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The Scottish economy

Economic perspectives*

Policy section

**Opinions expressed in the policy section and economic perspectives are those of the authors and not necessarily those of the Fraser of Allander Institute*

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The editor welcomes contributions to the Commentary's *Policy and Economic Perspectives* sections. Material submitted should relate predominantly to the Scottish economy (or regional economies) and/or have a wider Scottish public policy interest. Contributions should be written in an intelligible style for a non-technical and informed readership. Contributions should be submitted to Kevin D Kane, Managing Editor, Fraser of Allander Economic Commentary at k.kane@strath.ac.uk. Articles accepted for publication should be supplied in electronic form and conform to the guidelines available from Isobel Sheppard at fraser@strath.ac.uk . Opinions expressed in the Policy and Economic Perspectives sections are those of the authors and not necessarily those of the Fraser of Allander Institute. If you wish to receive copies of press releases and be kept informed of other publications from the Commentary, please click on the following link: http://www.sbs.strath.ac.uk/apps/fraser-commentary and complete the registration form.

Announcement: digitisation of historical issues of the Fraser Economic Commentary

The Fraser of Allander Economic Commentary (formerly known as the Quarterly Economic Commentary) has been published digitally since 2001. The Commentary, however, has an archive stretching back to 1975 and, unlike many journals today, much of this archive still remains in hardcopy only, thereby restricting its accessibility over the Internet.

In 2015 the Commentary will celebrate its 40th year of publication. To celebrate this milestone it is the intention of the Fraser of Allander Institute that all historic issues of the Commentary be digitised and made accessible via the Institute's website and an associated digital repository. These digitised articles will form an important part of the anniversary celebrations whilst simultaneously widening public access to a significant scholarly resource.

Those who have contributed articles to the Commentary over the years may be notified directly about this digitisation activity over coming months; however, owing to difficulties sourcing contact details for historical authors, it may not be possible to contact everyone. If you have not been contacted and are the author of an article(s) that you do not wish to be included in this digitisation activity, please contact openaccesspublications@strath.ac.uk with details of the article(s) in question. To ensure that digitisation can be completed by the anniversary date we would request that all such articles are registered at the above noted email address by Friday 29th August 2014. The Fraser of Allander Institute would also like to take this opportunity to apologise in advance to those authors whom we have been unable to notify and whose work is subsequently digitised.

General queries concerning the planned digitisation work can also be directed to openaccesspublications@strath.ac.uk.

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The Scottish economy

1 Outlook and appraisal

Brian Ashcroft, Economics Editor, Fraser of Allander Institute

Overview

The Scottish economy delivered strong economic growth in the first half of the year in the run up to the referendum but there are signs that growth may be beginning to slow. Growth in the wider global economy and the UK economy appears also to have begun to slow recently. The IMF Managing Director Christine Lagarde fears we may be entering a phase of weak growth which she has called the 'new mediocre'. Others such as ex US Treasury Secretary and leading economist Larry Summers go further and argue that the world economy now faces a situation of secular stagnation, a permanent deficiency of demand – caused, for example, by a permanent slow-down in the growth of working population - which can't be overcome even with near-zero interest rates. The recent indicators of slowing demand both at home and abroad, falling real wages, rising levels of household debt, the prospect of more substantial UK fiscal austerity to come, and the deeper concerns about secular stagnation raise several questions. Questions that can be posed but cannot be definitively answered, such as whether the Scottish and UK economies are now poised for a period of slower but sustainable growth, or whether growth will slow and then slip back into recession? Are we at a turning point or are we on a knife-edge?

The Nobel Laureate economist Paul Krugman has recently argued that if we are faced – as we are - with a persistent shortfall in demand then Government measures to boost spending including sustained spending on public works are appropriate. And borrowing can finance such investment because we should be less concerned about borrowing and the level of public debt when interest rates are likely to remain low and close to zero for a long period. The IMF in its October 2014 *World Economic Outlook* echoed Krugman by urging Governments to undertake increased public infrastructure investment. Such investment the IMF argued raises output in both the short and long term, particularly during periods of economic slack and when investment efficiency is high. So, in countries with infrastructure needs, it considered the time was right for an infrastructure push as borrowing costs are low and demand is weak. Debt-financed projects could have large output effects without increasing the debt-to-GDP ratio, if clearly identified infrastructure needs are met through efficient investment.

The *Outlook* shows that the estimated quality of UK infrastructure overall has been improving in recent years but still remains below that of the major advanced countries - Germany, France, Japan and Canada. The July 2013 report of the McKinsey Global Institute highlighted infrastructure investment as one of the top 5 catalysts for economic growth. It is also a major factor in the attraction of foreign investment. The UK Government appears to agree since at the time of writing it is unveiling plans for £15 billion of new infrastructure projects this week to make it "easier than ever" to invest in the UK. Such public investment is to be welcomed. However, we contend that in the light of slowing growth, the risks of secular stagnation, the need to boost competitiveness, net trade and inward foreign investment, that there is strong case that Government, and the UK Government in particular, should invest *much more* in infrastructure in and for Scotland. For example, more needs to be done to improve the infrastructure of road and rail, especially, between Scotland and the UK. Raising the borrowing levels available to the

Scottish Government would also help to support and encourage its own plans for infrastructure investment within Scotland. An expanded programme of public investment would appear to be essential when the real volume of private investment continues to be markedly below pre-recession peak levels in both Scotland and UK, even though private investment has picked up in recent quarters.

With the signs that the growth of productive activity may be slowing, we note also the strong performance of the Scottish labour market in recent months, with 52,000 jobs created over the year and unemployment on the ILO measure falling to 151,000 or 5.5%. However, despite the strong recent 'headline' recovery in the labour market, we are still some way from the conditions that maintained prior to the start of the Great Recession. Much of the recovery in jobs has been driven by the growth of part-time and self-employment. Full-time employment still remains considerably below its pre-recession peak, although there has been some pick up in recent quarters. An indication that there is still a deficiency of demand in the Scottish labour market, irrespective of whether the shift to part-time and self-employment is structural or cyclical, is provided by data on the number of weekly hours worked. These data show that the total number average weekly hours worked is at the latest data point -2.4% below the pre-recession peak. Finally, when jobs are compared to the potential labour supply as measured by the employment to adult population ratio we find that by June-August 2014, the ratio stood at -1.5% below the pre-recession peak, compared to -5.7% at the trough of the recession. This suggests that even when we consider jobs alone and not hours worked there is still plenty of slack in the Scottish labour market compared to the pre-recession peak, despite the recent strong jobs recovery. (The post-crash labour market is the subject of two articles in this Commentary).

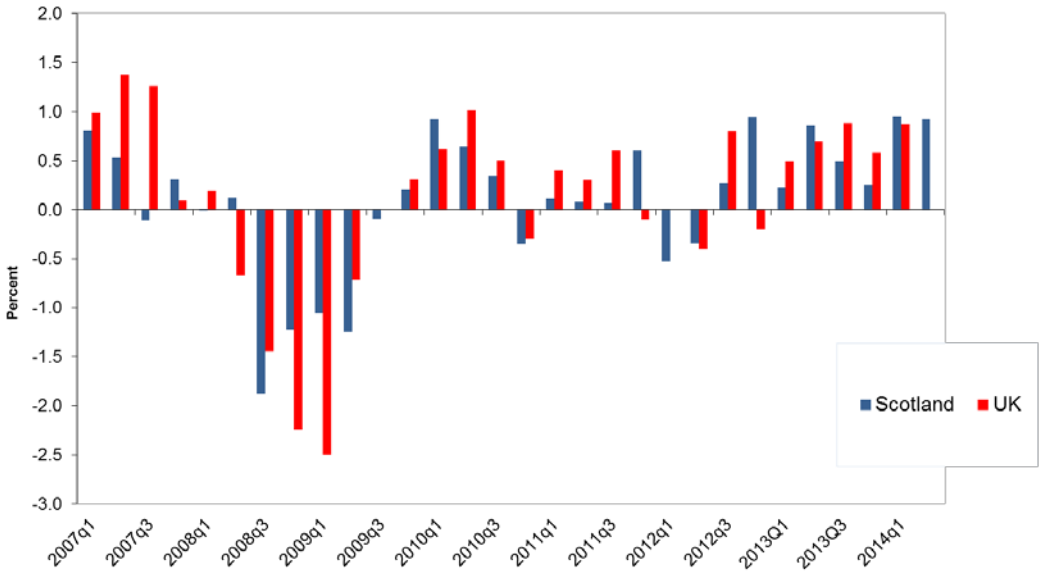
It is against this background that we have prepared our latest forecasts. We are now forecasting GDP growth in Scotland of 2.7% in 2014, 2.2% in 2015, and 2.1% in 2016. Given our previous forecast errors the lower and upper bounds for growth in 2014 are expected to be 2.4% and 3.0%, for 2015, 1.7% to 2.7%, and for 2016, 1.0% to 3.2%. We have therefore *revised up* our forecast for 2014 from 2.5% to 2.7% due to the strong growth in the first half of the year. We have held our forecast for 2015 at 2.2% but have *revised down* our forecast for 2016 from 2.4% to 2.1% in the light of concerns about secular stagnation and a persistent weakness of aggregate demand. Production and manufacturing continue to be the major sectors exhibiting the fastest growth in 2014, 2015 and 2016. Our forecasts for employee job creation and unemployment are similar to June 2014, with some revisions. On the central forecast, we are now forecasting that net jobs will increase by 46,560 in 2014, 41,600 in 2015 and 48,900 in 2016. Our projection for unemployment on the ILO measure at the end of 2014 is 124,700 (5.3%). In 2015, unemployment is now forecast to be 157,300 (5.8%) falling further to 151,800 (5.6%) by the end of 2016.

Recent GDP performance

The latest Scottish GDP data for the second quarter of this year (2014q2) show that Scottish GDP rose by 0.9% in Scotland in the quarter. This represents a strong growth performance but a slight weakening from the 1% GDP growth recorded in the first quarter. However, as anticipated in the June 2014 *Commentary* first quarter growth in Scotland is likely to have been inflated by the resumption of production at the Grangemouth refinery, after the resolution of the dispute that shut it down during the fourth quarter 2013. UK GDP grew by 0.9% in the first quarter. If the Grangemouth shutdown reduced Scottish GDP by -0.2% to -0.4%, as suggested in the previous *Commentary*, in the fourth quarter then

we can conclude that underlying Scottish GDP growth might have been slightly weaker than the UK in the first quarter of 2014.

Figure 1: Scottish and UK Quarterly GDP Growth, 2007q1 - 2014q2 (UK to 2014q1)

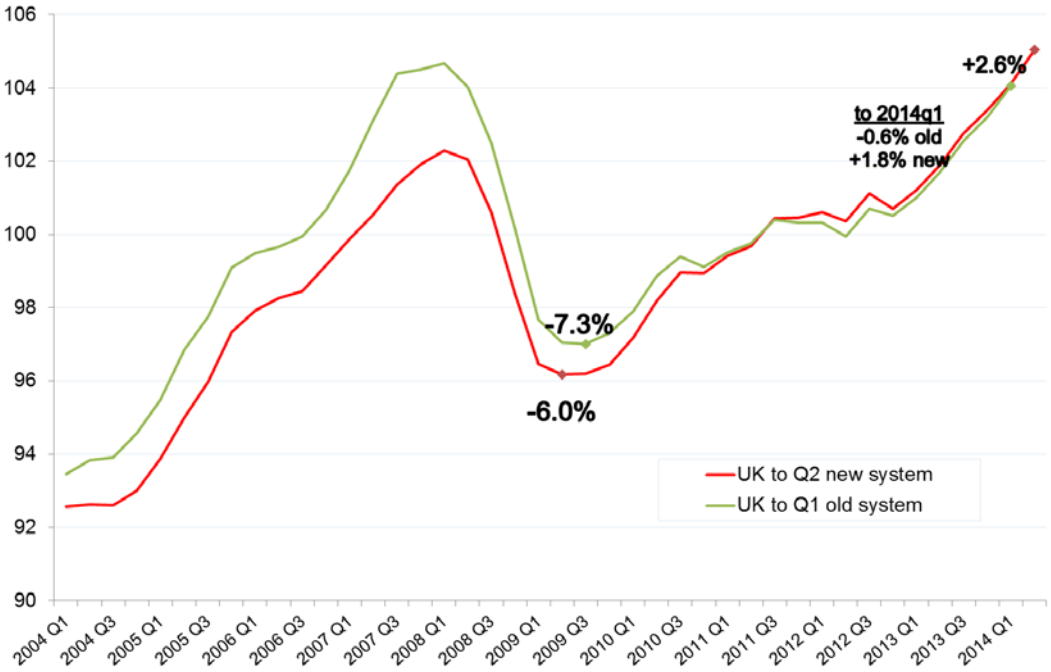


Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and 1st quarter 2014 and FAI calculations

Figure 1 charts Scottish quarterly GDP growth to the 2014q2 and UK quarterly GDP growth to 2014q1. We do not have comparable GDP growth figures Scotland and the UK for 2014q2. This is because the ONS have from the 2014q2 introduced changes to the UK National Accounts to comply with the European System of Accounts 2010. The key changes 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). These changes are currently estimated to raise the level of annual current price GDP in the UK by between 2.6 and 4.6 per cent, though the impact will vary across individual years. It follows that the two series - GDP for Scotland and the UK - will not be strictly comparable for the next two Scottish GDP releases (i.e. October 2014 and January 2015) as the Scottish series will continue to be estimated on the old basis until the transition of the Scottish National Accounts system is complete. The Scottish Government's advice to users is that the Quarterly GDP series remains a valid measure of short-term growth of the Scottish economy and in particular short-term comparisons over the quarter and the year between Scotland and the UK are still meaningful despite these methodological differences. However, it is not valid for longer-term comparisons.

Under the new system, UK GDP rose by just under 0.9% in the second quarter much the same as the estimate for Scotland on the old basis. However, the impact of the changes on the level of UK GDP is quite large as Figure 1a shows.

Figure 1a: UK GDP under old and new system of accounts

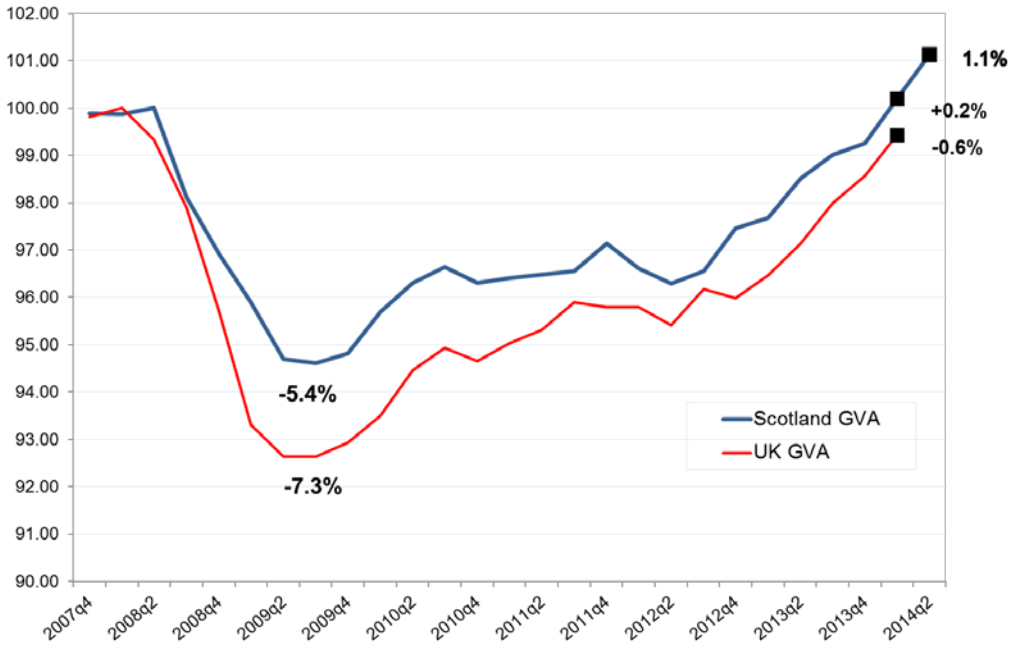


The scale of the recession in the UK is reduced from a contraction of -7.3% to -6.0% now much closer to the -5.4% contraction experienced in Scotland. By the first quarter of this year UK GDP was still -0.6% below its pre-recession peak under the old accounts system but +1.8% above the peak after the changes that are contained in the new system. So, UK GDP reached its pre-recession peak in the third quarter of 2013 under the new system compared to the old system where the peak had not been reached by the first quarter of this year.

Over the year to the fourth quarter - four quarters on previous four quarters - Scottish GDP grew at 2.4%, a growth rate that is above trend. These data indicate that the recovery continues at a strong rate and faster in the first half of this year than we had anticipated. Positive growth has now been recorded for the Scottish economy in the last 8 quarters. The effect of the latest data on Scotland and the UK's recovery from recession is shown in Figure 2.

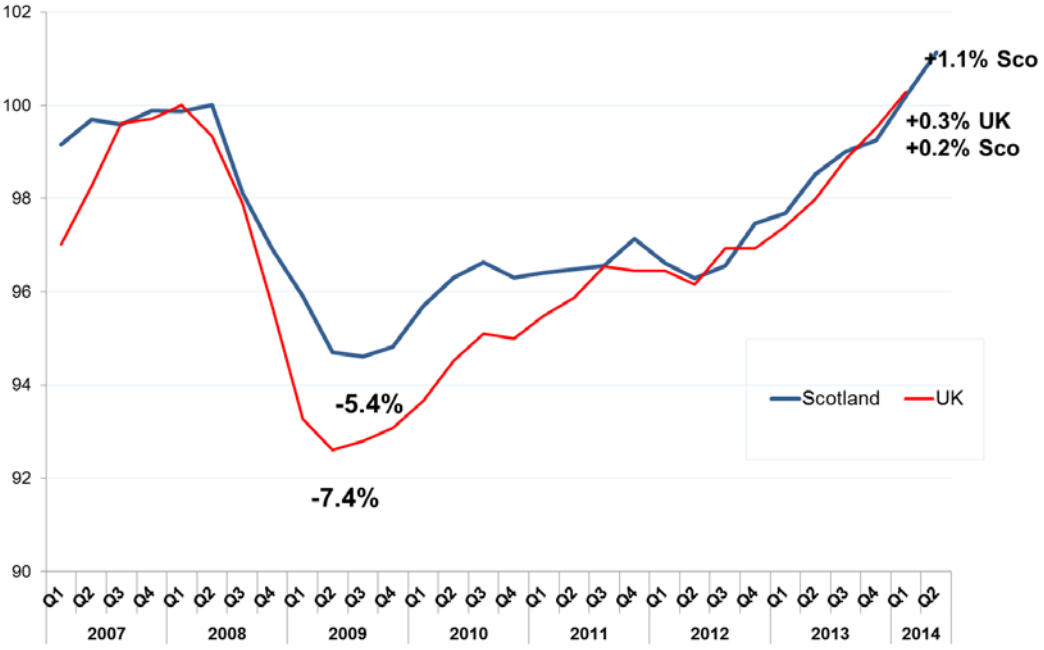
In the second quarter, GDP in Scotland was +1.1% above the pre-recession peak, having finally passed the peak in the first quarter of this year 6 years later. We await the publication of the Scottish GDP series next year under the new system to see if the revisions and additions to the data raise the level of GDP and bring forward the time when the pre-recession peak was reached as it did in the UK. Despite the recent strong Scottish growth performance, the overall strength of the recovery is still greater in the UK than Scotland. By 2014q2 Scottish GDP had grown by 6.9% since the trough of the recession compared to 7.3% in the UK to the earlier quarter 2014q1. However, as noted in previous *Commentaries* there is the complicating factor of oil and gas production which - offshore production - is included in the UK GDP data but not in the Scottish data. Removing oil and gas production gives us Figure 3.

Figure 2: GVA in recession and recovery Scotland and UK to 2014q2 (Relative to pre-recession peak) UK to 2014q1



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014, ONS and FAI calculations

Figure 3: GVA ex oil & gas, recession and recovery to 2014q2 (UK to 2014q1)

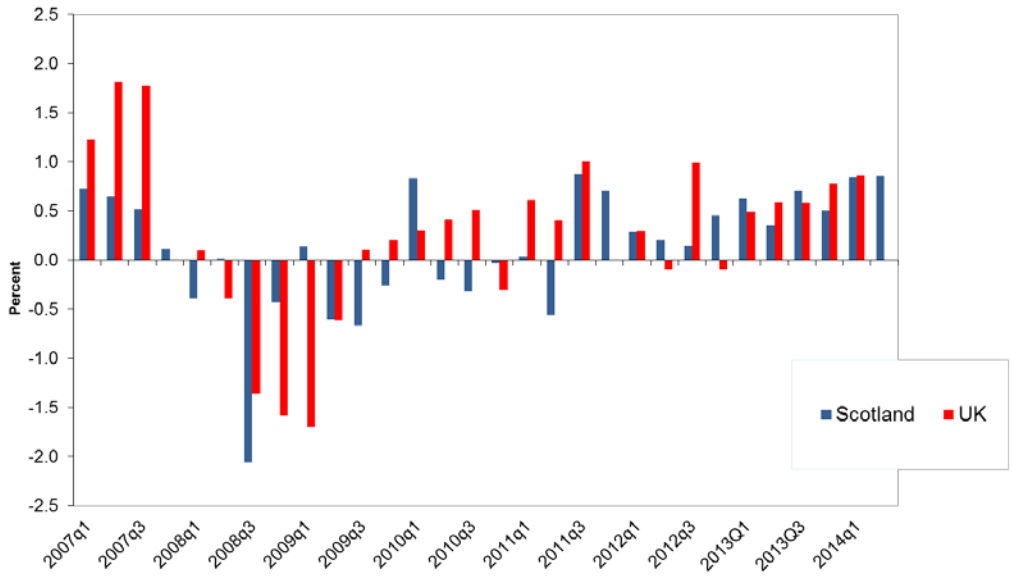


Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014, ONS and FAI calculations

When oil and gas production is removed, we find that on the old data series UK GDP was 0.3% above the pre-recession peak by 2014q1 compared to 0.2% in Scotland. The long period of weak oil and gas production has resulted in the UK GDP - ex oil & gas - having a much stronger recovery from recession than Scottish GDP. As noted above, Scottish GDP has recovered by 6.9% since the trough of recession while UK GDP - ex oil & gas - recovered by 8.3% from its trough by the previous quarter 2014q1.

Turning now to individual sectors of the economy. The Scottish service sector, which accounts for 72% of GDP in Scotland and 77% in the UK, grew by 0.9% in Scotland in the second quarter; this followed growth of 0.8% in Scotland and 0.9% in the UK in the first quarter - see Figure 4. Under the new system of accounting UK services output grew by 1.1%, faster than in Scotland.

Figure 4: Scottish and UK Services GVA Growth 2007q1 to 2014q2 (UK to 2014q1)

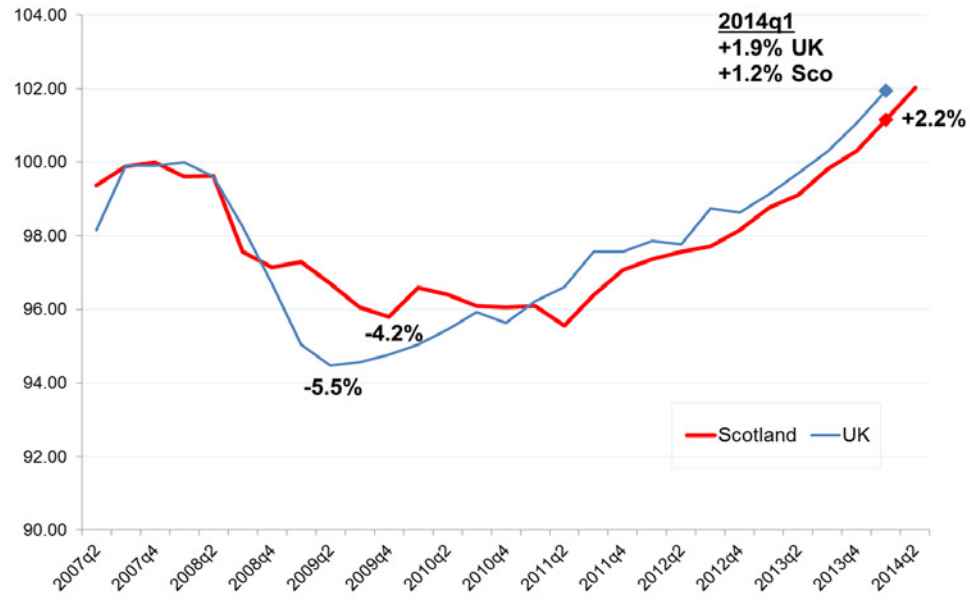


Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Over the year - that is four quarters over previous four quarters - the service sector in Scotland grew by 2.4%. The state of the recovery in Scottish and UK services is presented in Figure 5. Figure 5 indicates that by the second quarter output in Scottish services stood at 2.2% above the previous peak. By the first quarter output in Scottish services stood at 1.2% above the previous peak while output in UK services was 1.9% above. The data suggest that up to the first quarter the recovery in Scottish services continued to be weaker than in the UK with growth of 6.5% since the trough of the recession compared to 7.9% in UK services. In the previous three *Commentaries* we noted that the recovery in Scottish services' growth continues to underperform the overall performance of the economy in the recovery, whereas that was not the case in the UK where the recovery in services has been somewhat quicker. However, the data for the first and second quarters reveals that the recovery in Scottish services is strengthening both absolutely and relatively with growth of 6.5% since the trough compared to 6.9% for GDP in the economy as a whole. The service sector recovery in the UK still continues to outstrip, to some degree, the overall recovery in GDP. The production sector in Scotland still continues to boost

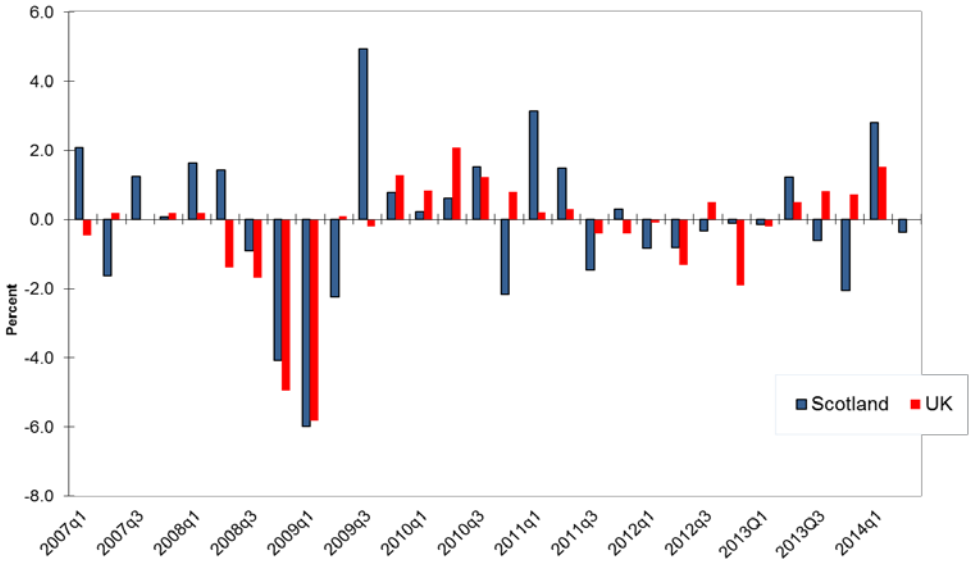
Scottish growth, growing by a little over 11% over the recovery, while the sector remains a significant drag on the recovery in the UK with growth of less than 1% to 2014q1 since the trough of the recession.

Figure 5: Services GVA in recession and recovery Scotland and UK to 2014q2 (UK to 2014q1)



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Figure 6: Scottish and UK Manufacturing GVA Growth at constant basic prices 2007q1 to 2014q2 (UK to 2014q1)

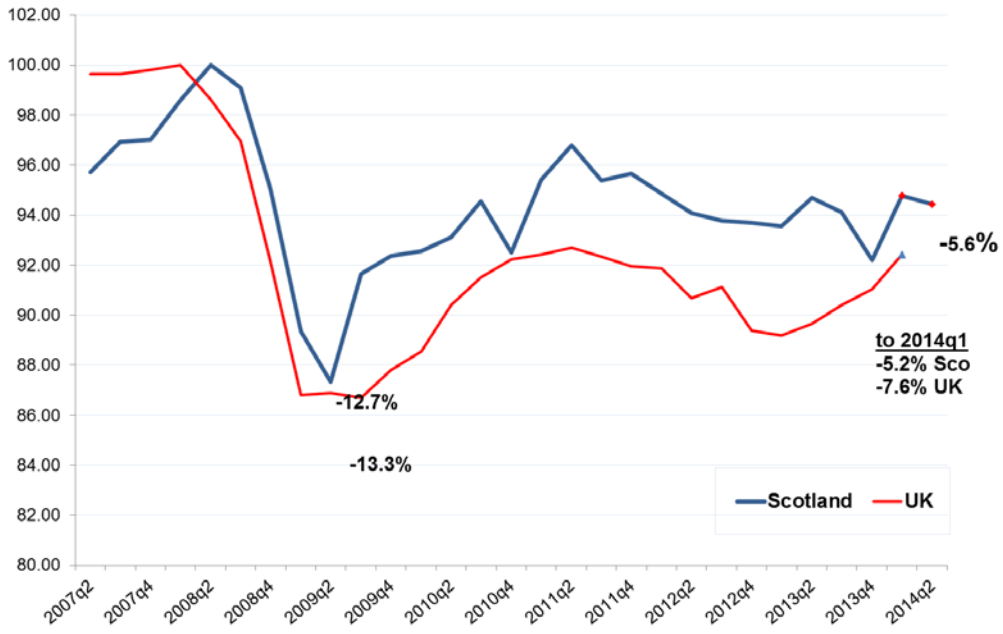


Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Scottish production output strengthened in the first quarter of the year as production at Grangemouth came back on stream. Output rose in the first quarter by 2.1% then rose again by 0.3% in the second quarter. UK production sector output grew by only 0.2% in the quarter. Over the year - four quarters on four quarters - production GVA rose by 0.6%. Within production, Mining & quarrying GVA grew by 5.4% in the second quarter and rose by 2.6% over the year. Electricity & gas supply GVA fell by –3.1% in the second quarter and also fell by -0.6% over the year. In the second quarter, GVA in Scottish manufacturing fell by -0.4% after rising by 2.8% in the first quarter, again largely due to the impact of Grangemouth restarting production. Over the year to the second quarter, Scottish manufacturing contracted slightly by -0.1%, indicating a flattening of the recovery in the sector. Figure 6 charts the quarterly percentage changes in GVA in Scottish and UK manufacturing.

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 Scotland to 2014q2, UK to 2014q1



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

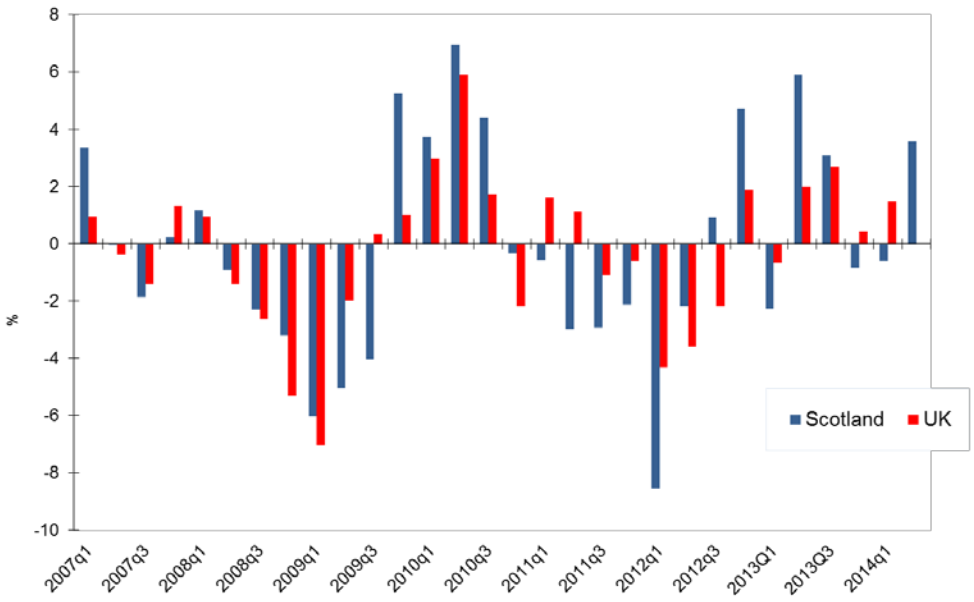
By the second quarter Scottish manufacturing GVA was still -5.6% below its pre-recession peak. The chart makes clear that the recovery in both Scottish and UK manufacturing effectively stalled in 2011q2, three years before the latest data point. UK manufacturing has demonstrated a stronger recovery since the first quarter of 2013. However, by the first quarter of this year UK manufacturing was -7.6% below its pre-recession peak compared to -5.2% in Scotland, reflecting the greater fall in UK manufacturing output in the recession and the stronger recovery in Scottish manufacturing before 2011q2.

Within manufacturing, four of seven principal sectors experienced growth in the second quarter: computer, electrical and optical products (electronics) (accounting for 9% of manufacturing GVA), which grew by 3% in the quarter but contracted by -10.0% over the year; transport equipment (accounting for

8% of manufacturing GVA) which expanded by +1.5% in the quarter but reduced output by -1.0% over the year; metals, metal products & machinery n.e.c. (accounting for 19% of manufacturing GVA) which grew by 0.9% in the quarter but by 6.5% over the year; and other manufacturing Industries, repair & installation (accounting for 22% of manufacturing GVA) which grew by 0.3%% in the quarter while growing by 2.2% over the year. The three manufacturing sub-sectors that contracted in the quarter were: textiles, clothing & leather products (accounting for only 2% of manufacturing GVA) which suffered a loss of output of -3.0% in the quarter but grew by 2.9% over the year; food & drink (accounting for 28% of manufacturing GVA) which contracted by -1.9% in the quarter and by -2.5% over the year; and finally, refined petroleum, chemical & pharmaceutical products (accounting for 12% of manufacturing GVA) which contracted by -2.0 in the quarter and by -0.8% over the year.

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

Figure 8: Scottish and UK Construction GVA Volume Growth 2007q1 - 2014q2 (UK to 2014q1



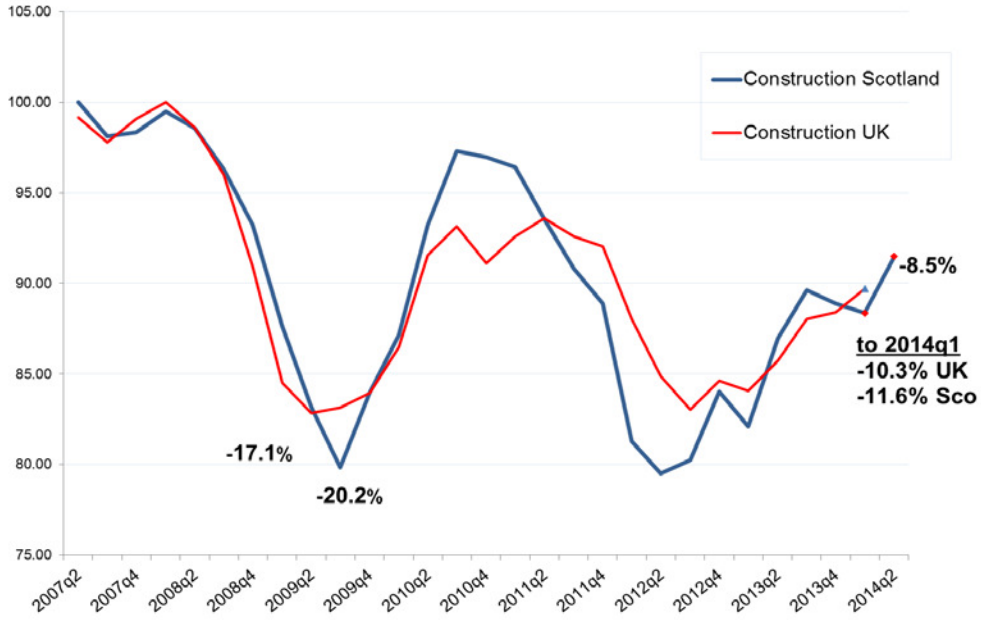
Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Scottish construction GVA picked up considerably in the second quarter growing by 3.6% after falling by -0.6% in the previous quarter and falling by -0.8% in the final quarter of 2013. UK construction GVA in contrast rose by 0.7% in the second quarter. Over the year – four quarters on four quarters - Scottish construction grew by 7.5%. Figure 9 displays the recession and recovery performance in both Scottish and UK construction.

Figure 9 highlights the recent recovery in Scottish construction after the downturn for two quarters. By the second quarter Scottish construction was still -8.5% below its pre-recession peak. By the end of the first quarter UK construction was -10.3% below peak and Scottish construction -11.6% below its peak.

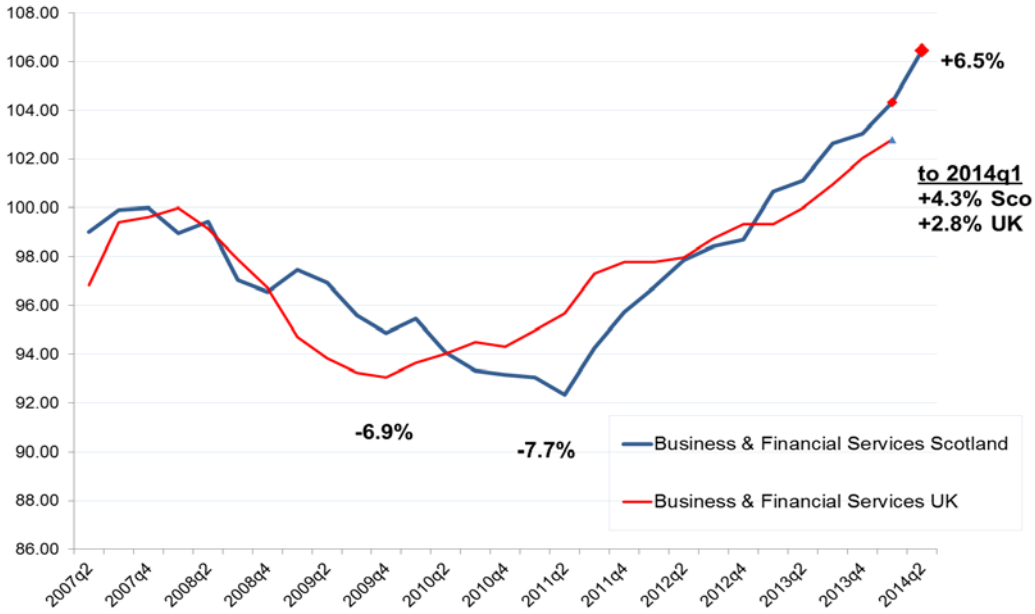
Within services, the principal sub-sectors in the private sector all displayed positive growth in the fourth quarter. Business and financial services grew strongly by 2%. Over the year, the sector grew at 4.4%. Figure 10 shows the growth of the sector in Scotland and UK during the recession and recovery.

Figure 9: Construction, Recession and Recovery to 2014q2 (UK to 2014q1)



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Figure 10: Business & Financial Services: Recession and Recovery to 2014q2 (UK to 2014q1)



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

By the first quarter, output or GVA in the sector had moved to +4.3% above its pre-recession peak in Scotland compared to +2.8% in the UK underlying the stronger recovery of this sector in Scotland compared to the UK. By the second quarter of this year output in the sector in Scotland stood at +6.5% above the previous peak. The aggregate GVA data for business and financial services in Scotland have recently masked significant differences between the performance of financial services on the one hand and business services on the other. Figure 11 shows what has been happening to financial services since peak output in the second quarter of 2008.

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

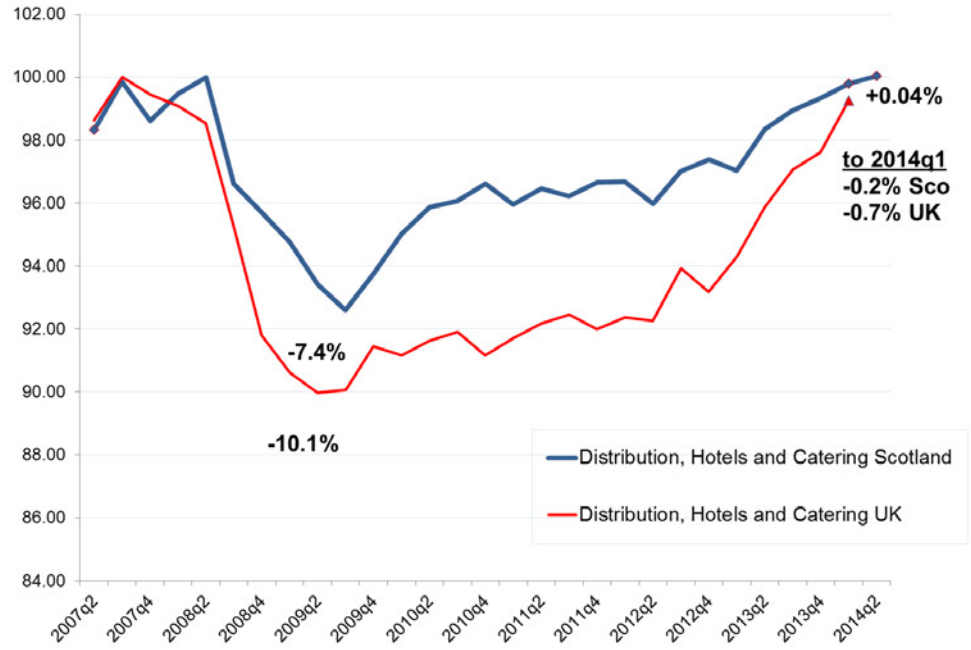
Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

These data show that the recovery in the sector is continuing this year after the weak performance in the second half of 2013. Now GVA in the sector is -6.8% below the pre-recession peak compared to the trough of -16.0% in 2012q4. The continuation of the recovery in financial services raises the hope that despite the structural change that occurred in the banking sector in particular after the Great Recession, output does now seem to be moving back slowly towards pre-recession levels.

Elsewhere, in private services, distribution, hotels and catering (accounting for 19% of services sector output in Scotland), grew by only 0.2% in the second quarter. Over the year, the sector grew by 2.1%. Figure 12 shows the performance of the sector during recession and recovery.

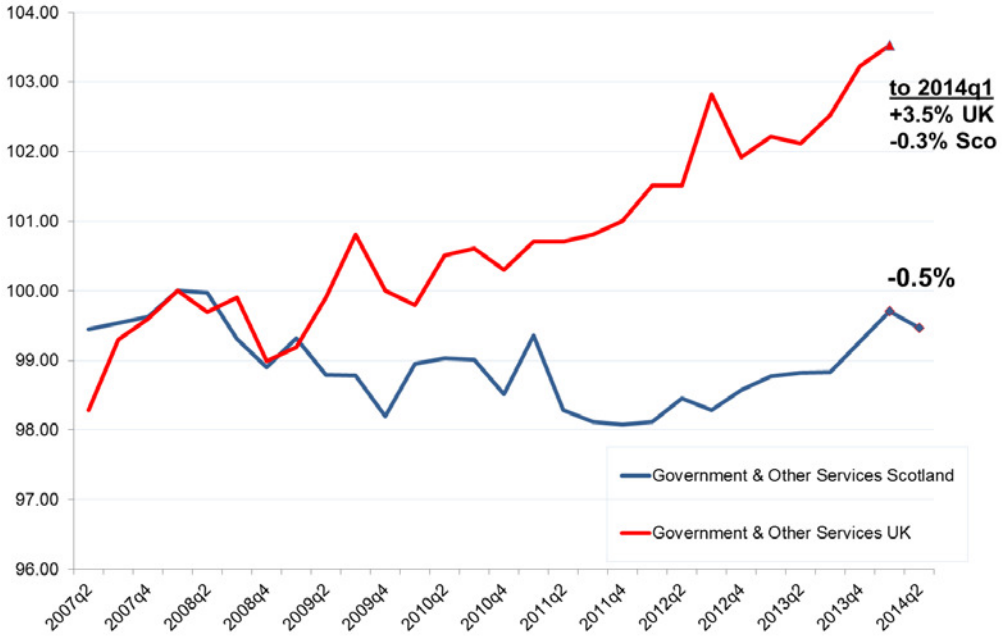
Figure 12 reveals that after data revisions the sector in Scotland just attained its pre-recession and is +0.04% above. By the first quarter the sector in the UK was still -0.7% below its peak, while the sector in Scotland was doing slightly better at just -0.2% below. However, it should be noted that the sector had a less serious recession in Scotland than in the UK with output falling by -7.4% here compared to -10.1% in the UK. The track of the recovery in the sector picked up strongly during 2013 and 2014 in both Scotland and the UK.

Figure 12: Distribution, Hotels & Catering: Recession and Recovery to 2014q2 (UK to 2014q1)



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Figure 13: Government and Other Services: Recession and Recovery to 2014q2 (UK to 2014q1)



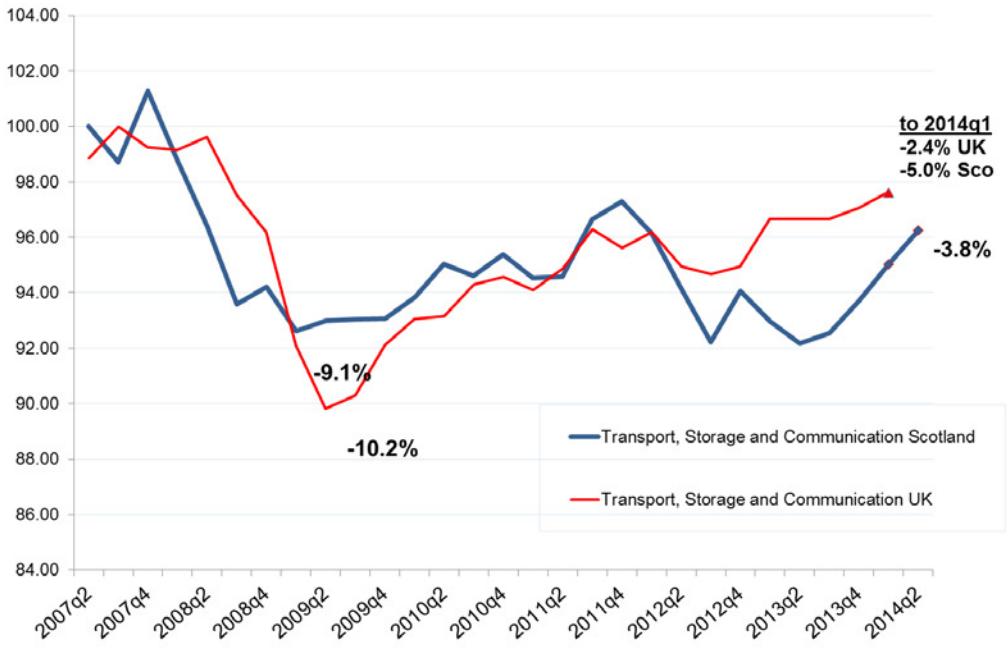
Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

Output in Government & Other Services fell slightly in Scotland in the second quarter by -0.2%. Over the year, output in the sector grew slightly in Scotland by 0.7%. Figure 13 shows the performance of GVA in the sector in recession and recovery.

By the first quarter GVA in the sector in the UK was 3.5% above the pre-recession peak, which as we have noted in several earlier *Commentaries* is difficult to understand at a time of fiscal consolidation, whereas output in the sector in Scotland was -0.3% below its pre-recession peak, which seems more reasonable. In the second quarter output in the sector in Scotland was -0.5% below peak.

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 11% of service sector output.

Figure 14: Transport, Storage & Communication: Recession and Recovery to 2014q2 (UK to 2014q1)



Source: Scottish Government GROSS DOMESTIC PRODUCT 2nd QUARTER 2014 and FAI calculations

The pick-up in the performance of the sector in Scotland continued in the second quarter with GVA rising by 1.3%. Over the year, the sector grew by 1.6% in Scotland. By the end of the first quarter GVA in the Scottish sector was -6.2% below pre-recession peak compared to -2.4% in the UK. By the second quarter, output in the sector in Scotland stood at -5.0% below pre-recession peak.

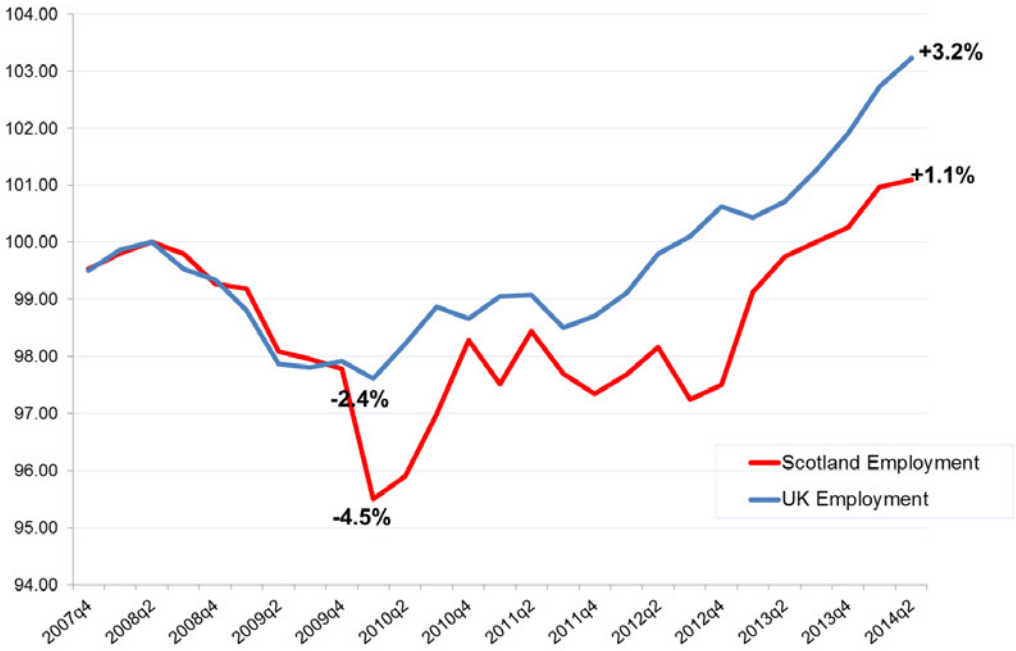
The Labour Market

The latest labour market data (see *Scottish Labour Market* section below) show a continuing strong recovery. In the quarter June – August 2014, employment rose by 1.4% in Scotland and was 0.0% in the UK. In terms of numbers, jobs rose by 35,000 in the quarter, compared to a 46,000 in the UK as a whole. Over the year, Scottish jobs rose by 52,000, a rise of 2.0%, while UK jobs rose 736,000, or 2.5%.

During the quarter unemployment in Scotland, in a further reflection of jobs growth , fell by -40,000, or -21.0%, to 151,000, or a rate of 5.5%, while in the UK, unemployment fell less rapidly by -154,000, or -7.2%, to a rate of 6.0%. Over the year, unemployment fell strongly by -54,000, or -26.2%, while in the UK unemployment also fell strongly but a little more slowly by -538,000, or -21.4% (See Figure 1 in the *Scottish Labour Market* section below, which shows the track of quarterly unemployment in Scotland and the UK from 2000 to August 2014.)

Figure 15 shows the performance employment in Scotland and the UK during recession and recovery to 2014q2.

Fig 15: Total Employment: Scotland and UK Pre-recession peak to 2014q2



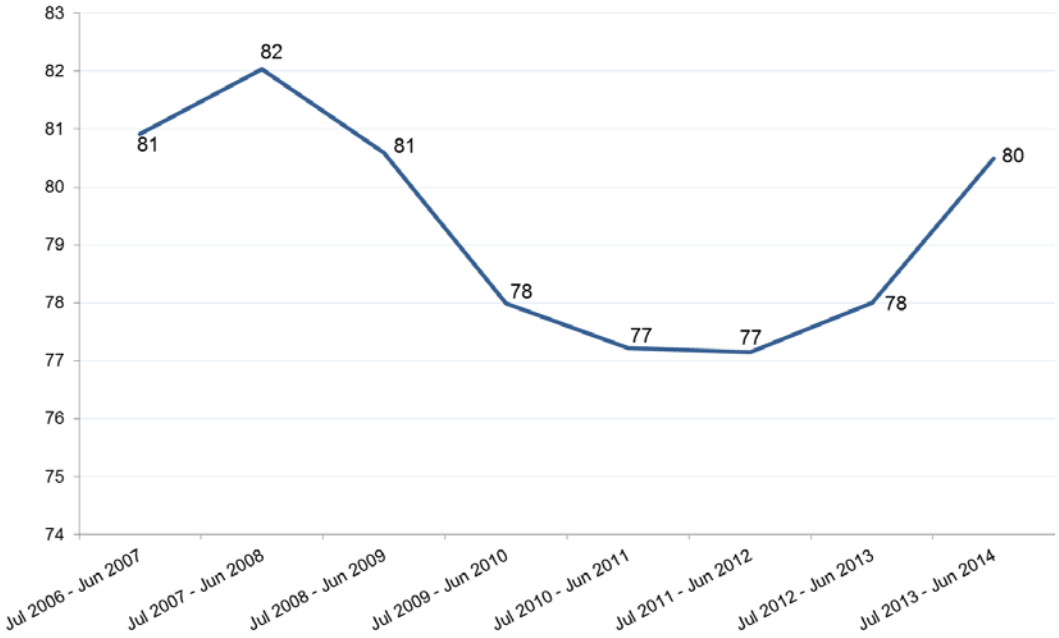
Source, ONS Regional Labour Statistics and FAI calculations

Scottish jobs as reported in the LFS worker surveys have now passed their pre-recession peak. Yet, despite the good recent performance of the labour market in Scotland overall performance in the recovery continues to be worse than the UK. By the end of the second quarter while Scottish employment was 1.1% *above* the pre-recession peak, in the UK jobs were 3.2% higher than the peak.

Despite the strong recent recovery in the labour market, we are still some way from the conditions that maintained prior to the start of the Great Recession. One indicator of this is the balance between full-time, part-time and self-employment. Figure 2 in the *Scottish Labour Market* section below reveals that much of the recovery in jobs has been driven by the growth of part-time and self-employment. Full-time employment still remains considerably below its pre-recession peak, although there has been some pick up in recent quarters. Whether this represents a continuing deficiency in the demand for labour or a more structural change heralding greater continuing shares in part-time and self-employment and a smaller share for full-time employment remains a moot point. An indication that there is still a deficiency of demand in the Scottish labour market, irrespective of whether the shift to part-time and self-

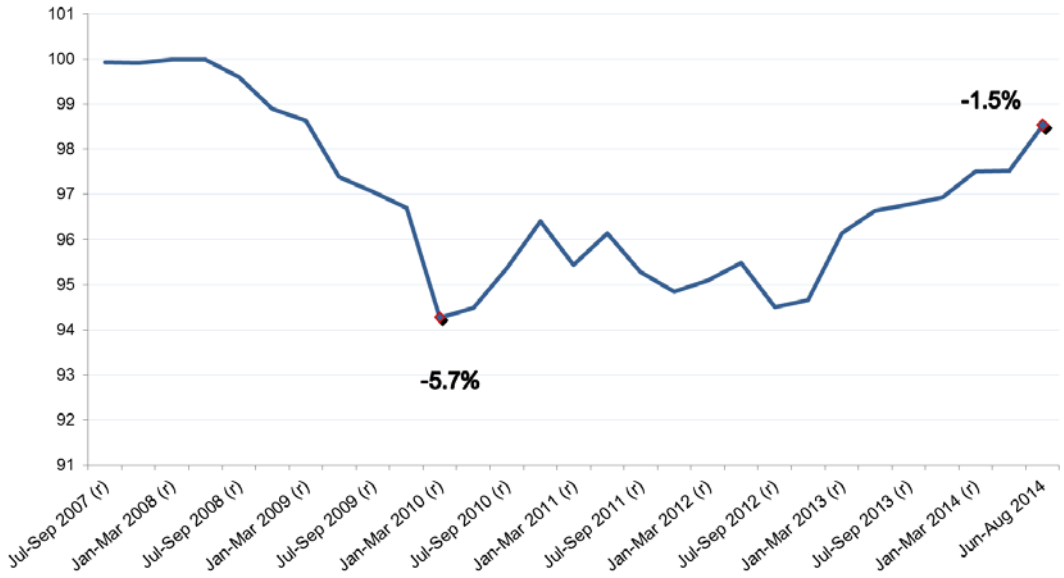
employment is structural or cyclical, is provided by data on the number of weekly hours worked. Figure 16 charts this statistic from 2007.

Figure 16: Total weekly hours worked in Scottish labour market (millions)



Source, ONS Regional Labour Statistics and FAI calculations

Figure 17: Employment to population (16 and over) July-Sep 2007 to Jun-Aug 2014 in recession and recovery



Source, ONS Regional Labour Statistics and FAI calculations

During the year July 2013 to June 2014 total weekly hours worked averaged 80 million that is 2 million, or -2.4%, below the pre-recession peak average weekly hours worked. So despite the number of jobs being higher than before the recession, the demand for labour as measured by hours worked is still lower

Finally, not only is the demand for labour still lower than pre-recession but demand -measured in terms of jobs - is still considerably deficient when compared to the supply of labour. Figure 17 charts the employment to population (aged 16 and over) ratio relative to pre-recession peak for Scotland to June-August 2014.

By June-August 2014, the ratio stood at -1.5% below the pre-recession peak, compared to -5.7% at the trough of the recession. This suggests that even when we consider jobs alone and not hours worked there is still plenty of slack in the Scottish labour market compared to the pre-recession peak despite the recent strong jobs recovery.

Forecasts

Background

Global and UK economies

In the June 2014 *Commentary* we suggested that there were four potential obstacles to a sustained recovery of the Scottish economy: a failure to achieve a balanced recovery; weak or no growth in real wages; an overheated housing market, especially in London and the South East of England; and the risk of deflation in the Eurozone.

At the present conjuncture only the overheating in the housing market has moderated, with house price growth slowing and, as the October 2014 minutes of the Bank of England's Monetary Policy Committee (MPC) notes: "Having risen strongly in the second half of 2013, mortgage approvals for house purchase had turned down in the early part of 2014 and had since failed to recover." However, there is little evidence of a more balanced recovery; indeed, the latest data suggest that growth in the UK still remains unbalanced. Real wage growth is still in negative territory, although there is some evidence that median real wages may now be rising in Scotland. Moreover, despite part-time and self-employment driving the recent growth in jobs, self-employment income appears to be stagnating and the decline in Trade Union membership and the diminishing influence of unions over pay setting may be contributing to the weakness of real wages (for more discussion see the *Scottish Labour Market* review below and the article by Boyd). The stagnation in the Eurozone has if anything worsened since we last reported. There would appear to be a real risk of deflation unless the ECB takes counter monetary policy measures in the absence of a loosening of fiscal policy, in Germany in particular. Quarterly growth in Germany averaged only 0.3% in the first half of the year, while industrial production fell by over 4% in August. Outside the Eurozone the US economy is displaying reasonable growth, perhaps justifying the Fed's decision to cease its policy of quantitative easing. Growth also appears to be slowing in emerging economies especially China. To be set against that is the impact of the recent substantial falls in the price of oil. Oil prices have slumped this year falling nearly 25 per cent over the past five months. Brent crude was trading as high as $115 in June 2014 and at the time of writing Brent crude futures are below

$85 per barrel. The Bank of England MPC suggests that the fall in the price of oil reflects subdued global demand against a background of rising supply. Moreover, the MPC notes that the upward-sloping oil price futures curve is consistent with some of the weakness in oil prices being expected to be temporary. Nevertheless, lower oil prices should produce a favourable income effect in net oil importing countries, which should help support the growth of demand.

Against this background the UK Government points to the strong growth of the UK economy as an exception to a picture of depressed demand outside the US in the wider global economy. While this is correct, the strong growth we have witnessed recently is substantially a delayed reaction to a recovery from recession that was significantly subdued by the UK Government's fiscal austerity policy and weak export performance. Of all the major OECD countries the UK was almost the last – with the exception of Italy - to begin to recover.

The key question is whether UK growth can be sustained. There seems little doubt that growth has begun to slow. The preliminary GDP estimate for the third quarter reported growth of 0.7% compared to 0.9% in the second quarter. Retail sales volumes in September 2014 fell 0.3% on August but this was mainly due to lower clothing sales reflecting the unseasonably warm autumn weather. There appeared to be no general slowdown in household demand.

Construction activity expanded at its weakest pace in five months in October due to a sharp slowdown in residential building growth but remained well above the long-term average, according to the latest purchasing managers' index from Markit/CIPS. Finally, the latest Markit/CIPS purchasing managers' survey for the service sector in October fell for the second consecutive month to its lowest level in 17 months. The survey indicated that growth was still occurring in the sector but at slower rate. To be set against these indicators of slowing overall and key sectoral growth, the latest Markit/CIPS survey of purchasing managers in the UK's manufacturing sector suggested that the sector expanded at its fastest rate in three months in October, fuelled by domestic demand.

In the light of these recent indicators, the key question is whether the UK economy is now poised for a period of sustainable growth, or whether growth will slow and then slip back into recession? Are we at a turning point? The IMF Managing Director Christine Lagarde has recently worried that the global economy is poised to slip into what she calls "the new mediocre". Others such as ex US Treasury Secretary and leading economist Larry Summers believe that the world economy now faces a situation of secular stagnation, a permanent deficiency of demand – caused, for example, by a permanent slow down in the growth of the working age population - which can't be overcome even with near-zero interest rates. As Paul Krugman says at its root it is "the problem of building consumer demand at a time when people are less motivated to spend" And that applies to investment too. If we are faced with a persistent shortfall in demand the policy implications are, as Krugman further notes, " … measures to boost spending — higher inflation, maybe sustained spending on public works (and less concern about debt because interest rates will be low for a long time)."

UK growth is increasingly reliant on domestic demand as the net trade position continues to be weak. While there has been a clear pickup in investment in the UK, growth is very dependent on household demand. And the growth of household demand it must be said is not based on solid foundations. Jobs

are being created in large numbers so boosting aggregate labour income, a key factor in household spending. But real wages are still not rising, which must be serving to dampen household spending. Households are clearly resorting more to credit and borrowing but it is difficult to believe that this can be sustained for very long. House price growth appears to be moderating. Rising asset/house prices allow households to borrow more knowing that the increased borrowing is 'covered' by the rising value of the assets they hold. Borrowing therefore becomes more risky if the growth in house prices starts to moderate, as it has. On top of this, household debt appears to be rising again to potentially dangerous levels. The recent *Credit Suisse Global Wealth Report 2014* notes that in the UK household debt grew quickly as a multiple of income from 1980 to reach 180% of income in 2008. During and after the Great Recession - which many economists believe was triggered by levels of private, including household, debt that had become unsustainable - household debt fell to 150% by 2013. However, in the last year the ratio has risen again to 170%. Moreover, a too soon increase in base rate by the Bank of England could prove to be the catalyst that leads to retrenchment: a sharp increase in the household saving rate and a sudden drop in spending.

Finally, we must not forget that the British economy is still subject to significant fiscal austerity. The *Institute for Fiscal Studies* has estimated that by the current fiscal year April 2014 to 2015 only 50% of the planned cuts in current spending will have been implemented, or 53% of overall – capital and current – spending cuts. The tax rises were more front-loaded so that 80% of these will have been implemented. But overall, with planned fiscal austerity amounting to 10% of UK national income by 2018-19, not much more than half of that has been achieved to date.

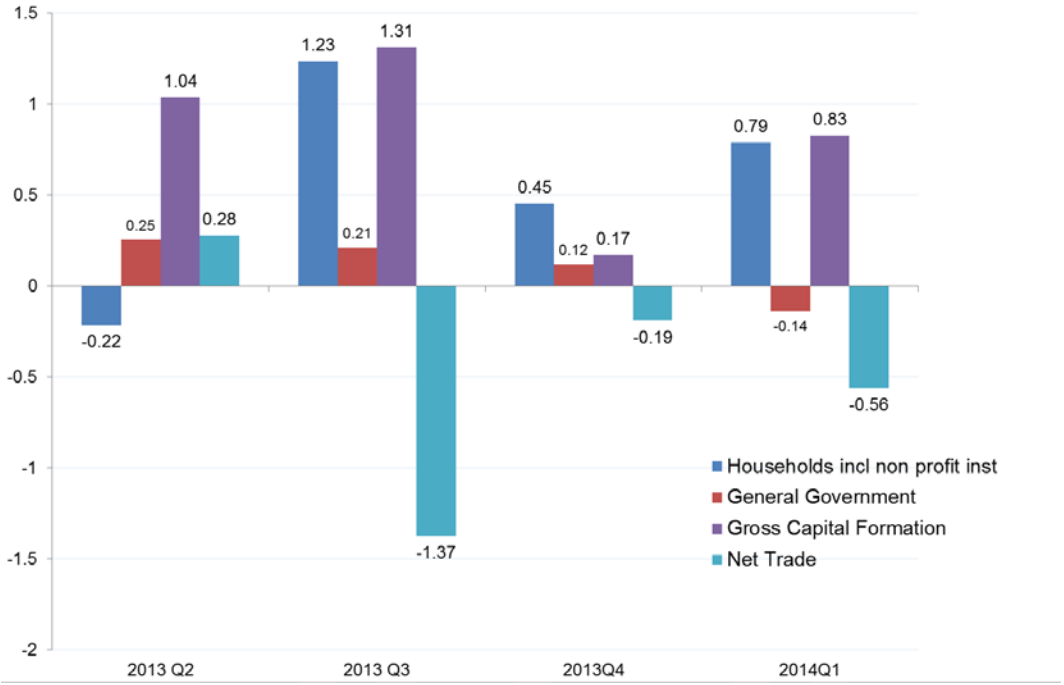
The brake imposed on domestic demand by this future austerity will be considerable. This, coupled with weakening export markets and a potential pull back in household spending, could see the UK economy slip back into recession. And Scotland would, obviously, not be immune.

The Scottish Economy

The Scottish National Accounts Project (SNAP) data from the Scottish Government allows us to gauge the extent to which the recovery in Scotland is becoming more balanced. Data published in August 2014 go up to the first quarter of this year. These data have been revised for the earlier quarters in 2013 compared with data presented and discussed in the previous Commentary. Figure 18 presents our estimates of the contribution of each expenditure components to nominal Scottish GDP growth in the final three quarters of 2013 and the first quarter of 2014.

What is heartening about these data is that investment – Gross Capital Formation – is playing a much more positive role in driving growth than in earlier quarters. Indeed, over the four quarters the contribution of investment was greater than the contribution of household demand to nominal GDP growth. The downside is that net trade made a negative contribution to Scottish growth during the second half of last year and the first quarter of this.

Figure 18: Expenditure Components Percent Point Contribution to Nominal Scottish GDP Growth in 2nd, 3rd, 4th Quarters 2013 and 1st Quarter 2014



Source: SNAP 13 August 2014 and FAI calculations

So, we can conclude that elements of a balanced recovery are falling into place. Investment has clearly picked up. But with the net trade position consistently negative in the last three quarters and a weakening global market the prospects that external demand will serve to sustain growth appear unlikely. Hence the prospects for sustained investment spending would appear to depend on the growth of domestic demand and household spending in particular. Household spending is continuing to make a positive contribution to growth but its underling determinants remain weak, as the discussion on the UK economy above make clear.

Investment in Scotland has picked up with inward foreign direct investment playing a role. So, in the light of slowing growth, the risks of secular stagnation, the need to boost competitiveness, net trade and inward foreign investment, we do believe there is strong case that Government, and the UK Government in particular, should invest more in infrastructure in and for Scotland. The IMF in its recent *World Economic Outlook* published in October makes the following plea to Governments:

> *" …. increased public infrastructure investment raises output in both the short and long term, particularly during periods of economic slack and when investment efficiency is high. This suggests that in countries with infrastructure needs, the time is right for an infrastructure push: borrowing costs are low and demand is weak in advanced economies ….. Debt-financed projects could have large output effects without increasing the debt-to-GDP ratio, if clearly identified infrastructure needs are met through efficient investment."*

The *Outlook* shows that the estimated quality of UK infrastructure overall has been improving in recent years but still remains below that of Germany, France, Japan and Canada, of the major advanced countries. The July 2013 report from McKinsey Global Institute highlighted infrastructure investment as one of the top 5 catalysts for economic growth. It is also a major factor in the attraction of foreign investment.

The UK Government appears on the face of it to agree since at the time of writing it is unveiling plans for £15 billion of new infrastructure projects this week and to make it "easier than ever" to invest in the UK. This is to be welcomed. However, more needs to be done to improve the infrastructure of road and rail, especially, between Scotland and the UK. Raising the borrowing levels available to the Scottish Government would also help to support and encourage its own plans for infrastructure investment within Scotland.

Scottish GDP growth in the first half of this year was somewhat faster than previously forecast. However, as noted above, UK GDP growth slowed to 0.7% in the third quarter from 0.9% in the second quarter. We do not have GDP outturn data for the third quarter for Scotland. However, we do have some partial indicators and business surveys. According to the Scottish Retail Consortium retails sales in September 2014 fell sharply. The suggestion that the referendum was a key factor in the downturn seems implausible. The unseasonal warms weather affecting clothing sales seems a better structural explanation but we must not rule out the possibility that we are seeing a slowing in the growth of domestic demand for some of the reasons discussed above. The third quarter *Quarterly Business Survey* from the Scottish Chambers of Commerce conducted by the Fraser of Allander Institute confirms the impression that growth is slowing down while still remaining positive. Orders and sales grew in the quarter but at a slower pace than in the second quarter while the increase in business optimism was more muted than between April and June 2014.

It is against this background in Scotland, the UK and the global economy that we have prepared our latest 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 presents our forecasts for Scottish GVA - GDP at basic prices - for 2014 to 2016. 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 2014 is 2.7%, which is revised up from our forecast of 2.5% in June 2014, due to the strong growth performance exhibited in the first half of the year. For 2015, we have maintained our June forecast of 2.2%. We have revised down our forecast for 2016 to 2.1% from 2.4% in June. This reflects an anticipation of a further weakening of the recovery than already forecast due especially to continuing weakness of the Eurozone economies.

Table 1, also compares our GVA forecasts with the median of latest independent forecasts for the UK as published by the UK Treasury. These show that we again expect Scottish growth to continue to be weaker than UK growth over the forecast period. So, we are now forecasting growth of 2.7% in 2014, 2.2% in 2015, and 2.1% in 2016. Given our previous forecast errors the lower and upper bounds for growth in 2014 are expected to be 2.4% and 3.0%, for 2015, 1.7% to 2.7%, and for 2016, 1.0% to 3.2%.

Table 1: Forecast Scottish GVA Growth, 2014-2016

GVA Growth (% per annum)	2014	2015	2016
Central forecast	**2.7**	**2.2**	**2.1**
June forecast	*2.5*	*2.2*	*2.4*
UK mean independent new forecasts (October)	3.1	2.7	n.a.
Mean Absolute Error % points	+/- 0.29	+/- 0.49	+/- 1.12

Production and manufacturing continue to be the major sectors exhibiting the fastest growth in 2014, 2015 and 2016. In 2014, production is projected to grow by 3.1%. Services and construction display positive growth this year at 2.5% and 2.0% respectively. This relative performance continues in both 2015 and 2016 even though forecast growth diminishes across all sectors in 2015 and then rises again in 2016. Production grows by 2.6% and 2.5% in 2015 and 2016, while service growth is projected to be 2.1% in 2015 and 2.0% in 2016. The construction sector continues to lag with growth of 1.3% in 2015 and 1.2% in 2016.

Employment Forecasts

Table 2 presents our forecasts for net employee jobs for the years 2013 to 2015 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.

Our forecasts for employee job creation are similar to our June forecasts, with a slight upward revision for this year and further downward adjustments for 2015 and 2016. On the central forecast, we are now forecasting that net jobs will increase by 46,560 in 2014, 41,600 in 2015 and 48,900 in 2016. This year, we now expect nearly 40,000 service sector jobs to be created, with around 2,100 added in production due to expected productivity increases given the growth in output, and somewhat stronger jobs growth of 3,600 in agriculture. Construction jobs are now forecast to rise this year by 1,600. In 2015/2016, the bulk of the jobs created are again expected to be in the service sector with an additional 32,600/38,300 jobs forecast, while 4,400/5,400 are added in production, 3,050/3,300 in agriculture and 1,550/1,900 in construction.

Table 2: Forecast Scottish Net Jobs Growth in Three Scenarios, 2014-2016

	2014	2015	2016
Upper	53,000	53,450	76,750
June forecast	*52,850*	*66,050*	*87,200*
Central	**46,560**	**41,600**	**48,900**
June forecast	*43,100*	*42,900*	*58,150*
Lower	33,400	19,900	29,900
June forecast	*33,400*	*19,900*	*29,900.*

Unemployment Forecasts

The key unemployment forecasts are summarised in Table 3 below.

Table 3: Forecasts ILO unemployment 2014-2016

	2014	2015	2016
ILO unemployment			
Rate (ILO un/TEA 16+)	**5.3%**	**5.2%**	**5.0%**
June forecast	6.4%	6.2%	5.8%.
Numbers	**127,700**	**141,019**	**135,537**

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. Our unemployment forecasts have been revised down further again from March, reflecting higher economic activity. Our projection for unemployment on the ILO measure at the end of 2014 falls to 124,700 (5.3%). In 2015, unemployment is now forecast to fall slightly to 5.2% but to increase in terms of numbers to 141,019 as the workforce increases. Falling again, to 135,537 (5.0%) by the end of 2016.

Brian Ashcroft
7 November 2014

2 Forecasts of the Scottish economy

Grant Allan, Fraser of Allander Institute

Abstract

The latest figures indicate that the Scottish economy has picked up strongly in the first half of 2014, in line with a surge in leading indicators across business surveys. It is likely however that this has eased as we turned into the later part of this year, suggesting that the rate of growth will slow. Where 2014 has exceeded our earlier expectations, we have revised our forecasts for growth (upwards) and unemployment (downwards) from June's Commentary. It remains unlikely that we will see a renewed expansion in activity given the scope for potential downside risks from, in particular, weak growth and deflation fears in the Eurozone; weak export growth; debt constrained households unlikely to continue to support economic activity and only slowing improving outlook for investment through 2015. Revisions to the data for the UK, to be implemented in Scottish statistics next year, will make somewhat difficult to make direct comparisons about the recent trajectory of the UK and Scottish economic performances: however the general picture, of slow and unsteady growth for Scotland is likely to characterise developments through the coming years.

Fiscal and monetary outlook

Analysis by Fiscal Affairs Scotland from October 2014, carried out in the aftermath of the Scottish Draft Budget, suggests that the coming year (2015-16) will be "one of the milder years in terms of cuts", as the fiscal consolidation of the UK Government continues. They note a real terms reduction in Scottish Government spending in 2015-16 of the order of 1.7%. The milder year coming however is, in their analysis, likely to followed by reductions of over 3% in both 2016-17 and 2017-18. That the public investment consolidation has concluded, these future reductions in spending will fall hardest on current spending in these years.

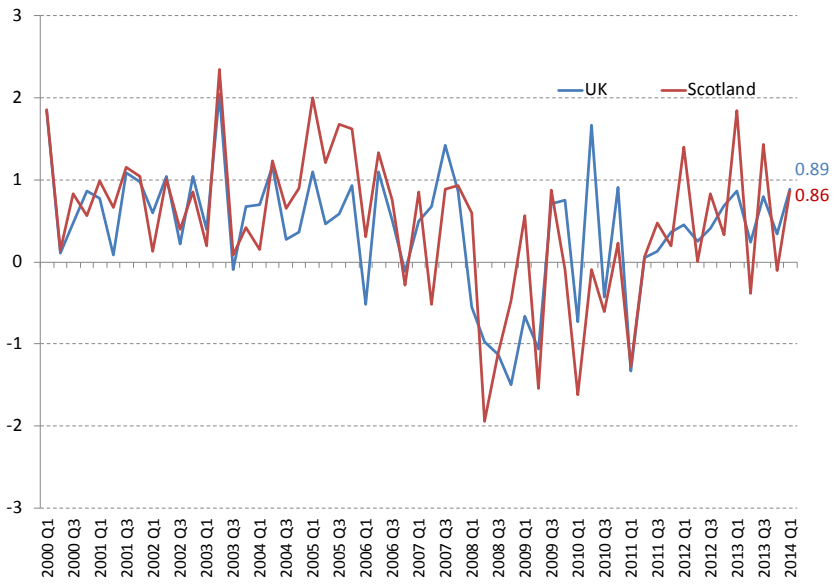
Monetary policy stance remains accommodative of activity – with no change in interest rates from 0.5%, and an unchanged QE asset purchase programme since we reported in June's commentary. That has moved considerably since the summer is the expected date (and pace at which) the Bank of England would seek to "normalise" interest rates. Current "forward-guidance" from the Bank indicates that with spare capacity in the economy and no breaches to its inflation target of 2%, it will not consider raising interest rates. Inflation had slowed in September to 1.2%, and so remains below the Bank's target. The QE programme will be maintained until the rise in the Bank's interest rate.

Since the August Monetary Policy Committee (MPC) meeting there have been signs of a disagreement within the group setting interest rates for the UK on the appropriate monetary policy stance. The minutes from October's meeting confirm that, as in August and September, two of the nine-member committee proposed to raise interest rates by 0.25% (to 0.75%). They argued that some signs of slack in, for example, the labour market had dropped rapidly, suggesting that prices could increase quickly. Given the lags in monetary policy therefore it would be, in their argument, sensible to act in advance to ensure inflation remain at the Bank's target over the medium term, and that increases in interest rates occurred gradually. The MPC voted 7-2 in favour of keeping interest rates at their current level.

Households

It is clear that household spending has driven a considerably portion of economic activity in Scotland and the UK. What is also clear from Figure 1 is that the volatility of (real) consumption spending growth has been greater in Scotland that the UK as a whole, as evidenced by two quarters of real terms reductions in spending growth during 2013. In the most recent quarter for which data is available (Q1 2014) consumer spending grew by 0.86% in Scotland and 0.89% in the UK as a whole. Data for Q2 2014 will be available on 12th November 2014. While savings ratios are not currently comparable for the UK and Scotland due to data compatibility it appears likely that the pattern of a declining savings ratio has continued for the UK as a whole, indicating that consumption is continuing to be funded from reductions in savings in the absence of wage growth. With the rate of increase in consumer prices (CPI) at 1.9% in June 2014, there is continued slow growth to wages in the UK (with no comparable series for Scotland available). Average weekly earnings growth during the second quarter of 2014 was 0.9% for regular pay (i.e. not including bonuses).

Figure 1: Household real consumption spending growth, Scotland and UK, Q1 2000 to Q1 2014, % q-on-q



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

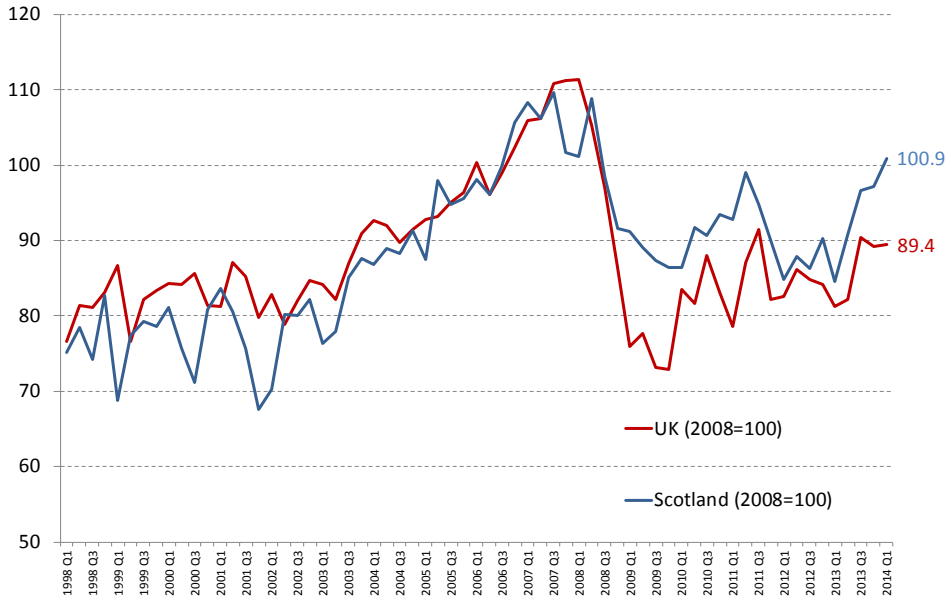
Investment

Classification changes mean that – until the Scottish data is consistent with changed UK data – it will be difficult to directly compare trends in investment spending. (For example, reclassifications to investment spending now mean that some Research and Development activity is classified as "Investment", while this will not be so in the Scottish series on investment until data is comparable). These changes are likely to have an impact on the path of investment spending over the recession. Figure 2 – which gives

comparable figures for Scotland and the UK to Q1 2014 - suggests that investment spending in Scotland had returned its level in 2008, while UK series was about 10% below its earlier (2008). Revisions to the UK series however now show a different profile to investment, so we hesitate to draw broad conclusions about the relative strength in investment spending in Scotland and the UK, based purely on this diagram (which relates to the first quarter of the year only).

The Bank of England's latest Inflation Report noted that business investment outlook between May and September was largely unchanged. Demand uncertainty was again important, but appear to have "receded" in the last year. They also point to excess capital in some sectors as potentially impacting on the scope for investment growth to grow sharply: since those sectors would not need to invest to expand output if demand conditions ease.

Figure 2: Real gross fixed capital formation, Scotland and the UK, Q1 1998 to Q1 2014



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

Trade

The latest statistics on Scottish exports to the rest of the world – covering manufacturing exports alone (roughly 60% of Scottish exports outside of the UK) – showed that in the second quarter of 2014 there was growth of 2.8% on Q1, and the second consecutive quarterly increase. In constant price terms, exports were helped by a rebound of exports from refined petroleum activities for the second consecutive quarter (up 4.4% in Q2, following a 14.5% increase in Q1), following the sharp contraction in Grangemouth activity during Q4 2013. There was a reduction in drink exports, continuing the weak overseas exports performance for that sector since the start of 2013.

In terms of key markets for Scottish products, latest figures suggest little room for relaxed optimism about the short-term trajectory. Markit's PMI for the Eurozone in October 2014 suggested a broad stability (indeed a small improvement) in activity however it was noted that the eurozone was "teetering on the edge of another downturn" with stagnation in new orders and declining employment, a contraction in business confidence and continued deflation. The Bank of England's MPC minutes from October note that "there was mounting evidence of a loss of momentum in the euro area, including in Germany". It is clear that downside risks to Eurozone economic activity cannot be ignored, and showing the dependence of an export-driven recovery on developing new international markets. Growth in the US is forecast to strengthen and is the only one of Scotland's major international export markets to have seen upward revisions to growth for 2014 and 2015 since Summer 2014. Again, it appears that without US markets, Scotland's export performance would be significantly worse. Table 1 shows the forecasts for growth in key global markets for Scottish products through 2014 and 2015.

In September the OECD identified slow growth in the Eurozone as principally due to "anaemic" demand, suggesting that additional steps were required to increase demand in the Eurozone – such as "more vigorous monetary stimulus" - and avoid the possibility of damaging period of deflation (a risk also noted by the IMF). With significant debt across Eurozone members, deflation would be particularly harmful. The OECD cautioned against seeing more recent increases in inflation expectations as a sign of the path of inflation, given there had been little sign of the period of deflation in Japan prior to its damaging period of deflation in the early 1990s. Interestingly, October's World Economic Outlook appraised the macroeconomic benefits of public infrastructure projects. They report that for advanced economies – and depending on the degree of slack, the stance of monetary policy and the way in which the investment is financed – such projects could have significantly positive impacts on output.

Table 1: Economic growth forecasts for 2014 and 2015 for major Scottish export markets, plus UK, China, Japan and Euro area, % p.a.

	2014		2015	
	IMF (October 2014)	OECD (September 2014)	IMF (October 2014)	OECD (September 2014)
USA	2.2	2,1	3.1	3.1
Netherlands	0.6	-	1.4	-
France	0.4	0.4	1.0	1.0
Belgium	1.0	-	1.4	-
Germany	1.4	1.5	1.5	1.5
Ireland				
United Kingdom	3.2	3.1	2.7	2.8
China	7.4	7.4	7.1	7.3
Japan	0.9	0.9	0.8	1.1
Euro area	0.8	0.8	1.3	1.1

Sources: *World Economic Outlook (International Monetary Fund, IMF, October 2014) and Interim Economic Assessment (Organisation for Economic Cooperation and Development, OECD, September 2014) Notes:a "-" indicates a country forecast is not produced.*

Forecasts for the Scottish economy: Detail

While in June we reported on a return of optimism evident through surveys at that point, we warned that these appeared to be driven by stronger than expected household spending growth. Data now available for the second quarter of 2014 suggests that the first half of the year saw strong growth, however there remains limited evidence of a recovery in (private) investment spending or exports. Data for Q2's (manufacturing) exports performance suggests a second quarter of positive growth however there were continued declines in drink exports, worth around 25% of Scottish exports.

Details from the latest Scottish GDP results for Q2 2014 suggest that in that quarter Scotland grew in line with the UK rate. Construction activity in Scotland in Q2 appeared to be more robust than in the UK as a whole (growing by 3.6% in Scotland and 0.7% in the UK) however this reversed three consecutive quarters where UK construction sector activity had been stronger. Service sector growth rates were broadly similar. Definitional changes to GDP make longer term comparisons between UK and Scottish economic activity at aggregate and sectoral level more difficult to draw.

Survey evidence points to some continued activity through the first half of 2014, consistent with the strong estimates for these two quarters. Most recent surveys for Q3 suggest that the rate of growth has eased into the second half of the year.

We note that export markets for Scottish goods appear to be facing continued growth problems with price deflation and continuing risk to the Eurozone countries, which are some of Scotland's major overseas markets. Domestic demand – specifically household consumption, with continued public austerity – appears to be robust however, we caution that households cannot continue to support economic activity in absence of real wage growth, and recent growth in the level of private debt suggests that consumption is increasing faster than wage income. As public austerity policy continues to reduce real (government consumption) spending through the next (Westminster) Parliament, this will continue to depress government spending as a driver of economic activity. The IFS note that around half of the planned Government's fiscal consolidation has taken place at the time of writing.

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 2014, 2015 and 2016. 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 sectoral categories.

We begin with the forecasts for GVA growth in the Scottish economy. The trend for annual growth in Scotland between 2005 and 2013 and our forecasts for the period to 2016 are shown in Figure 3. This also includes our upper and lower forecasts growth. As previously, the range around the central forecast is based on our past forecast accuracy of the first release of growth for the year. The changing basis for growth described above means that – following the release during 2015 of backdated growth figures for years which have been forecast – it is likely that earlier forecasts may appear to have larger errors. We

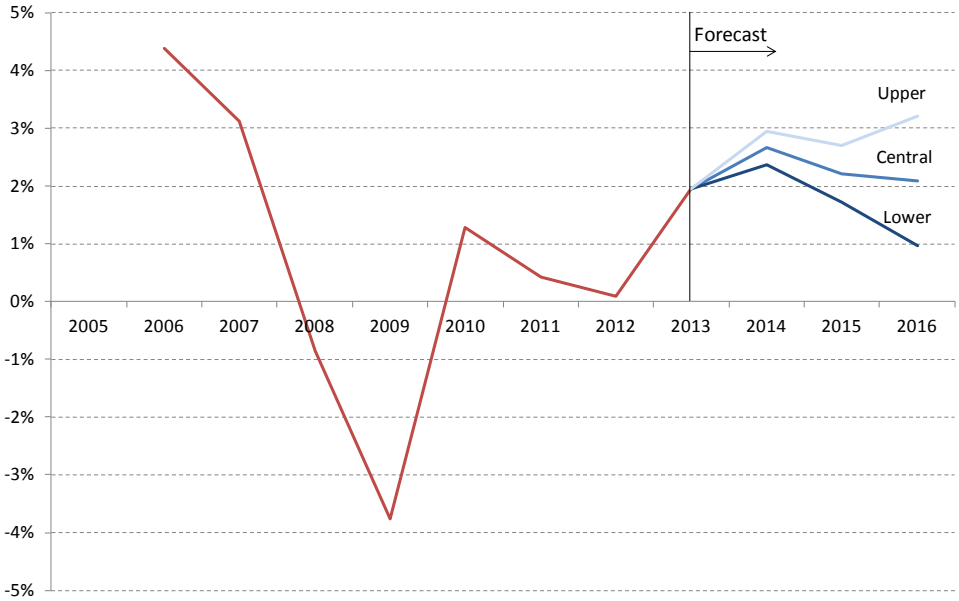
will reflect on the changing profile to Scotland economic growth and the implications for the assessment of our previous forecasts once the updated and revised Scottish data is produced.

Based on earlier forecasts since 2000, the mean absolute error of forecasts in the winter period and growth in the same year is 0.288 percentage points. Growth forecast errors for the following year are 0.494 percentage points. This gives the range for the upper and lower bands in 2014 and 2015. Our past forecast errors for the longest forecast horizon is 1.120 percentage points, so this is used to give the range around our central forecast for 2016.

Relative to June 2014's forecasts we have now revised up our central forecast for GVA growth in 2014 from 2.5% to 2.7% (i.e. a revision upwards up by 0.2 percentage points) and largely driven by better than expected growth outcomes through the first half of 2014, in particular the stronger than expected performance in the second quarter. Our forecast for 2015 remains at 2.2%, while we have revised our forecast for 2016 down from 2.4% to 2.1% in light of the weaker domestic and global environment for growth beyond the short term.

For comparison purposes, the UK's Office for Budgetary Responsibility (OBR) forecast for growth in 2014 (made in March 2014) and the median of independent growth forecasts for the UK made during the last three months for 2014 are 2.7% and 3.1% respectively, while for 2015 the respective figures are of 2.3% and 2.6% respectively.

Figure 3: Forecasts of annual real GVA (%) growth for Scotland, 2014 to 2016



Sources: *Fraser of Allander Institute forecasts, November 2014*

In addition to the aggregate growth forecasts in our central scenario, Table 2 presents our forecasts for GVA growth in 2014, 2015 and 2016 for three broad sectoral groupings: the "production", "construction" and "services" sectors of the Scottish economy. Much of the reduction in growth forecast for 2016 is in

the services sector, as household spending is projected to recover more slowly than previously anticipated and with slower growth in Scottish export markets.

Table 2: Scottish GVA growth (%) by sector, 2014 to 2016

	2014	2015	2016
GVA	2.7%	2.2%	2.1%
Production	3.1%	2.6%	2.5%
Construction	2.0%	1.3%	1.2%
Services	2.5%	2.1%	2.0%

Source: *Fraser of Allander Institute forecasts, November 2014*

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 2014, 2015 and 2016 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 2,358,000 employee jobs in Scotland in the second quarter of 2014. This was an increase of 13,000 jobs from the end of 2013 and saw an additional 5 thousand jobs created in the second quarter of 2014. The level of employee jobs is now 122,000 jobs (4.9%) lower than the peak of employee jobs in Scotland in Q3 2008 (2,480,000). This has improved from a trough in the second quarter of 2013 when there were 203,000 fewer jobs (8.5%) than at the pre-recession peak.

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 increase in each year, and have been revised up slightly since our June 2014 forecasts. The number of jobs is now forecast to increase by 2.0% in 2014 (up from 1.8%) with a slightly upward revision to the net annual change in employee jobs from 43,100 to 46,560 through to the end of 2014. Our forecast for 2015 is for the Scottish economy to add 41,600 jobs in 2015, down slightly from our June forecast. We continue to forecast the number of employee jobs in Scotland to breach its previous (2008) high by the end of 2016. The net change in employee jobs consistent with our upper, central and lower forecasts are shown in Table 4.

We present out forecasts for unemployment at the end of 2014, 2015 and 2016 in our central scenario in our central forecasts in Table 5. In line with the forecasts produced since June 2013, we report the forecasted number (and rate) of those unemployed under 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 3: Forecasts of Scottish employee jobs ('000s, expect where stated) and net change in employee jobs in central forecast, 2014 to 2016

	2014	2015	2016
Total employee jobs, Dec	2,391,560	2,433,179	2,482,058
Net annual change (jobs)	46,560	41,600	48,900
% change from previous year	2.0%	1.7%	2.0%
Agriculture (jobs, 000s)	41	44	47
Annual change	3,600	3,050	3,300
Production (jobs, 000s)	252	257	262
Annual change	2,100	4,400	5,400
Construction (jobs, 000s)	121	122	124
Annual change	1,600	1,550	1,900
Services (jobs, 000s)	1,978	2,011	2,049
Annual change	39,250	32,600	38,300

Note: Absolute job numbers are rounded to the nearest 50.
***Source:** Fraser of Allander Institute forecasts, November 2014*

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

	2014	2015	2016
Upper	53,000	53,450	76,750
Central	46,560	41,600	48,900
Lower	33,400	19,900	29,900

Note: Absolute job numbers are rounded to the nearest 50.
Source: Fraser of Allander Institute forecasts, November 2014

The recent labour market data at time of writing (7th November) indicates that the ILO unemployment rate in Scotland was 6.4% in the second quarter of 2014, down 0.2 percentage points on Q1 2014.In June we forecast that the unemployment rate would fall to 6.4% by the end of 2014. In light of stronger than anticipated growth in the first half of 2014 we have revised down our forecasts for the unemployment rate for the end of this year (although in line with an easing of growth in activity, we anticipate the rate of decline to slow).

Our new forecasts for the unemployment rate in Scotland at the end of 2014 and 2015 are 5.3% and 5.2% respectively. Figure 4 shows both the history of the ILO measure of the Scottish unemployment

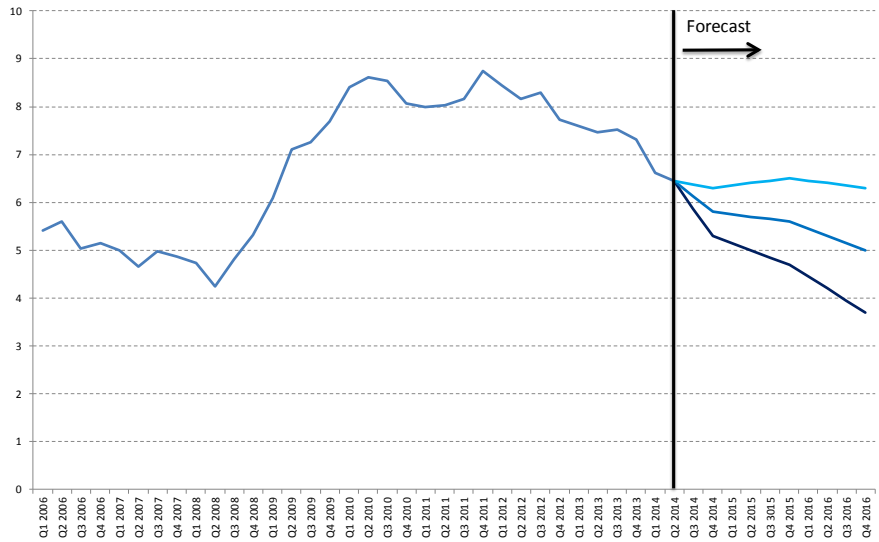
rate since 2006 and our central, upper and lower forecasts for the ILO unemployment rate, now extended out to 2016.

Table 5: Forecasts of Scottish unemployment in central forecasts, 2014 to 2016

	2014	2015	2016
ILO unemployment	124,700	141,019	135,537
Rate (%)[1]	5.3	5.2	5.0

Note: Absolute job 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 of the Fraser of Allander Economic Commentary.
Source: Fraser of Allander Institute forecasts, November 2014

Figure 4: Scottish ILO unemployment rate, 2006 to 2016 including forecasts from 2014



Sources: *ONS and Fraser of Allander Institute forecasts, November 2014*

Grant Allan

7th November 2014

3 Review of Scottish Business Surveys

Eleanor Malloy, Fraser of Allander Institute

Abstract

Business surveys are a useful tool to provide accurate and timely data and are extremely helpful in pinpointing subtle movements in the economy. Recent Scottish business surveys paint a broadly positive picture, albeit perhaps slightly subdued compared to surveys from the start of 2014. They continue to indicate that growth in output and jobs remains robust and many trends remain broadly favourable, although early indications are that the pace of recovery may be slowing and that some vulnerability may remain. Many business surveys use net balances, determined by subtracting the percentage reporting declines from the percentages reporting increases, and a number of recent surveys show more and more businesses reporting that trends have 'remained constant' indicating a degree of stability, although the pace of recovery is slowing somewhat. .

Bank of Scotland Purchasing Managers' Index (PMI)

The PMI which measures month-on-month changes in manufacturing and services output stood at 54.0 in May 2014, rose to 55.9 in June, rose further in July to 56.8 (a six month high) then eased to 54.6 in August and eased still further to 51.5 in September 2014. These latest set of surveys add weight to the view that although the economy continues to grow, the pace of growth is beginning to ease.

The PMI for July 2014 saw Business activity rise at its fastest rate for six months and also reported a robust increase in overall new business, although the weakness in manufacturers' export sales continued. In August the PMI reported that employment was rising at its fastest rate since 2007. Despite the robust headline figure however, the pace of growth in Scotland remained below the UK-wide average, and the September 2014 index pointed to the slowest rate of growth for 18 months.

Bank of Scotland Business Monitor

The Bank of Scotland Business Monitor covers the production and services sectors and the latest survey (Summer 2014) showed the Scottish economy performing at pre-recession levels. Turnover trends showed their best results for over seven years since spring 2007; and encouragingly expectations for the rest of the year remain robust.

In the three months ending August 2014, a net balance of 30% of respondents reported an increase in turnover; again this is the best result in over seven years and helped return the net balance figure to pre-recession levels. Volumes of repeat business remained at high levels and indeed improved compared to the previous quarter and to the same period in 2013. Trends in the volume of new business also continued to rise. Total volumes of business continued the positive trend showing a net balance of +31%, a rise compared to both the +27% of the previous quarter and the +24% in the same quarter one year ago. The improvement was evident across both production and services firms. The Business Monitor also reported that export activity, on balance, continued to rise

A net balance of 21% expect turnover to continue to rise during the period to the end of February 2015. Service firms are more optimistic than production firms, with service firms showing an overall net balance for turnover for the next six months at +26% compared to only +14% of production firms.

Future expectations in the survey fell marginally but were still at pre-recession levels, suggesting that the recovery will continue throughout 2014 and into 2015.

Manufacturing

Respondents to the Fraser of Allander / Scottish Chambers of Commerce Quarterly Business Survey (QBS) reported that although business optimism continued to improve for a net balance of +11.9% of firms, the rate of increase eased in Q3/14. Respondents to the Scottish Engineering Quarterly Review for Q3/14 reported that general optimism levels remain positive, if slightly down on the previous quarter. Optimism levels were higher for fabrication and machine shop sectors than for mechanical equipment and electronics.

Total orders continued to increase in Q3 for a net balance of +30.6% QBS firms, while fewer than 20% of firms reported a decline. Orders are set to continue to improve for a net balance of firms. Order levels among Scottish Engineering firms eased in the third quarter compared to the second quarter of 2014. This was particularly evident with regard to exports; however, encouragingly companies are predicting an improvement in Q4/14. A small net balance of 4% reported a decline in their total order intake, the first negative balance since September 2013. Small companies reported more positive trends in orders than did medium-sized and large companies and within the sectors, electronics and mechanical equipment were negative while fabricators, metal manufacturing and transport firms all reported positive net balances.

Investment plans in general remain upbeat for both Chamber of Commerce members and Scottish Engineering respondents. The average capacity used eased from 79% in Q2/14 to 72% for QBS firms, while almost half of businesses (47%) reported operating at below optimum levels of capacity.

Employment improved in Q3/14 for a net balance of QBS manufacturing firms, with only 7.1% of manufacturing firms reporting that overall employment levels had reduced and only 6% expecting a fall in Q4/14. Scottish Engineering reported that staffing levels in general eased in Q3 but remained positive, and that forecasts for the next quarter in general show a further increase.

Construction

While business optimism among QBS construction firms eased, only a quarter of firms reported a decline in business confidence. The latest Scottish Construction Monitor (SCB) quarterly survey for Q3/14 also showed that construction firms remained positive but that confidence had eased somewhat.

Orders continued to improve for QBS respondents albeit at a slower pace than in Q2/14 and a net balance of 20% expect a further rise in Q4/14. Public sector orders declined in Q3/14 and a net balance expect a further decline in Q4/14.

On average QBS construction firms were utilising 83% of available capacity and work-in-progress increased from +33.3 to +38.7.

Recruitment difficulties are becoming more apparent with more than 45% of QBS construction firms that had attempted to recruit reporting increased difficulties. The average wage increase among QBS firms rose from 4% in Q2/14 to 5.7% in Q3/14, the highest figure for 7 years.

Retail

A net balance of -12.3% of QBS firms reported a decline in retail optimism. A net of firms also reported a decline in sales although a small net balance are forecasting a rise in Q4/14. Employment trends remained strong in Q3/13 with a net balance of 17% reporting a rise and only 7% reporting a reduction in total employment levels. Prices are stabilising with net balance of firms expecting to raise prices.

The Scottish Retail Consortium reported that sales September declined by 2.9% compared to the same period last year when they rose by 1/8% and like-for-like sales decreased by 4.2%.

Tourism

Optimism levels among Scottish hotels continued to improve in the three months to the end of September 2014, and Visit Scotland also recorded a rise in confidence.

As forecast by firms in the Q2/14 QBS survey, the net trends in visitors continued to increase during Q3/14 with both domestic and overseas trends continuing to improve.

Visit Scotland reported a 12% decline in domestic overnight tourism to Scotland (GB residents) in June 2014 compared to June 2013. International tourism in Q2/14, on the other hand, was at its highest level since 2007 and 13% up on the same period in 2013. The number of day trips for the year to August 2014 was up 5.2% and spend was up 7.8%. Hotel occupancy rates for July were fairly flat but rises were reported in Forth Valley, Ayrshire and Arran and Glasgow and the Clyde Valley.

A net balance of +21.3% of QBS tourism firms reported an increase in employment during Q3/14 and not unexpectedly employment is expected to decrease in Q4/14 given the seasonality of the industry. Of the more than half of hotels to the QBS that had attempted to recruit in the 3 months to the end of September 2014 a quarter of them reported an increase in recruitment difficulties.

Outlook

A common theme permeating many of the latest set of business surveys in Scotland is that the rate of economic growth will continue though at slower rate of increase heading into 2015. Expectations for 2015 are generally at historically high levels although they are beginning to ease from the recent record highs of 2014, suggesting that the recovery will continue and will become increasingly rooted. Many of the surveys show that employment levels have improved and are expected to continue to rise.

However, for some manufacturing sectors trading conditions remain more challenging than those experienced by service firms, most probably due to the situation internationally with signs of only a weak recovery in the Eurozone. Growth remains, to a large extent, reliant on household spending and in order to sustain growth over the longer term, an increase in investment is required. The recovery in Europe, which account for half of Scotland's exports, remains fairly subdued. This poses a challenge to

exporters to widen their export markets and remain competitive to ensure that the recovery is sustainable in the longer term.

In conclusion, recent Scottish business surveys paint a broadly positive picture, albeit perhaps slightly subdued compared to surveys from the start of 2014. They continue to indicate that growth in output and jobs remains fairly robust and many trends remain broadly favourable, although early indications are that the pace of recovery may be slowing and that some vulnerability may remain.

Current trends in Scottish Business are regularly reported by a number of business surveys. This report draws on:

Lloyds TSB Business Monitor Issue 67 June 2014 – August 2014;
Scottish Chambers' Business Survey Q3 2014
Scottish Engineering Quarterly Review Q3 2014;
The Bank of Scotland Markit Economics Regional Monthly Purchasing Managers' Indices (PMI) for July 2014 – September 2014;
The Scottish Retail Consortium's KPMG Monthly Scottish Retail Sales Monitor for September 2014
Visit Scotland Occupancy surveys for Q1 2014.

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 for Scotland and the UK, to August 2014. The Scottish unemployment rate stands at 5.5%, below the UK rate of 6.0%. The employment rate in Scotland is 73.9%, with the UK figure 73%. In 2014 the number of people in employment in Scotland has reached the highest on record. Growth in employment, however, is still sustained by part-time workers and self-employment. Wages have failed to show sustained growth suggesting that traditional wage setting mechanisms remain impaired. Thus, despite the positive signs of recovery in the Scottish labour market, there is still remaining slack and possibly even wider structural issues.

Recent trends and statistics

The latest comparable figures on the labour market between Scotland and the United Kingdom in the quarter to October 2014 are summarised in Table 1. Labour Force Survey (LFS) data show that in the quarter to October 2014 the level of employment in Scotland rose by 35 thousand, to 2,611 thousand and over the year by 52 thousand. For the same period, UK employment rose by 46 thousand and 736 thousand respectively. The Scottish employment rate (16 – 64) – i.e. those in employment as a percentage of the working age population – was 73.9%, up 1.3% from one year earlier. For the same period the UK employment rate was 73.0%, up 1.5% compared to a year earlier. Scottish unemployment, in the quarter to October 2014, fell by 40 thousand to 151 thousand, a fall of 52 thousand over the year.

Table 1: Headline indicators of the Scottish and UK labour markets, June – August 2014

		Scotland	Change on quarter	Change on year	United Kingdom	Change on quarter	Change on year
Employment*	Level (000s)	2,611	35	52	30,763	46	736
	Rate (%)	*73.9*	*0.9*	*1.3*	*73.0*	*0.1*	*1.5*
Unemployment**	Level (000s)	151	-40	-52	1,972	-154	-538
	Rate (%)	*5.5*	*-1.4*	*-1.9*	*6.0*	*-0.4*	*-1.7*
Inactivity***	Level (000s)	739	8	9	9,028	113	-46
	Rate (%)	*21.7*	*0.3*	*0.3*	*22.2*	*0.3*	*-0.2*

Source: *ONS Labour Market Statistics, Scotland and UK, October 2014.*
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

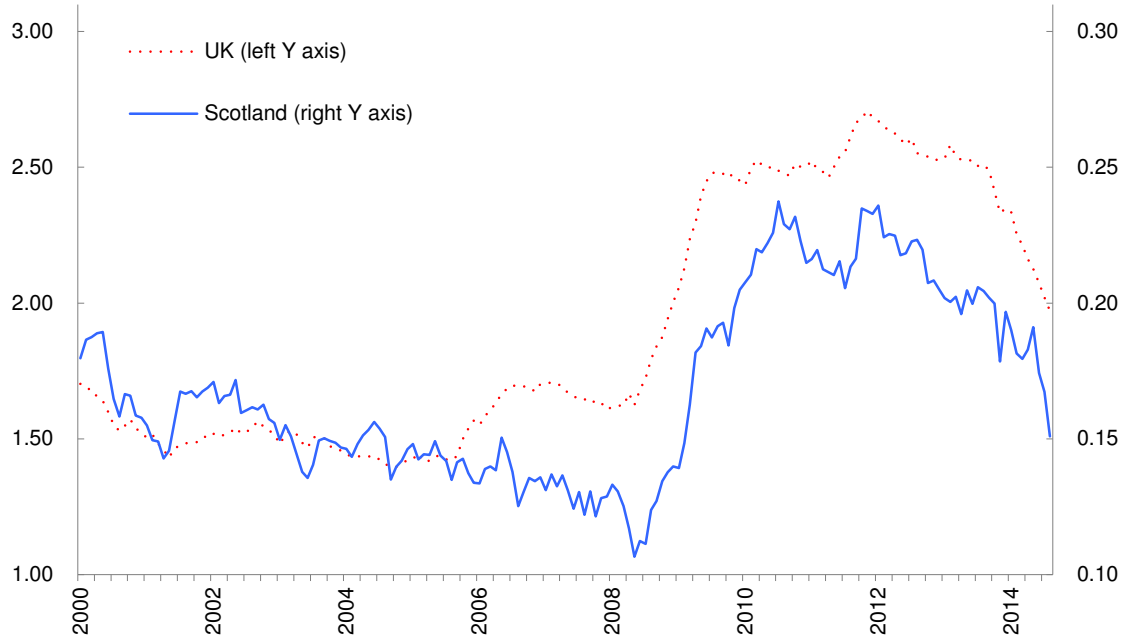
The relationships between employment, unemployment, total economically active and inactive are important in discerning the reaction of the labour market to overall economic conditions. It is important to appreciate that changing levels of employment and unemployment, and changes in employment rates should 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 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.

Table 1 shows that for Scotland the preferred International Labour Organisation (ILO) measure of unemployment fell to 151 thousand, between June – August 2014, a fall of 52 thousand over the year. The ILO unemployment rate fell in the months to October 2014 and now stands at 5.5%. This represents a 1.4% fall over the last quarter and a 1.9% fall over the year. The comparable ILO unemployment rate for the UK stands at 6.0%, and is down 0.4% over the most recent quarter and down 1.7% over the year.

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 (111 thousand) in May – June 2008, immediately preceding the worldwide financial crash and the subsequent Great Recession. Unlike the pattern of previous recessions, unemployment has fallen more rapidly than expected to just below 200 thousand, reflecting in part the more rapid rise in part time and self-employment (see Figure 2 and Table 5).

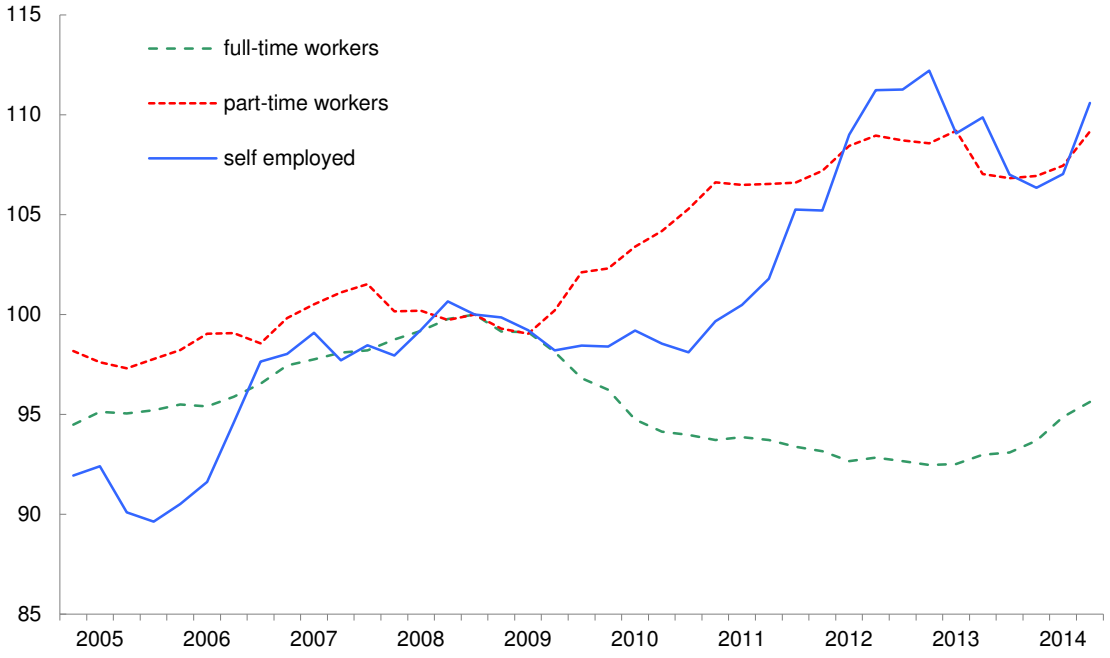
Figure 2 illustrates how the employment 'recovery' continues to be driven by an increase in part time work and self-employment. Growth in full-time workers remains subdued and has failed to gain momentum over the past years. A strong and sustained recovery in the labour market would require a more robust growth in full-time workers. It is questionable whether the number of full-time workers will 'ever' reach pre-recession levels. The data point towards a more permanent structural shift towards part-time work and self-employment in the Scottish labour market.

Figure 1: Unemployment (in millions) in Scotland and the UK 2000 – August 2014



Source: *ONS Labour Market Statistics, Scotland and UK, October 2014.*

Figure 2: Trends in full, part time and self-employment January 2004 – June 2014



Source: *ONS Labour Market Statistics, Scotland, October 2014.*
Notes: *October 2007 – September 2007 = 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 June – August 2014 the number of economically active (16+) in Scotland decreased by 5 thousand, and the activity rate decreased by 0.2% to 63.2%. There were 2,762 thousand economically active in Scotland during June – August 2014. This comprised 2,611 thousand in employment (2,524 thousand aged 16–64) and 151 thousand ILO unemployed. The level for those of working age but economically inactive increased by 10 thousand (0.6%) in the latest quarter, and increased by 21 thousand (1.3%) over the year to 1,606 thousand.

Economic inactivity for men aged 16 – 64 decreased by 0.4% over the year, and decreased by 0.2% for women over the year to August 2014. In the year from July 2013 to June 2014 the key components of change in inactivity were fewer: students, down by 10 thousand; people looking after family members and/or home, down 1 thousand; retirees, down 3 thousand; long-term sick, down 3 thousand; those temporarily sick remained unchanged. Though the majority of the inactive (215 thousand) did not want a job, 86 thousand wanted employment.

Data on employment by age, derived from the Annual Population Survey, is available up to July 2013 – June 2014. Table 2 illustrates the changing employment rates by age group form July 2005 onwards. In the year to June 2014, employment rates fell for workers aged 16-17 (by 5.3%) and 16-24 (by 0.9%). The largest increase in the employment rate was seen by these aged 50 – 64 (increase of 2.6%). The employment rate for all workers aged 16 and over increased by 1.0 % over the year to June 2014 to 58.6%.

Table 2: Employment rates (%) by age and selected age cohorts, Scotland July 2005 – June 2014

(In %) Jul-Jun.	Jun-06	Jun-07	Jun-08	Jun-09	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14
All 16+	59.7	60.6	60.8	59.8	58.3	58.2	58.0	57.6	58.6
16 - 64	73.0	73.9	74.2	72.8	71.0	70.9	70.9	70.6	72.0
16 - 17	43.1	43.1	39.4	38.0	30.4	33.6	29.0	29.8	24.5
18 - 24	68.1	68.7	68.5	65.9	62.2	61.2	59.9	59.1	59.2
16-24	62.7	63.2	62.2	60.0	55.6	55.6	53.7	53.2	52.3
25 - 34	79.5	81.1	81.6	80.3	78.3	79.0	79.6	79.2	80.2
35 - 49	82.9	83.7	83.9	82.3	81.0	81.5	81.3	81.1	82.8
50 - 64	63.0	64.2	65.5	64.8	64.4	63.3	64.2	64.0	66.6
65+	5.0	5.6	5.7	6.6	6.5	6.7	7.1	8.1	8.5

Source: *ONS Labour Market Statistics, Scotland, October 2014.*
Note: *Denominator = all persons in the relevant age group.*

Table 3 provides some indications, although with reservations, of the changing pattern of employment since July 2006 to June 2014 for different occupational groups (SOC2010).

Table 3: Percentage in employment in Scotland, by occupation, July 2006 – June 2014

(In %) Jul-Jun.	Jun-07	Jun-08	Jun-09	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14
Managers and directors	8	9	9	9	9	8	9	9
Professional occupations	18	18	19	18	18	19	20	20
Associate prof & tech	12	13	13	13	13	13	13	13
Administrative & secretarial	12	12	12	12	11	11	11	11
Skilled trades occupations	12	12	12	12	12	11	11	11
Caring, leisure and service	10	9	9	10	10	10	9	10
Sales and customer service	9	9	9	9	9	9	9	9
Process, plant and machine	7	7	7	7	7	7	6	6
Elementary occupations	12	11	11	12	11	12	11	11

Source: *Annual Population Survey, NOMIS, October 2014.*
Notes: *Occupation in Standard Occupational Classification (SOC).*
Rounding means totals do not add to 100.

Total workforce job figures are a measure of jobs rather than people. Total seasonally adjusted workforce jobs in Scotland for June 2014 (the latest available figures) stood at 2,693 thousand, (i.e. 2,359 thousand employee jobs, 315 thousand self-employed jobs, HM forces and supported trainees 19 thousand). Table 4 indicates the sectorial 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 and are subject to extensive revision.

Table 5 outlines the changing patterns of full time and part time employment. The latest data indicates that from January 2013 to December 2013, the number of employees has increased by 26 thousand, whereas the numbers of self-employed have decreased by 16 thousand. Even though the numbers of part-time workers have decreased by 10 thousand over the year, the number of temporary employees has increased by 6 thousand.

Table 5 also indicates that the numbers of full-time workers in Scotland has increased by 23 thousand (1.3%) over the year from January 2013 – December 2013. Part-time employment numbers have grown through the recession, though they did decrease by 10 thousand over the year to December 2013. The changing trends in full and part-time employment since January 2006 are shown in Figure 2. The rising number of self-employed indicates some substitution of self-employment for employment.

The number of those working part-time because they could not find a full time job is 121 thousand (see Table 5), suggesting that increasing numbers of workers are taking par-time employment in the absence of available full time work. The number of people who cannot find a full-time job is still almost double compared to pre-recession numbers. This reflects continuing issues in the wider economy.

Table 4: Total workforce jobs by industry, Scotland, June 2009 – June 2014

Industry (in thousands, SIC07)	Jun-09	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14
All jobs	2,650	2,576	2,613	2,628	2,605	2,693
Agriculture, forestry & fishing	54	60	49	54	54	60
Mining & quarrying	30	30	29	34	37	39
Manufacturing	203	185	189	198	196	196
Electricity & gas	16	21	20	17	13	15
Water supply, sewerage, waste	16	14	16	18	15	17
Construction	187	168	178	171	164	164
Wholesale & retail trade	392	378	372	369	375	377
Transport & storage	117	111	112	115	116	116
Accommodation & food service	194	174	185	180	174	179
Information & communication	76	70	65	72	69	70
Financial & insurance activities	101	91	91	91	89	101
Real estate activities	34	27	31	36	39	40
Professional scientific & technical	176	171	192	211	197	187
Administrative & support service	195	195	187	196	215	232
Public admin & defence	162	160	155	154	153	150
Education	197	198	206	197	197	204
Human health & social work	367	375	387	375	373	398
Arts, entertainment & recreation	70	77	87	81	76	79
Other service activities	58	65	59	57	52	67
People employed by households	3	5	2	2	1	3

Source: *ONS Labour Market Statistics, Scotland, October 2014*
Notes: ** Workforce jobs are a measure of jobs rather than people. There are extensive revisions from previous figures*

Table 5: Trends in Scottish total, full-time, part-time, self-employed and temporary employment etc. and those unable to find a full- time job

All in employment (in thousands) Jan-Dec.	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Dec-13
Employees *	2,217	2,244	2,243	2,210	2,185	2,167	2,146	2,172
Self-employed *	264	263	268	265	268	283	302	286
Full-time workers **	1,867	1,892	1,900	1,844	1,796	1,785	1,772	1,795
Part-time workers **	629	631	626	645	672	676	684	674
Workers with 2nd job	96	93	99	102	97	96	101	95
Temporary employees	129	128	116	133	125	121	127	134
Could not find full-time job	59	60	64	84	107	114	115	121
Total *	2,498	2,525	2,529	2,492	2,472	2,464	2,468	2,481

Source: *ONS Labour Market Statistics, Scotland, October 2014*
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*

Real wages

This section revisits the prevailing issue surrounding the 'slow' growth in real wages, as discussed in the previous and more extensively in this issue of the Fraser of Allander Institute Economic Commentary. The following builds on analysis by Blanchflower and Machin (2014a,b) whilst focusing on Scotland. To set the scene, Mark Carney (2014), the Governor of the Bank of England, argued the following in a speech on 9 September 2014:

> *"As employment approaches its new higher level, wage pressures should increase and capital investment should continue to recover. Productivity growth should pick up bringing the higher, sustainable pay rises that British workers deserve. Specifically, the Bank's latest forecast expects real wage growth to resume around the middle of next year and then to accelerate as the unemployment rate continues to fall to around 5½ percent over the next three years. By the end of our forecast, we see 4 percent nominal pay growth on average across the economy."*

This forecasted wage growth would most certainly be welcomed by British workers as real wages have been in negative territory since 2008 (see Figure 3). With around 60 percent of total Scottish Household income stemming from wages (Emonts-Holley, Ross and Swales, 2014), it is particularly important that wages outpace, or at least stay par with inflation. Continuing weak performance of pay growth, however, does not provide sufficient evidence to support such positive forecasts on wage growth. Moreover, unemployment has seen big declines across the UK without any sign of a robust recovery in wage growth.

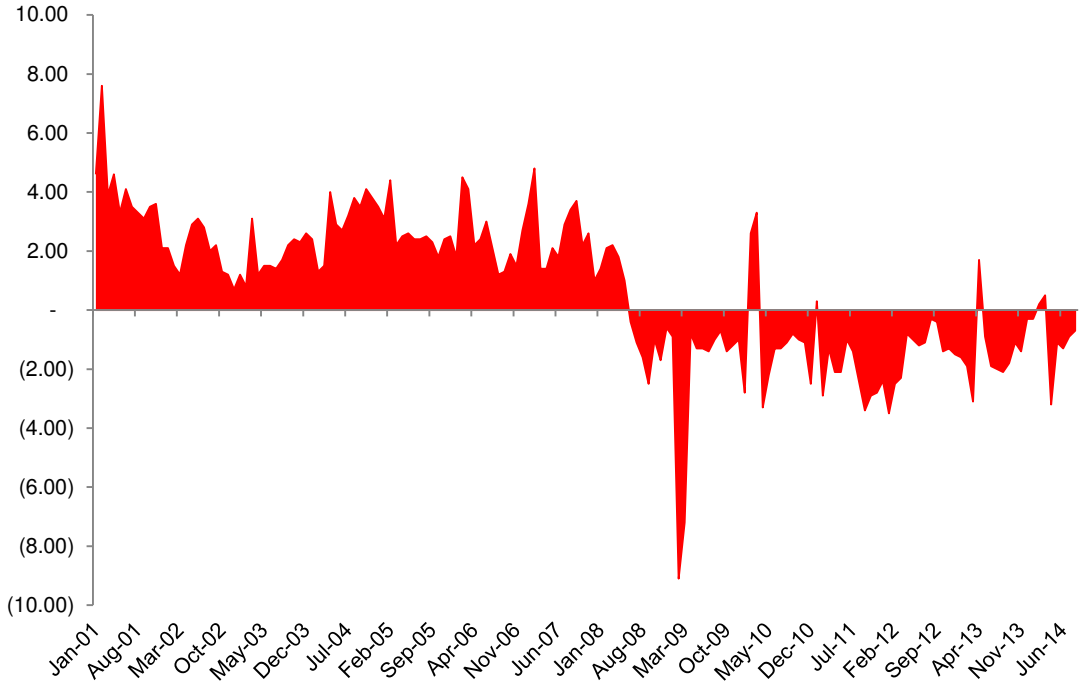
As discussed in the previous issue of the Fraser Economic Commentary, until real wages move into positive territory the prospects for a sustained growth in UK household spending must remain uncertain. One critical factor here is whether labour productivity can begin to grow strongly. Without a step-change in the rate of growth of productivity the likelihood is that the recovery - as the economy begins to approach capacity - will see rising nominal wages but little increase in real wages as the growth of product prices matches that of nominal wage growth.

Data suggest that Scottish real wage growth became positive in 2013 whilst UK growth has remained negative for the past three years (see Figure 4). This could be due to a faster growth in labour productivity in Scotland than in the UK, but we have no up-to-date data on labour productivity on this matter.

The current state of the labour market can be summarised as follows: the Scottish unemployment rate stands at 5.5%, below the UK rate of 6.0%. The employment rate in Scotland is 73.9%, with the UK figure 73%. The number of people in employment in Scotland reached the highest on record (see Section 4 for more data on the Scottish labour market). One could expect real wages to be positive given this rather strong performance of the labour market. Real wages, however, have been largely negative since 2008.

The latest UK figures from the Labour Force Survey on Average Weekly Earnings (AWE) show that a sustainable growth of real wages in not in sight. Figure 3 shows the growth in UK real wages (UK AWE) - total pay (% changes year on year) deflated by CPI (% change over 12 months) – since January 2001. The data show little evidence that the UK real wage is aiming for positive territory.

Figure 3: Real UK average wage growth January 2001 to August 2014 (%)



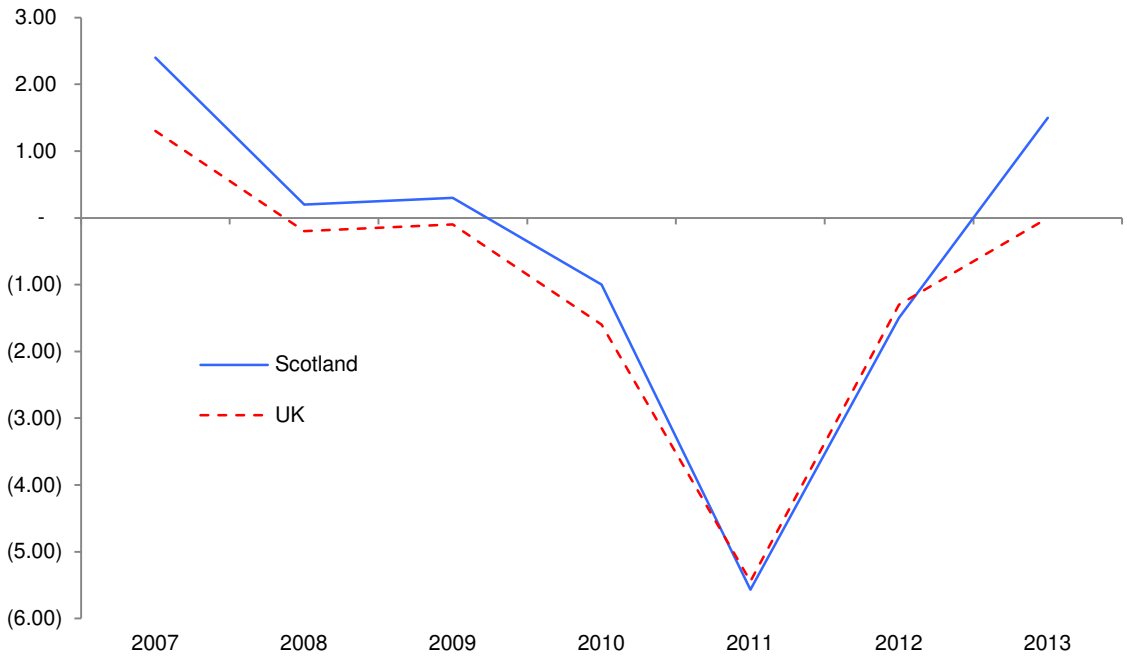
Source: *ONS Labour Force Survey and Fraser of Allander Institute calculations.*

Data on pay that contain regional identifiers are significantly lagged. Latest data from the Annual Survey of Hours and Earnings (ASHE) are summarised in Figure 4 and show median gross weekly pay in real terms from 2007 to 2013.

Note: The median income is the income of what would be the employed person in the middle, if the income from all employed in the UK were sorted in a list from 'smallest' to 'largest'. As it represents the middle of the income distribution, the median employment income provides a good indication of the income of the "typical" employee. It is thereby a better indicator than mean income as it is less likely to be skewed by outliers.

Data in Figure 4 for Scotland suggest that median real wages have increased into positive territory. In contrast, UK real wages have remained negative since 2008. This could suggest that Scottish real wage growth has also outpaced UK growth in 2014. More timely data, however, are not available (this highlights the need for real-time economic data see e.g. Ross (2013) and Boyd (2014) in this Commentary). As such, it is not clear whether the positive real wage growth in Scotland is pointing towards signs of sustainable recovery or just a 'dead cat bounce'. The more recent data from the LFS shown in Figure 3, however, would indicate the latter.

Figure 4: Median weekly pay gross, real terms, all employee jobs, from 2007-2013 (£)



Source: ONS ASHE and Fraser of Allander Institute calculations.

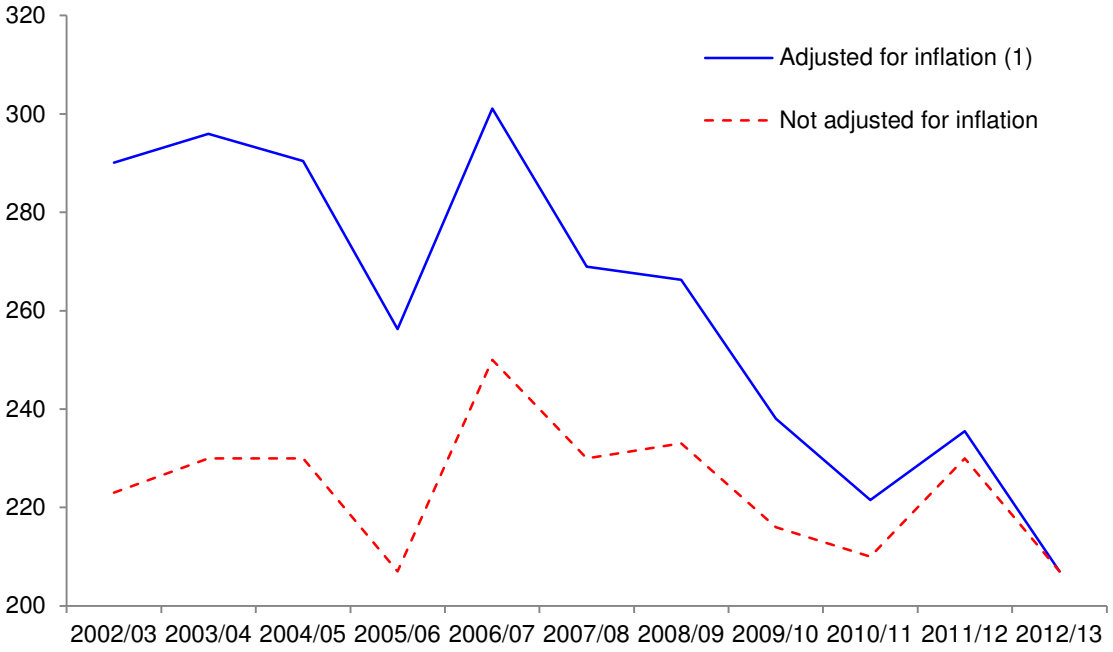
Note: Data based on results for 2007-2009, revised 2010-2012, and provisional results for 2013. The calculation of real wage growth is based on the assumption that CPI inflation in Scotland is the same as in the UK.

The recovery in employment since 2008 has largely been driven by an increase in part-time and self-employment (see ONS (2014b) and D'Arcy & Gardiner (2014) for detailed analysis of UK self-employment). Self-employment earnings, however, are not covered by the LFS AWE or ASHE. Hence, a significant proportion of the labour market - and the key driver of the recent labour market 'recovery' - is not taken into consideration.

Figure 5 shows weekly median income for the self-employed in the UK, sourced from the Family Resource Survey (FRS). The data for the UK show that there has been a strong decrease in self-employment earnings from 2007/08 onwards. Thereby a significant increase would be required here to outpace inflation and bring self-employment income growth into positive territory.

A robust source for regional data on self-employment is Her Majesty's Revenue and Customs (HMRC, 2013). Figure 6 shows weekly median income of the self-employed from both the HMRC (UK, England and Scotland) and the FRS (UK only). The data are not compatible (due to significant differences in the underlying methodology) but give a broad indication of underlying trends. The HMRC data are not complete, and show less volatility compared to the FRS. Major peaks and troughs are, however, comparable. Thereby it can be expected that regional self-employment earnings will follow the downward trend that the FRS shows for 2012/13. Given this, neither HMRC nor FRS data would suggest sustainable growth in self-employment income.

Figure 5: UK median weekly self-employment income from 2002/03-2012/13 (£)



Source: DWP Family Resource Survey.

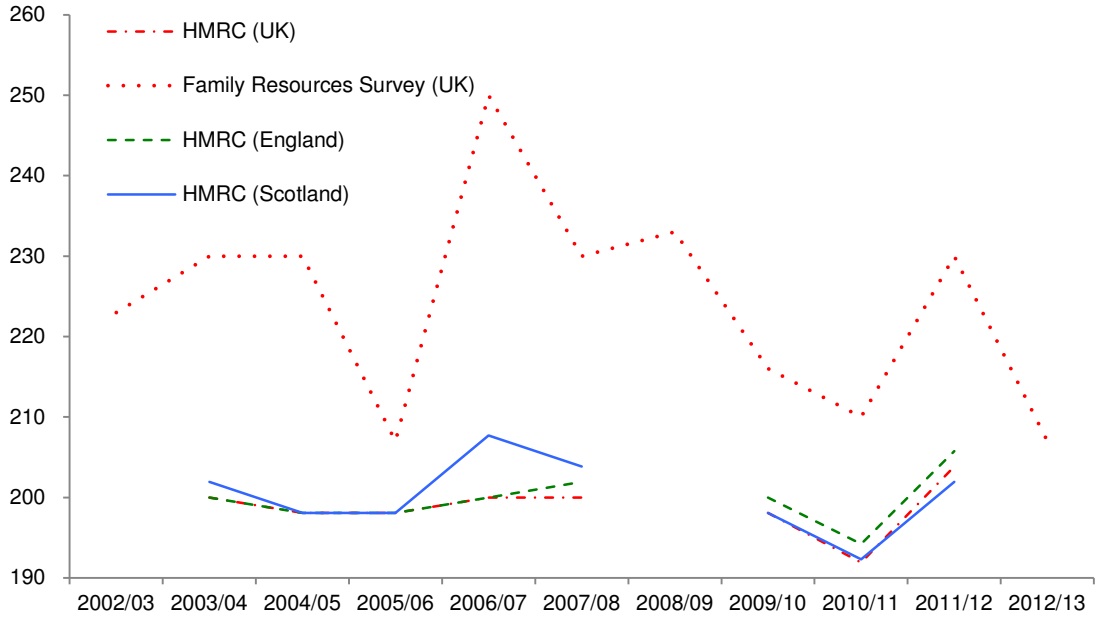
Note: Self-employed and employees are aged 16 and over.
(1) Income figures are in 2013 prices.

Even though this topic can only be touched upon briefly herein, declining Trade Union membership may have played a significant role in the recent stagnant development of wage growth. Historically, Trade Union membership has played a significant role in generating sustainable wage growth (see e.g. Blanchflower 1986, Gregg and Machin 1991, 1992). Union influence over pay setting, however, has been in decline for three decades.

The latest figures from the Department for Business, Innovation and Skills (2013) indicate that by 2011 only 7% of private sector workplaces in UK bargained with unions over pay for any of their employees and just under one sixth of private sector employees (16%) had their pay set by collective bargaining. These figures have remained fairly stable since 2004 (Van Wanrooy et al., 2013).

Also, the percentage of all unionised workplaces normally negotiating over pay, hours and holidays fell from 32% in 2004 to 25% in 2011. This fall was concentrated in the private sector where the percentage declined from 27% to 18%, suggesting a hollowing out of recognition in that part of the economy (Van Wanrooy et al., 2013). Figure 7 shows Trade Union membership levels by sector from 1995 to 2013.

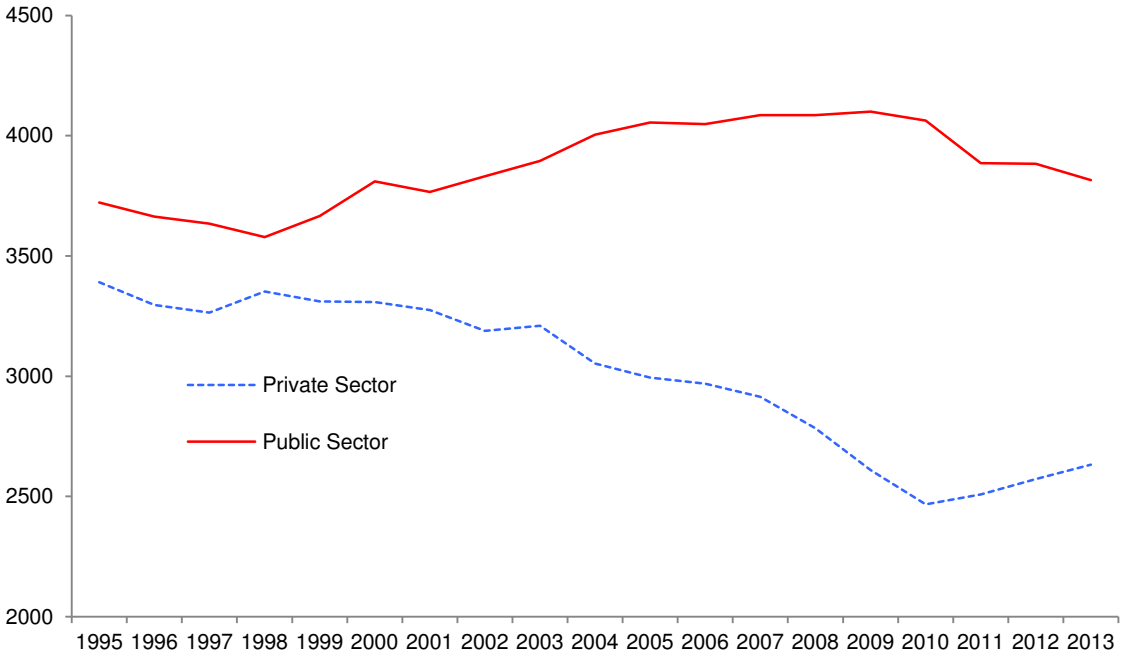
Figure 6: Median weekly income of the self-employed from 2003/04-2011/12 (£)



Source: HMRC Personal income by tax statistics, DWP Family Resource Survey, and Fraser of Allander Institute calculations.

Note: HMRC data for 2008-09 are not available. Data are not adjusted for inflation.

Figure 7: UK Trade Union membership levels (000s) by sector from 1995-2013



Source: ONS Labour Force Survey.

To conclude, the labour market has shown a rather robust recovery in Scotland (and in the UK). From this, it could be expected that there is more than sufficient pressure to push real wages into positive territory. Scottish real wages have seen an increase into positive territory in 2013. More timely data, however, suggest that the UK has not yet experienced significant enough growth in wages to outpace inflation.

The recent recovery in the labour market has been largely driven by part-time and self-employment. Self-employment income, however, has been stagnating and even lacks any signs of healthy nominal growth. Thereby a large part of the labour market is experiencing a significant decrease in real income.

There has been a decisive decline in Trade Union membership and, more importantly, Union influence over pay setting. Thereby, the traditional mechanism by which wage growth is supported has been impaired. Significant pressure on wages can therefore not be expected to feed through this channel.

These rather bleak data, however, are somewhat selective. There are more positive signs on the horizon that could help accelerate wage growth in future (i.e. the current push towards a 'living' wage). Sustainable and balanced household consumption requires wages to grow at a faster pace than currently observed. Productivity will improve and pressure on wages will thereby mount over time pushing real wages into positive territory. Given current developments, however, one would not expect this to occur in the short-run.

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FRASER OF ALLANDER INSTITUTE

EDITORIAL INTRODUCTION

This edition of the Fraser of Allander Commentary (Vol. 38, No.2, November 2014), the first after the historic Scottish Independence Referendum, has much to say about the current state and prospects for the Scottish economy. Despite encouraging 'headline' indicators, the nature, strength and sustainability of output and employment growth appear balanced on a knife edge. Many of the issues relating to any assessment of future prospects relate to the nature of the contemporary labour market.

The article by Darby and McIntyre sets out the issues facing policymakers – especially macroeconomic policy makers – as they try to assess whether and when to tighten monetary policy by starting the process to raise interest rates. Much of this issue revolves around whether there is still 'slack' in the economy; many, including the Fraser of Allander Institute, think there is. A second article by Boyd focuses on the current Scottish labour market; its retention of people in the labour market post-crisis and well as the growth – evident before the crisis – of part time, self-employment and insecure forms of employment (eg zero hours contract etc.). The implications both for labour market policy and timely labour market *statistics* in Scotland (and the UK) are noted.

The development of Scottish economic statistics is outlined by Spowage. The importance of accurate, independent and timely economic statistics is noted as is their relationship to Scotland's existing - and prospective (via the Smith Commission) - devolved powers. Importantly, the point is made that the best (economic) statistics evolve from the direct engagement of users. The article points out how interested parties can become engaged to help develop better economic statistics for Scotland, its policy makers and citizens.

The timeliness of economic statistics is a key issue for policy makers. The article on 'Nowcasting' by Allan, Koop, McIntyre and Smith of the Economics Department and Fraser of Allander Institute at the University of Strathclyde provides as taster as to how to 'nowcast' the performance of the Scottish economy. This is an issue to which the Commentary will, no doubt, return.

Scotland's growth companies have an economic impact, disproportionate to their size. Hopkins and Richmond's analysis of a limited number of such companies, shows that acquisitions by Scottish companies are often the fastest way to grow a company and to add new markets and technologies. They also show that the *sale* of such companies is not always a loss to the Scottish economy. Their analysis raises questions as to the policy focus in Scotland to help develop fast-growth companies.

Scotland's progress in the current UEFA Euro 2016 qualifiers is of interest to many (in Scotland). How will Scotland progress in the tournament? Analysing the literature and past international men's football results, Scelles and Andreff provide a number of scenarios under which Scotland may indeed qualify to the finals in France in 2016.

In the Commentary's Policy Section, the article by Barbour, Morton and Schang speaks to how the very considerable financial challenges within the NHS in Scotland can be met. The scale of the challenge is outlined as are a number of principles by which they might be successfully addressed. Learning from other health systems, reconfiguring services, moving many out of hospitals and into the community and the positive patient support role of medical technologies are reviewed.

The Scottish Independence Referendum was a defining moment in Scotland's political and economic development. How people voted is the subject of the article by Curtice. He shows that the economic perspectives on the cases for and against independence were crucial to the outcome. These economic perspectives are the subject of this Commentary's final article by Young in which he notes that an unspoken aspect of both campaigns was the depth of the UK Union's 'single market' that has been built up and developed over 300 years. Far from being dead, as some have suggested, Young notes that voters' understanding of the practical realities of the UK's 'single market' was a critical factor in the final result.

The Fraser Economic Commentary welcomes articles on economic and related policy issues, particularly as they relate to Scotland and other devolved nations and regions, in the UK, Europe and worldwide. To do so, please contact the Editor.

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Economic perspectives

The post-crisis labour market and the challenges to policymakers

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Introduction & Overview

While headline figures on employment, the participation rate and the unemployment rate for the UK are encouraging, there is widespread agreement that the evolving changes in the labour market underlying these figures are more complex. One consequence is that headline labour market figures are less useful than they were previously for measuring the overall health of the labour market, not just in Scotland, but across the UK and many other countries.

It is unclear at this stage whether many of the changes that have occurred will turn out to be temporary, and so can be expected to revert back to pre-crisis behaviour and norms as the recovery progresses, or whether the severity of the Great Recession has caused persistent changes in the functioning of the labour market. This is important, not least since persistent structural changes may mean that policies that worked well in the past may no longer be appropriate.

In this article we begin with a discussion of some key features of the post-crisis labour market. We then review a number of the challenges that the post-crisis labour market poses for policymakers, starting with how changes in the labour market impact on fiscal balances. We then emphasise that the UK Monetary Policy Committee's assessment of the remaining slack in the labour market is critical to their decision as to how long monetary policy can be supportive of the recovery, without risking raising inflation above its target.

We argue that it is critical to gain an understanding of the extent and nature of *underemployment* in the economy when making assessments of current labour market slack[1]. This understanding is also critical to motivating well designed policy interventions to deliver better labour market outcomes for those currently underemployed. We review a number of specific policy prescriptions, drawing on the existing literature, as well as on UK and Scottish government experiences. We argue that appropriate policy design is now of critical importance to reducing the risks of polarization of the labour market and secular stagnation.

Recovery is progressing but evidence of a post-crisis hangover remains

The most recent release of UK GDP data indicates that the 2008 peak in real GDP was finally surpassed during 2013 and the latest GDP growth figures are more buoyant, particularly when compared to those in much of the rest of Europe. For some time now employment figures have been stronger than forecasts of the Office of Budget Responsibility (OBR) and the Bank of England. The path of

[1] The Scottish Parliament's Economy, Energy and Tourism Committee published a report on "Underemployment in Scotland" in April 2013 . This report discusses the definition of the term, evidence on its prevalence, costs to individuals and the economy as a whole and sets out a number of policy options.

employment since 2010 has been markedly stronger than in previous recessions, although underlying the aggregate employment figures, the composition of employment is markedly different in the post-crisis period and productivity and earnings have remained weaker than expected during the recovery. Much of the increase in total jobs has been concentrated in self-employment, part-time and temporary employment. Alongside this a small decline in numbers in full time employment is still evident relative to 2008.

These compositional changes are important. Self-employment has accounted for over one third of the rise in employment since 2010, and figures released by the Office of National Statistics ONS in August 2014 show an increase of 732,000 since 2008:Q1 which accounts for 67% of the rise in total employment over the same period, see ONS (2014). This rise, in part, reflects a long-term trend, though the increase has been stronger than forecast. Prior to the crisis the construction industry was the most common sector for the self-employed, with around 40% of construction workers classified as self-employed. However the crisis hit this sector the hardest, and between 2009 and 2014 it had seen the slowest growth in self-employment compared with other major industry groups. ONS figures show that the recent rise in self-employment was largest in professional, scientific and technical activities which include roles such as management consultant, book-keepers, photographers and chartered accountants.

Reliable information on income from self-employment is only available with a long lag as early survey based estimates are replaced with data from self-assessed tax returns, but available information confirms that earnings of many of the new self-employed lie at the lower end of the income distribution. The Family Resource Survey indicates that in 2012/13 the average median income from self-employment was £207 per week, a fall of 22% (after taking into account inflation) since 2008/09[1] compared with a fall of around 6% for employees over the same period. It's likely that the aggregate figure includes some workers who became self-employed in response to temporarily low demand for labour and are working fewer hours than they desire. Some policy makers assume affected workers will prefer to switch back into employment as demand recovers.

Another feature of the post-crisis labour market is underemployment. In broad terms underemployed include those working fewer hours than they would like or working in jobs that underutilise their skills; i.e. part-time workers that would prefer to be full-time and skilled workers currently in low paid, low skill jobs. Underemployment is distinct from unemployment in that the individuals are in work but are not working at their full capability. A benefit of underemployment, relative to unemployment, is that workers remain attached to the labour market. It is widely accepted that underemployment has contributed to the resilience of employment through the recession. However, it also seems likely that underemployment is one factor that can help to explain the weakness of productivity in the face of rising employment, the so called productivity puzzle, which is evident both in terms of low output per worker and low output per hour, see for example Barnett et al. (2014). In our view, restoring productivity to pre-crisis trends is likely to require substantial outflows from underemployment into employment to better match desired hours and better utilise workers skills.

It is particularly difficult to judge to what extent, and how quickly, underemployment of will dissipate. Janet Yellen, Chair of the Federal Reserve, touched on these issues and the challenges they pose to

those responsible for US monetary policy in her speech at the Federal Reserve Bank of Kansas City's Economic Symposium at Jackson Hole in August, Yellen (2014). UK policymakers face similar challenges, as we now explain.

The implications of labour market developments for UK macroeconomic policy

Policymakers have to make difficult judgments about the extent to which labour market developments such as those described above are cyclical and can be expected to revert to better understood norms as the recovery progresses, and the extent to which they are structural and can be expected to persist.

Arguments that increases in participation, in part-time employment and in self-employment are likely to be temporary and will reverse as recovery progresses include suggestions that increased participation largely reflects firms' and households' responses to temporary impacts of the financial crisis. For example, increased participation of older workers can reflect postponement of retirement in response to reduced real asset values and lower income from savings. At the same time, additional entrants into the labour force may be working to compensate for losses in household incomes associated with poorer outcomes for primary earners who have faced cuts in their hours and/or earnings. As asset values recover and primary earners return to their more usual hours of work, this form of participation may fall back, and could potentially do so quite quickly. It's also possible that as the recovery progresses a lot of part-time workers should be able to get full-time jobs, although as Yellen points out, the ongoing shift in employment away from goods production and towards services, a sector which typically uses a greater portion of part-time workers, may well boost the share of part-time jobs in the longer term.

From the fiscal policy perspective one key question is how much of the government's budget deficit can be expected to narrow automatically as the economy recovers, and how quickly? Labour market developments clearly matter here, given the importance of income tax and national insurance contributions paid by workers in total government receipts and the direct links between labour market developments and welfare payments, including those to the working poor.

Reduced hours of work and earnings of primary earners have certainly reduced income tax receipts and the shortfall generated has not been offset by increased employment given that the new jobs have been disproportionately concentrated in low paid, part-time work. As the OBR have pointed out, this kind of employment-driven growth generates less in tax receipts because a given amount of labour income split between more people attracts a larger number of tax-free personal allowances, reducing the effective tax rate, see OBR (2014). In this sense both the level and composition of labour income have become less favourable for public finances[2]. Indeed, this could well become more acute if there are further increases in the value of tax free allowances as some (political parties) propose.

Successive OBR forecasts have assumed that recovery will broadly generate a return to pre-crisis norms, with relatively modest revisions made to potential output. When outturns have disappointed, their successive forecasts have broadly rolled forward the expected recovery and have made relatively modest revisions to potential output. It would be more informative if forecast ranges were provided, and

[2] These issues have been discussed at length in recent weeks, see for example Cadman (2014), Houlder (2014) and Barrett and Giles (2014).

if implications of alternative speeds of recovery and alternative trajectories for potential output were discussed. For now, the OBR's central forecasts do not appear to have taken on board the rather different characteristics of the most recent changes in the composition of employment, leaving them overoptimistic on income tax receipts and surprised by the continuing weakness in overall earnings growth. Nonetheless, in its own recently published analysis of their forecast errors the OBR concludes that the biggest factors explaining the persistent errors in forecasts of income tax revenues have been weak earnings growth reflecting low productivity, along with lower dividend and interest income, OBR (2014). At the very least it would be helpful to see the implications of alternative scenarios discussed – admitting the possibility that the labour market may not recover to pre-crisis norms.

In order for tax receipts to recover the OBR stress that the gap between actual and potential output needs to close and productivity needs to recover. It admits that considerable uncertainty remains in relation to how much productivity will recover as demand conditions improve and how much the shortfall in tax receipts reflects structural weakness that will not come back. Alongside errors in forecast income tax revenues it has been a challenge to for the OBR to accurately forecast welfare payments. The main sources of errors that they've identified relate to housing benefits, tax credits, state pensions and job seekers allowance. The main theme being that in the post-crisis period a greater number of the working poor have been entitled to claim benefits and tax credits than before. Again, it is clear that a return to pre-crisis norms will only follow increases in productivity and wages.

A second key question repeatedly asked of fiscal policymakers is can and should UK wide fiscal policy do more to support the recovery?

A prominent policy of the UK Government has been to increase in the personal income tax allowance, at the same time as reducing expenditure across non-protected departments, and this is planned to continue. More specifically, the personal allowance has been increased in successive budgets by more than inflation, from £6,475 in 2010-11 to £10,000 by 2014-15 and will rise further on current plans, to £10,500 in 2015-16. There are some positive impacts of this policy: it takes some additional families on low incomes out of paying income tax and alongside welfare reforms further strengthens work incentives especially for some low earners. However, this is a policy that all tax payers benefit from, and while this may make it popular with voters in general, more targeted policies may be more effective in helping those with the lowest incomes/earnings. Those with the lowest incomes don't benefit at all directly and are in fact could be worse off if the Government's approach to funding tax giveaway involves reductions in welfare payments and public service provision. Other policy levers are available to the UK Government.

Commentators including the International Monetary Fund (IMF) and the UK's Institute for Fiscal Studies (IFS) have pointed out that there are a number of other potential interventions that would have been better targeted at strengthening the labour market. The IMF has gone further in setting out a list of "job-friendly" policies in their latest Fiscal Monitor, IMF (2014a), top among them are suggestions for targeted cuts in employer social security contributions (NICs), increased focus on growth enhancing public services; improving access to finance and training; safeguarding social needs by protecting social expenditure; and improving infrastructure, especially in the areas of transport, energy, and housing. The

IMF explains that this can be done at relatively low financing cost at present, with costs quickly offset by both short and long-term benefits. In conclusion, the IMF argue that the *composition of fiscal policy* can and should do more to support the recovery.

From the perspective of monetary policymakers the challenge is to understand the implications of labour market developments for inflation[3]. In the current low inflation environment key questions are: i) what degree of slack remains in the economy and ii) how far can monetary policy help to reduce this slack without boosting inflation above its target?

UK monetary policy has maintained a highly accommodative stance since the crisis. Continuing this stance has helped to offset some of the adverse impact of reductions in government spending and is likely to continue to do so, provided that inflation is expected to remain below target.

At present, and on balance, the majority of the Bank of England's Monetary Policy Committee (MPC), as well as external commentators including the IMF, believe monetary policy should continue to support the recovery as it has to date. Crucial to their assessment is evidence from the range of indicators that the Bank of England uses to assess how much spare capacity or "economic slack" remains. As noted at the outset, headline figures on the unemployment rate, employment growth and participation rates are currently less informative then they were in the past, and this has been recognised by the MPC when making judgements. In this regard it is perhaps surprising that the Bank of England referred to a specific employment rate when forward guidance was introduced, as did the Federal Open Market Committee in the United States. Nevertheless, the Bank has recognised the importance of indicators of underemployment and (still muted) wage growth in its policy decision making.

Of course, policy decisions are sometimes based on finely balanced judgements. Members of the MPC are acutely aware that changes in monetary policy can only be expected to operate with a lag. On the one hand it is desirable that the MPC anticipate labour market pressures by raising the Bank Rate in advance of any inflationary response, on the other hand if the Bank Rate is increased too far ahead of any prospective pickup in wage growth and/or other emerging inflationary pressures there is a risk of increasing the vulnerability of highly indebted households.

Minutes of the September 2014 meeting of the MPC (the most recent available at the time of writing) indicate that they are some signs that labour market slack is diminishing, see Bank of England (2014b). In particular job-to-job flows and voluntary resignations, which fell markedly during the crisis, are beginning to rise again. This shift seems indicative of improving confidence, and may in part reflect individuals finding work in roles that better match their skills and desired working hours. Likewise the minutes record growing evidence that some individuals who became self-employed in response to temporarily depressed demand for labour may be switching back into employment. The MPC expect these developments to reduce underemployment, while boosting measured productivity and earnings, while having only a modest impact on wage settlements and unit labour costs.

[3] Note that we focus here on policy within the remit of the UK's Monetary Policy Committee and don't, for reasons of space, include discussion of related policy in relation to financial stability objectives.

Nonetheless, considerable uncertainty remains as to the extent of these ongoing developments, and how quickly they will take effect. The views of two MPC members are that it is possible that the dislocation that has held back wage growth and productivity is now being corrected quite rapidly. The most sceptical on whether underemployment will in fact translate into increased labour supply as recovery progresses is external MPC member Martin Weale, see Weale (2014a,b,c). He's pointed out that people whose partners lose jobs or face a significant drop in their earnings may well say that they would like to work longer, but that once the economy recovers and their partners' earnings are restored the implied extent of the increase in desired labour supply may not materialise. He has set out his doubts on the validity of inferences from survey information on underemployment and has concluded that, at best, a very substantial margin of uncertainty remains. Weale's own view is that underemployment statistics overstate the underlying amount of spare capacity and he has cautioned that the stated intention of raising Bank Rate gradually implies that the first rise needs to come sooner than would otherwise be the case. At present, his view that Bank Rate should rise soon is not shared by the majority of the MPC, who still see muted inflation pressures from wage growth over the next year to 18 months and it looks unlikely that they all share the view that Martin Weale expressed in a speech in October 2014 that the "best indicator" of future wage pressures wage pressures "is the rate at which unemployment is falling" Weale (2014c). It is therefore clear that changes in the labour market are central to the time path and strength of monetary policy decisions in the UK at present.

Quality of jobs and zero-hours contracts

Another area of concern for policymakers lies in the quality of jobs being created; this is partly reflected in the nature of contracts. A great deal of recent attention has focused on the growing prevalence of so-called zero-hours contracts, described as a type of contract used by employers whereby workers have no guaranteed hours and agree to be potentially available for work (see for example Pyper and McGuinness (2014), Chandler(2014) and Freeman (2014).

Awareness of the use of such contracts has been heightened in the post-crisis labour market. While it's fair to say that there are severe limitations to the available data in this area, the ONS undertook the first survey of businesses to obtain an employer-based estimate of the number of employee contracts that did not guarantee a minimum number of hours, but which provided work in the survey reference period in January 2014 (covering the fortnight beginning 20 January 2014). A second such survey took place in September 2014 and results will be reported at the end of the year. This supplements employee based information collected through the Labour Force Survey.

For employers, zero-hours contracts offer a means of flexibility to respond to uncertain and fluctuating demand. Flexibility is also welcomed by some kinds of workers, for example students and some pensioners[4]. However, for workers who would prefer more secure work, but aren't able to find other openings, contracts with no guaranteed hours are a key source of financial insecurity and are not likely to be conducive to career development and progression. Welfare benefits available to the working poor can ease the strain somewhat, but don't actively help workers who are unhappy with their hours. Zero-

[4] Students need to fit paid work around their other commitments, so having the ability to turn down work around exam times etc. is important. Pensioners who are seeking a little extra income may be able to live with the uncertainty of not having guaranteed hours.

hours contracts can create significant financial insecurity for employees, uncertainty around entitlements to benefits and the new auto-enrolment system for workplace contributions, high workplace stress, and lack of opportunities for career progression. As the recovery strengthens, some workers may be able to renegotiate their contracts or find permanent jobs, but zero-hours contracts are likely to remain a feature of the labour market.

Several consultations on the use of zero-hours contracts have reported during the past year. Vince Cable, Secretary of State for Business Innovation and Skills, led on the UK Government consultation which ran from December 2013 until March 2014, and reported in June 2014. The main outcome was the announcement of the Government's intention to ban the use of exclusivity clauses which seek to prevent individuals on zero-hours contracts from working for another employer, even when no work is guaranteed. The use of such clauses undermines choice and flexibility for the individuals concerned, and seeks to prevent them from finding alternative ways to increase their earnings. The proposal to ban exclusivity clauses is now a provision in the Small Business, Enterprise and Employment Bill, currently being considered by the UK Parliament.

An additional issue, and where there is currently some confusion, is whether those people who are currently unemployed and refuse a zero-hours contract will face benefit sanctions. Although Vince Cable has tried to give reassurances in this regard, Minister for Employment Ester McVey has not ruled out imposing sanctions on those failing to accept a zero-hours contract, without good reason, under the new system of Universal Credit, see Pyper and McGuinness (2014).

In April 2014 the Labour party published its own consultation in Pickavance (2014). This made a number of recommendations in addition to banning exclusivity clauses: i) that employers should be prevented from requiring zero-hours workers to be available for work; ii) that zero-hours workers who in practice work regular hours should, after a specified period, have a right to a contract with fixed minimum hours; and iii) that zero-hours workers should have a right to compensation when shifts are cancelled at short notice.

Policy changes have also been proposed in Scotland, and may well have an impact relatively soon. While employment policy is a reserved power of the UK Government, the Scottish Government is seeking to influence the types of employment contract that firms tendering for Government work use via its procurement procedures[5]. New Scottish legislation is expected to be in place towards the end of 2015.

So far we have concentrated on the actual versus desired hours dimension of underemployment, but two further dimensions are also important and potentially have even greater implications for the future productive potential of the economy and for the persistence or elimination of sub-optimal outcomes. These dimensions relate to geography and skills.

Geographical and skills dimensions to underemployment

The geographical dimension of underemployment is sometimes referred to as geographical mismatch and stems from the fact that jobs are often located where poorer people cannot afford to live. The skills

[5] See the Procurement Reform (Scotland) Act 2014, which was passed by the Parliament on 13th May 2014 and received Royal Assent on 17th June 2014.

dimension of underemployment refers to workers who are in jobs that don't fully utilise their skills or qualifications. One of the clearest examples of the skills dimension of underemployment is the prevalence of a proportion of recent graduates working in non-graduate jobs[6].

The policy prescriptions that have be advanced to reduce geographical underemployment include i) area based policies aimed at incentivising companies to locate/expand in areas of high unemployment and ii) helping workers move to, or commute to, areas with lots of jobs. There are many examples of past policies that fall into the first category including Regional Selective Assistance, Enterprise Zones, European Union Structural Funds, and industrial cluster policies. However, for a range of reasons, evaluations of such policies tend to conclude that they have not generated the hoped for outcomes, see for example Lawless et al. (2011) and Neumark and Simpson (2014).

The objective of helping workers move to areas with lots of jobs has motivated policy prescriptions of liberalising planning laws, removing zoning restrictions and incentivising provision of cheaper housing, all of which can be expected to have impact albeit with varying time lags. The objective of helping workers to commute to areas with job vacancies recognises that a lack of affordable and efficient public transport can constitute a barrier that makes it harder for people to access appropriate work. Some powerful recent evidence comes from a US study of job search among nearly 250,000 Americans in nine cities in the Midwest who lost their jobs during mass lay-offs at the start of the crisis.

Their engagement with the labour market was tracked over a six year period and findings suggest that the typical American city dweller can access just 30% of available jobs in their city within 90 minutes using public transport, see Andersson et al. (2014). Spending money on transport infrastructure to improve job accessibility is consistent with the IMF's call for a well-designed fiscal stimulus discussed earlier. Indeed, in England, the economic case put forward for HS2, and now HS3, stresses the intention to create a network of cities that are more accessible to workers by cutting journey times. However there's been vocal debate on how large the potential employment effects of such initiatives really are, with critics focusing on the need to help those in areas of social deprivation outside cities to access available jobs, rather than improved city to city links, see for example Overman (2012).

Initiatives to improve the accessibility of low skilled workers to existing vacancies need not involve massive infrastructure investment of the scale of HS2 or HS3. In fact, researchers looking at the US data have suggested that the amount of money involved could be relatively small: simply buying buses and having them pick up workers in lower-income, outer neighbourhoods and then running them from those places — not stopping along the way — all the way into commercial centres can greatly increase the accessibility of jobs to low-income workers, see Andersson et al. (2014). We believe that serious consideration should be given by UK and devolved policy makers to an assessment of geographic mismatch and what steps can be taken to improve accessibility of vacancies, particularly for low skilled workers.

Returning now to skills mismatch, much of the focus of policy has been on improving education to work transitions. For example, a number of specific policies were recommended by the Commission for

[6] Considerable media attention focused on an ONS report from November 2013 which found that 47 per cent of those who completed a degree in the past five years were working in non-graduate jobs (predominantly in roles such as sales assistants and care workers) in April to June 2013 as compared to 39 per cent in 2008, see Office of National Statistics (2013).

Developing Scotland's Young Workforce, chaired by Sir Ian Wood which reported in June 2014, Scottish Government (2014). The recommendations can be broadly described as encouraging a closer relationship between schools and industry; a better tailoring of college level education to the needs of employers; improvements in the modern apprentice scheme and work to encourage employers to hire young people. While undoubtedly important, policy needs to recognise that those currently in education and transitioning into the labour market represent only one dimension to the skill match issue. As we have emphasised above, seeking to increase outflows from underemployment is critical if the workers are to achieve their potential and if the economy's growth potential is to be restored.

In some ways the challenge faced by policy makers here is similar to that posed by youth unemployment and long-term unemployment. So discussion of interventions that seek to improve incentives for firms to take on younger workers, for example by targeting a reduction in non-wage labour costs via a reduction in employers' national insurance contributions; taking actions that improve SME's access to graduate labour markets and to better match those firms with vacancies to access a suitably qualified pool of applicants are all relevant. Reports prepared for the Department of Business Innovation and Skills and by the Small Business Federation have made important contributions here, see Sear et al. (2012) and Federation of Small Businesses (2009). The focus particularly on small businesses is warranted because a considerable proportion of the new jobs created during both the recession and the on-going recovery are in successful small businesses that are innovative and are drivers of growth in the economy as a whole, see Department for Business Innovation and Skills (2013).

However, in this article we have emphasised that it is important to have a clear focus on improving labour market outcomes for as many as possible of those currently in a situation of *underemployment*. If policymakers, commentators and agencies such as Job Centres are too focused on headline employment, participation rates and unemployment rates there is a real danger that poor outcomes will persist. Ironically, where in-work benefits and tax credits make underemployment more bearable this may erode incentives for workers to keep looking for better employment matches during recovery and may result in them staying underemployed for longer. In the absence of other interventions, there should be real concern that polarization within the labour market will persist and recovery in fiscal balances will be delayed. In our view, failure to take policy action to tackle underemployment in all its guises is a recipe for greater polarization in the labour market and a continuation of productivity growth that does not fulfil its potential.

Conclusions

In conclusion, after previous recessions policymakers focused on getting people back into work and avoiding lasting negative impacts from long-term unemployment. This time, the fact that a higher proportion of the working age population has retained engagement with the labour market has been a positive achievement. Nevertheless, as we argued that there is a need to upgrade the nature of some of this engagement as the recovery progresses in order to address underemployment and the persistence of associated bad outcomes for individuals, for fiscal balances and for the productive potential of the economy as a whole.

In particular some workers are in jobs that don't fully utilise their skills; have limited prospects for advancement and/or their jobs fail to provide the hours of employment desired. These workers, and

others, may face barriers in accessing available vacancies that better suit their abilities and requirements as a result of geographical mismatch. We have argued that there is a clear need for policies that facilitate transitions out of poorly matched jobs to reducing the risk of sustained polarization of labour market outcomes and underperformance of the economy as a whole.

In our view the most promising policies to improve the strength of the labour market include policies to i) improve transport infrastructure, helping people commute to access suitable jobs; ii) help people relocate to access jobs; iii) help SMEs with vacancies to achieve better matches of workers to jobs; and iv) remove exclusivity clauses in zero hours contracts and for the Government to show leadership in incentivising improved contractual arrangements via its own procurement rules. While it is feasible for zero-hours contracts to play an important role in a well-functioning labour market, it is clear that the growth in these contracts in recent years does not reflect a robust and well-functioning labour market – and indeed may undermine the strength of the economy as we continue to emerge from the Great Recession.

The success or failure of policies to improve labour market outcomes will have profound implications for both fiscal and monetary policy. For the reasons outlined earlier, there are important interactions between welfare policy and the feasibility of attaining sustainable fiscal balances in the future. If unchecked, the persistence of each of the elements of underemployment we have highlighted will contribute to stagnation of median incomes and be reflected in persistently lower tax receipts and higher spending on in-work benefits. And importantly, from the monetary policy perspective, the prospects for wage pressure from these groups is likely to remain muted until significant inroads are made into eroding remaining labour market slack in the economy and returning hourly productivity back toward pre-crisis norms.

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Labour market changes and implications for policy and labour market information (LMI) in Scotland

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Abstract

The recovery from the deep recession of 2008/09 has been weak and somewhat unusual: employment has been stronger than anticipated given the slow recovery in output. The labour market's recovery is undoubtedly impressive when it is measured by headline employment, unemployment and activity statistics. However a focus only on headline statistics risks masking a number of trends which conflate to justify a less optimistic assessment. Of particular interest has been the rapid embedding of labour market trends which had started to emerge pre-recession such as underemployment, self-employment, youth unemployment and insecure forms of working. The unprecedented collapse in real wages since 2009 is proving more durable than many commentators believed and the remarkable increase in people aged over 65 remaining in work has hardly featured in public discourse. Though ambiguity persists as to the extent to which these trends reflect structural shifts or the remnants of a cyclical downturn, it is argued that at least some of these trends reflect structural shifts. The potential impacts of these domestic and global trends on the Scottish labour market and their implications for policy at Scottish level are discussed. In doing so, a number of ongoing and serious issues with the range and quality of Scottish labour market data are discussed.

I Introduction

The timing could hardly have been more fortuitous for Alex Salmond MSP, First Minister when he addressed the STUC conference *Decent Work, Dignified Lives* on 15 October 2014; for the embargo on the latest labour market statistics for Scotland had ended just as he took the podium at 9.30am. This allowed the First Minister to announce another set of 'stunning' figures: in the three months to August 2014 unemployment had fallen by 40,000 and employment had risen by 35,000. The data had once again confirmed the remarkable resilience of Scotland's labour market.

Yet perhaps surprisingly for an audience more concerned than most with job numbers, the response was muted. Over the course of the day a number of conference participants questioned the veracity of the figures which they struggled to reconcile with their own experience. Their perception was not of a booming labour market but one characterised by falling real wages, rising insecurity of work, record underemployment and stubbornly high youth unemployment. The salient lesson they had drawn from the turbulent period since 2008 wasn't that flexible labour markets had triumphed but that quality of employment was deteriorating and jobs increasingly lacked what they considered to be an acceptable degree of economic security.

[1] The views expressed are those of the author and not of the Scottish Trades Union Conference (STUC).

The statistics announced by the First Minister and the sceptical reaction of the audience point towards a growing problem. The headline statistics might be strong but they're also increasingly inadequate to describe the ways in which labour market trends are affecting real people in real time.

This article will argue that at least some of these trends reflect structural shifts. It will seek to describe both the potential impact of domestic and global trends on the Scottish labour market and the implications for policy at Scottish level. In doing so, a number of ongoing and serious problems with the range and quality of Scottish labour market data are discussed.

II The triumph of flexibility?

Given the length and depth of the 2008/09 recession and the prolonged period of stagnation that followed, the performance of the labour market has been remarkable in a number of respects: employment has been stronger than could have been anticipated throughout this period and although unemployment did surge it never hit the rates feared in late 2008 as the financial crisis gripped the globe. The old trope that unemployment is a lagging indicator was proved somewhat redundant when the unemployment figures subsequently recovered significantly quicker than GDP.

The performance of headline employment has led to a dominant narrative of a strong recovery that doesn't entirely stand up to scrutiny. Some six and a half years after the start of the Great Recession in the spring of 2008, neither employment nor unemployment has yet attained its pre-recession rate. Employment may well be at its 'highest ever' level in Scotland but that is not uncommon: since the Labour Force Survey was established in 1992, the level of total employment has breached its 'highest ever' level on no fewer than 50 occasions (41 occasions for 16-64 years category)[2] – as the Scottish working age population continued to expand. Indeed, the 16-64 employment rate in June-August 2014 is still a full one percentage point below that achieved in April-June 2007.

It is salutary to note that using the internationally comparable International Labour Organisation (ILO) measure of unemployment, unemployment in June-August 2014 was still 1.5% above that of March-May 2008 and the number of ILO unemployed people at 151,000 is 36% higher.

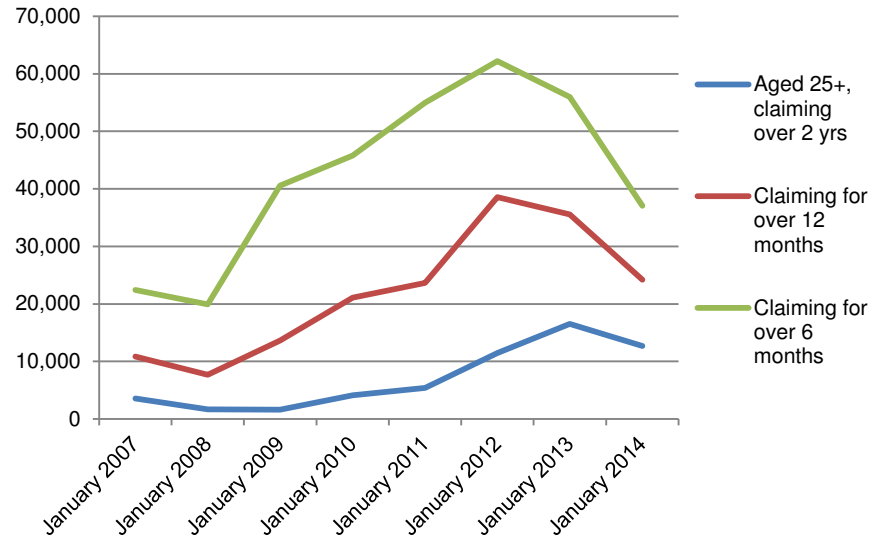
The trajectory of long-term unemployment has followed a more traditional path than other trends witnessed over the past few years. From a low in 2008, the number of those claiming Job Seeker's Allowance (JSA) for over 6 and 12 months rose to peak in 2012; the peak for those aged over 25 claiming for over 2 years peaked one year later. On all three measures, long-term unemployment has fallen encouragingly and sharply over the last year, though it remains significantly above its pre-recession levels.

So headline levels are undoubtedly impressive but maybe not quite as impressive as the political narratives at Scottish and UK level would suggest. The relevant question however is whether headline

[2] Unless otherwise specified, all labour market statistics (including Labour Force Survey, Annual Population Survey and experimental LFS) included above drawn from the latest Regional Labour Market Release, Office for National Statistics, October 2014

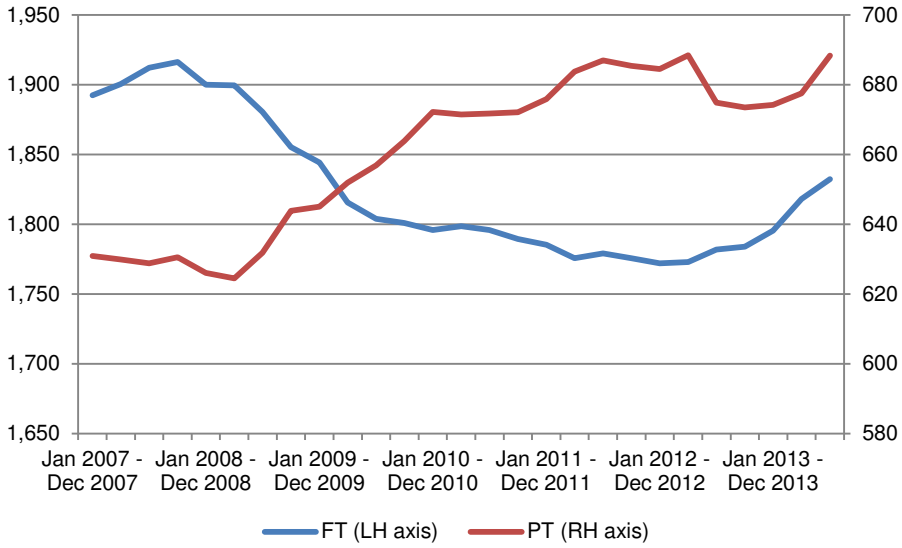
statistics continue to provide a sufficiently accurate overview of the state of the labour market? The trends discussed here suggest they might not. At the very least the growing number of low wage, self-employed, older and underemployed workers means that there is a greater degree of labour market slack than that suggested by the headline figures.

Figure 1 Numbers claiming Job Seeker's Allowance (JSA) for over 6, 12 and 24 months, Scotland, 2007-2014



Source: ONS, Nomis, 17 October 2014

Figure 2 Full and part-time employment (000s), Scotland, 2007-2014



Source: ONS, Regional Labour Market, October 2014

Full, part-time and self-employment

Total jobs may have recovered to their pre-recession level but full-time jobs have not: in the June-August 2014 period the number of full-time jobs stood at 1,832,000, still 84,000 below their pre-recession peak. There were 688,000 part time jobs during this period; 64,000 or 10.26% higher than the pre-recession level.

Perhaps of more concern is the rise in self-employment. Since 2007 self-employment in Scotland has increased by 27% to from 248,000 to 315,000 while employee jobs have fallen by 120,000 or 5% from their peak in September 2008.

Figure 3 Employee and self-employed jobs (000s), Scotland, 2004-2014

Source: ONS, Regional Labour Market, Scotland, October 2014

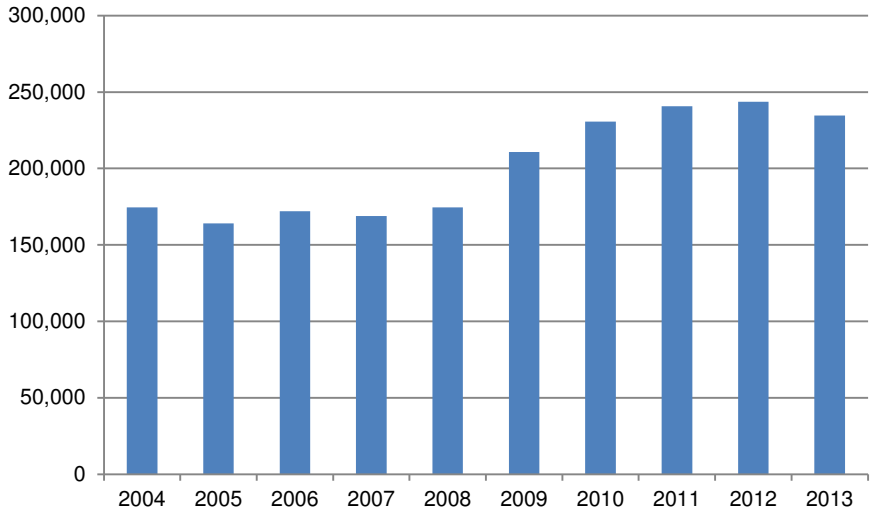
Although data is limited in Scotland, evidence from across the UK as a whole indicates that the recent surge in self-employment does not reflect an entrepreneurial boom; rather it suggests a large new cohort of self-employed workers who currently work less hours and earn less by doing what they used to do as employees (CIPD 2012, ONS 2014).

Underemployment

Two factors behind stronger than anticipated employment since 2008 are falling real wages and cuts in working hours; two obvious ways in which a labour market can adjust to falling demand without a concomitant increase in unemployment. One consequence has been historically high levels of underemployment: those who report as wanting to work more hours in their current job (the majority), or want a new job with more hours or an additional job.

Underemployment increased by 44% between 2007 and 2012 to nearly one in ten (9.9%) workers. It's important to note that average underemployment in Scotland between 2005 and 2008 was 7.2% of the workforce – hence underemployment is not, as is sometimes presented, a new, post-recession feature of the Scottish labour market (Scottish Government 2014).

Figure 4 Underemployment in Scotland ('000s), 2004-2013



Source: Scottish Government, Local Area Labour Markets 2013

Recent work by the Trades Union Congress (TUC) suggests that the slight fall in underemployment between 2012 and 2013 might not have been sustained (TUC 2014). The underemployment level between March-January 2014 was 252,305 -perhaps reflecting the impact of another year of falling real earnings. When combined with the underemployed, self-employed workers the total rises to 279,495. Therefore, despite the strong growth in employment through 2014, the best current information indicates that underemployment may also have risen since 2013.

Insecurity

Since 2008, the anecdotal evidence fed back from trade union workplace representatives has focused less on redundancies or the threat of redundancies (although clearly these have happened) than on the growing use of insecure forms of employment contracts. These include pay between assignment contracts, illusory forms of self-employment designed to avoid responsibilities such as paying tax, aggressive forms of performance management and, above all else, zero hours contracts. These trends are not picked up in official labour market surveys and therefore the quality of information we have is, once again, scant.

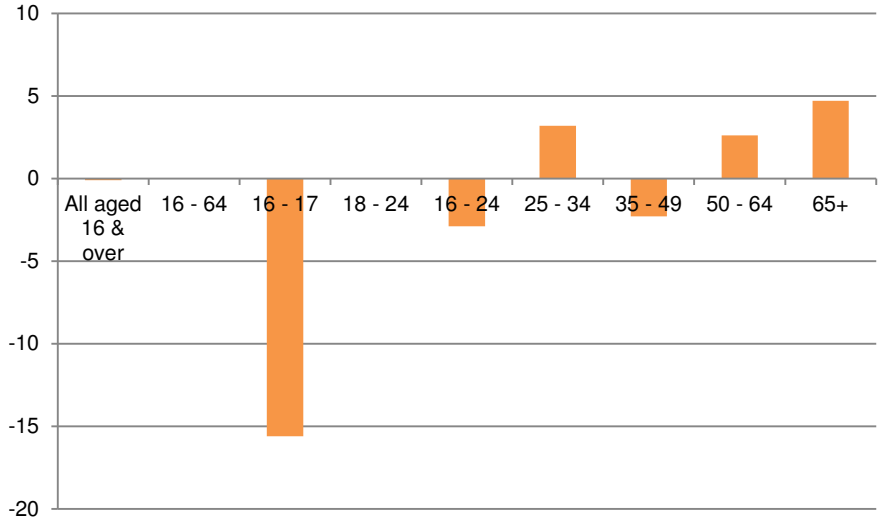
Extracting from recent Office of National Statistics (ONS) work, the Scottish Trades Union Congress (STUC) estimated that around 120,000 workers in Scotland are employed on zero hours contracts (ONS 2014, STUC 2014). Again, it's important to stress that such contracts weren't invented during the

recession; rather the economic circumstances of the past few years have seen the increasing normalisation of such insecure forms of employment.

Employment by age

Interestingly, the trend with perhaps the most profound long-term implications is the one that has been the least discussed. Stubbornly high youth unemployment has been firmly on the political agenda but not one of the contributory factors: that is the significant rise in the number of those aged 65 and over who are remaining in work and in the labour market.

Figure 5 Percentage change in the employment rate, by age groups, Jan-Mar 2008 to May-July 2014, Scotland (*experimental* Labour Force Survey (LFS)



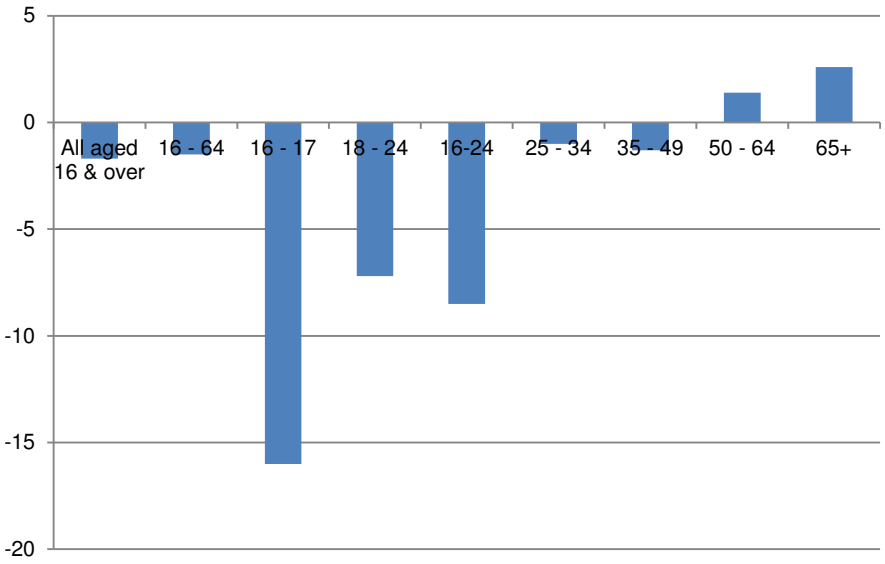
Source ONS, Regional Labour Market, October 2014

The latest experimental ONS statistics for employment by age (refer Figure 5), show that between Jan-March 2008 and May-July 2014 the employment rate of the over 65 age group increased by 4.7% compared to a decline of 2.9% for the 16-24 age groups (accounted for by 16/17 year olds).

More reliable, but older, statistics drawn from the Annual Population Survey tell an even starker story (refer Figure 6): between Jan-Dec 2008 and July 2013/June2014 the 50-64 age group increased its employment rate by 1.4% and the over 65s by 2.6%. These were the only age groups to register *any* increase in the employment rate over the period since the financial crash in 2008.

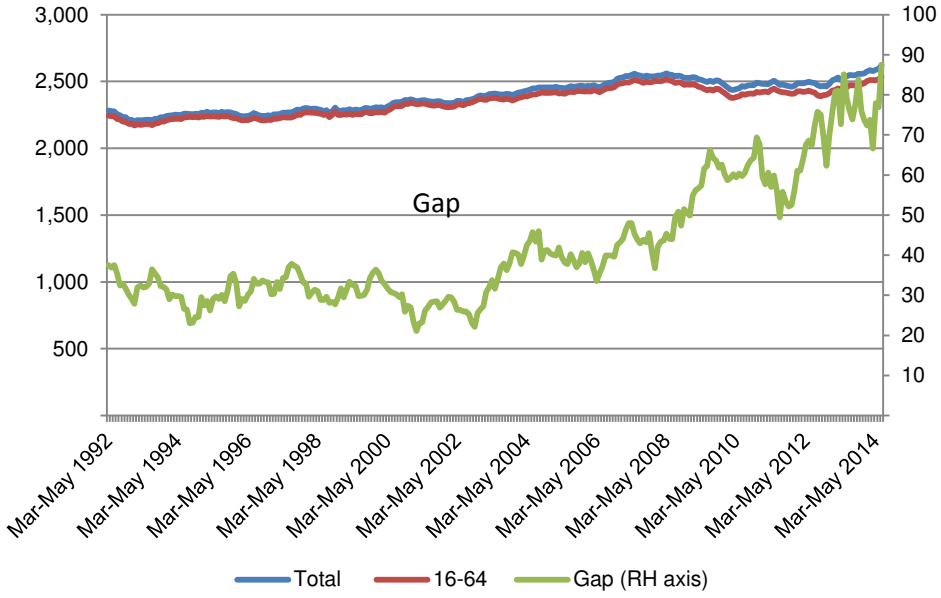
However, it is important to emphasise that the numbers of the over 65s staying in the workplace are still relatively *very* low; employment for this group has risen from 49,000 in January 2008 to 78,000 in July'13-June'14 but the increase has been rapid, as demonstrated in Figure 7 which shows the growing absolute gap in employment between measurers of total employment and those aged between 16-64 to May-July 2014.

Figure 6 Percentage change in employment rate, by age groups, Jan-Mar 2008 and May-July 2014, Scotland



Source ONS, Regional Labour Market, October 2014

Figure 7 Gap between total employment and 16-64 years employment (000s), 1992-2014



Source ONS, Regional Labour Market, October 2014

An optimistic account of these changes would stress that people are living healthier, longer lives and therefore wanting to work for longer. A more pessimistic account might highlight pension reforms and

falling real wages, forcing people to work for longer when their own and/or partner's pension entitlements are eroded or wages fall.

The unprecedented decline in real wages

Real wages have declined across the UK for all but three of the last 74 months under report and the cumulative fall in the median real wage is around 10%. As the Bank of England recently reported this fall is without precedent since records began in the mid 1800's (Haldane 2014).

Scotland has seen a fall in the real median wage similar to that for the UK as a whole. Between 2009 and 2013 (the latest Annual Survey of Hours and Earnings Data are for the year to April 2013) the Scottish median real wage fell by 7.6% representing an annual loss in 2013 of £1,760.

Table 1 Declining real wages in Scotland, percentage change for selected groups 2009-2013

Total		Full-time		Part-time		Median Worker
Male	Female	Male	Female	Male	Female	
%-7.7	-8.2	-7.1	-5.8	-6.8	-8.8	**-7.6**
£-1,993	-1,406	-2,002	-1,372	-545	-789	**-1,760**

Source: Annual Survey of Hours and Earnings 2013

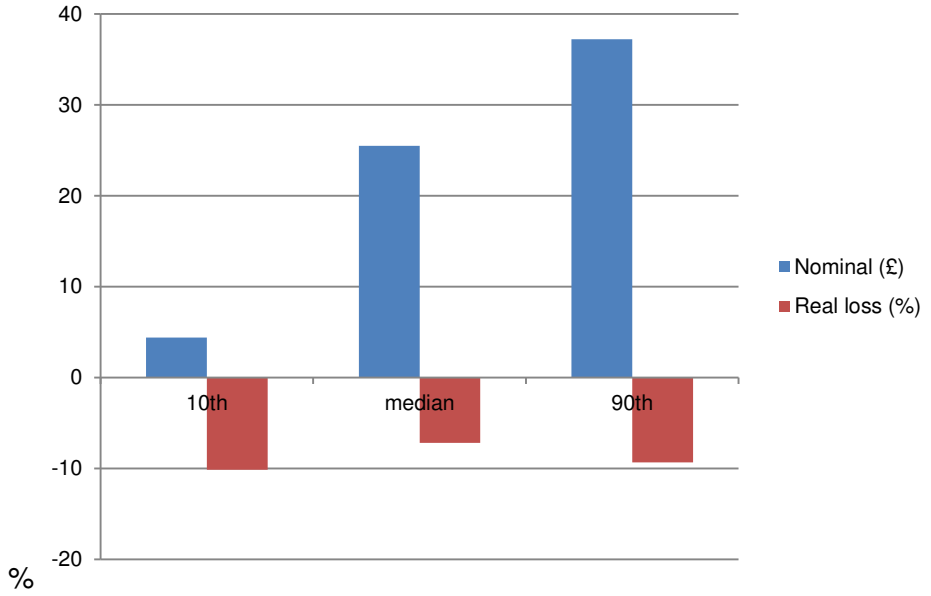
In 2013, the median worker would be earning £1,760 more if wages had kept pace with inflation over the period 2009-13. Female part-time workers have seen the biggest fall in real wages at a time when the numbers of people working in part-time jobs has increased.

Perhaps even more concerning is that young workers and workers at the very bottom of the wage distribution (10th percentile) have seen the biggest proportionate fall in their real wages of 10% (refer Figure 8).

The situation of falling nominal wages is even more acute when specific occupations are considered (refer Figure 9) which shows the percentage change in nominal wages by occupational groups, for the lowest paid (10^{th} percentile, median workers and the highest earning (90th percentile).

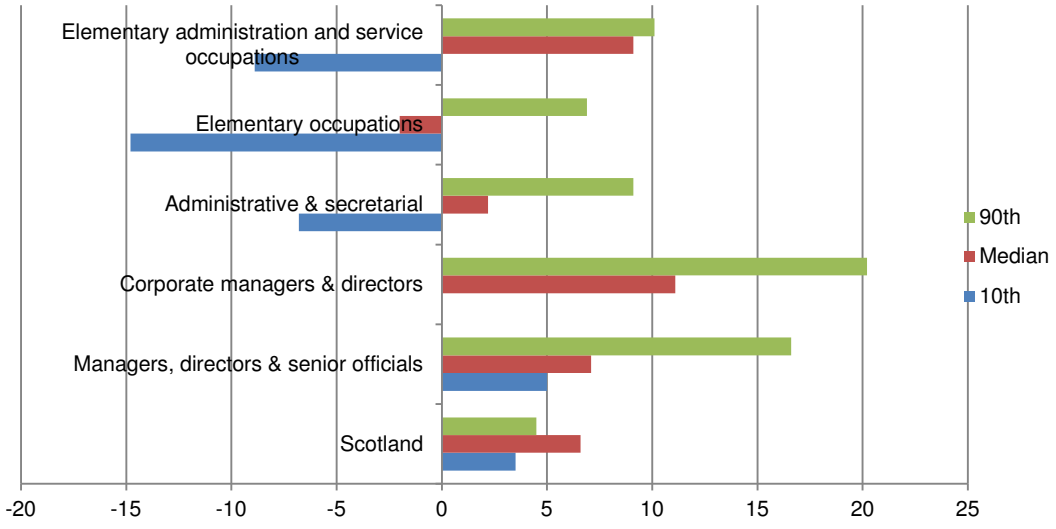
The bottom 10% of the 70,000 workers in elementary occupations suffered a fall in *nominal* wages (wages *before* adjusting for inflation) of 14.8% over this period. The bottom 10% of the 180,000 workers in elementary administrative and service occupations suffered a decline in nominal wages of 9%. Given the protection afforded by the minimum wage, it is safe to conclude that nominal wage falls have been driven by cuts in working hours.

Figure 8 Percentage change in nominal and real wages for selected percentile groups, 2009-2013



Source: Annual Survey of Hours and Earnings 2013

Figure 9 Nominal gross weekly wages, percentage change by selected income percentile, 2009-2013



Source: Annual Survey of Hours and Earnings 2013

Whilst real term wage cuts have been a fact of life for a significant majority of workers across all occupations some have received *real terms* increases; the largest going to the top 10% of corporate managers and directors. This group received an *increase in gross weekly wages of £82 per week or £4,290 a year above inflation*.

To put this fully in perspective, the gross wages of the top 10% of corporate managers and directors are now £283 a week or £14,176 a year higher than in 2009. In 2013, the average weekly gross wage of the bottom 10% of *all workers* was £125 a week or £6,500 a year.

So, while a large majority of workers have suffered a decline in the real value of their wages over 2009-2013, the pain has not been evenly distributed with the lowest paid workers in the lowest paid sectors experiencing significant nominal wage cuts.

III Structural or cyclical change?

Only the passage of time will provide a complete answer as to whether the trends outlined above are structural shifts or an ongoing hangover from the economic downturn of the Great Recession. However, the case that current trends signal significant structural change is becoming more persuasive.

The shift towards the 'hour glass' labour market is likely to continue and possibly accelerate; a labour market characterised by increasing opportunity (and rewards) at the top and growing employment in low pay, low skill, low productivity sectors at the bottom (Resolution Foundation 2013). The next wave of automation is anticipated to curtail job creation in middle income, middle status jobs in manufacturing and some services although the extent to which this will happen is hotly contested and many economists worry more about the impact of technology on inequality rather than employment levels per se (Brynjolfson, McAfee 2014; Cowen 2013).

Should pay growth continue to be muted it is reasonable to assume that underemployment could remain above pre-recession levels. Slow pay growth and pension reforms will continue to exert pressure on the over 65s to remain in the workplace. The shift from employee jobs to low wage self-employment has been apparent since before the recession and has accelerated significantly over the past two years.

And there are good reasons to believe that real wages will not improve even if the recovery in GDP and employment endures. Over the past 18 months forecasts of rising real wages have proved consistently optimistic.

The unprecedented decline in real wages is a consequence of a number of factors including the long-term decline of union membership and collective bargaining coverage and the prioritisation of policies aimed at enhancing flexibility for employers. Very poor productivity growth post-recession has limited the scope for wage rises but it would be a mistake to assume that real median wages will recover with productivity; indeed growth in median wages had decoupled from productivity growth prior to the recession of 2008/09 due to rising wage inequality (Machin, Blanchflower 2014).

Stephen Machin of the LSE argues that these trends are compounded by:

> '*…the increased substitutability of the unemployed with low wage workers – driven by increase in 'welfare conditionality' and breaches are associated with sanctions, reductions in cash payments, which in turn have become more severe. At the same time has occurred the development of a system of tax credits which supplement low wages for those with children. The increased pressure to take low waged work and*

> *compensation for doing so may have increased the willingness of workers to trade lower wages for employment, and also their substitutability for low wage workers*". (Machin 2014)

The UK coalition government is committed to extending the flexibility of the UK's labour market. Measures that would directly and substantially tackle employment insecurity and low wages are unlikely to be forthcoming. Indeed, the commitment to maintaining the UK's relative flexibility is deeply embedded across the mainstream parties and proposed new approaches to the minimum wage by the Labour Party and SNP might best be described as timid.

IV Data issues – UK and Scotland

The UK does not compare favourably with other OECD nations in the quality of its labour market statistics or in the speed of their collection and publication (Blanchflower 2014). The employment and unemployment statistics published in October 2014 are an average for the period June-August 2014. The three month average is published because the sample sizes are too small to allow for an accurate single month figure. By October 2014, most other developed nations had published single month figures for August and some, including the US, for September 2014.

Unfortunately, the unfavourable international comparison is further compounded at the Scottish level (as it is for any one of the twelve ONS nations and regions). The ONS regional release does not provide a Scottish version of the UK release. The all UK release provides information in most categories for the latest rolling three month period but in some key categories (e.g. full-time /part-time /temporary employment; hours worked, employment and unemployment by age and duration) Scottish data is only updated four times a year and even then the data is an average for the latest year under report.

The situation is particularly acute with regard to employment by sector and wages. Sectoral employment data is derived from the Workforce Jobs Survey which simply estimates Scottish jobs on the basis of an all UK survey. This ignores the different compositions of both public and private sectors and leads to figures which are scarcely credible. It is no exaggeration to say that at present using current official statistics our understanding of where people actually work in Scotland is very limited.

On a monthly basis the only data published by ONS – Average Weekly Earnings (AWE) – is derived from the Monthly Wages and Salaries Survey (MWSS) which does not include self-employed workers or those workers employed in a firm with fewer than 20 employees. Given these are significant groups – in sum around a third of all workers – and ones in which wage growth might be expected to be slowest, the survey fails to provide an accurate account of what is happening with wages.

Again, the data is much worse at Scottish level where the best current data is an annual survey (the Annual Survey of Hours and Earnings or ASHE). In short, here in autumn 2014, Scottish policymakers have to make do with data for the year ending April 2013, data that are effectively (at best) 18 months old. This is not a satisfactory position if we want to develop policies to improve and strengthen the Scottish labour market and help reduce inequality.

V The Global Picture

A quick look at Eurostat will confirm that the UK has relatively high employment and low unemployment but high underemployment and low wages. It is tempting to pick any one of these indicators and use it to paint a simplistic picture of the UK labour market and how it compares to those of other developed nations. And many seem unable to resist this temptation!

It is therefore important to note that large employment gaps, quality of employment, insecurity and falling wages remain a concern in many developed nations. In the period since 2008 wage growth has failed to recover with productivity in most G20 nations. A declining labour share and rising wage inequality are not unique to the UK and US (ILO, OECD, World Bank 2014).

But recent OECD and ILO (2014) work also found that '*there does not appear to be any necessary trade-off between job quality and job quantity: some countries manage to do well on both counts. There are also considerable differences in job quality between socio-economic groups within countries. Youth, low-skilled workers and those with temporary jobs appear to cumulate many disadvantages*'.

The policy remedies suggested by these global institutions are a mix of the orthodox (increasing participation, investing in skills and training) plus a new emphasis on tackling labour market inequality and supporting aggregate demand (the latter has not been considered orthodox since the 1970s – at least by the global institutions). It is illuminating that the IMF and OECD now acknowledge that '*supply side interventions to increase participation may not yield the desired positive impact on growth unless accompanied by successful interventions to increase labour demand'*.

The pressures facing the UK labour market are not dissimilar to those facing other countries. There are of course lessons to be learned from other approaches to labour market management and in particular how various models have coped with the turbulence of the 'great recession' (Schmitt 2011).

Crude characterisations of the UK and other models do not assist the learning process. Neither does the (peculiarly Scottish?) tendency to ignore or discount global trends. It's remarkable that the ongoing and raging debate about the state of the economy and Scotland's constitutional future managed to almost completely ignore the challenges of automation, digitisation and secular stagnation – the IMF's Christine Lagarde's characterisation of the outlook for the global economy as the 'new mediocre' - with which the rest of the global economic community is currently obsessed. Global trends do and will exert profound influence on the shape of the Scottish labour market and must be acknowledged, discussed and addressed.

VI Policy responses

A reasonable (and often not so reasonable) debate about the structure and regulation of the UK labour market will continue. Advocates of retaining flexibility as the defining characteristic will feel emboldened by the trajectory of employment and unemployment over the past few years. Others will wish to see reforms aimed at improving wages and the security and quality of employment. They will point not only

to trends discussed above but the ongoing experience of other countries that manage to combine both higher wages and better quality work with employment rates similar to or higher than the UK. The policy responses discussed below unashamedly flow from the latter perspective. However it is also suggested that some caution is appropriate when seeking to draw lessons from experience elsewhere.

The Smith Commission will soon make recommendations on a new package of powers for the Scottish Parliament. Employment law, active labour market policy and economic development are – as they were during the referendum campaign – very much viewed as secondary issues; powers over taxation and welfare continue to dominate the debate but the obvious connections between the labour market and taxation and welfare are rarely if ever drawn. This is unfortunate especially when the issue of inequality remains to the fore. There are good arguments on both sides as to whether the devolution of employment would be good for Scotland in the long run, but these are insufficiently aired.

Given the active debate on Scotland's new constitutional settlement, the following labour market policy responses are critical under whatever constitutional changes emerge.

Facilitating better policy

The data deficit described above should be addressed as a matter of urgency; whilst it's impossible to see these problems being resolved without additional investment by the Scottish or UK Governments the absolute sums involved would be very small in the context of total budgets. There is a compelling case that better information will lead to better policy design which will save money in the longer term. The minimum aspiration should be for the ONS regional labour market monthly release to provide the same information for Scotland as it does for the UK as a whole. The next step should be to improve the quality of the main surveys and speed up the process in order to allow publication of single month, reliable estimates within two months (as is currently the case in the US).

There also needs to be a discussion about the ongoing relevance of key labour market indicators. For instance, as more over-65s remain in or return to the labour force, using the 16-64 age group as the key employment measure might need to be revisited. This is one area that would benefit from additional focused, qualitative research to help determine the reasons why greater numbers of older people are working past retirement age.

The use of the ILO unemployment rate as the main gauge of young people's position in the labour market should also be revisited. There are fiercely compelling reasons why tackling youth unemployment should be a priority for government; the 'scarring' effect of youth unemployment will remain with young people affected and the costs to the public purse are well documented. But using the ILO youth unemployment rate can *overstate* the extent of youth unemployment as the denominator (all economically active people in the age group) is less relevant for this group when so many are in full-time education. Using the 'youth unemployment ratio' (where the denominator is the total population of the group) would better define the problem and allow for more accurate comparisons with other nations (Eurostat 2014).

Measuring outcomes

Does it make sense to continue to extol the strength of the labour market on the basis of headline employment and unemployment figures if real wages are falling, people are unable to find the working hours they need to make ends meet and employment is becoming more insecure?

Building Oxfam's Human Development Index and a range of other work, the STUC is currently working with the Scottish Government through the Scotland Performs Roundtable to develop indicators for the National Performance Framework (NPF) to better measure work and well-being. Recognising the data deficiencies above and that Workplace Employment Relations Survey (WERS) – the one survey that seeks to measure *quality of work* issues - isn't disaggregated by nation or region, discussions are ongoing as to how a basket of indicators might measure more effectively peoples' experience of the labour market. Whilst this work is important and it is encouraging to see Government committed to improving the NPF, it is difficult once again to envisage real progress being made until investment in a new Scottish survey is forthcoming.

Towards more and better jobs

The Scottish economy has failed to generate sufficient good jobs or ensure that those that are created are distributed evenly around the country. This is a structural problem with no easy remedy. Those proposing populist solutions whilst ignoring the realities of 40 years of increasing globalisation do nothing to improve the lot of workers in low wage, insecure jobs or even help generate a better quality of debate about economic development in Scotland.

Much of the 'new industrial strategy' literature adds little to the debate. With policies focused on a few 'higher value' sectors employing relatively few people it is hardly surprising that policy fails to resonate with the majority of workers (Williams, Johal et al 2013, 2014) – or indeed businesses.

Whilst space isn't available here to discuss full proposals for a new approach to economic development in Scotland it is worth stressing that under any constitutional scenario, the creation of 'more and better' jobs in Scotland is necessarily a difficult, uncertain and long-term process. It will be necessary to supplement current policy with an approach that addresses the 'mundane' sectors where employment is highest and likely to grow. An approach that simply reinvents existing strategy and rearranges institutions is unlikely to deliver much of a 'good jobs' dividend.

Social Partnership

In Scotland's Future, the 'white paper' on independence, the Scottish Government promoted a European style social partnership approach to labour relations:

> "*We will work with the STUC and the business community on mechanisms to formalise the relationship between government, employer associations and employee associations with a particular focus on encouraging wider trade union participation and in recognition of the positive role that can be played by collective bargaining in improving labour market conditions*". (Scottish Government 2013)

It will be interesting to see post referendum how this agenda develops in Scotland. The First Minister's announcement in October 2014 that a new Fair Work Convention would be established in response to the Working Together Review signals that this approach will be pursued, even if no further relevant powers are devolved at the end of the Smith Commission process.

There are however likely to be some significant institutional and cultural barriers to creating a genuine and substantial social partnership focused on the availability and quality of work in Scotland.

As the OECD has argued, '*National industrial relations structures and practices are part of the social and political fabric, implying that bargaining structures are not easily changed by government action*'. (OECD 2011)

It needs to be recognised that a set of societal factors exists in the Nordic nations which enable social partnership to flourish. Institutional, cultural and historic factors have led to different if similarly successful arrangements in countries such as Germany, Austria and the Netherlands. These conditions do not currently apply in Scotland.

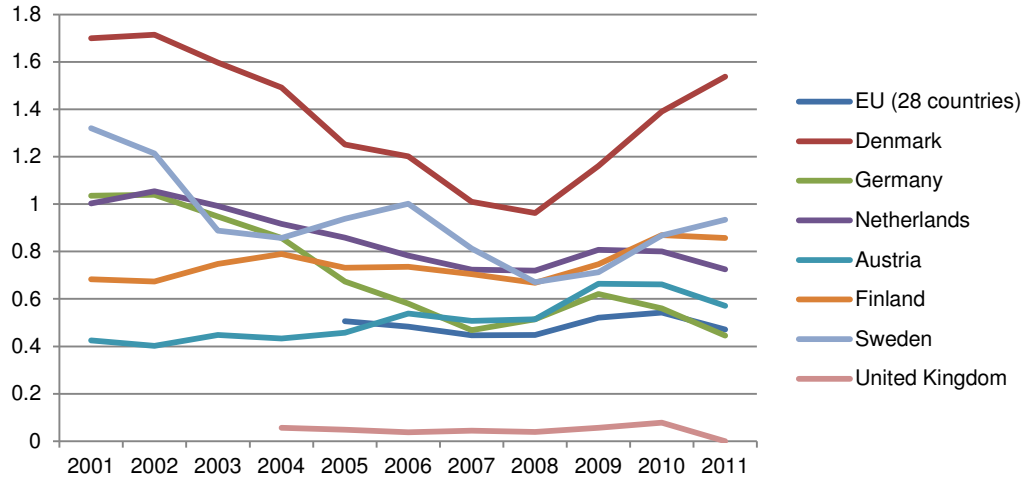
It remains to be seen if it is possible to establish a coherent, durable system of social partnership in Scotland. The employer pillar in Scotland currently lacks coherence with a range of overlapping representative business organisations including: the Federation of Small Businesses (FSB), (non-statutory) Chambers of Commerce, a Scottish Chambers of Commerce, the Confederation of British Industry (CBI), the Institute of Directors (IOD), as well as the multipartite Scottish Council Development and Industry (SCDI). Most, if not all, lack any substantive analytical capacity and some have an ideological outlook. This is clearly a challenge if we wish to build in Scotland an effective social partnership approach to the labour market that helps move us towards a northern European model.

Nevertheless it is an approach worth pursuing. With appropriate investment a new approach to the labour market with strong social partner buy-in is a necessary component of making the Scottish economy less short-termist and closer in nature to the productive and innovative economies of western and northern Europe.

An active labour market policy

If better outcomes in the labour market are to be achieved then higher and more consistent investment is required in active labour market policy (ALMP) measures. AMLP measures or 'active interventions' cover policies aimed at providing people with new skills or experience of work such as: training, job rotation and sharing, employment incentives, supported employment and rehabilitation, direct job creation and start-up incentives; they do not include welfare benefits or support services such as jobsearch). In the EU, the UK is an absolute outlier in how little is spends on such ALMP measures (refer Figure 10).

Figure 10 Spending on active labour market measures as % of GDP, 2001-2011



Source: Eurostat 2014

It should be noted that this low spend is not explained by the UK's relatively low unemployment rate as both high and low spending levels are observed among countries with high or low employment. It can be argued that spending is consistently and significantly higher in those countries with the most enduringly successful labour markets. And, it is a remarkable fact that Denmark spends more in cash terms on AMLP measures than does the whole of the UK. Spending on active ALMP measures is also higher in countries that manage to reduce labour market inequalities still prevalent in the UK.

Though there are no separate figures for ALMP spend in Scotland, it is difficult to envisage that any additional Scottish Government spend will help shift Scotland much higher in the EU rankings. Developing a nascent social partnership – no matter how challenging - is not sufficient to create a Nordic style labour market in Scotland; it will also take the investment of hard cash to achieve.

V Conclusions

Rapidly improving headline employment and unemployment statistics through 2014 should not be allowed to distract from the profound changes taking place in the Scottish labour market. The Great Recession and the prolonged stagnation which followed provided the economic and political conditions for the trends discussed above to take firm root. The consequences are that relatively high employment levels are accompanied by very weak pay growth, rising insecurity and hidden unemployment. Those groups already disadvantaged within the labour market, especially the young, increasingly struggle to access secure, decent job opportunities.

A twin-track policy response is required. First, a properly resourced effort to dramatically improve the range, quality and timeliness of Scottish labour market information is essential to facilitate better analysis and enable the design and implementation of effective interventions. Second, Scottish policymakers need to build on both the aspirations set out in Scotland's Future and the Working Together Review's

recommendations to develop a distinctly Scottish system of social partnership. This will require – as a minimum - significant, sustained investment in ALMP measures and a radical overhaul of employer representation.

The extent of the challenge is great but the development of a labour market which meets the needs of all of Scotland's citizens will not be achieved through tinkering with current policy responses.

Please …

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The development of Scottish economic statistics

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Abstract

The economic statistics produced by the Scottish Government have evolved markedly over the last decade. As part of this, in 2008, the Scottish National Accounts Project (SNAP) was launched with the aim to develop a full set of National Accounts for Scotland. This has been a significant undertaking, and the work is only partly complete. However for the first time, there now exists a fully integrated and coherent Scottish National Accounts system which continues to expand its coverage of economic data in Scotland. This article sets out what has been put in place to date, and highlights key areas for further improvement. It shows how this work fits with an historic programme to improve Scottish economic statistics by the Scottish Government. New priorities are outlined and users – including Commentary readers - are invited to engage with the Scottish Economic Statistics Consultation network to feed in their views as to how Scotland's vital economic statistics can be developed further to better describe, measure and analyse the Scottish economy for the public benefit.

I Introduction

Economic statistics are an essential source of information for policy makers and government, parliament, the media, academics and researchers. The financial crisis and subsequent recession alongside Scotland's constitutional debate has only served to emphasise the critical importance of the production of impartial, accurate, respected and timely statistics that inform our understanding of the Scottish economy and its performance.

The National Accounts Unit in the Scottish Government is responsible for producing many of the headline figures of the Scottish economy and its public finances. It sits in the Office of the Chief Economic Adviser (OCEA) which is the central economic analysis and economic statistics unit in the Scottish Government.

What are National Accounts, and why are they produced? In broad terms, National Accounts are an internationally comparable and consistent set of accounts that measure the economic activity of a given country. They are produced to measure the progress of the economy, assess the impacts of policy changes, monitor and evaluate the scale of economic 'events' or 'shocks' such as the financial crisis, and – in the case of Scotland - to place Scottish economic performance in a comparable international context.

One of the most important figures produced in National Accounts (and Scotland is no different) is Gross Domestic Product (GDP). This measures the total output of the economy, including from firms, households, government and non-profit institutions in one single figure - with no double counting.

Another high-profile 'output' or 'product'[1] of any set of National Accounts is information on public sector finances. The Government Expenditure & Revenue Scotland publication – more popularly known by its acronym as GERS (GERS, Scottish Government, 2014) - is produced in March each year. It provides information on the total amount of public sector expenditure on behalf of Scottish residents and the total amount of revenue raised in Scotland.

The article describes how the Scottish National Accounts have been developed over the past decade, and discusses the current range of products and plans for further development to meet the increased demands for accurate, detailed and timely Scottish economic statistics.

II History of Scottish National Accounts

Prior to 2008, economic statistics in Scotland were focussed mostly on short-term indicators to monitor current economic conditions. This meant a focus on GDP growth and its component series. The index of production, index of services and index of manufactured exports were the first outputs produced and were followed by a composite index of GDP.

While relatively limited, the development of a distinct 'Scottish GDP' series post-devolution was a major step-forward. Most countries only publish such regular economic statistics at a national level. Indeed in the UK, Scotland is the only part of the UK to publish its own quarterly GDP series.

Periodically, the Scottish government has also constructed Input-Output (I-O) and Supply-Use tables. In simple terms these provide an overall measure of the value of the economy in cash terms – as opposed to seeking to measure growth – and importantly they seek to capture the flow of goods around an economy and the important linkages between industries. These tables underpin virtually every model of the Scottish economy both in academia and private sector, including the model used by the Fraser of Allander Institute.

Since the launch of these statistics, there has been a growing demand for ever more detailed information on the Scottish economy. In light of this in 2008, the Scottish National Accounts Project (SNAP, Scottish Government, 2008) was launched with the aim to move towards the creation of a full set of National Accounts for Scotland.

The United Nations describes the System of National Accounts as:

> *"The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity. The SNA describes a coherent, consistent and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications and accounting rules.*
>
> *In addition, the SNA provides an overview of economic processes, recording how production is distributed among consumers, businesses, government and foreign nations. It shows how income*

[1] Here the term 'output' and 'product' is used interchangeably and simply refers to any unified set of economic statistical series produced by the Scottish Government within the context of the Scottish National Accounts.

originating in production, modified by taxes and transfers, flows to these groups and how they allocate these flows to consumption, saving and investment. Consequently, the national accounts are one of the building blocks of macroeconomic statistics forming a basis for economic analysis and policy formulation." (United Nations, 2008)

In essence this is what the Scottish National Accounts Project seeks to deliver for Scotland. The original aims of the specific SNAP work streams were to:

- Produce different component breakdowns of GDP, on expenditure and income methods;
- Produce consistent multi-year Input Output tables
- Present quarterly revenue estimates
- Investigate the production of Gross National Incomes, and consider the production of per capita Gross Disposable Household Income (GDHI) and a Household Savings Ratio
- Present comprehensive trade estimates, including a Balance of Trade, and investigate the flows between Scotland and the North Sea.
- Improve investment estimates for Scotland, including consideration of the collection of primary data through tailored surveys.
- Investigate the quality of price information for Scotland

There have been significantly advances in this work over the past few years, but much work still has to be done.

III So, what economic statistics does the Scottish Government produce?

The Scottish Government has a fully integrated system of National Accounts, with our Input-Output and Supply-Use tables forming the foundation of a balanced accounts. Each time a new set of I-O tables is released, it is on a consistent basis back to 1998. This approach ensures that all data are coherent, accurate and comparable over time and across all our products for balanced years. It also allows for a much more fluid programme to improve data sources and methods and to enable positive incremental change in the quality of *all* estimates.

The following are some of the key economic statistics produced by the Scottish Government.

Table 1: Summary of main Scottish Government economic statistics publications

Product	Frequency	Latest Release was for	Released on
Gross Domestic Product (GDP)	Quarterly	Q2 2014	41927
Index of Manufactured Exports (IME)	Quarterly	Q2 2014	41935
Retail Sales Index for Scotland (RSIS)	Quarterly	Q3 2014	41948
Quarterly National Accounts Scotland (QNAS)	Quarterly	Q2 2014	41955
Oil and Gas Statistics	Quarterly	Q2 2014	41955
Supply-Use and Input-Output tables for Scotland	Annual	1998-2011	41836
Government Expenditure & Revenue Scotland (GERS)	Annual	2012-13	41710

Gross Domestic Product (GDP – Scottish Government, 2014) is the most high profile quarterly Scottish economic statistic. It shows how the economy has grown (or contacted) over the previous quarter, using pure volume measures or turnover adjusted for inflation. Figure 1 shows the headline results from the most recent release (15 October 2014). This shows the quarterly growth rates for each quarter from 2007, including over the period of the recession.

Figure 1: GDP Quarterly Growth Rates 2007 - 2014 Q2

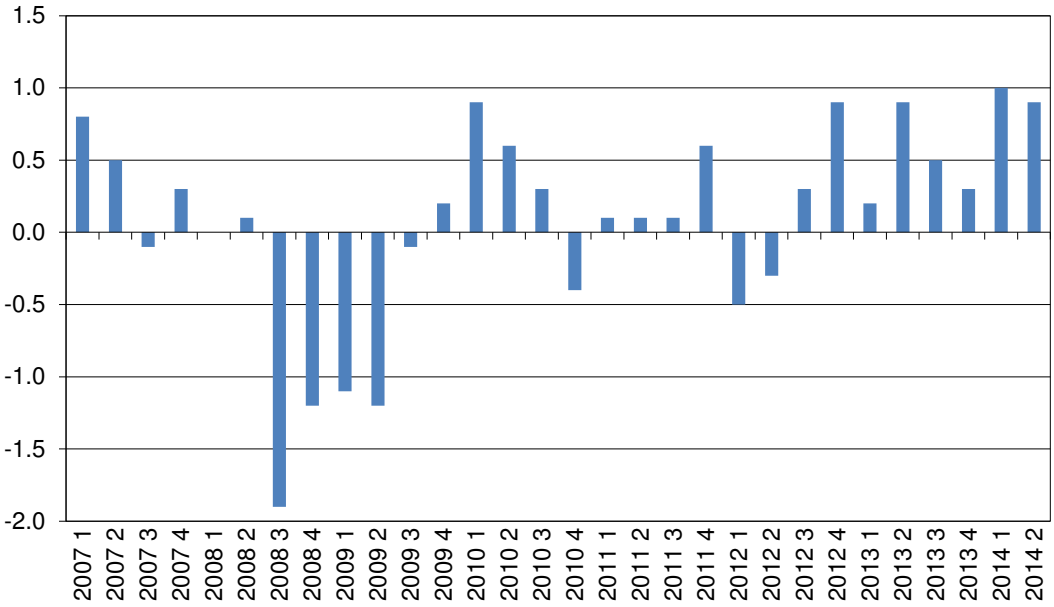


Figure 2 (a): Quarterly Growth Rates 2007 - 2014 Q2, Production

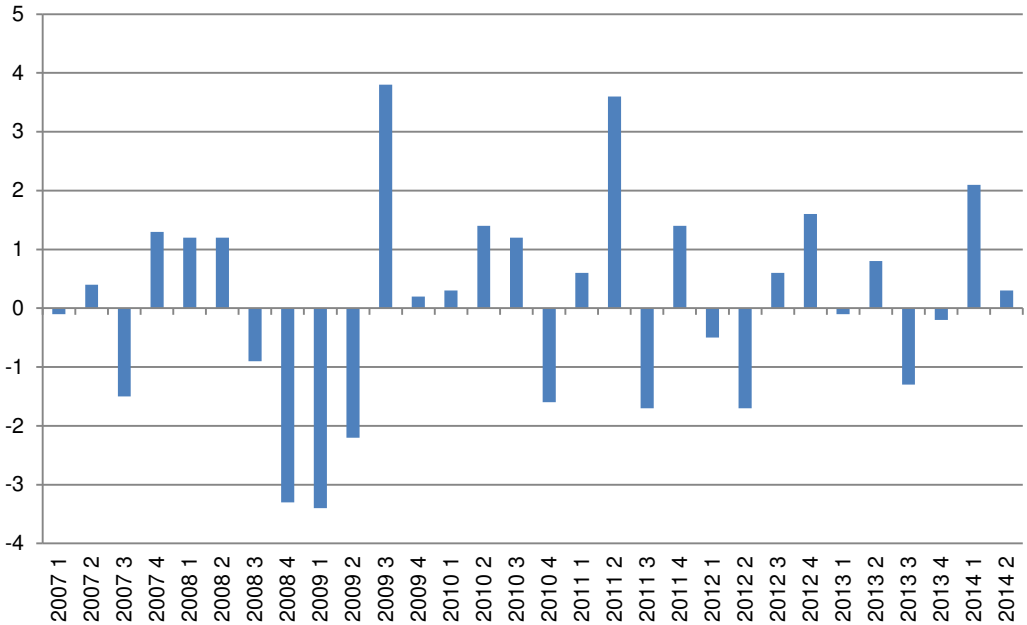


Figure 2 (b): Quarterly Growth Rates 2007 - 2014 Q2, Construction

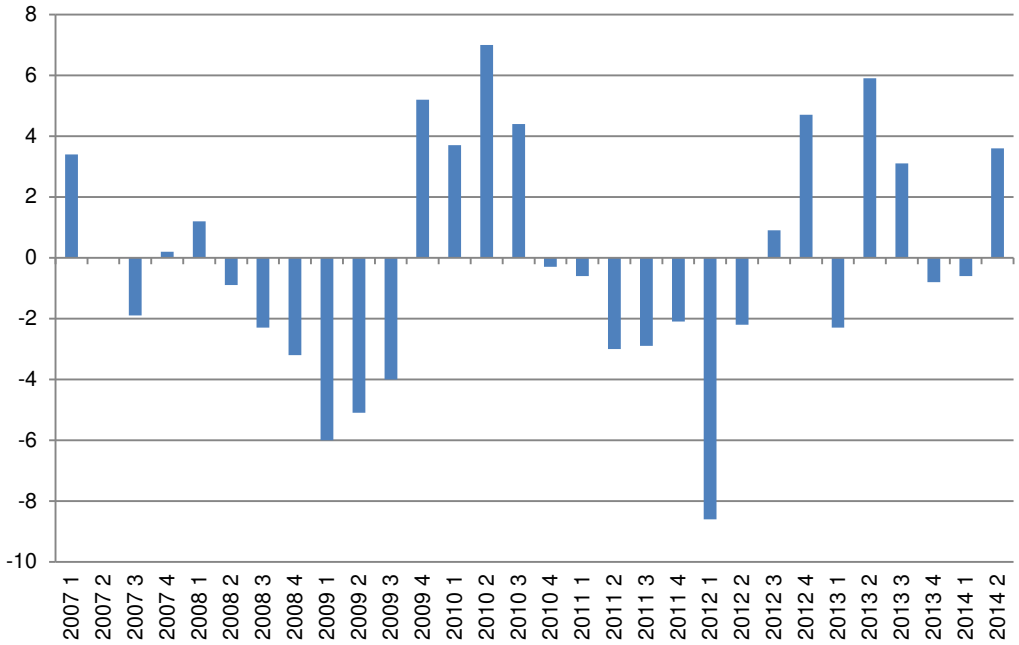
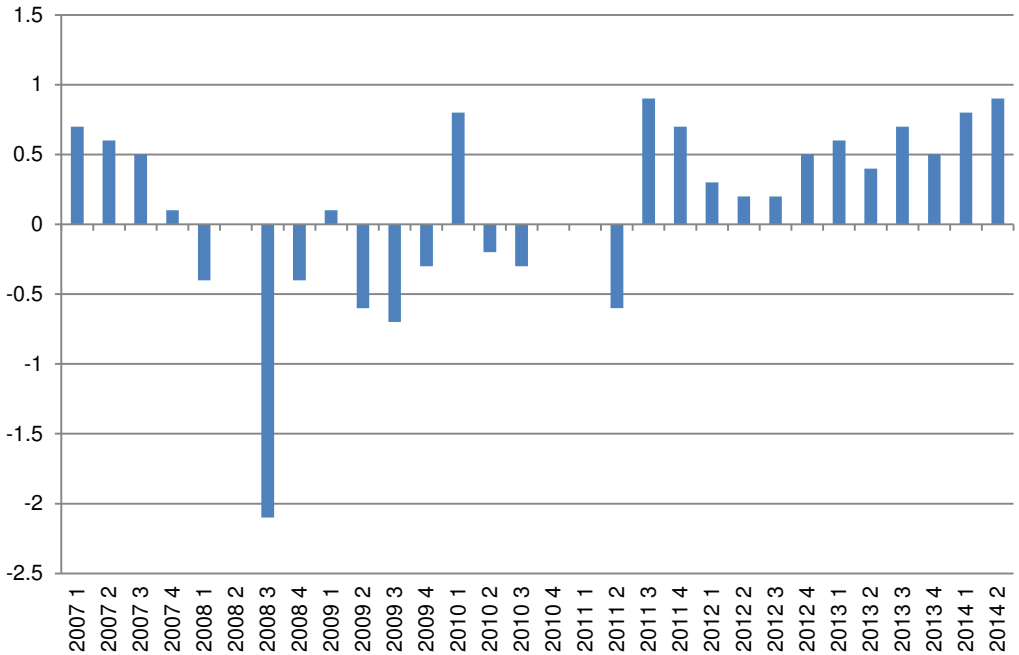


Figure 2 (c): Quarterly Growth Rates 2007 - 2014 Q2, Services



There is also significant interest in the industrial or general sectoral breakdown of GDP and how they have been performing (see Figures 2a, 2b and 2c**).** They show the performance, over the last few years, of the three broad components of the Scottish economy, namely the production, construction and services sectors.

Two quarterly outputs on specific sectors of the economy are also produced. The **Index of Manufactured Exports** (IME, Scottish Government, 2014) provides quarterly real terms movements for exports from manufacturing industry to the rest of the world. We also produce the **Retail Sales Index for Scotland** (RSIS, Scottish Government, 2014), which seeks to capture the performance of the retail sector of the Scottish economy. These products both rely on the same core data – the Monthly Business Survey – used for turnover in GDP estimation.

The **Input-Output** and **Supply Use** tables at the very aggregate level produce the weight – or scale - of each sector in the Scottish economy, in each year. Figure 3(a) shows the weight of each sector in the economy for the latest balanced year, 2011, and Figure 3(b) shows a breakdown for manufacturing.

Figure 3 (a): GVA Weights by Broad Industry Group, 2011

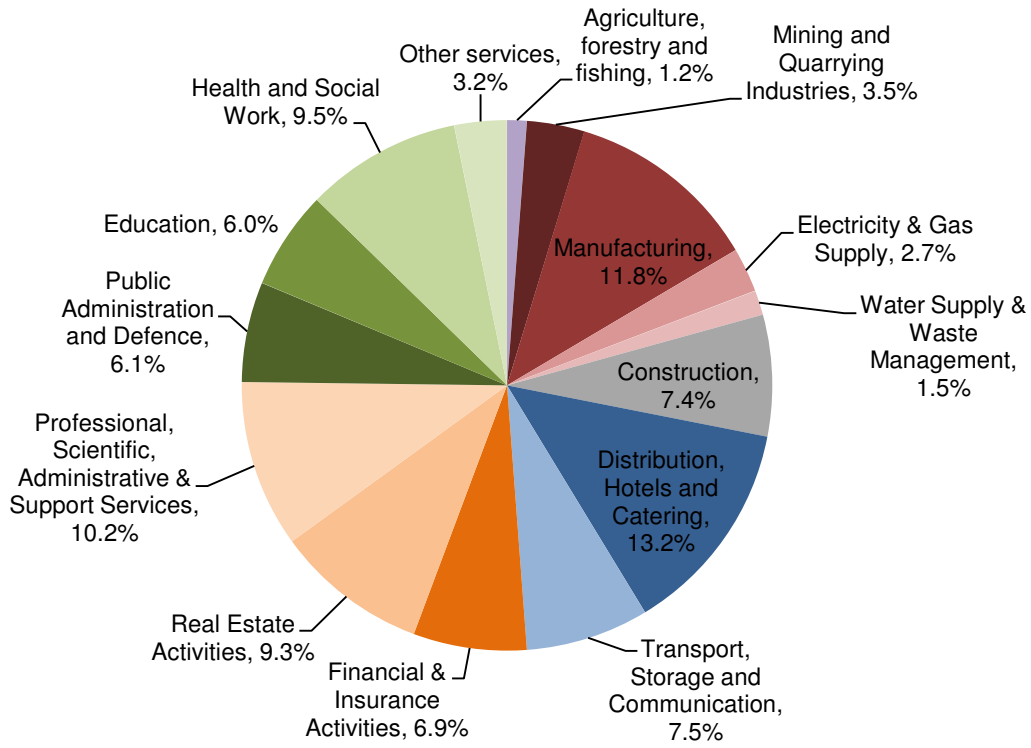
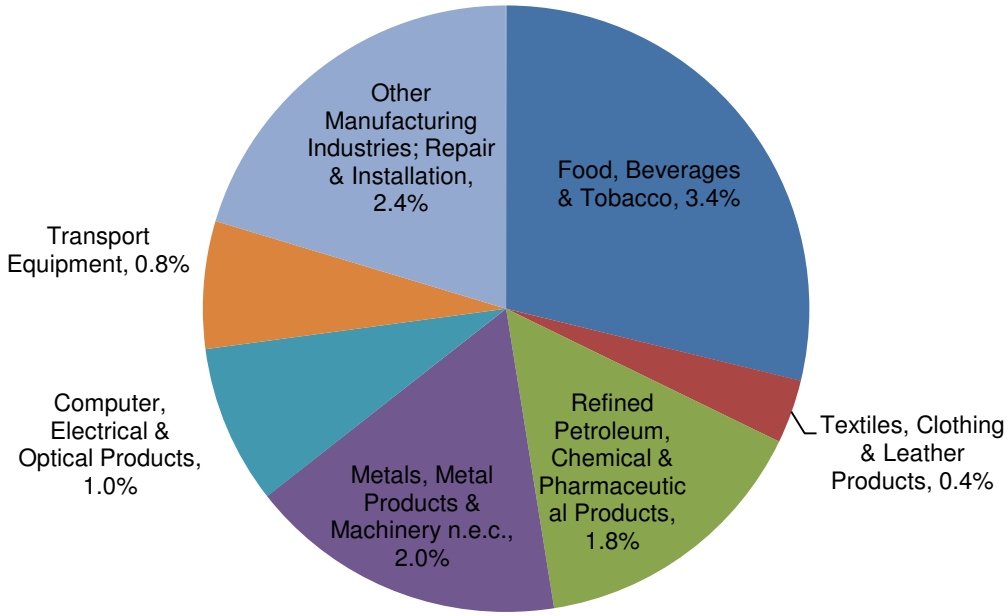


Figure 3 (b): Manufacturing Weights by Broad Industry Group, 2011



The Input Output tables support many other systems in the Scottish Government's Office of the Chief Economic Adviser (OCEA) and the wider Scottish Government. For example, it forms the basis of our Computable General Equilibrium (CGE) model run by the Fiscal and Economic Modelling Unit, and the I-O team is responsible for producing the carbon analysis which sits alongside the budget. This team also does numerous economic impact assessments to calculate the contributions of industries or the effect of policy spend.

As part of the Scottish National Accounts Plan work has been ongoing to develop new products that are required to fulfil the objectives set out for SNAP (see above). One flagship product is the **Quarterly National Accounts Scotland** (QNAS, Scottish Government, 2014), which started to be published in early form in 2010 and has now become an established and kite-marked National Statistics product.

QNAS produces on a regular basis many of the economic statistics that were set out in the original SNAP plan, including:

- GDP (Expenditure) and its components
- Quarterly Revenue Estimates
- Household Savings Ratio
- Onshore Balance of Trade
- GDP deflators
- Productivity estimates

Work to develop these strands has not stopped with creation of QNAS. In November 2013, the first estimates of Scotland's Gross National Income for 2010 (Scottish Government, 2013) was produced. In addition, quarterly oil and gas statistics (Scottish Government, 2014) are now produced with estimates of production, operating costs and sales revenue. This also includes estimates of trade flows between 'onshore' and 'offshore' (i.e. the UK continental shelf) Scotland which allows for the calculation of an overall balance of trade.

In 2014, capital investment data were collected by the Scottish Government for the first time from Scottish businesses. These are currently being analysed and will lead to improvements in estimates of investment in the 2012 Input/Output (I/O) tables, and a follow-up survey is planned for autumn 2015.

Finally, there is the public sector finances publication, **GERS** or **Government Expenditure and Revenue Scotland**. GERS estimates the contribution of revenue raised in Scotland towards the goods and services provided for the benefit of the people of Scotland under the current constitutional arrangement. In essence, GERS provides an estimate of Scotland's overall fiscal position - the current budget balance and the net fiscal balance – as well as a detailed account of over 1,000 expenditure budget lines of the Scottish, UK and local governments and all taxes raised and collected in the UK. It also addresses the question of the North Sea and its contribution to public sector finances in Scotland.

IV What's next for Scottish National Accounts?

The construction of National Accounts for Scotland has been likened to building Scotland's own "Sagrada Familia"[2], a journey towards a beautiful construction that will never be complete. It is unarguable that there are many areas that one could seek to improve Scottish economic statistics but given existing resources, improvement need to be prioritises - in conjunction with feedback and engagement with users.

Migration to the European System of Accounts 2010

Over the next six months, work will take place to migrate the Scottish National Accounts System to conform to the European System of Accounts 2010 (EuroStat, 2014). This conversion has already taken place at the UK level and across Europe in September 2014, but in Scotland we need to wait until the UK level information is available to be able to convert the Scottish Input-Output tables and therefore all products on to this new basis.

In the meantime, users have been alerted to the (interim) comparability problems that this presents. Of particular interest in Scotland is how Scotland's economy or 'numbers 'compare to that of the UK as a whole. Recognising this, users have been advised that while comparisons over the previous quarter and year are likely to be valid, comparisons over a longer time period are likely to be subject to a greater degree of uncertainty than normal.

[2] Sandy Stewart, who started the SNAP and has developed economic statistics for Scotland for the past 20 years.

GERS 2013-14

Alongside this programme of work, GERS 2013-14 will be published in March 2015 and a consultation on this publication will be launched before the end of 2014.

New programme areas

Post April 2015, the focus will be on three main programmes of improvement work to continue to develop SNAP:

- **Trade** – to improve the coherence between estimates of exports from the National Accounts and Global Connections Survey (in conjunction with the Business and Digital Analytical Unit in OCEA);
- **Oil and Gas** – to improve Scottish oil and gas statistics in conjunction with a sub-group of users, including how to understand better the flows between onshore and offshore Scotland (i.e. the continental shelf);
- **GDP** – to review the timeliness of the main GDP publication and the sequence of release of key economic statistics.

However, these are our *broad* plans and the Scottish Government is keen to discuss these with users over the coming few months to December 2014.

Scottish Government economic statisticians and statistics

The Scottish Government National Accounts Unit has nine professional statisticians. It works in three broad areas, although the integrated nature of the National Accounts calls for a significant degree of joint working across the following steams:

- **Input-Output** – A team produces the supply-use and Input-Output tables, which form the foundation of the Scottish National Accounts system.
- **Short term indicators** – A team produces 3 quarterly publications – GDP, Index of Manufactured Exports and the Retail Sales Index. It has the responsibility for the highest profile outputs of the National Accounts Unit.
- **Scottish National Accounts** – This is, in essence, a development team and is the newest and most flexible part of National Accounts Unit. It was established in 2008, and publishes new products, including the now-well established QNAS.

The National Accounts Unit works closely with other areas of the Office of the Chief Economic Adviser. This includes the Business and Digital Analytical Unit which has responsibility for business data - which it receives from the UK Office for National Statistics (ONS) - and it produces many products on the nature, structure and performance of businesses in Scotland. It is also responsible for publishing the Global Connections Survey that estimates Scotland's exports to both the rest of UK and the rest of world and which is an essential source of information for the Scottish National Accounts.

Input from government economists is essential to our work, both to provide context and to allow quality assurance from the wider range of economic intelligence that is monitored by OCEA. Our products often underpin key economic publications, such as the Chief Economist's **State of the (Scottish) Economy** (Scottish Government, 2014) which is published approximately every four months.

Professional Standards

Professional statisticians in government work to a Code of Practice for Official Statistics (UK Statistics Authority, 2009). This is overseen by the UK Statistics Authority, which routinely assesses our products to ensure they meet the standards set out in the Code and to meet the quality threshold of being deemed "National Statistics". To explain, the different labels statistics produced by Government can be categorised as follows:

- **National Statistics:** are statistics assessed by the UK Statistics Authority as meeting the Code of Practice (i.e. they meet an identified user need, are well explained and readily accessible, produced according to sound methods and are managed impartially and objectively in the public interest.
- **Official Statistics:** are statistics that meet many of the parts of the Code and which in time will be presented for assessment as 'National Statistics'.
- **Experimental Statistics:** is a term used for official statistics which are in the early stages of development, are subject to methodological developments and likely to be revised more often than other types of estimates. They are published in a way to allow them to be developed in conjunction with user feedback and to allow their methodology to evolve openly.

All fully developed products – such as GERS, GDP, I-O tables and the Quarterly National Accounts – have been kite marked by the UK Statistics Authority as National Statistics products.

V The way ahead, how users can get involved

User consultation is critical to the development of the Scottish National Accounts and is an essential part of operating under the Code of Practice for Official Statistics. As the Code points out, user involvement and engagement ultimately makes for better (economic) statistical products and higher quality methodologies.

There are many ways that users of Scottish Government economic statistics can get involved with on-going work and future developments.

The simplest way is to sign up to ScotStat (Scottish Government, 2014), the Statistics Consultation Network. Users can select their statistics of interest and be kept updated on their development. If one selects 'Economy', you will be alerted to new publications and consultations and to any issues with our statistics.

Users can feed back comments and views directly about certain products, or raise questions or requests for different or further types of analysis, by simply emailing the Unit's economic statistics mailbox – economic.statistics@scotland.gsi.gov.uk.

Finally, to engage more directly and to help shape the Unit's work programme, there is the **Scottish Economic Statistics Consultation Group (SESCG)**. This is composed of users of our statistics, people with an expertise in using National Accounts information and other economic statistics as well as National Accounts Team staff. This group also oversees Business & Digital and Labour Market Statistics. The group meets annually – usually in February / March - and sub-group meetings take place on an ad-hoc basis throughout the year.

If any users – including Fraser Economic Commentary readers - would like to get involved in this group or wish to simply find out more about the Business & Digital or Labour Market Statistics areas then they are encouraged to email the Unit at economic.statistics@scotland.gsi.gov.uk.

VI Conclusion

The production of Scottish economic statistics is vital to Scotland, not only to government and policy makers, but to business and civic Scotland more generally - individual businesses and business representative bodies, Trade Unions, local authorities, the third sector as well as academics and academic commentators such as the Fraser of Allander Institute. Scotland's economic statistics also will play a vital role in the debate over the powers devolved to the Scottish Parliament. As the Code of Practice for Official Statistics makes abundantly clear, it is only through ongoing user involvement, feedback and engagement that the Scottish Government will be able to produce Scottish economic statistics that are fit for purpose for Scotland and her citizens.

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Scottish Government (2014) – *Estimating an Income Account and Gross National Income for Scotland* http://www.scotland.gov.uk/resource/0043/00438156.pdf

Scottish Government (2014) - *Government Expenditure and Revenue Scotland (GERS)* http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/GERS

Scottish Government (2014) – *Gross Domestic Product (GDP)* http://www.scotland.gov.uk/topics/statistics/browse/economy

Scottish Government (2014) – *Index of Manufactured Exports (IME)* http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/IME2014Q2

Scottish Government (2014) – *Quarterly National Accounts Scotland (QNAS)* http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/SNAP/QNAS

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'Nowcasting' the Scottish economy

Grant J. Allan, Gary Koop, Stuart G. McIntyre and Paul Smith, University of Strathclyde

Introduction and overview

In 1956, when he was Chancellor of the Exchequer, Harold Wilson observed that: "…some of our [economic] statistics are too late to be as useful as they ought to be. We are always, as it were, looking up a train in last year's Bradshaw [timetable]". In some respects little has changed, the timeliness of official statistics of economic performance continues to be a concern with initial estimates of key macroeconomic variables (e.g. GDP, or the equivalent at the subnational level in the UK, GVA) being released long after the end of quarter they refer to. This delay has fostered an interest in providing short term forecasts or even 'nowcasts': forecasts of the current state of economy. Nowcasting was well defined in a recent *Commentary* (Volume 37 No 2) article by Andrew Ross as the attempt to "provide real time assessment of current activity i.e. to nowcast rather than forecast[1]" or as Hal Varian, Chief Economist at Google puts it, nowcasting is about 'predicting the present'[2].

While producing timely economic indicators is a difficulty at the UK level, it is more of a problem for the regions and nations of the UK. Though Scotland is particularly well served in terms of the production of economic data within the UK, even here the initial estimate of Scottish GVA for the second quarter of 2014 was not released until 15 October, 2014 (and this initial estimate is liable to be revised in upcoming months). Thus, policymakers in 2014Q2 did not know the *current* value of GVA when making decisions and would not know what it actually was until over three months after the end of the quarter.

Given these prolonged delays in the release of data, nowcasting is of particular interest at the sub-national level. However, producing nowcasts poses particular challenges, mostly related to the timeliness of predictors and the availability of data. One additional dimension, which we are at the early stages of exploring, is the importance of developments in neighboring regions.

This short note is intended to highlight some work currently being undertaken by a group within the Department of Economics at the University of Strathclyde, including members of the Fraser of Allander Institute, whose aim is to produce nowcasts of the Scottish economy. While this research is very much a work in progress, we are keen to highlight the potential of such approaches to improve our understanding of the *current* performance of the Scottish economy.

Methods

Nowcasting methods have been utilized in many countries. Perhaps the best-marketed example of this is found on the website: http://now-casting.com, which was established by two academic leaders in the field of nowcasting: Domenico Giannone and Lucrezia Reichlin. Several excellent surveys of nowcasting (or closely related topics such as short-term forecasting) have recently appeared. These include

[1] https://pure.strath.ac.uk/portal/files/30683812/FEC_37_2_2013_RossA2.pdf
[2] https://www.thinkwithgoogle.com/articles/predicting-the-present.html

Banbura, Giannone and Reichlin (2011)[3], Banbura, Giannone, Modugno and Reichlin (2013)[4], Camacho, Perez-Quiros and Poncela (2013)[5] and Foroni and Marcellino (2013)[6].

Methods of nowcasting involve the use of different econometric models (for instance those developed by Ghysels et al[7] which we also use and are known as the MIDAS - Mixed Data Sampling). An important issue is that the variable being nowcast (GVA) is calculated on a quarterly basis, while many variables we use to inform our nowcasts (e.g. business and consumer surveys, employment statistics) are calculated on a monthly basis. This mismatch between the frequencies of variables poses econometric issues that must be addressed.

The nowcasts for Scotland that we aim to produce will rely upon a range of predictors. These will cover a range of factors, which we feel, are likely to be important in predicting the evolution of the Scottish economy. Examples include: trade data (e.g. on exports from Scotland), retail sales index, index of services, and employment data. A full list of variables will be included in the working paper.

This short note is not the place to discuss issues of methodology in more detail. However, a website/blog (http://nowcastingscotland.com/) has been established for this project which will go live in the near future. There will be a working paper available on this site which will provide comprehensive details on the data and methodology that will be used in this project.

Release of nowcasts

While this project is only at the pilot stage, we intend to release some experimental results in the coming months and refine both our methodology and the data used. Readers should expect experimental monthly nowcasts to appear on the blog, and in due course we will provide a transparent evaluation of the performance of this type of model on the blog. If things go well, our goal is to provide regularly updated (and non-experimental) nowcasts on the blog site and add nowcasts to the set of forecasts produced in the Fraser of Allander Institute Economic Commentary.

Concluding thoughts

Given the significant lag between the end of a quarter and the release of Scottish GVA estimates, there are considerable advantages to be gained from improvements in short term forecasting or nowcasting. In addition, with the planned devolution of further economic powers to the Scottish Parliament, a better understanding of the nature and evolution of the Scottish economy is likely to be particularly valuable. In the coming months we will begin to release estimates of Scottish GVA using our nowcasting model, and we hope that this work will be of interest and use to readers of the Fraser Economic Commentary.

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The role of sales and acquisitions in company growth in Scotland

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Abstract

The paper presents an overview and analysis of company acquisition activity in Scotland over the period 2003-12. An acquisition remains a rare avenue for company growth, and data demonstrates that Scottish companies are less likely to acquire other companies, or be bought, than those in other comparable countries. Scottish companies are also less likely to be involved in international acquisition activity. Company motivations for pursuing acquisition as a growth model appear to relate to speed and risk and include: securing investment, accessing skills and knowledge, expanding products and services ranges, quicker entry to new markets and being able to compete for larger contracts. This research demonstrates that acquisition activity can be an important trigger for sustained growth for Scottish companies.

I Background

Existing evidence of the impact of acquisitions paints a complex picture. The Mergers and Acquisitions Research Centre[1] (MARC) note the gains of a minority of successful firms[2] make it appear that acquisition activity is a positive contributor to the UK economy when the overall picture is more uncertain[3]. Whilst there are differing opinions regarding larger takeovers, there is a prevailing view that smaller acquisitions have a greater chance of success[4].

Harris (2009) found that inward acquisition leads to an increase in labour productivity but a decrease in labour intensity as the acquirer makes investment not only to achieve the desired profitability gains but to bring the acquired company's operations in line with the new owners' requirements.

Evidence of the impact of acquisition on employment suggests that while there are examples of increases in employment at corporate level, most acquisitions are generally followed by a reduction in employment within the acquired firm[5]. Previous research by Scottish Enterprise (SE) on corporate headquarters found acquisition has the potential to lead to a loss of autonomy and loss of functions in the domestic HQ; that acquired companies are more vulnerable to closure; and that within about a decade of acquisition, employment in the acquired company had more or less halved[6].

However, Denison et al note little evidence that considers the *"role of M&A in a corporate growth strategy"*[7] and as such *o*rganic growth and growth via acquisition are often presented as alternative strategies. Research by SE (2012) demonstrates that company growth typically occurs periodically through a series of 'trigger points' which suggests organic growth can be complemented by acquisitions

[1] *Based in CASS Business School at City University London*
[2] *Such as BP, AstraZeneca and Reckitt Benckiser*
[3] *2011, p.5*
[4] *Cardinali & Wikren (2012), Gotton, Kahl & Rosen (2005) and KPMG (2007)*
[5] *Harris, (2009)*
[6] *Botham, & Clelland (2005)*
[7] *2011, p.112-113*

which trigger or accelerate a period of growth. Subsequent work by Nesta (2014) has identified that acquisition is increasingly becoming a feature of high-growth firms[8].

Whether a trade sale can be seen as part of a growth strategy with benefits to the economy depends in part on the location of the acquired firm and the actions of the acquiring firm. The acquiring firm may choose to keep activity (for example employment and output) at the acquired firm's current location. If activity remains domestic following a sale, the economic impacts are likely to be restricted to the potential 'loss' of profits should the acquirer choose to repatriate them back to their home nation. Any shift in the high value aspects of the acquired company would similarly result in a loss to the economy. However, within this perspective there has been little analysis of the shape and scale of acquisition activity in Scotland and how companies use acquisitions to help their growth.

The ZEPHYR database[9] provides detailed statistical data to give a robust and accurate indication of the nature of acquisitions within the Scottish economy, and is considered to be one of the most comprehensive and authoritative sources of such data in the UK.

The analysis of the ZEPHYR database was complemented by face-to-face interviews with a group of Scottish Enterprise Account Managed companies[10] that have either been subject to a trade sale or acquisition. The aim was to explore the underlying motivations that drive and influence this activity.

It is important to note that SE Account Managed companies are selected for their high-growth potential; therefore the evidence presented here may not therefore fully reflect the range of acquisition activity across Scotland's wider business base.

II The Scottish acquisitions market in an international context

From 2003 through to 2012, ZEPHYR recorded the following number of deals involving Scottish companies:

- 664 inward acquisitions (a non-Scottish company acquiring a Scottish company)
- 458 outward acquisitions (a Scottish company acquiring a non-Scottish company)
- 284 intra-acquisitions (a Scottish company acquiring another Scottish company).

Comparing acquisition activity in Scotland with other European countries shows that inward acquisition activity is less common in Scotland than in other similarly-sized economies. The same can be said of outward acquisitions made by Scottish companies. Scotland's performance more closely resembles that of the major Western European economies of Great Britain, Germany and France; though this may not be surprising given that the Scottish economy is an integral part of the UK economy.

[8] *Nesta, 2014*
[9] *Owned and managed by the Bureau van Dijk, the owners of the FAME business database*
[10] *SE works with companies that will make the biggest difference to Scotland's economic performance through our Account Management Service, selected as a result of their significant growth potential.*

Diagram 1 Total inward and total outward acquisitions as a percentage of the overall business base (2003-12), by country

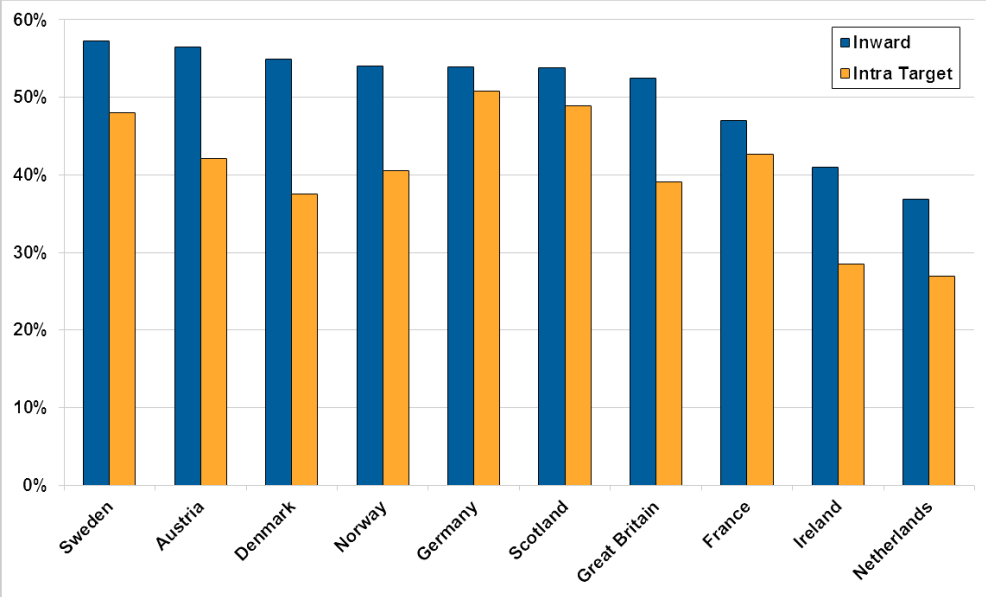


Table 1 Location of companies acquired by Scottish companies and acquiring Scottish companies (2003-12) and Scotland's top export markets (2012)

Location of companies acquired by Scottish firms		Location of firms acquiring Scottish companies		Top 10 Scottish export trading partners (2012)	
Rest of the UK	42%	Rest of the UK	44%	Rest of the UK	£47.6bn
Scotland	38%	Scotland	31%	United States	£3.6bn
United States	6%	United States	8%	Netherlands	£2.7bn
Ireland	2%	Norway	3%	France	£2.2bn
Australia	1%	France	2%	Germany	£1.5bn
Netherlands	1%	Ireland	1%	Norway	£920m
India	1%	Australia	1%	Switzerland	£870m
Norway	1%	Netherlands	1%	Spain	£830m
Canada	1%	Germany	1%	Ireland	£815m
France	1%	Canada	1%	Belgium	£735m

Source: ZEPHYR and The Scottish Government, Global Connections Survey (2013)

Data for both inward and outward acquisitions strongly mirror current export flows for Scotland with a dominant majority of activity with the United States, France, Ireland and Norway (refer Table 1)[11].

[11] *Ernst & Young (2013). No Room for Complacency. 20013 UK Attractiveness Survey – Scotland* http://www.ey.com/Publication/vwLUAssets/2013_Scotland_Attractiveness_Survey/$FILE/EY_2013_Scotland_Attractiveness_Survey.pdf

Despite their increasing importance in global trade and investment flows[12], less acquisition activity takes place between Scottish companies and those of BRIC countries.

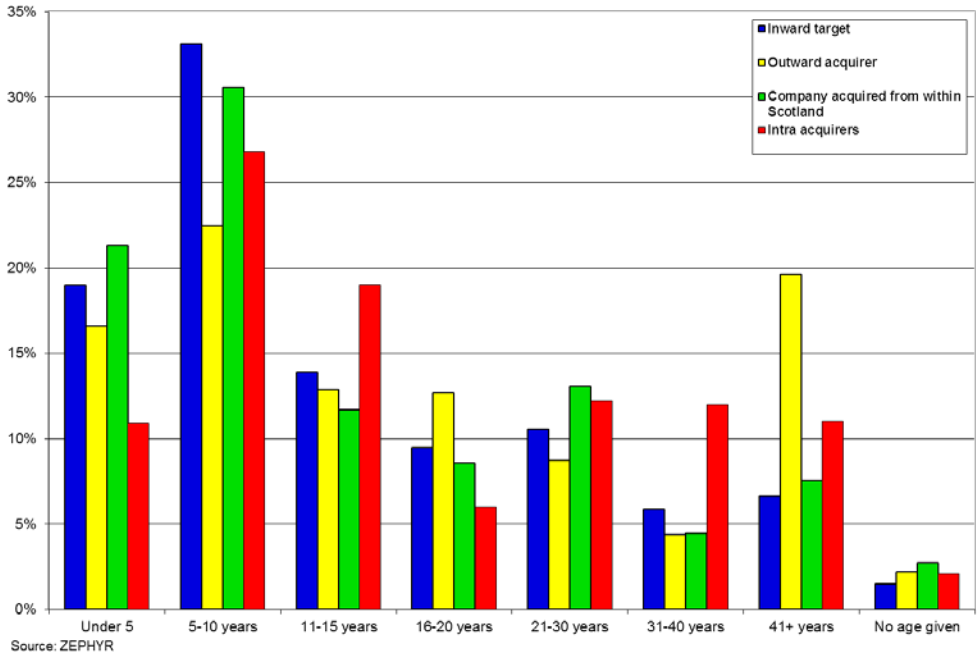
The vast majority of acquisition activity involving Scottish firms takes place within the UK market. This rate of intra-country acquisition is noticeably higher than in other comparator nations. This lower international propensity to acquire or be acquired perhaps reflects the low level of internationalisation of the Scottish business base (a lower proportion of Scottish SMEs export than those to other countries) and the importance of the UK market to Scottish companies.

The greatest proportion of Scottish firms being acquired (be that from outwith or within Scotland) as well as making acquisitions are companies that are under ten years old. Between 2003 and 2012 such companies accounted for:

- 52% of all inward acquisitions
- 39% of outward acquisitions
- 52% of intra-acquired companies
- 37% of intra-acquirers

Acquisition activity by younger companies is greater in Scotland, and to a lesser extent the UK, than in other European countries. The reasons for this are unclear as there is no evidence that Scottish firms engaged in this activity are different in any other way e.g. company size. This is a potential area for future research.

Diagram 2 Scottish companies involved in sales and acquisitions, by company age (2003-12) [13].



[12] *UNCTAD Global Investment Trends Monitor, No.11 (January 2013), No.12 (March 2013) and No.13 (October 2013).*

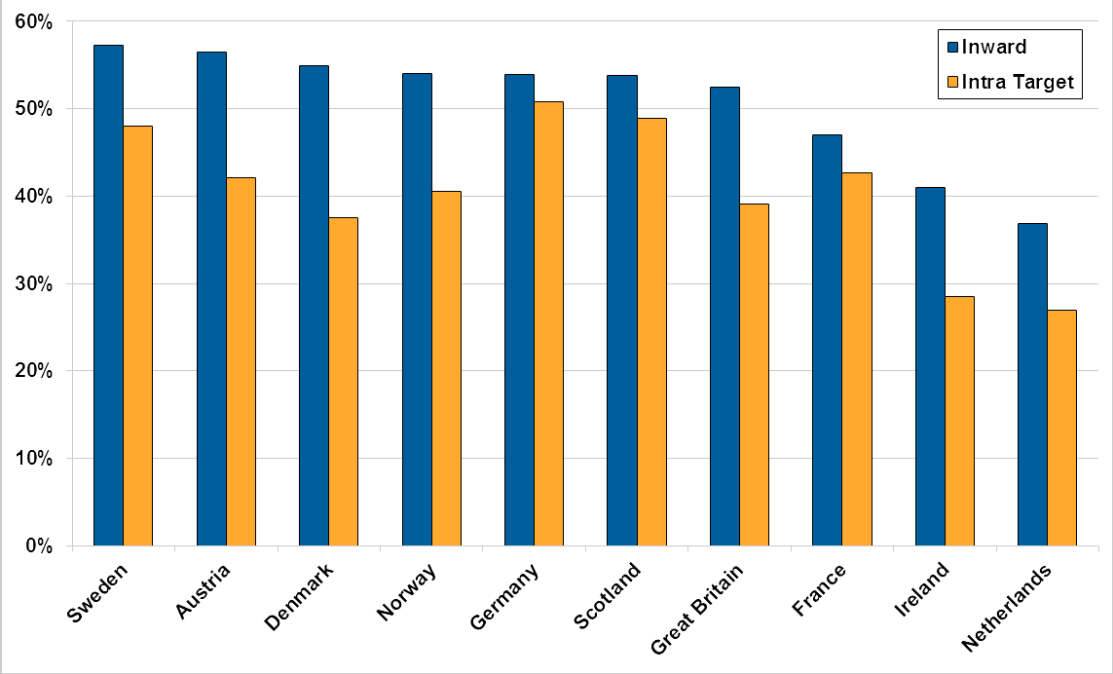
[13] *The spike in outward acquisitions of 41+ is influenced by The John Wood Group PLC which made fifteen acquisition deals over the period thus abnormally inflating the data for this cohort.*

The median deal size for Scottish companies bought by non-Scottish companies suggests that whilst both the purchase and sale companies involved are young, they are not necessarily small (when compared to other nations' median deal sizes). Similarly, Scotland's median outward acquisition deal size is similar to that of other countries, but as the Scottish companies are younger than their European counterparts, this may be an indication that these Scottish companies have undergone a period of early growth.

The post-deal status of a company can give some indication of the motivations behind, and the consequences of, each deal. Dissolution and an inactive status suggests the principal objective (or at least a strong consideration) may have been to acquire a company to eliminate it; either to extract valuable aspects (e.g. market share) or simply to eliminate a market competitor[14].

In contrast, a company that remains active once it has been acquired suggests a different set of motivations behind the deal. It suggests that the company has been targeted because it is, or has the potential to be, profitable and has, or has the potential to be, of significant value to the acquirer in its current location, with its current market and current customer base. This suggests that the strategy behind the acquisition/trade sale recognises the potential to achieve synergies from bringing together the two firms, which evidence shows is a key factor in achieving post-acquisition success[15].

Diagram 3 Percentage of companies remaining active post-acquisition (2003-12)



[14] *It should be noted that the period of this study covers Recession of 2008 – 2014 and this may be a factor in many of the dissolutions and inactivity of companies.*
[15] *Cardinali, A., Wikren, B. (2012), Berkovitch & Narayanan (1993), Raj, M. & Forsyth, M. (2004)*

Analysis of the trading status of firms shows lower post-acquisition active rates for acquired Scottish companies (54% for those acquired from overseas, and 42% for those acquired from within Scotland) than for those companies who make acquisitions.

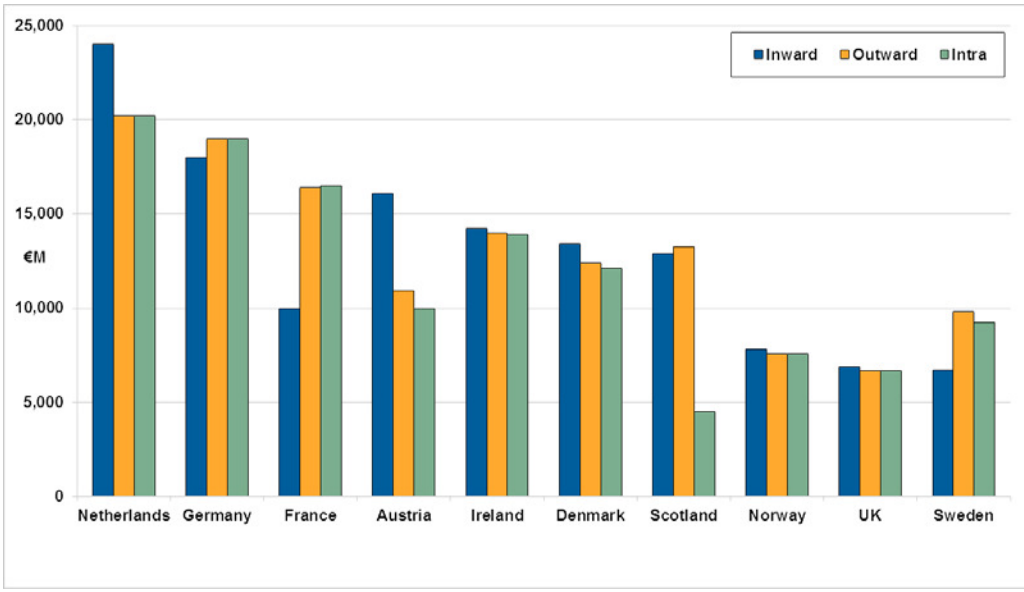
Scotland has one of the stronger post-acquisition active rates in Europe across all types of deal. For inward acquisitions, Scotland's rate of (54%) is higher than other countries such as France, Netherlands and Ireland. Scotland is also ahead of the UK and is only 3% behind top-placed Sweden at 57%.

The post-acquisition active rate for acquired Scottish companies is higher than some other countries. This suggests that acquirers recognise the value of Scottish targets in terms of the existing market as well as their supply chain and networks. This may reflect the acquired company's 'embeddedness' in the Scottish economy as well as other benefits such as access to markets and public sector support. In this regard, Scotland's acquisitions market may potentially offer an avenue to benefit not only Scottish firms, but also the Scottish economy through an expansion in jobs, supply chains and potential future unrelated activity within Scotland.

Median deal sizes suggest that most acquisitions take place at the SME level. The median figure for both inward and outward acquisitions is around £11m.

In comparison to other countries, Scotland performs within the mid-range for inward acquisition deal sizes, at around €12.9m (£10.8m); lower than the Netherlands but higher than Norway and Sweden as well as the United Kingdom.

Diagram 4 Median deal size by acquisition type and country (2003-12)



In terms of outward acquisitions, the median Scottish deal size of €13.25m (£11.1m) is higher than comparable countries (Austria, Denmark, Norway, Sweden and the UK). The data suggests that

Scottish companies that make cross-border acquisitions are very similar to Scottish companies subject to trade sales.

The greatest numbers of deals are by companies in the following sectors: technologies and advanced engineering; financial and business services; creative industries; and, energy sectors. This is true for each type of acquisition 'deal' (inward, outward and intra).

In summary, the Scottish acquisitions market demonstrates that:

- Compared to other similar-sized economies, a lower proportion of Scotland's business base is involved in acquisition and trade sale activity;
- Scotland is strongly dependent on the UK market for company sales and acquisitions, more so than comparable, independent countries;
- Scottish companies involved in acquisition are younger than those in other countries, but deal sizes are comparable, as are post-acquisition activity rates;
- Companies in technologies and advanced engineering; financial and business services; creative industries and energy are more active in acquisition activity both across borders and within Scotland.

III BUSINESS' EXPERIENCE OF ACQUISITION

In order to better understand some of the underlying factors behind sales and acquisitions activity, a series of interviews were conducted with twelve companies that are account managed by Scottish Enterprise. These highlighted three principal reasons for sales and acquisitions activity, namely to:

- achieve growth;
- facilitate a management exit ; and
- provide a return to investors.

(i) To Achieve Growth

The primary objective for many companies' acquisition activity was to realise growth, using acquisition or a trade sale to either trigger a new phase or continue a current growth phase. Companies provided a range of reasons why they felt acquisition was the best route to maximise their growth potential, with strong similarities between companies subject to a trade sale and those making an acquisition. These included to:

- Source the quickest way to achieve and/or accelerate growth;
- Lower the risk attached to acquiring a company with knowledge, skills and customers compared to investing in the existing company and activities;
- Realise synergies and shared goals between companies;
- Access products and services and add more products and services to the company's offer;
- Give the Scottish company a stronger presence and/or a base in either an existing market or in a target market, particularly internationally, at a pace that could not be realised any other way;
- Provide instant access to skilled, trained and qualified staff;
- Provide instant access to networks, contacts and relationships to be exploited for further growth plans;

- Provide the company with a healthier financial position, a stronger balance sheet; often to remove debt and other financial constraints;
- Secure investment, particularly capital investment, which the Scottish company alone was not able to find or attract;
- Provide a level of technical support and expertise not previously available;
- Increase their customer base and reduce risks to the company

A common factor raised by the interviewees was the importance of finding the right acquisition or trade buyer. As one Chief Executive put it *"It's not the biggest cheque, it's who would work with us to grow in the long-term. It also showed our staff that they were valued and part of what we wanted to achieve."* Scottish companies interviewed showed a desire to secure the best fit for their company and staff, with some spurning larger financial returns in order to achieve this.

The overall conclusion is that each company felt that acquiring another company, or being acquired, was the quickest route to realising growth and also the safest option, providing the right condition were set. Companies were consistently of the view that alternative strategies would have found it harder to penetrate further into markets, make necessary investment and access the required knowledge, expertise or contacts. To build their companies organically would have, in their view, take too long, been too costly and have had a lesser chance of success. For each company, therefore, their decision to acquire or be acquired was the most logical step to ensure they grew.

(ii) To Achieve a Management Exit

In the case of two companies, the explicit aim of the owners from the outset was to achieve an exit and a return on investment. For a further two companies, an exit had gradually become the preference of the owner. The exit was ultimately used in each of these four cases as a 'trigger' point for further growth of the company as the experiences and skills of new members of the management team took the company *"to the next level"*.

Often, exiting owners sought to ensure that the company remained in Scotland by stipulating that sale contracts retain brand names, key accounts and guarantees to retain staff. This shows that despite seeking a management exit, it was not simply about securing an exit at any price or any effect and leaving the business to the whims of its acquirer.

"We spent years on this company; it's our legacy so we weren't going to hand it to just anyone. They had to make sure it worked for us beyond the sale, otherwise we'd have looked elsewhere."

One motivation was a desire by the owner to maintain their reputation to allow them to continue to work in their chosen field within Scotland. This also helped therefore to secure continuing benefits from the company's operation on the Scottish economy.

This desire to remain active after exiting the company, and the requirement that the replacement owner had to have relevant skills, expertise and experience, highlights the potential of acquisitions activity to 'recycle' individuals and entrepreneurs within the Scottish economy.

(iii) To Provide a Return to Investors

Interviews highlighted that companies with investment from angel investors and private financiers possessed a greater awareness of the potential role a trade sale could play in facilitating their growth plans. The eventual exit of existing funders was a central part of their overall business plan, which enabled the company to ensure their funders received a return as well as ensuring the deal enabled the company to continue to grow. Each such interviewee believed that a sale presented the best opportunity for them to facilitate this exit and achieve growth.

Reaching these growth goals only arose because of the drive to facilitate an exit for initial investors. It allowed the Scottish company to secure investment and higher growth in jobs, not just in the company but also the supply chain, whilst providing investors with a financial return and enabling them to re-invest in further companies.

Companies repeatedly highlighted that they companies are presented with opportunities for trade sales and acquisition on a consistent basis. As one Managing Director noted *"they're always coming across my desk, some I take a few minutes to think about, others I just ignore … They're always there and you never know when something might just appear at that right time."*

Some companies admitted that they were *"…always looking. We never stop. You just don't know what opportunities you'll miss… we're always talking with customers, clients. That's how these come about."*

Interviews highlighted not only the approach of some Scottish companies but also their acumen in using economic conditions to secure attractive deals. Whilst their long-term ambition is to grow turnover and profitability, management have been flexible in their approaches to achieve this. Rather than being rigidly committed to any particular strategy, they remained open to all viable opportunities as the economy, their industries and markets evolved.

IV Alternatives to Acquisition

Whilst both trade sales and acquisitions provide an avenue for growth, they are not the only option available to companies. Other routes include investing in existing structures (growing organically), a stock market listing, employee ownership or joint ventures.

Companies believed these other avenues would not have allowed growth to occur as quickly and not to the level desired and subsequently realised. The reasons for pursuing a trade sale or acquisition above other available alternatives seem to relate to *risk* and *speed*. On completion of the deal, companies had a ready supply of skilled staff, machinery, networks, knowledge and markets/orders. Securing these benefits almost instantly allowed growth to be realised much more quickly than attempting to build these organically.

It could also be interpreted that companies saw a trade sale or acquisition as a better value/lower cost route to growth. Companies had considered investment and diversification but concluded there was no

guarantee if, or when, such a strategy would pay off. One cited an example of a competitor in Scotland who had chosen to invest to grow organically, but *"hadn't seen anywhere near the return they might have hoped for, and they have no real indication as to when they will, if indeed they ever, do."*

Some companies acknowledged that they did not perhaps consider all potential growth options open to them, giving two reasons for this. The first was knowledge of where to seek advice. The second was that, in some cases, the owner made a quick decision to sell and did not take time, or involve existing management, to explore other options. In such cases, outcomes had been ultimately beneficial for the company, but on reflection, one interviewee felt some external advice on alternative growth strategies may have been beneficial.

For those companies that considered their objectives and options and set out a clear plan to deliver these either via acquisition or trade sale, their experiences were positive. They had a stronger belief that they had achieved and, in some cases, surpassed their expectations. Whilst pre-deal diligence was viewed as exhausting and thorough, their reflection was that it was worth the time and effort.

Companies for which acquisition decisions arose more out of circumstance than any strategy, did not regret decisions that were taken, but acknowledged that post-acquisition benefits had emerged more by chance than design and that more due diligence could have been undertaken to ensure the deal was the absolute best outcome for the company.

VI Conclusions

It is clear that trade sales and acquisitions can and do form part of the growth plans for companies, bringing with them wider benefits for the regional economy. Scotland's market is similar to many countries, although acquisition activity involving Scottish companies is notably lower than similar sized countries. This suggests that the challenge to grow companies in Scotland is not a consequence of too many companies being acquired.

The motivation for companies to acquire others (or seek a sale) appears to be the speed and ease of access to markets: secure sufficient investment needed to grow; to enter new markets or deeper into existing markets through attracting larger clients. Companies that had these motivations had found themselves unable to fund additional investment from within or lacking the confidence to be able to attract sufficiently skilled staff, hence preventing them from adding new products and services in order to grow, both within their sector and geographically.

Evidence points to a correlation between the networks of companies and successful, growth-led, acquisition activity. Hence, increasing the level of Scottish firms trading internationally would most likely lead to an increase in company acquisitions. This fact heightens the importance of successfully embedding companies within the Scottish economy in order to maximise post-acquisition (or sale) economic activity in Scotland. We know from the research that the greatest benefits to both the company and the economy arise when companies that are acquired are embedded within the Scottish economy, with established links to growing markets, skilled staff, supply chains and strong growth potential.

The potential downside of acquisitions of Scottish-based companies is the leakage and loss of profits from the Scottish economy. However companies saw this loss as being an acceptable trade-off in order to access higher growth. Interviews highlighted that in the absence of a trade sale companies would not have experienced subsequent growth in sales and jobs, not have secured required investment nor been able to access international networks via attracting larger contracts without the acquisition.

This issue of how to further embed companies within the Scottish economy is worthy of further consideration given that acquisition activity increases as companies seek to internationalise. Future research could also develop a greater understanding of the extent to which post-sales 'recycling' of knowledge, skills and funds occurs and assess its benefits to the Scottish economy. Research could also consider the extent and impact of some of the barriers that companies face (e.g. access to investment finance, innovation and skills) which led to the choice of a trade sale or acquisition, as the best means to growth.

The evidence gathered in this study found a prevailing view amongst Scottish Enterprise Account Managed companies that acquisitions and trade sales had formed a *central* part of their growth plans. As such sales and acquisitions should be seen by policy makers as a regular characteristic of the modern business economy and be recognised as an effective route through which company growth can be achieved.

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Determinants of European national men's football team performance: Scotland's potential progress in the UEFA Euro 2016 qualifiers

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Abstract:

In this paper, we estimate the potential outcomes for Scotland in the 2016 Euro qualifiers, based on a model of the outcomes of previous European men's football matches. The sampled dataset includes all matches played between European national men's football teams between August 2012 and December 2013, that is 368 matches in all. According to our model, Scotland should fail to progress to the UEFA Euro 2016 playoffs by only one goal in Group D. This result is confirmed when we correct our model to take into account the difference between real scores and scores provided by the model for each team in Group D. Nevertheless, in a third model – which is a better predictor – Scotland should come third in Group D and thus proceed to the playoffs in which it could hope to qualify for the Euro 2016 Finals. A fourth and final approach predicts that Scotland could even come second in Group D, behind Germany, and thus qualify directly to the UEFA Euro 2016 Finals in France.

I Introduction

The UEFA Euro 2016 Finals will take place in France and will be the first Euro Finals to include 24 teams. This increase in the number of teams provides more chances for some countries to take part in the Finals, including Scotland which has qualified only in 1992 (when 8 teams competed) and 1996 (when 16 teams competed). Indeed, in the 2016 Euro Finals instead of having only the teams ranked first in their groups plus the best second teams, all teams ranked first *and* second in their groups will qualify directly, plus the best third team across all groups, plus four other teams that will have beaten the four other third-ranked teams in the playoffs.

In this paper, we estimate the potential outcomes for Scotland in the 2016 Euro qualifiers, based on a model of the outcomes of previous European international men's football matches. The sampled dataset includes all matches played between European national men's football teams between August 2012 and December 2013, 368 matches in all.

The paper is structured as follows. In Section II we present our model. In Section III the data are described and in Section IV we report our results. In Section V we then apply these results to the forthcoming UEFA Euro 2016 qualifiers, with a focus on Scotland. In Section VI we note some limitations in the model and its resulting predictions. We conclude in Section VII.

II Model specification

In our model a score equation is specified and then estimated using variables identified in a review of the literature (Allan and Moffat, 2014; Andreff and Andreff, in press; Baur and Lehmann, 2007; Berlinschi, Schokkaert, and Swinnen, 2013; Gelade and Dobson, 2007; Hoffmann, Lee, and Ramasamy, 2002; Hoffmann, Lee, Matheson, and Ramasamy, 2006; Houston and Wilson, 2002; Leeds and Leeds, 2009; Macmillan and Smith, 2007; Yamamura, 2009, 2012). In addition, we introduce seven new variables which have not yet been tested as potential determinants of national men's football team performance. The relevant variables from the literature are:

- *Population*: $(Log\ POP_i - Log\ POP_j) / Log\ [min\ (POP_i, POP_j)]$,
  with POP_i the population of team *i*'s nation and POP_j the population of team *j*'s nation;
- *GDP per capita*: $(Log\ GDP_i - Log\ GDP_j) / Log\ [min\ (GDP_i, GDP_j)]$;
- *Climate* ([temperature - 14°C]^2): $(CLI_i - CLI_j) / [min\ (CLI_i, CLI_j)]$;
- *Experience*: *EXP* equals the number of matches played by a country in its history, thus $(Log\ EXP_i - Log\ EXP_j) / Log\ [min\ (EXP_i, EXP_j)]$;
- *Percentage of players*: is the number of football players in a country (*PLA*) divided by its population: $[(Log\ PLA_i / Log\ POP_i) - (Log\ PLA_j / Log\ POP_j)] / min\ [(Log\ PLA_i / Log\ POP_i), (Log\ PLA_j / Log\ POP_j)]$.
  The expectation is that a large population is not sufficient as a precondition to perform in the football World Cup while the percentage of players within this population should be a crucial determinant of scores and wins;
- *Home advantage*: is a dummy equal to 1 if team *i* plays home, -1 if team *j* plays home.

In addition to the above variables drawn from the literature, we introduce seven new variables to test the determinants of the outcome of men's international football matches. They are:

- *Player Quality*: is the number of players who are on the roster of the 10 most valuable European football clubs and have been fielded in at least 20 games per season: $(PLQ_i - PLQ_j) / min\ (PLQ_i, PLQ_j)$.
  The 10 most valuable clubs in Europe are Real Madrid, Manchester United, FC Barcelona, Arsenal, Bayern Munich, AC Milan, Chelsea, Juventus, Manchester City and Liverpool (more than $650m for every team against $520m for the 11th (i.e. Tottenham); Forbes, 2013). The underlying assumption is that best players have an incentive to play in those teams with the best financial resources to pay them;
- *Foreign Managers:* from the core group of western European countries: $FOM_i - FOM_j$,
  with *FOM* as a dummy: equal to 1 for countries with a national team coached by a foreign manager from Belgium, France, Germany, Italy or the Netherlands.
  This dummy is derived from Kuper and Szymanski (2012) who contend that the five above-mentioned western European countries have discovered the secret of football and all adhere to the basic tenets of rapid collectivised western European football.
- *Technology Transfer through managers*: $TTM_i - TTM_j$,
  with *TTM* a dummy equal to 1 for countries with a manager who has coached a team in Belgium, France, Germany, Italy or the Netherlands or has been trained himself / herself by a manager

operating in one of these five countries (the dummy equals 0.5 if the club was in the second division);

- *Prize*: is a dummy equal to 1 if team *i* is favourite, -1 if team *j* is favourite in a match with sporting prize for the two teams.

  Sporting prize means that a team is in contention for a specific sporting prize:
  - winning the final (eg UEFA Euro Finals or FIFA World Cup)
  - a qualification to the next round of a Finals' competition
  - *first* rank (rather than the second) in the group stage in a Finals' competition (eg the FIFA World Cup) – even when being ranked second allows a team to qualify to the next round. As a first-ranked team it automatically faces a second-ranked team from another group in the next round, hence, to be first rather than second should allow a team to avoid a supposedly best team in the next round. It is notable that in the 2014 World Cup, every team ranked first in its group stage qualified into the round of 16.

  A team is considered as favourite if there is a difference of 0.1 or more between the two opponents in betting odds. When betting odds are not available, dummies are allocated to teams only in those cases where an obvious favourite can be assessed.
- *Prize difference in favour of the favourite*: is a dummy equal to 1 if team *i* is favourite, -1 if team *j* is favourite when it occurs that the favourite team has a sporting prize whereas the underdog has no sporting prize.
- *Prize difference in favour of the underdog*: is a dummy equal to 1 if team *i* is the underdog, -1 if team *j* is the underdog the latter having a sporting prize whereas the favourite has no sporting prize.
- *No prize*: is a dummy equal to 1 if team *i* is favourite, -1 if team *j* is favourite in a match without a sporting prize.

A linear specification for the predicted score between team *i* and *j* is written as follows:

$$S_{ijtsd} = \beta_0 + \beta_X X_{ij} + \beta_Z Z_{ijt} + \beta_W W_{ijts} + \beta_K K_{ijtsd} + \varepsilon_{ijtsd} \quad (1)$$

where:

S_{ijtsd} is the score of a match between team *i* and team *j* in year *t*, during the semester *s* and on day *d*, β_0 is an intercept term, β_X stands for the coefficients of explanatory variables X_{ij} which depend on team *i* and team *j* (Climate and Percentage of players), β_Z the coefficients of explanatory variables Z_{ijt} which depend on team *i* and team *j* in year *t* (Population and GDP per capita), β_W the coefficients of explanatory variables W_{ijts} which depend on team *i* and team *j* in year *t* and semester *s* (Player Quality), β_K the coefficients of explanatory variables K_{ijtsd} which depend on team *i* and team *j* in year *t*, semester *s* and on day *d* (Experience, Foreign Managers, Technology Transfer, Home advantage, Prize, Prize difference for the favourite, Prize difference for the underdog and No prize) and ε a stochastic error term.

III Data description

The sample used to test the above-specified model gathers together all game-specific data from August 2012 to December 2013 for European men's international football (368 observations); Montenegro is excluded from the sample since data about the number of players are missing. Data regarding Score,

Experience, Percentage of players and Home advantage have been collected or calculated from FIFA sources; Population is available on the United Nations website; GDP per capita from the International Monetary Fund website; Temperature from the World Bank website; Player Quality from ESPN and Wikipedia; Foreign Managers and Technology Transfer from Wikipedia; and Prize, Prize difference for the favourite, Prize difference for the underdog and No prize from BetBase1. Table 1 exhibits descriptive statistics for the sample as a whole.

IV Results

The results are shown in Table 2. Population, Experience, Percentage of players and Prize difference in favour of the favourite team have a significantly positive impact at the 1% threshold. Player Quality, Home advantage and Prize a significantly have a positive impact at the 5% threshold. GDP per capita has a significantly *negative* impact at the 10% threshold, while all other variables are insignificant. Though the latter variables are not all significant, it is worth noting that using the same model applied to all the men's national football team matches *in the world* over the period 2011-2013 (2,854 observations), all variables are significant, save for Climate.

Table 1: Descriptive statistics.

Variable	Mean	Standard deviation
Abs Score	1.5897	1.4735
Population	16,054,388	25,967,538
Abs Log-population difference	0.1476	0.1599
GDP per capita	32,663	30,553
Abs Log-GDP per capita difference	0.1290	0.1034
Temperature	8.4674	4.3833
Abs Climate difference	30.22	123.33
Experience	536.36	225.93
Abs Log-experience difference	0.1059	0.1114
Percentage of players	7.4118%	5.2134%
Abs Percentage of players difference	0.0438	0.0377
Quality of players	1.9674	5.2167
Abs Quality of players difference	3.1087	6.2400
Foreign managers	0.1114	0.3146
Abs Foreign managers difference	0.1957	0.3967
Technology transfer	0.1780	0.3762
Abs Technology transfer difference	0.2826	0.4396
Home advantage	0.9565	0.2039
Abs Prize	0.5326	0.4989
Abs Prize difference / favourite	0.0978	0.2971
Abs Prize difference / underdog	0.0136	0.1158
Abs No prize	0.3315	0.4708

Table 2: Results.

Variable	Coefficient	p-value
Population	2.6291	0.0002
GDP per capita	-1.3179	0.0967
Climate	-0.0004	0.3879
Experience	2.1463	0.0198
Percentage of players	7.2387	0.0035
Player quality	0.0272	0.0452
Foreign managers	0.1632	0.3652
Technology transfer	0.0579	0.7449
Home advantage	0.6771	0.0368
Prize	0.3522	0.0254
Prize difference / favourite team	0.8107	0.0031
Prize difference / underdog	-1.4087	0.3240
No prize	0.0667	0.6348
Constant	-0.4867	0.1172
Observations	368	
Adjusted R^2	0.470	

Table 3: Results without Netherlands-Hungary.

Variable	Coefficient	p-value
Population	2.5462	0.0003
GDP per capita	-1.3717	0.0818
Climate	-0.0004	0.3915
Experience	2.4032	0.0069
Percentage of players	6.7136	0.0060
Player quality	0.0292	0.0297
Foreign managers	0.1786	0.3189
Technology transfer	0.0169	0.9225
Home advantage	0.6747	0.0366
Prize	0.3513	0.0245
Prize difference / favourite team	0.8088	0.0032
Prize difference / underdog	-0.1098	0.8947
No prize	0.0694	0.6213
Constant	-0.4998	0.1059
Observations	367	
Adjusted R^2	0.476	

Surprisingly, the absolute value of the coefficient for Prize difference in favour of the underdog is higher than those for Prize difference in favour of the favourite team and Prize. This would mean that the advantage for the favourite team is higher when it has no prize to defend. This is counter-intuitive as one

would expect favourites to have a smaller incentive to play at their best level and thus one would expect their coefficient to be lower. It is worth noting that the results for Prize difference in favour of the underdog could be biased by one score difference: that between Netherlands and Hungary (+7). We thus re-ran our model without this game (refer Table 3). These results are now more consistent with our expectations. Consequently, we applied this revised model to predict Scotland's potential outcomes in the 2016 UEFA Euro qualifiers.

V Scotland's potential progress in the UEFA Euro 2016 qualifiers

Model 1

Table 4 provides the outcomes in the UEFA Euro 2016 qualifying Group D according to our model. First, the differences between teams in each individual game are given, resulting from the application of coefficients outlined in Table 3 to each game. The coefficient for home advantage is 0.6747, which should mean for example that if Scotland loses by two goals against Germany in Germany, it should theoretically lose by less than one goal at home (2 - 0.6747 - 0.6747 = 0.6506: Germany loses its home advantage (-0.6747) and has even now an away disadvantage (-0.6747 again)). Actually, we considered that the constant in our model (-0.4998) counterbalances the strength of home advantage and reduces it to 0.1749 (0.6747 - 0.4998). Of our 367 observations, 351 took place at a national stadium while 16 took place at a neutral ground. Hence that is why we apply 0.1749 for home advantage. Second, below Table 4 we provide the standing resulting from the differences between teams in each individual game, based on the UEFA rules for the allocation of points at the end of each game (i.e. 3 points for a win, 1 point for a draw, 0 point for a loss) and deciding between teams with the same number of points (i.e. goal difference in all games – as noted in brackets).

Table 4: Outcomes in the UEFA Euro 2016 qualifying Group D according to our model

	Germany	Ireland	Poland	Scotland	Georgia	Gibraltar
Germany		+2	+2	+2	+2	+6
Ireland	-1		0	0	+1	+4
Poland	-1	+1		+1	+1	+5
Scotland	-2	0	0		+1	+4
Georgia	-2	0	-1	0		+4
Gibraltar	-6	-4	-4	-4	-4	

1. Germany 30
2. Poland 20
3. Ireland 13 (+5)
4. Scotland 13 (+4)
5. Georgia 8
6. Gibraltar 0

Scotland should be in contention with Ireland in Group D to take part in the playoffs for the UEFA Euro 2016 Finals, but fail to do so by one goal. Germany – the current World Champions – should win all its matches, taking advantage of its population, experience, percentage of players and its player quality

(Table 5). Poland should take advantage of its population and lower GDP per capita compared to Germany, Ireland and Scotland. The latter two countries have very similar data, with Scotland having better experience and Ireland a larger percentage of players.

Table 5: Data in the UEFA Euro 2016 qualifying Group D

	Population	GDP per capita	Temperature	Experience	Percentage of players	Player quality	Foreign manager	Technology transfer
Germany	80 640 000	40369.97	8.50	887	20.22%	10	0	0
Ireland	4 662 000	40267.27	9.11	505	9.04%	0	0	0
Poland	38 548 000	21679.39	7.87	756	5.19%	1	0	0
Scotland	5 300 000	44339.62	8.31	726	7.94%	0	0	0
Georgia	4 489 000	6007.129	7.36	516	4.95%	0	0	1
Gibraltar	29 259	34177.52	18.60	52	7.00%	0	0	0

Model 2

It seems proper that we should compare real score and the score provided by the model based on the period August 2012 to December 2013 for every men's international football team (except Gibraltar that did not play) to assess potential over or under-performance (refer to Appendices 1 to 5). We took this into account to correct our model. According to our new model, Scotland should be in contention with Poland to take part in the playoffs for the qualification in the UEFA Euro 2016, but still fail to do so by one goal (Table 6). However, an encouraging point to note is that Scotland has performed strongly since June 2013, after having underperformed up until March 2013 (Appendix 1). This could mean that Scotland could outperform Poland.

Table 6: Outcomes in the UEFA Euro 2016 qualifying Group D according to our corrected model

	Germany	Ireland	Poland	Scotland	Georgia	Gibraltar
Germany		+2	+2	+2	**+3**	+6
Ireland	-1		**+1**	**+1**	**+2**	**+5**
Poland	**-2**	**0**		**0**	+1	+5
Scotland	-2	0	0		+1	+4
Georgia	**-3**	**-1**	-1	**-1**		**+3**
Gibraltar	-6	-4	-4	-4	**-3**	

1. Germany 30
2. Ireland 20
3. Poland 15 (+6)
4. Scotland 15 (+5)
5. Georgia 6
6. Gibraltar 0

Model 3

We then replaced our previous model by using a regression in which we explain score difference by way of home advantage and dummies for every team instead of by the previously used determinants. For example, for Scotland, we use 1 when it played at home and -1 when it played away; we use the same principle for other teams. The advantage of this approach is that it directly captures team strengths over the period August 2012 to December 2013. Given that Gibraltar did not play over this period, we arbitrarily chose to allocate San Marino's coefficient to Gibraltar. Using this updated model – which is the most powerful for predictions (adjusted $R^2 = 0.527$) – Scotland should come third in Group D and qualify for the playoffs (Table 7). The best third team among all groups will be directly qualified for the UEFA Euro 2016 but our model predicts that it will not be Scotland; rather it predicts it will be Sweden. The other teams it predicts that will take part in the playoffs will be: Iceland, Israel, Slovakia, Slovenia, Romania, Bulgaria and Denmark. According to our coefficients, the hierarchy among Scotland and these teams is as follows: Israel (5.647), Slovakia (5.550), Romania (5.499), Scotland (5.494), Slovenia (5.341), Bulgaria (5.272), Iceland (5.148) and Denmark (5.100). In taking into account home advantage (+0.281), this would mean that Scotland should qualify against Bulgaria, Iceland and Denmark (+1 at home, 0 away) whereas other confrontations should be very uncertain (0 at home, 0 away). Using this model based on team strengths over the period August 2012 to December 2013, the standings in the different groups for the UEFA Euro 2016 qualifiers should be as set out in Table 8. For each team we indicate its coefficient in our model and not its number of points; but the ranking is the same using either approach.

Table 7: Outcomes in the UEFA Euro 2016 qualifying Group D according to home advantage and team strengths over the period August 2012 to December 2013

	Germany	Ireland	Poland	Scotland	Georgia	Gibraltar
Germany		+2	**+3**	**+3**	+3	**+8**
Ireland	-2		+1	+1	+1	**+6**
Poland	-2	**-1**		0	+1	+5
Scotland	-2	0	**+1**		+1	**+5**
Georgia	**-3**	-1	**0**	**0**		**+5**
Gibraltar	**-7**	**-5**	-4	**-5**	**-3**	

1. Germany 30
2. Ireland 22
3. Scotland 15
4. Poland 11
5. Georgia 8
6. Gibraltar 0

Table 8: Standings in the UEFA Euro 2016 qualifiers according to team strengths over the period August 2012 to December 2013

A	**1. Netherlands (7.036), 2. Czech Republic (5.661), *3. Iceland (5.148)***, 4. Turkey (5.138), 5. Kazakhstan (4.606), 6. Latvia (4.403)
B	**1. Bosnia and Herzegovina (7.385), 2. Belgium (6.887), *3. Israel (5.647)***, 4. Wales (5.129), 5. Cyprus (4.137), 6. Andorra (2.535)
C	**1. Spain (7.140), 2. Ukraine (6.558), *3. Slovakia (5.550)***, 4. Belarus (5.333), 5. Macedonia (5.148), 6. Luxembourg (3.910)
D	**1. Germany (7.776), 2. Ireland (5.935), *3. Scotland (5.494)***, 4. Poland (5.083), 5. Georgia (4.950), 6. Gibraltar (0.408)
E	**1. England (6.574), 2. Switzerland (6.245), *3. Slovenia (5.341)***, 4. Lithuania (4.753), 5. Estonia (4.142), 6. San Marino (0.408)
F	**1. Greece (6.244), 2. Finland (5.914), *3. Romania (5.499)***, 4. Hungary (4.901), 5. Northern Ireland (4.679), 6. Faroe Islands (3.607)
G	**1. Russia (6.653), 2. Austria (6.266), 3. Sweden (6.191)**, 4. Montenegro (5.755), 5. Moldova (3.745), 6. Liechtenstein (3.344)
H	**1. Italy (5.949), 2. Croatia (5.831), *3. Bulgaria (5.272)***, 4. Norway (5.027), 5. Azerbaijan (4.961), 6. Malta (3.201)
I	**1. Portugal (6.470), 2. Serbia (6.355), *3. Denmark (5.100)***, 4. Albania (4.999), 5. Armenia (4.760)

Model 4

A fourth and final approach attempts to predict Scotland's progress in the UEFA Euro 2016 qualifiers by thinking in terms of cycles and observing the performance of countries in Group D over 2011, 2012 and 2013 (Table 9). Ireland and Scotland are quite similar: good performances in 2011, not so good in 2012 and better in 2013. By contrast, Poland's performance was poor in 2013. The best situation for Scotland would be for it to continue its improvement evident over 2012 and 2013. In 2013, Scotland came close to Ireland (difference of 0.123) with a stronger increase (+1.399 vs. +1.050). It is difficult to anticipate whether countries will perform in the same way. However, it seems possible that Scotland could become as good as Ireland and perhaps even slightly better. Consequently, it is possible that Scotland could secure second place in Group D and gain direct qualification to the UEFA Euro 2016 Finals.

Table 9: Performance of countries in the UEFA Euro 2016 qualifying Group D in 2011, 2012 and 2013

	2011	European rank	2012	European rank	2013	European rank
Germany	7.275	3	6.954	5	7.757	1
Ireland	6.611	9	4.974	36	6.024	15
Poland	5.871	19	6.069	17	4.926	36
Scotland	6.288	12	4.502	39	5.901	17
Georgia	5.236	29	5.013	34	4.577	41

VI Limitations of the model

The above results improve our knowledge about the determinants of national men's football team performance by taking on board some new explanatory variables. However, some limitations must be underlined. For example, we define Player quality as the number of players who play in the 10 most valuable clubs and who have been fielded at least in 20 games per season. Using this definition, Atletico Madrid, which has reached the Champions League final in 2013-2014, is not among the most valuable clubs. In 2012-2013, Borussia Dortmund, which also reached the Champions League final, was not listed in the 10 most valuable clubs either. These teams performed well due to their team spirit and coach influence, as much as to their player quality. Hence, sampling the most valuable clubs can be improved and besides, money does not always guarantee both victories on the pitch or appropriate player recruitment. For example, Liverpool, which has appeared each year in the Top 10 most valuable clubs, did not achieve to qualify in the Champions League four years in a row (from 2009/2010 to 2012/2013). This raises the question whether Liverpool players really were among the best in the world.

In this paper, we have chosen to follow Kuper and Szymanski (2012) in confining the importance of Foreign Managers and Technology Transfer dummies to Belgium, France, Germany, Italy and Netherlands. However, this can be criticised. Choosing these dummies implies accepting Kuper and Szymanski's underlying implicit hypotheses. For instance, if a manager has been transferred from one of the five core countries, he is automatically considered to be a good manager - even if he has never played at a professional level. Also, if a manager originates from a country other than the core and has never played in one of the five core countries or been trained by a manager from these countries, he is automatically considered as not being a good manager. This would mean that Gordon Strachan (Scotland manager) is not considered a good manager, which seems highly questionable considering Scotland's performance since June 2013. Similarly, it would also mean that Alex Ferguson could not be considered a good manager, whereas he is regarded as one of the most successful managers in the history of the game (Hoye, Smith, Nicholson, Stewart & Westerbeek, 2008). It is worth noting that Alex Ferguson trained Gordon Strachan from 1978 to 1984 at Aberdeen and from 1986 to 1989 at Manchester United. Despite their rivalry (Austin, 2006), it is possible that Gordon Strachan takes advantage from skill transfer from Alex Ferguson. A finer identification of the most successful managers and the test of skill transfer from these managers could be improved in our model.

As noted above, our "predictions" are mainly based on outcomes of the results of European men's international football matches over the period August 2012 to December 2013. Nevertheless, there is no reason to expect that national team strengths over the period August 2014 to December 2015 will be the same that over the same period 2012 to 2013. Table 10 provides European national team strengths over the periods January 2011 to July 2012 and August 2012 to December 2013. It can be seen clearly that the hierarchy of European national teams has largely evolved between the two periods. For this reason, it is necessary to be careful about our "predictions".

Table 10: European men's national football team strengths and rankings over the periods January 2011 to July 2012 and August 2012 to December 2013

	01/2011-07/2012	Rank	08/2012-12/2013	Rank	Rank difference
Albania	4.419	42	4.999	36	+6
Andorra	3.183	52	2.535	52	0
Armenia	5.647	25	4.760	40	-15
Austria	5.230	29	6.266	12	+17
Azerbaijan	4.119	45	4.961	37	+8
Belarus	4.692	38	5.333	27	+11
Belgium	5.985	16	6.887	6	+10
Bosnia and Herzegovina	5.692	23	7.385	2	+21
Bulgaria	4.955	35	5.272	28	+7
Croatia	6.391	11	5.831	19	-8
Cyprus	4.100	46	4.137	46	0
Czech Republic	6.086	13	5.661	21	-8
Denmark	6.465	10	5.100	33	-23
England	6.917	4	6.574	8	-4
Estonia	4.094	47	4.142	45	+2
Faroe Islands	3.473	50	3.607	49	+1
Finland	5.191	32	5.914	18	+14
France	6.500	9	6.976	5	+4
Georgia	5.207	31	4.950	38	-7
Germany	7.007	2	7.776	1	+1
Greece	6.002	15	6.244	14	+1
Hungary	5.906	19	4.901	39	-20
Iceland	4.720	37	5.148	29	+8
Ireland	6.114	12	5.935	17	-5
Israel	5.208	30	5.647	22	+8
Italy	6.505	8	5.949	16	-8
Kazakhstan	4.277	44	4.606	43	+1
Latvia	5.130	33	4.403	44	-11
Liechtenstein	3.896	48	3.344	50	-2
Lithuania	4.428	41	4.753	41	0
Luxembourg	3.703	49	3.910	47	+2
Macedonia	4.690	39	5.148	30	+9
Malta	4.451	40	3.209	51	-11
Moldova	4.375	43	3.745	48	-5
Montenegro	5.038	34	5.755	20	+14
Netherlands	6.854	5	7.036	4	+1
Northern Ireland	3.411	51	4.679	42	+9
Norway	5.652	24	5.027	35	-11
Poland	5.770	20	5.083	34	-14
Portugal	6.715	6	6.470	10	-4
Romania	5.693	22	5.499	24	-2
Russia	6.977	3	6.653	7	-4

San Marino	1.581	53	0.408	53	0
Scotland	6.019	14	5.494	25	-11
Serbia	5.576	26	6.355	11	+15
Slovakia	4.942	36	5.550	23	+13
Slovenia	5.258	28	5.341	26	+2
Spain	7.750	1	7.140	3	-2
Sweden	6.600	7	6.191	15	-8
Switzerland	5.967	18	6.245	13	+5
Turkey	5.977	17	5.138	31	-14
Ukraine	5.510	27	6.558	9	+18
Wales	5.723	21	5.129	32	-11

VII Conclusion

In this paper, we propose a score equation based on 13 variables which we apply to assess Scotland's likely progress in the UEFA Euro 2016 qualifiers. In our first two models, Scotland fails to progress to the UEFA Euro 2016 playoffs by only one goal. Nevertheless, in our third model which is better, it predicts that Scotland should be third in Group D and thus progress to the playoffs and thus hope to qualify for Euro 2016 Finals. Using our fourth model – and assuming a continuing improvement in Scotland's performance – allows us to posit that Scotland could even come second to Germany in Group D and thus allow Scotland to qualify directly to the UEFA Euro 2016 Finals in France. Bonne chance, l'Écosse!

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Appendices

Appendix 1: Comparison between real score and score provided by the model for Scotland over the period 08/2012-12/2013.

Date	Match	Real score	Score provided by the model
08/09/2012	Scotland-Serbia	0	0
11/09/2012	Scotland-Macedonia	0	+1
12/10/2012	Wales-Scotland	+1	0
16/10/2012	Belgium-Scotland	+2	+1
14/11/2012	Luxembourg-Scotland	-1	-1
06/02/2013	Scotland-Estonia	+1	+1
22/03/2013	Scotland-Wales	-1	+1
26/03/2013	Serbia-Scotland	+2	+1
Total Scotland till 03/2013		***-4***	***+2***
07/06/2013	Croatia-Scotland	-1	+1
14/08/2013	England-Scotland	+1	+2
06/09/2013	Scotland-Belgium	-2	-1
10/09/2013	Macedonia-Scotland	-1	0
15/10/2013	Scotland-Croatia	+2	-1
19/11/2013	Norway-Scotland	-1	0
Total Scotland since 06/2013		***+2***	***-5***
Total Scotland		**-2**	**-3**
Average gap			**+0.071**

Appendix 2: Comparison between real score and score provided by the model for Germany over the period 08/2012-12/2013.

Date	Match	Real score	Score provided by the model
07/09/2012	Germany-Faroe Islands	+3	+4
11/09/2012	Austria-Germany	-1	-1
12/10/2012	Ireland-Germany	-5	-2
16/10/2012	Germany-Sweden	0	+2
14/11/2012	Netherlands-Germany	0	-1
06/02/2013	France-Germany	-1	0
22/03/2013	Kazakhstan-Germany	-3	-2
26/03/2013	Germany-Kazakhstan	+3	+3
06/09/2013	Germany-Austria	+3	+2
10/09/2013	Faroe Islands-Germany	-3	-4
11/10/2013	Germany-Ireland	+3	+3
15/10/2013	Sweden-Germany	-2	-1
15/11/2013	Italy-Germany	0	0
19/11/2013	England-Germany	-1	0
Total Germany		**+28**	**+25**
Average gap			**+0.214**

Appendix 3: Comparison between real score and score provided by the model for Ireland over the period 08/2012-12/2013.

Date	Match	Real score	Score provided by the model
15/08/2012	Serbia-Ireland	0	0
07/09/2012	Kazakhstan-Ireland	-1	-1
12/10/2012	Ireland-Germany	-5	-2
16/10/2012	Faroe Islands-Ireland	-3	-2
14/11/2012	Ireland-Greece	-1	0
06/02/2013	Ireland-Poland	+2	0
22/03/2013	Sweden-Ireland	0	+1
26/03/2013	Ireland-Austria	0	0
29/05/2013	England-Ireland	0	+2
02/06/2013	Ireland-Georgia	4	0
07/06/2013	Ireland-Faroe Islands	+3	+2
11/06/2013	Spain-Ireland	+2	+1
14/08/2013	Wales-Ireland	0	0
06/09/2013	Ireland-Sweden	-1	0
10/09/2013	Austria-Ireland	+1	+1
11/10/2013	Germany-Ireland	+3	+3
15/10/2013	Ireland-Kazakhstan	+2	+1
15/11/2013	Ireland-Latvia	+3	+1
19/11/2013	Poland-Ireland	0	+1
	Total Ireland	**+5**	**-4**
	Average gap		**+0.474**

Appendix 4: Comparison between real score and score provided by the model for Poland over the period 08/2012-12/2013.

Date	Match	Real score	Score provided by the model
15/08/2012	Estonia-Poland	+1	-1
11/09/2012	Poland-Moldova	+2	+2
17/10/2012	Poland-England	0	-1
14/12/2012	Poland-Macedonia	+3	0
06/02/2013	Ireland-Poland	+2	0
22/03/2013	Poland-Ukraine	-2	0
26/03/2013	Poland-San Marino	+5	+4
04/06/2013	Poland-Liechtenstein	+2	+4
07/06/2013	Moldova-Poland	0	-1
14/08/2013	Poland-Denmark	+1	0
10/09/2013	San Marino-Poland	-4	-4
11/10/2013	Ukraine-Poland	+1	+1
15/10/2013	England-Poland	+2	+2
15/11/2013	Poland-Slovakia	-2	0
19/11/2013	Poland-Ireland	0	+1
	Total Poland	**+7**	**+13**
	Average gap		**-0.4**

Appendix 5: Comparison between real score and score provided by the model for Georgia over the period 08/2012-12/2013.

Date	Match	Real score	Score provided by the model
15/08/2012	Luxembourg-Georgia	-1	-1
07/09/2012	Georgia-Belarus	+1	0
11/09/2012	Georgia-Spain	-1	-1
12/10/2012	Finland-Georgia	0	0
16/10/2012	Belarus-Georgia	+2	+1
22/03/2013	France-Georgia	+2	+1
02/06/2013	Ireland-Georgia	+4	0
05/06/2013	Denmark-Georgia	+1	+1
14/08/2013	Kazakhstan-Georgia	+1	-1
06/09/2013	Georgia-France	0	-1
10/09/2013	Georgia-Finland	-1	0
15/10/2013	Spain-Georgia	+2	+2
Total Georgia		**-12**	**-5**
Average gap			**-0.582**

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Determinants of European national men's football team performance

Keywords: performance, international men's football, European national teams, Scotland, UEFA Euro 2016 qualifiers, FIFA World Cup.

Policy Section

The Scottish NHS: meeting the financial challenge ahead

James Barbour, Alec Morton, Laura Schang

Abstract

The Scottish NHS faces a crisis of affordability in the next couple of decades as the population ages and demands on services intensify. This presents two challenges: the first is how to redesign services to achieve greater efficiencies, and the second is how to engage the public so that there is a realistic public view about what is affordable, against which a mature discussion about the hard choices about funding and provision can take place. We refer to these as the *innovation* and *openness* challenges. In the paper we outline the current state of the system and discuss possible policy options. We conclude with some recommendations for next steps.

1. Introduction

As one of the four countries of the UK, Scotland is a proud inheritor of the original "National Health Service" or NHS. The reason for the enduring popularity of the NHS in Scotland and indeed in the other countries of the United Kingdom is that it is a mechanism for providing universal coverage, enabling "everyone to obtain the services they need at a cost that is affordable to themselves and to the nation as a whole" (WHO, 2013). Universal coverage has been described by Margaret Chan, the Director of the World Health Organisation (WHO), as "the single most powerful concept that public health has to offer", but this, if anything understates its importance: it has become a central idea in the political history of the last sixty years, as one country after another has made the journey to universal coverage, many inspired by the example of the UK.

A challenge facing virtually all high-income countries, however, is how to continue to provide universal coverage as their populations age over the next couple of decades. This applies whether or not countries have implemented universal coverage through NHS-like systems, which are funded out of general taxation, or social insurance systems on the German model, where people are enrolled with a social insurance fund (typically prevented from discriminating on the basis of pre-existing conditions to ensure universality). It also applies irrespective of the ownership structure of hospitals, the existence or otherwise of a split between purchasers and providers, the details of the financing mechanism, and so on.

Domestically, the Scottish NHS has become a central battleground in the recent independence referendum with both sides arguing that the Scottish NHS and the communitarian values which underpin it would be best protected under their preferred constitutional arrangements. This debate has underscored the popularity of universal coverage: it is an idea with deep and passionate support, and the NHS, which instantiates it, is regarded with passionate devotion.

During the Scottish independence campaign, various claims were made about the NHS. Future viability and levels of funding were debated. A leaked discussion paper, apparently prepared for NHS Scotland Chief Executives (reported by BBC Scotland, 16/09/14) argued "The status quo and preservation of existing models of care, are no longer options, given pressures we face." As reported, the paper alleged a funding gap of £400m for the coming year. Such concerns are not confined to Scotland. In an open letter to the UK Prime Minister (The Independent, 05/10/14) the Chair of the British Medical Association and Leaders of Medical Royal Colleges and Charities wrote "The NHS and our Social Care Services are at breaking point and things cannot go on like this". The letters claims a funding deficit of £30bn by 2020. In the USA, which spends almost double on health care compared to the UK, 16.9% of GDP against 9.3% in 2012 (OECD, 2014) a leading physician Director has described the need to reduce spending on health care, as "The central domestic challenge of our time. It is not only harming families and choking our economy, but it also threatens our national well-being and economic security" (Cochran and Kenney, 2014).

We believe the Scottish Government has been on balance a good steward of the NHS over the last several years: realistic in its assessment of the future challenges facing the system and responsible in providing a consistent policy framework for the development of the system in the years since devolution. However, given that the referendum has now happened, now is a good time to look at the long term prospects for the system. In this paper we take the opportunity to look beyond the next few years, to the mid-2030s. Unfortunately in the years to come the pressures on the system from demographic and technological change look set to intensify. We believe that the Scottish NHS will continue to exist, but services will look different and, indeed, the contract between government and citizens will have to be different. In this paper we explore a few options and scenarios.

In Section 2, we review where the Scottish NHS is currently, noting that demographic change will present the system with demands substantially in excess of those which it is able to deal with currently. One way to respond to these pressures is to seek to make the system more efficient, that is to say its ability to service needs with existing inputs can be enhanced. This seems unlikely to be possible without significant innovation, and service redesign and consolidation – we review some of the ways in which this ***innovation challenge*** can be met in Section 3. However, even with significant innovation, the coming resource pressures mean that the public will have to face up to what their tax money can and cannot buy for them. In Section 4, we discuss some ways in which this ***openness challenge*** could be addressed.

2. Background: The Scottish NHS now

Following devolution in 1999, the Scottish NHS has benefitted from relative organisational stability and a consistent policy focus on improving population health, reducing health inequalities and enhancing the quality of healthcare (for an in-depth review of the Scottish health system and policy developments, see Steel and Cylus, 2012). In 2010, the Healthcare Quality Strategy reaffirmed commitment to a comprehensive service that is effective, safe and person-centred (Scottish Government, 2010). Progress has been made in relation to each of these ambitions. For example, healthcare associated infections

and rates of emergency bed days have fallen considerably.[1] The current reform agenda seeks to strengthen health and social care integration and aims to shift the balance of care away from episodic, acute care in hospitals towards preventive medicine and support for self-care in the community for the rising number of people with long-term and complex conditions (NHS Scotland, 2013). However, flat funding with increasing demand poses a challenge to the financial sustainability of the system. This section sets out the scale and nature of the financial challenge the Scottish NHS will be facing over the next years and reviews what has been achieved so far.

2.1. Level of spending on health and the funding 'gap'

In 2012/2013, the Scottish Government allocated £11.58 billion (about 41% of its budget) for health (Scottish Government, 2012). Between 2000 and 2009, public spending on health more than doubled in cash terms and increased by almost 40% in real (inflation-adjusted) terms (Audit Scotland, 2009). Since then the annual rate of growth has been declining and the Scottish Government's budget plans for 2012 to 2014 set out a nominal growth of between 1.2% and 1.9% per year. This entails a real decrease of 2.8% over this timeframe (Scottish Government, 2011).

In international comparison, the United Kingdom as a whole spent about 9.3% of its Gross Domestic Product (GDP) on health in 2012 (OECD, 2014). This is similar to the Nordic countries Finland, Norway and Sweden (with about 9.1%, 9.3% and 9.6% of GDP, respectively, in 2012). However, there is a gap with respect to some countries with competitive economies including Denmark, Germany and Switzerland (with about 11%, 11.3% and 11.4% of GDP, respectively, in 2012 (OECD, 2014), indicating that higher expenditure on healthcare does not necessarily inhibit economic performance. In this respect, Scotland may have some headroom to increase spending on health to meet the financial challenges ahead; provided that, crucially, the resources that are currently in the system are effectively used, and that any extra resources are invested in high-value care to improve population health and reduce health inequalities.

Table 1 Government spending on health per head in the United Kingdom, by nation 2000/01 and 2012/13 [percentage spending relative to Scotland]

	Scotland	England	Wales	Northern Ireland
2012/13	£2072	£1,912 [92%]	£1,954 [94%]	£2,109 [102%]
2000/01	£1,064	£891 [84%]	£985 [93%]	£1,099 [103%]

Source: adapted from Bevan et al (2014).

[1] Between 2007 and 2012, Clostridium difficile infections fell by 78% and Staphylococcus aureus (MRSA/MSSA) bacteraemia fell by 37%. Over the same period, there was a 12% reduction in rates of emergency bed days for people over 75 years from about 5,466 to 4,814 per 1,000 population. See Health Protection Scotland (2014) and ISD (2013).

Compared to the other countries of the United Kingdom, public spending on health per head in Scotland was second highest after Northern Ireland in 2012/13. Over the years since 2000/01, the spending differential to England, Wales and Northern Ireland has narrowed (Table 1).

In Scotland, health is the only policy sector with an increasing resource budget (in cash terms) over the current spending period to 2015. This is due to the Scottish Government's decision to pass on increased funding from the Barnett consequentials [2] in full following the Department of Health 2010 UK Comprehensive Spending Review (Scottish Government, 2011b).

However, this protection of the health budget is relative: in the face of inflationary pressures arising from demographic changes, pharmaceutical and staff costs, the Scottish Government estimates that the NHS will need to make efficiency savings of at least 3% of allocated baseline funding to break even and meet rising demand for services (Scottish Government, 2011). At the beginning of 2012/13, the 14 territorial NHS boards forecast they would need to achieve savings of £271.7 million to break even. This amounted to 3.1% of the baseline revenue budget across all boards (with substantial geographic variation ranging from 1.7% at NHS Grampian to 7.1% of allocated baseline funding at NHS Shetland; Audit Scotland, 2013). There are therefore, significant challenges to financial sustainability even in the near term.

Table 2 Budget plans for Scottish Government spending on health, 2012/13

	£m	%
NHS and Special Health Boards	8,862.30	76.51
Primary and Community Care Services	1,388.00	11.98
Capital	453.5	3.92
Improving health and better public health	226.7	1.96
Education and Training	179.6	1.55
NHS Impairments	100	0.86
eHealth	90.3	0.78
Research	69.5	0.60
Clean Hospitals/MRSA Screening Programme	28.4	0.25
Access Support (waiting times management)	27.1	0.23
Distinction Awards	24	0.21
Quality and Efficiency Support	18.9	0.16
Self-Directed Support Programme	5.5	0.05
Other	109.20	0.94
Total	**11,583.00**	**100.00**

Source: Scottish Government (2011a).

[2] For each extra pound spent on a public service in England, the devolved governments in Scotland, Wales and Northern Ireland receive increases in their block grants proportionate to the size of their population. While this funding is not earmarked for the public service to which it was allocated in England, the Scottish Government has pledged to pass on in full the health related shares.

2. 2. Distribution of expenditure on health

Of the £11.58 billion budgeted for health in 2012/13, just over 76% consists of baseline allocations to the 14 territorial NHS boards and the nine special health boards (Table 2). The rest is transferred to boards for specific programmes or spent directly by the Scottish Government.

In 2012/13, about £10.20 billion was spent on care directly provided to patients in hospital, community and family health services within the 14 health board areas and at two special boards, the State Hospital and Golden Jubilee National Hospital. Figure 1 shows how this expenditure is distributed between sectors. This illustrates that, despite the national strategy to move care to the community, the Scottish NHS is, in terms of its resource use, still dominated by the hospital sector.

The share of the budget spent on different sectors of care has remained largely constant between 2008/09 and 2012/13: from 57.8% to 57.0% on hospital care; from 15.0% to 16.4% on community care; from 23.9% to 23.3% on family health services; and from 3.4% to 3.3% spent on resource transfers to local authorities in support of community care services.

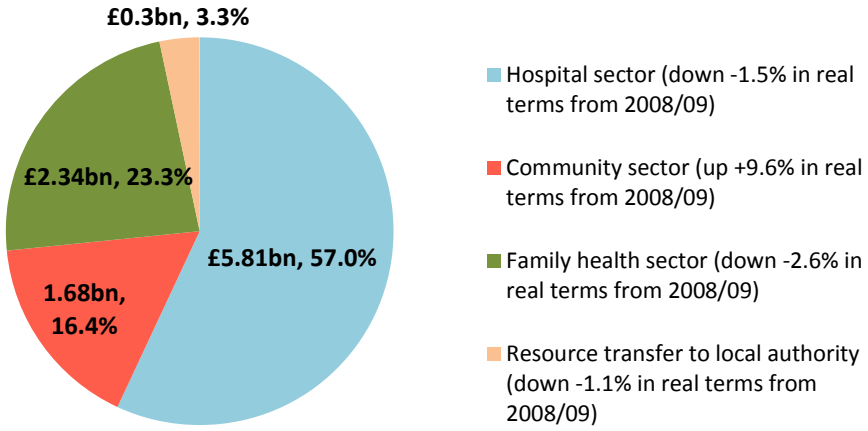
Nevertheless, in nominal terms, all sectors have seen increasing expenditure over the period from 2008/09 to 2012/13, albeit at different rates of growth (ranging from +7% in family health services and +8.1% in hospital care to +20.3% in community care). In real terms, there is evidence of a modest resource shift between community and hospital care: spending on hospital care has declined by -1.5% in real terms between 2008/09 while expenditure on community care increased during that period by +9.6% in real terms. Extra resources spent on community care largely went into three areas of expenditure:

- pharmacy (up by 35% in real terms compared to 2008/09);
- allied health professions and other paramedical staff (up by 15%); and
- administrative costs (up by 8%).

Figure 2 shows the amount and share of health spending by category in 2012/13, plus percentage changes since 2008/9. Staff costs continue to make up the largest item of spending, over two thirds of expenditure on hospital and community care. Almost 12% was spent on prescription drugs and associated pharmacy spending, an increase by 11.2% in real terms (22.1% in cash terms) compared to 2008/09. This means that pharmacy spending was the only category with real-term increases in spending over that four-year period.

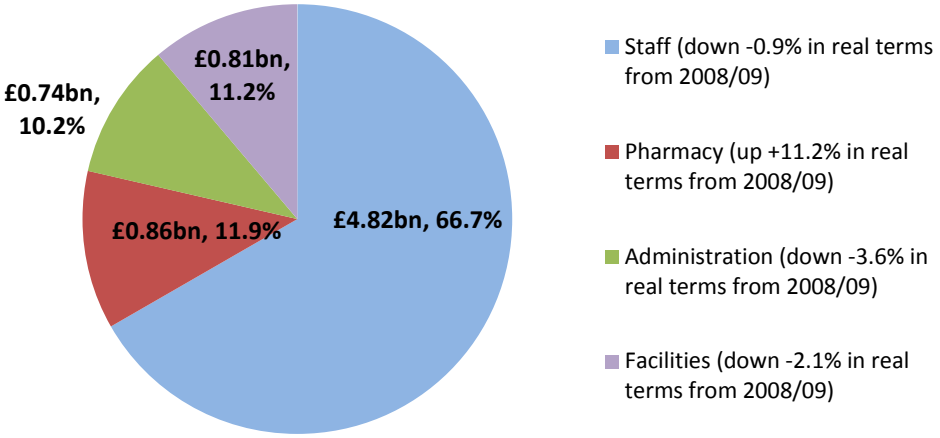
Drug costs are often regarded as an easy place to look for short term savings so it is worth drilling down in more detail. Although general practice accounts for the largest net prescribing cost (about £1.12 billion in 2012/13), spending has decreased in cash and real terms compared to 2011/12. This is linked to a drop in the cost per item of high volume proprietary costs which came off patent during 2012. These drugs could hence be substituted with cheaper generic alternatives (e.g. Atorvastatin for the lowering of blood cholesterol to prevent events associated with cardiovascular disease; ISD 2014a).

Figure 1 Distribution of health spending in Scotland and percentage changes between 2008/9 and 2012/13, by sector (s14 territorial NHS boards, Golden Jubilee Hospital and the State Hospital)



Source: ISD (2013).

Figure 2 Distribution of health spending in Scotland, plus percentage changes (2008/9 and 2012/13), by category (hospital and community care)



Source: ISD (2013).

The growth in pharmaceutical expenditure (Figure 2) is largely driven by prescribing in hospital, in particular spending on high-cost, low-volume (HCLV) drugs (Table 3). In 2012/13, NHS Boards spent over £115 million on the top ten HCLV drugs, a third of total pharmaceutical expenditure in hospital. These are expensive specialist drugs which are provided in hospital for cancer, irritable bowel conditions (anti-TNFs) and rheumatic conditions for comparatively few patients. Expenditure on these drugs tends

to increase at a faster rate than other drugs and is also less predictable, hence creating a particular cost pressure on NHS boards (Audit Scotland, 2013).

Table 3 Changes in NHS pharmaceutical expenditure in Scotland, 2010/11 – 2012/13

	Change in total spending 2010/11 to 2011/12 [a]	Change in total spending 2011/12 to 2012/13[b]
Top 10 HCLV drugs		
Cash terms	£12.2 million (+15%)	£13.5 million (+13%)
Real terms	£10.4 million (+15%)	£12 million (+12%)
All hospital drugs		
Cash terms	£13.4 million (+5%)	£28.2 million (+9%)
Real terms	£7 million (+2.4%)	£23 million (+7%)
All GP Drugs		
Cash terms	£12 million (+1%)	£60 million (-6%)
Real terms	£11 million (-1%)	£74 million (-7%)

Source: Audit Scotland 2012/13

Notes: [a] Spending on HCLV drugs and all hospital drugs excludes NHS Highland and NHS Tayside; [b] Spending on HCLV drugs and all hospital drugs excludes NHS Tayside as data are currently being processed by ISD Scotland.

2. 3. Key drivers of expenditure growth and financial sustainability

The growth of public expenditure on healthcare is influenced by several determinants that affect the demand and supply of health services (European Commission and Economic Policy Committee, 2012):

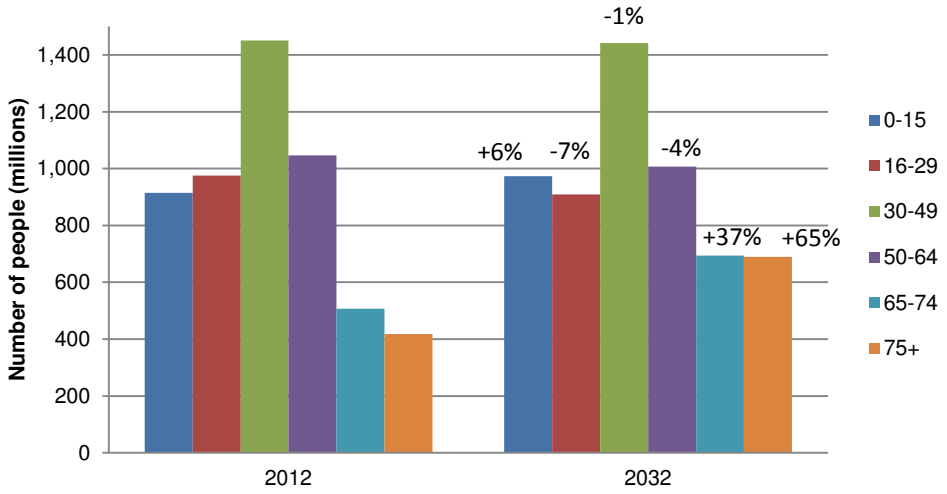
> **Demand side factors** may include demographic changes, related changes in health status, regulations and entitlements governing access to healthcare, and changing expectations about standards of care;
>
> **Supply side factors** may include costs associated with new health technologies (in particular pharmaceuticals), staff costs, and the organisation of service provision.

In this section we focus on the demand-side factors as the supply side factors are to a large extent a function of policy action, which is the focus of the next two sections.

Rising demand: ageing of the population

Between 2012 and 2032, the share of people aged 65 years and over is projected to grow substantially (Figure 3). In contrast, the population of working age (16 to 64 years) is expected to remain stable or (in the group aged 16 to 29 years) even decline.

Figure 3 Scotland's population by selected age groups , 2012 and 2032, plus percentage change



Source: authors' estimate based on General Register for Scotland (2014).

These trends pose two challenges for the financial sustainability of the health service.

First, in terms of revenue from taxation, an increasing share of older people increases the old age dependency ratio, i.e. fewer contributors in relation to the beneficiaries of services. In Scotland, the old age dependency ratio is expected to grow by about 65% between 2012 and 2037 from 27 to 41 people over 65 years for 100 people in working age (15-64 years). Consequently, fewer people will pay taxes to finance public health care.

Second, because spending rises steeply with age, population ageing can be expected to lead to rising health and social care expenditure. In 2012, people over 65 years made up about 17% of the Scottish population, but accounted for 33% of NHS operating costs (about £3.37 billion). Integrated mapping of resource use across health and social care shows that the NHS and local authorities spent about $4.61 billion for people over 65 years in 2012/13. Almost a third of this expenditure was consumed by emergency admissions to hospital (authors' estimate based on ISD, 2014b). The Scottish Government forecasts that, by 2031, almost £8 billion will be required to finance health and social care for older people (Figure 4). This assumes no changes in age/sex specific costs of health and social care (i.e. no improvement in the health of the population or in quality-adjusted efficiency of service delivery).

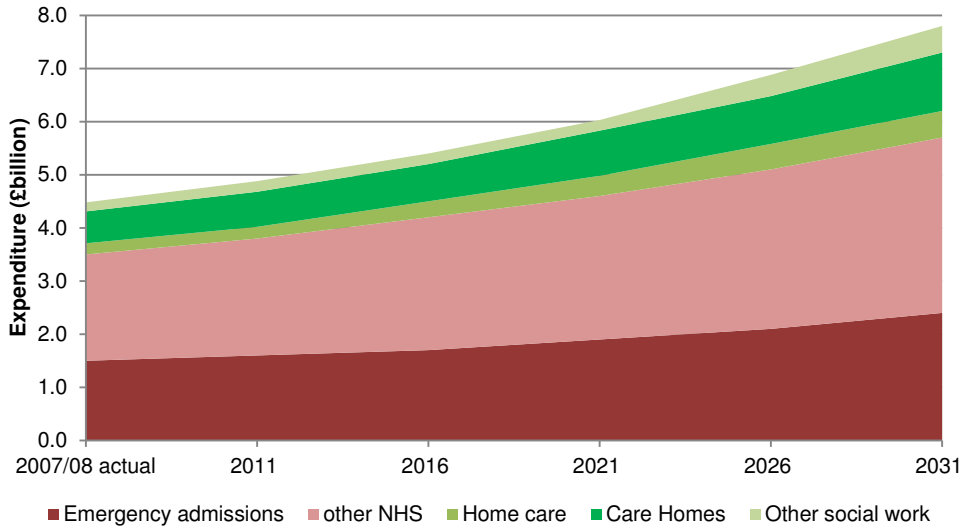
However, predicting future spending needs is fraught with methodological issues and controversies. Macroeconomic models (Lisenkova et al., 2010; Lisenkova and Mérette, 2013) show that the impact of population ageing on economic development and on labour income tax rates required to ensure a balanced government budget is highly sensitive to population projections and net migration.

In its 2012 Ageing Report, the European Commission and the Economic Policy Committee (2012) estimate a range of scenarios for future healthcare spending and sensitivity to alternative sets of

assumptions regarding future burdens of disease, income elasticity and technological change. This shows that whilst ageing *per se* does drive expenditure growth to a non-negligible extent, a key source of uncertainty is whether gains in life expectancy are spent in good or bad health. If disability is compressed towards the end of life at a faster pace than mortality (the so-called "compression of morbidity" hypothesis (Fries, 1989)), then increasing longevity entails an increasing number of health life years and this may moderate the additional cost burden from ageing (and indeed provide greater opportunity for older people work beyond statutory retirement). In contrast, the "expansion of morbidity" hypothesis (Olshansky et al., 1991) states that falling mortality goes in line with an increase in morbidity and disability. Empirical research (Global Forum for Health Research, 2008) on the validity of these hypotheses is inconclusive, and suggests potentially counter-balancing effects of rising rates of some disabling conditions (dementia, musculoskeletal diseases) and declining prevalence rates of others (cardiovascular and chronic respiratory diseases). Finally, many factors – in particular the long-term spending impact of technological change as a cost-increasing or cost-decreasing variable – are endogenous and dependent on Government policy decisions.

Though we therefore cannot know for certain what the exact future funding requirements for healthcare are, it is clear that healthcare expenditure can be expected to increase into the future.

Figure 4 Health and Social Care resource use: projected increases for people aged 65 and over, 2007/8 to 2030/31



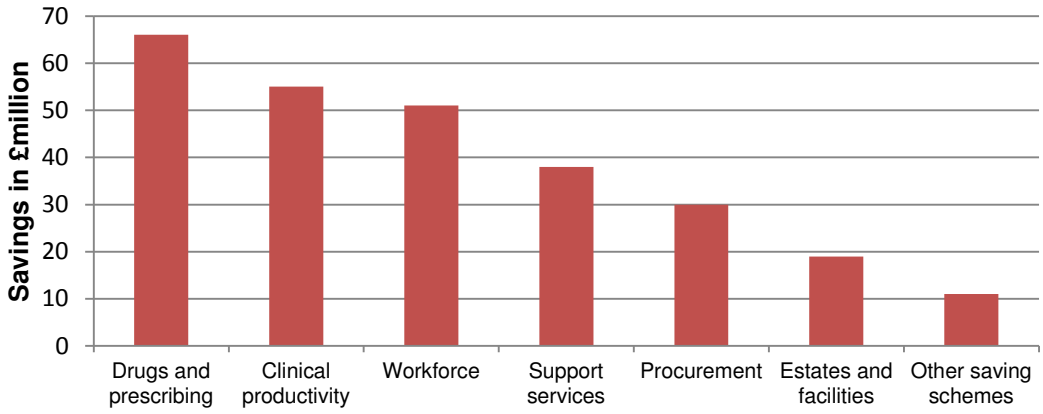
Source: Scottish Government, COSLA and NHS Scotland (2010).

2. 4. Efficiency savings: what has been achieved and how?

For 2012/13, the NHS in Scotland as a whole achieved savings of 3% of baseline funding, as required by the Scottish Government, and 99% (£269.8 million) of its own forecast savings target of £271.7 million (Audit Scotland, 2013). Since 2009, local actions to reduce costs while improving the quality of healthcare have been supported by a national Efficiency and Productivity Framework (Scottish Government, 2011b). In 2012/13, savings were achieved mainly through changes in prescribing

behaviour (for example by means of generic prescribing through the operation of the Scottish Tariff) and clinical productivity (which includes changes in acute flow and capacity management; Figure 5).

Figure 5 Efficiency savings reported by NHS boards, by workstream, 2012/13



Source: Scottish Government (2014a).

On average, 78% of savings reported by boards were recurring in 2012/13, meaning that savings achieved recur year on year (e.g. lower staff costs due to better streamlined processes). However, some boards continue to rely on a large proportion (up to 56%) of non-recurring savings (e.g. those derived from the sale of fixed assets, such as buildings); these one-off savings risk being unsustainable in the future (Audit Scotland, 2013). Moreover, 66% of savings required for 2014/15 are still unidentified. This amount increases to 73% for 2015/16. Thus, for just two years ahead, boards have not determined how or where they will release more than two-thirds of the savings needed to break even, suggesting a lack of planning how to achieve sustainable financing over the long term (Audit Scotland, 2013).

In 2013, the Scottish Government's Route Map to the 2020 vision (NHS Scotland, 2013) set out key deliverables for 2013/14 to enhance the financial sustainability of the system. These include a new innovation fund to provide pump-priming for innovations that enable Scottish small and medium sized enterprises (SMEs) to collaborate with NHS Scotland to test approaches that improve the quality of care and foster economic growth, as well as efforts to scale up shared services (including the reduction of drug costs through a single, coordinated programme at national level). However, as should be evident from the previous subsection, the system faces ever more pressing challenges to its long term sustainability over the next decade or two. It seems likely that once the one-off gains from picking the 'low hanging fruit' have been harvested, deeper policy and operational innovations will be needed to transform the health service for the years to come.

3. The innovation challenge

As health care systems in advanced economies across the world experience the same challenges of growing, ageing populations, rising levels of chronic conditions and ever increasing costs, there is a growing recognition that short-term cost cutting measures are no longer sufficient response. The challenge is now seen as how to change the way health care is delivered (Taunt et al., 2014).

Creating a system of health and social care which is patient centred, safe, accessible and affordable, requires the simultaneous pursuit of better quality of care, at lower costs. Several barriers exist to achieving this goal. The lack of a detailed model for health care reform, which balances short term cost containment with longer-term goals, is one such barrier while the absence of a candid dialogue involving patients, professionals and communities is another. There is a need to gain acceptance from stakeholders that it is no longer sufficient to avoid future costs and that reduction of current costs is required, accompanied by a redirection of costs – and care – away from hospitals. As noted, in Scotland, the hospital share all of NHS expenditure currently stands at 57%, largely unchanged over the last five years (ISD, 2014).

On their own, individual health care organisations have been historically unlikely to achieve radical service transformation, irrespective of the scale of financial challenge (Thirlby, 2011). Scottish Health Chief Executives acknowledged in their leaked paper, that: "Boards lack the mandate and ability to implement the scale of reform required" (reported by BBC Scotland, 16/09/14). To achieve a future state of high quality, affordable health care, service innovation is the key to future sustainability (Department of Health, 2011).

In Scotland, many favourable conditions are already in place to help make a start in this necessary transition. High quality medicine in centres of excellence, and primary care, a large stable workforce, 135,980 in 2014 up by nearly a third in 15 years, (Scottish Government, 2014c), comprehensive long-term data sets and a compact Public Sector, largely unaffected by continuing reforms, are in place. In relative terms, health services are well resourced, with more GPs, hospital doctors and nurses per 1000 population than the rest of the UK (Bevan et al., 2014). And, following the referendum process, the country has been described as having one of the most politically engaged populations in Europe (Alex Salmond MP, First Minister's statement in the Scottish Parliament 23/09/14). These are all assets that Scotland can put to use, to create a sustainable health and social care service for its citizens.

These underlying circumstances support the task of translating "the best work anywhere into the standard everywhere" (Cochran and Kenney, 2014: 23), in the cause of achieving future sustainability through innovation. An example of such 'best work' is the introduction of integrated care, defined as "planning and providing services to impose the patient perspective as the organising principle of service delivery" (Shaw et al., 2011: 7).

As an example of an opportunity for learning, is the Kaiser Permanente health care system[3]. Its systematic adoption of better-integrated care supports a range of acute hospital admissions that is around one third lower than that of the UK. Similarly, its length of hospital stay per 1000 of population, is 3.9 days, against 5.7 in Scotland. Inpatient admissions in the Kaiser System are 69 per 1000 population, against 143 in Scotland. Acute bed days used per 1000 population are 270 in Kaiser, against 812 in Scotland (Bevan et al., 2014). In the UK, the health care system in Torbay is achieving comparable benefits (Thistlethwaite, 2011).

[3] Kaiser Permanente is a not for profit, integrated managed care consortium, based in Oakland, California. Founded in 1945, by industrialist Henry J Kaiser, and physician Sidney Garfield, it has an income of US$53bn, with 180,000 employees, including 15,000 physicians

Integrated care systems feature “community navigators” to co-ordinate health and social care systems and in Kaiser’s system, “community paramedics” who can intervene and treat patients in crisis, where hospital admissions may otherwise be required. In Yorkshire, Airedale Hospitals have adapted the Kaiser model of using community nurses linked directly to doctors and hospital by skype and iPad. This approach has reportedly yielded a 60% reduction in hospital admissions (Financial Times 5/10/2014). Across the NHS, face to face contact accounts for 95% of all health care intervention and a reduction of 1% of this activity is estimated to save £200m (Department of Health, 2011). In the USA, the culture of “presenteeism” in hospitals is tackled through video conferencing with doctors and groups of patients, with health care provided where the patients live, work and play.

Telehealth (the remote exchange of data between individuals and health care professionals as an assistance to diagnosis and treatment) and telecare (the use of remote monitoring to manage the risks of independent living) have benefited from £20m investment in Scotland over the past five years, affecting 44,000 patients. Benefits attributed to this investment focus on the avoidance of 8,400 emergency admissions over the same period, according to the National Telehealth and Telecare Delivery Plan (NHS Scotland, COSLA and The Scottish Government, 2012). The Delivery Plan does not make a direct connection between telehealth and telecare and cost reduction, while acknowledging that further work is required “to establish a baseline and develop consistent outcome measures and indicators, to track the impact of telehealth and telecare, on working practices, productivity and resource use”.

Statistically significant benefits in respect of reductions in admission levels and mortality have been reported (Steventon et al., 2012), but none relating to cost reduction. No significant reduction in demands on GP time was found. Innovation in telecare and telehealth has the potential to improve unnecessary hospital admissions but “robust information on costs and outcomes is lacking” (Clark and Goodwin, 2013: 3). In the Scottish context, telehealth and telecare initiatives are not yet part of a co-ordinated and systematic programme of integrated care and therefore are more likely in current form, to generate benefits in remote accessibility, rather than the more radical effects of disruptive technology now being seen elsewhere in the UK, and in the USA.

In Scotland, the Public Bodies (Joint Working) (Scotland) Act 2014 allows for the establishment of Integration Joint Boards, with the organisational potential to support widespread adoption of integrated care innovations. Alongside integrated care, the extensive mining of patient related data sets offers the opportunity to move care in Scotland from the industrial age to the information age. Data sharing with the patients at the centre is central to the success of initiatives in Torbay, resting on the principle “nothing about me, without me.”

In many systems, data mining is already used by doctors to determine the best form of treatment for patients. It is also central to risk stratification of patients. In the USA, 5% of individuals incur half of all health care expenditure (Cochran and Kenney, 2014: 21) In Airedale, 3% of patients have been identified as consuming 39% of resources (Financial Times 5/10/2014). Equivalent figures for Scotland do not appear to be readily available. Yet having such data is critical to identifying the patients who

cannot be discharged due to failings in the social care system: effectively medicalising (at great cost) social problems with roots that are outside the healthcare system. At the aggregate level is the cost of this can be demonstrated by the most recent delayed discharge figures for Scotland, which show that against a target of no patient waiting longer than two weeks for discharge (a target not demanding by international standards and due to be introduced in 2015), 518 patients were awaiting discharge, amounting to around 150,000 lost bed days. The need for approaches such as the Kaiser approach is apparent for older patients with complex needs, where increased longevity is accompanied by increased incidence of multiple conditions. In the USA, it is estimated that half of all people over the age of 75 have 3 or more complex conditions (Goodwin et al., 2014).

International models of Primary Care support the importance of the role of the General Practitioner or primary care physician, at the heart of an integrated, team based approach. The current status of General Practitioners as Independent Physicians, their existing workloads and remuneration arrangements, have the potential to inhibit their membership of integrated Teams. Correspondingly, "where care givers are working within common governance and incentives rules, facilitated through closer organizational partnership arrangements, then the more likely it seems that integrated care on the ground can be supported" (Goodwin et al., 2014: 20). A useful resource in this discussion is the recent report from King's Fund and the Nuffield Trust, which reviews a number of possible models of integrated primary care drawing on international experience (King's Fund and the Nuffield Trust, 2013).

4. The openness challenge

If it is not possible to find efficiency savings along the lines outlined in Section 3 to meet the challenges outlined in Section 2, additional revenue will have to be obtained from elsewhere. However, health is the second largest budget category in the public sector accounts after welfare, and although spending on benefits is arguably less politically popular than health, large scale raids on the benefit budget (to say nothing of the pension budget) would clearly raise issues of their own, outside the scope of this note. Increasing general revenues would be another route. Presumably raising significant additional financing would be well within the scope of powers of a future Scottish government with enhanced tax raising powers but public willingness to accept tax rises has yet to be tested. A conceivable policy option (quite common in other European countries) would be to institute a hypothecated tax to pay for health services: this would create greater public visibility on the costs of the healthcare system specifically and limit the scope for political discretion (or "interference") in the allocation of funds.

If money to cover the additional expenditure is not forthcoming from general tax revenues, there are as a matter of logic, a number of possible options. These can be conceptualised through the famous cube of universal coverage promulgated by the WHO (2010). Countries providing universal coverage must make decisions about:

1. Who is covered?
2. What fraction of expenditure is covered?
3. What is covered?

Each of these dimensions of coverage drives cost and therefore countries wishing to reduce public expenditure must cut back on one of these dimensions.

In terms of 1., there is the option of denying care to some people altogether. As an example of this, Kentekenelis et al. (2014) report that 800,000 people in Greece are now unemployed and without access to either unemployment benefits or health coverage, as a result of the government's austerity programme. For them, health provision is only via the voluntary sector. Of all possible ways of dealing with a budget shortfall, this seems the worst – a breach of the very principles of universal coverage itself, and a dereliction of society's duty to people at a time in their life when they are most in need.

In terms of 2., a second option is cost-shifting to patients through imposition of or increases to user fees and co-payments. Typically there is also some form of means testing to protect those who are unable to pay. The recent history of Ireland an example of this approach close to home. Altogether Thomas et al. (2014) estimate that on average every person in Ireland is paying an extra €100 in user fees compared to before the crisis, although of course this average masks the fact that older and sicker people will pay more and younger and healthier people will pay less. Although user fees are often advocated on the grounds that they reduce unnecessary care, the general thrust of the evidence is that user fees reduce both necessary and unnecessary care in a fairly indiscriminate fashion (Swartz, 2010). What is certain is that compared to obtaining funds from general taxation, user fees disproportionately hit people who are unwell. User fees may be a last resort means of funding, if there are political barriers to raising the funds through taxation, but should not be a seen as a sustainable solution.

A third alternative is to restrict what is covered in the healthcare system (this is dimension 3. above), typically by "implicit" rationing through imposing access restrictions such as waiting lists (Morton and Bevan, 2012). Economically waiting lists are problematic as a means of rationing as they impose deadweight costs in the system. Implicit rationing is also more acceptable in societies where it is accepted that "doctor knows best" but for better or for worse, modernity is associated with a decline in such deferential attitudes. A related response to restricting coverage is to degrade the quality of the service offering. Yet even if it were desirable to sanction clinicians cutting corners to reduce costs, this runs counter to the core principle of focussing on quality and patient safety which have been central to Scottish health policy discourse since devolution, and would risk undercutting the gains which have been made from the government's determined pursuit of this agenda.

In view of the problems associated with implicit rationing, many countries in response to the austerity introduced by the financial crisis have introduced or strengthened explicit rationing of services through a defined benefit plan or "positive list" of treatments which patients are entitled to expect in the public system. This is also a common feature in the systems of many middle-income countries (for example those in Latin America, see Giedion et al. (2014)) who have sought to introduce universal coverage but who are simultaneously acutely mindful of the budget constraints that such systems must operate under. An advantage of defined benefits plans is that they can be used throughout the planning process, both at the stage of budgeting and assessing public sector resource needs, as well as in monitoring system delivery. Indeed, if there is agreement about what should be provided by the healthcare system, and for what indications, it should in principle be possible to monitor the volumes of services provided with what

is expected given population morbidity, and thus assess both under- and overuse of services – see e.g. Schang et al. (2014) for an example of some modelling to support this sort of exercise in a paediatric ENT context.

Defined benefit plans have the attractive feature that they make it clear to the taxpaying public what the system can and cannot afford and thus make it possible for citizens to make an informed decision about the right level of funding for the health service. Scotland is in the fortunate position of having a suite of institutions which have a guideline development and technology assessment role: the Scottish Intercollegiate Guidelines Network (SIGN), the Scottish Medicines Consortium and the Scottish Health Technologies Group. However, defining a benefits package which is robust is not merely a technical exercise: it requires strong processes which incorporate evidence and synthesise them with social values, and which can be shown to procedurally fair. Although engaging members of the public and other stakeholders in deliberating about the key economic and ethical challenges is not easy, examples of good practice do exist (Daniels and Sabin, 2007; Gold et al., 2007; Airoldi et al., 2014). Moreover, the National Institute of Clinical Excellence (NICE) in England has commissioned studies of population values as they relate to healthcare prioritisation (Edlin et al., 2012), and willingness to pay assessments for a quality adjusted life year (Donaldson et al., 2011, drawing on the expertise of Scottish researchers). If Scotland aspires to have a healthcare system which reflects her values, and to make a balanced and informed judgement about a socially acceptable /agreed trade-off between additional expenditure and coverage and system reform, there is a clear need to establish more clearly what these distinctively Scottish values actually are, and involve wider stakeholders in decision making about the health system, so that the coming difficult decisions are taken in as robust, defensible and democratice manner as possible.

5. Conclusion

Although we have rehearsed some of the issues and options in this paper, we do not have the knowledge or the indeed the mandate to make detailed and specific recommendations about what should be done. However, we consider that in charting a way forward, there are five important streams of activity which should be part of a credible response.

Issue One: There should be a detailed and authoritative **high level investigation of the scale of the funding gap** between projected expenditure and healthcare financing needs which Scotland faces, chaired by an authoritative and credible figure. (A possible model is the Wanless Review (Wanless, 2002) in England from some years ago). Of course, as we highlight above, the methodology for assessing future healthcare financing is not a settled science: it is not the case that there a single number. A properly rigorous study would produce a range of estimates which reflect genuine uncertainty about the way in which population morbidity and cost drivers will evolve, and so would command broad assent and credibility. At the same time, such an assessment would provide Health Boards with the framework that they need to begin operational planning and would set the stage for an informed and realistic public discussion.

Issue Two: . There should be a concerted effort to **strengthen leadership capability** in the health service. Clinical leadership in particular has a vital role. In response to the calls from the BMA and Royal Colleges for an open debate about the future of the NHS in Scotland, doctors need to assume the role of "accountable leaders". As the Chief Executive of the Institute of Health Improvement describes it "We need doctors to be the leaders for whom 'hanging onto the status quo', is a betrayal of their patients" (Maureen Bisognano, cited in Cochran and Kenney, 2014: 30). Indeed, in general, the delivery of better integrated care, based on innovative technology, new roles and personalisation of care across health and social care, will require new leaders and new leadership skills (Taunt et al., 2014).

Although integral, clinicians cannot lead in isolation. The leadership cadre in the public sector in Scotland is small and the number of leaders with the necessary experience to transcend organisational boundaries, even smaller. Universities in Scotland, with their business schools and Innovation centres offer the potential to develop programmes of joint learning, which foster a culture of innovation and the confidence to navigate new models of governance. "Mitigation Planning" for the uncomfortable consequences of shifting resources away from the acute sector and the development of robust information sharing arrangements with the patient at the centre "nothing about me, without me" will also require focussed leadership.

Issue Three:. There needs to be a **suite of tools for Health Boards to shift the balance of investment** in local health economies, making difficult but necessary decisions such as closing inefficient facilities. Well-designed systems of integrated care, accompanied by innovative use of disruptive technology have the potential to release substantial monies from the acute sector (Bevan et al., 2014). Yet in Scotland and in many other countries there is no validated approach for successful disinvestment (HealthPACT, 2013). Working with universities and leading economists, Scotland could lead the way in developing an open and rigorous process for disinvestment and reinvestment, with accompanying metrics for assessing outcomes. To accompany innovation, "reverse innovation" is required, offering a mechanism for stripping out activities, which no longer add value, or can be replaced by something better (Department of Health, 2011). To realise benefits from new ways of working, existing spending must be treated as variable, when all too often it is seen as fixed (Kaplan et al., 2013).

Strategic planning requires reality-proofed technical and process tools to support difficult decisions. For example, the Journey Making approach (Ackermann and Eden, 2011) has a track record in supporting healthcare organisations to think about the formulation of strategy; the Program Budgeting and Marginal Analysis (Mitton and Donaldson, 2001) or the STAR approach sponsored by the Health Foundation (Airoldi et al., 2014) have been used to think about strategic prioritisation and service redesign. However, developing strategic planning competency is not "plug and play": learning about such approaches has to be done in a context where there is the provision of opportunities for senior staff to learn and develop the necessary skills alongside with their peers. There needs to be a broader public national dialogue about what is affordable, what level of increased spending the public are prepared to bear, and how services are to be "rationed" if the spending to meet the financial demands of providing existing levels of service to an older and hence sicker population.

Issue Four:. International experience (Clemens et al., 2014) the importance of an **open and honest debate, accompanied by broad and continuing stakeholder consultation and engagement**, leading to a shared vision of the future state. This accords with the view of the BMA Scottish Chairman (Dr Peter Bennie, cited in the Scotsman 19/09/14). Politicians have to lead this debate but ultimately the whole of Scottish society will have to participate. Here there are opportunities to learn from other areas of policy: for example, the UK government made a substantial commitment to engaging the public in a national debate about what should be done about the UK's radioactive waste in the middle of the last decade, and much could be learned from that exercise (Morton et al., 2009; Dietz and Morton, 2011). Indeed, the Irish government appears to be contemplating a move towards an explicit "health basket" or health benefits plan, arrived at in a consultative fashion through the development of a guiding "values framework" (Irish Government Department of Health, 2014).

Issue Five:. Implementing a shared vision, with clinicians leading the way, is more likely to be successful, with the availability of a **Transformation Fund**, supporting the initiation of new services and the transition away from old ones (Taunt et al., 2014). As Scotland begins the process of being able to determine its own taxation levels, there is an opportunity to link revenue generated, to the evident public concern for the future sustainability of the NHS. Delivery of new models of care, in accordance with a shared vision and facilitated by a Transformation Fund, could be seen as an early and legitimising task for the new Integration Joint Boards. These are to be responsible for adult social care, adult community services and a proportion of adult acute services. Their role is to ensure "That health and social care in Scotland, is joined up and seamless" (Scottish Government, 2014 (website)).

This initiative has already attracted conflicting views. The Confederation of Scottish Local Authorities (COSLA) response to the consultation on the Public Bodies (Joint Working) (Scotland) Act highlights the need for the effective disinvestment and reinvestment mechanisms: *"Integration authorities must have sufficient control of the means to shift the balance of care from acute to community setting and take demand out of the system*" (COSLA response 2/6/2014 – authors' italics) By contrast the BMA response suggests that: "It will be difficult to support the shift of resource between health care and social care without an adverse impact on care" (BMA response 23/9/2014). Even Audit Scotland is unclear on the effects on hospitals (Audit Scotland response July 2014).

In conclusion, the delivery of health and social care which is safe, timely, effective, efficient, patient focussed and also affordable is a huge task. Our forebears have bequeathed us a healthcare system based on the principles of universal coverage which has been both resilient over decades and a source of global inspiration. In Scotland, today, politicians, clinicians and health care leaders have the opportunity, in the words of Jonas Salk, discoverer of the first polio vaccine, to demonstrate that: "Our greatest responsibility is to be good ancestors": that we have the courage and imagination to reinvent the universal coverage so that it is sustainable for future generations, and to do so in a way which remains faithful to the distinctive values of the Scottish people.

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It all depends on your perspective: economic perceptions and the demography of voting in the Scottish Independence Referendum

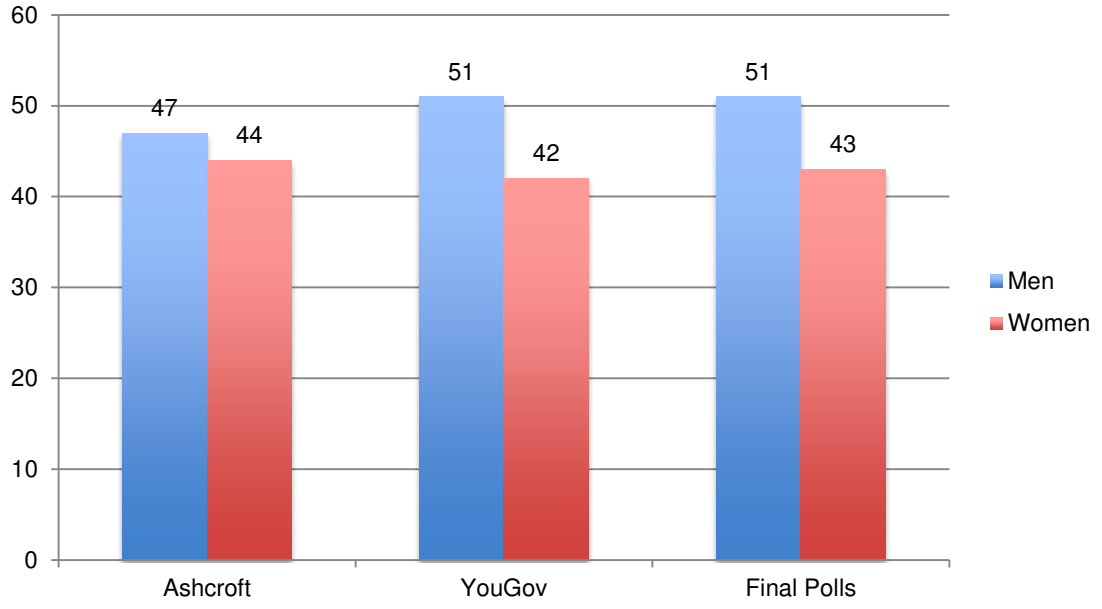
John Curtice, University of Strathclyde

A lot closer than had seemed likely a few months previously; not as close in the end as the final polls had suggested. That probably summarises many people's reaction when they learnt that 45% had voted Yes, and 55% No in Scotland's independence referendum.

But Scotland did not vote as one. Voters' propensities to vote Yes or No varied according to their social and economic circumstances. Not least of the reasons is that those circumstances affected their perceptions of the economic consequences of independence.

Two polls of how people actually voted have been published so far. One was conducted on polling day by YouGov (via the internet) and consisted of interviews with 1,756 people who had also participated in YouGov's final pre-polling day poll, undertaken during the three days immediately before 18 September 2014. To their reports of how they had just voted were added the reported voting behaviour of 783 people who had previously told YouGov that they had already voted by post. The results of this exercise were first published shortly after the polls closed at 10pm on polling day and it forecast that 46% had voted Yes, and 54% No, only one point apart from the actual result.

Figure 1: The Scottish Independence Referendum - Gender Gap: % of men and women voting Yes

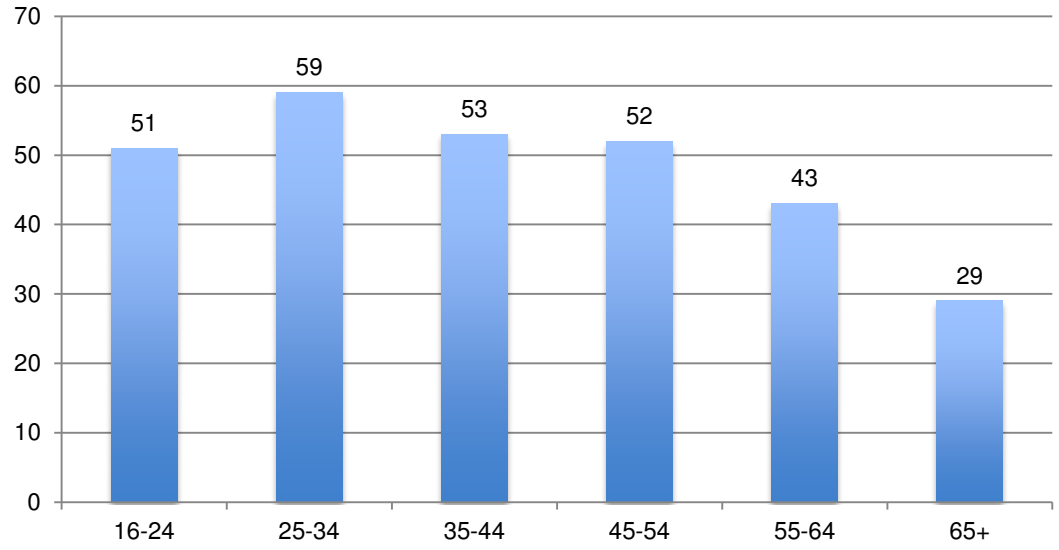


The second poll, commissioned by Lord Ashcroft, was conducted on polling day and the day after. In this case some respondents (1,216) were interviewed by 'phone, others online (831), giving a grand total of

2,047 interviewees. In this poll the data were weighted, so that the overall proportion who said that they voted Yes and No reflects the actual result.

Between them, the two polls uncover three clear patterns, patterns that in each case had long been anticipated by pre-polling day opinion polls. First, as Figure 1 shows, women were less likely than men to vote Yes. According to YouGov, 51% of men voted Yes but only 42% of women. This figure is quite close to the pattern in the final polls; on average each company's final poll pointed to a 51% vote amongst men, 43% amongst women. Ashcroft's poll suggests that the gender gap was rather narrower, with 47% of men voting Yes and 44% of women. But taking into account the vagaries of sampling error it is at least possible that a majority of men voted Yes and that Scotland's decision to stay in the Union rested on the support given to the No camp by women.

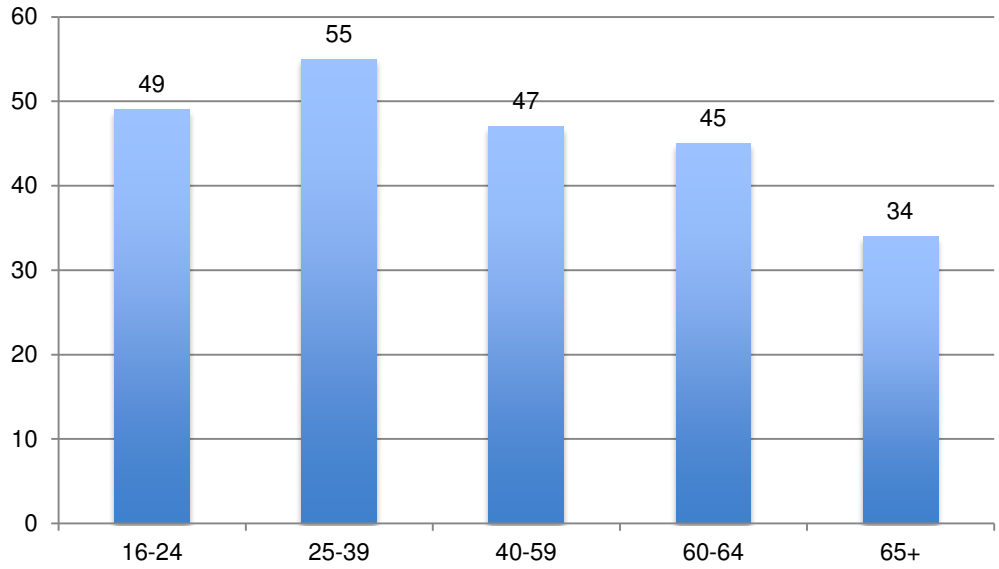
Figure 2A: The Scottish Independence Referendum - Age Gap (1): % voting Yes, by age group



** Source: Ashcroft Polls*

Second, older people were less keen on the idea of independence than younger people. According to Ashcroft (see Figure 2A), the age gap was particularly stark, with just 29% of those aged 65 plus saying that they voted Yes, whereas a little over half of those aged under 55 backed independence. YouGov suggest that the age gap was not quite that stark, but even so still found that only around a third of those aged 65 and over voted Yes, whereas support for independence amongst the under 60s as a whole might have been only just short of 50%. This age gap has led to some speculation that perhaps there might be a majority for independence in, say, twenty years' time when the current generation of older people is no longer with us. However, we should note that both polls suggest that support for independence was highest amongst those in their late twenties and thirties rather than amongst the very youngest group of voters aged 16-24. So perhaps we should not necessarily assume that future generations of voters will necessarily evince the same degree of enthusiasm for independence that is currently in evidence amongst those aged between 25 and 55.

Figure 2B: The Scottish Independence Referendum - Age Gap 2: % voting Yes, by age group*



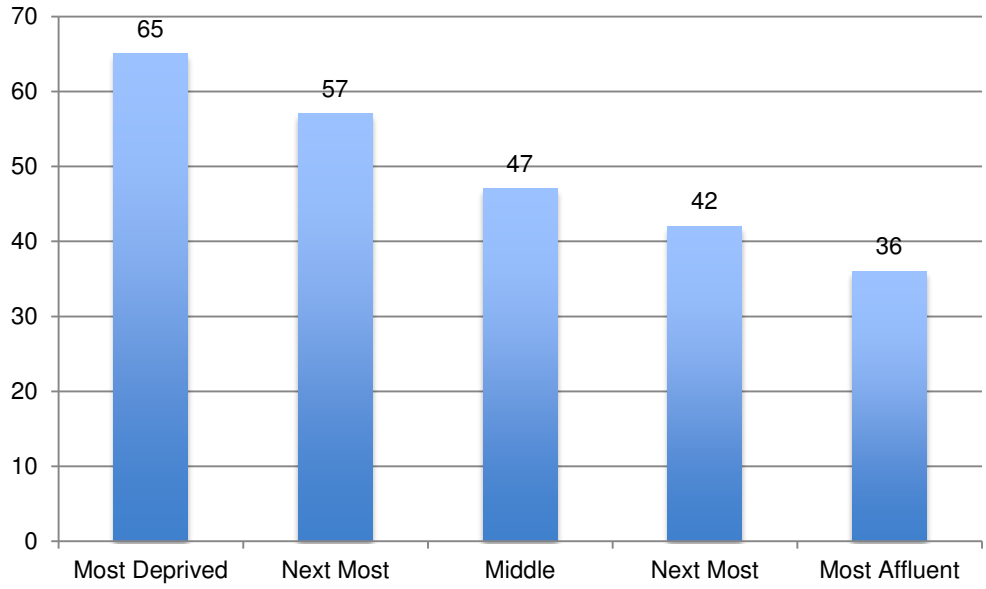
** Source: YouGov*

Third, those living in less affluent circumstances were more likely than those who are living more comfortably to vote Yes. According to YouGov, 50% of those who market researchers classify as 'C2DEs' that is those who are or who were engaged in manual, 'working-class' occupations, or who are now primarily dependent on the state for their income, voted Yes. In contrast support amongst those categorised as 'ABC1s', primarily those in white collar, 'middle class' jobs, stood at only 41%. This class gap is, though, bigger than that found on average in the final polls, where support for Yes again stood at 50% amongst C2DEs, but at 44% amongst ABC1s. Ashcroft also has a rather lower estimate of the gap, with only 47% of C2DEs supporting Yes and 44% of ABC1s.

However, this *binary* division of Scots into two large classes undoubtedly underestimates the extent to which economic circumstance influenced the way that people voted. A much sharper pattern was uncovered by Ipsos MORI when in two polls they conducted just before polling day they classified their respondents according to the level of deprivation in their neighbourhood. As Figure 3 shows, a clear majority of those living in the most deprived parts of Scotland (as measured by the Scottish Index of Multiple Deprivation) voted in favour of independence, whereas only around only two-fifths of those living in the most affluent did so.

These patterns were also evident in the geography of the vote as revealed by the results in each of Scotland's 32 local council areas. In the one-third or so of council areas with the highest levels of unemployment, on average 51% voted Yes. In contrast, the Yes vote averaged just 39% in the places with the lowest levels of unemployment. Equally, in the one-third of council areas with the highest proportion of people living in one of the 15% most deprived neighbourhoods in the country, on average 51% voted Yes, compared with 40% amongst those areas with the fewest living a multiply deprived neighbourhood.

Figure 3: The Scottish Independence Referendum Deprivation Gap: % voting Yes, by degree of neighbourhood deprivation (SIMD*)



** SIMD (Scottish Index of Multiple Deprivation)*
Source: Calculated from Ipsos MORI polls 15-16.9 & 16-17.9

The Yes vote was also higher in places with a relatively young population. In those council areas with relatively few people aged 65 and over, on average 47% voted Yes, whereas only 39% did so in those areas with the highest proportions of such voters.

It is thanks to these patterns that, despite its historical association with the Labour party, Clydeside together with Dundee provided the four areas where a majority did vote in favour of independence. Glasgow, North Lanarkshire, West Dunbartonshire and Dundee are amongst the six council areas with the highest unemployment count and the highest proportions of people living in a deprived neighbourhood. At the same time, all four areas contain relatively low proportions of people aged 65 or over.

But why did these demographic differences and geographical patterns arise? One hypothesis that suggests itself is that those who were less well-off felt that they had relatively little to lose financially and indeed might have been inclined to hope that independence would bring about an improvement in their lot. Older people, meanwhile, might have been more likely to feel that independence posed an economic risk that they as pensioners could not afford to take.

After all, people's evaluations of the economic consequences are known to have played a *central* role in whether they opted to vote Yes or No (Curtice, 2014). According to the 2014 Scottish Social Attitudes survey, conducted between May and August 2014, no less than 92% of those who thought that the economy would be better under independence said that they intended to vote Yes rather than No. In contrast, just 6% of those who reckoned the economy would be worse under independence stated that they would vote in favour of leaving the UK. ICM uncovered much the same pattern when in the polls it

conducted each month they asked whether independence would be good or bad for Scotland's economy.

Table 1: Perceptions of the economic consequences of Independence, by gender, age group and social class (by %)

…by	Better off	Worse off	No difference/ Don't know
Gender			
Men	41	43	17
Women	30	51	19
Age group			
16-24	37	44	19
25-39	40	40	21
40-59	37	45	17
60-64	35	48	17
65+	26	59	15
Social grade			
ABC1	32	51	16
C2DE	38	43	19

Source: YouGov 15 -17 September 2014

These perceptions did vary significantly from one demographic group to another. As Table 1 shows, older voters were markedly less likely than younger voters to think that Scotland would 'economically better off' if it became an independent country. The same is true, if less starkly, of ABC1 as opposed to C2DE voters. Here again, however, a rather sharper picture emerges if we look at how perceptions varied according to the character of the area in which someone lived. According to the Scottish Social Attitudes survey, amongst those living in one of the one-fifth most deprived neighbourhoods in Scotland, 30% thought Scotland's economy would be better under independence, almost as many as the 34% who thought it would be worse. In contrast amongst those living in one of one-fifth most affluent parts of the country, only 24% thought the economy would be better while as many as 54% felt it would be worse.

So it looks as though people's views of the economic consequences of independence depended on the perspective from which they were looking. For those living in less well-off circumstances and for younger people, the economic prospects under independence looked brighter than they did for those who were better off and were older. For all the complex debate about currency union, the prospects for North Sea Oil, and the future of labour market productivity, the debate about the economics of independence was in truth in part at least an argument about whose interests might or might not be best served by changing the country's constitutional status - and thus was an argument that reflected some of the *social* divisions in Scottish society.

That, of course, still leaves us with one other pattern to consider – the gender gap. For as our Table shows, it appears that the gender gap also reflected different perceptions of the economics of independence. However, it is less obvious why women's current economic circumstances should lead them to come a different perspective (or at least a less favourable one) on independence than did men. Perhaps here a different psychology came into play – certainly women were more inclined to say that the consequences of independence were all rather uncertain (Ormston, 2014). Or maybe women just proved to be a lot more hard-headed than men?

Despite the best efforts of professional economists to lay out what the implications of a Yes or No vote might be, in practice voters were faced in the referendum with a choice between two uncertain futures. Nobody could be entirely sure what the economic consequences of independence or remaining in the Union might be. Against that backdrop we should not be surprised that people's evaluations of those consequences were influenced by their current circumstances and psychology, and that as a result who voted which way reflected some of the social divisions in Scottish society. After all, those were a present reality, not part of an unknown future.

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The fate of the UK's single market - the issue that the referendum campaigns failed to address and how it shaped the outcome

Alf Young

The referendum produced a blizzard of claim and counter-claim about the consequences for the Scottish economy of a Yes or a No vote. However one defining economic issue, it seems to me, was overlooked throughout on all sides. Hardly anyone chose to explore, in any depth, the fate of the United Kingdom's single market in goods and services, labour and capital, if the political union that brought it into being came to an end, by popular assent.

Yes Scotland was at pains throughout to insist that, were there to be an in-out referendum in 2017 on UK membership of the European Union, the only way to preserve Scotland's place in Europe's single market would be to embrace independence. That implies being part of a wider, open market is vital to national economic success. So why did Yes have so little to say about the fate, were its campaign to succeed, of the much older common market Scotland currently enjoys, by being a member of the UK?

The No side had plenty to say about a related economic feature of the existing union. Its shared currency. No hammered away at why an independent Scotland could not expect to go on using the pound, as part of a formal monetary union, if it chose to leave. One of the main campaigning thrusts of Better Together was to accuse the other side of having no Plan B. What currency an independent Scotland might then use.

But where was Better Together's analysis of what a constitutional parting-of-the-ways might mean for one of the most potent symbols of that togetherness - the single market we all call, in its political guise, the UK? That common market is an order of magnitude older than its European counterpart. It has been three centuries in the making and is markedly more seamless in internal trading terms, labour mobility, investment flows and regulatory oversight than the European Economic Community, first created by its six core members under the Treaty of Rome in 1957, first embraced by the UK in 1973.

It has been an integral part of our shared heritage across these islands since the political union of 1707. The UK single market has helped make us all who we are. It has shaped our industries and many of our careers; informed and entertained us; built and furnished our homes; shaped our urban landscape as it clothed and fed us. It has enabled us to save and borrow and put something aside for our old age. In short, for good or ill, that UK single market has touched almost every aspect of our lives.

Strange then that its future received such scant attention in such a protracted campaign. A passing reference to the benefits of "a borderless UK" featured in the first of the nineteen papers published by the UK government in defence of the existing union. For its part the Scottish government promised the "social union" with the rest of the UK would survive us becoming independent again. We would all stay friends.

That left a nagging question. The social union Yes wanted to perpetuate has been mediated, for so long, in so many ways, by the UK's diverse and sophisticated single market. So how could that social union be preserved without retaining the UK single market too? A social union also implies freedom of association, across national borders. It was asserted that an independent Scotland, seeking EU membership in its own right, would not be required to join the Schengen Area.

Schengen, which Norway and Iceland participate in, requires free movement of people, without border checks, across national boundaries across most of the EU. The UK and Ireland are the only two member states currently enjoying a Schengen opt-out. Yes claimed an independent Scotland would also secure that opt-out, thus avoiding border controls with the rest of these islands. No insisted that an independent Scotland, to gain accession to the EU, would have to join Schengen. Since No prevailed neither claim will now be tested. So we simply do not know whether that free movement of people, such a vital ingredient in a social union and an essential pillar of the existing UK single market, would have survived independence.

We did see, late on in the campaign, a number of UK-wide businesses go public about the consequences for them of a Yes vote. Some financial services groups, headquartered in Scotland but with the vast majority of their customers south of the border, signalled an intention to move their registered offices south. Some major retailers warned of the prospect of differential pricing of goods if the existing UK single market was broken up by Scottish independence.

Such interventions were dismissed by Yes as further scaremongering, an extension of Project Fear. There was talk of boycotting companies, like Standard Life and the John Lewis Partnership, that dared speak out. However there was virtually no debate about the reality of border effects, however lightly policed, on free trade across them, especially when the status of these borders undergoes constitutional change.

The fate of the UK single market wasn't just neglected by both sides in the referendum campaign, it was posted missing elsewhere too. When the leading Scottish historian Professor Sir Tom Devine came out as a Yes voter a month before the poll, he provided his own analysis of why the 1707 union, "a marriage of convenience", born of "pragmatism" on both sides, had become so destabilised it was no longer fit for purpose.

"From the 1750s down to the 1980s there was stability in the relationship," he wrote. "Now, though, all the primary foundations of that stability have gone, or have been massively diluted." The British Empire, in which Scots had played such a significant role, was gone. The two great wars of the 20th century and the collapse of the old Soviet empire had left no "obvious other" to test our collective security. "Dinosaur heavy industries" hadn't survived the Thatcher era. Even the "new glue" of the post-war welfare state and the creation of the NHS was not enough to save a political union past its sell-by date.

Professor Devine cites "a silent transformation of the Scottish economy" as one of the 21st century realities propelling him on his journey to Yes. "We now have an economy that can sustain itself in a resilient way in world markets," he contends. "The English and imperial markets were once a great seduction for Scotland, but now Europe is of great importance."

Are we really being asked to believe that that economic transformation in Scotland in the past three decades - one that has turned Scotland into the most prosperous per-capita part of the UK outside London and the south-east of England - came about despite the core significance of that UK single market, not, in large measure, because of it?

With 70% of Scottish exports still going to the rest of the UK and non-oil exports to the continuing UK accounting for nearly one-third of total Scottish GDP, how can Professor Devine dismiss English markets as an old seduction, now supplanted by the lure of Europe? He must know the UK is currently registering strong GDP growth, while eurozone economies are stalling and are stalked by the spectre of deflation.

Nowhere in his analysis, does the long-term economic significance of the UK single market, or its fate were Scotland to become independent, feature. It's a big omission. Notably the three and a bit decades since 1980, in which Professor Devine claims to have detected that "silent transformation" in Scotland's economic prospects, is precisely the period over which Scotland's two oldest banks set strategies for themselves that led not to resilient independence, but near-death experiences.

Up until the mid 1980s Bank of Scotland (BoS) and Royal Bank of Scotland (RBS), like banks south of the border, were reluctant to embrace the competitive opportunities offered by the UK single market. They adhered to a commercial non-aggression pact with their English counterparts, buttressed by the fact that Barclays owned 35.4% of BoS while Lloyds owned 16.4% of RBS.

Barclays had acquired its stake in BoS in 1971, through a deal to allow its wholly-owned subsidiary, British Linen Bank, to merge with Scotland's oldest bank. British Linen became the Bank's merchant banking arm, while Barclays retained its dominant minority shareholding in BoS until 1985. That entire holding was then sold on to Europe's largest mutual life assurance business (and the Bank's close Edinburgh neighbour), Standard Life. In 1996 Standard Life decided such a large stake in one bank unbalanced its equity portfolio. In a tense, politically-charged episode it sold its BoS shares to a range of institutional investors.

Lloyds built up its stake in RBS in the late 1970s with a view to launching a full takeover bid for its Edinburgh rival. But it was beaten to the punch by RBS agreeing a merger with another London-based bank, Standard Chartered, only to find itself on the receiving end of a rival hostile offer from the Hongkong and Shanghai Banking Corporation (HSBC). When both these deals were thrown out by the Monopolies and Mergers Commission, any prospect of Lloyds winning control of RBS evaporated too.

By the end of the 1990s both Scottish banks, having escaped the clutches of English rivals, had themselves turned predator. In 1999 BoS launched a hostile bid for a struggling English clearer, NatWest. When its Scottish rival, RBS, decided to bid for NatWest too and saw its offer prevail, BoS threw itself into a merger with the biggest demutualised building society, Halifax, creating a combined bank called HBOS. Emboldened by its NatWest conquest, RBS went on (in concert with two continental banks) to outbid Barclays for control of Dutch banking group ABN AMRO.

Eight years on, as the great financial crisis broke and cash was running out, both RBS and HBOS had to throw themselves on the mercy of the UK Treasury. Lloyds, which in 1979 had wanted to take control of RBS, was prevailed upon to swallow HBOS whole. It is still digesting that meal, shedding tens of thousands of jobs, scraping through the latest European bank stress tests. A shrunken RBS remains more than 80% owned by the UK taxpayer. Two transformations certainly. But hardly welcome ones. Only the resilience of the UK single market kept these banks afloat.

While it featured only peripherally in the referendum campaign, the historic significance of the UK single market and doubts about its future had Yes prevailed may still have shaped voting intentions. We don't yet know nearly enough about why Scots voted the way they did. We know something of how patterns varied by age, gender and social class. We also know that many in the cohort that voted most strongly No, older voters, made up their minds many months before the actual vote.

That group has been accused by some on the Yes side of acting out of downright selfishness. It could equally be argued these were the very people who, because they had lived the longest, were the most frustrated by a political debate that, despite its intensity, failed miserably to address intuitively-obvious questions from the outset. Questions like what would happen, if Scotland became independent, to the UK single market that had shaped so much of their own lives.

As the polling analyst Professor John Curtice puts it "In practice voters were faced with a choice between two uncertain futures. Nobody could be entirely sure what the economic consequences of independence or remaining in the Union might be. Against that backdrop we should not be surprised that people's evaluations of those consequences were influenced by their current circumstances and psychology."

To suggest that the fate of the UK single market may have helped determine the outcome of the Scottish referendum campaign is not to argue that free trading blocs like it or the more embryonic European single market are invested with any more historical permanence than political unions are. There are too many other formidable forces at work in these first decades of the 21st century.

Globalisation of production. Rising income inequality. Tensions between growth agendas and those that prioritise wellbeing. The mismatch between the fiscal demands of nation states and tax avoidance strategies of global corporations. The pressures the growing digital economy, with online distribution of goods and services, is placing on traditional territorial models of matching supply and demand, even those that have embraced free trade and single markets. To name but five. If Scotland is destined to revisit its national question, I would hope the then state of its market relationship with the rest of these islands gets greater scrutiny than it did this time. But by then there will doubtless be many other great issues fighting for consideration.

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