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Notes

The editors welcome contributions to the Economic Perspectives section. Material submitted should be of interest to a predominately Scottish readership and written in a style intelligible to a non-specialist audience. Contributions should be submitted to Cliff Lockyer c.j.lockyer@strath.ac.uk

Articles accepted for publication should be supplied electronically and conform to the guidelines available from Isobel Sheppard fraser@strath.ac.uk

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Outlook and Appraisal

Overview

Clearer signs of a recovery are now emerging within the Scottish economy. This is to be welcomed. But despite the recent good survey evidence the recovery is far weaker than would be expected 5 years after a recession, even a recession generated by a banking crisis. The reason for this stagnation and anaemic recovery is twofold: the UK government's fiscal consolidation programme and a weak export performance reflecting both supply-side structural problems in the UK and Scottish economies as well as weak global demand.

The latest Scottish GDP data for the fourth quarter of last year show that Scottish GDP rose by 0.5% in Scotland in the quarter, while falling by -0.3% in the UK. But once declining oil and gas production is removed - offshore activities are not included in Scottish GDP data but they are in the UK data - we find that Scottish and UK growth is largely identical. Moreover, in 2012 GDP ex oil and gas grew at 0.5% in the UK compared to 0.3% in Scotland. By the fourth quarter last year GDP was -1.9% below its pre-recession peak in the UK compared to -2.4% for Scotland. So, we can conclude that the recovery continues to be weak in the UK and little weaker still overall in Scotland.

The Scottish production sector was buoyant in the fourth quarter both absolutely and compared to the UK. Unfortunately, one-off technical production considerations in energy supply in Scotland and in mining and quarrying - North Sea oil and gas production - in the UK are probably providing a false picture of performance in the sector. This is made clear when we consider the performance of manufacturing. Manufacturing GVA contracted by -0.5% in the fourth quarter in Scotland and by far worse, -1.4%, in the UK. Scottish manufacturing GVA now stands at -5.5% below the 2008-09 pre-recession peak, while the figure for UK manufacturing is -9.5%. However, it is some small comfort that Scottish manufacturing is doing better than UK manufacturing. The downturn in the fourth quarter in Scottish manufacturing as well as in UK manufacturing takes some of the shine off the good overall Scottish GDP performance in the fourth quarter. This is reflected in the export performance of Scottish manufacturing where exports abroad (ex rUK) fell by 1.4% in the fourth quarter of last year so manufactured exports

now stand 13.1% below their pre-recession peak. The manufactured export position continues to be worse than the situation after the collapse of electronics production led to an exporting nadir in 2002.

Nevertheless, a more detailed look at the performance of the Scottish service sector reveals evidence of recovery in certain key sectors. Scottish services GVA grew by 0.3% here in the fourth quarter compared to zero - very slightly negative - growth in the UK. By the fourth quarter of this year, Scottish services GVA was still -1.6% below its pre-recession peak compared to a UK position where the sector now stands 0.5% above its pre-recession peak output. Yet, despite that there are some bright spots within Scottish services as well as some causes for concern.

The bright spots are the evidence that business service activities are now recovering strongly. After contracting by more than 6% during the recession, GVA in the sector languished until the second quarter 2011. From then on business services began to recover strongly, attaining its pre-recession peak between the first and second quarter of last year. By the end of the fourth quarter 2012 GVA stood 5.1% above its pre-recession peak. It is also evident that while real estate activities, accounting for just under 40% of business services, have recovered to stand at around 2.5% above pre-recession peak output, the remaining 60% element of business services - professional, scientific, administrative & support services, has been growing the fastest with GVA reaching nearly 6% above its pre-recession peak by the end of last year.

The cause for concern is the performance of financial services. When we disaggregate the data we find that that a structural decline appears to have been taking place in financial services in Scotland. GVA has now fallen more than 17% below its pre-recession peak, a loss of around one sixth of total output in the sector. There seems a strong likelihood that some of this lost output may never return.

In the labour market conditions continue to improve at a faster rate than GDP, suggesting deterioration in productivity. In the quarter January to March there was a surge in employment in Scotland. Jobs rose by 54,000 in the first quarter of this year compared to a fall of 43,000 in the UK as a whole. In addition unemployment fell by just under 7,000 to below the 200,000 mark to 199,000, or a rate of 7.3%. Scottish jobs are now -1.3% below their pre-recession peak, whereas in the previous quarter they were more than 3% below the pre-recession peak. This is still worse than the UK, where, despite the loss of jobs in the recent quarter the total is 0.6% above the pre-recession peak. But we shouldn't get carried away by the recent improvements in the Scottish jobs market and unemployment. Unemployment is falling but at 7.3%

it is still high compared to the 3.9% before the recession and it could begin to rise again. Moreover, when employment is compared to the 16 plus population we find that before the surge in jobs in the first quarter of this year this ratio stood at -6.2% below its pre-recession peak, identical to the position at the trough of the recession. After the surge it rose to -4.3% below. This suggests that the size of labour reserves in Scotland, and the extent of human misery at not having a suitable job, remains large.

Aggregate data show that with weak export and investment data, there is little evidence of a rebalancing of the Scottish economy away from domestic private and public consumption spending to external private and domestic investment spending. Such a rebalancing is seen by many as a pre-requisite for a strong recovery.

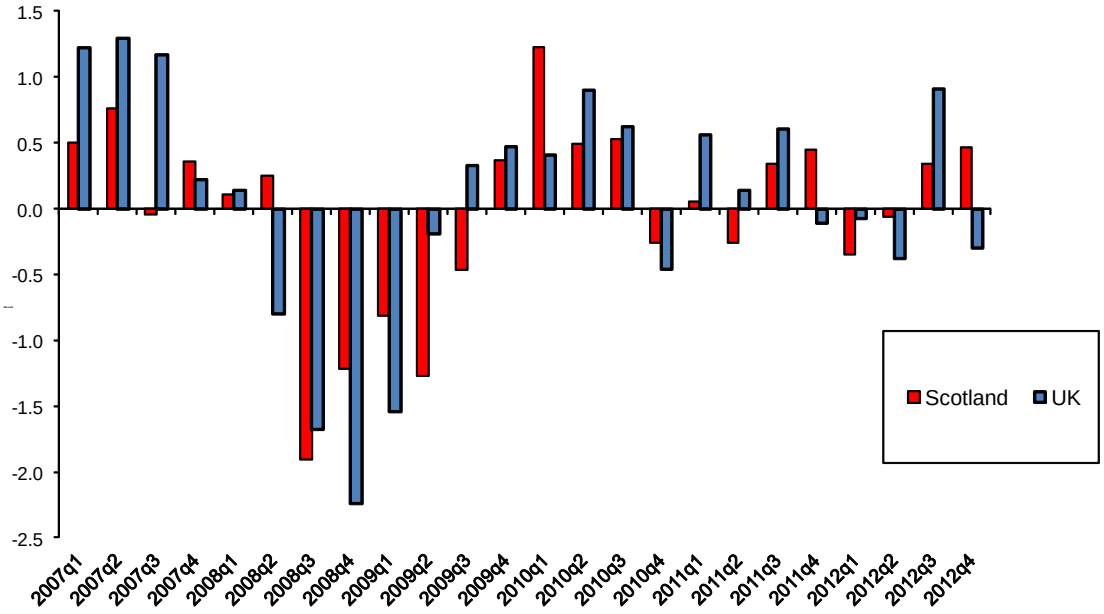
Against this background we have maintained our GDP forecast for 2013 at 0.9%, the same as our March forecast. For the two years 2014 and 2015, we have revised down slightly our forecast for 2014 from 1.7% to 1.6%, and have revised up the forecast for 2015 from 1.9% to 2.1%. The forecasts reflect the continued weakness of domestic demand, in particular government spending and consumer expenditure, and weak anticipated growth in the rest of the UK and Eurozone markets to which Scottish exports are so reliant. Some may be surprised that we have not revised up our forecasts for 2013 and 2014 given the evidence of a recent pick up in the economy. We have not done this since our forecasts already contain gradual improvements to the growth rate. And so a recovery - all be it anaemic - is built in.

We have generally raised our forecasts for job creation compared to our March forecast. This reflects the stronger jobs performance noted in the recent data and reflects the sectoral rebalancing of our growth forecast more in favour of labour intensive services. On the central forecast, we are now forecasting that net jobs will rise by 12,150 in 2013, rising to 28,200 in 2014 and 38,700 in 2015. Our unemployment forecasts have been revised down somewhat from March, reflecting the weakness of productivity, and higher employment given the growth of output. Our projection for unemployment on the ILO measure at the end of 2013 is now 213,250. We continue to expect the unemployment position to deteriorate slightly in 2014 compared to 2013 due to relatively weak output and employment growth. Unemployment is now forecast to be 228,000 by the end of 2014 but then falls back to 189,350 by the end of 2015 as growth in the economy strengthens.

Recent GDP performance

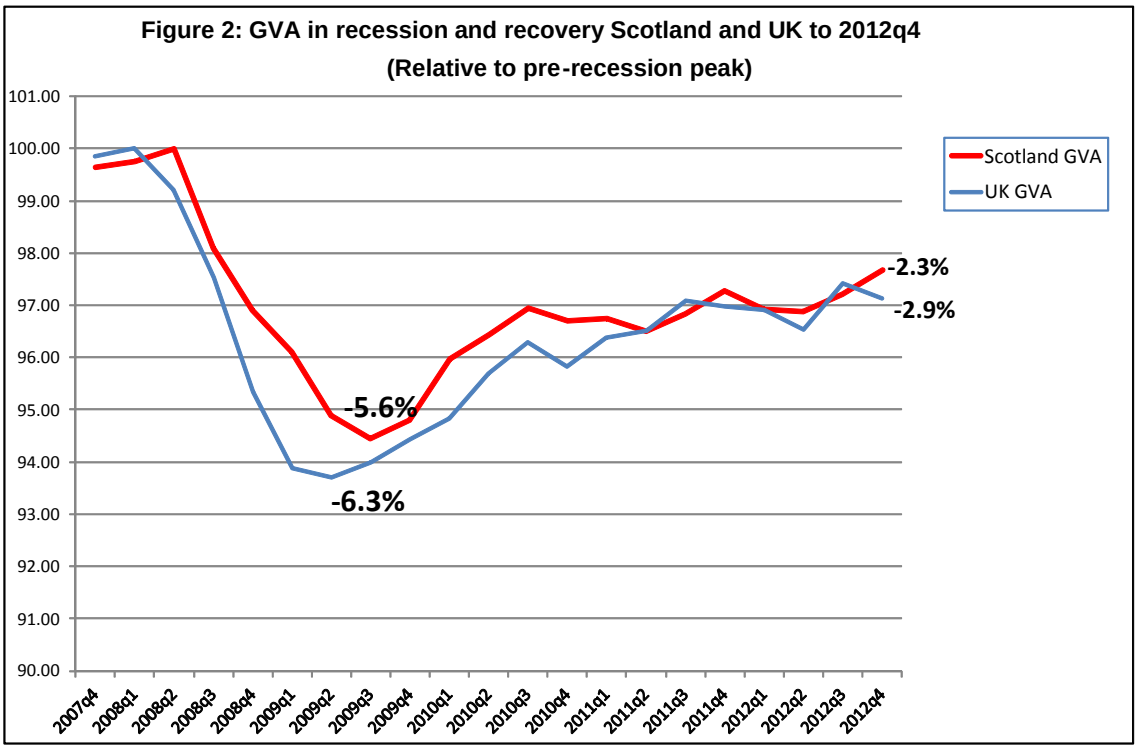
The latest Scottish GDP data for the fourth quarter of last year show that Scottish GDP rose by 0.5% in Scotland in the quarter, while falling by -0.3% in the UK. However, growth in 2012 - calendar year - was at 0.3% identical in both Scotland and the UK, see Figure 1.

Figure 1: Scottish and UK Quarterly GDP Growth, 2007q1 - 2012q4



These data are quite encouraging and suggest that a recovery may finally be emerging, if at a halting pace.

Figure 2: GVA in recession and recovery Scotland and UK to 2012q4
(Relative to pre-recession peak)



The effect of the new data on Scotland's recovery from recession is shown in Figure 2.

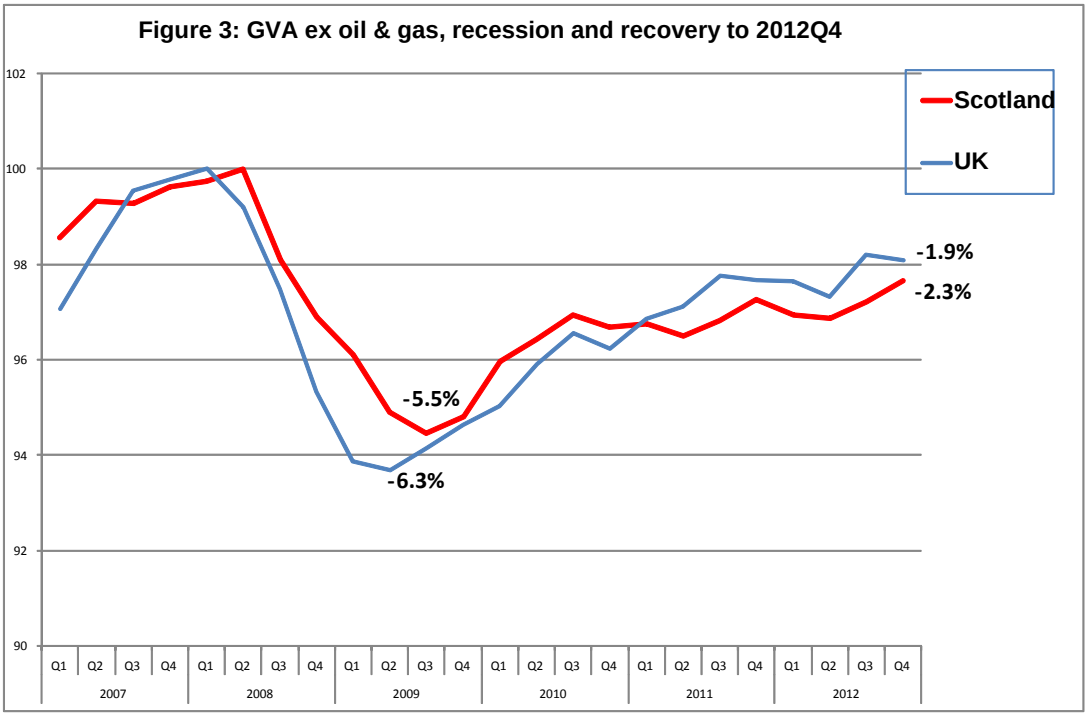
In the third quarter, GDP in both Scotland and the UK was just under 3% below the pre-recession peak, whereas in the previous quarter Scotland was more adrift from the UK. After the latest data Scottish GDP stands at -2.3% below its pre-recession peak, slightly better than the position of UK GDP, which continues at -2.9% below its pre-recession peak. So, despite some recovery we see a still largely stagnant economy with a long way to go before it gets back to where it was in GDP terms before the recession started in 2008.

There are two key factors that are complicating the assessment of the GDP performance of Scotland and the UK, both absolutely and relatively, during 2012. The first is the differential impact of the London Olympics. The second is the consequences of declining oil and gas production.

To a certain extent the weak performance of the UK economy in quarter four was a reflection of the temporary boost given to GDP by the Olympics in quarter three. If we look at the growth in GDP between quarters two and four in Scotland and the UK, we see that Scottish GDP rose by 0.8% while UK GDP rose by 0.6%. So, when we smooth out the effect of the Olympics the performance of Scotland and the UK is much closer.

But then 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.

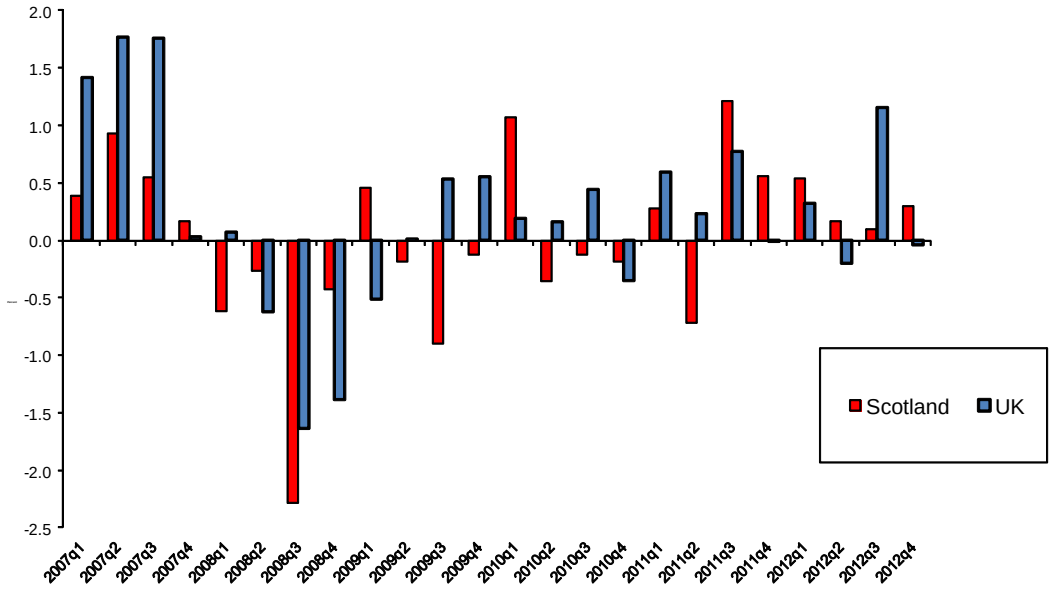
Figure 3: GVA ex oil & gas, recession and recovery to 2012Q4



Once declining oil and gas production is removed, we find that both Scotland and the UK grew by 0.8% between the second and fourth quarter. Scottish and UK growth is identical. Moreover, in 2012 GDP ex oil and gas grew at 0.5% in the UK compared to 0.3% in Scotland. By the fourth quarter last year GDP was -1.9% below its pre-recession peak compared to -2.4% for Scotland. So, we can conclude that the recovery continues to be weak in the UK and little weaker still overall in Scotland.

Turning now to individual sectors of the economy, we see that the Scottish service sector, which accounts for 72% of GDP in Scotland and 77% in the UK, was stronger in Scotland in the fourth quarter after being weaker in the third quarter. Scottish service GVA grew by 0.3% here compared to zero - very slightly negative - growth in the UK as Figure 4 shows.

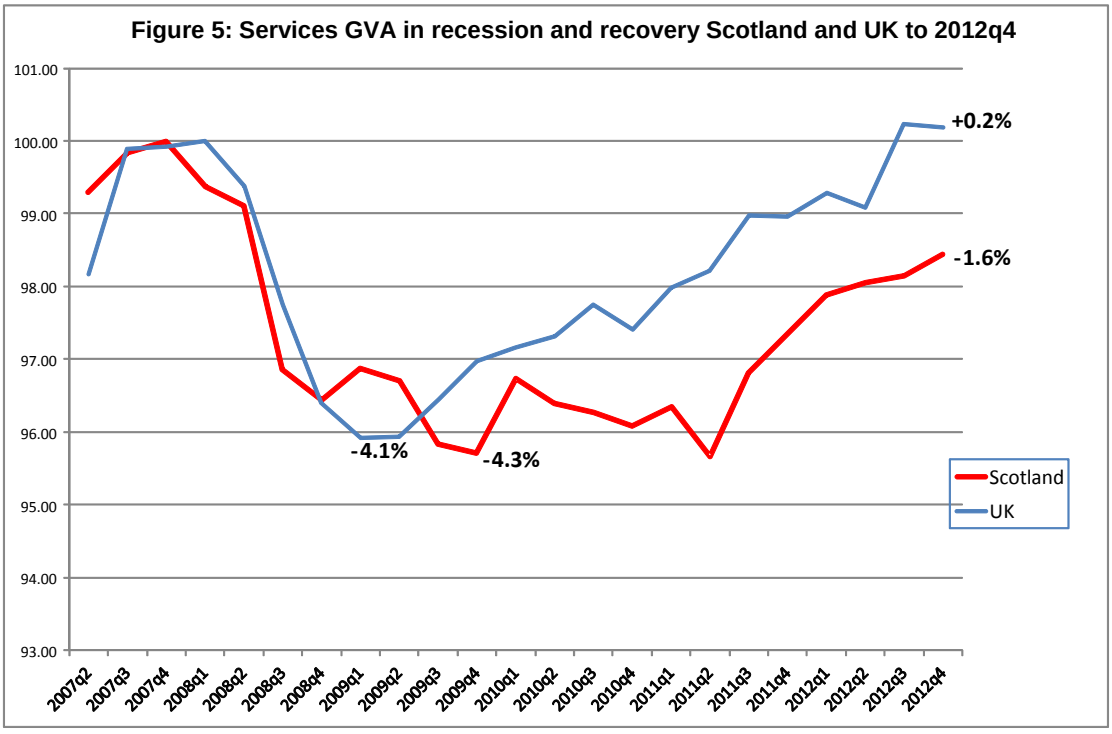
Figure 4: Scottish and UK Services GVA Growth 2007q1 to 2012q4



But over the year - that is four quarters over previous four quarters - the service sector in Scotland grew by 1.6%, which was better than UK service sector growth of 1.2%. We noted in the previous *Commentary* that the Scottish Government GDP/GVA data release has changed its yearly growth measures from the four quarter on four quarter usual method to growth between the corresponding quarters of the respective years. This seems to us a less satisfactory measure of annual growth than the four quarter approach. We shall persist with our own calculations of annual growth on a four quarter over four quarter basis.

The state of the recovery in Scottish and UK services is presented in Figure 5.

Figure 5: Services GVA in recession and recovery Scotland and UK to 2012q4

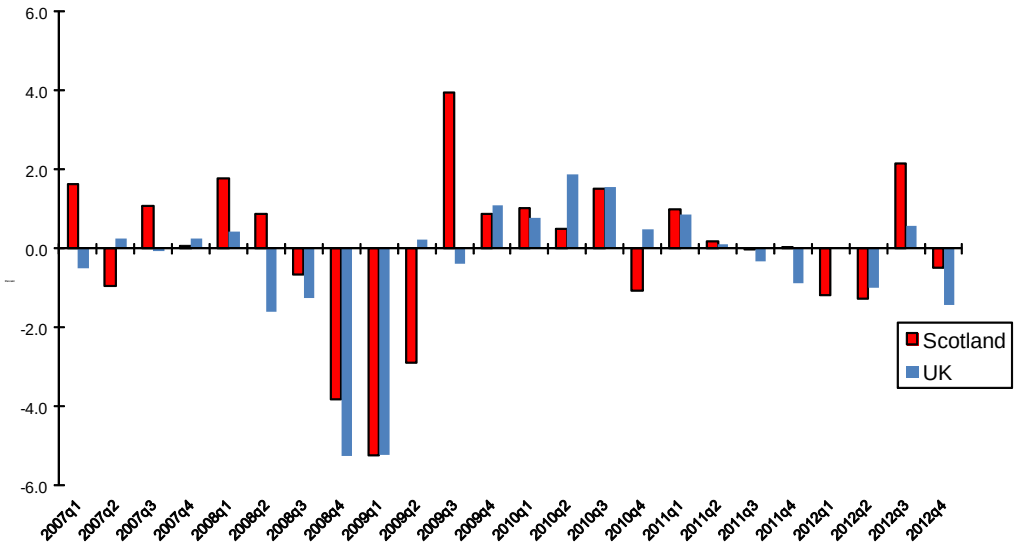


By the fourth quarter of this year, Scottish services GVA was still -1.6% below its pre-recession peak compared to a UK position where the sector now stands 0.5% above its pre-recession peak output. The loss of Scottish service sector output in the recession was -4.3% a little more than the -4.1% output loss in services in the UK. So, it is clear that despite the stronger growth performance of Scottish services in the latest quarter and over the year to the 4th quarter, the sector is weaker than its UK counterpart. Some recovery is evident but unlike UK services there is still some way to go before pre-recession peak output is regained. But it is not all gloom in the Scottish service sector, as we note below.

Output in the Scottish production sector continued to recover. Output rose by 1.1% in the quarter compared to a fall of -2.1% in the UK. Over the year - four quarter on four quarter - production GVA fell slightly by -0.2% in Scotland compared to a large fall of -2.4% in the UK. A key reason for this was strong growth of 8.8% in electricity and gas supply in Scotland compared to a rise of 2.2% in the UK. This may be due to structural reasons such as a power plant coming back on stream after a maintenance shut down. If so, a fall in output or flat growth might be expected in the first quarter. Over the year, the GVA of the electricity and gas sector contracted by -2.9% in Scotland but rose by 0.9% in the UK. Mining & quarrying also performed more strongly in Scotland with growth of 1.3% in the quarter and 5% over the year. In contrast, UK mining & quarrying contracted by 10.7% in both the quarter and over the year. This appears to be structural due to oil production issues in the North Sea.

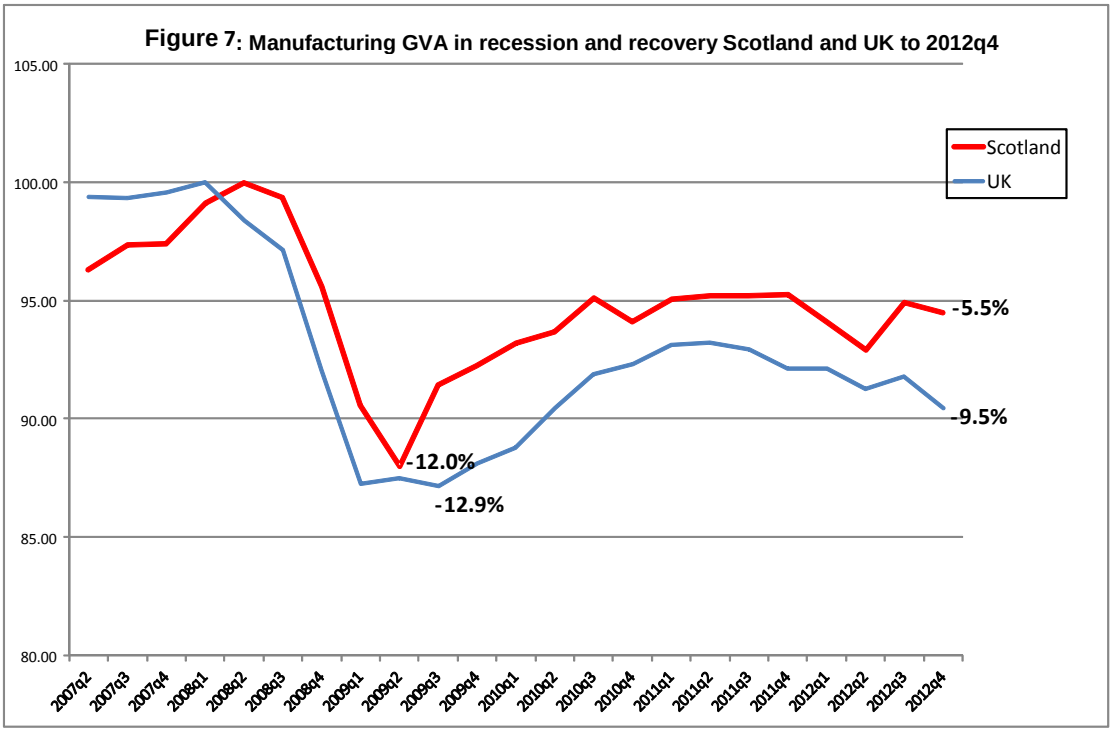
One hope of the UK Government and many commentators is that the UK economy will recover from the Great Recession by re-balancing away from domestic demand to external or foreign demand, from consumption to investment, and from public to private production. A key factor in this is the desired shift in favour of manufacturing, which is a major exporter. The latest data show that very little progress is being made here.

Figure 6: Scottish and UK Manufacturing GVA Growth at constant basic prices 2007q1 to 2012q4



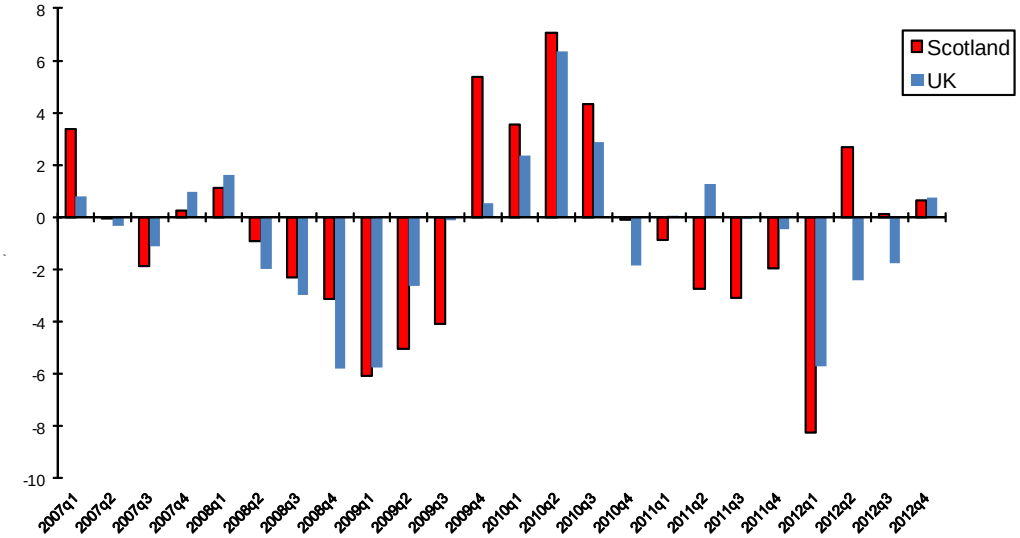
Manufacturing GVA contracted by 0.5% in the quarter in Scotland after strong growth in the third quarter - Figure 6. UK manufacturing, in contrast, fared worse with output falling by -1.4%. Over the year, both UK and Scottish manufacturing GVA fell by -1.1% in Scotland less than the -1.5% fall in the UK. 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 and UK to 2012q4



Scottish manufacturing GVA now stands at -5.5% below the 2009-09 pre-recession peak, while the figure for UK manufacturing is -9.5%. However, it is some small comfort that Scottish manufacturing is doing better than UK manufacturing. The downturn in the fourth quarter in Scottish manufacturing as well as in UK manufacturing takes some of the shine off the good overall Scottish GDP performance in the fourth quarter.

Figure 8: Scottish and UK Construction GVA Volume Growth 2007q1 - 2012q4



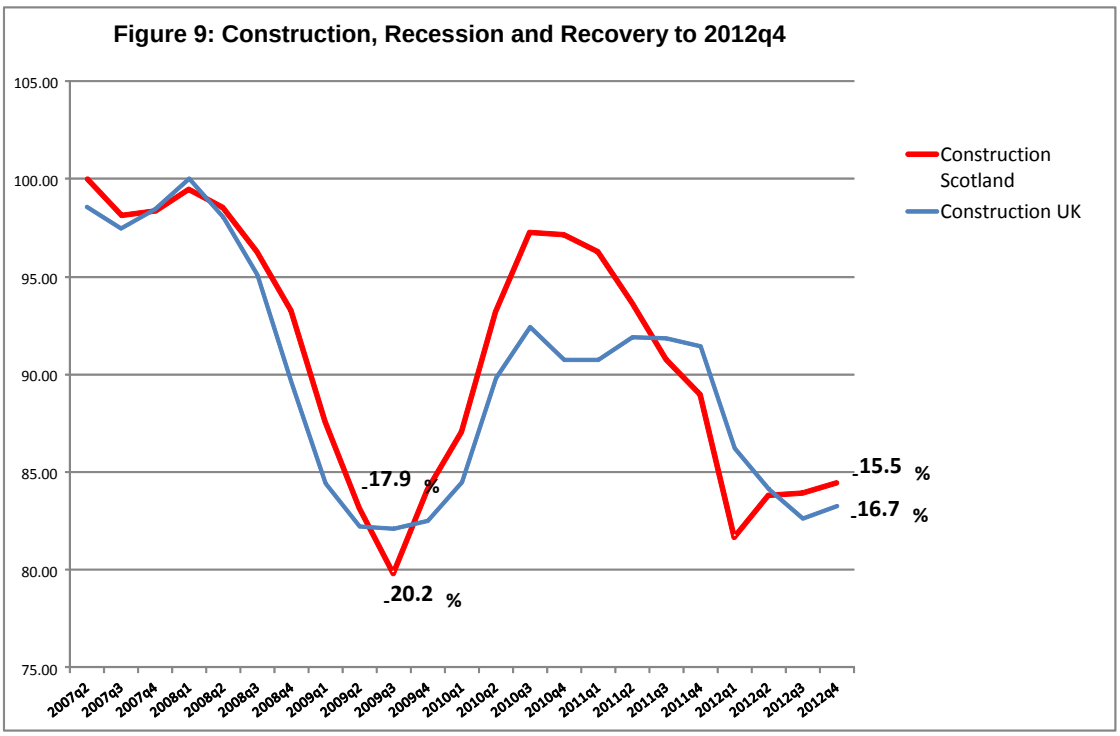
Within manufacturing, the main boost to growth in the fourth quarter came from other manufacturing and the food and drinks sector. GVA rose by 2.7% and 0.3%, respectively in the quarter but fell by -1.8% and -0.3%, respectively, over the year - four quarter on four quarter. Textiles and clothing grew by 3.8% during the quarter but the sector contributes little to manufacturing output - about 2.5% - since the

structural contraction has resulted in the volume of output falling by two thirds since 1998. The main sectors holding back manufacturing growth in the fourth quarter were refined petroleum, chemical and pharmaceutical products, and computer, electrical and optical products, which contracted by -4% and -6.5% respectively during the quarter.

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

Scottish construction GVA rose by 0.6% in the quarter but fell by -9.7% over the year. UK construction, in contrast, grew a little more strongly in the quarter at 0.8% but contracted by a little less, -8.1%, over the year. The sector still continues to be languishing despite the strong pick-up in the second quarter. Figure 9 shows the state of the recovery in the construction sector in Scotland and UK.

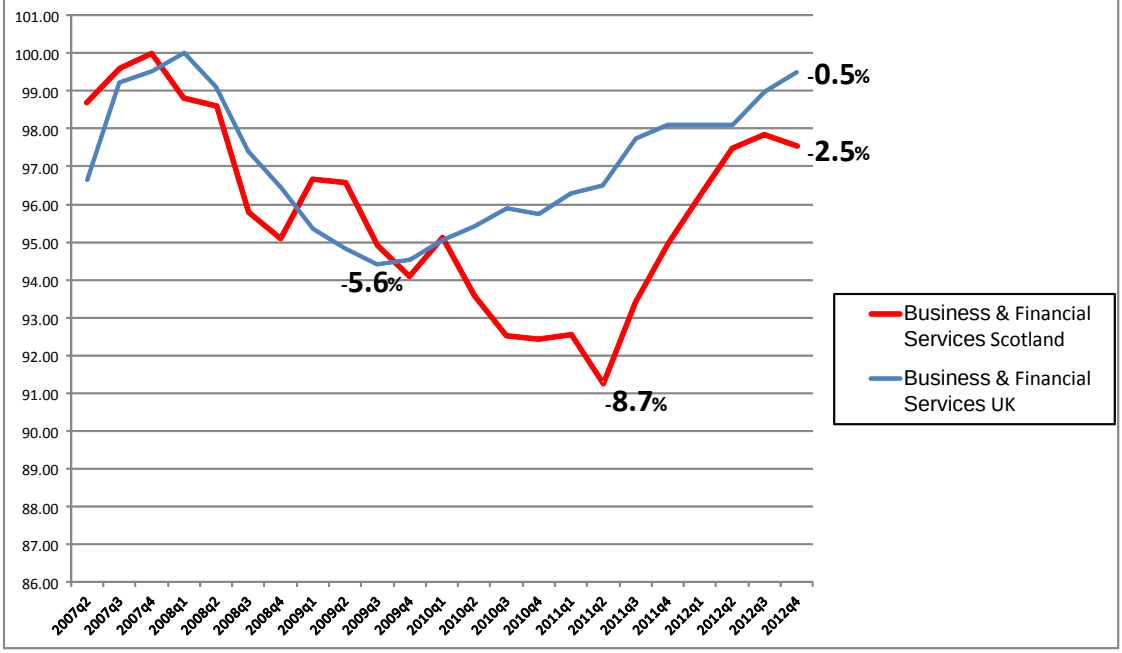
Figure 9: Construction, Recession and Recovery to 2012q4



We noted in the previous *Commentary* that the weakened state of the construction industry in both Scotland and the UK is very likely to be due to the UK government's fiscal consolidation programme. The contraction from the third quarter of 2010 in Scotland may well be related to fiscal consolidation where, so far, the bulk of the cuts have fallen on capital expenditure and buildings especially. In the UK where there have been similar cutbacks in government capital expenditure, the impact on overall construction output might have been somewhat muted by the expenditure on construction projects associated with the Olympics. And in Scotland the onshore effects of investment in renewables and in the oil industry could be responsible for the recent upturn. In addition, since we now may be seeing a slow general recovery in output this is likely to have positive implications for construction. But it is still worth noting that at -15.5% and -16.7% below their pre-recession peak Scottish and UK construction output is not much higher than it was at the trough of the recession.

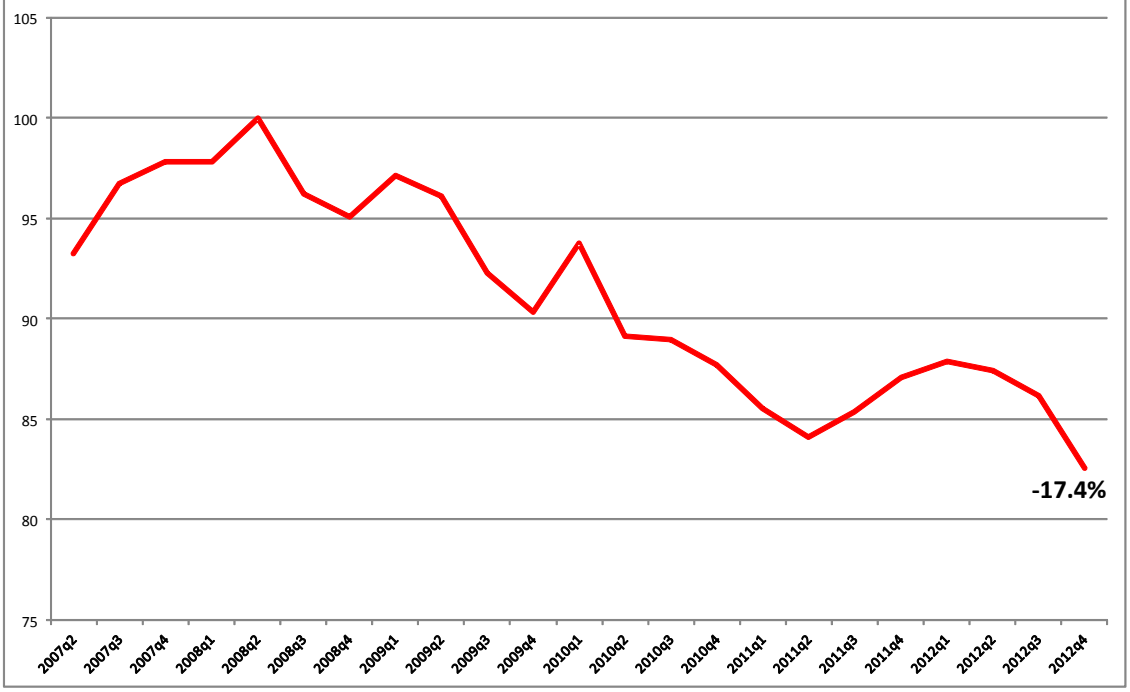
Within services, the most important private sector by contribution to GDP, business and financial services - 25% of overall GDP and 35% of service sector GVA - contracted by -0.3% in Scotland while growing by 0.5% in the UK during the fourth quarter. But over the year, four quarter on four quarter, the sector grew by 4.5% in Scotland compared to weaker growth of 1.5% in the UK. Figure 10 shows the path of GVA in the sector during the recession and recovery relative to its pre-recession peak.

Figure 10: Business & Financial Services: Recession and Recovery to 2012q4



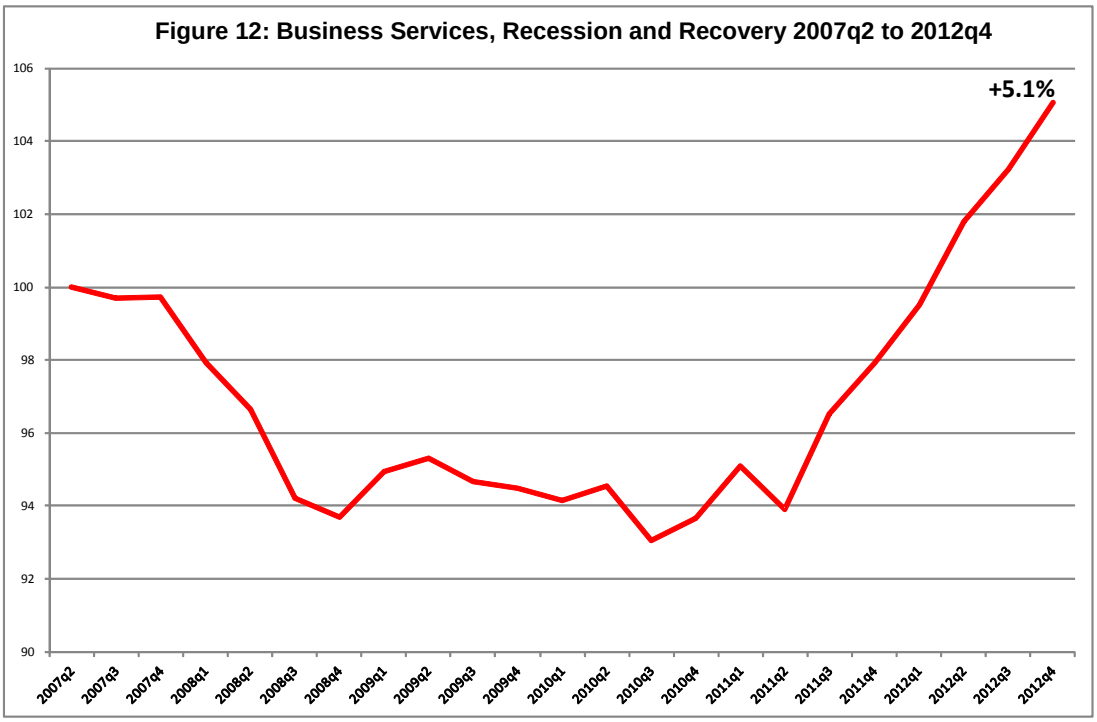
By the latest quarter the sector in the UK was -0.5% below its pre-recession peak while its Scottish counterpart was still -2.5% below. However, the aggregate GVA data for business and financial services in Scotland mask significant differences between the performance of financial services on the one hand and business services on the other. Currently, we only have disaggregated data for Scotland. Figure 11 shows what has been happening to financial services since peak output in the second quarter of 2008.

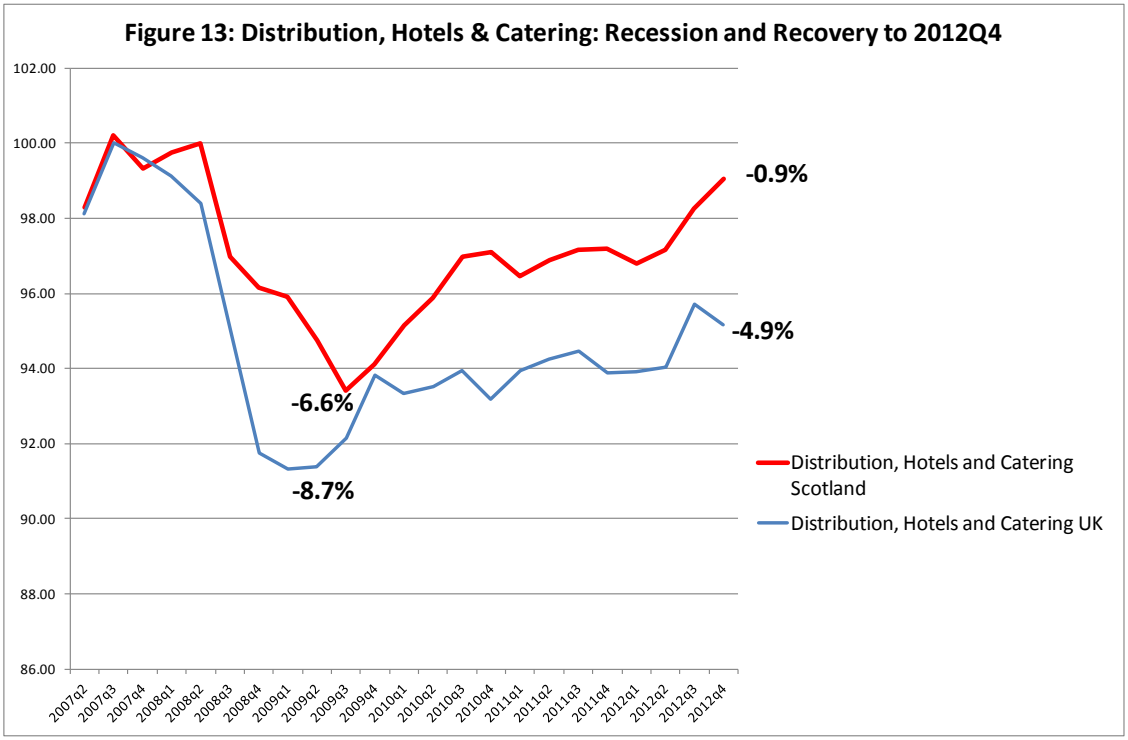
Figure 11: Financial Services, Recession and Recovery 2008q2 to 2012q4



Despite the upturn in output between the second quarter of 2011 and the first quarter of 2012, there is a strong indication in the chart that a structural decline has been taking place in financial services in

Scotland. GVA had fallen more than 17% below its pre-recession peak, a loss of around one sixth of total output in the sector. There seems a strong likelihood that some of this lost output may never return. When we now turn to business services on its own - a combination of real estate activities and professional, scientific, administrative & support services - we see a very different picture as Figure 12 reveals.





It is clear from the figure that a recovery is now taking place in business services. After contracting by more than 6% in the recession from the middle of 2007 to the final quarter of 2008, GVA in the sector

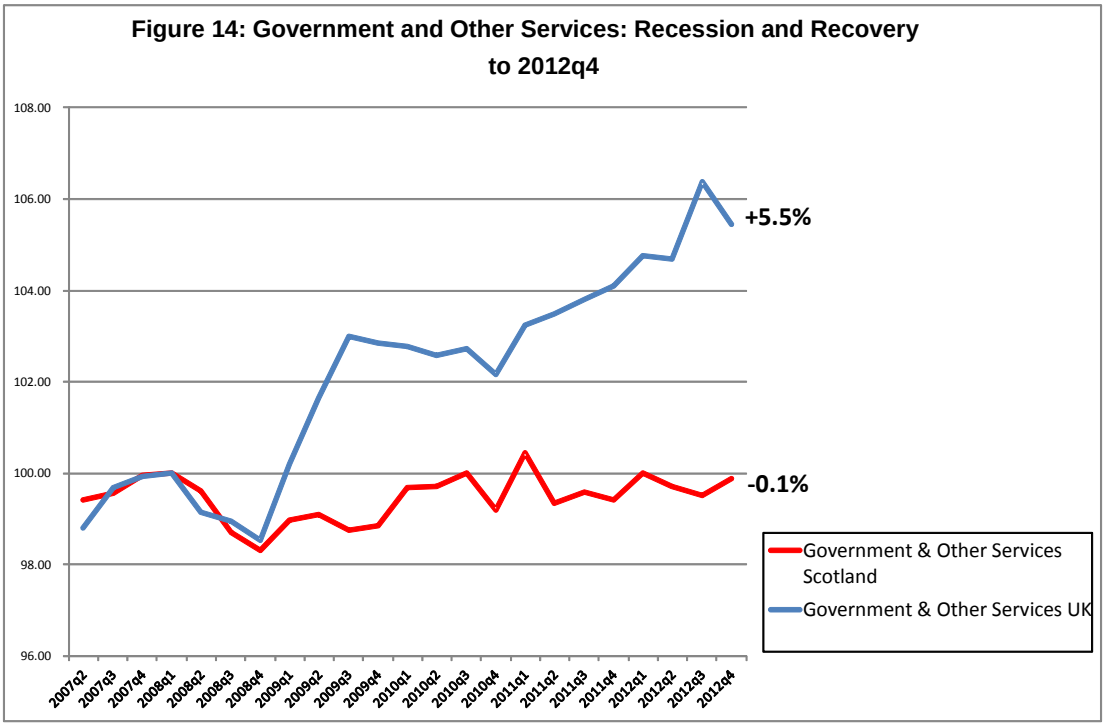
languished until the second quarter 2011. From then on business services began to recover strongly, attaining its pre-recession peak between the first and second quarter of last year. By the end of the fourth quarter 2012 GVA stood 5.1% above its pre-recession peak. It is also evident that while real estate activities, accounting for just under 40% of business services, have recovered to stand at around 2.5% above pre-recession peak output, the remaining 60% element of business services - professional, scientific, administrative & support services, has been growing the fastest with GVA reaching nearly 6% above its pre-recession peak by the end of last year.

Elsewhere in private services, the main sector is distribution, hotels and catering, accounting for 19% of services sector output in Scotland, grew by 0.8% in the fourth quarter compared to a fall of -0.6% in the UK. Over the year, the sector grew by 0.9% in Scotland compared to 0.6% in the UK. Figure 13 shows the performance of the sector during recession and recovery.

What is clear from Figure 13 is that the sector, after the latest data and revisions, has performed much better in Scotland throughout both recession and recovery. It certainly looks as if retailing and spending in the high street may have held up better in Scotland than in the UK. But we don't have access to the disaggregated data to confirm that. One supporting, piece of evidence, from ONS data published on 13 May, is that household property debt appears to have been much lower in Scotland through recession and recovery than in the UK as a whole and most other areas of the UK. In 2008/10 Scotland had at £55,000 the lowest median property debt of any UK region or nation. And Scotland contained the fewest households considering their property debt to be “a heavy burden” (8.2%).

Government & Other Services GVA rose by 0.4% in Scotland compared to a contraction of -0.9% in the UK. Over the year measured value added in the sector was almost flat at 0.1% growth in Scotland compared to a *rise* of 1.6% in the UK. Figure 14 shows performance in recession and recovery.

Figure 14: Government and Other Services: Recession and Recovery to 2012q4

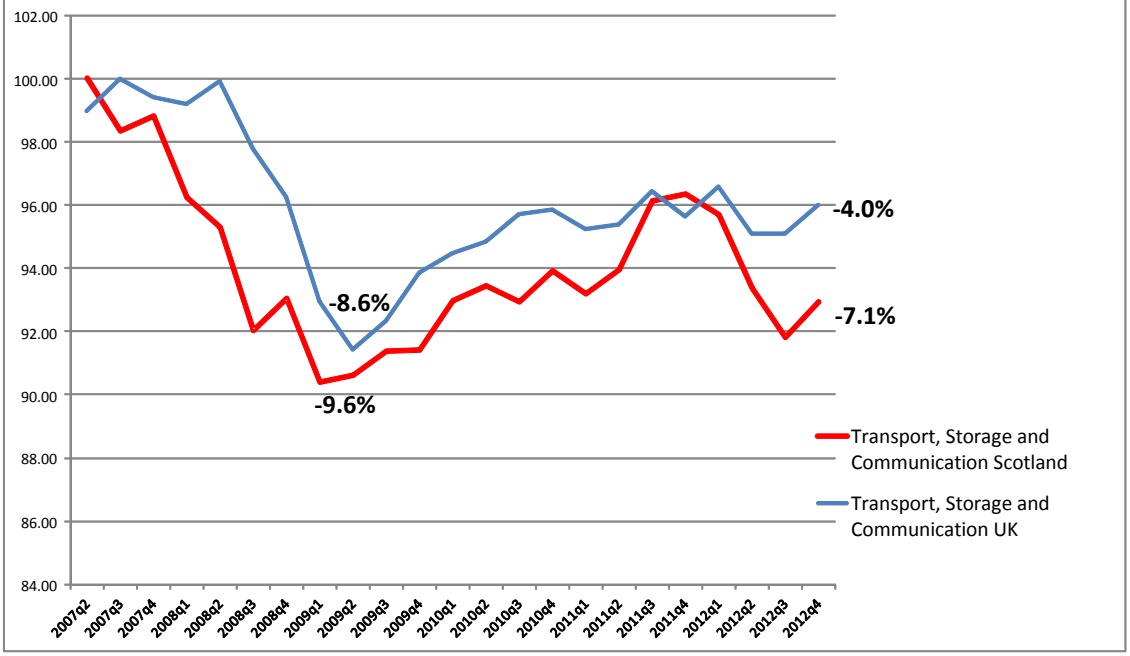


We continue to find the strong growth in the sector in the UK difficult to understand, while the Scottish sector's performance is more intuitively reasonable. In the earlier *Commentaries* we noted that "in view of the fact that Government accounts for about 88% of the output, how has such an increase come about at a time of fiscal consolidation? Is it a genuine increase in the real value of UK government output over the period? Is it due to measurement differences between the UK and Scottish government production? Or, is it due to measurement error? Either way it is important to resolve this issue because the comparative size of the government sector means that the difference in performance is a not

insignificant factor in the aggregate GVA differential between Scotland and the UK." We are still no further forward in resolving these questions.

Finally, Figure 15 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 15: Transport, Storage & Communication: Recession and Recovery to 2012Q3



It is clear from the chart that the sector experienced a worse recession in Scotland and the recovery that was occurring has fallen away so that by the end of last year GVA was still more than 7% below the pre-recession peak compared to 4% in the UK.

The Labour Market

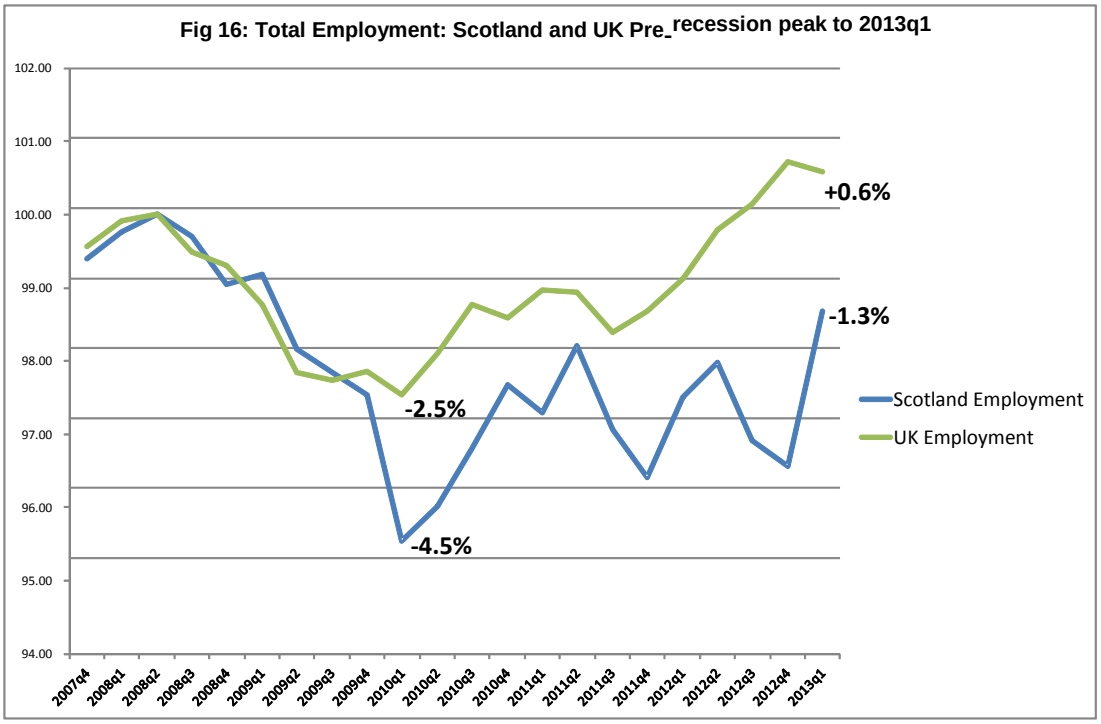
The latest labour market data (see *Overview of the labour market* below) reveal that conditions in the Scottish labour market continue to improve. In the quarter January to March there was a surge in employment in Scotland. Jobs rose by 54,000 in the first quarter of this year compared to a fall of 43,000 in the UK as a whole. In addition unemployment fell by just under 7,000 to below the 200,000 mark to 199,000, or a rate of 7.3%.

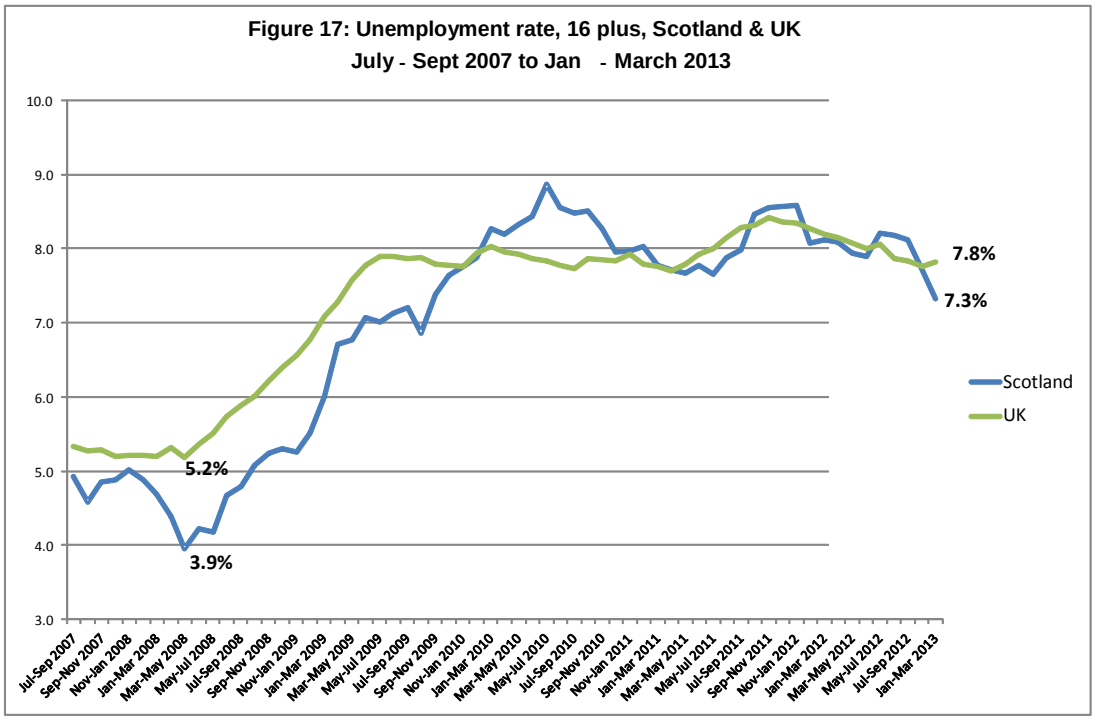
This brings Scottish jobs performance since before the recession more into line with the UK as Figure 16 shows.

Scottish jobs are now -1.3% below their pre-recession peak, whereas in the previous quarter they were more than 3% below the pre-recession peak. This is still worse than the UK, where, despite the loss of jobs in the recent quarter the total is 0.6% above the pre-recession peak.

The unemployment position is shown in Figure 17 below. The figure shows that unemployment is now faring better in Scotland than the UK

It is difficult to explain the recent strong Scottish job creation performance while GDP growth appears to be weaker. There are several possibilities.





First, we cannot discount the possibility that the Scottish data reflect measurement or sampling error, more so than the UK data where samples are relatively bigger. The latest 'surge' may reflect a correction of earlier errors, or a large error in the latest measurement. Only later data will help clarify that.

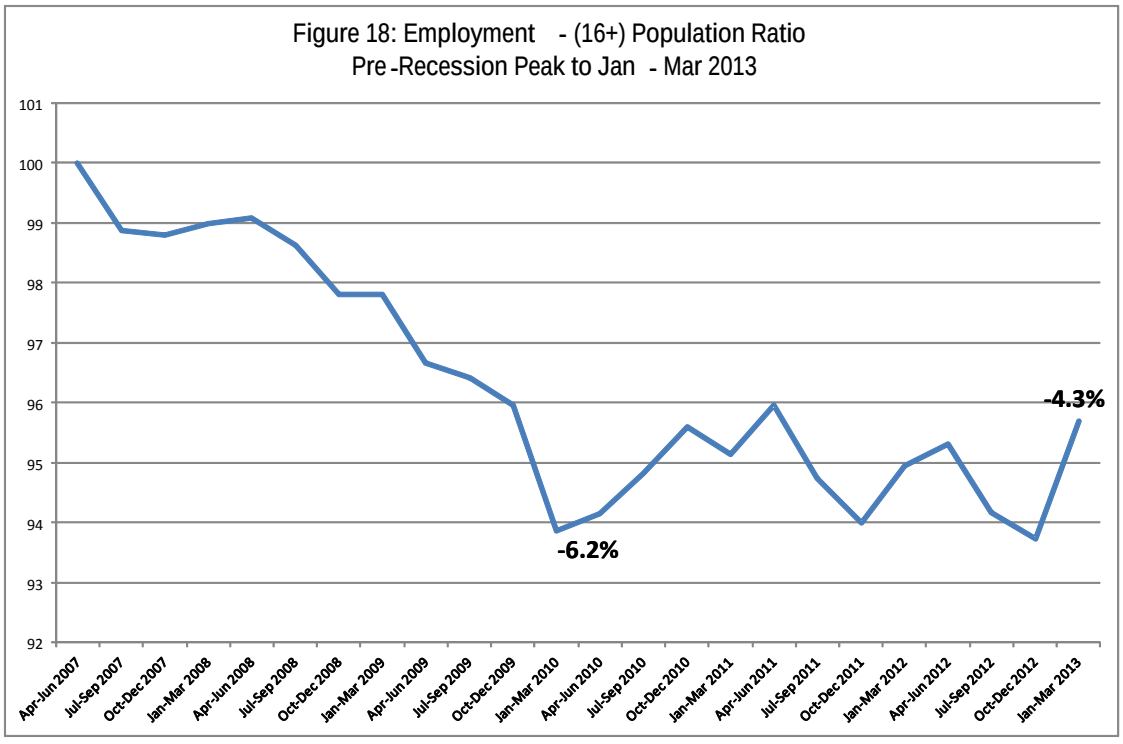
Secondly, if we assume no measurement error, the explanation could be as follows.

Since the fourth quarter of 2009 when there was a large loss of jobs in Scotland, the Scottish jobs market has been weaker than the jobs market in the UK as a whole. Yet, GDP growth has been very similar in Scotland and the UK. On the face of it, that meant that productivity worsened more in the UK than Scotland. Again we also cannot discount measurement error affecting the GDP estimates both in Scotland and the UK. There may also be different industrial/structural reasons, including the relative number of 'zombie' firms in Scotland and the UK, which would affect the relation of employment to output in Scotland and UK - we assume that the contribution of such firms to GDP is much less than their contribution to employment, other things equal.

But setting all those possible explanations aside, it could be the case that Scottish employers took a more pessimistic view of the course of the recession and recovery than their UK counterparts. Hence, employment was cut back here but not in the UK. Now we may be seeing a correction as Scottish employers revise their expectations up considering that conditions are not as bad as they expected. Conversely, UK employers may be in the process of revising their expectations downward: the recovery is not as strong as they anticipated, hence cutback on employment.

This is speculation and only a theory, but it does reconcile the different Scotland-UK jobs market behaviour with the similar output/GDP behaviour.

Finally, we shouldn't get carried away by the recent improvements in the Scottish jobs market and unemployment. When employment is compared to the 16 plus population we get the following chart of quarterly data to Jan - Mar 2013.



Before the surge in jobs in the first quarter of this year this ratio stood at -6.2% below its pre-recession peak, identical to the position at the trough of the recession. After the surge it rose to -4.3% below. The numbers economically inactive that genuinely do not wish to work may have risen somewhat since 2007 due to population ageing. But we know from discussion in previous *Commentaries* that the recession appears to have produced a discouraged worker effect with many leaving the labour market because they have given up on getting a job. The working population is also rising. This, coupled with the fact of the evidence of a shift from full-time to part-time and self-employed working with diminished hours overall - see *Overview of the labour market* below - suggests that the size of labour reserves in Scotland, and the extent of human misery at not having a suitable job, remains large.

Forecasts

Background

The second estimate for UK GDP growth in the first quarter reported a rise of 0.3% in UK GDP unrevised from the previously published estimate. This followed the -0.3% fall in the fourth quarter of 2012, 1% rise in the third quarter, and the 0.9% rise in the third quarter, which was much influenced by the Olympics and lower output in the second quarter due to the Queen's Jubilee. Total growth in the UK in 2012 over 2011 was 0.3%. The economy continues to stagnate five years after the onset of recession. Recent signs of a recovery in output do little to alter that basic truth.

Despite the pick-up in growth in the first quarter, the main components of UK aggregate demand remain weak. Household expenditure in the first quarter contributed positively to growth even though it weakened compared to growth in household spending in the previous four quarters. But the main contributor to UK real GDP in the first quarter was stock building, or inventories. There continues to be little or no evidence of rebalancing away from household consumption toward investment and net exports. In the first quarter, both investment and net trade contributed negatively to growth. Taking the year to the first quarter, the main drivers of growth were again domestic household consumption (0.8%), inventories and a small contribution (0.1%) from business investment. The main negative contributions to GDP growth over the year came from net trade (-0.6%) and government final consumption (-0.2%). It seems probable that the boost from inventories reflects firms' expectations of growth in future demand. Clearly, to the extent that such growth fails to emerge to the degree anticipated then we should expect cut backs in inventories and a negative impact on GDP growth.

In the first quarter, the main sectoral contribution to GDP growth of 0.3% came from services (0.4%) and the extraction industries (0.1%). Construction made a negative contribution to growth (-0.1%). Manufacturing production continued to be weak with GVA falling by -0.3% after falling -1.4% in the fourth quarter of last year. But recent Markit PMI surveys for May indicate a strengthening is occurring in the growth of construction, manufacturing and services. But it must be remembered this strengthening is from a low base in a weak and stagnant economy. The PMI for construction rose from 49.4 in April to 50.8 in May. This was the first time since October that the index had climbed above the 50 mark that divides expansion from contraction. House building activity has strengthened considerably but civil engineering projects show little signs of improvement due to public sector capital spending cutback as part of the UK government's fiscal austerity policy. Retail sales grew by 3.4% between May 2012 and 2013. Industry data suggest much of the recent growth was fuelled particularly by on-line sales. The UK manufacturing PMI index PMI index rose from 49.8 in April to 51.3, suggesting a return to growth. The Markit/CIPS UK Services PMI for May was particularly encouraging, given that services account for more than 70% of the economy. The index rose from April's 52.9 to 54.9 in May signalling a strengthening in the rate of growth. This jump in the index was the sharpest since March 2012. However, we must caution that last year's jump in the index in March did not come to much and growth remains low for this stage of the 'recovery'.

Finally on the UK, an indication that the financial markets believe a recovery of sorts is now getting underway is provided by the yield on 10 year UK Treasury bonds. The yield has risen from around 1.75% at the beginning of May to 2.04% by 5 June. Similarly, in the US the yield on 10 year generic Treasury bonds has risen from around 1.75% to 2.12% over the same period, perhaps suggesting that the US recovery is perceived to be stronger. The point here is that if markets expect improved growth prospects they will move away from (sell) fixed interest securities towards (buy) equities which are expected to offer a greater return. In addition, a pickup in the recovery also leads to an expectation that quantitative easing might soon cease, which will have a depressing effect on the price of bonds and a reverse effect on the yield.

In Scotland, we will not have first quarter GDP data until the third week in July. In the fourth quarter, we noted above that real GDP rose by 0.5% in Scotland in the quarter, while falling by -0.3% in the UK. From the latest *Scottish National Accounts Project* (SNAP) data published on 22 May Scottish GDP in

current market prices rose by 0.1% in the fourth quarter. When we disaggregate this change into the contribution of the different (expenditure) components of aggregate demand, we obtain Figure 19 below.

Figure 19: Expenditure Components Percentage Contribution to Nominal Scottish GDP Growth in 4th Quarter 2012

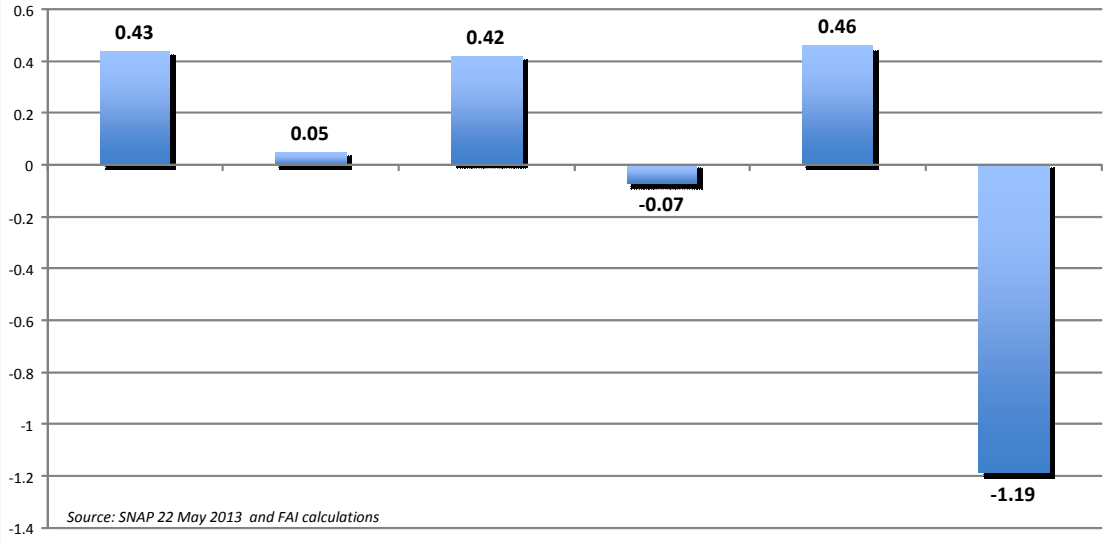


Figure 19 shows that the situation is very similar to the UK. Household consumption, central government spending and gross capital formation (investment) all made a positive contribution. But again net trade abroad made a large negative contribution. The contribution of investment may be somewhat illusory since the data will contain inventory accumulation, or stock building, which may have been rising, as noted above for the UK, in the expectation of a future increase in demand. So, as with the data from the third quarter, reported in the previous *Commentary,* there is limited evidence of a rebalancing of the economy away from domestic private and public consumption spending to external private and domestic investment spending.

In the absence of official GDP and other data for the first quarter in Scotland we must rely on survey information for the first five months of this year. The *Review of Scottish Business Surveys* below notes that

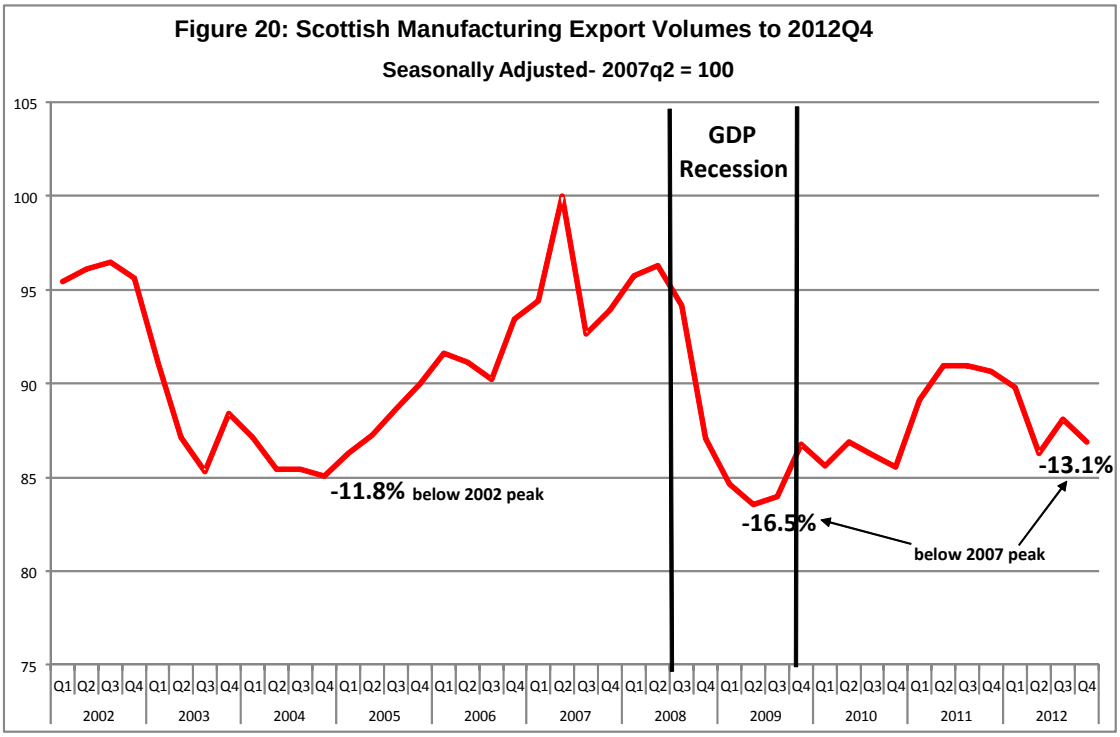
"Overall demand remains weak and a number of Q1 surveys took the view that the Scottish economy was stagnating and bumping along the bottom of the recession, however by May there was more of an emerging sense that that the worst of the recession is over, but that the recovery will be hard."

Despite the positive contribution of household consumption in the fourth quarter there is little doubt that household spending in Scotland remains weak in 2013. Nevertheless, the first quarter 2013 retail sales reported rising sales volumes and rising nominal expenditures, with the volume of retail sales stronger than in the UK. Wage growth in the UK and presumably Scotland remains low slowing markedly at the end of 2012 to 0.8% which is less than the rate of inflation and so indicates falling real wages, which in turn must affect household spending. The housing market continues to be weak - see *Forecasts of the Scottish Economy* section below. Scottish house prices fell by -1.2% in the year to February and prices are 9% below their 2008 peak having fallen by 12% in the downturn. With no growth in house prices there is no boost to household wealth and increased spending. Equity prices are rising, despite a set-back in recent days, as risk assets have come back into favour. But it is unlikely that this will have much impact on consumer spending because of the low levels of share ownership. The Scottish household saving rate remains high as debt continues to be paid down. For all these reasons household spending is likely to continue to be weak.

Investment continues to be weak despite its positive contribution to Scottish GDP growth in the fourth quarter of 2012; as noted above it is likely that this was due to the effect of stock building in anticipation of growth in future demand. As the *Forecasts of the Scottish Economy* section below notes, investment spending in the fourth quarter was 18.8% below its pre-recession peak, having fallen by 22.9% from peak to trough in the recession. The comparable UK figures are 19.8% and 28.5%. There has been some pickup in construction sector, which is much affected by investment spending but we must expect the growth of investment to continue to be weak during 2013.

Net trade contributed negatively to growth in the fourth quarter of last year and there is little sign of an upturn in the near future, although prospects should pick up during 2014. But it all depends on the state of household demand in the rest of the UK, where two thirds of Scottish exports go, and abroad. UK GDP growth may be picking up slightly but it will be far from a sustained recovery during 2013 and this will affect Scottish exports. Scottish manufactured exports abroad (ex rUK) fell by 1.4% in the fourth quarter of last year so manufactured exports now stand 13.1% below their pre-recession peak as Figure 20 shows.

Figure 20: Scottish Manufacturing Export Volumes to 2012Q4



The manufactured export position continues to be worse than the situation after the collapse of electronics production led to an exporting nadir in 2002. There is little hope of much improvement in the short run. The Eurozone remains in recession .The IMF, OECD and EU Commission have all cut their GDP forecasts for the major economies. The growth of world trade was slower in 2012 than in any year since 2008 and the UK's share fell due to the contraction of financial services. Scottish exports are unlikely to recover by much, if at all, in 2013.

GDP growth may be starting to recover more strongly but we should not forget the burden that continues to be imposed upon the UK economy by the Coalition Government's programme of fiscal consolidation. In this context it is worth quoting the *Institute for Fiscal Studies*:

"The UK is in the fourth year of a planned eight-year fiscal tightening. Following further announcements made in Budget 2013, this fiscal consolidation is now forecast to total £143 billion by 2017–18. The UK is intending the fourth largest fiscal consolidation among the 29 advanced economies for which comparable data are available. By the end of this financial year, half of the total consolidation is expected to have been implemented. However, within this tax increases and cuts to investment

spending have been relatively front-loaded, while cuts to welfare spending and other non-investment spending have been relatively back-loaded."

So by the end of this financial year more than £70 billion has still to be taken out of the economy and taken from those, such as welfare recipients, who have high spending propensities. In this context, it will be hard for the UK economy to generate the rate of growth required to generate a full recovery back to the growth trend. As we noted in the previous *Commentary*:

"The more rationale policy approach .... would be for the UK government to slow the pace of fiscal consolidation, and undertake a massive infrastructure investment programme while borrowing costs remain so low. ..... The way is still open for a massive boost to infrastructure spending in the UK. If only the government would take it."

We see no reason to change that view.

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

GVA Forecasts

For our latest GVA forecasts we continue the presentational procedure adopted in earlier 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. We have updated our forecasting model to SIC2007 industries and have accommodated the latest release of the Scottish Input-Output tables.

Table 1 presents our forecasts for Scottish GVA - GDP at basic prices - for 2013 to 2015. The forecasts are presented in more detail in the *Forecasts of the Scottish Economy* section of this Commentary below.

Table 1: Forecast Scottish GVA Growth, 2013-2015

GVA Growth (% per annum)	2013	2014	2015
Central forecast	0.9	1.6	2.1
March forecast	*0.9*	*1.7*	*1.9*
UK mean independent new forecasts (May)	0.8	1.5	2.1
Mean Absolute Error % points	+/- 0.440	+/- 1.031	+/- 1.204

Table 1 shows that our GDP forecast for 2013 at 0.9% is the same as our March forecast. For the two years 2014 and 2015, we have revised down slightly our forecast for 2014 from 1.7% to 1.6%, and have revised up the forecast for 2015 from 1.9% to 2.1%. The forecasts reflect the continued weakness of domestic demand, in particular government spending and consumer expenditure, and weak anticipated growth in the rest of the UK and Eurozone markets to which Scottish exports are so reliant. Some may be surprised that we have not revised up our forecasts for 2013 and 2014 given the evidence of a recent pick up in the economy. We have not done this since our forecasts already contain gradual improvements to the growth rate. And so a recovery is built in. But it must be stressed that this recovery is fairly anaemic and not what one would have expected 5 years after a recession, even a recession generated by a banking crisis. As we argued before the reason for this stagnation and anaemic recovery is twofold: the UK government's fiscal consolidation programme and a weak export performance reflecting both supply-side structural problems in the UK economy as well as weak global demand.

Table 1, also compares our GVA forecasts with the median of latest independent forecasts for the UK in, 2012 and 2014 and the average of the new independent medium-term forecasts for 2015 that are published by the UK Treasury. These show that we expect Scottish growth to continue to be a little stronger than UK growth this year and next year, and the same growth as the UK in 2015. So, we are now forecasting growth of 0.9% in 2013, 1.6% in 2014 and 2.1% in 2015. Given our previous forecast errors the lower and upper bounds for growth in 2013 are expected to be 0.46% and 1.34%, for 2014, 0.57% to 2.63%, and for 2015, 0.90% to 3.30%.

Production and manufacturing continue to be the major sectors exhibiting the fastest growth in 2013, 2014 and 2015. In 2013, production is projected to grow at 1.1% but this is a reduced forecast from the 2% projected in March. Services and construction display positive growth this year at 0.8% and 0.7% respectively. This relative performance continues in both 2014 and 2015 as forecast growth across all sectors increases. Production grows by 1.9% and 2.5% in 2014 and 2015, while service growth is projected to be 1.5% and 2.0%. The construction sector continues to lag but picks up to 1.2% and 1.3%. This forecast has therefore revised down the growth of production and manufacturing, and revised up the forecast growth of services. As noted above a recovery is now evident in certain parts of services especially business services while manufacturing remains weaker than expected.

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.

Table 2: Forecast Scottish Net Jobs Growth in Three Scenarios, 2013-2015

	2013	2014	2015
Upper	22,600	50,500	64,300
March forecast	*21,400*	*44,950*	*59,100.*
Central	12,150	28,200	38,700
March *forecast*	*9,400*	*19,150*	*31,800*
Lower	2,450	4,450	16,400
March forecast	*-3,100*	*-5,750*	*5,150.*

We have generally raised our forecasts for job creation compared to our March forecast. This reflects the stronger jobs performance noted in the recent data and reflects the sectoral rebalancing of our growth forecast more in favour of labour intensive services. On the central forecast, we are now forecasting that net jobs will rise by 12,150 in 2013, rising to 28,200 in 2014 and 38,700 in 2015. This year, we now expect just over 12,000 service sector will be created, with only small numbers of net jobs added in other sectors. In 2014/2015, the bulk of the jobs created are expected to be in the service sector with an additional 23,000/30,500 jobs forecast, while 2,550/4,350 are added in production, 1,600/2,250 in agriculture and 750/1,550 in construction.

Unemployment Forecasts

The key unemployment forecasts are summarised in Table 3 below.

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 somewhat from March, reflecting the weakness of productivity, and higher employment given the growth of output. As the

analysis above in the section on the Labour Market implies, the variation in the link between output and labour demand and the unanticipated changes in labour supply makes unemployment a difficult number to predict. We also see many workers leaving the labour market so that the measured unemployment rate becomes a less and less accurate measure of the extent of labour reserves and the underlying misery of job loss. Our projection for unemployment on the ILO measure at the end of 2013 is now 213,250. We continue to expect the unemployment position to deteriorate slightly in 2014 compared to 2013 due to relatively weak output and employment growth. Unemployment is now forecast to be 228,000 by the end of 2014 but then falls back to 189,350 by the end of 2015 as growth in the economy strengthens.

Table 3: Forecasts ILO unemployment 2013-2015

	2013	2014	2015
ILO unemployment			
Rate (ILO un/TEA 16+)	7.9%	8.4%	7.0%
March forecast	8.3%	8.6%	7.7%
Numbers	213,250	228,000	189,350

Brian Ashcroft
7 June 2013

Forecasts of the Scottish economy

Summary

Despite continued challenges in the domestic and external environment, there are little signs that some of the downside risks to growth in 2013 are likely to materialise. There is growing evidence of a recovery in the United States, and while some Eurozone countries have seen their growth forecasts downgraded in recent months, forecasts by major institutions for the Euro area as a whole have not been revised down as significantly as they have been on occasions over the last four years. Following revisions to some of the (experimental) national accounts data for Scotland, an interesting pattern of pre-recession divergences in income and expenditure between Scotland and the UK as a whole has emerged, which will require further examination to explore its consequences for the future path of consumer spending growth in Scotland. We have kept our forecast for growth in Scotland through 2013 at 0.9%, with a minor revision of our forecast for 2014 to 1.6% from 1.7%. Our forecast for growth in 2015 is now 2.1%, up by 0.2 percentage points. The jobs outlook for Scotland is forecast to improve relative to our previous forecasts with modest growth in net employee jobs each year through the forecast horizon.

Households

Figures for wage growth across the UK as a whole – a comparable figure for Scotland is not available - show that (private sector) average weekly earnings growth slowed markedly at the end of 2012 and into 2013, growing at 1.4% in the final quarter of 2012 and 0.8% in the first two month of 2013. With inflation remaining above this rate, and the Bank of England's expectations for it to remain so through the medium-term, earnings continue their real terms decline. Falling real wages are likely to prolong the point at which households feel their finances to be "sustainable", although some respite in Scotland could come from the restatement of some increases in public sector earnings, although these are capped at 1% which remains below cost of living increases.

Short term house price indices have recorded smaller falls in house prices in Scotland than the UK as a whole, and the average house price has remained stable since the start of 2010. The UK House Price Index reports that house prices in Scotland to February 2013 were down by 1.2% in a year, less than the fall in Northern Ireland (-7.7%) but house prices in Wales rose by 4.1% and prices in England rose by 2.1% in the same period. Taking out London and the South East of the UK, UK prices still rose by 0.6%.

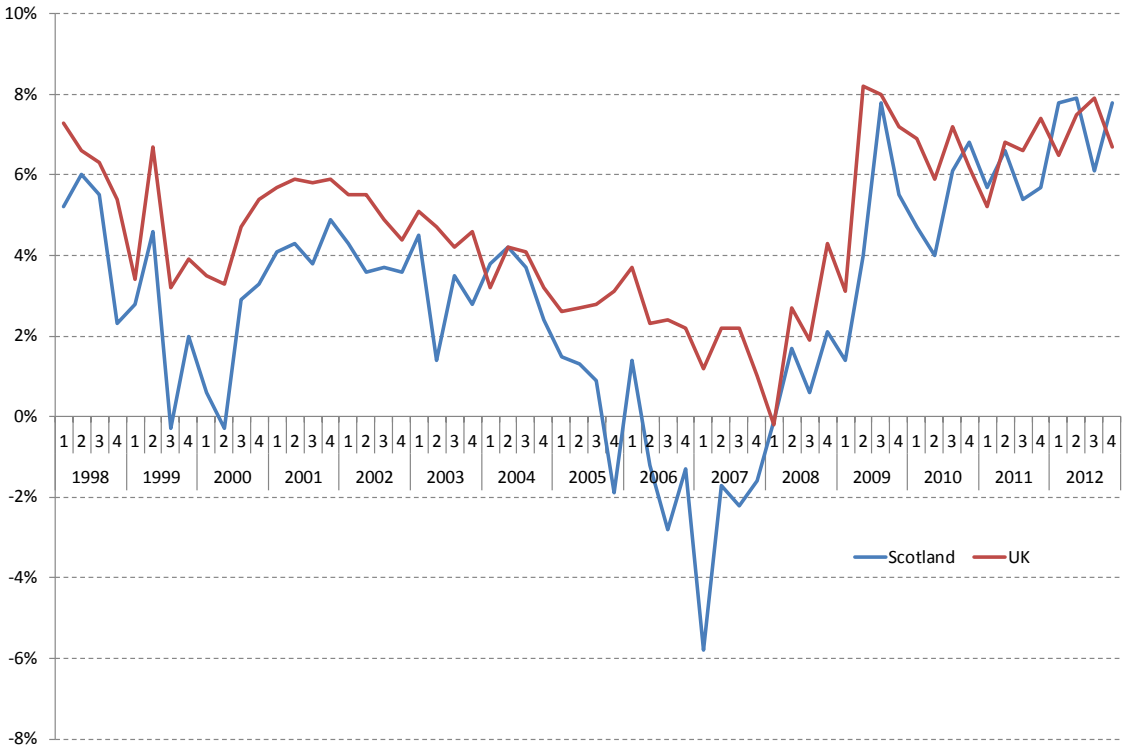
House prices on average are around 9% below their 2008 peak, having fallen 12% from their peak by the start of 2009. Price expectations have increased in the last four months, while housing transactions are around half of the numbers seen before 2008. Mortgage advances in the final quarter of 2012 were up 6% from the same quarter of the previous year in both Scotland and the UK. At the same time, the level of new housing completions remains stubbornly below pre-recession levels. Private new build completions fell between 2011 and 2012 to 9,862 over the year, down by around half from the levels seen between 1997 and 2008.

Markit's Household Finance index for the United Kingdom followed its fall earlier in 2013 with a positive movement in the most recent (May) release. This index has moved up from its lowest levels and has recorded the slowest deterioration seen since May 2010. While still some distance away from the 50 base line of "no change", this movement was explained by positive movements in future income expectations.

Figure 1 shows how the household savings ratio has evolved to the final quarter of 2012 in both Scotland and the UK. These data – which have been significantly revised since the last publication of SNAP earlier in 2013 – now imply that Scottish households had a number of quarters of negative savings in the pre-recession period, and have since increased savings ratios to the same levels as for

the UK as a whole. The previously observed (positive) difference between Scottish and UK households savings ratios for much of the last decade, has been reduced markedly in these most recent data. One possible avenue which may explain some of the observed divergence between the Scottish and UK figures comes in the latest Bank of England's Inflation Report. This reports figures from the (UK) living costs and food survey which show that high-debt mortgagors (those with a mortgage of more than twice annual disposable income) had negative savings ratios in the period prior to 2008, and that these households have made significant reductions in spending since. While the UK figures are not broken down to the regional level, it would be revealing – as well as being useful for tracking the extent of household debt deleveraging to have occurred since 2008 – for the evolution of household financial debt in Scotland over the last decade to be examined in more detail.

Figure 1: Household savings ratios, Scotland and UK, Q1 2000 to Q4 2012



Sources: (Experimental) Scottish National Accounts Project data (Scottish Government) and UK Quarterly National Accounts (National Statistics).

The Scottish Retail Index published on the 1st of May reported that volume of retail sales in Scotland rose by 0.3% in the first three months of 2013, while the value of sales was up 0.6% from the last quarter. The volume of retail sales in Scotland on this measure was stronger in Scotland than Great Britain as a whole.

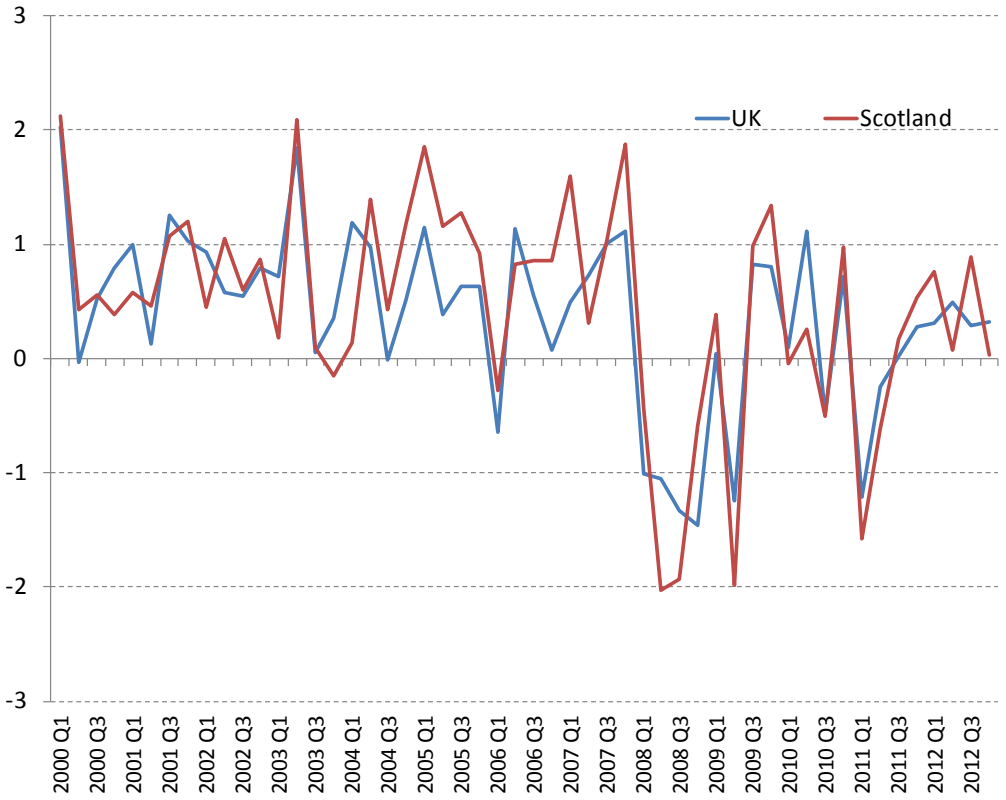
Comparable Scottish and UK data on household income and consumption growth are available up to the final quarter of 2012. These show that in the final quarter of 2012 consumer spending in Scotland rose by only 0.03% - the smallest amount since the second quarter of 2011. UK consumer spending grew by only 0.32% in the same quarter (See **Figure 2**). Relative to its pre-recession peak, the levels of consumer spending in the final quarter of 2012 are 3.4% and 2.8% below in Scotland and the UK respectively.

Investment

The output of the Scottish construction sector – the sector most heavily affected by investment spending – rose in the final quarter of 2012, recording three successive quarters of growth. Growth over 2012 was

however down from 2011 due to a sharp fall at the start of 2012. In output terms, short of an unlikely rapid pickup in new investment projects it seems likely that 2013 will see continued slow growth. Domestic private house building remains flat, while there is no sign of housing market confidence reappearing soon.

Figure 2: Household real quarterly consumption spending growth, Scotland and UK, Q1 2000 to Q4 2012



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

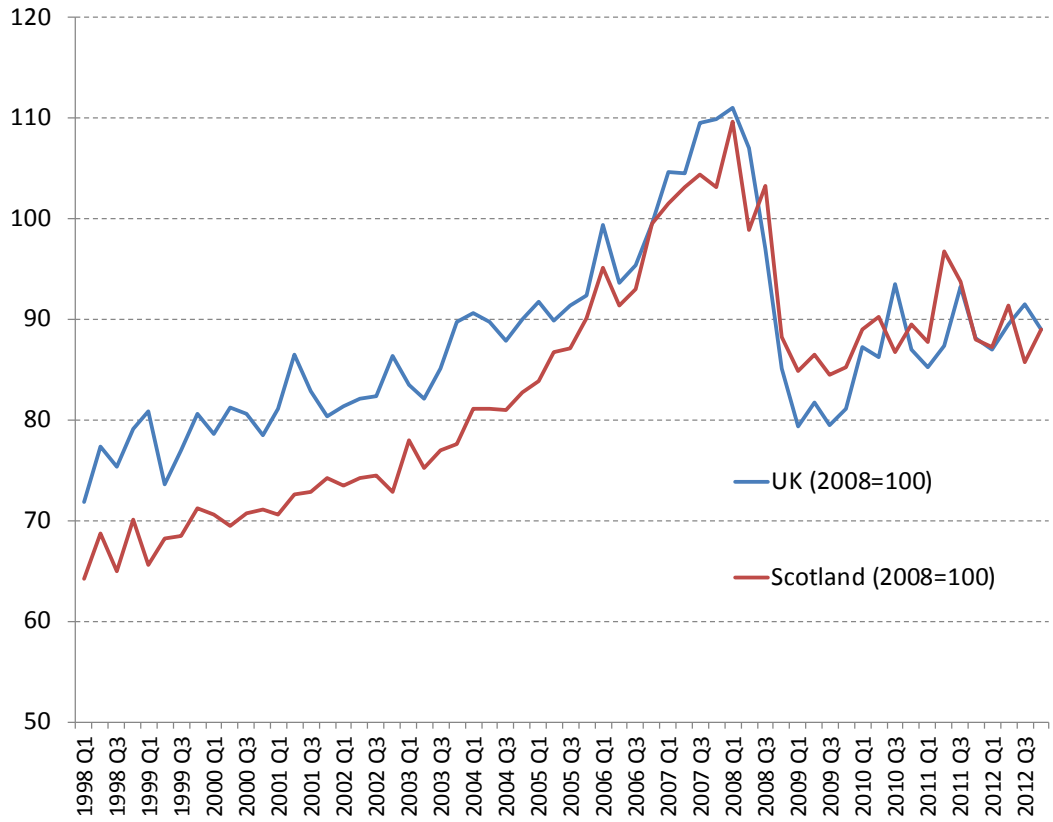
In the UK as a whole the most recent figures on output in the construction sector indicated that the volume of sectoral output was at its lowest level since the final quarter of 1998. “Private-commercial other new work” remains stubbornly below pre-recession levels.

Figure 3 shows that real investment spending (including public and private spending) in the UK and Scotland remains significantly below its pre-recession values. Additionally, it also indicates that while the two quarters to Q3 2012 saw increases in investment spending in the UK, since the second quarter of 2011 investment spending in Scotland has fallen relative to its level in 2008. Changes to the SNAP data from which these data on investment comes has moved the Scottish series much closer to that of the UK than had previously been observed from the available data. The revised series shows a peak to trough fall in real investment of 22.9% in Scotland and 28.5% in the UK as a whole, while investment spending is 18.8% and 19.8% below its pre-recession peak in Scotland and the UK respectively.

Trade

The rest of the UK provides the largest market for goods produced in Scotland outside the Scottish economy. The latest (preliminary) growth data indicate that UK GDP growth was 0.3% in the first quarter of 2013, indicating that UK output has been broadly flat over the last 18 months. The most recent Index of Production figures for March 2013 supported this picture, with production up 0.2% on the quarter but down 1.4% compared to the level one year earlier.

Figure 3: Real gross fixed capital formation, Scotland and UK, Q1 1998 to Q4 2012



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

The latest data on exports from Scotland to the (non-UK) rest of the world show that during the fourth quarter of 2012 Scottish exports fell by 1.4%. Exports from Scotland in real terms fell between 2011 and 2012 by 2.9%. This quarter on quarter decline came despite growth in exports by four industries– "Food and Drink", "Textiles, clothing and leather", "Wood, pulp, paper, publishing and printing" and "Metal and non-metal products". Exports by the "Food and drink" sector were the only area in which growth over the year was seen, and its growth was 0.6%.

The latest Bank of England Inflation Report notes that while world trade growth was slower in 2012 than in any year since 2008, the UK's share of world trade fell, in particular caused by UK financial services exports declining.

The most recent forecasts for the international environment suggest a continued worsening of countries' prospects as we begin 2013. The International Monetary Fund, OECD and European Commission have all significantly cut their growth forecasts again, after doing so through the latter half of 2012. Latest forecasts for GDP growth in major Scottish international export markets and revisions from earlier forecasts are shown in Table 1. The National Institute's latest forecasts for the UK as a whole conclude that UK export volumes will actually decline during 2013. In particular this will be driven by a fall in exports to the Euro Area and broadly flat growth in exports to non-EU countries. The significant reduction in growth prospects for the Eurozone suggests that the European export market will remain generally weak for Scottish producers over the next couple of years.

Advance estimates of US GDP growth in the first quarter of 2013 revealed growth of 2.5% on an annualised rate, up from 0.4% growth at an annual rate in Q4 2012 (when growth was principally affected by a significant decrease in federal defence spending). US consumer spending grew by 2.2%

on an annual rate in the quarter, reflecting strong spending in services, while the household savings rate fell to 2.6% - its lowest rate since the start of 2009. Private investment growth slowed, but remained positive, but there was a significant upturn in both inventory investment and exports. Goods exports rose in the quarter although imports also rose, so trade did not directly contribute to the change in real GDP seen in the first quarter.

The very latest Eurozone PMI revealed that while still in overall contraction territory, the index had eased for the second month running in May 2013. New order business fell for the 22nd successive month, indicating the continued and ongoing weakness of new business in the Euro area. Again there was some divergence between nations, with the index for Germany easing into expansion territory, while those for Spain, Italy and France remaining in contraction. The survey evidence appeared consistent with continued recession for the Eurozone through 2013 as both the IMF and OECD continue to forecast. As Table 1 indicates, for the Euro area as a whole, growth forecasts for 2013 have been revised down by both these organisations in the last six months, with a sharp deterioration in the forecasted growth for France - which is Scotland's third largest (non-UK) export market.

Table 1: Economic growth forecasts for 2013 and 2014 for major Scottish export markets, plus UK, China, Euro area and world, including changes from earlier forecasts where available, %

	2013				2014			
	IMF (April 2013)	Revision (since January)	OECD (May 2013)	Revision (since Dec 2012)	IMF (April 2013)	Revision (since January)	OECD (May 2013)	Revision (since Dec 2012)
USA	1.9%	-0.2%	1.9%	-0.1%	3.0%	-0.1%	2.8%	0.0%
Netherlands	-0.5%	n/a	-0.9%	-1.1%	1.1%	n/a	0.7%	-0.8%
France	-0.1%	-0.4%	-0.3%	-0.6%	0.9%	0.0%	0.8%	-0.5%
Belgium	0.2%	n/a	0.0%	-0.5%	1.2%	n/a	1.1%	-0.5%
Germany	0.6%	0.1%	0.4%	-0.2%	1.5%	0.0%	1.9%	0.0%
Ireland	1.1%	n/a	1.0%	-0.3%	2.2%	n/a	1.9%	-0.3%
UK	0.7%	-0.3%	0.8%	-0.1%	1.5%	-0.3%	1.5%	-0.1%
China	8.0%	-0.1%	7.8%	-0.7%	8.2%	-0.3%	8.4%	-0.5%
Euro area	-0.3%	-0.2%	-0.6%	-0.5%	1.1%	0.0%	1.1%	-0.2%

Source: World Economic Outlook, International Monetary Fund (April 2013), World Economic Outlook Update, International Monetary Fund (January 2013), Economic Outlook No. 93, OECD (May 2013) and Economic Outlook No. 92, OECD (December 2012).

Forecasts for the Scottish economy: Detail

On the domestic side of the economy, the fiscal contraction at the UK level and new changes to the household income through welfare changes starting in April 2013 is likely to make a negative contribution to household spending growth. The distributional consequences of wage and welfare changes will be important for the growth of overall household expenditures, but we are unable to capture this within our forecasts. Household spending growth slowed at the end of 2012, and although retail sales measures suggest an increase in Scotland compared to GB as a whole, it is likely that retail sales will be largely flat in the continued presence of weak household income growth and with the higher household saving rates in Scotland compared to the UK.

In our central forecast, we have retained the forecasted slow overall growth in household consumption growth through 2013, which is in line with current surveys of the domestic outlook. Government expenditure growth is forecast to continue its real terms contraction through the forecast horizon.

The most recent survey evidence for manufacturing in Scotland and UK reported a slight improvement across many sectors, with capital expenditure particularly strong in the UKCS. Survey data for the

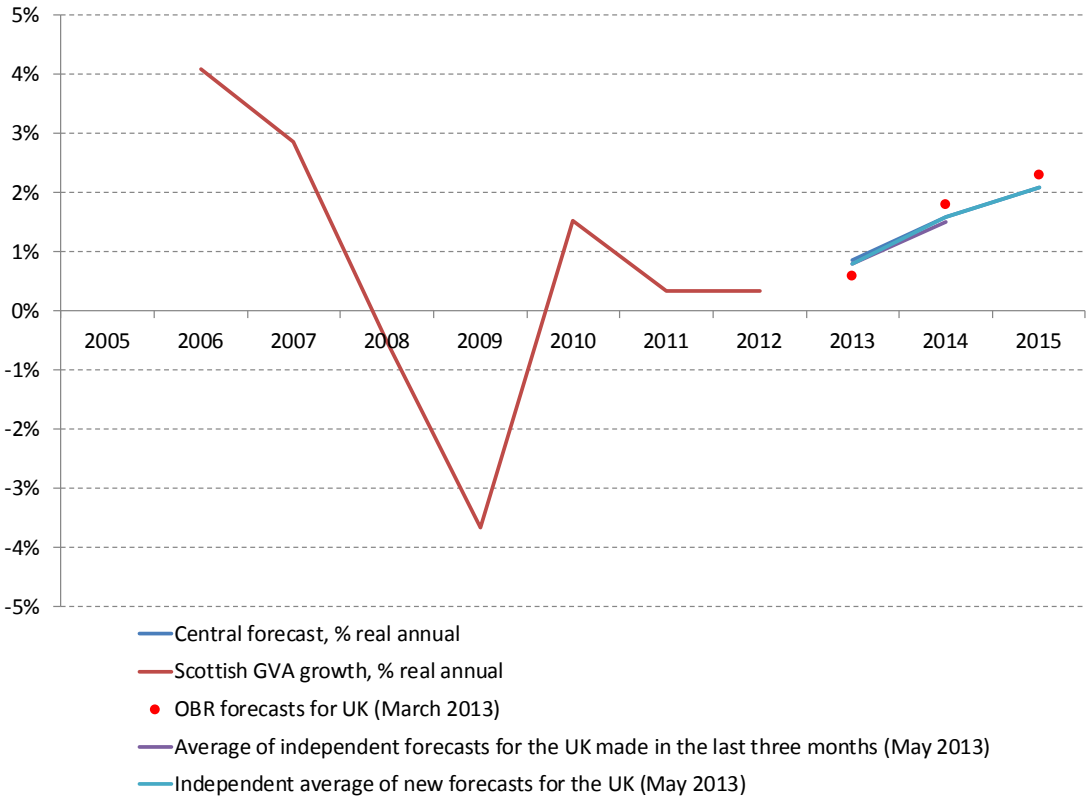
construction sectors suggests that there may be tentative signs of growth in future quarters. Commercial construction activity remains weak, but growing, through 2013 on our central forecast.

The external market for Scottish goods and services has evolved slightly in the last quarter. There is continued weakness in the economies of the Eurozone – Scotland's major non-UK market for exports – as well as most forecasters revising down growth expectations for the UK economy over 2013 and 2014. The most recent survey evidence however, points to increased confidence if not orders in the Eurozone, and more positive signs of recovery in the United States.

Results

In this issue of the *Commentary*, we are forecasting the year-on-year real growth in key economic and labour market variables, including aggregate Gross Value Added (GVA) and employment and unemployment, over the period 2013 to 2015. The model used is multi-sectoral, and where useful, results are reported for sub-aggregate sectors. Given the release of Input-Output tables – showing the pattern of production and consumption in the Scottish economy, and links to other economies – we have updated the model to SIC2007 industries, and to operate at the same classification as sectors which are reported in the GDP figures for Scotland.

Figure 4: GVA growth for Scotland, 2013 to 2015, and comparisons to UK forecasts, annual real %



Sources: Fraser of Allander Institute forecasts, Office for Budgetary Responsibility and HM Treasury (various months).

We begin with the (central) forecasts for growth in the Scottish economy. Our new forecasts for 2013, 2014 and 2015 are shown in **Figure 4**. This also shows for comparison purposes only, a number of different sources forecasts for the UK over the same period. These sources are the Office for Budgetary Responsibility (OBR) which last forecast in March 2012, and will release new forecasts later in November 2012, the median of recent forecasts produced by professional forecasts for each year of the forecast window.

Our forecasts for real GDP growth in Scotland in 2013, 2014 and 2015 are now 0.9% and 1.6% and 2.1% respectively. Our forecast for growth in 2013 is slightly lower than that forecast in our last Commentary, but rounding to a single decimal means that it remains at 0.9% for the year. Our forecasts for growth in 2014 is 0.1 percentage points lower than we forecast in March 2013 while our forecast for 2015 is revised up by 0.2 percentage points.

In particular, a slightly weaker outlook for household spending through 2013 is partially offset by increased expectations for business investment growth and only modest changes to (trade weighted) non-UK export markets for Scottish products.

In addition to these aggregate growth forecasts, **Table 2** presents the GVA forecasts by broad industrial grouping, i.e. for the "production", "services" and "construction" sectors.

Table 2: Growth (%) by sector in the Scottish economy, 2013 to 2015

	2013	2014	2015
Gross Value Added	0.9%	1.6%	2.1%
Production	1.1%	1.9%	2.5%
Construction	0.7%	1.2%	1.3%
Services	0.8%	1.5%	2.0%

Source: Fraser of Allander Institute forecasts

We use our calculated past forecast errors (e.g. the difference between aggregate growth forecasts and what outturn figures were) to show the potential range of outcomes around our central forecast.

For forecasts made in the summer period, our forecasts for growth in that year have had a mean absolute error of 0.440 percentage points. The same error in forecasts for the following year (i.e. 2014) is 1.031 percentage points.

Again, we use the mean absolute error for the longest forecast period for the longest forecast – in this issue, to 2015 - as we do not yet have a long history of forecasts of growth made over a three year horizon. These historical errors give the ranges around our central estimates of Scottish GVA growth shown in Table 2 above. The estimated range around our central forecasts of GVA growth in each year is shown in **Figure 5**.

Employment

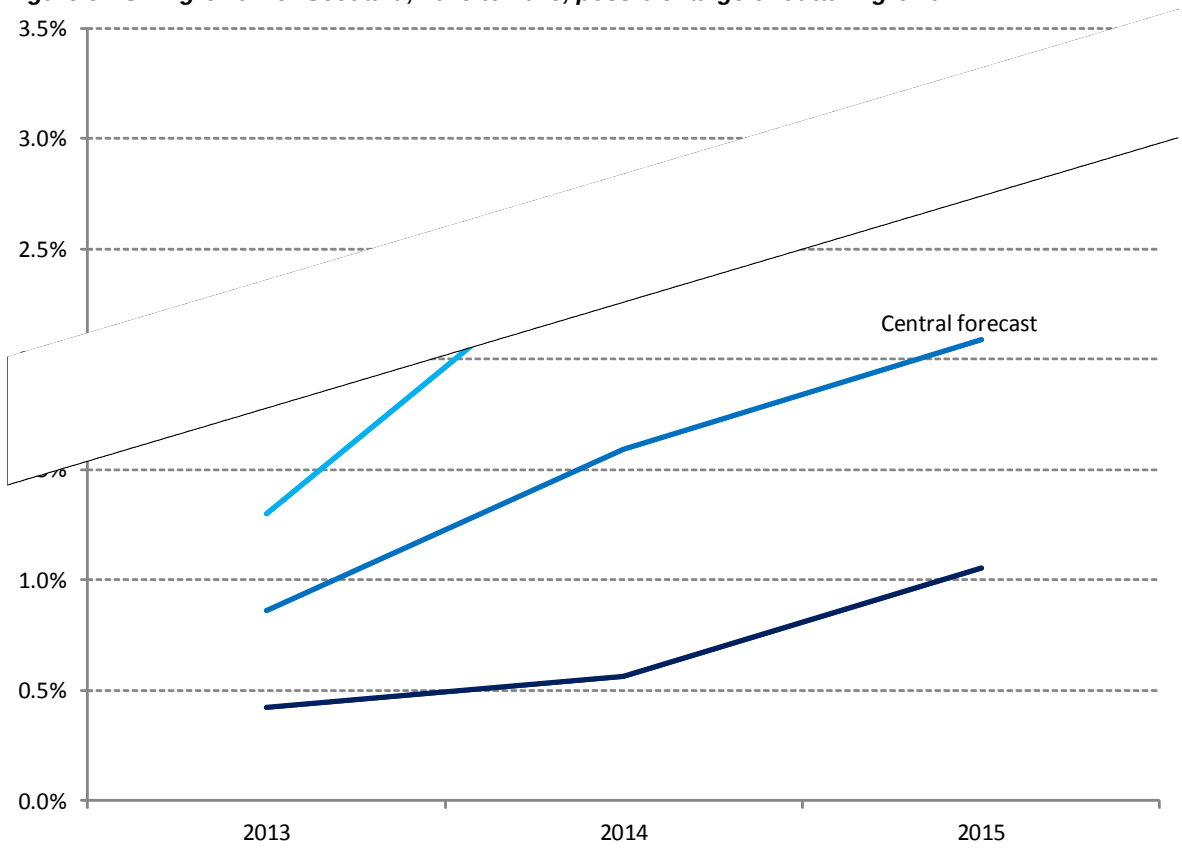
Detailed commentary on recent developments in the Scottish labour market is available in the *Labour market* section. In this section we focus on trends and forecasts for the number of (employee) jobs in the Scottish economy.

The most recent data on the number of (employee) jobs in Scotland are available to the end of the fourth quarter of 2012. These indicate that the number of jobs in Scotland at the end of 2012 was 2316 thousand, an increase of 38,000 since the end of 2011. In March's Commentary, we had forecast an increase in employee jobs between the end of 2011 and 2012 of 32,650. The level of employee jobs forecast was 2,294 thousand, while the outturn data currently estimated that there were 2,316 thousand jobs in Scotland at the end of 2012, indicating that the employee jobs series itself had been revised up since our last forecast.

Our forecasts for employee jobs in 2013, 2014 and 2015, including a breakdown by broad sectoral groups, are shown in **Table 3**. The number of employee jobs in 2013 is forecast to increase by just over 12,000 from the end of 2012, and up from almost 9400 increase forecast in March 2012. Most of this increase in job numbers through 2013 is due to a forecast rise in the number of jobs in "Service"

industries. Through 2014 and 2015 we expect the number of jobs to increase each year (by 1.2% and 1.6% respectively), revised up from 0.8% and 1.4% growth in employee jobs forecast in March 2013.

Figure 5: GVA growth for Scotland, 2013 to 2015, possible range of outturn growth



Source: Fraser of Allander Institute forecasts

Table 3: Forecasts of Scottish employee jobs (000s, except where stated) and net change in employee jobs in central forecast, 2013 to 2015

	2013	2014	2015
Total employee jobs (000s), Dec	2,328	2,356	2,395
Net annual change (jobs)	12,150	28,200	38,700
% change from previous year	0.5%	1.2%	1.6%
Agriculture (jobs, 000s)	30	31	33
Annual change	650	1,600	2,250
Production (jobs, 000s)	250	252	257
Annual change	-350	2,550	4,350
Construction (jobs, 000s)	121	121	123
Annual change	-450	750	1,550
Services (jobs, 000s)	1,928	1,952	1,982
Annual change	12,200	23,300	30,550

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

The employee jobs forecasts consistent with our upper and lower forecasts for GVA growth are given in **Table 4**.

Table 4: Net annual change in employee jobs in central, upper and lower forecast, 2013 to 2015

	2013	2014	2015
Upper	22,600	50,500	64,300
Central	12,150	28,200	38,700
Lower	2,450	4,450	16,400

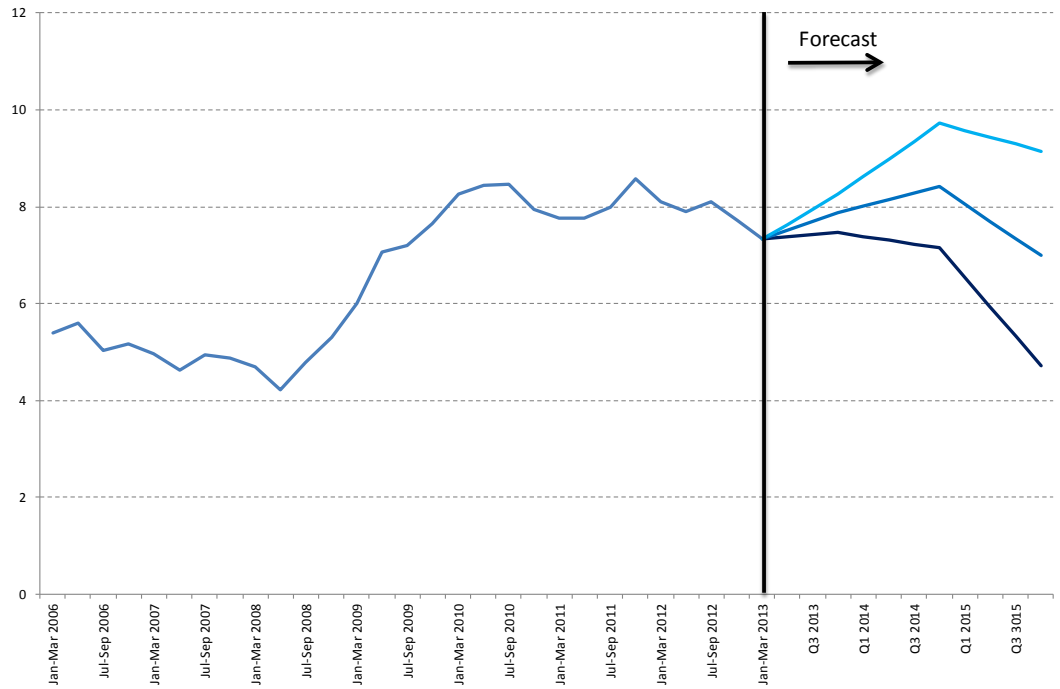
Note: Absolute numbers are rounded to the nearest 50.
Source: Fraser of Allander Institute forecasts

Table 5: Forecasts of Scottish unemployment in central forecast, 2013 to 2015

	2013	2014	2015
ILO unemployment	213,250	228,000	189,350
Rate[1]	7.9%	8.4%	7.0%

Notes: Absolute numbers are rounded to the nearest 50. [1] = rate calculated as total ILO unemployment divided by total of economically active population aged 16 and over. The most recent labour market figures are detailed in the Labour market section of the Fraser Economic Commentary.

Figure 6: Scottish ILO and claimant count unemployment rate, history and forecast: 2006 to 2015



Source: Fraser of Allander Institute forecasts

Unemployment

We present our forecasts for unemployment at the end of 2013, 2014 and 2015 in our central forecast in **Table 5**. As with previous forecasts we report the ILO unemployment measure and the number forecast to receive unemployment benefits ("claimant count"). The ILO measure is preferred as it gives a more complete indication of the extent of labour resources available for work but unable to find work, and so is a better measure of the level of spare capacity in the labour market.

We have revised these down – both in levels and rates – as the Scottish labour market continues to display unusual (low) productivity changes – e.g. more robust employment measures while output has been declining over recent quarters. We are now forecasting a level of ILO unemployment at the end of 2013 at 7.9% (down from 8.3% forecast in March) and 8.4% and 7.0% in 2014 and 2015 (down from March's 8.6% and 7.7% forecasts respectively). We show the history of ILO unemployment rate since 2006, and our central and upper/lower forecasts for this variable from Q2 2013 to 2015 in **Figure 6**.

Grant Allan

8th June 2013

Review of Scottish Business Surveys

Overall

Overall demand remains weak and a number of Q1 surveys took the view that the Scottish economy was stagnating and bumping along the bottom of the recession, however May survey data indicated that there was more of an emerging sense of a recovery and that that the worst of the recession is over, but that the recovery will be slow.

Once again activity in the oil and gas sector was the strongest. The Ernst & Young's review of the oilfield services sector suggested strongly rising orders, revenue and employment in 2012, and this was echoed by the Oil & Gas UK's quarterly index and annual Activity Survey 2013. The latest Scottish Engineering Survey (Q2 2013) reported slightly rising confidence and orders, more so for metal manufacturing, machining and transport; and the latest monthly hotel occupancy survey reported higher occupancy levels than a year ago. In contrast the first Scottish Chamber' Business Survey (SCBS) of 2013 showed that whilst the Scottish economy essentially remained weak, there was a further rise in manufacturing optimism. Confidence among SCBS construction firms was less downbeat than in previous quarters and there was an unexpected modest rise in tourism confidence. Retail remains problematic for the Scottish economy with like for like sales declining by 3.0% in April, according to the Scottish retail consortium. Business sentiment among SCBS wholesale and retail firms however failed to improve with the weakness in consumer demand threatening to delay any economic recovery. The latest Business Monitor from Lloyds TSB Scotland for the three months to February 2013 indicated a marginal improvement in the Scottish economy as 29% of the firms surveyed increased turnover, 37% experienced static turnover and 34% experienced a decrease; the resulting overall net balance of -5% was an improvement from the -10% of the previous quarter and the -6% of the same quarter one year earlier.

Oil and gas services

The revival of the oil and gas sector in the UKCS continued with rising confidence, investment and activity. The UKCS is now benefitting from record investment in new developments and improvement to existing assets and infrastructure, the strongest for more than three decades' (OGUK 2013:3). Strong prospects for the UKCS were also highlighted in the latest Scottish Enterprise's UKCS Spends and Trends and by most industry analysts. Underpinning the rising confidence and activity have been a series of tax changes.

The oilfield services sector likewise recorded growth in optimism, output and employment. Ernst & Young's Review of the Oilfield Services sector suggests an increase of 6,000 employees in 2011 and an increase of 17% in revenues.

Oil and gas production has declined considerably over the past two years, due in part to adverse tax changes in the mid-2000s. As Oil & Gas UK note, it would be wrong to expect any immediate upturn in production, but by 2017, production is expected to rise to approximately two million boepd. (Oil & Gas UK 2013:4).

The Aberdeen city and Aberdeenshire labour markets continue to outperform both the Scottish and UK figures, with unemployment in Aberdeenshire at 3.4% compared to 7.9% in Scotland. The activity rate in Aberdeenshire is 9.3 percentage points higher than the Scottish figure. In terms of job quality and income the North East continues to outperform the Scottish figures. (ONS Dec 2012)

The importance of the oil and gas sector to the UK and to Scotland was evident in the publication of two major strategy papers: (1) HM Government's UK Oil and Gas, Business and Government Action, and (2) Oil & Gas Industry Leadership Group, co-chaired by the Minister for Energy, Enterprise and Tourism, the Scottish Government and the chairman of the Imes Group.

The latest Aberdeen Chamber Oil and Gas Survey (No 18 Spring 2013) noted that recent changes to tax allowances coupled with rising international demand had contributed to operators reporting rising total activity in 2012. 60% of operators anticipate increased activity and 40% a level trend in total activity in 2013. In 2012 80% reported rising production related activity in 2012, and 40% anticipate increasing production related work in 2013. The extent of working at or above optimum levels provides further evidence of the rising levels of activity both in the UKCS and internationally. In the Spring 2013 survey all operators reported working at or above optimum levels in 2012 and 75% at or above optimum levels in respect of international based activities.

Private sector

The February PMI stated that 'the health of the Scottish private sector economy continued to improve'. Results indicated growth in both business activity and inflows of new work, which in turn contributed to further job creation. There was a rise in costs pressures leading to a slight increase in average output prices over the month. The index climbed to an eight-month high of 52.5, from 52.3 in January. This indicated a further expansion in private sector business activity, and extended the sequence of growth to five months. As was the case in January, Scotland registered a sharper increase in output than the UK as a whole. The March PMI data from the Bank of Scotland showed that growth of private sector activity north of the border had slowed and that the level of new business rose at a slower rate. Job creation however, strengthened and was the most marked in eight months. Amid rising fuel costs and weakness in sterling, input price inflation was sharp, although firms generally absorbed these higher cost pressures as charges were virtually unchanged. The private sector economy expanded modestly in March, and at a slower rate than in each of the previous three months. The index for March was 51.1, down from 52.5 in February. Growth was underpinned by a further, albeit slower, rise in service sector business activity and factory output down marginally on the month. The April PMI data showed an increase in business activity and new work. Companies reported creating more jobs, with employment rising at the fastest pace in nine months. Input price inflation eased from the peak in March, although cost pressures remained high enough to lead to an increase in output prices. The index rose to a 12 month high of 53.1 in April, from 51.1 in March, suggesting a solid increase in private sector business activity in Scotland. The expansion was broad-based by sector, with a rise in growth in factory output and in service sector activity. The index showed that Scotland outperformed the UK as whole.

Production

Respondents to the LloydsTSB Scotland Business Monitor showed that the overall net balance of turnover for firms in the production sector in the three months to end of February 2013 was +2%. This was a slight improvement on the +1% of the previous quarter but identical to the +2% of the same quarter one year ago. Overall total volumes of business improved in the first quarter with a net balance of -6%, (a rise from -10% in the previous quarter); the improvement however, was less evident among production firms (+1%) compared to +3% of last quarter. Production firms appeared to be more optimistic than service firms and showed an overall net balance for turnover for the next six months at +10% compared to -4% for service firms. Expectations for cost increases showed a slight increase. Concerns over credit availability fell for all firms as did concerns for credit costs, however production firms were more concerned about credit availability and credit costs than service firms.

Manufacturing

During the first quarter of 2013 business confidence continued to improve for a net of 18.6% of SCBS manufacturing firms compared to a net balance of +1.1% in the previous quarter and to +14.3% in Q1 2012. Similarly respondents to the Scottish Engineering Quarterly Review for the three months to the end of March 2013 reported that optimism remained generally positive, but the level of optimism remained similar to the final quarter of 2012.

A net balance of 4.6% of SCBS firms reported a rise in total sales; better than the previous quarter (-1.2%) but down on the same quarter of 2012 (+14.3%). Respondents are fairly optimistic as to the trends in orders for the second quarter of 2013 (+16.7%). Scottish Engineering respondents reported that total orders declined following a rise in the final quarter in 2012. Within the engineering sectors only machine

shops and transport reported positive trends. Average capacity utilisation declined by one percentage point for SCBS firms and was also down on the same quarter of 2012. More than half of firms reported working below optimum levels.

Turnover is expected to rise for a net balance of SCBS firms (+18.8%). The net trend in profitability (+5.9%) is also expected to rise over the coming year. The trends in investment in plant/machinery declined for a net balance of manufacturing respondents (-3.6%). New investment continues to be directed towards replacement (32.5%) or to improve efficiency (39%).

During the first quarter of 2013 a net balance of SCBS firms reported a decline in total employment levels (-8.3%) although around two thirds continued to report no change to overall levels. A third of firms increased pay during the three months to March and the average increase was 2.9%. 42% reported seeking to recruit staff compared to 48% in Q4 2012, and a third of recruiting firms reported difficulties. Employment levels continued to improve for small and medium Scottish Engineering companies but not for large companies; fabricators and metal manufacturing reported shedding staff while the oil & gas sector continued to grow.

Construction

The decline in business optimism among SCBS construction firms eased further during the first quarter of 2013 (-10.7%) compared to the previous quarter (-25.8%) although around two thirds of firms continued to reported a rise/no change to optimism levels. The trend in total new orders/contracts continued to ease for a net balance of -3.5% in the first quarter of 2013. No net change is forecast for Q2. Capacity utilisation rose from 79.4% to 83.7%, the highest average level since the second quarter of 2008. Public sector (-8.3%) and domestic/house build orders (-16.6%) continued to decline however there was an unexpected rise in private commercial orders (+7.4%). Cash flow trends continued to decline (-28.6%). Turnover (-7.1%) and profitability (-21.5%) are still expected to be weak over the next 12 months together with continued pressure on margins. Half of responding firms expect tender margins to worsen during the coming year.

The downward trend in employment unexpectedly ended with a net of 10.7% of SCBS firms reporting a rise in total employment levels in Q1, although the upward trend is expected to be a temporary one with a net of 4.5% forecasting a decline in Q2 2013. Recruitment activity rose (from 38% to 44%) as did recruitment difficulties (from 15% to 27%). Average pay increases rose from 2.3% in Q4 2012 to 2.6%. The latest figures from the Annual Population Survey indicate that the Scottish construction sector has lost an estimated 62,500 jobs since 2008, including 14,500 in 2012.

The main findings from the Scottish Construction Monitor conducted by the Scottish Building Federation indicated that Industry confidence eased four percentage points rising from -28% to -24%. Despite this rise, the overall level of confidence within the industry remained negative as just under half of firms reported being less confident about their future prospects compared to only one fifth who were more confident.

This latest survey focussed on the issue of late payments and found that almost four out of every five construction firms responding to the survey have been affected by late payments in the past year. The survey reported that late payments appeared to be an issue predominantly affecting private sector repair and maintenance, private sector house building, and private commercial activity although a quarter of firms also report problems with late payments from public sector repair and maintenance. The main findings were that 57% of construction firms had been forced to write off unpaid invoices over the past 12 months with the value of these invoices ranging from less than £500 up to £50,000 and the results indicate Scottish construction firms have written off invoices with an average value of £5,931.25 over the past 12 months.

Wholesale and logistics

Business optimism amongst Scottish Chamber of Commerce wholesalers declined (-43.7%) to the lowest level since the final quarter of 2011. Only 6% of firms reported an increase in business confidence. Once again the downward trend in sales (-18.7%) was worse than expected from the previous survey with fewer

than a fifth reporting an increase in sales; a net balance expect the decline to continue (-14.3%) in the second quarter of 2013.

Three-quarters, compared to 80% in the previous Scottish Chambers' survey, of wholesalers continued to report increased pressures from transport costs. Firms remain under pressure from raw material costs (62.5%), pay settlements were cited as a pressure for 25% of firms. More than half of firms (62.5%) expect to increase prices over the next three months. A net balance of firms expect a fall in both turnover (-31.3%) and profitability (-31.2%) over 2013. Slightly fewer than half (43.8%) of firms reported no change to investment plans; nevertheless the decline continued (-18.7%).

SCBS wholesale respondents, as expected, reported a net decrease in overall employment levels during the first quarter of 2013 (-6.3%) and a net balance expected to shed staff in the second quarter (-12.5%). Over a third sought to recruit staff (37.5%); largely for replacement. The average pay increase in Q1 was 3% compared to 3.1% in Q4 2012.

Retail distribution

Sales trends remained relatively flat. The latest Scottish retail sales index (Q1 2013) noted that retail sales volumes grew by 2.0% (2012 Q1 on 2013 Q1). The value of Scottish retail sales, without adjusting for inflation, during the first quarter of 2013 increased by 0.6 per cent from the previous quarter, and grew by 2.5 per cent annually (2013 Q1 on 2012 Q1).

The low levels of business confidence among SCBS retailers continued through the first quarter of 2013 (-45.2%) but although the net balance remains negative it was less severe than the decline reported in Q1 2012 (-62.8%). The negative trend in overall sales continued, although eased marginally from -37.3% in Q4 2012 to -35.9%, however 60% of retailers reported a decline in the total value of sales during the first three months of 2013. Only 11.9% reported and only 5.1% expect increased sales, as continuing concerns over consumer confidence remain evident.

Cost pressures remain historically high and continued to increase in the first quarter of 2013 for SCBS firms. Utility costs and raw material prices continued to be of particular concern. Pressures on margins remain widespread with more than half of firms forecasting declining profitability (59%) and slightly fewer than half (47.6%) expect a decline in turnover during the coming year. Labour market activity continued to decline with only 4.9% reporting an increase and none expecting an increase in overall employment levels. A fifth of firms reported increasing pay, and the average increase rose marginally from 2.3% to 2.4%.

The Scottish Retail Consortium SCR reported that sales on the high street declined by 2.1% in April; like-for-like sales fell by 3%. The SRC blamed the cold weather and an early Easter for the decline. Food sales saw their biggest fall since January 1999 although retailers insisted this was due to the early Easter. The latest figures, from the SRC/KPMG retail sales monitor, showed total food sales were down 1.4% on 12 months ago, with like-for-like food sales down 2.7%. Non-food sales fell by 2.7% and like-for-like non-food sales declined by 3.3%.There was an increase in sales of clothing and footwear in Scotland during April compared with March, but not as much as in the rest of the UK where the weather was better at the end of the month.

Tourism

Business confidence rose for a net balance of SCBS hotels (+2%) in the first quarter of 2013 (the first rise for six quarters). Slightly fewer than half of firms reported no change (42%). A net balance of 14% reported a fall in visitors during the three months to the end of March; and a net balance of 6.7% anticipate a decline in the second quarter of 2013. The trend was not as depressed as had been expected by respondents from the previous survey.

Average occupancy declined from 60.4% to 59.6% amongst SCBS responding hotels although this average was up compared to Q1 2012 (53.0%). During the first quarter of 2013 trends in bar/restaurant trade and conference/function facilities declined and are expected to continue to decline. A net balance (-39.2%) reported a decline in the average daily room rate, although the downward trend is expected to ease with -8.9% expecting a further decrease in room rates in Q2 2013. 63% reported the lack of tourist

demand as the primary business constraint. Competition, poor transport infrastructure, high fuel costs and weak marketing of the area also remained a concern to hotels.

The Scottish Hotel Occupancy Survey (February 2013) conducted by Visit Scotland reported a rise of 11 percentage points in room occupancy and a rise of 6 percentage points in bed occupancy. The only regions reporting a decline in room occupancy were Dundee & Angus and Forth Valley. Only the main urban centres of Aberdeen/Grampian, Edinburgh/Lothians and Glasgow & Clyde had above average occupancy rates.

More than half (56.3%), compared to only 12% in the previous quarter, of SCBS hotels sought to recruit staff. Although employment trends continued to decline, the decline was less steep than had been forecast. A net balance of 8.7% expect a rise in total employment levels in the second quarter of 2013.

Outlook

The most recent surveys suggest signs of an emerging but weak and tentative recovery together with some growth both in the UK and elsewhere. There are more positive signs of a recovery in the United States and more encouragement to focus less exclusively on austerity in the Eurozone, but at present these developments are reflected more in increased confidence than orders.

UK manufacturing (PMI trends for May) reported an improving situation, and the latest Scottish Engineering quarterly survey reported rising orders across a number, but not all, sectors and the continuing high levels of capital expenditure and activity in the UKCS will stimulate the UK oil and gas supply chain.

The latest PMI survey evidence for UK construction suggests signs of a pick-up in housing and anecdotal evidence in Scotland suggests signs of both modest increased house building activity and of increased architectural and design work.

Inevitably household consumption remains constrained, given continuing pay restraint and the widened sense of job insecurity and this continues to impact on the retail sector. Nevertheless, latest data from Visit Scotland's monthly occupancy survey suggests better trends than last year, albeit with widespread discounting together with some signs of an improvement in business and conference tourism.

Cliff Lockyer/Eleanor Malloy
June 2013

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

1. *Oil & Gas UK Index Q 3 2012*
2. *Deloitte Petroleum Group Drilling Activity Q4 2012*
3. *PwC Drilling Activity*
4. *PwC Shale Oil: the next energy revolution*
5. *Lloyds TSB Business Monitor Issue December 2012 –February 2013;*
6. *Scottish Engineering's Quarterly Review Q1 and Q2 2013;*
7. *The Bank of Scotland Markit Economics Regional Monthly Purchasing Managers' Indices for February – May 2013;*
8. *Lloyds TSB England Regional PMI for February – April 2013;*
9. *The Scottish Retail Consortium's KPMG Monthly Scottish Retail Sales Monitors for February - April 2013.*

Overview of the labour market

Inevitably interest in the Scottish labour market continues to focus on the trends in employment and unemployment and for a further issue we return to these themes. Concern continues to focus on underemployment but the publication of the First Findings of the 2011 Workplace Employment Relations Study affords insights as to how work has changed in the recession and the policies adopted by employers.

Underemployment

As was noted in the previous Commentary the Economy, Energy and Tourism Committee called for evidence as to the issues related to the rise in underemployment, the rise in part time employment and work that does not utilise all the skills employees possess. Two themes were highlighted in the evidence. Felstead noted that conventionally less attention is given to skills underutilization and drew the committee's attention to the Skills Survey Series (Felstead et al 2007) which highlighted that proportionally Scotland had fewer jobs than the UK as a whole requiring degrees on entry, but proportionately more jobs that did not require qualifications on entry. In contrast, Bell highlighted underemployment, the impact of changes to the labour force noted in previous Commentaries; namely that whilst the numbers employed have increased this has been due to an increase in part-time and self-employment and a decline in full-time employment (see table 5 and figure 2 later in this section). Both definitions were examined in the Economy, Energy and Tourism Committee's report 'Underemployment in Scotland' (2013).

The Committee, in exploring the dimensions of underemployment, noted the rise in underemployment, sectoral and regional variations in Scotland and the diverse issues underpinning these patterns. Whilst there was some association with the level of demand for labour and unemployment levels, evidence from HIE indicated that underemployment in the Highlands & Islands is probably more prevalent than the statistics indicate, especially in fragile areas where much employment is part-time or casual and seasonal where many families adopt a multi occupational way of life to enable the family unit to remain viable. The CBI evidence to the committee drew attention that the more flexible labour market related to the rise in underemployment and was helping to protect jobs in the recession, whereas the STUC argued that underemployment related more to the rise of low wage and insecure employment.

In addition, the Committee took evidence as to the effects of displacement, where higher qualified workers displace lower qualified ones and the emerging practice of unpaid work (internships) as a route to secure paid employment, and the Committee noted, in recommendation 106, its concerns as to the adverse impact of displacement on the least skilled and the young.

Work in the shadow of recession

The first findings of the UK wide 2011 Workplace Employment Relations Study (ESRC, ACAS, NIESR, DBIS 2013) entitled part one of its findings - a review of the changes to British workplaces – 'In the shadow of recession', and explored the responses to the recession. Three-quarters of all workplaces had taken some action in response to the recession that impacted directly on their workforce. A cut or freeze in pay was reported by 42% of workplaces (63% public and 39% private sector). A freeze on recruitment was reported by 28%, 18% reduction in overtime, 16% reduction in training and reduced use of agency staff, 15% reduction in basic hours and 14% compulsory redundancy. Employees reported both wages cut or frozen (33%), workload increased (29%) access to paid overtime reduced (19%) and contracted hours reduced (5%). The results highlight the ability of workplaces to vary hours/labour costs rather to rely on redundancies and may offer some explanation of the differing pattern of unemployment in the current recession. Further evidence to support these responses to the recession is contained in the First Findings from the Skills and Employment Survey 2012 (www.llakes.org). This noted a heightened sense of insecurity, work intensification and a decline in the amount of training.

Recent trends and statistics

The latest comparable figures on the labour market between Scotland and the United Kingdom in the quarter to March 2013 are summarised in Table 1. Labour Force Survey (LFS) data show that in the quarter to March the level of employment in Scotland rose by 54 thousand, to 2,517 thousand. Over the year to March 2013, employment in Scotland rose by 30 thousand. Over the year UK employment fell by 43 thousand. The Scottish employment rate (16 – 64) – those in employment as a percentage of the working age population – was 71.8 per cent, up 0.4 per cent to one year earlier. For the same period the UK employment rate was 71.4 per cent, up 0.8 per cent compared to one year earlier. Scottish unemployment, in the quarter to March, fell by 7 thousand to 199 thousand, a fall of 21 thousand over the year.

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. Figures derived from the Labour Force Survey differ slightly from those derived from the Annual Population Survey.

The relationships between employment, unemployment, totally economically active and inactive are important in appreciating changing levels of employment and unemployment, and changes in the employment rates should be seen in conjunction with changes in the activity rates. If people leave employment and become unemployed (but are still economically active) the unemployment rate increases, but the economically active rate remains unchanged. However, if people leave employment and do not seek employment, as seems to be a continuing pattern, they are categorised as economically inactive, as such the unemployment rate remains unchanged whilst the activity and inactivity rates change. Equally the changing pattern between full and part time employment is of interest and once again we return to this issue later in this section. This is clearly shown in table 1. Over the year to March 2013, the numbers employed rose by 30 thousand, whilst unemployment fell by 21 thousand – and the numbers of those aged 16-64 who are economically inactive rose by 9 thousand and the numbers economically active rose by 10 thousand.

Table 1 shows that for Scotland the preferred International Labour Organisation (ILO) measure of unemployment fell to 199 thousand, between January – March 2013, a fall of 21 thousand over the year. The ILO unemployment rate fell in the three months to March 2013 and now stands at 7.3 per cent. This represents a 0.4 per cent fall over the last quarter and a 0.8 per fall over the year. The comparable ILO unemployment rate for the UK stands at 7.8 per cent, and is down 0.1 per cent over the most recent quarter and also down 0.4 per cent over the year.

Table 1: Headline indicators of Scottish and UK labour market, Jan – March 2013 (thousands)

Jan – Mar 2013		Scotland	Change on quarter	Change on year	United Kingdom	Change on quarter	Change on year
Employment*	Level (000s)	2,517	54	30	29,708	-43	434
	Rate (%)	71.8	1.1	0.4	71.4	-0.2	0.8
Unemployment**	Level (000s)	199	-7	-21	2,518	15	-92
	Rate (%)	7.3	-0.4	-0.8	7.8	0.1	-0.4
Inactivity***	Level (000s)	758	-30	4	9,003	47	-212
	Rate (%)	22.4	-0.9	0.2	22.4	0.1	-0.6

Source: Labour Market Statistics (First Release), Scotland and UK, May 2013

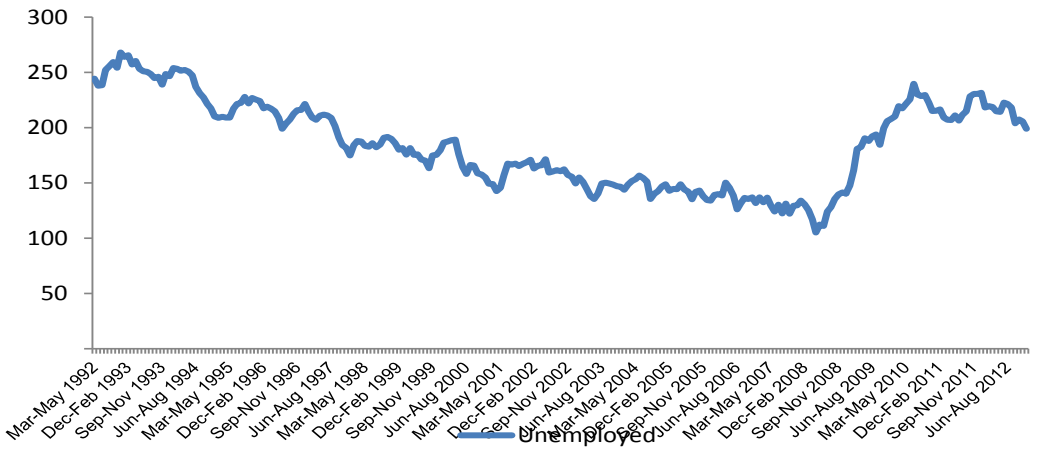
** Levels are for those aged 16+, while rates are for those of working age (16-59/64)*

*** 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)*

Figure 1 illustrates the trend in unemployment in Scotland since 1992. Unemployment peaked in October – December 1992 at 268,000, it took almost five years - to August - October 1997 - to be consistently below 200,000 and a further five and a half years - to February – April 2003 - to be below 150,000 and reached the lowest number (111,000) in May – June 2008. Unlike the pattern of the previous recession unemployment has fallen more rapidly to below 200,000, this may reflect the more rapid rise in part time and self-employment (see figure 2 and table 5).

Figure 1 Trend in Scottish unemployment 1992 – Jan-Mar 2013 (thousands)



Source: Labour Market Statistics (First Release), Scotland and UK, May 2013

The economically active workforce includes those individuals actively seeking employment and those currently in employment (i.e. self-employed, government employed, unpaid family workers and those on training programmes). Between January – March 2013 the numbers economically active (16+) rose by 47 thousand and the activity rate rose by 1.0 to 63.4%. There were 2,716 thousand economically active people in Scotland during January – March 2013. This comprised 2,517 thousand in employment (2,437 thousand aged 16 – 64) and 199 thousand ILO unemployed. The level for those of working age but economically inactive fell by 30 thousand in the latest quarter, but rose by 4 over the year thousand to 758 thousand people.

Table 2: Employment rates thousands (%) People by age for Jan 2004 – December 2012

	All aged 16+	16 - 64	16 - 17	18 - 24	16-24	25 - 34	35 - 49	50 - 64	65+
Jan 04 - Dec 04	59.5	72.5	44.3	68.5	63.1	79.2	82.2	61.9	5.2
Jan 05 - Dec 05	59.6	72.9	44.4	69.0	63.6	79.5	82.2	62.8	4.8
Jan 06 - Dec 06	60.4	73.6	43.2	68.3	63.0	80.2	83.7	63.7	5.4
Jan 07 - Dec 07	60.6	73.8	38.6	69.0	62.5	81.4	83.5	64.4	5.7
Jan 08 - Dec 08	60.3	73.5	40.5	66.4	60.8	81.2	83.1	65.2	6.0
Jan 09 - Dec 09	59.2	71.9	34.0	64.1	57.8	79.5	81.8	64.5	6.6
Jan 10 - Dec 10	58.3	71.0	32.1	61.7	55.7	77.9	81.5	64.1	6.7
Jan 11 - Dec 11	57.9	70.7	30.8	60.6	54.6	79.0	81.1	63.7	6.6
Jan 12 - Dec 12	57.7	70.6	29.4	59.2	53.2	79.0	81.4	64.0	7.8

Source: Labour Market Statistics (First Release), Scotland and UK, May 2013

Data on employment by age, derived from the Annual Population Survey, is available up to December 2012. In the year to December 2012 employment rates fell for those aged 18 – 24, but rose for those aged

35 and over. Table 2 illustrates the changing employment rates by age group for January – December 2004 onwards.

Table 3: Employment, unemployment, inactivity and claimant count rates by Local Authority Area 2012

	Employment rate 16 - 64 (%)	Unemployment rate 16+ (%)	Econ inactivity rate 16-64 (%)	Claimant count rate (%)
SCOTLAND	70.6	7.9	23.1	4.1
Aberdeen City	76.9	5.0	17.8	2.2
Aberdeenshire	79.9	3.4	17.5	1.3
Angus	74.3	6.2	20.9	3.3
Argyll & Bute	70.5	6.3	24.0	3.3
Clackmannanshire	65.5	9.9	26.6	5.4
Dumfries & Galloway	67.2	8.2	25.2	3.7
Dundee City	65.2	10.6	27.5	5.9
East Ayrshire	66.9	11.3	24.1	6.1
East Dunbartonshire	73.3	6.1	21.9	2.7
East Lothian	74.8	6.5	20.7	3.3
East Renfrewshire	72.6	5.8	23.2	2.4
Edinburgh, City of	72.8	6.4	22.7	3.2
Na h-Eileanan an Iar	71.3	6.3	22.4	3.2
Falkirk	72.9	8.1	21.0	4.5
Fife	69.6	9.1	22.9	4.5
Glasgow City	59.7	11.7	32.2	5.8
Highland	76.6	5.0	19.9	2.8
Inverclyde	65.3	12.1	23.6	5.5
Midlothian	75.1	6.6	21.3	4.1
Moray	77.7	4.9	18.8	2.6
North Ayrshire	61.7	12.7	28.6	6.7
North Lanarkshire	69.5	11.4	20.3	5.6
Orkney Islands	81.3	3.8	14.1	1.6
Perth & Kinross	74.5	6.0	19.3	2.3
Renfrewshire	71.6	8.9	21.4	4.9
Scottish Borders	72.5	5.9	22.7	3.0
Shetland Islands	79.7	3.5	19.0	1.5
South Ayrshire	69.9	9.2	21.6	4.4
South Lanarkshire	75.1	6.9	20.7	4.6
Stirling	67.3	8.1	26.1	3.3
West Dunbartonshire	67.0	11.4	24.1	6.5
West Lothian	74.0	6.6	21.7	3.9

Source: First Release May 2013 (Annual Population Survey, Job Centre administrative system, BRES
Claimant count averaged for 12 month period

Inactivity for men aged 16 – 64 rose by 1 thousand over the year, but fell by 3 thousand for women over the year.

In the year to December 2012 the changes in the reasons for inactivity were: student up 14 thousand, looking after family/home down 1 thousand, retired down 4 thousand and long term sick down 10 thousand. The numbers temporarily sick rose by 4 thousand. The majority 585 thousand did not want a job – but 199 thousand were inactive but wanted employment.

Table 3 indicates the continuing significant differences in employment, unemployment and inactivity rates at the local authority level for 2012. In 2012 employment rates varied from over 80% in Shetland to between 65 - 70% in nine local authority areas and below 65% in two local authority areas. Likewise unemployment rates varied from 3.4% to 12.7%.

Table 4: Percentages in employment by SOC (2010) January – December 2007 to January – December 2012

	Jan 07-dec 07	Jan 08-dec 08	Jan 09-dec 09	Jan 10-dec 10	Jan 11-dec 11	Jan 12-dec 12
1: managers, directors and senior officials	8.6	8.6	8.9	8.6	8.4	8.5
2: professional occupations	18.0	18.0	18.2	18.1	18.3	19.8
3: associate prof & tech occupations	12.6	12.6	12.6	12.6	13.6	12.7
4: administrative and secretarial occupations	11.7	11.9	11.5	11.2	10.8	10.8
5: skilled trades occupations	12.0	12.3	11.6	11.7	11.5	11.1
6: caring, leisure and other service occupations	9.3	9.2	9.6	9.9	9.6	9.4
7: sales and customer service occupations	8.9	8.8	8.8	9.3	9.3	9.2
8: process, plant and machine operatives	7.1	7.4	7.0	6.8	6.6	6.6
9: elementary occupations	11.5	11.0	11.6	11.4	11.8	11.2

Source: *Annual Population Survey, NOMIS*
Notes: *Rounding means totals do not add to 100*

Table 5: Total workforce jobs* by industry, Scotland, June 2006–2012 and Dec 2012 (thousands)

Industry	June 2006	June 2007	June 2008	June 2009	June 2010	June 2011	June 2012	Dec 2012
A : Agriculture, forestry and fishing	54	60	60	59	66	50	52	51
B : Mining and quarrying	28	30	30	29	31	29	33	32
C : Manufacturing	226	228	212	201	187	187	202	194
D : Electricity, gas, steam and air conditioning supply	10	13	16	19	21	20	20	19
E : Water supply; sewerage, waste management etc.	18	17	16	14	13	19	17	16
F : Construction	194	203	199	185	173	176	173	168
G : Wholesale & retail trade; repair of motor vehicles etc.	384	380	396	398	380	372	372	374
H : Transportation and storage	118	123	123	111	112	111	119	126
I : Accommodation and food service activities	190	188	191	186	179	179	191	194
J : Information and communication	73	79	69	68	69	67	71	72
K : Financial and insurance activities	107	91	98	100	91	90	89	82
L : Real estate activities	29	30	32	32	27	33	29	25
M : Professional, scientific and technical activities	154	161	176	174	171	187	199	199
N : Administrative and support service activities	180	192	200	185	197	193	193	181
O : Public administration & defence; social security	177	181	177	146	162	152	154	153
P : Education	200	192	208	208	197	208	202	201
Q : Human health and social work activities	399	383	398	401	381	383	392	394
R : Arts, entertainment and recreation	81	75	84	71	78	81	92	93
S : Other service activities	65	63	58	59	68	59	50	45

Source: *Labour Market Statistics (First Release), Scotland, May 2013*
* *Workforce jobs are a measure of jobs rather than people*
Note: *There are extensive revisions from previous figures*

Table 4 provides some indications, although with reservations, of the changing pattern of employment since 2007/8.

Total workforce job figures are a measure of jobs rather than people. Total seasonally adjusted jobs for the quarter ending December 2012 (the latest available figures) stood at 2,620 thousand employee jobs, 287 thousand self-employed jobs, HM forces and supported trainees 17 thousand. Table 5 indicates the sectoral breakdown and provides some indication of both the impact of the recession and the recovery on sectors, although the trends need to be considered with some caution.

Table 6 outlines the changing patterns of full time and part time employment, and highlights the growth in the numbers of part time workers in Scotland, the latest data (January 2012 – December), over the past year the number of employees has fallen by 21 thousand whereas the numbers of self-employed have risen by 19 thousand.

Table 6 indicates the numbers of full time workers in Scotland since the peak in employment have declined by 144 thousand whilst part time employment numbers recovered very quickly and are now 53 thousand higher and self-employed 31 thousand higher. The changing trends in full and part time employment since October 2007 – September 2008 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 54 thousand higher than the peak in employment, suggesting that increasing numbers of workers were taking part time employment in the absence of full time work.

Table 6: Trends in total, full, part time, temporary and part time who could not find a full time job.

	All in employment							
	Total	Employees	Self employed	Full-time workers	Part-time workers	Workers with second jobs	Temporary employees	Could not find full-time job
Apr 2007 - Mar 2008	2,533	2,248	267	1,900	630	96	126	60
Jul 2007 - Jun 2008	2,544	2,254	271	1,912	629	98	125	61
Oct 2007 - Sep 2008	2,550	2,262	269	1,916	631	98	119	61
Jan 2008 - Dec 2008	2,529	2,243	268	1,900	626	99	116	64
Apr 2008 - Mar 2009	2,527	2,245	267	1,899	624	101	117	65
Jul 2008 - Jun 2009	2,515	2,235	264	1,880	632	103	123	73
Oct 2008 - Sep 2009	2,502	2,219	265	1,855	644	101	127	81
Jan 2009 - Dec 2009	2,492	2,210	265	1,844	645	102	133	84
Apr 2009 - Mar 2010	2,471	2,186	267	1,816	652	101	132	90
Jul 2009 - Jun 2010	2,464	2,181	265	1,804	657	99	126	96
Oct 2009 - Sep 2010	2,469	2,187	264	1,801	664	98	127	99
Jan 2010 - Dec 2010	2,472	2,185	268	1,796	672	97	125	107
Apr 2010 - Mar 2011	2,474	2,185	270	1,799	671	98	126	110
Jul 2010 - Jun 2011	2,471	2,181	274	1,796	672	95	131	114
Oct 2010 - Sep 2011	2,464	2,167	283	1,789	672	96	126	114
Jan 2011 - Dec 2011	2,464	2,167	283	1,785	676	96	121	114
Apr 2011 - Mar 2012	2,464	2,156	293	1,776	684	97	125	118
Jul 2011 - Jun 2012	2,473	2,156	299	1,779	687	100	118	115
Oct 2012 – Sep 2012	2,469	2,153	299	1,776	685	98	119	116
Jan 2012 – Dec 2012	2,468	2,146	302	1,772	684	101	127	115

Source: Labour Market Statistics (First Release), Scotland, May 2013

Note: 1. Includes people who did not state whether they worked part time or full time

2. The split between full time and part time employment is based on respondents' self-classification

Figure 2 illustrates how the employment 'recovery' continues to be driven by an increase in part time and self-employment. This changing pattern of employment may help to explain why the link between employment and GDP seems different to previous recessions.

Figure 2 Trends in full, part time and self-employment since April 2004 (Oct 2007 – Sept 2008 = 100)

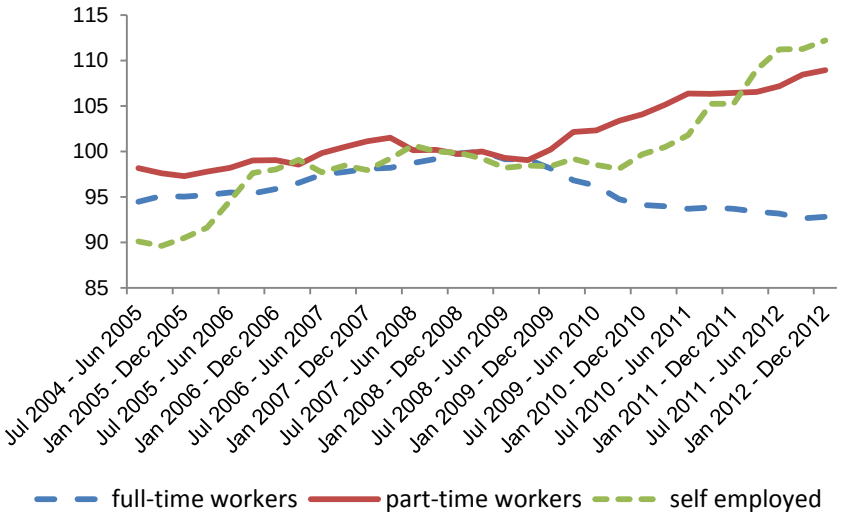


Table 7 suggests rising numbers of self-employment in all occupational groups since 2007, except skilled occupations, for professional and related groups it would seem that people have sought to sustain employment in their profession by self-employment, whereas for process and elementary occupations reliance on skill would seem to be less of a reason.

Table 7: Trends in total employment and self-employment Jan – Dec 2007 and Jan – Dec 2012

	Jan- Dec 07	Jan-Dec12
Managers, Directors and Senior Officials: All people	222,300	210,400
Managers, Directors and Senior Officials: Self-employment	42,900	52,100
Professional Occupations: All people	456,400	486,300
Professional Occupations: Self-employment	43,800	49,500
Associate Prof & Tech Occupations: All people	318,000	314,100
Associate Prof & Tech Occupations: Self-employment	33,100	43,200
Administrative and Secretarial Occupations: All people	295,700	267,600
Administrative and Secretarial Occupations: Self-employment	6,700	7,200
Skilled Trades Occupations: All people	302,900	274,200
Skilled Trades Occupations: Self-employment	79,900	74,300
Caring, Leisure and Other Service Occupations: All people	234,800	234,400
Caring, Leisure and Other Service Occupations: Self-employment	19,100	22,100
Sales and Customer Service Occupations: All people	224,600	229,100
Sales and Customer Service Occupations: Self-employment	5,500	7,400
Process, Plant and Machine Operatives: All people	178,100	163,000
Process, Plant and Machine Operatives: Self-employment	22,500	28,300
Elementary occupations: All people	293,200	278,400
Elementary occupations: Self-employment	13,200	15,400

Notes: *Based on SOC 2010*

Source: *Annual Population Survey*

Table 8 indicates how the total weekly hours have fallen since the onset of the recession, down by an estimated 4 million hours per week, with full time down 0.6 hours and part time down 0.1 hours. Table 9

explores the trends in terms of changing usual hours of work. However, the data for tables 7 and 8 does not permit an examination of the changing ratio between paid and unpaid overtime.

Table 8: Actual weekly hours of work January – December 2007 to January – December 2012

	Total weekly hours (millions)[12]	All workers[1]	Full-time[3]	Part-time[3]	Workers with second jobs
	1	2	3	4	5
Jan 2007 - Dec 2007	82	32.4	37.2	16.5	9.6
Jan 2008 - Dec 2008	81	31.8	36.4	16.3	9.6
Jan 2009 - Dec 2009	79	31.8	36.7	16.5	10.1
Jan 2010 - Dec 2010	77	31.2	36.2	16.3	9.7
Jan 2011 - Dec 2011	77	31.3	36.5	16.4	9.2
Jan 2012 - Dec 2012	78	31.4	36.6	16.4	9.7

Notes: *1* *Main and second job*
2 *Total actual weekly hours including both paid and unpaid overtime*
3 *Main job only*
Source: *Annual Population Survey*

Table 9: Usual weekly hours of work January – December 2007 to January – December 2012

		All in Employment (%)	Employees (%)	Self-employed (%)
Jan 07 - Dec 07	Less than 6 Hours	1.1	0.8	2.1
	6 up to 15 hours	5.9	5.6	7.5
	16 up to 30 hours	18.8	19.2	16.2
	31 up to 45 hours	54.5	56.6	37.1
	Over 45 hours	19.7	17.8	37.1
	Total (thousands)	*2,521*	*2,241*	*263*
Jan 11 - Dec 11	Less than 6 Hours	1.3	0.9	2.6
	6 up to 15 hours	6.5	6.2	8.1
	16 up to 30 hours	20.7	20.9	19.2
	31 up to 45 hours	54.0	56.2	37.7
	Over 45 hours	17.6	15.7	32.3
	Total (thousands)	*2,464*	*2,167*	*283*
Jan 12 - Dec 12	Less than 6 Hours	1.6	1.1	4.6
	6 up to 15 hours	6.2	5.8	8.5
	16 up to 30 hours	21.1	21.4	19.2
	31 up to 45 hours	53.7	56.1	37.3
	Over 45 hours	17.4	15.7	30.5
	Total (thousands)	*2,468*	*2,146*	*302*

Notes: *Total weekly hours includes paid and unpaid overtime*
Source: *Annual Population Survey*

Table 9 indicates that the usual hours of work of self-employed are lower than for full time employees and have declined. As was noted in the previous Commentary the service sector has not regained the level of productivity that was reached before the crisis, and staff may well be working as hard, although the volume of business has declined, or that the costs of closure of the business outweigh the losses of continuing to trade – the so called 'zombie' firm. Alternatively companies may well continue to 'hoard' labour due either to perceptions of skill shortages and recruitment difficulties, or due to the costs of redundancy.

Tables 7 and 8 of the Labour Market statistics (first release) provide information of the claimant count. The most recent (seasonally adjusted) figure for Jobseekers allowance claimants (16+) in Scotland stood at 138 thousand in April 2013, down 6.3 thousand or 4.4% over the year (these figures are taken from table 8 (1) in the Labour Market Statistics [First Release] May 2013. The claimant count rate at April 2013 stood at 4.9 per cent, or 6.2% for men and 3.4% for women (note these figures are taken from table 7 in the Labour Market Statistics and measure the number of claimants on the second Thursday of each month). The latest unemployment data at the Scottish constituency level is available in a SPICe Briefing.

Table 10 provides some limited indications of the experience of unemployment in terms of claimant count by age and duration. The latest figures suggest that 38.3 thousand have been claiming benefit for more than a year, up 3,500 over the year and 18,100 thousand have been claiming for more than 2 years, up 9.1 thousand (or 102.1%) over the year.

Table 10: Total claimant count and computerised claims by age and duration (Numbers in April 2013 and percentage change over year to April 2013)

	All computerised claims	All computerised claims Up to 6 months	All computerised claims Over 6 and up to 12 months	All computerised claims All over 12 months
All 16+ numbers	137,700	74,300	25,100	38,300
All 16+ % change over year	-6.2%	-3.9%	-5.7%	3.5%
All 18 – 24	36,100	22,500	6,800	6,800
All 25- 49	79,500	40,000	14,600	22,900
All 50 and above	23,600	11,200	3,700	8,600

Source: Labour Market Statistics (First Release), Scotland, May 2013

Trends in public sector employment are now considered in more detail a separate section in the Commentary. As the section indicates public sector employment in Scotland continues to decline, although at a slower rate than previously. The latest data at the time of writing this section (Q4 2012) indicates that there were 580,400 (551,700 excluding public sector financial institutions) employed in the public sector in Scotland, a decrease of 10,300 (1.7%) over the year. Employment in the devolved public sector declined by 4,500 (0.9%) to 485,100, due mainly to declines in further education (800) and local government employment (5,100).

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June 2013

Public Sector employment in Scotland

Inevitably interest focusses on the recent trends in public sector employment; however once again, the themes of cuts, capacity and targets are indicative of more significant current and medium term issues affecting the public sector.

Public sector employment (based on headcount and excluding public sector financial institutions) rose between 1999 and 2006, but since 2006 has declined by 48,000. Although the movement of local authority staff both in and out of arm's length organizations, typically charities, continues to make comparisons slightly harder.

Public sector employment in Scotland continues to decline, although at a slower rate than previously (see Table 1). The latest data at the time of writing this section (Q4 2012) indicates that there were 580,400 (551,700 excluding public sector financial institutions) employed in the public sector in Scotland, a decrease of 10,300 (1.7%) over the year. Employment in the devolved public sector declined by 4,500 (0.9%) to 489,700, due mainly to declines local government employment (5,100) and further education (down 800).

A comparison between headcount and full-time equivalent data suggests that since 2009 the devolved public sector in Scotland has been shedding more part-time than full-time jobs, between Q4 2009 and Q4 2012 headcount (devolved public sector) employment declined by 43,60000, whilst the full time equivalent declined by 31,900.

Table 1 Number of people employed in Scotland (headcount)

		Total Employment	Private Sector		Public Sector		Public Sector *Excluding public sector financial institutions*	
		Level	Level	Percentage	Level	Percentage	Level	Percentage
Q4	2006	2,524,000	1,924,400	76.2%	599,700	23.8%	599,700	23.8%
Q4	2007	2,541,000	1,941,800	76.4%	598,900	23.6%	598,900	23.6%
Q4	2008	2,532,000	1,885,400	74.4%	647,000	25.6%	604,400	23.9%
Q4	2009	2,464,000	1,829,400	74.2%	634,700	25.8%	599,000	24.3%
Q4	2010	2,480,000	1,864,300	75.2%	615,700	24.8%	582,200	23.5%
Q4	2011	2,464,000	1,872,900	76.0%	590,700	24.0%	559,300	22.7%
Q4	2012	2,468,000	1,888,100	76.5%	580,400	23.5%	551,700	22.3%

Source: Quarterly Public Sector Employment series, Scottish Government, Office for National Statistics

Notes

1 *Figures have been rounded to the nearest hundred. Total employment has been rounded to the nearest thousand.*

2 *Public sector financial institutions include Northern Rock (classified to the public sector from Q4 2007), Royal Bank of Scotland Group plc and Lloyds Banking Group plc (both classified to the public sector from Q4 2008).*

Table 2 indicates the changing levels of employment (headcount) at the broad category level. Over the past year the largest declines in headcount have been in local government (down 5,100), public sector financial institutions (down 2,700) and the civil service (down 1,700). In percentage terms the largest declines have been in public sector financial institutions (down 8.7%) and further education colleges (down 5%).

Table 2 Public Sector employment by National Accounts classification (headcount) all Q4 2012 figures

	Total Public Sector	Civil Service	Other Public Bodies	NHS	Armed Forces	Further Education Colleges	Total Central Gov.	Local Gov.	Public Corp	Public Sector Financial Insts
2006	599,700	52,100	19,200	150,300	12,800	16,700	251,100	320,700	27,900	
2007	598,900	49,800	22,600	154,500	12,200	16,900	255,900	316,000	26,900	
2008	647,000	49,800	23,400	157,400	12,000	16,900	259,500	313,600	31,300	42,600
2009	634,700	51,100	22,900	160,800	11,900	16,000	262,700	305,800	30,500	35,700
2010	615,700	48,700	22,700	158,000	12,300	16,800	258,400	295,500	28,300	33,500
2011	590,700	47,100	21,500	154,400	11,600	15,000	249,700	282,800	26,700	31,400
2012	580,400	45,400	21,400	155,800	10,900	14,200	247,700	277,700	26,200	28,700

Source: Public Sector Employment in Scotland Statistics Quarterly Public Sector Employment series.

Notes

1 *Figures have been rounded to the nearest hundred. Total employment has been rounded to the nearest thousand.*

2 *Public sector financial institutions include Northern Rock (classified to the public sector from Q4 2007), Royal Bank of Scotland Group plc. and Lloyds Banking Group plc. (Both classified to the public sector from Q4 2008).*

3 *Local Government category revised to include SPT.*

4 *A number of local government staff have transferred to arm's length organisations which are part of the private sector. This largely explains the decrease in local government employment between 2008 and 2009.*

5 *Information for further education colleges is based on actual information from Q4 2010.*

Education

Within the education sector the numbers employed in Scottish Further education colleges had declined by 800 over the year to Q4 2012 to 14,200, and by 2,700 since Q4 2008 and further reductions are likely. Merging colleges continues to pose a number of issues. Criticism was voiced in an internal review at James Watt College of management sanctioning bonus payments to senior staff for work associated with the setting up of the new merged college in Ayrshire and (Herald 27th April 2013).

Transport

Some of the weaknesses in the policy of outsourcing individual or small groups of ferry routes were made evident with the breakdown of Serco Northlink's Hamnavoe which operates between Scrabster and Stromness and the difficulties the contractor found in supplying a substitute ferry.

Subsidised transport for older citizens continues to be an issue, limitations on the use of transport cards and increased charges on rail routes have featured as well the consequences of the funding shortfall for Scottish Government's free bus scheme.

Local Government

Table 3 indicates the changes in headcount by local authority and indicates both a decline in Local Authority employment of 5,100 (1.8%) over the year. The majority of authorities have now published budgets with proposals for further employment reductions, increased charges for services and reductions in the range and depth of services. Developments in English local authorities continue to highlight the increasing use of outsourcing, accounting for some 60% of the value of all public sector outsourcing contracts. As we noted in the previous Commentary it is estimated that 50% of council waste management services and 23% of HR, IT and payroll functions are now outsourced.

Table 3 Local Government employment by local authority (headcount) Q4 2006 – Q3 2012 (Not seasonally adjusted)

Year	2006	2007	2008	2009	2010	2011	2012	Annual Change Headcount	Annual Change %
Local Authority / Joint Board									
Aberdeen City	11,600	11,600	11,400	9,800	8,800	8,800	8,700	-100	-1.2%
Aberdeenshire	13,900	13,300	14,200	14,800	14,400	14,000	13,600	-400	-2.7%
Angus	5,700	5,700	5,800	5,700	5,500	5,500	5,400	-100	-1.1%
Argyll & Bute	5,600	5,700	5,500	5,500	5,300	4,900	4,800	0	-1.0%
Clackmannanshire	2,800	2,900	2,900	2,800	2,700	2,500	2,700	200	6.4%
Dumfries & Galloway	8,400	8,400	8,200	8,400	8,300	7,800	7,700	-100	-1.4%
Dundee City	8,400	8,400	8,000	8,200	7,900	7,200	7,300	100	1.2%
East Ayrshire	6,900	6,800	6,800	6,700	6,600	6,400	6,200	-200	-3.0%
East Dunbartonshire	4,600	4,900	5,100	5,000	4,800	4,500	4,300	-100	-2.8%
East Lothian	4,900	5,000	5,000	4,900	4,700	4,800	4,700	-100	-2.2%
East Renfrewshire	4,600	4,800	4,800	4,800	4,500	4,500	4,400	0	-0.2%
Edinburgh, City of	20,600	20,800	19,400	19,200	18,500	17,700	17,800	100	0.6%
Eilean Siar	2,500	2,600	2,600	2,600	2,500	2,500	2,400	-100	-4.9%
Falkirk	7,700	7,900	8,100	8,100	7,900	7,400	7,600	100	1.8%
Fife	24,000	23,400	22,500	23,200	22,300	21,300	19,700	-1,700	-7.9%
Glasgow City	35,800	32,300	31,800	23,500	22,100	21,400	19,400	-2,000	-9.4%
Highland	12,800	12,800	12,700	12,800	12,600	11,200	10,200	-1,000	-9.1%
Inverclyde	5,100	5,000	4,900	4,700	4,600	4,300	4,300	100	1.4%
Midlothian	4,700	4,800	4,800	4,800	4,600	4,500	4,700	100	2.6%
Moray	4,800	5,100	5,200	5,200	5,000	4,900	5,000	100	1.2%
North Ayrshire	7,400	7,500	7,400	7,300	7,000	6,700	6,700	0	0.7%
North Lanarkshire	18,100	18,000	18,000	17,800	16,800	16,200	16,100	-100	-0.8%
Orkney Islands	2,200	2,100	2,500	2,400	2,400	2,400	2,400	0	0.0%
Perth & Kinross	5,900	6,100	6,100	6,300	6,000	6,000	6,000	100	0.9%
Renfrewshire	9,200	9,000	8,800	8,700	8,400	7,500	7,800	300	4.0%
Scottish Borders	5,700	5,800	5,700	5,700	5,700	5,600	5,500	-100	-1.2%
Shetland Islands	3,700	3,800	3,900	4,200	4,200	4,000	3,800	-200	-5.1%
South Ayrshire	6,000	5,700	5,600	5,500	5,800	5,200	5,200	0	0.6%
South Lanarkshire	16,300	16,000	15,600	15,700	14,800	14,600	14,800	200	1.4%
Stirling	4,600	4,600	4,500	4,500	4,400	4,200	4,200	0	0.5%
West Dunbartonshire	6,000	6,300	6,400	6,600	6,300	5,900	5,600	-300	-5.5%
West Lothian	8,300	8,400	8,400	8,400	8,300	7,900	8,000	200	2.1%
Total Fire Joint Boards	5,800	5,800	5,800	5,900	5,600	5,600	5,600	100	0.9%
Total Police Joint Boards	24,600	23,600	23,900	24,800	24,500	23,900	23,900	100	0.2%
Total Valuation Joint Boards	700	700	700	600	600	600	600	0	-1.8%
SPT	700	700	700	700	600	600	600	0	-6.2%
SCOTLAND	320,700	316,000	313,600	305,800	295,500	282,800	277,700	-5,100	-1.8%

Source: Joint Staffing Watch Survey, Scottish Government

Notes: 1. Figures are rounded to the nearest hundred.

2. Totals may not add up to the sum of the parts due to rounding

3. Figures for fire service staff exclude volunteer and retained fire-fighters

4. Police and Fire Service staff in Dumfries and Galloway and Fife, who are not covered by Joint Boards, are included within the figures for Joint Boards for consistency.

Health

Pressures on the NHS from increasing costs, rising expectations and increasing demand and changes to policies were again evident in waiting figures. The BMA expressed concerns that Scottish health boards should be more closely monitored to ensure they are not disadvantaging patients and 'skewing clinical priorities to meet targets'. The BMA Scottish council chair noted: ''waiting times targets were first established to support patients in their treatment journey. However, as Audit Scotland reports, the systems are inadequate and have been open to manipulation. This is not in the best interests of patients and is largely the result of the drive for political point scoring in our NHS. Clinical need and patient care must be at the centre of any waiting times management system. It is essential that targets are based on clinical evidence, not simply political imperative."

The Audit Scotland report noted a rise in the use of unavailability codes rocketed from 11 per cent of patients in 2008, to 30 per cent in 2011. The report indicated that similar patterns were found across Scotland, but says the reasons for this are not clear because of the limitations of waiting list management systems and lack of evidence in patient records.

Emergency Services

Interest has inevitably focussed on the integration of the Scottish police and the integration of IT and related services. Less attention has been paid to the Scottish fire and rescue service which been created by the merger of eight brigades into three regions – north, west and east. In common with English fire services the emphasis, given budget constraints, will have to move more to fire prevention and risk analysis. In common with other emergency services managing more effective working and sustaining the current levels of retained and voluntary staffs will be problematic. The Scottish ambulance service likewise is having to plan substantial changes to cope with funding at or below the inflation rate.

The Public Interest Disclosure Act 1998 provides protection for public employees who raise concerns as to wrongdoing that they are aware of through their work (see Audit Scotland's guide for employees). However, a study of the experiences of 1000 whistleblowers (Public Concern at Work 2013) found that 60% of those contacting Public Concern at Work did not receive any response from their management as to their concerns. The most concern response was formal action short of dismissal. The report concluded that 'speaking up in the workplace may seem futile or dangerous to many individuals'

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Cliff Lockyer
June 2013

FRASER OF ALLANDER COMMENTARY, JUNE 2013:

GLASGOW – SPECIAL ISSUE

Introduction by Professor Sir Jim McDonald
Principal and Vice Chancellor, University of Strathclyde
Chair, Glasgow Economic Leadership

Introduction and Background

It is timely that the **Fraser of Allander Commentary** turns its analytical attention to Glasgow, Scotland's largest city and the centre of Scotland's only true metropolitan economy. As the **Scottish Government** and the UK Government's **Technology Strategy Board** (TSB) recognise, cities and city-regions are increasingly the drivers of economic recovery and growth. This is also increasingly true for many of the world's largest and most dynamic companies – Siemens, GE, Mitsubishi, CISCO, IBM, ARUP etc. – who recognise that cities are driving demand for new smart infrastructure and technologies. That Glasgow has been chosen by the TSB (from over 50 UK cities) to be the UK exemplar to test, develop and deploy SMART city technologies, is testament to the fact that Glasgow is well-positioned – institutionally, academically and economically – to take advantage of an upturn in global demand. Not only is there increasing demand for smart solutions to urban living we can - and must - use this to attract new research-led and high value work to develop and extend the city's export base. Such a development is a world away from the deep structural economic changes that buffeted this great city and its citizens from the early 1980's. This sea change in the city's economic experience is evidence, I would argue, that Glasgow is well into its 'second wave' of post-1980's economic development (the first was the McKinsey / Glasgow Action focus on financial services, software and tourism). This 'second wave' recognises and builds on the first while refocusing on Glasgow's – and its wider city region's - historic role and contemporary reality as Scotland's engineering and technological heartland, and as a base for newer industries in the life sciences, creative media and low carbon / renewable technologies.

It is clear than any city, not least Glasgow, will have to both embrace a low carbon future, as well as develop industrial and business success in the development and application of low carbon technologies, innovation and business practices. It is in the latter area that Glasgow, with its engineering heritage, businesses and universities and colleges, needs to focus its efforts to create a new Industrial Revolution. We know from the literature on city growth that it is the *application* of innovation and its widespread use across all sectors of the economy – including digital and web-based technologies – that are critically important to underpin long-term growth and development.

The development of Glasgow, post the 2008 financial crash and subsequent deep recession – what in the US is termed, the 'Great Recession' – has been a journey to rediscover and renew Glasgow economic, civic and business roots. The establishment of the **Glasgow Economic Commission** in 2010, by the Leader of the City Council and the Glasgow Economic Partnership was a bold attempt to draw on the experience and expertise of the city's private sector leaders to help focus public efforts to support and drive growth and employment. Similarly, the subsequent establishment of the **Glasgow Economic Leadership** Board brought together leading business figures – from engineering, finance, energy, life sciences, food & drink and retail - with the Leader (and CEO) of the City Council and senior leaders from Scottish Enterprise and, of course, academia. In essence, the aim of Glasgow Economic Leadership is to

recreate the sense of purposeful engagement of the city's civic, business and academic communities behind a single purpose: to grow and develop the Glasgow economy, attract investment and jobs and increase Glasgow's contribution to Scotland's growth and development.

To do this, the Leadership Board, following on from the advice and analysis of the Glasgow Economic Commission, established **industry-led, key sector work streams - Low Carbon Industries; Engineering, Design & Manufacturing; Life Sciences; Financial & Business Services; Tourism & Events; and, Higher & Further Education** - a sector which make a very significant contribution to the city's economic, social and cultural life.

Each work stream was set a simple task: to identify (within a six month period) an Action Plan to help drive investment and jobs and contribute to the overall development of the city economy. Each drew on its own experience and knowledge - from business, public agencies and academia – to agree and then present their proposals to the Economic Leadership Board in June 2012. These Action Plans were grounded in fact and experience, and focused on Glasgow working to meet new global demands. Each Action Plan was set in a wider Scottish perspective and sought to identify the distinctive contribution that Glasgow could make to Scotland's success. In Life Sciences, for example, the work stream focused on Glasgow's pre-eminent role in Scotland for **Stratified Medicine** (or as it's termed in the US, 'personalised medicine'); on **MedTech** (medical and health technologies) where the city lies at the centre of Scotland's largest concentration of MedTech companies; and on **global pharma manufacturing** with Scotland's largest centre based at GSK in Irvine. Similarly in Tourism, the work stream sought to further enhance the economic contribution that Glasgow plays as Scotland's centre for **Business Tourism**, its increasing focus on attracting **Major Events**, such as the Commonwealth Games in 2014, other major sporting (eg the city's bid to host the 2018 Youth Olympics) and cultural events; and, the strategic and global exploitation of Glasgow's unique **Mackintosh** legacy. In Low Carbon Energy – and as recognised separately by the *Economist* – the focus has been on capitalising on the world class research base at Strathclyde University together with the creation of an integrated corporate community to build strong supply chain opportunities and enhanced uses of technological innovation.

This issue of the **Fraser of Allander Commentary** includes a business perspective on Glasgow as a business and corporate centre by **PwC**. Glasgow is home to the headquarters of major companies, most notably the publically-listed, FTSE 100, Weir Group plc and Aggreko plc, plus Scottish Power, Clydesdale Bank, the privately-owned Edrington Group and a significant number of smaller, high-growth, technology companies such as Castle Precision Engineering, Linn Products, Graham Technology and Sgurr Energy to name but a few. These companies – and more - link Glasgow firmly to international markets and they utilise and develop Glasgow enviable skills and graduate base as well as attracting global talent to the city. An increasing number work in partnership with the city's universities and colleges to develop not only the skills and innovation they need to succeed but in partnerships help take research into new industries and products. Importantly they help anchor investment and talent in the city – and in Scotland.

Glasgow's ambitions to develop a low carbon economy and test and demonstrate the application of SMART city technologies is outlined by **Dr Richard Bellingham** of the **Strathclyde International Public Policy Institute's (SIPPI) Institute for Future Cities** and a leading expert in Energy and SMART Cities analyses. Dr Bellingham outlines the work to date and how we must use these to help drive a new 'smart' industrial revolution in the Glasgow and the wider city region economy.

Dr Kristinn Hermannsson (research associate at the Fraser of Allander) analyses the economic impact of universities / HEIs in Glasgow. This work is UK-leading and reflects the expertise of the Fraser of Allander Institute in applied economics. Suffice to say, it is our students that are working out in the economy, make the largest economic impact on productivity and wealth - something we should never forget.

Grant Allan, Research Fellow at the Fraser of Allander and its Lead Forecaster, uses the latest economic data to analyse Glasgow's 10-year economic performance and compares it to that of Scotland's cities to draw out its strengths – such as the city's strong skills profile with graduate numbers that compare favourably with major UK cities; and, of course, the city's continuing challenges.

It is worth noting that Glasgow's business leaders told the **Glasgow Economic Commission** that they compare Glasgow – what it offers and how it is developing - not with Scotland's other cities, but to the

UK's larger cities: Manchester, Birmingham and Leeds as well as major European cities. This outward-looking economic perspective reflects Glasgow's long trading tradition which saw it develop explosively from an important medieval ecclesiastical and academic centre to a great trading city, based first on the North Atlantic trade and then with the industrial revolution as a world leader in shipbuilding and engineering. It is an intriguing thought as to whether Glasgow, post-2008 and into the early years of the 21st century, is returning to its economic roots as a global trading city – trading on its skills and talent, innovation, technologies and business acumen. This is a vision that Glasgow's Victorian business and civic leaders, who oversaw this great city's growth over a century ago, would recognise and strongly endorse.

This is an exciting time for Glasgow. The **Fraser of Allander Commentary** provides an opportunity to analyse where we are and some of the issues we face. However, it is for **Glasgow Economic Leadership** and all its partners in business, public agencies and academia to converge through collaboration in order to invest in where we want to be and what city we want to create for the benefit of all our citizens, longstanding or new. To let Glasgow flourish.

Professor Sir Jim McDonald
June 2013

Glasgow defined: a business perspective

PwC in Scotland

Introduction

PwC in Scotland support for the Fraser of Allander Economic Commentary is now in its sixth year and we are pleased to be able to contribute this business perspective on Glasgow.

Commerce, trade and business together with education have been the heart of Glasgow over the centuries. Glasgow played a central role in developing Scotland's trans-Atlantic commerce and trade-based economy with the development of the tobacco trade. As the 'second city of the empire' in the late 1800s it was, as Findlay (2011) notes, a central player in the first industrial revolution with its textile, mining, iron and shipping industries. Glasgow's leadership in the manufacture of ships, locomotives and heavy engineering reflected not only a highly skilled workforce, but equally a strong tradition of technological innovation and invention together allied to a strong financial and business services base.

Through much of the 20th century Glasgow, along with many other industrial cities, had to confront the problems of industrial change and rising social deprivation and experienced several cycles of decline, renewal and regeneration. However, the traditions of innovation, together with a strong higher education sector, and a vibrant culture and dynamism have enabled Glasgow to change and to renew its economy. Since the 1980s, Glasgow has been rebuilding itself through a series regeneration programmes including: the 'Glasgow Miles Better' campaign, the 1988 Glasgow Garden Festival, being European City of Culture in 1990 and, looking forward, hosting the Commonwealth Games in 2014. These, together with a series of development strategies, most notably the private-sector led Glasgow Action which led the implementation of a services-led McKinsey strategy from the mid-1980's to the Joint Economic Strategy of Glasgow City Council and Scottish Enterprise set out in 2006 'Step Change' strategy programme and – even more recently - the creation of the Glasgow Economic Commission and the private sector-led Glasgow Economic Leadership all illustrate the innovation and strength of commitment of civic, business and academic partners to continuing and strengthening Glasgow's economic growth and renewal.

As we argue in our report 'Good Growth for Cities' (2012), cities have a significant role to play, as the engines of both local and national sustainable growth in the current economic climate of reduced public sector expenditure as well as policies of reducing the structural deficit and rebalancing the economy. In the UK cities account for 9% of the landmass but are the location of 53% of businesses, 58% of jobs, 60% of GVA and 82% of high skilled jobs (Centre for Cities 2013).

Recent Scottish evidence (Grant 2013) suggests the growth in economic activity in the three major cities of Scotland – Glasgow, Edinburgh and Aberdeen – has outperformed that of the Scottish economy as a whole in recent years. 'Over the last eight years, the share of Scottish output that is produced in these three sub-regions has increased, and now accounts for almost one half of all output in the Scottish economy' (Grant 2013).

Today cities, as centres of economic growth, are even more important to the Scottish economy. Since the 1990s Glasgow has, through a series of economic development strategies, sought to develop the framework and partnerships to promote economic growth and to cope with the changing economic context. But Glasgow, in common with other cities faces new challenges – sustaining growth and competitiveness in a period of austerity, the need to reduce energy consumption and to take full advantage of the opportunities of the digital age to work smarter and to integrate more cleverly the activities of the city and its citizens.

The Glasgow Economy

Business tends to see the Glasgow economy not in terms of Glasgow city, but a broader metropolitan area with a population of 1.2 million (Glasgow Economic Commission 2011), encompassing North and South Lanarkshire, Renfrewshire and East Renfrewshire, East Dunbartonshire and Inverclyde together with

Ayrshire and West Dunbartonshire. The Glasgow Economic Review (2011) estimated the Glasgow metropolitan economy to be worth some £35 billion per annum with some 53,000 private sector enterprises (Scottish Corporate Statistics) with its further and higher education institutions generating £1.6 billion of output and increasingly acting as 'magnet' for business research and innovation: for example the Inchinnan-based Advanced Forming Research Centre (AFRC) focused on the aerospace market; the Cumbernauld-based Power Networks Demonstration Centre (PNDC) based on the energy transmission market and city centre-based Technology Innovation Centre the focus of Glasgow's strength in low carbon industries and, in particular, renewable technologies and innovation..

Glasgow has a diverse economy with more than ten companies with a turnover of over £500 million per annum, two FTSE 100 HQ companies (Weir Group PLC and Aggreko PLC), some 30 companies with an annual turnover of £200 - £500 million, 40 companies with a turnover of between £100 - £200 million, over 50 companies with a turnover of £50 - £100 million, over 75 companies with an annual turnover of £20 - £50 million per annum, together with almost 100 SMEs with a turnover of over £10 million per annum (data from Scottish Business Insider). Metropolitan Glasgow is also home to a greater than expected proportion of high growth companies [Glasgow Economic Commission, Economic Analysis (2011).

What makes a competitive city?

Simplistically what companies want is a place where they can do business, be competitive and grow. For some Scottish cities this means a clear focus on the core business sector, for example for Aberdeen this is clearly a focus on developing and sustaining the oil and oil supply chain and renewable energy and hence a combination of public and private sector policies which facilitate the supply of skilled staffs and a modern infrastructure.

In recent years academics, policy makers and business have recognised the importance of modern, high quality information and communication networks and the potential economic advantages to be gained when cities embrace the commercial possibilities of integrated and advanced information and communication technologies. The development of 'silicon', 'cyber' 'digital' and 'Smart' city policies highlight the desire to accelerate the introduction and integration of information and communication technologies into city and business life in order to grow cities and regions have been widely adopted. There have been considerable differences in the emphases in such policies; some have focussed on a single objective (IT infrastructure and interconnectivity), others have stressed a broader programme of infrastructure improvements; and an emphasis on energy reduction and sustainability is a popular third theme. Additionally IT and information companies have recognised the value of the smart city concept as a marketing tool and have developed sets of factors to enable cities to benchmark and improve their smart working.

MIT Media Lab – City Science has developed six broad themes, embracing both current and emerging technologies, which need to be integrated in the future to sustain cities, arguing 'we must deploy emerging technologies to create a nervous system for cities that supports the ability of their government, energy, mobility, work and public health networks'. Similarly Giffinger et al (2007) in an EU funded study to rank European medium sized cities in terms of 'smartness' developed six criteria based largely on traditional regional approaches to regional growth; a smart economy, smart mobility; a smart environment; smart people and smart governance. Likewise IBM (2009) has published both a view of smarter cities and tools for assessing and monitoring progress to optimise core city systems.

We believe, as IBM also recognise (2010), that an emphasis on the need for cities to focus on modern and effective information technologies and integrated data management systems can possibly underplay the importance education and learning, cities with a combination of high quality university based research and well developed business and financial networks have been areas of rapid economic growth and business start-ups. A city's competitiveness depends not only on the infrastructure but equally on the skills, creativity, knowledge and willingness to absorb innovation of its citizens and of those who want to work in the city. It is important not to forget that Glasgow, and Scotland, have benefitted from a long tradition of successful entrepreneurs who, with a long term vision, have created large, successful companies.

For these reasons we support the approach adopted by the Glasgow Economic Leadership that, following Parkinson (2003 and 2005) and others, there are a number of key characteristics which can be used to define city competitiveness (see Slims Consulting 2011 for a fuller discussion of these themes), namely:

Innovation in firms and organizations;

A skilled and educated workforce;

Connectivity – both physical and electronic;

A broad economic base;

A thriving higher education and research sector;

A good quality of life;

A strategic capacity to mobilise and implement long term strategies

Smart governance.

Good and effective growth

Traditionally growth has been measured in terms of economic data - growth, employment, income, GVA, infrastructural improvements together with measures of social equality and inclusion. More recently, broader indicators, popularly reported as 'happiness' indices have been developed. In 2012 the Office for National Statistics published a national well-being index based on additional questions added to the Integrated Household Survey, Oxfam produced a humankind index for Scotland (2012) entitled the 'New measure of Scotland's prosperity, in PwC we produced in 2011, in collaboration with Demos, 'Good Growth' a report on economic wellbeing and followed this in 2012 'Good Growth for Cities'. All of these indicate that successful cities are ones which identify the quality of jobs, income levels, health and work-life balance, housing and transport infrastructure and the environment as important factors to improve.

Looking forward: Issues for business

In terms of the cities agenda businesses are frequently asked the question 'What do you want, or need, or looking forward what are your priorities?' But there are no simple answers to such questions; much depends on the particular issues confronting a business sector and the stage in the business's life cycle. Equally the answers will be different for incoming firms and those well established in the community. Simplistically all businesses want to be able to grow and develop, employees to enable this and an infrastructure that facilitates such growth and development. The Glasgow Economic Commission, drawing on Parkinson's work identified eight key factors driving successful city economies and identified a number of sectors with the potential to generate significant wealth and employment.

Our work with the business community leads us to suggest four broad issues:

Physical infrastructure	Modern work requires good and modern workplaces which are energy efficient interconnected and well designed to be attractive places to work and do business;
Connectivity	A modern transport system with good interconnectivity between the main components and good links to the main markets. Excellent and smart digital connectivity and working for business and for the main aspects of city life. Open, strong and effective networks between local government, business, higher education and the community. A city which has good links to export markets.
Innovation	An effective governance, industry and higher education sectors which attract and retain skilled employees; a community which values innovation irrespective of whether it is scientific, business, cultural or artistic;
A vision	Cities need a vision for the future, a plan to achieve that vision and a commitment by the main city agencies to work to achieve it.

Conclusions

As the UK and Scottish economies begin the recovery from recession it is evident that the economic context has changed, there are severe and continuing pressures on public sector budgets, markets continue to experience ever-more competition, and energy and other mineral costs continue to rise. Glasgow has weathered an extensive economic restructuring over the past twenty to thirty years and is now, arguably, again at a crossroads. It can react to the current economic climate by accepting more modest ambitions and reduced rates of economic growth and business innovation, or use the current, challenging economic climate to innovate and engineer a future that embraces the opportunities offered by smarter ways of working,

Glasgow should be rightly proud of its successes in developing the renewables and the low carbon Industries, in its excellence in engineering and the life sciences, in its growing financial & business services, as well as its world class research led higher & further education sector and it should not forget the importance of its artistic and cultural sector which adds to the contribution tourism makes to the West of Scotland. Much has been achieved, nevertheless, future progress along the route to a future vision for Glasgow will require leadership, brave decisions to be made, and polices which encourage sustain and value private sector engagement and strong links between local government, higher education and business remain, as they have for previous generations, at the heart of Glasgow's future.

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Smart & Sustainable Cities

Richard Bellingham & Nicholas Purshouse, University of Strathclyde

Summary

The University of Strathclyde is creating a new Institute for Future Cities that aims to improve the quality of human life across the world through innovative research that enables cities to be understood in new ways, and innovative approaches to be developed for the way we live, work, learn and invest in cities. The new Institute will create a focus and strategy to coordinate academic research on urban themes, and partnerships with cities, businesses, research institutions and governments across the world.

This paper outlines the wider context and issues for urban policy and research, and describes some of the key objectives and activities of the Institute for Future Cities - including the €3.7 million EU FP7 STEP UP project on sustainable city planning and implementation, a new ESRC research programme on crime prediction, and the City Observatory within the £24 million TSB Future City Demonstrator in Glasgow.

Background

Over half the world's population now lives in cities – this simple fact, whilst it emphasises the global importance of urban society and its impacts, conceals a much more complex picture of change across the world. Some projections estimate that global urban population will increase from around 3.6 billion in 2011 to reach about 5 billion by 2030 and 6.2 billion by 2050[i], with significant consequences for economies, environment, resource utilisation and governance – as well as significant opportunities for integration and transformation of urban systems. Current and projected growth in city populations will occur mainly in the developing world – with many developed world cities having broadly flat or shrinking populations. Cities are also the drivers of many economies across the world. Urban areas currently account for 70% of global GDP (World Bank, 2010)[ii], and according to MGI (2011)[iii] 600 metropolises will contribute more than 60% of world GDP growth in 2025. In Korea, Hungary, and Belgium the capital city accounts for around half of total GDP[iv].

Urbanisation has often been considered a process that needed to be curbed and controlled, however policy makers are increasingly recognising urbanisation as a powerful force in support of economic growth and poverty reduction (World Bank, 2010). China plans to move hundreds of millions people into cities over the next 20 years in an effort to lift a larger proportion of its population out of poverty.

As well as growth of cities there are powerful processes driving other types of significant on-going change in cities. The role and relevance of different drivers varies according to the individual context of each city.

Some examples are given below:

- demographic change (eg increasing populations, aging populations, changing social structures)
- need to improve public services and reduce costs
- tackling social problems – crime, health, education
- economic growth or recession - opportunity and changing economic structures
- consumerism and the desire for improved quality of life
- policies to reduce environmental impacts (including carbon emissions)
- natural or man-made crises
- climate change
- political and cultural change
- opportunities for change created by new technologies and adoption of those technologies.

Cities in the developed world often have rigorous long-term planning systems and policies – but as the impacts of these drivers are not always fully understood, major strategic decisions are taken in the face of

unpredictable change, and therefore can result in the delivery of infrastructure and systems that are misaligned with the needs of cities and citizens as the ground continually changes beneath the feet of planners. The ability of cities to reduce risk and be successful in a range of possible futures is a critical issue for city planners and citizens.

Very different models of city governance are in place across the world – with some cities having strong powers, strong governance, and effective local systems; some cities with weaker powers (as more power is held by central government), and some largely chaotic cities struggle to create and implement effective policies and strategies at a city level (and are therefore particularly vulnerable to the above drivers for change).

Consumption of global resources is fundamentally linked to GDP and the total size of human population across the world. Cities interact with global consumption in several ways:

- due to system efficiencies cities enable larger populations to be supported;
- by increasing wealth and education they promote both consumption and production;
- by allowing people to become better educated and wealthier cities encourage lower birth rates.

Cities therefore have a significant role to play in meeting global policy objectives (and can be used to by-pass national policy frameworks). The role of cities is increasingly recognised – for example, the European Commission created the Covenant of Mayors which promotes action at city level through political commitment to a process of reducing carbon emissions by at least 20% by 2020. Over 4000 cities across Europe have signed the Covenant but relatively few have produced credible strategies to deliver low carbon futures for their cities – and equally few have taken steps towards implementing those strategies in a co-ordinated fashion - though there are isolated examples of good projects in many cities. Increasingly influential networks of cities are being formed to exchange knowledge, improve skills, promote strategic thinking, develop multi-city strategies, and attract investment - such as C40, Eurocities, and the Scottish Cities Alliance.

Across the world we see growing interest from cities, governments, businesses and universities in the creation of smart sustainable cities – in the US cities like Chicago and New York show real political commitment, and in China some major cities are now signing the equivalent of the EU covenant of mayors.

Glasgow City and Strathclyde University together are becoming a growing focus of attention. In 2010 Glasgow published the Sustainable Glasgow strategy – this strategy aims to help Glasgow become one of Europe's most sustainable cities. For Glasgow this means achieving a mix of objectives – reducing carbon – but also achieving urban regeneration; delivering jobs and training; helping change the city's image; regenerating communities, and tackling fuel poverty. A set of major feasibility studies helped Glasgow understand its carbon emissions, and identify the technically and financially viable opportunities that could feasibly reduce the city's carbon emissions by 30% within 10 years. Since 2010 we have started to see some of the report's major recommendations being implemented – with the designation of district heating zones in City Plan 3; creation of a waste to energy plant at Polmadie capable of handling all the city's municipal waste; and proposals to improve the efficiency of street lighting. Next year Glasgow will host a low carbon Commonwealth Games – watched by over 1 billion people worldwide – which includes the development of district heating for hundreds of homes and other facilities in the Commonwealth Games zone.

Strathclyde University built on its work creating the Sustainable Glasgow strategy to win €3.7 million in EU funding for the STEP UP programme, and to support Glasgow's winning bid for the TSB's £24 million Future Cities Demonstrator (see below) - a win that is drawing attention from around the world. Strathclyde is also currently creating the £89 million Technology and Innovation Centre that is forming joint academic/commercial research partnerships on agreed themes – including low carbon energy and future cities.

Given the global context, strong interest from commercial partners, local opportunity and resource, and the relevant strengths that Strathclyde has across multiple disciplines, the University decided to create a new Institute for Future Cities.

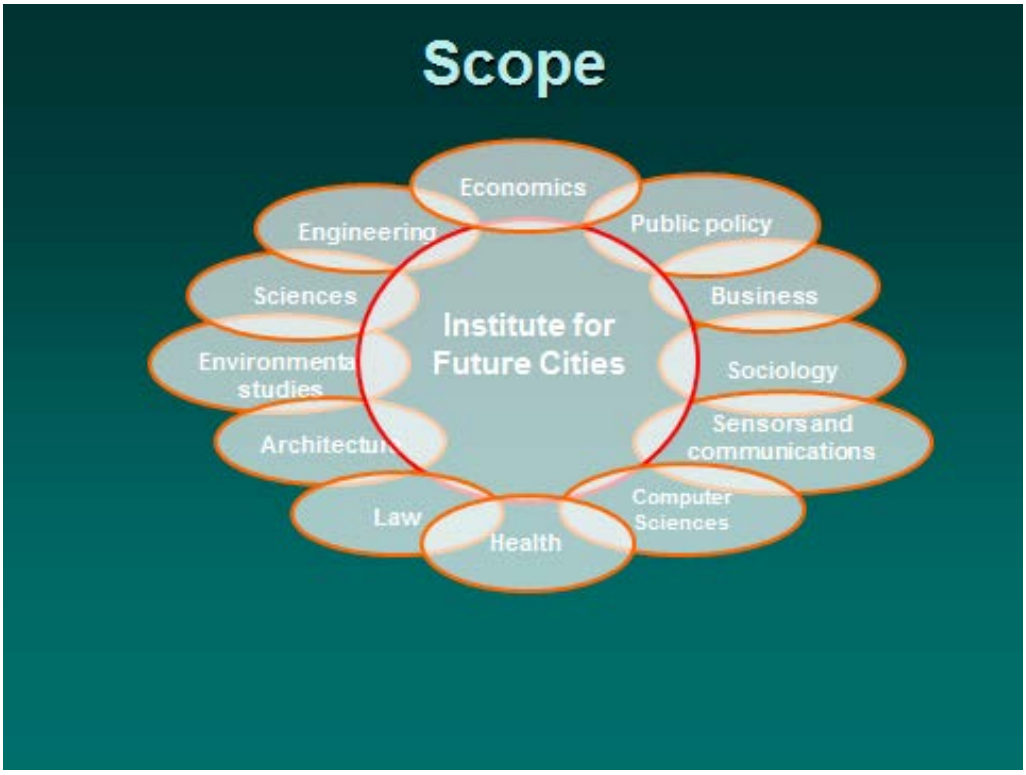
The Institute for Future Cities

The University of Strathclyde is creating a new Institute for Future Cities to improve the quality of human life across the world through innovative research that enables cities to be understood in new ways, and innovative approaches to be developed for the way we live, work, learn and invest in cities. The new Institute will create a focus and strategy to coordinate academic research on urban themes, and partnerships with cities, business and government across the world.

The Institute will tackle the large, complex and difficult issues and opportunities for cities across the world. The Institute will work in partnership – integrating and catalysing expertise and research from multiple disciplines within Strathclyde University and other research institutes and working with Glasgow and other cities across the world; commercial organisations and local and national government organisations.

Multiple disciplines need to work together to develop effective solutions, and to capitalise on the very significant opportunities offered by cities to deliver economic growth, reduce environmental impacts, and tackle major social issues (eg in crime, health, and education).

The University of Strathclyde and its partners have strengths in a range of relevant disciplines – such as sensors, communications, energy, engineering, computing, mathematics, sociology, health, public policy, architecture, design, law, business, and economics. Through a coordinated approach these strengths can work together to optimise research opportunities and outcomes, and deliver significant tangible impacts in the urban context.



Significantly increased public and commercial funding for research in the UK, Europe and across the world is creating opportunities to address key urban issues using the tools and the scale necessary to create innovative and relevant solutions that work in both current and future cities.

The Institute aims to create a world-leading centre for research and teaching on smart sustainable cities that integrates and catalyses expertise and research across sectors and multiple disciplines, to address challenges, seize opportunities, and inform decisions. The Institute's research programmes and teaching aim to deliver tangible impacts on real cities - enabling policy makers to create strategies that have greater prospect of success, reduced risk, and greater positive impacts; citizens to influence and make better use

of services, make informed decisions, live richer and more fulfilled lives; and businesses to identify new opportunities and create new business models. The Institute will work in partnership across the world - with cities, research institutions and commercial organisations to conduct research, share data, develop techniques, maximise impact, share experience and improve understanding in cities. Already the Institute is finding significant interest from major commercial organisations in joint research programmes. The Institute will also make a major contribution to the University's internationalisation agenda through creating links with cities and research institutions globally. These partnerships will develop and be enlarged throughout the life of the Institute.

The Institute will build on a series of existing projects and opportunities including:

- the €3.7 million EU FP7 STEP UP programme on planning and implementation of sustainable cities
- a new Masters degree on planning and implementation of sustainable cities
- a new ESRC research programme on crime prediction and crime reduction measures
- the City Observatory within the TSB Future City Demonstrator

Further details of these programmes are given below.

The Institute will also develop major new research programmes in areas such as:

- Risk, resilience and agile urban systems
- Health improvement in urban populations
- Citizen engagement in urban design and system management
- Key success factors in economic and social transformation of cities
- Effective governance and business models in urban environments
- Use of big data to model and simulate urban systems

STEP UP

The Smart Cities and Communities EU FP7 initiative, launched in June 2011, supports like-minded cities to work together to achieve their energy and climate goals – with a focus on assisting achievement of the EU's 2020 CO2 reduction and renewable energy targets. Through creation of enhanced Sustainable Energy Action Plans (SEAPs) cities describe their low carbon strategies – with specific activities, measures and time frames. The initiative encourages cities to create demonstration projects and accelerate the deployment of best practice solutions for actions such as low carbon energy production (waste to energy, renewable energy, district heating and energy recovery); retrofitting building energy efficiency measures; low carbon transport and mobility; and energy demand management.

STEP UP (Strategies Towards Energy Performance and Urban Planning) is a €3.7 million EU FP7 Smart Cities and Communities initiative running Autumn 2012 to Spring 2015. The project, coordinated by the University of Strathclyde, consists of four partner cities: Glasgow (UK), Ghent (Belgium), Riga (Latvia), and Gothenburg (Sweden), their associated local authorities, as well as academic institutes and industry partners in each city. For Glasgow, the local partnership consists of Glasgow City Council, University of Strathclyde, and Scottish Power.

STEP UP is creating a coherent and easy-to-use model for energy planning. This model will be adopted in multiple cities to deliver faster and greater impacts for Europe's 2020 energy targets – and wider policy objectives such as improving security of energy supplies, achieving urban regeneration, economic growth, and tackling fuel poverty – making these cities better places to live, work, learn, and do business.

The cities in the STEP UP partnership were deliberately selected so that they have similarities that enhance their ability to work with each other. The cities have all signed the European Covenant of Mayors and are therefore committed to significantly reducing their carbon emissions by 2020. The cities all have populations in the range 0.5 to 1 million, and are all historic port cities in Northern Europe- which leads to a number of common topologies, socio-economic factors, opportunities and issues.

STEP UP is a partnership of twelve organisations from city government, academia, and business. The combination of a local authority, commercial and research partner from each city, together with links into local partnerships and local stakeholder groups, ensures that STEP UP will be able to facilitate the delivery of real projects in participating cities by using a multi-disciplinary, multi-sector and integrative approach. The range of expertise and experience of the partners involved will ensure the provision of holistic solutions that deliver real economic, environmental and technological advances in each city with regards to sustainable city planning. The active involvement of city councils will ensure that the plans meet the needs of citizens, businesses and existing infrastructure. The involvement of the commercial sector (including energy companies and banks) ensures proposals are economically feasible.

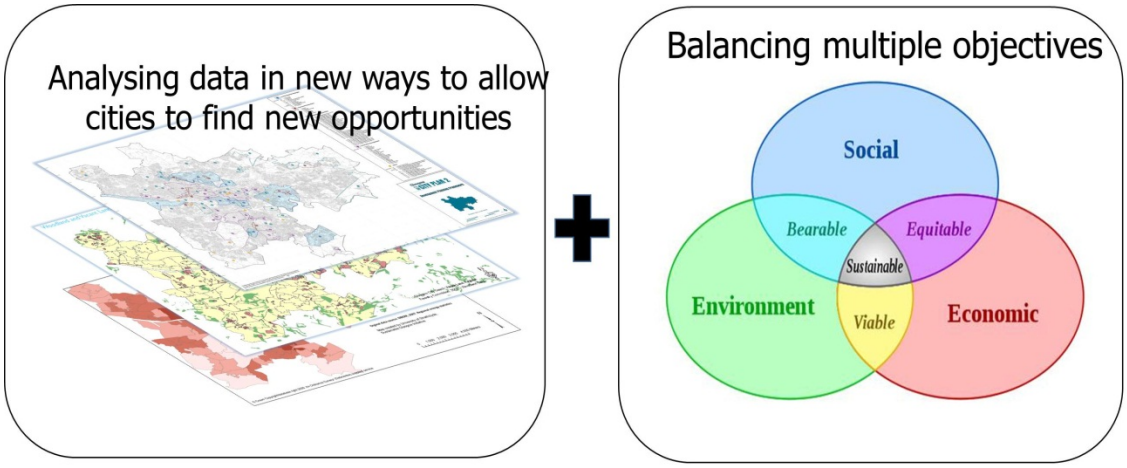
Supported at the highest political level in all four cities, city leaders are playing an active role in the project throughout its life, ensuring it delivers on its objectives, and has clear and significant impact in the partner cities and beyond.

An Integrated Approach

The project is taking an integrated approach to energy planning, integrated project design and implementation by addressing three vital themes of energy and technology, economics, and organisation and stakeholders together:

The challenges associated with becoming more sustainable will be addressed by the project through:

- Creating an energy planning approach for developing and enhancing strategic energy action plans
- Demonstrating this approach works to deliver faster and greater positive environmental and economic impacts
- Disseminating and replicating this approach through a learning network to other ambitious cities across Europe (and beyond)
- Showcasing best practice innovative cross-sector low carbon solutions and projects
- Developing a “framework” for integrated project development and bringing several high level innovation pilot projects to the edge of application.
- Addressing economics, financing and stakeholder engagement to facilitate rapid deployment and replication.



STEP UP will identify and promote existing best practice on integrated cross sector energy solutions, such as industrial waste heat integrated into district heating networks or electric vehicles linked to smart electricity grids. STEP UP partner cities will draw inspiration from the winning elements of these lighthouse projects and develop common innovative projects which contribute to tackling their joint climate and energy challenges and opportunities. These innovative projects aim to show that integrated planning achieves better energy outcomes and economics as compared to the traditional approach which segments projects and sectors.

The programme will engage other cities in a Learning Network where skills and expertise on energy planning and best practice on integrated cross sector energy solutions are shared and supported. A small number of cities will become companion cities to the STEP UP partners and receive close guidance, coaching and training. Nuremburg is Glasgow's companion city – and an additional companion city is expected to be identified in the next few weeks.

The approach for enhancing Sustainable Energy Action Plans will be documented, replicated in companion cities and disseminated via the STEP UP web portal. Lighthouse demonstration projects will also be promoted via the web portal. Study tours of the STEP UP partners' cities will be run for city planning professionals and commercial enterprises interested in energy planning and the Step Up approach to integrated cross sector project development. Training and learning initiatives will extend the impact of STEP UP beyond the life of the project and across a much wider range of cities. This includes the creation of a new Masters degree in sustainable city planning and implementation that will be taught jointly by the University of Strathclyde with partner Universities across the world.

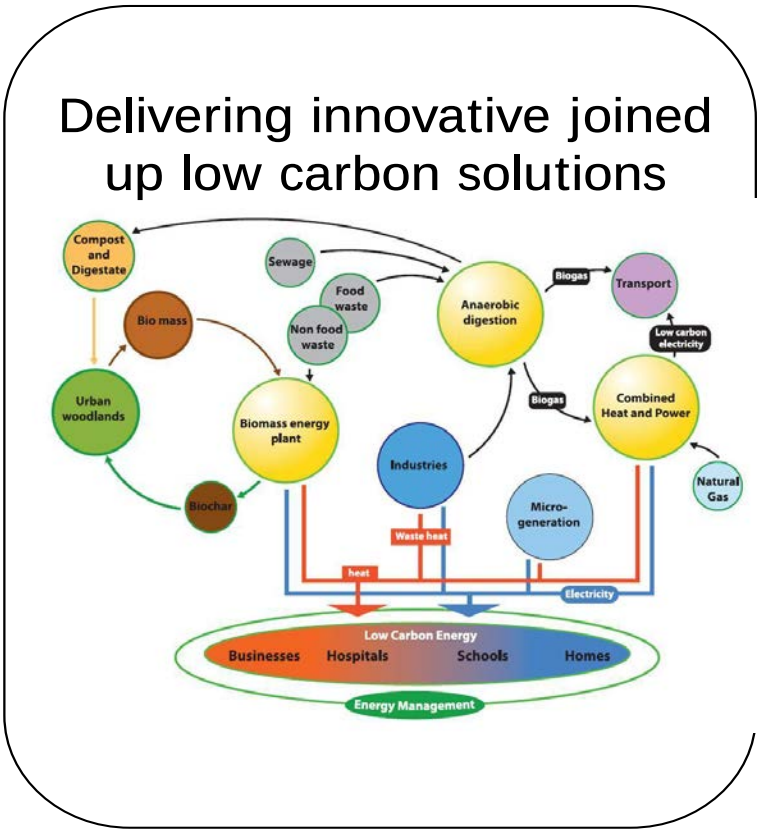
First Steps

Since starting in November 2012, the project has formed a committed consortium of partners successfully working together across Europe. Each city has now completed detailed stakeholder mapping and engagement plans; is conducting a gap and issue analysis of current energy plans; as well as the mapping of energy flows throughout the city. Large sets of data for energy consumption and efficiency are compiled for each city and Geographical Information Systems (GIS) are used to model and visualise opportunities and to demonstrate scenarios for of future energy flows.

Cities are also in the process of identifying best practice ("lighthouse") integrative projects from their region which will be promoted and used to identify common issues and opportunities that all partner cities can learn from. In order to encourage fast replication of successful models and practices, a learning network of cities across Europe is being created that will test how STEP UP approaches work in different situations, and improve expertise in the network by sharing knowledge.

To ensure availability of tools, expertise, and lessons learnt, the project has launched a website (www.stepupsmartcities.eu) and later this year will be holding workshops to pass knowledge to the

learning network of cities. To assist cities to work more closely together to develop enhanced smart and sustainable city energy plans an open conference involving all projects partners, and the wider learning network will be held in June 2013.



For more details please refer to the website at: www.stepupsmartcities.eu or e-mail info@stepupsmartcities.eu

Future Cities Demonstrator

Last year, the Technology Strategy Board (TSB) launched a Future Cities Demonstrator competition; with the winner receiving £24million to showcase large-scale solutions that demonstrate unique and functional methods of integrating city systems in an environmentally-sound, economical way to improve the overall quality of life for citizens.

From an initial list of 30 cities, Glasgow was shortlisted along with London, Bristol and Peterborough, winning the competition earlier this year with a strong, local authority led project proposal in partnership with business and academic communities. Glasgow is building on major projects such as the Commonwealth games to demonstrate quickly the impact of innovative city solutions to the world.

The Future City Demonstrator supports the TSB's objective of accelerating economic growth by stimulating and supporting business-led innovation with aim of positioning UK companies – supported by a world-class academic and research base – to export innovative approaches to delivering efficient, attractive and resilient cities across the world. The TSB assess this sector as being worth £200 billion per annum globally. Their aim is for the demonstrator to act as a showcase for the impact of innovative urban technologies on real cities - helping UK companies accelerate development of viable solutions and technologies for the wider benefit of the UK economy (Technology and Strategy Board, 2013).

Future City Demonstrator – key themes

Led by Glasgow City Council in partnership with key public, private and academic organisations, including the University of Strathclyde, implementation of the Demonstrator project will be completed by mid-2014 and will demonstrate how providing new integrated services across health, transport, energy and public safety can improve the local economy and increase the quality of life of Glasgow's citizens (Glasgow City Council, 2013).

The project will contribute to addressing some of the city's pressing energy, transport and health needs and will also show how innovative use of technology can improve the Council's service provision, while additional potential benefits include improved crime prevention, a reduction in anti-social behaviour and improvements in travel infrastructure. (Technology & Strategy Board, 2013).

The demonstrator will develop programmes to promote healthy living; deliver advanced street lighting to address community safety and perception of crime; and enhance building energy efficiency to provide affordable warmth. The University of Strathclyde's Technology and Innovation Centre will host major elements of the City Observatory. This will allow academic and business and industry researchers to analyse hundreds of data sets about Glasgow - its health, economy, transport, energy use – enabling the city to be understood in new ways, new solutions to be developed and tested, and the city to be used as a "living lab". A city dashboard and a management system will be created that allows policy makers to see the city as an integrated whole, and new interfaces created to improve service delivery to citizens. Opening up access to data should also create new business opportunities through creation of new services and business models.

The project proposals for the demonstrator are currently being developed – example projects include:

- Journey planning - providing citizens with a real time view of traffic levels, and checking that buses and trains are on time.

- Monitoring of energy levels across the city - including new Combined Heat and Power (CHP) systems, that could allow the city to store energy when demand is low and then use it during times when it is higher. This has the potential to cut fuel bills and help the city tackle fuel poverty.

- Monitoring footfall and retail demand to analyse economic performance within Glasgow and assist tailoring of public policy at a local level.

- Via smartphone apps citizens will be able to report issues like pot holes or missing bin collections and monitor problem resolution.

- Improved identification and management of traffic incidents and emergencies by better integration of CCTV and traffic management.

- Improved crime prevention and detection of crime as well as, helping to reduce anti-social behaviour incidents through the improved use of camera technology and integration of data.

- Potential to give residents real-time information on waiting lists in hospitals around the city.

- Use of sensors to assist older and disabled people to live independently.

The city's political leaders have made clear that they see the demonstrator as a huge boost to Glasgow's ambitions to build a better future for the city and its people. They aim to use technology intelligently to integrate management of different city systems to make Glasgow a better place to live, work and do business - helping it to attract new businesses and residents. More widely, the results from Glasgow's demonstrator are expected to assist UK businesses to test and develop innovative integrated urban solutions and technologies that can be sold around the world.

Predictive Crime

In June the Institute for Future Cities will start a new £300,000 ESRC research project that will analyse multiple live and historic datasets to understand the pattern of crime in the city in new ways, to influence policy and test new approaches to managing street environments to reduce crime.

Street crime and fear of street crime have significant adverse impacts on individual lives, the use and regeneration of urban areas, the ability to attract businesses and investment, the price of property, and the ability of citizens to live full and creative lives. Previous studies have examined the relationships between a range of social, economic and situational factors and levels and predictability of crime using a range of techniques. However the impact of altering these factors (where they can be influenced), and how such measures might be combined with other potential crime reduction measures is not necessarily fully understood. This research projects aims to achieve new insights into the pattern of crime in cities using big data analytics to analyse the relationships between multiple datasets and levels of crime and to derive innovative optimised strategies that result in lower levels of street crime, as well as balancing other objectives – such as lower service costs (e.g. from improved design of street lighting, and policing patterns), lower carbon emissions, and improved public confidence and acceptance. Subject to agreement from key stakeholders the project may test some of these strategies through using the city as a living lab.

This project aims to help to achieve several different goals at the same time:

- Reduce actual levels of street crime and the perceived risk of crime;
- Improve the confidence of people and increase positive uses of public street space;
- Attract investment and businesses;
- Redesign services (such as lighting) to reduce costs and carbon emissions.

The project will review and analyse the significant ethical issues raised by conducting this type of research. It will create an external reference group to consider the ethical issues of the proposed research which will include academics, city government, local community representatives, the police and other key stakeholders – and may include experts from outside the city. This reference group will assist in reviewing protocols for ethical use of big data analytics in urban environments.

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[i] UN Urbanisation Prospects -2011 Revision.
[ii] World Bank, 2010, Systems of Cities: Harnessing Urbanisation for Growth and Poverty Alleviation – The World Bank Urban and Local Government Strategy, The World Bank, Washington D.C.
[iii] MGI, 2011, Urban World: Mapping the Economic Power of Cities, McKinsey Global Institute, Washington D.C.
[iv] "Smart Opportunities in Smart Cities" Frost and Sullivan

The importance of the city: A spotlight on Glasgow's recent economic performance

Grant Allan, University of Strathclyde

"Cities are our species' greatest invention. …Cities are the absence of physical space between people and companies. They are proximity, denseness, closeness. They enable us to work and play together, and their success depends on the demand for physical connection…" (Glaeser, 2011, p. 6)

Introduction

The Scottish Government purpose specifically acknowledges the heart of the debate on whether concentration of economic growth helps or hinders overall national growth. By aiming to assist the creation of "a more successful country, *with opportunities for all of Scotland to flourish*, through increasing sustainable economic growth" [emphasis added], the purpose target suggests that growth at the Scottish level is consistent with growth also at lower spatial levels. In a recent paper we reported that concentration of economic activity had increased over the last fourteen years, with the major cities – Aberdeen, Edinburgh and Glasgow – outperforming the Scottish economy and accounting for almost one half of all output in the Scottish economy (Allan, 2013).

In this short note we explore some details about the specific performance of the Glasgow economy in the recent past. In particular we explore to what extent the Great Recession has impacted on economic activity at the city level. We focus exclusively on the area as defined by the city council area. Although we therefore omit those regions surrounding Glasgow, our previous work suggested that it was principally in the major city economies that growth in Scotland was occurring. The most recent data for which an industrial breakdown of Gross Value Added (GVA) is available estimates that 17.0% of GVA in the Scottish economy was created within Glasgow. In the wider West of Scotland area, including Glasgow, 39% of Scotland's GVA was created. With extensive commuting flows into the Glasgow area, concentration of economic activity didn't persist to anything like the same extent when examining regional household wage income figures.

Through seeking to understand the particular details of Glasgow's growth performance over the recent past we hope to uncover what has made Glasgow's growth performance particularly strong.

Glasgow and Scotland: demographic highlights

We begin by examining levels and recent trends in headlines of the labour market in Glasgow and Scotland. These are shown in Table 1.

Table 1: Glasgow and Scotland labour market headlines

		Glasgow			Scotland		
		Latest	Change in last year	Change since 2008	Latest	Change in last year	Change since 2008
Population [a]	Level	598,800	1.0%	2.5%	5,254,800	0.6%	1.7%
Working age population [a]	Level	420,300	1.4%	3.6%	3,449,100	0.5%	1.5%
	Rate*	70.2%	0.2%	0.8%	65.6%	-0.1%	-0.2%

*Notes: [a] = 2011 figures; [b] = 2012 annual figures; * rate is proportion of total residence population. Source: ONS mid-year population estimates.*

Firstly we see that Glasgow's population growth each year since 2008 has been higher than for Scotland as a whole. This reverses the historic trend in the relative population growth of these areas. Between 1981 and 2008 there was only one year (2001) in which Glasgow's population grew faster than Scotland as a whole. The period since 2008 doesn't coincide with weak population growth at the Scottish level – at around 0.6% between 2010 and 2011 the population of Scotland increased by its single largest percentage point increase over the last thirty years – but that Glasgow's population increase has been striking.

Although we do not attempt to identify the causes of Glasgow's recent population growth, the population can only adjust through natural factors (births and deaths) and migration decisions (net migration being the sum of (positive) in-migration and (negative) outmigration to an area). Taking migration first, one might speculate that migration could assist Glasgow's recent population increases particularly through migrants being attracted to the Scottish cities, with their thicker labour markets and superior job opportunities in times of crises.

Interestingly, data on migration by council area (GROS, 2012) is available and lets us test this hypothesis. While the resident population of Glasgow increased by 14,600 between 2008 and 2011 (2.5%), net migration to Glasgow accounts for 8,880 of this change. Looking at gross migration flows between 2008 and 2011, while in-migration to Glasgow has been broadly stable at around 27,700 per year, out-migration has fallen sharply over the last three years. This is certainly an interesting finding as falls in out-migration could be consistent with reduced labour mobility between the regions of Scotland. This could have implications for the regional pattern of employment over the short- and medium term. The link between declining out-migration from Glasgow and the much reduced levels of house prices and sales transactions would be one anecdotal area worthy of further investigation.

Interestingly, we can also see that the proportion of Glasgow residents of working age has increased in every year since 1993, a chain unbroken by the recession. Over the same periods the share of the Scottish population of working age has declined.

Glasgow's recent economic performance and the impact of the recession

To examine Glasgow's recent economic performance, we again refer to the dataset constructed for Allan (2013). This used current price (cash) values for GVA by ten industries for 23 sub-regions across Scotland, of which Glasgow was one. The process by which these data was converted into a real (constant price) series is detailed in that publication.

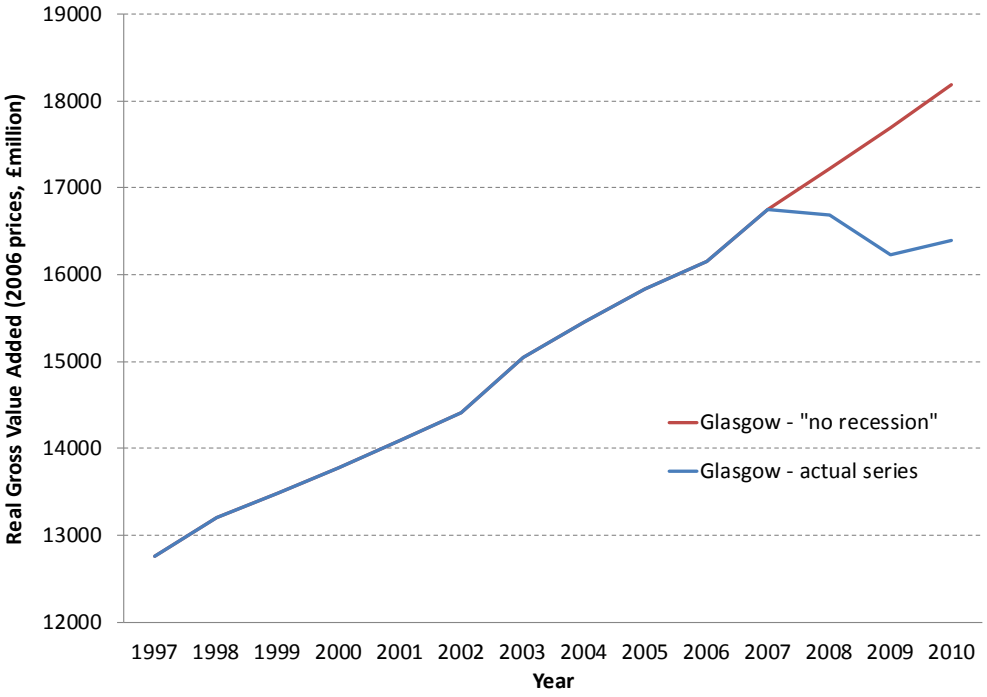
From these data we can make the following observations. Firstly, Glasgow's economic growth was slightly stronger than Scotland as a whole. This finding applies to the period between 1997 to 2010 when annual growth in Glasgow and Scotland was by 1.9% and 1.8% respectively, as well as sub-periods, i.e. a "pre-recession" period of 1997 to 2007 (2.8% vs. 2.7%) and a "post-recession" period from 2008 to 2010 (-0.7% vs. -0.8%). Over the period Glasgow's economy added 17.8% (£3.64 billion) of the growth measured at the Scottish level (£20.38 billion).

We can estimate the cost (between 2008 and 2010) of the Great Recession to the city economy. For this, we simply continue the historical growth rate over the 1997 to 2007 period into the years to 2010, and compare against the real GVA series since 2008 with the lost output being the difference between the two lines. These are shown in Figure 1. We can estimate that the output of the city economy would other things being equal have been £1.8 billion higher in 2010 without the recession, with the cumulative lost output to the Glasgow economy over the 2008 to 2010 period estimated at £3.8 billion.

Industrial contribution to city growth performance

While interesting, the aggregate figures mask some of the structural change which has taken place within the Glasgow economy over this short time period. Unfortunately these data do not allow for more detailed breakdown than ten industries, but, although this is reasonably aggregate, some patterns can be identified.

Figure 1: GVA series for Glasgow, actual series and continuation of pre-recession trend



Figures 2a and 2b show the structure of the Glasgow economy in 1997 and 2010 respectively. Several points can be made. Firstly, the share of activity which is within the Production sector has decline by 4.2 percentage points. Secondly, the biggest increase in importance for the Glasgow economy has been in "Business service activities", whose share has increased by 6.1 percentage points. The share of output in Glasgow in the other private services activities has remained broadly constant. The increase in the share of activity in "Business service activities" is greater than has occurred for the Scottish economy as a whole, demonstrating the new importance of this sector to the city economy.

Figure 2a: Structure of Glasgow economy, 1997

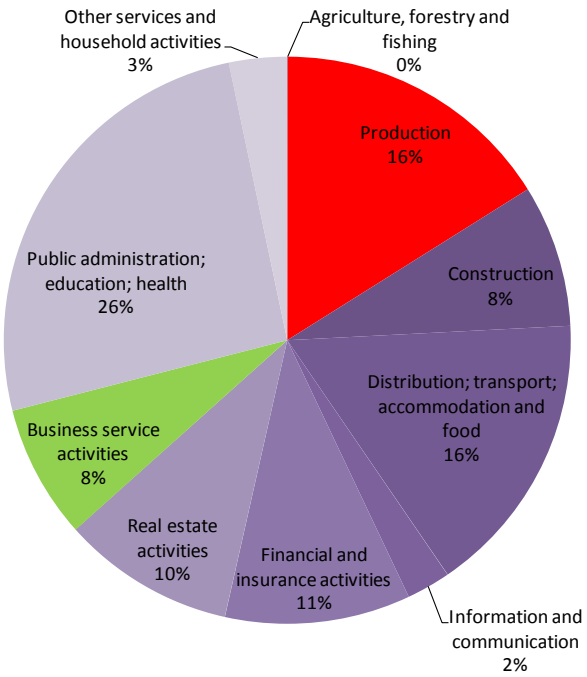
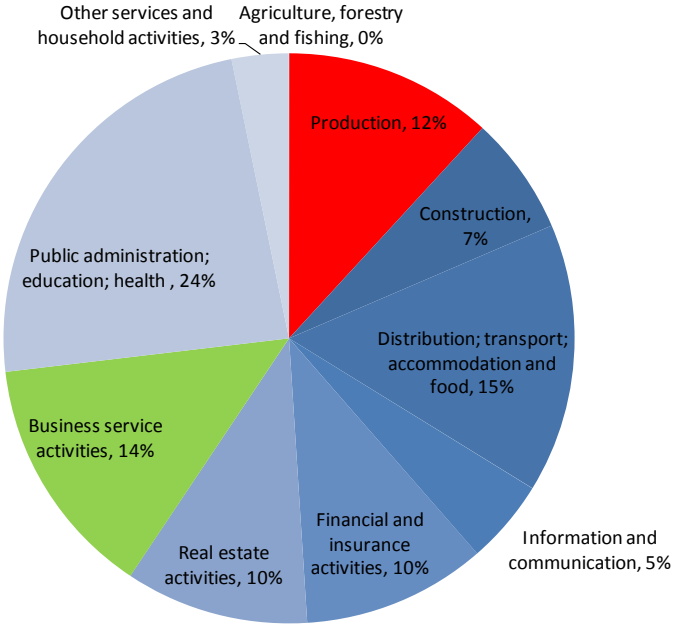
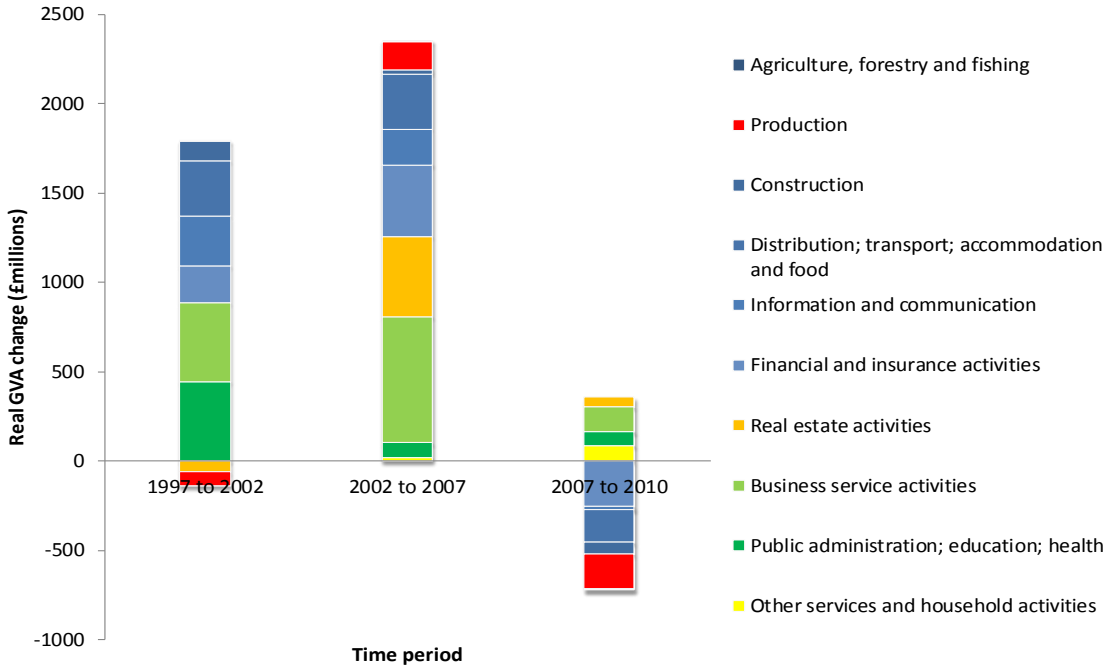


Figure 2b: Structure of Glasgow economy, 2010



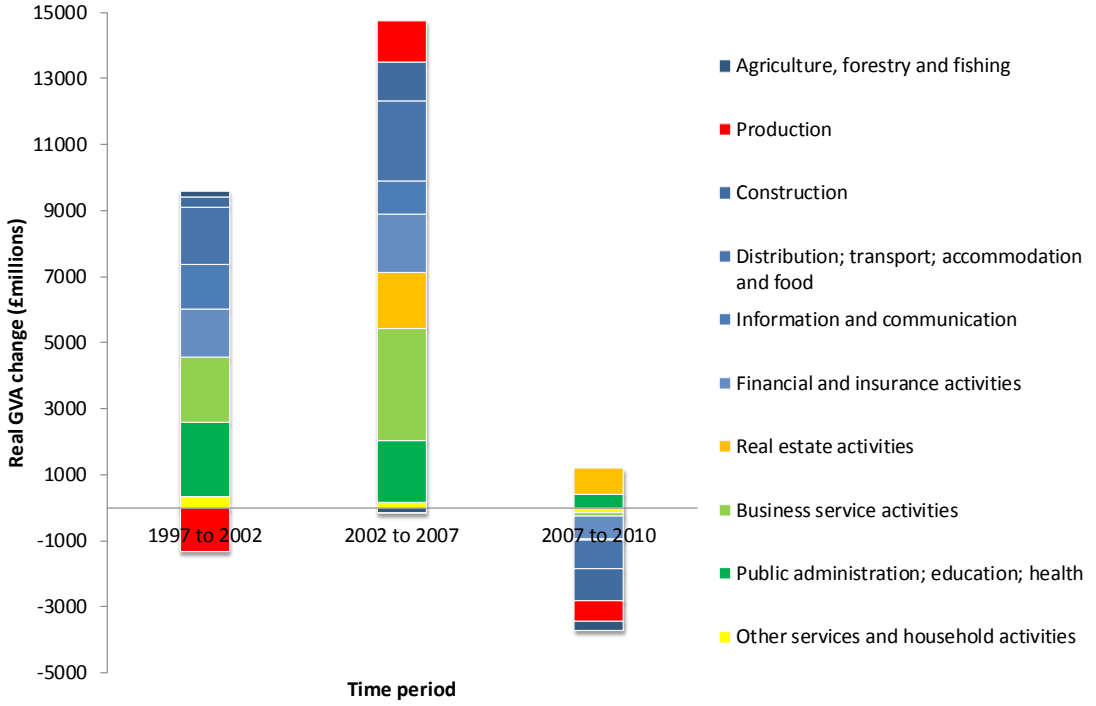
From our dataset we can also look at the time profile of sectors contributions to overall real growth in the Glasgow economy. We can break down the £3.6 billion real growth of GVA for Glasgow down to show the time period and the sector responsible. Over the period as a whole, 35.3% of the growth in GVA was in the "Business services activities", with 16.5% in "Public administration, education and health", 12.7% in "Information and Communication" and 12.2% and 11.8% in "Real Estate" and "Distribution, transport, accommodation and food" sectors respectively. The only one of the ten industries identified in the dataset which made a negative contribution to Glasgow's GVA over the period was "Production", which saw its real GVA fall by £113 million over the fourteen years. The negative contribution to growth by this sector in Glasgow mirrored its negative contribution to Scotland's growth over the same period.

Figure 3: Absolute change in real GVA in Glasgow by time period and sector, £million



Interestingly, we can also breakdown these overall contributions by time period. These results are shown in Figure 3. For example, it becomes apparent that while "Production" activities made a negative contribution over the whole period, for the years between 2002 and 2007 its contribution was positive (£157 million) and fell in both the previous (1997 to 2002) and the recession period (2007 to 2010). Of the ten sectors identified, only four – "Real estate activities", "Business service activities", "Public administration, education and health" and "Other services" saw absolute GVA increase in the period post-2007. For the same ten sectors at the Scottish level, only "Real estate activities" and "Public administration, education and health" made positive contributions to aggregate GVA over the period since 2007 (Figure 4). This demonstrates in particular the importance of the growing "Business service activities" sector in Glasgow in alleviating what would otherwise have been a more significant decline in service sector activity for Scotland as a whole.

Figure 4: Absolute change in real GVA in Scotland by time period and sector, £million



Conclusions

In summary therefore, there is evidence that over the fourteen years to 2010 the Glasgow economy marginally outperformed the Scottish economy as a whole, although output did fall between 2007 and 2010 for both areas. Additionally, population growth in the city has outstripped Scottish population growth, even at a time of strong national growth in population. It appears from the data on council-level migration that this is largely explained by a fall in out-migration from the city, which raises interesting questions about recent labour mobility. Further, we have estimated that the Great Recession cost the Glasgow economy some £3.8 billion in lost activity between 2008 and 2010. Further, at the sectoral level we can see that significant change has occurred to the Glasgow economic structure over this short period of time, and the "Business service activities" sector has significantly increased its importance to the city.

There are a number of areas for future research suggested by these observations. Firstly, it would be useful to understand if the pattern of growth seen in Scotland's largest city been repeated across other major cities of Scotland and the UK, or if these trends are unique to Glasgow. Secondly, it would be useful to explore more about the link between economic structure of city economies and their growth, understanding the contribution of city-specific factors and of more general sectoral trends. Thirdly, it would be useful to examine further the links between the Great Recession and sub-national labour mobility. Finally, it would be interesting to answer the fundamental question of policy and purpose: whether

economic growth in Scotland is helped or hindered by strong growth performances of the major cities or if there is a trade-off between growth and spatial economic equality in Scotland.

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Expenditure Impacts of Higher Education Institutions and their Spatial Distribution: Glasgow City Region v the Rest of Scotland

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Several previous studies have established that higher education is a significant sector in the Scottish economy. The most recent of these find the expenditure of Higher Education Institutions (HEIs) and their staf support approximately 4% of gross output in Scotland, based on conventional multiplier based impact attribution. If the role of Scottish Government funding is discounted (due to the binding budget constraint imposed by the Barnett funding mechanism) this is still a sizeable 2%; indicating that higher education is a significant export sector (for details see: Hermannsson et al 2013ab). It has long been recognised that higher education as a sector is even more important for the local economies where the HEIs are concentrated. For example, in a 1966 issue of the Scottish Journal of Political Economy Blake and McDowell settle the argument, which is more important for the economy of St Andrews, the university or the golf course.

This article analyses the role of higher education in the economy of Glasgow (GLA) and the rest of the Strathclyde regions (RST). The aim is to compare and contrast the impact of the west coast institutions to the impacts of HEIs in the rest of Scotland (ROS). In particular the aim is to examine the degree to which the spatial distribution of HE activities between the West and the ROS is determined by Scottish Government funding decisions and to what extent this is driven by success at securing external students and funding.

This analysis is based on Hermannsson (2012), which utilises a comprehensive income and expenditure database for HEIs in Scotland (Hermannsson et al, 2010) constructed for the year 2006. This is augmented by analysing some broad income trends since 2006 to determine the subsequent changes in the Glasgow HE sector and its relative position vis-á-vis the rest of Scotland. The focus of this article is only on the role of the HEIs themselves. However, the associated impacts of students‘ consumption expenditures are equivalent to about 20% of the expenditure impacts of HEIs (Hermannsson et al 2013 a).

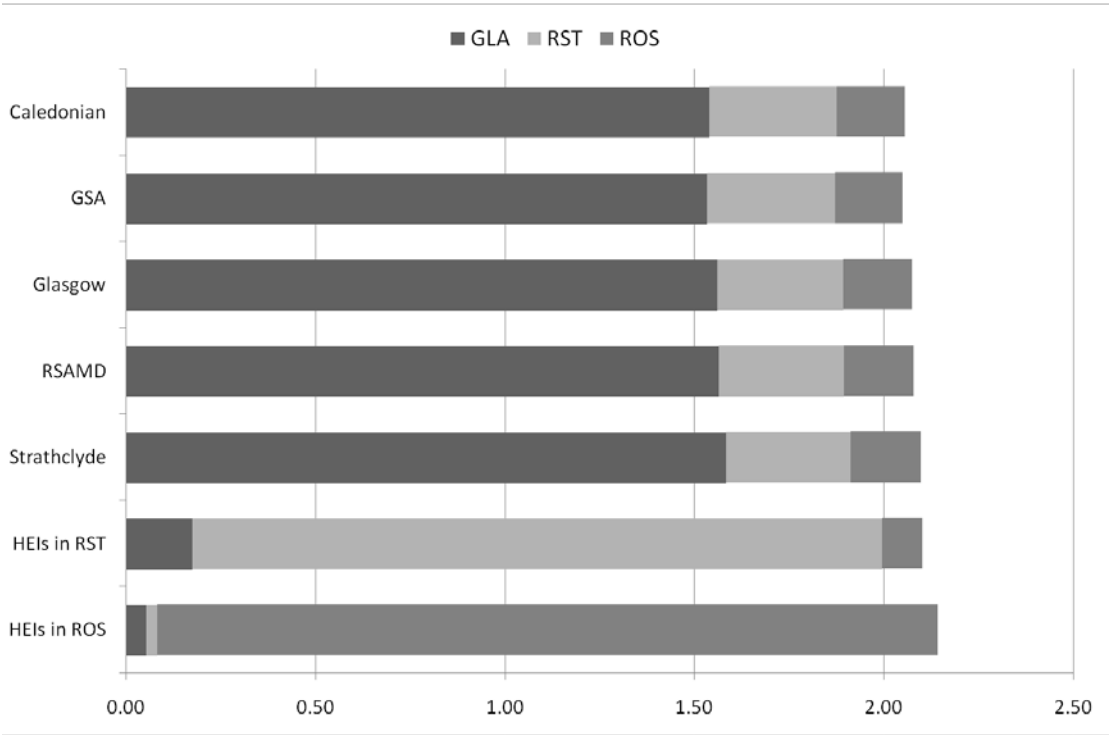
As argued here the simple expenditure impacts of HEIs are significant and any changes in these are immediately felt in the institutions‘ host communities. However, in the longer term probably the single most important economic impact driven by HEIs is through increasing the skills of participants in the labour market. Every year this increase in human capital enhances the productivity of the labour force, augmenting the capacity of the economy and stimulating competitiveness (Hermannsson et al 2010). Furthermore, there are a range of wider impacts from education in general and some from higher education in particular. These include technological spillovers, the benefits of education to private individuals (happiness, child rearing, marital success, longevity etc.) and various socioeconomic feedbacks such as on health, crime rates, civic institutions etc. These impacts are potentially very large although the evidence base is weaker than for the more directly observable labour market impacts. For details of this point see (McMahon 2004) and for a review of the available evidence on different types of economic impacts of universities I refer to Hermannsson & Swales (2010).

Expenditure impacts of HEIs

Determining the sub-regional and interregional expenditure impacts of the HEIs themselves is a relatively straightforward matter, given the Input-Output database, which identifies each HEI as a separate sector and furthermore identifies the spatial distribution of their expenditures. The figure below reveals the interregional Type-II output multipliers for the Glasgow HEIs (Caledonian, GSA, Glasgow, RSAMD and Strathclyde) and two aggregate sectors comprising the HEIs in RST and ROS, respectively.

The output multipliers show how £1 of final demand translates into an output impact and how it is distributed spatially across Scotland. For example, imagine that the University of Strathclyde were to receive an exogenous injection of £100m, say in the form of increased fees from overseas students, we can infer from the interregional Type-II output multiplier that this would result in a Scotland-wide output impact of approximately £210m. Output in Glasgow would be stimulated by approximately £160m, while output in the rest of the Strathclyde region and the rest of Scotland would be boosted by approximately £30m and £20m, respectively.

Figure 1 Interregional Type-II output multiplier of the HEI sectors identified in the 3-region GLA-RST-ROS HEI disaggregated IO-table.



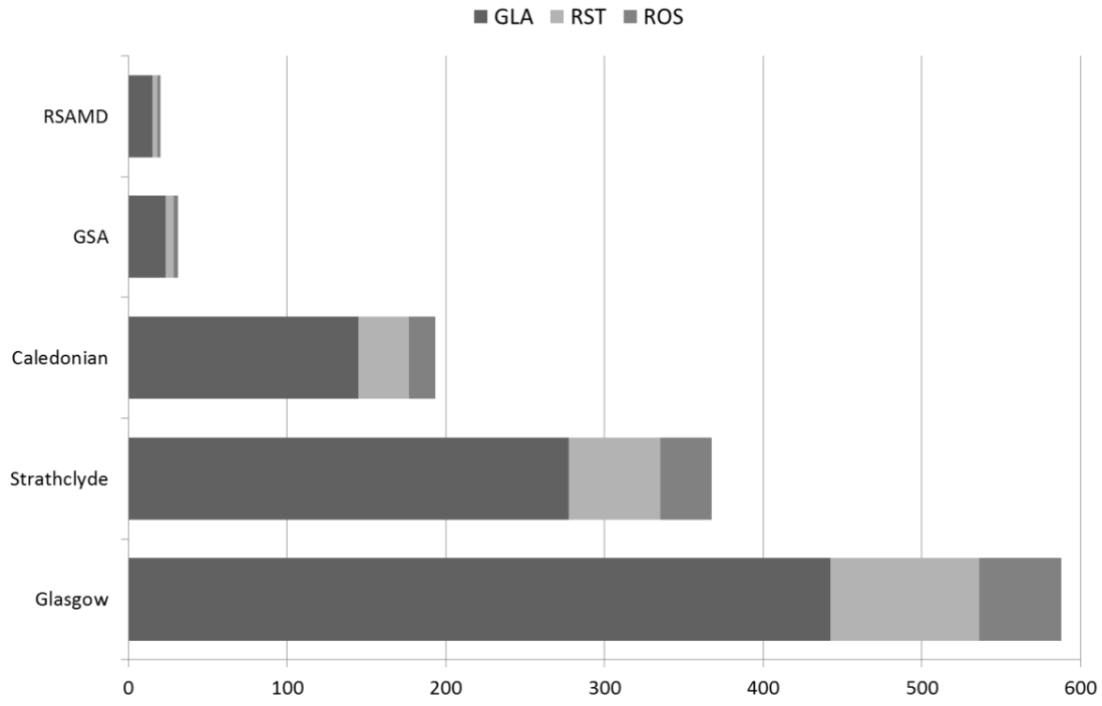
As the diagram reveals, most of the knock-on impacts are incurred within the HEIs' host regions, most markedly for the aggregated impacts of universities located in the larger regions RST and ROS. Glasgow is the most open region with significant knock-on impacts occurring in the other two regions, particularly in RST.

Figure 2 reveals the absolute output impact of individual universities located in Glasgow on the Glasgow, RST and ROS economies. Overall the Glasgow HEIs drive a Scotland-wide output impact of £1.2 bn. This amounts to approximately 0.7% of total output in Scotland. As the output impact is the product of the institutions' final demand and its output multiplier, scale is a significant driver of impact. In this regard the University of Glasgow is the biggest institution, generating approximately half of the total impact of all five Glasgow HEIs.

As Figure 2 reveals these impacts are not confined solely to the institutions' host regions, but are distributed through knock-on effects to other sub-regions. The output multipliers are a scale-independent measure of the HEIs' expenditure impacts. However, Figure 3 serves as a reminder that the institutions

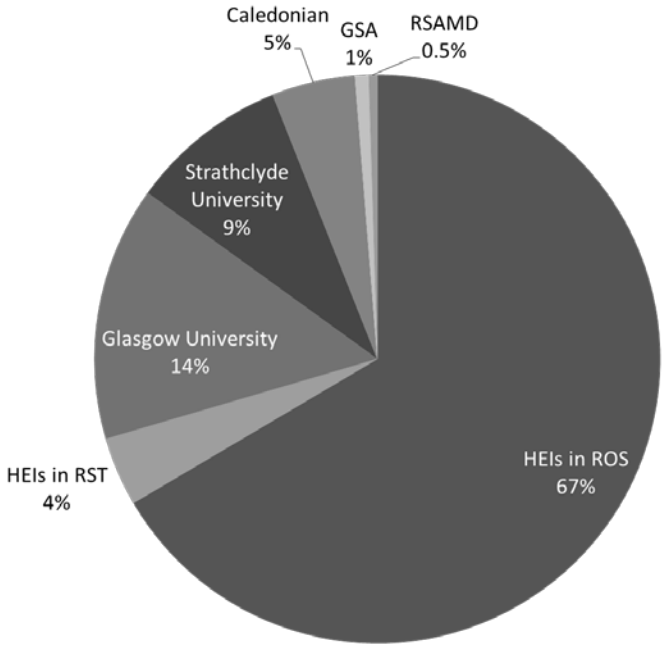
vary greatly in scale, which, given the similarity of Scotland-wide multipliers (Hermannsson *et al,* 2010b) is a key driver of total expenditure impacts.

Figure 2 Interregional Type-II output impacts of HEIs in Glasgow. Horizontal bars represent absolute impact (£ millions), disaggregated by sub-region of impact.



The HEIs in ROS sector is composed of 13 HEIs in the ROS and the HEIs in RST is a composite of the two institutions in the Strathclyde region, Bell College and the University of Paisley, which in fact have now merged to form the University of the West of Scotland. The five Glasgow HEIs therefore represent approximately 30% of the total expenditure impacts of the sector in Scotland.

Figure 3 Percentage-breakdown of the Type-II output impact of HEIs in Scotland



Interregional distribution of HEI activities and impacts within Scotland

Figure 4 reveals where the stimuli of the HEI-sector originate and how they spread across Scotland through knock-on impacts. The rows indicate the origin of the stimulus while the columns reveal the location of impact. For example, looking at the top row, this depicts the impact of HEIs in Glasgow and how these are spread across Scotland. Reading across we can see that Glasgow HEIs exert an impact of £904m upon Glasgow itself, drives £192m of output in the rest of the Strathclyde region and £106 in the rest of Scotland. The rightmost value sums this up to reveal a Scotland-wide impact of HEIs in Glasgow of £1,201m. If we work our way down the GLA column in the table we see what impacts the HEIs in different parts of Scotland exert upon Glasgow. The local HEIs cause an impact of £904m upon their host city while HEIs in the rest of the Strathclyde region have an impact upon Glasgow to the tune of £13m and the HEIs in the rest of Scotland drive an output impact of £67m in the city. The sum of the column reveals that all HEIs in Scotland drive £984m of output within the City of Glasgow. Generally, for the HEIs in each sub-region, most of the impacts are felt within their host region, although significant impacts spill over to other regions. For example the HEIs in the rest of Scotland (RST) generate a Scotland-wide output impact of £159m. Of this, £138m or 87% occur within the host region while £13m are felt in GLA and £8m in the ROS.

Figure 4 spatially disaggregated Type-II output impact of HEIs in Scotland. Rows indicate location of HEIs and columns reveal location of impact (£m).

		Location of impact			
		GLA	RST	ROS	SCO total
Location of HEI	GLA	904	192	106	1,201
	RST	13	138	8	159
	ROS	67	35	2,604	2,706
SCO total		984	365	2,717	4,066
– % of SCO total		*24%*	*9%*	*67%*	*100%*

HEIs in Glasgow receive approximately 31% of the income of the HEIs sector in Scotland. A noteworthy feature of these results, however, is that Glasgow only reaps 24% of the output impacts of the overall HEIs sector in Scotland. If we take a look at GLA and RST in conjunction (the whole of the Strathclyde region) we saw in Section 4.1 that HEIs in this area receive approximately 34% of the income of the overall sector in Scotland. However, the region receives approximately 33% of the output impact of the HEIs sector in Scotland. Thereby it is evident that a significant share of the spillovers from Glasgow are captured in the RST. On balance, however, it is clear that due to interregional linkages, the Strathclyde region captures less of the output impact of the HEIs sector in Scotland (33%) than the scale of the HEIs in Strathclyde (34% of the income of the Scotland-wide sector) would suggest. From the point of view of policy discourse in Scotland, this is of further interest as Glasgow and the Strathclyde region are perceived to host a relatively large share of the HEIs sector vis-á-vis the rest of Scotland, or at least command a respectable share of the sector given the relative scale of the area.

As we see from Figure 5, this perception holds from the narrow perspective of HEIs in Glasgow as part of Glasgow city. For the narrow city council area the HEIs are certainly over-represented relative to the city's share of overall population in Scotland[i]. However, as I argue in Chapter 3, Glasgow and the rest of the Strathclyde region are economically very interdependent and can be treated as a single functional entity. Looking at the Strathclyde region as a whole HEI capacity is relatively under-provided vis-á-vis the rest of Scotland. Due to the interregional economic structure of Scotland this imbalance is further exacerbated as the Strathclyde region as a whole enjoys less of the output impact of HEIs than the scale of the area's HEIs sector would suggest.

Figure 5 Share of population, HEIs sector and output impacts of HEIs by region in Scotland.

	GLA	RST	ROS	Scotland (GLA+RST+ROS)	Strathclyde area (RST + GLA)
Population 2006 (headcount)	580,700	1,443,900	3,092,300	5,116,900	2,024,600
% of row total	*11%*	*28%*	*60%*	*100%*	*40%*
Income of HEIs (£ millions)	627	78	1,359	2,065	*706*
% of row total	*30%*	*4%*	*66%*	*100%*	34%
Output impact of HEIs (£ millions)	984	365	2,717	4,066	1,349
% of row total	*24%*	*9%*	*67%*	*100%*	*33%*

Does this result imply that the HEIs sector is not equitably spread across space in Scotland, with the rest of Scotland being favoured at the expense of the Strathclyde area? As we know, just over one half of the sector's funding comes from the Scottish Government, so perhaps the question should be raised if spatial distribution of HEIs' income in Scotland reflects a relative underperformance of the HEIs in the Strathclyde area when it comes to competing for income from students' fees and research grants? HEIs in Glasgow and the rest of the Strathclyde area tend to be more dependent upon funding from the devolved government than HEIs in the rest of Scotland. To address this I turn to Figure 6, which shows the income by source for the aggregate HEI-sectors in each of the three regions.

Figure 6 Income of HEIs in GLA, RST and ROS disaggregated by source (Scottish Government and other funding) for 2006.

	GLA	RST	ROS	Scotland (GLA+RST+ROS)	Strathclyde area (RST + GLA)
Scottish government funding (£ millions)	364	65	700	1,129	429
% of row total	*32%*	*6%*	*62%*	*100%*	*38%*
Other income of HEIs (£ millions)	263	14	659	936	*277*
% of row total	*28%*	*1%*	*70%*	*100%*	*30%*
Total income of HEIs (£ millions)	627	78	1,359	2,065	706
% of row total	*30%*	*4%*	*66%*	*100%*	*34%*

Looking at the HEIs in the Strathclyde area as a whole they receive 38% of all Scottish Government funding for HEIs. This is still slightly less than the area's population share would imply. However, when we look at the other sources of funding it is the extent to which the Strathclyde area is at a disadvantage vis-à-vis the rest of Scotland that is striking. Only 30% of the other income of HEIs in Scotland can be attributed to the HEIs in the Strathclyde area, where 40% of the population reside, whereas the remaining 70% can be attributed to the HEIs in the rest of Scotland, where 60% of the population reside. What drives this relative underperformance of the HEIs sector in the Strathclyde area is beyond the capacity of this analysis to answer. However, as a large share of the other funding category is external to the Scottish economy (UK-wide and international research funding and tuition fees) it is clear that a considerable boost to the Scottish economy could be obtained by raising the share of exogenous income of the Strathclyde HEIs to the same level as for those institutions in the rest of Scotland.

Looking at the HEIs in Strathclyde in aggregate 61% of their income comes from the Scottish Government while 39% comes from other sources. The same ratios for the HEIs in the rest of Scotland are 52% and 48%. If Scottish Government funding were held constant but the HEIs in Strathclyde could raise their share of other income to 48%, this would mean additional income for the Strathclyde HEIs sector to the tune of £119 m ((429/0.52)-706=119). This amounts to just under 17% of the aggregated income of HEIs in GLA

and RST. Whether this is possible seems to be granted by the performance of HEIs in ROS. Whether this is feasible is an altogether more complicated matter. For example, would additional efforts at drawing in external funding and students substitute or complement efforts to train the indigenous population? If research grants and external students are complementary to efforts at training graduates for the local labour market then the outcome is all-round positive. However, if these income earning activities are at the detriment of efforts geared towards the host economy then these goals are conflicting and it cannot be determined *a priori* if boosting the Strathclyde HEIs' share of other funding is ultimately beneficial to the Scottish economy.

Trends from 2006

Figure 7 Scottish HEIs, total income in £000s, 2006-2012.

	2006	2007	2008	2009	2010	2011	2012
The University of Aberdeen	156,983	172,563	186,253	216,723	227,091	221,026	217,014
University of Abertay Dundee	32,455	34,395	36,074	37,812	36,252	37,054	34,164
Bell College	19,924	21,748					
The University of Dundee	163,971	175,791	191,379	207,687	219,090	229,211	223,316
Edinburgh College of Art	14,707	17,147	16,945	16,503	17,966	26,157	
Edinburgh Napier University	81,351	88,823	99,350	100,392	105,708	106,173	103,971
The University of Edinburgh	435,569	477,062	555,319	591,533	633,979	650,829	700,887
Glasgow Caledonian University	97,644	100,441	103,551	111,381	115,862	113,512	107,435
Glasgow School of Art	15,799	17,437	18,330	19,462	21,403	22,544	23,303
The University of Glasgow	312,372	361,743	397,005	421,152	439,471	450,195	439,839
Heriot-Watt University	99,545	110,564	117,820	134,501	142,662	150,359	155,647
Queen Margaret University Edinburgh	27,570	27,409	31,013	35,174	33,552	34,041	34,346
The Robert Gordon University	75,084	79,188	86,567	91,720	94,324	93,017	88,669
Royal Conservatoire of Scotland	10,378	11,765	12,790	13,169	14,749	15,648	16,543
The University of St Andrews	108,762	118,331	129,123	147,061	155,788	165,706	170,242
SRUC	43,659	44,096	44,878	47,424	49,776	55,002	54,540
The University of Stirling	83,663	88,872	92,922	96,946	101,948	102,184	99,086
The University of Strathclyde	191,054	203,994	219,275	230,654	230,664	230,016	224,965
University of the Highlands & Islands	35,365	43,754	47,951	52,167	68,174	62,190	57,428
University of the West of Scotland	58,481	63,451	95,395	91,742	95,479	95,917	91,017
Total	2,064,336	2,258,574	2,481,940	2,663,203	2,803,938	2,860,781	2,842,412

Before concluding it is useful to have a quick look at headline indicators for the income of Scottish HEIs and the extent to which this is dependent on funding council grants[ii]. The two broad trends observed since 2006 is that the income of the HEIs has risen and they are less dependent on the Scottish Funding Council (and hence the Scottish Block Grant) for their income. I shall elaborate on each point in turn. As Figure 7 reveals the total income of the sector has grown significantly in absolute terms in the 7 year period since 2006. With most of the growth occurring in the first half of the period, while the sector has been stagnant in nominal terms since 2010. Over the 7 year period the average annual growth rate comes to about 4.7%, while average annual UK CPI inflation stood at approximately 3.4% in the same period. Hence there's been a modest growth in real terms.

Going back to the regional definitions presented earlier there is marked difference in how this has affected individual sub-regions. Looking at Figure 8 it is clear that the income of HEIs in Glasgow has kept up with inflation, while the RST has shrunk in real terms and HEIs in the ROS have grown in real terms and above the Scottish average.

Given the current climate of public sector austerity it is interesting to analyse how the composition of the HEIs income has evolved over this period. A headline indicator that provides a succinct overview is the share of grants from the Scottish Funding Council in the total income of HEIs. A graphical summary of how this ratio has evolved is provided in Figure 9. Over time this dependency on the funding council has

decreased for Scotland as a whole as well as for HEIs in Glasgow and the Rest of Scotland. Conversely the RST is increasingly dependent on funding council grants[iii].

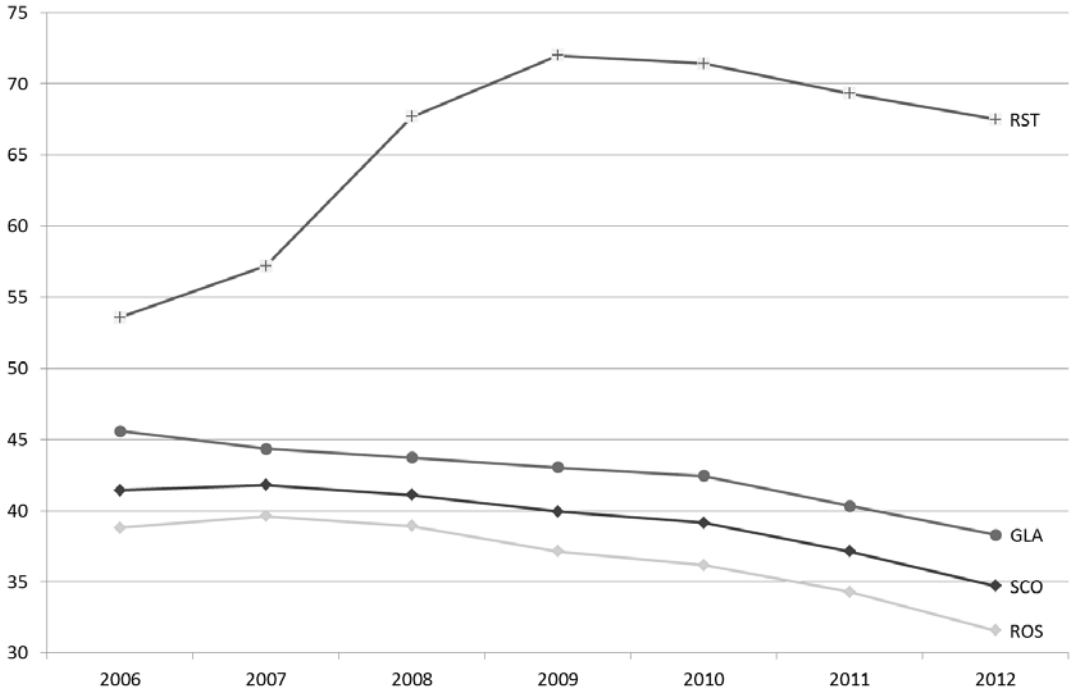
Figure 8 Scottish HEIs, total income in £000s, 2006-2012 aggregated by regions and average annual growth rates.

Sub-region	2006	2007	2008	2009	2010	2011	2012	Growth rate p.a.
GLA	627,247	695,380	750,951	795,818	822,149	831,915	812,085	3.8%
RST	78,405	85,199	95,395	91,742	95,479	95,917	91,017	2.2%
ROS	1,358,684	1,477,995	1,635,594	1,775,643	1,886,310	1,932,949	1,939,310	5.2%
Total (SCO)	2,064,336	2,258,574	2,481,940	2,663,203	2,803,938	2,860,781	2,842,412	4.7%

Conclusions

An analysis of the institutional expenditure impacts reveals that these clearly cut across sub-regional boundaries in Scotland. Most explicitly this was evident for the Glasgow HEIs where 25% of their Scotland-wide output impacts were felt outside their host region. This is due to the economic structure of their host sub-region Glasgow, which is very open, as reflected in the scale of wage payments to the rest of the Strathclyde region and to a lesser extent to the rest of Scotland. Perhaps unsurprisingly the HEIs in the largest sub region (ROS) exhibit the least tendency for impacts to spill-over onto neighbouring sub-regions, with 96% of the output impacts incurring within the region.

Figure 9 Ratio of total funding council grants to total income (%)



Furthermore, I analyse how HEI activities are distributed across the three regions by comparing shares of HEI expenditures with population shares. From this perspective HEIs are clearly over-represented in Glasgow. However, as I have suggested earlier it is misleading to view Glasgow in isolation as it is, in functional terms, very much part of the Strathclyde region. When focusing on the Strathclyde region as a whole (GLA+RST) it is evident that relative to the regions' population, HEI activity is under-represented vis-á-vis the rest of Scotland. When the output impacts (final demand + 'knock-on') of the HEIs are examined the Strathclyde region is at a further loss as an even greater share of output impacts is experienced in the ROS than of direct impacts. A casual observation would suggest that this reflects an in-equitable

distribution of HEI funding across Scotland. However, this is not as straightforward as it may initially appear. Once HEIs income has been disaggregated into Scottish Government funding and other income sources it turns out that public funding is allocated approximately in line with population shares between the whole of the Strathclyde area (GLA+RST) and the rest of Scotland (though the Strathclyde area seems to be, if anything, slightly favoured by the Scottish Government). However, the HEIs in the rest of Scotland appear to be better able to draw income from sources independent of the binding public sector budget constraint imposed by the Barnett formula, i.e. external research funding and students' tuition fees. In principle therefore the HEIs in the Strathclyde region should be able to emulate the success of their counterparts in the rest of Scotland. I calculate that if these were able to complement their public income with external funds to the same extent as the HEIs in the ROS this could result in an additional income of £119m for the Strathclyde HEIs (a 16.8% increase in total income). This should be technically feasible given the precedent of the other Scottish HEIs (although clearly not a light task). However, it is an open question whether this would be desirable for the Scottish economy. If a focus on external income complements the HEIs' capacity for building human capital it is clearly a good thing overall. However, if there is some trade-off between focusing on external competiveness of the institutions and their role in producing graduates for the local labour market, the outcome would be ambiguous. This is because the cultivation of human capital brings sizeable economic benefits through expanding the supply-side of the economy.

Looking at income trends since 2006 reveals that the income of HEIs in Scotland as a whole has risen in real terms during this period. However, this has occurred more slowly in Glasgow than the rest of Scotland. HEIs in Glasgow and the rest of Scotland have been able to grow their share of funding coming from sources independent of the Scottish Funding Council and decrease their exposure to funding from the Scottish Block Grant.

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[i] Universities are central place phenomena and therefore it may not be surprising that Glasgow, as Scotland's largest city, benefits from their presence. A further interesting aspect is to what extent Edinburgh benefits from the presence of HEIs. In population terms Edinburgh is about 80% of the size of Glasgow, but maintains an HEI sector that in income terms is approximately 101% of the size of the Glasgow sector.

[ii] These numbers are extracted from the HEIDI database, maintained by the Higher Education Statistics Agency (HESA).

[iii] After amalgamation into the University of the West of Scotland this now just a single HEI.

DEPARTMENT OF ECONOMICS

University of Strathclyde Business School

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- Core taught courses are designed around the latest academic research on the issues facing energy managers today.
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