)} \quad \text{, for } \lambda \neq \theta \text{ .} \qquad (1)$$

The derivation of formula (1) is given in the Annex to Cuthbert (2001)

What formula (1) means is that, in the circumstance where $\frac{\lambda}{\theta} < 1$, then the initial per capita spending relativity, R_0, will decay geometrically to the limiting value $\lambda^k \frac{(\theta - 1)}{(\theta - \lambda)}$, which is a function of the expenditure growth rate in England, the rate of relative population growth, and the lag.

What this implies is that, when the nominal rate of growth in public expenditure is greater than the relative rate of population growth, then the Barnett formula will deliver convergence of the ratio of per capita spending levels in Scotland to England towards a limiting value. The significance of formula (1), however, is that it indicates that the limiting value will be 1 only if λ =1. If $\lambda > 1$, then the limiting value will be greater than 1: and in the circumstance where θ is not much greater than λ, the limiting value could be very much greater than 1. For example, a value of $\lambda = 1.002$, (a common historic value), and $\theta = 1.025$, (together with k = 4), would imply a limiting situation where public expenditure per head in Scotland was almost 10% above that in England.

These questions are explored in more detail in Cuthbert, (2001): but formula (1) explains a lot about why the Barnett formula has not actually brought about the convergence towards equality in per capita spending levels which many commentators were expecting.

Another important implication of formula (1) is that, if $\frac{\lambda}{\theta} > 1$, that is, if the rate of growth in nominal public expenditure in England falls below the relative rate of population growth in England compared to Scotland, then per capita expenditure will increase in Scotland relative to England, and will go on increasing. This implication was not studied in detail in the earlier paper, because at that time this situation was not expected to occur. But this has been the situation since 2010, given the cutbacks in public expenditure following the effects of the 2008 crash. And again, formula (1) explains how the Barnett formula, in the presence of relative population change (as between Scotland and England), has to some extent protected Scotland from the worst effects of UK public expenditure cuts.

IV Extending the model to include Holtham indexation of a Barnett abatement

In this section, the model outlined in the previous section is extended to cover the situation where there is an abatement to the Barnett formula block grant for tax revenues which the Scottish government will receive direct: and where this abatement is indexed using the Holtham approach. In developing this model, a number of simplifying assumptions are made (in addition to the simplifications in the original approach.) In particular, it is assumed that the Scottish government adopts a neutral tax policy, under which it does not change its tax rates away from those current in the rest of the UK, (rUK): and it is assumed that the ratio of tax receipts to the tax base stays constant through time, in both Scotland and the UK as a whole.

Additional notation, and further assumptions, are as follows.

Let $T_t^E, T_t^S, \text{and } T_t$ represent, respectively, tax revenues in England, Scotland and the whole UK in year t.

Let ϕ be the relative rate of growth in the tax base in England as compared to Scotland. It is assumed that ϕ is constant from year to year. In line with the above assumption that tax take is proportional to tax base, it follows that

$$\frac{T_t^E}{T_{t-1}^E} = \phi \frac{T_t^S}{T_{t-1}^S}$$, for all t.

Let a_t represent the abatement to the Barnett formula block grant in year t: then $a_0 = T_0^S$, (given the no-detriment assumption in setting the initial abatement), and

$a_t = \frac{T_t}{T_0} a_0$, under Holtham indexation, given the assumption that tax take is proportional to the tax base.

Let $\dot{E}_t^S$ represent abated expenditure in Scotland in year t:

therefore $\dot{E}_t^S = E_t^S - a_t + T_t^S$.

Finally, let $\dot{R}_t$ represent relative per capita spending levels in Scotland and England, when Scotland receives the abated block grant, plus its own revenues on devolved taxes.

Then it is shown in Annex 1 that

$$\dot{R}_t = R_t - (\frac{a_0}{T_0})(\frac{p_0}{p_0^S})(\frac{T_t^E}{E_t})\lambda^t(1-\phi^{-t}) \qquad (2)$$

where R_t is as given in formula (1).

Note that, if it is assumed that the term $(\frac{T_t^E}{E_t})$ remains roughly constant, (that is, if the share of "devolved" expenditure in England funded by "devolved" taxes remains roughly constant), then the second term on the right in formula (2) will be of the form $-K\lambda^t(1-\phi^{-t})$,

where the constant K in this expression is a fraction, with a value approximately equal to 0.5. This follows since the first term in brackets in equation (2) is Scotland's initial share of UK taxes, and the

second term is the ratio of English to Scottish population, so the product of these two terms will be approximately 1. The third term is the share of expenditure in England, (on the same services as are devolved in Scotland), which is funded by taxes which are devolved in Scotland: the corresponding figure is approximately 0.5 in Scotland, and the English figure is likely to be broadly similar.

So, roughly speaking,

$$\dot{R}_t = R_t - K\lambda^t(1-\phi^{-t}) \quad \text{, where K is approximately equal to 0.5.} \qquad (3)$$

In deriving the approximate expression in formula (3), a number of further assumptions are clearly being made: for example, it involves sweeping up all forms of taxation into a composite aggregate: it involves assuming that the abatements for the non-income tax element of the aggregate are indexed by something like Holtham indexation: and it involves assuming that the relative growth rates for the different tax bases, (the ϕ values for each element), are the same. Nevertheless, while bearing these assumptions in mind, the approximation in formula (3) is a useful guide as to how the dynamics of the post-Smith system are likely to evolve.

V Implications

So what are the implications of the above analysis?

i) **When tax bases grow at the same rate, the Barnett formula works as at present:** An immediate implication of formula (3) is that, if ϕ = 1, (that is, when the tax base in Scotland is growing at the same rate as that for the UK as a whole), then the last term is equal to zero, and hence the evolution of relative per capita spend would be exactly as under the original Barnett formula. This is as expected; Holtham indexation is neutral when the tax bases grow at the same rate.

ii) **But things are very different if the tax bases do not grow at the same rate.** If $\lambda \geq 1$, (that is, if population is growing relatively faster in England as compared with Scotland, as has been the case for many years), and if $\phi \neq 1$, (that is, if the tax bases are not growing at the same rate), then the formulae imply that relative per capita spend will eventually move to values which are, under any criterion, untenable. In the most stable case, when $\lambda = 1$ and $\phi > 1$, formula (3) implies that, for large t, $\dot{R}_t$ will behave asymptotically as $R_t - K$: which would imply, if the unadjusted Barnett formula was leading to long term convergence of per capita spending levels to something like parity, that public expenditure per head in Scotland would converge to something like 50% of the value in England.

In the less stable case, where $\lambda > 1$, then the final term in formula (3) diverges – upwards if $\phi < 1$, and downwards if $\phi > 1$.

iii) **And increases in relative population change magnify the effects.** Finally, it is worth noting that, because of the λ^t component in the final term of equation (3), any increase in λ, (that is, the rate of relative population change in England compared to Scotland), magnifies the effect of Holtham indexation.

VI Potential Dynamic Effects

What the previous section means is that, (other than in the unlikely case where $\phi = 1$), the system is such that it cannot proceed indefinitely with constant values of θ, λ and ϕ: eventually, relative values of per capita spend in Scotland as compared to England would move to values which would be politically unacceptable, and something would have to change.

Such a change might come about as a result of policy action: either by the Westminster government, (e.g. in the form of a fiscal transfer): or through specific policy action by the Scottish government. There is more discussion of this possibility later. But left to itself, it appears likely that the way the parameters in the system will evolve will be destabilising, rather than stabilising.

To illustrate this kind of possibility, consider the following hypothetical scenario. Suppose that, due to a boom in financial services in the City, there was an increase in English tax receipts, and that the Westminster government responded to this by increasing the rate of planned public expenditure growth. The implication, in terms of the model, is that the parameter θ, (the rate of growth of public expenditure in England), and ϕ, (the relative rate of growth in the tax base), would both increase at some specific time. Looking at formula (3), the effect of the increase in θ will be to reduce the limiting value to which the unadjusted Barnett formula is converging, (i.e. the term $\lambda^k \frac{(\theta - 1)}{(\theta - \lambda)}$): to increase the rate of convergence to that value, (as the term $\frac{\lambda}{\theta}$ becomes smaller), and to increase the amount subtracted off in the final term of formula (3), (since $K\lambda^t(1 - \phi^{-t})$ is an increasing function of ϕ). In other words, the increases in θ and ϕ will both have the effect of reducing $\dot{R}_t$, (that is, relative per capita spend in Scotland as compared to England).

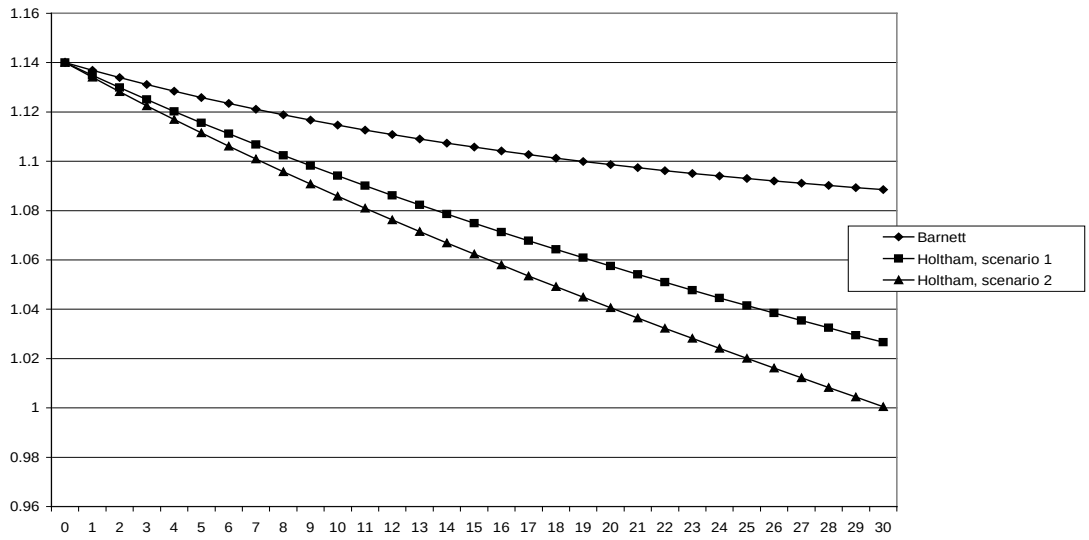
But the effects are unlikely to simply end there: the decline in $\dot{R}_t$ is likely to have a depressing effect on the Scottish economy: and that, together with the initial stimulus to the economy in London and the South East, is likely to contribute in turn to an increase in the relative population growth parameter, λ. The effect of an increase in λ works in different directions in the different components of formula (3): in the Barnett element, it will increase the limiting value, and slow the rate of convergence: but the λ^t

term will magnify the Holtham reduction element. For reasonable values of the parameters, the latter effect will dominate, however. So the overall effect of increasing λ will be to further reduce $\dot{R}_t$.

The danger is that the effect of reducing relative per capita spend in Scotland, $\dot{R}_t$, will be to further depress the Scottish economy, with further knock on effects on the relative growth rates of the tax base and of population. In other words, the adverse effects of the long term behaviour of $\dot{R}_t$ with fixed parameter values, which as has already been noted are untenable, (unless $\phi = 1$), are likely to be accentuated by further dynamic effects on the parameters.

Of course, for a mechanism of this type to take effect, it would have to be the case that changes in the model parameters, of the order of magnitude that might reasonably be expected in the real world, would have material effects on $\dot{R}_t$. Figure 1 below illustrates that modest changes in parameter values can indeed have material effects. The figure considers two scenarios. Under Scenario 1, the values of the parameters are θ = 1.05, λ = 1.0028, and ϕ = 1.005: and under Scenario 2, θ = 1.06, λ = 1.004, and ϕ = 1.008 . What figure 1 shows is how the ratio of relative per capita spend in Scotland to England would evolve from an initial value of 1.14, first of all under the pure Barnett formula, (with values of θ and λ as in Scenario 1): then under Holtham indexation, with Scenario 1 parameters: and finally under Holtham indexation and Scenario 2 parameters. The figure illustrates how the fairly modest changes in parameter values between the two scenarios do indeed have a quite marked effect on the rate of decline of $\dot{R}_t$. (The figure also illustrates how, for the scenario 1 parameter values, Holtham indexation is indeed much less favourable for Scotland than the original pure Barnett formula.)

Figure 1: S/E per capita expenditure ratio, under Barnett, and two scenarios with Holtham



The overall implication is that, without active policy intervention, the system currently being set up is likely to be unstable. Which then raises the question: are the available policy levers such that the system can be adequately controlled?

At this point the argument becomes more speculative. But as regards the policy levers wielded by the Scottish government, it appears unlikely that they would be sufficient to counter the kind of adverse dynamics outlined above. The economic powers which the Scottish government will possess after the implementation of Smith will themselves be fairly limited. The Scottish government is likely to have little scope to counter a decline in $\dot{R}_t$ by raising tax rates – because if tax rates get badly out of line with rUK, that in itself will depress the Scottish economy, giving a further adverse push to ϕ and λ . And in a situation where $\dot{R}_t$ is already declining, the scope for boosting the economy by radically cutting tax rates will be limited.

Overall, the conclusion is that the system is unlikely to be stable unless Westminster is prepared to actively deploy the other potential type of policy measure – namely, adjustments to overall fiscal transfers.

The above discussion illustrates the possibility of Scotland becoming locked into a cycle where relative expenditure per head, compared to England, is aggressively reduced, much faster than would happen under the Barnett formula: and where, unlike the Barnett formula, these reductions would not stop once parity was reached. However, in the long run, the chances of a converse cycle, where $\dot{R}_t$ progressively increases, seem unlikely. This is because, assuming that there is long run economic normalisation of the UK economy, and that nominal public expenditure maintains a roughly constant share of nominal GDP, then relatively high trend values of UK nominal public expenditure growth could be expected, which would imply a high value of θ. If the Scottish economy did start to boom, then this is likely to depress the relative population growth parameter, λ . The combination of a high θ and low λ would imply that the unadjusted Barnett formula would have an R_t value which would converge downwards fairly rapidly towards 1. Against the background of a declining Barnett term, R_t in formula (3), the chances of an unstable upswing in relative per capita spend, $\dot{R}_t$, look remote.

VII A suggested adjustment to Holtham indexation.

Under Holtham indexation as currently proposed, neutrality will occur if the tax base in Scotland grows at the same rate as the tax base in the UK as a whole. If the UK population is growing relative to that in Scotland, then for this condition to be satisfied, it must hold that the tax base per head in Scotland must grow at the same rate as the tax base per head in the UK, multiplied by the relative rate of population growth in the UK as a whole compared to Scotland. This implies that, for Holtham indexation to be

neutral, Scotland must grow its tax base per head at a faster rate than the per capita tax base in the UK as a whole.

An alternative criterion for neutrality would be that the system should be neutral if the *per capita* tax bases in Scotland and the UK were growing at the same rate. To achieve an indexation system which satisfied this neutrality condition, what would be required would be to use an indexation factor which was equal to the growth in the UK tax base over the relevant period, divided by the relative growth in the UK to Scottish populations over the period.

There is a good argument in terms of equity for making this adjustment to Holtham indexation. In addition, making the change has the effect of somewhat dampening the instability that is a danger with an unadjusted Holtham indexation. Without going into the detail of the algebra, it can be shown that the effect of the adjustment is to replace formula (2) above by an expression for $\dot{R}_t$ which can be approximated by

$$\dot{R}_t = R_t - \left(\frac{a_0}{T_0^E}\right)\left(\frac{p_0}{p_0^S}\right)\left(\frac{T_t^E}{E_t}\right)\left(1 - \left(\frac{\lambda}{\phi}\right)^t\right) \qquad (4)$$

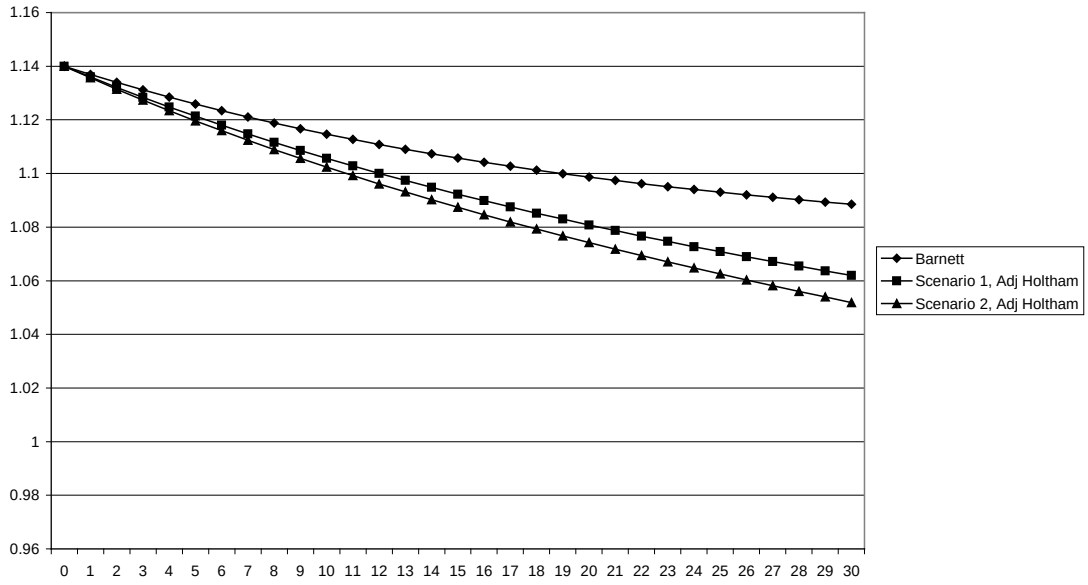
The expression in formula (4) will converge if $\phi > \lambda > 1$, (assuming $\theta > \lambda$) , whereas unadjusted Holtham indexation would diverge in these circumstances.

The adjusted system is still not satisfactory: the limit of equation (4) would still, in the long run, represent an untenable ratio of per capita expenditure. But the behaviour of the system will be much more damped: so the potential for adverse dynamic effects is reduced.

As an illustration of the effect of the adjustment to Holtham indexation, Figure 2 shows exactly the same scenarios as Figure 1, but now with adjusted Holtham indexation. It can be seen that the adjustment has had the effect of significantly reducing the departure from the original Barnett formula: and of reducing the effect of moving from Scenario 1 to Scenario 2.

There are therefore technical, as well as equity, arguments for making the suggested adjustment to Holtham indexation: although, as has been seen, the long run position even with the adjustment is still likely to be untenable.

Figure 2: S/E per capita expenditureratio: under Barnett, and two scenarios with adjusted Holtham



VIII Conclusion

This paper has modelled the way in which the revenues received by the Scottish government will behave, under the type of arrangement currently proposed for the implementation of the Smith Commission reforms as set out in Cm8990: specifically, what is considered is the kind of arrangement being proposed for income tax, under which there will be an abatement to the Barnett formula block grant in relation to the tax revenues foregone by Westminster, and this abatement will then be indexed by what is known as the Holtham approach.

A number of simplifying assumptions have been made: e.g. that the Scottish government adopts a neutral tax policy: and that tax revenues maintain a constant proportion of the tax base, in both Scotland and the UK. Nevertheless, despite the magnitude of these simplifying assumptions, the results of the modelling are of considerable interest, since they illustrate the underlying pressures which are likely to shape the dynamics of the system.

There are three key parameters in the system: the rate of growth of public expenditure in England, (θ): the relative rate of growth of population in England compared to Scotland, (λ): and the relative rate of growth of the tax base in England compared to Scotland, (ϕ).

What the model shows is that, other than the unlikely case when ϕ = 1, then for fixed values of θ, λ and ϕ, the system will evolve towards a position where relative per capita spending levels in Scotland and England are *so different* that the situation is politically untenable. What this implies is that the system cannot run on indefinitely for fixed values of θ, λ and ϕ: something would have to change.

In fact, the situation is worse than this, because, as the paper explains, there are likely to be dynamic feedback effects on θ, λ and ϕ which will make the system more unstable.

The implication is that, to maintain the operation of the fiscal system in some reasonable form of stability, active policy intervention will be required, by the Scottish government, by Westminster, or by both. The policy levers available to the Scottish government are so limited that it is unlikely to be able to maintain stability on its own. (It is worth remembering that the Scottish government will have control of only a single major tax, income tax: that it will have restricted borrowing powers: and that it lacks control of competition policy, international trade development, licensing of North Sea oil, utility regulation, and a number of labour market responsibilities.) This implies that an active monitoring of the system by Westminster, and adjustment of fiscal transfers, are likely to be required.

The paper also proposes an adjustment to crude Holtham indexation which, while by no means providing a complete answer to the likely problems, has strong equity arguments in its favour, and would also have a stabilising effect on the system.

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Annex 1: Proof of formula (2)

The notation is as in the main part of the paper. The proof proceeds in a number of steps.

1) Express T_t^S in terms of T_t^E.

Since, by definition, $\frac{T_t^E}{T_{t-1}^E} = \phi \frac{T_t^S}{T_{t-1}^S}$, for all t, it follows that

$$\frac{T_t^S}{T_t^E} = \phi^{-1} \frac{T_{t-1}^S}{T_{t-1}^E} = ... = \phi^{-t} \frac{T_0^S}{T_0^E} :$$

therefore $T_t^S = \phi^{-t} \frac{a_0}{T_0^E} T_t^E$, since $T_0^S = a_0$.

2) Calculate the Holtham indexation factor.

$$T_t = T_t^E + T_t^S = T_t^E (1 + \phi^{-t} \frac{a_0}{T_0^E}) :$$

therefore, indexation factor = $\frac{T_t}{T_0} = \frac{T_t^E}{T_0} (1 + \phi^{-t} \frac{a_0}{T_0^E})$.

3) Calculate adjustment to Barnett block grant.

Adjustment to Barnett block grant

= - (indexed abatement) + (Scottish tax revenues)

$$= - \frac{T_t^E}{T_0} (1 + \phi^{-t} \frac{a_0}{T_0^E}) a_0 + \phi^{-t} \frac{a_0}{T_0^E} T_t^E$$

$$= - T_t^E (\frac{a_0}{T_0}) [1 + \phi^{-t} \frac{a_0}{T_0^E} - \phi^{-t} \frac{T_0}{T_0^E}]$$

$$= - T_t^E (\frac{a_0}{T_0}) [1 + \phi^{-t} \frac{a_0}{T_0^E} - \phi^{-t} \frac{(a_0 + T_0^E)}{T_0^E}]$$

$$= - T_t^E (\frac{a_0}{T_0}) [1 - \phi^{-t}] .$$

Hence $\dot{E}_t^S = E_t^S - T_t^E (\frac{a_0}{T_0}) [1 - \phi^{-t}]$.

4) Calculate $\dot{R}_t$.

$$\dot{R}_t = \frac{\dot{E}_t^{\,S}}{p_t^{\,S}} \frac{p_t}{E_t}$$

$$= R_t - \left(\frac{a_0}{T_0}\right)\left(\frac{T_t^{\,E}}{E_t}\right)[1-\phi^{-t}]\left(\frac{p_t}{p_t^{\,S}}\right)$$

$$= R_t - \left(\frac{a_0}{T_0}\right)\left(\frac{p_0}{p_0^{\,S}}\right)\left(\frac{T_t^{\,E}}{E_t}\right)\lambda^t[1-\phi^{-t}] \text{ , since } \frac{p_t}{p_t^{\,S}} = \lambda^t\left(\frac{p_0}{p_0^{\,S}}\right):$$

thus establishing formula (2).

June 2015

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