

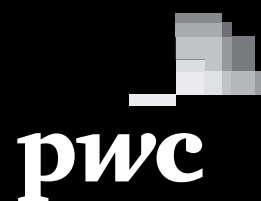


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Fraser of Allander Institute
Department of Economics
University of Strathclyde
Sir William Duncan Building
130 Rottenrow
Glasgow G4 0GE

t: +44 (0) 141 548 3958

f: +44 (0) 141 548 5776

e: fraser@strath.ac.uk

w: <http://www.strath.ac.uk/fraser/>

Outlook and Appraisal

Overview

There was evidence of some genuine growth in the Scottish economy in the third quarter of last year. Also the new GDP methodology and revisions have meant the fit with the UK economy during recession and recovery is closer. The recovery has been a little stronger than the earlier data suggested but still a little weaker than the UK as a whole. But survey evidence suggests a weakening in the final quarter of 2012 and uncertain prospects for 2013. It is quite clear the main components of aggregate demand in the Scottish economy remain weak. Moreover, there is little or no evidence of rebalancing away from household consumption toward investment and net exports. From the latest Scottish National Accounts Project (SNAP) data it is evident the contribution of components of demand to growth between the second and third quarters came almost exclusively from Scottish household consumption and to a small extent from government spending. Net trade and investment made a negative contribution.

Despite the strong contribution of private consumption there is little doubt that household spending in Scotland remains weak and will continue to be weak. The fourth quarter retail sales index reported falling sales volumes and flat nominal expenditures, with spending weaker than in the UK. Earnings growth remains low at around 2% per annum which is less than the rate of inflation and so indicates falling real earnings, now back to 1999 levels. The labour market in Scotland shows falling measured unemployment but from the middle of last year employment is falling and the number inactive continues to rise. The 'real' level of unemployment is clearly higher and that will contribute to weak household spending on goods and services. The housing market is flat with no growth in house prices and therefore offering no boost to household wealth and increased spending. Equity prices are rising 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 and the likely transience of the equity 'boom'. The Scottish household saving rate is high and rising and at 11.1% is 3.4 percentage points higher than in the UK. For all these reasons household spending is likely to continue to be weak.

Government fiscal consolidation is set to increase as the UK Government strives to meet its target of balance in its structural (cyclically adjusted)

current budget in five years. Most of the future adjustments concern spending rather than taxation with 68% of planned benefit cuts and 78% of current departmental spending cuts still to come after April this year. These cuts will depress household demand as well as reducing government spending directly.

Investment and net trade contributed negatively to growth in the third 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 Britain and abroad and there is no guarantee given all the negative influences that the expected pick up will emerge. As the latest SNAP data reveal, since the second quarter of 2011 investment spending in Scotland has fallen relative to its level in 2008. And the prospects for a growth in the contribution of net trade depend much on the recovery of demand and output in the eurozone from the current recession and wider growth of world trade. Huge uncertainties exist over eurozone prospects. The main beacon of hope is recovery in the US economy but this is not without its uncertainties.

Finally, while we might see some further and perhaps innovative monetary policy loosening when the new Governor Mark Carney takes up his post in July, we shouldn't expect much from monetary policy in directly boosting growth. While the economy continues at zero nominal interest rates there is little that traditional monetary policy can do to boost growth. But it can lower real rates by allowing, or acquiescing in, a higher inflation rate, and charging for holding bank deposits (negative interest rates). It can also participate in pumping money directly in the economy by financing the government deficits by printing new money (helicopter money). This is essentially fiscal policy rather than monetary policy but we shall see if there are any innovations forthcoming from the new Governor that might help the British economy escape its liquidity trap, while bearing the burden of fiscal consolidation.

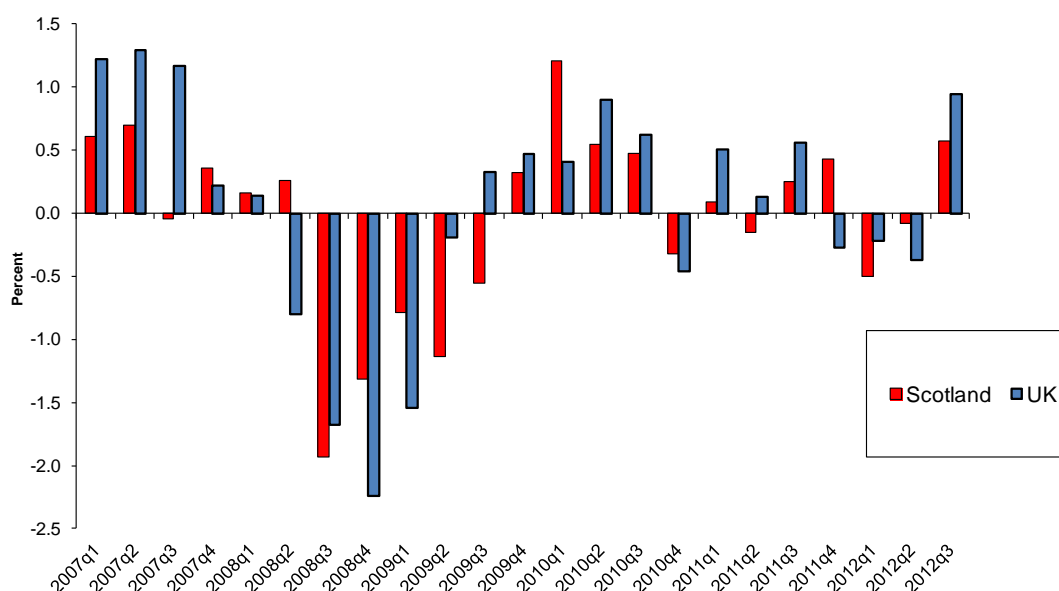
The more rational policy approach, however, would be for the Chancellor in his Budget in March to slow the pace of fiscal consolidation, and undertake a massive infrastructure investment programme while borrowing costs remain so low. Ironically, the UK lost its AAA credit rating not because of fiscal profligacy but because of austerity. The austerity has severely lowered growth prospects, hence low tax revenue prospects and continuing lack of progress in dealing with the deficit. This is exactly what many world class Keynesian economists had predicted. The only silver lining in the credit rating downgrade is that it will from previous evidence e.g. Japan, and the US, have no effect on the UK long-term borrowing rate. The financial markets do not rate highly the credit agencies ability to judge sovereign debt default prospects. And they are

right. The way is still open for a massive boost to infrastructure spending in the UK. If only the government would take it.

Against this background we have reduced our forecasts for GDP growth in 2013 and 2014 to 0.9% and 1.7%, respectively. We now forecast 2015 for the first time and expect growth to be higher in that year, at 1.9%, as recovery finally, and hopefully, takes hold. Job creation remains high in 2012 as many part-time, self-employed jobs, were created offering low hours as full-time jobs were lost as output growth remained weak. We predict net job creation of 9,400 this year, rising to 19,150 in 2014 and 31,800 in 2015. The bulk of the net job creation is in the production sector, with the service sector contributing much more to job creation in 2014 and 2015. Our projection for unemployment on the ILO measure at the end of 2012 is now 204,050. We continue to expect the unemployment position to deteriorate slightly in 2013 and 2014 compared to 2012 due to weaker output and employment growth. Unemployment is now forecast to be 218,300 by the end of 2013 and 228,500 in 2014. By the end of 2015 we project that unemployment will have fallen back to 204,100 as the economy recovers more strongly. But we would warn that many workers are leaving the labour market probably because of an inability to find work. Hence, the measured unemployment rate is becoming a less and less accurate measure of the extent of labour reserves and the underlying misery of job loss.

Recent GDP performance

Figure 1: Scottish and UK Quarterly GDP Growth, 2007q1 - 2012q3



The latest Scottish GDP data for the third quarter of last year show that the Scottish economy grew by 0.6% in the third quarter, compared to growth of 0.9% in the UK see Figure 1. This is a commendable Scottish performance. It is commendable because the so-called 'Olympic bounce' was expected, and is

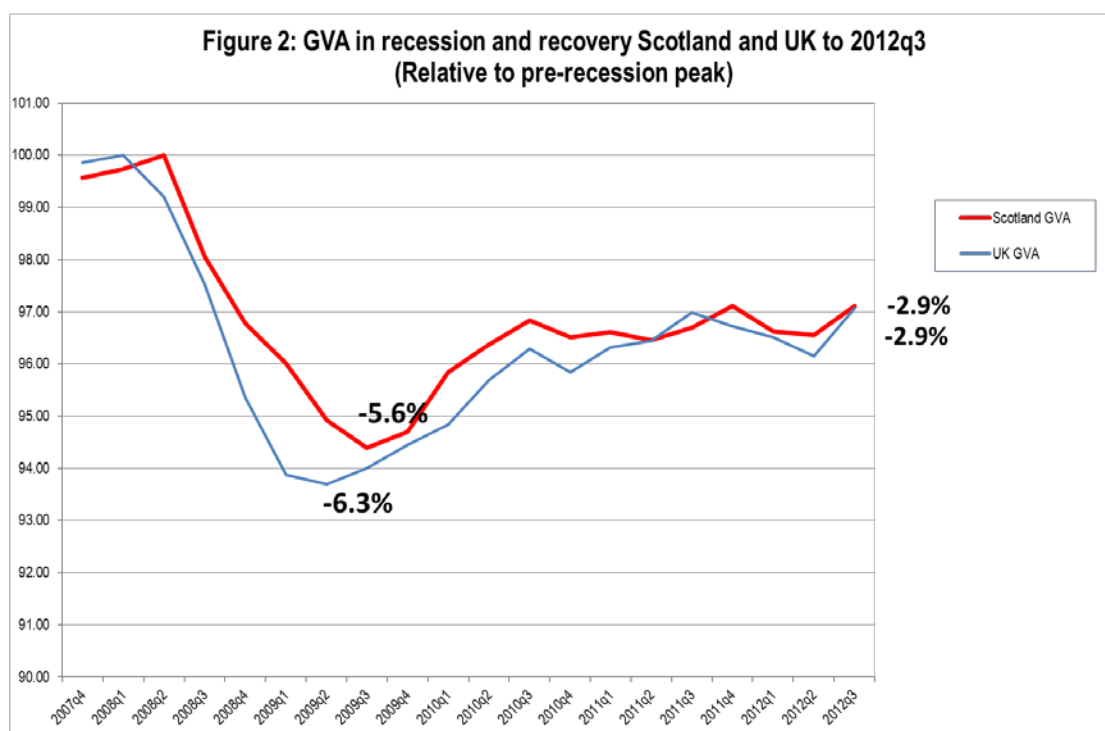
likely to have been, much weaker here than in the UK. So, it is probable that the 0.6% figure represents 'genuine' growth in Scotland whereas the 0.9% UK figure contains a large transient element.

But what is perhaps more interesting than the third quarter results is the effect of methodology and data source revision on the nature and profile of Scotland's recovery from recession.

The Release states that

"This publication incorporates a number of updates to methodology and source data. This is the first Scottish GDP publication fully based on the Standard Industrial Classification (SIC) 2007, which is a major revision to the previous SIC 2003. As part of this process, annual GVA weights since 1998 for each industry have been updated following their estimation in a SIC 2007 based Supply-Use framework. The most recent annual GVA weights now relate to 2009, updated from 2007 in the previous publication. This update means that the latest estimates better reflect the current structure of the Scottish economy."

It also means that there is a more accurate like-for-like comparison with the UK. The effect on Scotland's recovery from recession is marked as Figure 2 shows.

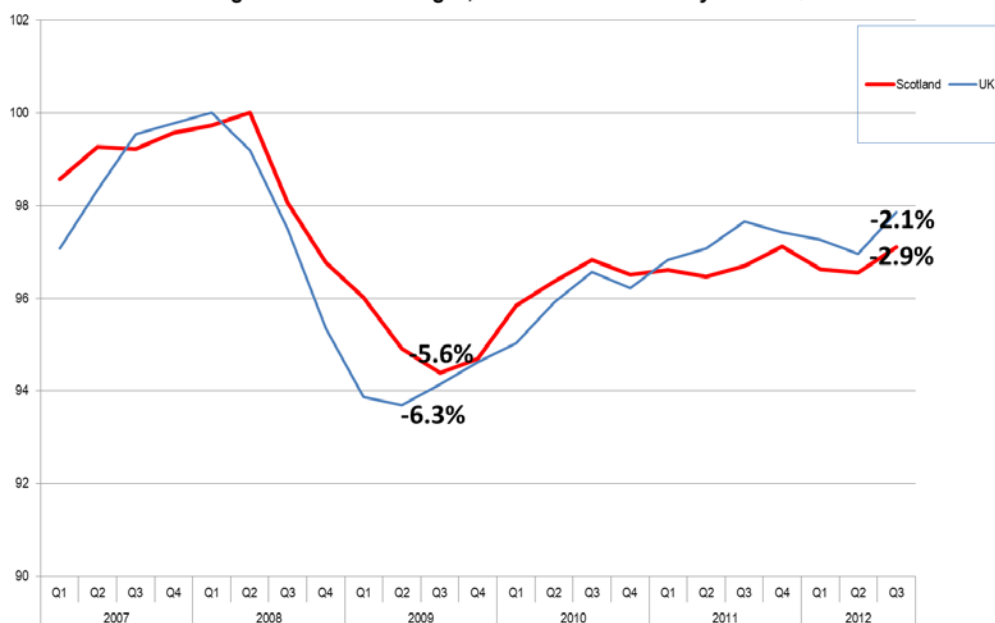


The three quarters of negative growth to the second quarter evident in the previous release have now reduced to two. The scale of the Great Recession is slightly reduced to a drop of -5.6% rather than -5.8%. And now Scotland stands with the UK in being just under 3% below the pre-recession peak, whereas in the previous quarter Scotland was more adrift from the UK.

The Scottish recovery is still slightly weaker than the UK but not by much. Later expected revisions to the UK GDP data may change the relative picture again.

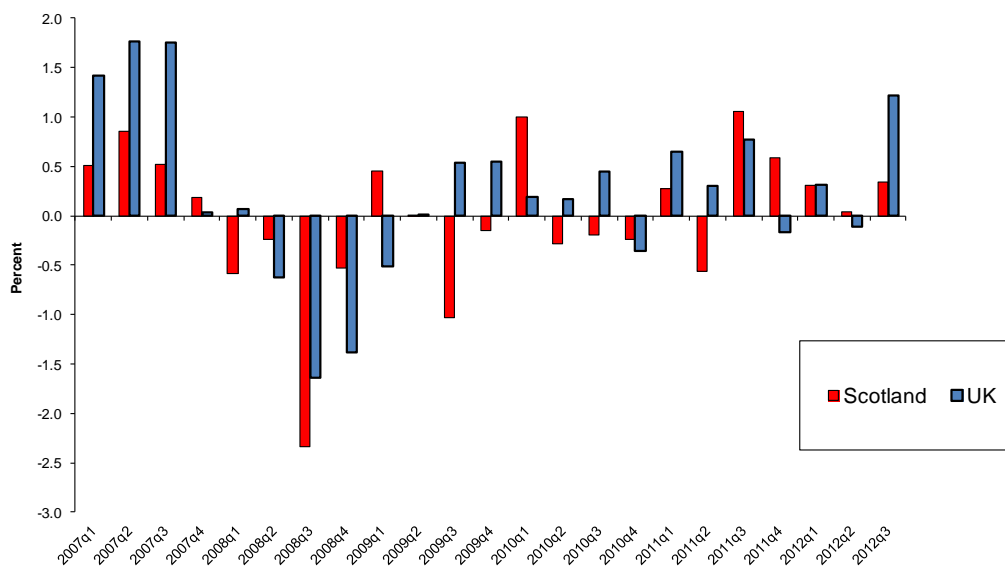
But as we noted in earlier *Commentaries* the aggregate output figures flatter the Scottish recovery because of the statistical quirk that the UK figures include all of oil production whereas the Scottish data do not. With oil production weak this has affected the Scottish-UK GDP relative as CPPR previously pointed out. As the data excluding oil and gas production show, presented in Figure 3, the Scottish recovery from the Great Recession is still clearly weaker than the UK.

Figure 3: GVA ex oil & gas, recession and recovery to 2012Q3



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 weaker in Scotland in the third quarter. Scottish service GVA grew by 0.3% here compared to growth of 1.2% in the UK as Figure 4 shows.

Figure 4: Scottish and UK Services GVA Growth 2007q1 to 2012q3



But over the year - that is four quarters over previous four quarters - the service sector in Scotland grew by 1.5%, which was slightly better than UK service sector growth of 1.2%. It is worth noting that the latest 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. (See below in *Forecasts of the Scottish Economy* section, Box 1).

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

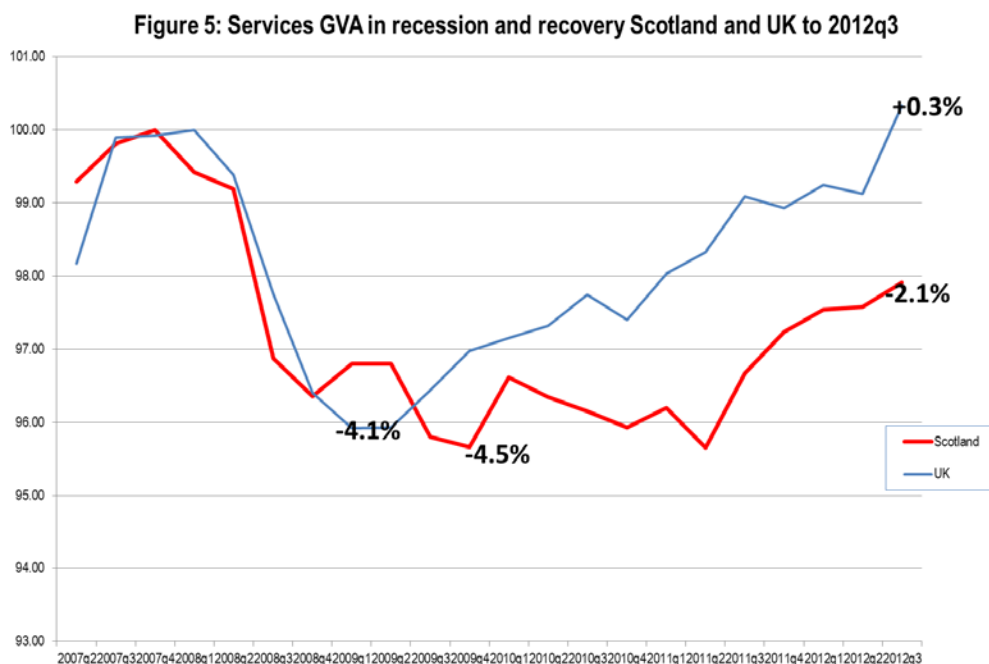
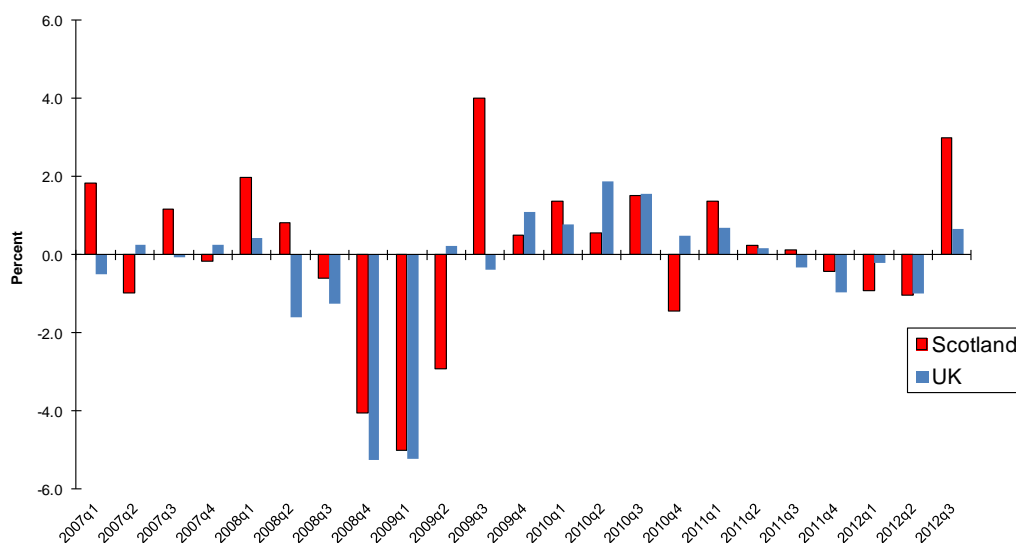


Figure 6: Scottish and UK Manufacturing GVA Growth at constant basic prices 2007q1 to 2012q3



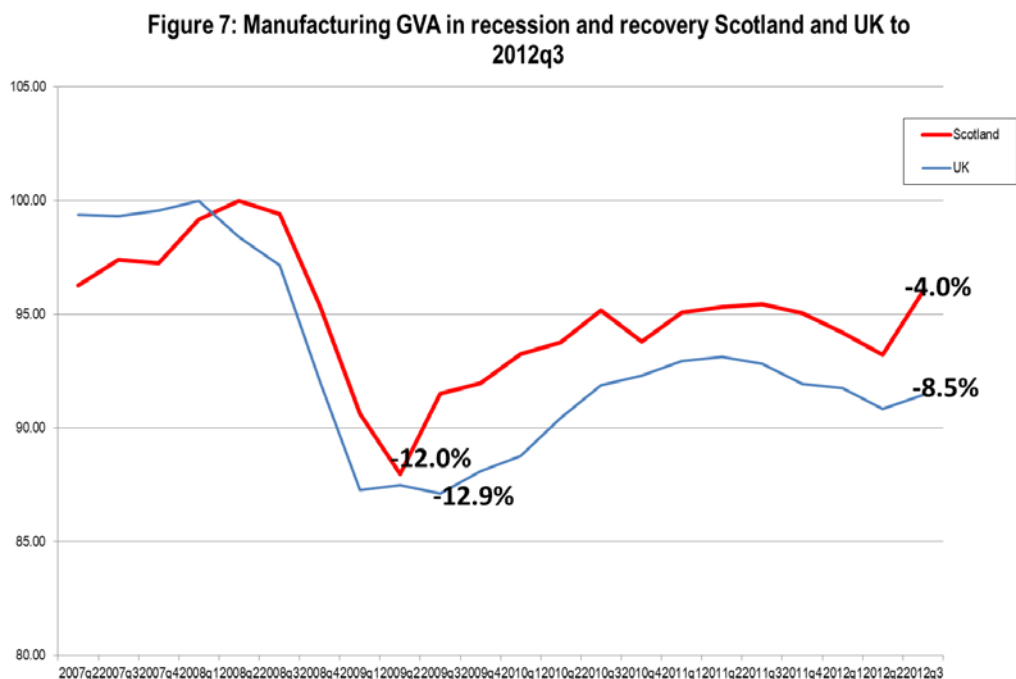
By the third quarter of this year, Scottish services GVA was still -2.7% below its pre-recession peak compared to a UK position where the sector has finally recovered its pre-recession peak output to stand 0.3% above that level. The loss of Scottish service sector output in the recession was -4.5%, a little more than the -4.1% output loss in services in the UK. So, it is clear that despite the slightly stronger growth performance of Scottish services over the year to the 3rd quarter, the sector is very weak compared to its UK counterpart. Some recovery is evident but unlike UK services there is still a long way to go before pre-recession peak output is regained.

The weakness of the production sector here noted in the previous Commentary now seems to have ceased. Output rose by 1.9% in the quarter compared to a rise of 0.7 per cent in the UK. Over the year -

four quarter on four quarter - production GVA rose by 0.2% in Scotland compared to a large fall of -2.5% in the UK. A key reason for this was the markedly improved performance of Scottish manufacturing as Figure 6 shows.

Manufacturing grew by 3% in the quarter but fell by -0.3% over the year. This can be compared with the performance of UK manufacturing which grew by only 0.7% in the quarter and contracted by -1.4% over the year.

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



Scottish manufacturing GVA now stands at -4% below the pre-recession peak, while the figure for UK manufacturing is -8.5%. The effect of the new weights, revised methodology and revised data has been to significantly change the nature of the recession and recovery in Scottish manufacturing. The depth of recession at -12% is now much the same as in the UK at -12.9%. Previously, the Scottish manufacturing recession had been large but shallower at -10.6%. And the recovery is now stronger than previously estimated with the position at the latest data point contrasting with the earlier data when at the end of the second quarter Scottish manufacturing was some -7.2% below its pre-recession peak. Clearly, the strong third quarter performance also helped to lower that.

Within manufacturing, the main boost to growth in the third quarter clearly came from the food and drinks sector. GVA rose by 10.2% in the quarter but fell by -1.7% over the year - four quarter on four quarter. Computer, electrical and optical products grew by 3.4% in the quarter while other manufacturing grew by 3.9%. However, the other key sectors in manufacturing all contracted during the quarter: textiles and clothing (-7.6%), refined petroleum, chemicals, pharmaceuticals (-2.3%), and transport equipment (-2.8%). So, the pick-up in manufacturing is by no means general and very much influenced, we would guess, by buoyant whisky sales.

Turning now to construction, the latest data are presented in Figure 8. Scottish construction GVA fell by -0.4% in the quarter and by -10.1% over the year. But UK construction contracted even more in the quarter, by -2.5%, but by less, -6.1%, over the year. The sector still continues to be languishing despite the pick-up in the second quarter which appears to have evaporated by the 3rd quarter. Figure 9 shows the state of the recovery in the construction sector in Scotland and UK.

Figure 8: Scottish and UK Construction GVA Volume Growth 2007q1 - 2012q3

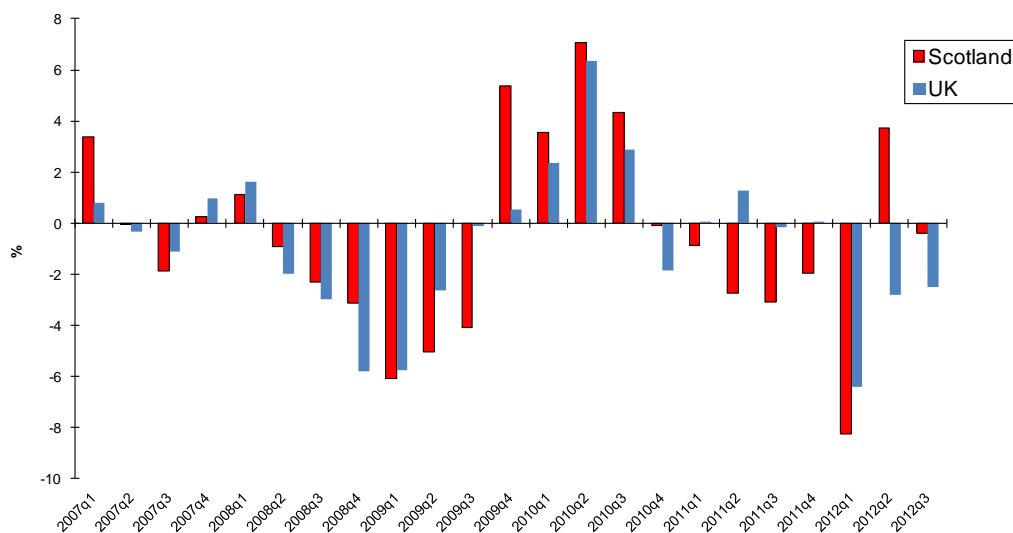
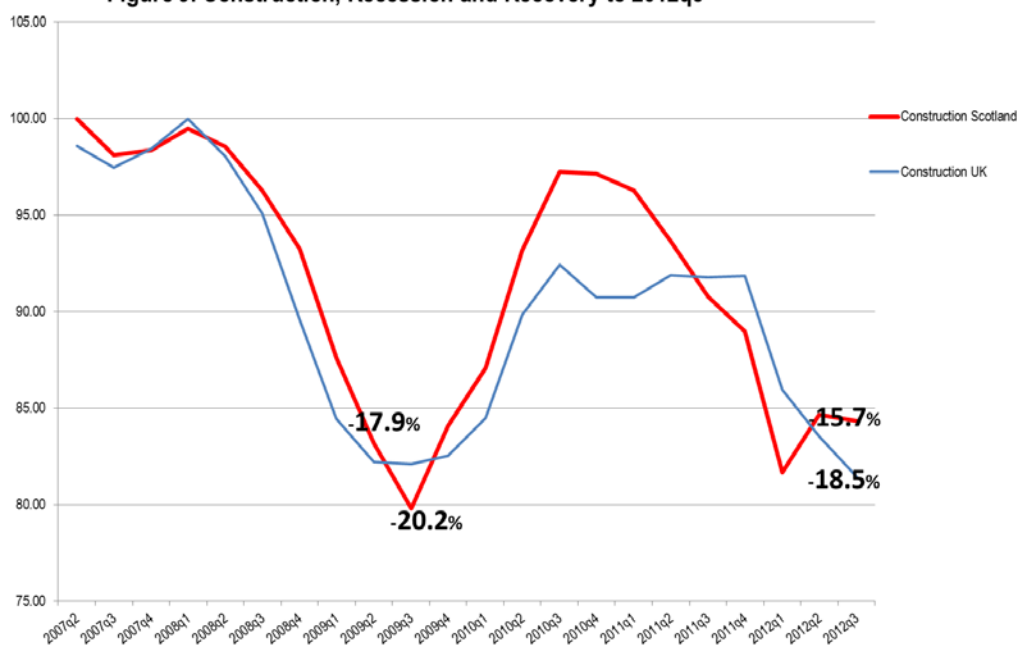
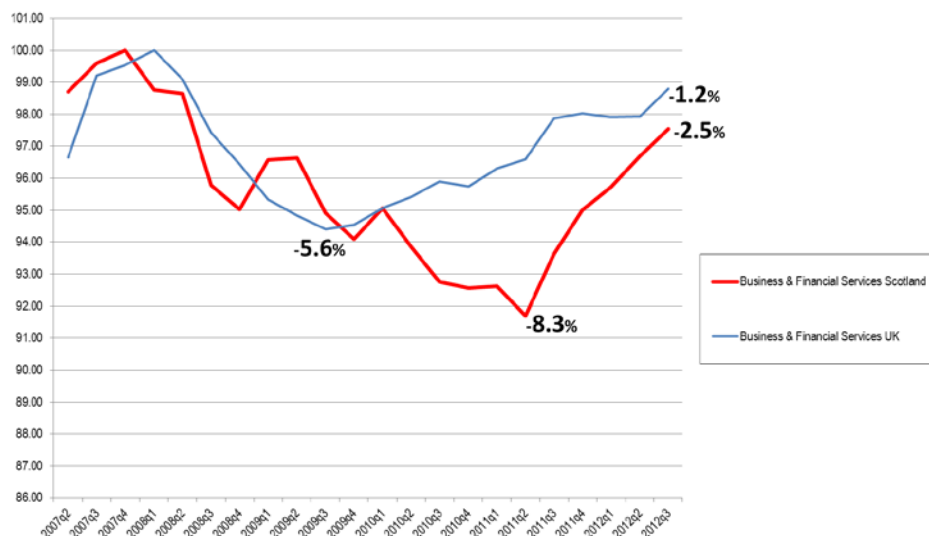


Figure 9: Construction, Recession and Recovery to 2012q3



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. We noted in the previous *Commentary* that 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. But even here the decline in construction output after the second quarter last year has led to both UK and Scottish construction output being not much higher than it was at the trough of the recession.

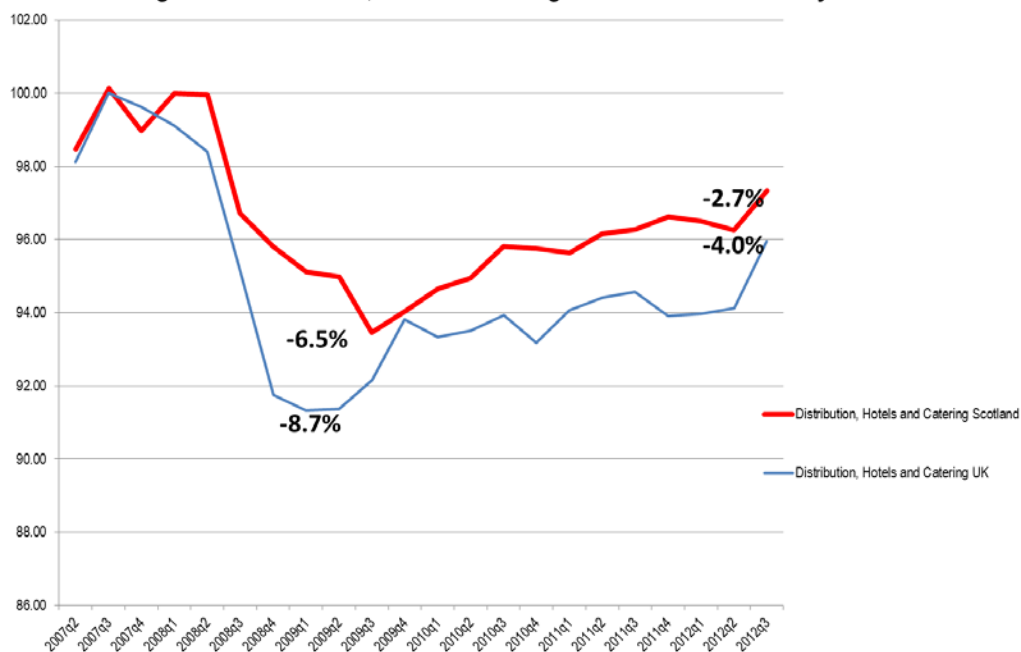
Figure 10: Business & Financial Services: Recession and Recovery to 2012q3



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 - grew by 0.9% in both Scotland and the UK during the third quarter. But over the year, four quarter on four quarter, the sector grew by 3.9% in Scotland compared to slightly weaker growth of 1.6% in the UK. Figure 10 shows the path of GVA in the sector during the recession and recovery relative to its pre-recession peak.

The revised data still show that this sector experienced a stronger recession in Scotland than the UK. But the downturn is now seen as shallower but more protracted with the trough at -8.3% not being reached until the second quarter of 2011. This has to be compared with a trough of -9.5% in the third quarter of 2009. It is now clear that after the contraction to 2011Q2 the recovery has been much stronger in the Scottish arm of the sector. By the latest quarter the sector in the UK was -1.2% below its pre-recession peak and its Scottish counterpart was -2.5% below.

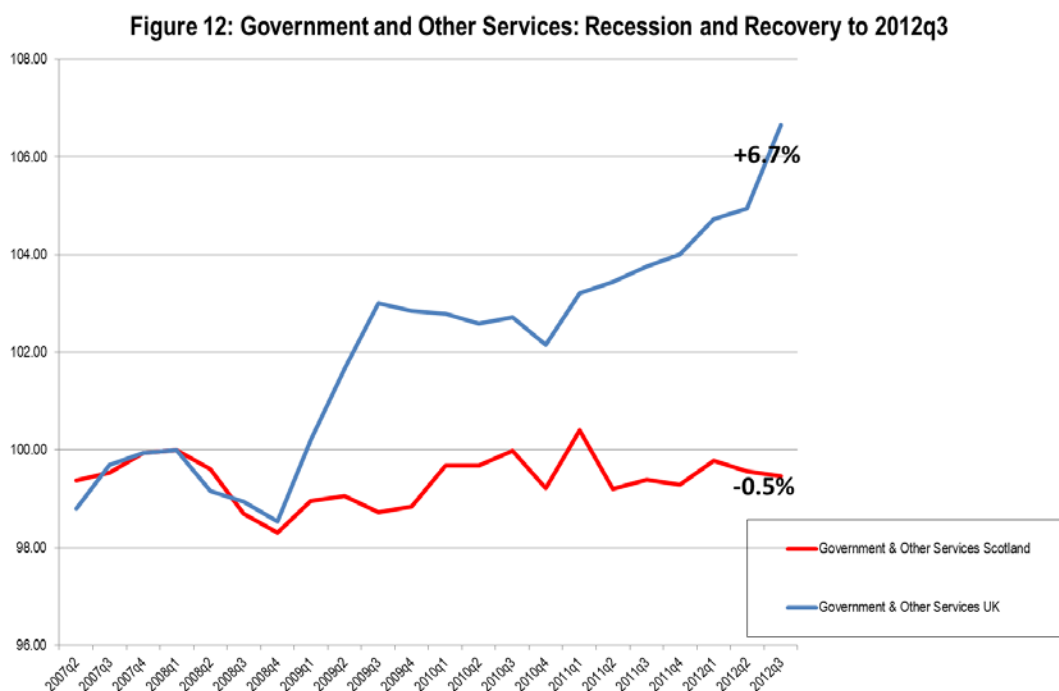
Figure 11: Distribution, Hotels & Catering: Recession and Recovery to 2012Q3



Elsewhere in private services, the main sector is distribution, hotels and catering, accounting for 19% of services sector output in Scotland, grew by 1.1% in the third quarter compared to 1.9% in the UK. But over the year, the sector grew by 0.8% in Scotland compared to 0.5% in the UK. Figure 11 shows the performance of the sector during recession and recovery.

What is clear from Figure 11 is that this sector has broadly performed better in Scotland throughout both recession and recovery. While we don't have more disaggregated data to compare Scotland and the UK, it looks as if retailing and spending in the high street may have held up better in Scotland than in the UK. But we can't be certain about that.

Government & Other Services GVA contracted by -0.1% in Scotland compared to growth of 1.6% in the UK. Over the year measured value added in the sector was flat in Scotland compared to a rise of 1.9% in the UK. Figure 12 shows performance in recession and recovery.



We find the strong growth in the sector in the UK difficult to understand. The Scottish sector's performance is more intuitively reasonable. In the previous *Commentary* 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 no further forward in resolving these questions.

The Labour Market

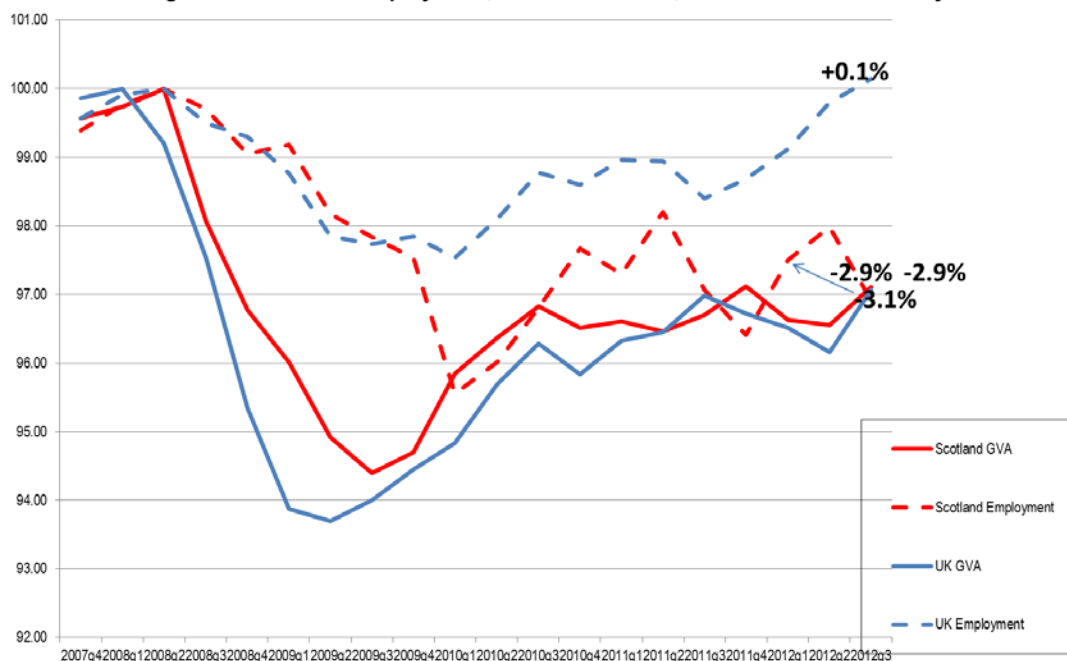
The latest labour market data (see *Overview of the labour market* below) show jobs in Scotland falling by 11,000, and unemployment fell by 13,000 in the latest quarter to December. Over the year, jobs were up by just 2,000 while unemployment was lower by 25,000. In the UK employment rose, resulting in the 16-64 employment rate rising over the year to 71.5 per cent above Scotland's 70.7 per cent which fell slightly over the year.

Figure 13 charts the performance of GDP and employment in Scotland and UK from the pre-recession peak to the latest data point in the third quarter of last year - the latest data point for the GVA data. By

the latest quarter Scottish GDP was just under -3% below its pre-recession peak, now, after the data revisions and methodology change, a shortfall that is identical to the UK. The same, however, cannot be said when it comes to the labour market.

Scottish employment stands at around -3.1 per cent below its pre-recession peak. In the UK, in contrast, employment is now 0.1% above the previous peak.

Figure 13: GDP and Employment, Scotland and UK, Recession and Recovery



As noted in the previous Commentary, these figures suggest that productivity per worker has fallen significantly in the UK since the recession began. But what is now different from the last time when we reported is that productivity per worker in Scotland is now much the same as before the recession.

The 'productivity puzzle' appears essentially to be a UK, not a Scottish, problem. Yet, that is not wholly correct because while worker productivity does not appear to have fallen markedly in Scotland as it has done in the UK, there has been no upturn in productivity. An upturn in productivity is normally associated with recovery from recession as labour hoarded in the recession i.e. working fewer hours and/or less intensively, works more hours and or more intensively in the recovery. So there is still a puzzle about productivity here in Scotland but less marked than in the UK. Some discussion of this is provided in the *Overview of the labour market* below.

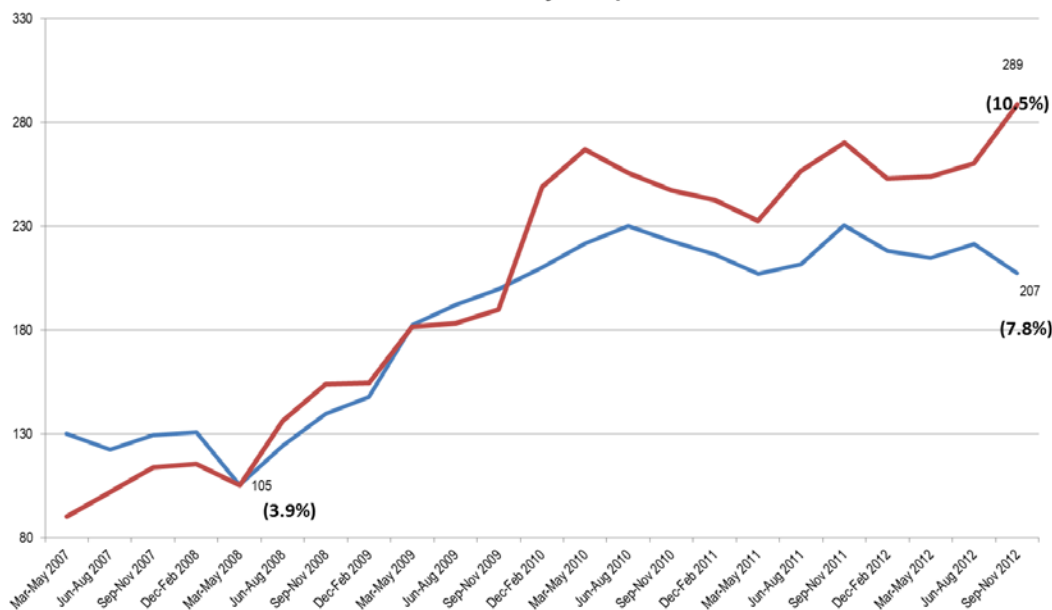
Meanwhile, we see falling employment *and* falling unemployment in Scotland. And that is quite a different picture from the UK. We noted in the last *Commentary* that if jobs are falling unemployment will rise unless workers leave the labour force. Workers might leave the jobs market for demographic reasons such as retirement, having a baby, moving into full-time education etc. Such influences are usually fairly stable or may exhibit a rising or falling trend. But workers might also leave the labour market because they can't find work. Frustrated job seekers may simply stop looking for work and declare themselves to not be seeking working to the Labour Force Survey, the source of our unemployment data. Economists call this a 'discouraged worker' effect. It is evidenced in the data by rising numbers of self-declared inactive workers.

It certainly appears that this is what has been happening in Scotland since the recession began. In the latest quarter to December inactive numbers rose by 9,000 and by 27,000 over the year, a rise in the inactivity rate of 0.3% points and 0.8% points, respectively. In the UK, in contrast, the inactivity rate fell

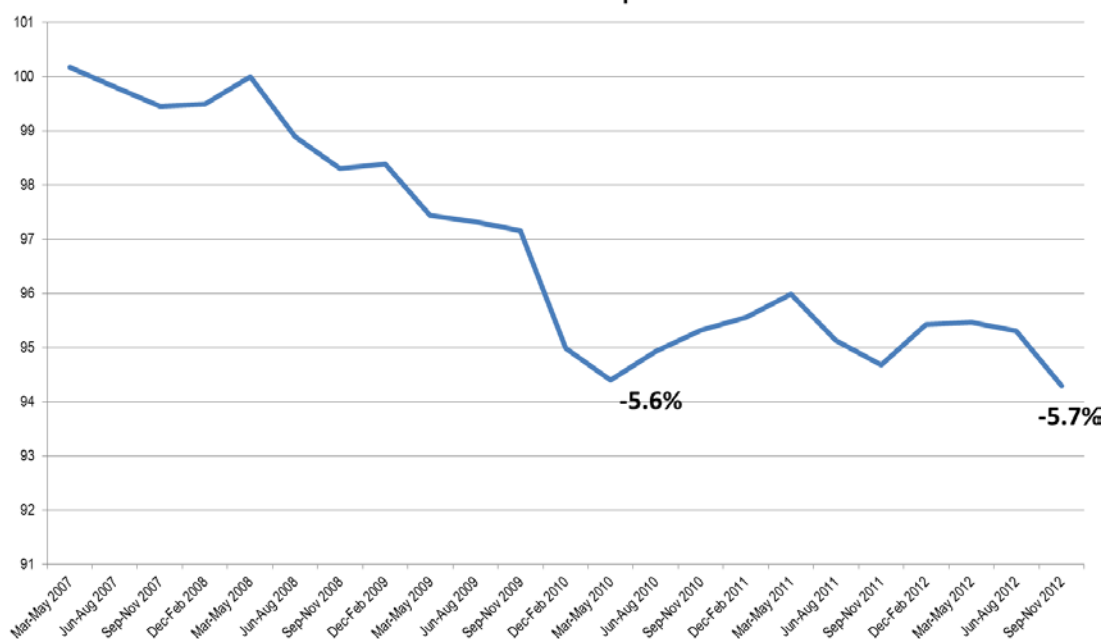
-0.2% points in the quarter and by -0.8% points over the year. It looks as if the measured Scottish unemployment rate is not providing an accurate picture of the state of the Scottish labour market.

We, therefore, hypothesise that the rising inactive numbers in Scotland is a consequence of disproportionate weakness in the Scottish jobs market. Workers are discouraged by the lack of available jobs to cease looking for work and leave the labour market. If we also assume that the labour market was in equilibrium at the start of the recession then we can compute a 'real' level and rate of unemployment by adding back in this 'discouraged worker' effect. This is done in Figure 14 below.

**Figure 14: 'Real' and Measured Unemployment Numbers '000s:
Recession and Recovery to Sept - Nov 2012**



**Figure 15: Employment-Working Population Ratio - (16+)
Pre-Recession Peak to Sept-Nov 2012**



The hypothesised 'real' level of unemployment is some 80,000 higher than the official rate and on a rising trend. In addition, we have noted that employment is -3.1% below its pre-recession peak.

However, that is not the end of the story. The working population is rising in Scotland so if you express employment over the total number of workers economically active and inactive we get Figure 15.

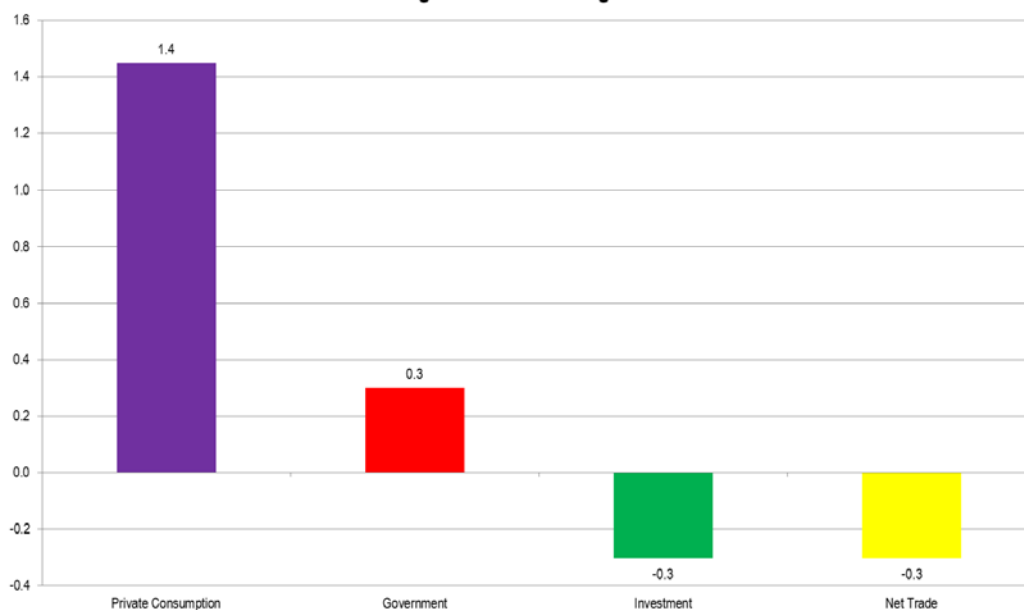
The situation is now worse than at the worst of the recession with employment - working population ratio now -5.7% below its pre-recession peak compared to -5.6% in the trough of the recession. There are clearly real and continuing problems in the Scottish jobs market.

Forecasts

The second estimate for UK GDP growth in the fourth quarter reported a fall of -0.3% in UK GDP unrevised from the previously published estimate. This followed the 1% 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. According to ONS the fall was due to "maintenance at the UK's largest North Sea oil field, a 'fall-back' effect from the Olympic and Paralympic Games and underlying weak domestic demand."

Manufacturing production was particularly weak with GVA falling by -1.3%. But service sector output also contracted by -0.1%. Construction reported a welcome increase with growth of 0.9% but output in the sector fell by -8.2% over the year. Manufacturing GVA contracted by -1.8% over the year, while service sector output rose by 1%. Total growth in the UK in 2012 was 0.2%.

Figure 16: Expenditure components of 3rd quarter 2012 nominal Scottish GDP growth - Percentages



Notwithstanding special factors, it is quite clear the main components of aggregate demand remain weak. Moreover, there is little or no evidence of rebalancing away from household consumption toward investment and net exports. In the fourth quarter, the main contributors to growth were government consumption and household consumption. Investment (-0.4%) and exports (-0.5%) made a large negative contribution. The decline in exports was offset to some extent by a fall in the demand for imports so the contribution of net exports to growth while negative was, at -0.1%, fairly small. Taking the year to the fourth quarter the main drivers of growth were again domestic household consumption (0.9%) and government final consumption (0.7%). There was almost no contribution from investment (0.1%) and a negative contribution from net trade (-0.9%). So, there is no indication here that the British

economy is re-balancing as the UK government desires away from household spending on domestic goods to net exports and investment.

In Scotland, the new GDP methodology and revisions have meant the fit with the UK economy has been closer. The recovery has been a little stronger than the earlier data suggested but still a little weaker than the UK as a whole. The same cannot be said however for employment and labour demand. GDP rose by 0.6% in the third quarter. But from the latest *Scottish National Accounts Project* (SNAP) data published 28 February it is evident the contribution of components of demand to growth between the second and third quarters came almost exclusively from Scottish household consumption and to small extent from government spending. Net trade and investment made a negative contribution. So, the situation is largely identical to the UK. The specific expenditure components are presented in Figure 16 - note the chart shows the quarterly growth of the component *not* its contribution to GDP growth.

Despite the strong contribution of private consumption there is little doubt that household spending in Scotland remains and will continue to be weak. The fourth quarter retail sales reported falling sales volumes and flat nominal expenditures, with spending weaker than in the UK. Earnings growth remains low at around 2% per annum which is less than the rate of inflation and so indicates falling real earnings, which the *Forecasts of the Scottish Economy* section of this Commentary below notes are now back to 1999 levels. The housing market is flat with no growth in house prices and therefore offering no boost to household wealth and increased spending. Equity prices are rising 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 and the likely transience of the equity 'boom'. The Scottish household saving rate is high and rising and at 11.1% is 3.4 percentage points higher than in the UK. For all these reasons household spending is likely to continue to be weak.

Government fiscal consolidation is set to increase as the UK Government strives to meet its target of balance in its structural (cyclically adjusted) current budget in five years. Most of the future adjustments concern spending rather than taxation with 68% of planned benefit cuts and 78% of current departmental spending cuts still to come after April this year. These cuts will depress household demand as well as reducing government spending directly.

Investment and net trade contributed negatively to growth in the third 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 Britain and abroad and there is no guarantee given all the negative influences that the expected pick up will emerge. As the latest SNAP data reveal since the second quarter of 2011 investment spending in Scotland has fallen relative to its level in 2008. And the prospects for a growth in the contribution of net trade depend much on the recovery of demand and output in the Eurozone from the current recession and wider growth of world trade. Huge uncertainties exist over Eurozone prospects. The main beacon of hope is recovery in the US economy but this is not without its uncertainties.

Finally, while we might see some further and perhaps innovative monetary policy loosening when the new Governor Mark Carney takes up his post in July, we shouldn't expect much from monetary policy in directly boosting growth. While the economy continues at zero nominal interest rates there is little that traditional monetary policy can do to boost growth. But it can lower real rates by allowing, or acquiescing in, a higher inflation rate, and charging for holding bank deposits (negative interest rates). It can also participate in pumping money directly in the economy by financing the government deficits by printing new money (helicopter money). This is essentially fiscal policy rather than monetary policy but we shall see if there are any innovations forthcoming from the new Governor that might help the British economy escape its liquidity trap, while bearing the burden of fiscal consolidation.

The more rational policy approach, however, 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. Ironically, the UK lost its AAA credit rating not because of fiscal profligacy but because of austerity. The austerity has severely lowered growth prospects, hence low tax revenue prospects and continuing lack of progress in dealing with the deficit. This is exactly what many world class Keynesian

economists such as Paul Krugman, Brad deLong, Larry Summers, Simon Wren Lewis and many others had predicted. The only silver lining in the credit rating downgrade is that it will from previous evidence e.g. Japan, and the US, have no effect on the UK long-term borrowing rate. The financial markets do not rate highly the credit agencies ability to judge sovereign debt default prospects. And they are right. The way is still open for a massive boost to infrastructure spending in the UK. If only the government would take it.

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 the previous Commentary. We present only a central forecast but use estimated forecast errors to establish the likely range that the true first estimate of the growth of Scottish GVA will lie between.

Table 1 presents our forecasts for Scottish GVA - GDP at basic prices - for 2012 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, 2012-2015

GVA Growth (% per annum)	2012	2013	2014	2015
Central forecast	-0.1	0.9	1.7	1.9
<i>November forecast</i>	<i>-0.1</i>	<i>1.3</i>	<i>2.2</i>	<i>n.a.</i>
UK median independent new (February)	0.0	1.0	1.6	2.1
Mean Absolute Error % points	+/- 0.159		+/- 1.204	+/- 1.204

Table 1 shows that we have revised down our GDP forecast from the November forecast for the two years 2013 and 2014. For 2012, the forecast remains the same at -0.1%, a little weaker than the UK. The lower forecasts reflect the continued weakness of domestic demand, in particular government spending and consumer expenditure, and weaker than anticipated growth in the rest of the UK and Eurozone markets to which Scottish exports are so reliant. The forecast for growth in 2013 has been revised down by 0.4%, while 2014's growth forecast is 0.5% lower. Any further delay from the political process leading to potentially critical disruption to activity in the euro area is likely to produce downside risks to growth throughout the forecast horizon.

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 weaker than UK growth this year, a little stronger next year and a little weaker in 2015. So, we are now forecasting growth of -0.1% in 2012, 0.9% in 2013, 1.7% in 2014 and 1.9% in 2015. Given our previous forecast errors the lower and upper bounds for growth in 2012 are expected to be -0.26% and 0.06%, for 2013, 0.36% and 1.44%, for 2014, 0.50% to 2.90%, and for 2015, 0.70% to 3.10%.

After the predicted fall in output in all major sectors in 2012, production and manufacturing continue to be the main sectoral drivers of growth in 2013, 2014 and 2015. Production is forecast to contract by -0.1% in 2012 the same as in both services and construction. In 2013, production is projected to grow at

2% but this is a reduced forecast from the 3.3% projected in November. Services and construction display positive growth this year at 0.7% and 0.6% respectively, less than half the rate in production. This relative performance continues in both 2014 and 2015 as forecast growth across all sectors increases. Production grows by 3.3% and 3.8% in 2014 and 2015, while service growth is projected to be 1.2% and 1.3%. The construction sector continues to lag but picks up to 1.1% and 1.3%.

Employment Forecasts

Table 2 presents our forecasts for net employee jobs for the 4 years 2012 to 2015 in terms of a central and upper and lower forecast.

Table 2: Forecast Scottish Net Jobs Growth in Three Scenarios, 2012-2015

	2012	2013	2014	2015
Upper	36,850	21,400	44,950	59,100
<i>June forecast</i>	-19,350	27,100	53,350	<i>n.a.</i>
Central	32,650	9,400	19,150	31,800
<i>June forecast</i>	-25,750	16,950	29,450	<i>n.a.</i>
Lower	29,950	-3,100	-5,750	5,150
<i>June forecast</i>	-32,050	5,500	5,850	<i>n.a.</i>

The most obvious point about these forecasts is the revisions for 2012. As in the UK we have seen a disjoint between what is happening to job creation and what is happening to output. Net jobs have been created even as output was flat or falling. Labour productivity has fallen and many of the new jobs are part-time with low hours. But since we forecast jobs and not full time equivalents then we must accommodate these changes. Hence, on the central forecast, we are now forecasting that net jobs rose by 32,650 in 2012, rather than a fall of -25,750. However, job creation weakened in the Scottish labour market from the middle of last year so we do not expect such strong jobs growth in 2013 and 2014 even though GDP is forecast to rise more quickly. We predict net job creation of 9,400 this year, rising to 19,150 in 2014 and 31,800 in 2015. The bulk of the 9,400 net job creation this year will be in the production sector, where we expect some 7,800 extra net jobs to be created. The service sector sheds some -850 jobs but construction adds just under 2,000 jobs and 450 jobs are created in agriculture. In 2014 and 2015, the service sector begins to create many more jobs, 4,250 and 13,600 respectively. Yet, this is still less than the production sector, largely driven by manufacturing jobs growth, where 10,850 and 14,050 jobs are forecast in the two years. Construction is projected to add around 3,000 jobs in each of those years.

Unemployment Forecasts

The key unemployment forecasts are summarised in Table 3.

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. We have again revised down our forecasts for unemployment at the end of 2012, despite the deteriorating labour market conditions. 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 2012 is now 204,050. We continue to expect the unemployment position to deteriorate slightly in 2013 and 2014 compared to 2012 due to weaker output and employment growth. Unemployment is now forecast to be 218,300 by the end of 2013 and 228,500 in 2014. By the end of 2015 we project that unemployment will have fallen back to 204,100 as the economy recovers more strongly.

Table 3: ILO unemployment rate and claimant count rate measures of unemployment in central forecast 2012-2015

	2012	2013	2014	2015
<i>ILO unemployment</i>				
Rate (ILO un/TEA 16+)	7.8%	8.3%	8.6%	7.7%
Numbers	204,050	218,300	228,500	204,100
<i>Claimant count</i>				
Rate (CC/CC+total job)	5.0%	5.2%	5.3%	4.7%
Numbers	137,650	141,900	148,511	130,192

Brian Ashcroft
1 March 2013

Forecasts of the Scottish economy

Summary

After two quarters of negative growth, the Scottish economy delivered a strong performance in the third quarter of 2012. The UK economy as a whole saw negative growth in the final quarter of 2012 - and it looks likely that Scottish growth over 2012 will be close to zero. Over the coming year, we see slowing earnings growth, the introduction of welfare changes and continued fiscal consolidation weakening the domestic economy, while there could be increasing volatility, including potentially critical political shocks, in important export markets. The net result is a lowering of our central growth forecasts for 2013 and 2014. It continues to be true that risks are aligned to the downside again. Growth in the United States – Scotland's single largest export market – appears strong, highlighting opportunities, albeit further concentrating Scottish reliance on this market.

Fiscal policy

The UK Chancellor will deliver his budget on March the 20th, in the shadow of recent downgrading of UK government debt from its AAA rating.

In their Green Budget of February 2013, the Institute for Fiscal Studies found that the progress towards the planned fiscal consolidation was partial in certain areas. While there had been significant progress towards the planned tax increases and cuts to investment spending, by the end of 2012-3 “just 32% of the planned cuts to benefit spending and 21% of the cuts to day-to-day spending on public services will have been delivered”. This has implications for the Scottish Government's budget over the coming years.

Research by the Centre for Public Policy for Regions (CPPR) in February 2013 has specifically examined the implications for the Scottish Government's Budget to 2017-18. In their publication they projected Scottish Departmental Expenditure Limits between 2009-10 and 2017-18. This showed that in cash terms the Scottish Resource DEL budget will be unchanged in 2017-18 compared to 2009-10, meaning a real terms cut of £4.4 billion, or 16% while Capital DEL budget is projected to decline by £1.9 billion over the period, down 45% in real terms. The zero change between 09-10 and 17-18 in CPPR's words, “hides a slowly rising trajectory to 2015-16 which is then followed by year-on-year cash reductions”. Their report discusses the “second wave” of spending reductions after 2015-16, with an estimated £1.6 billion real reduction in Resource DEL over two years, and Capital DEL spending held constant in real terms.

In terms of the trajectory towards these significant reductions in the public spending power in Scotland, they estimated that to the end of the 2012-13 year, two-thirds of the reduction in spending under Resource DEL has yet to be made. The front loading of Capital DEL reductions is evident from their estimate that current funding is four-fifths to the new reduced level. Clearly, the nominal 1% increase in public sector pay from April 2013 will help those workers earning under £80,000, but CPPR also acknowledge that some public sector workers (e.g. teachers, NHS workers, and police) have been protected from previous pay-freeze arrangements, as they were subject to existing multi-year deals. Whether such protection should continue into the future is likely an important decision to be made, and extending into these areas is likely to be both politically and socially controversial and offering the potential for significant savings to the public purse.

We noted in the last *Commentary* that in this issue we would examine the programme of welfare changes to start in April 2013. Earlier analysis by the IFS from March 2012 indicated that over £9 billion of spending reductions will hit in 2013-4, with the two largest negative impacts coming through reductions to Child Benefit eligibility and linking benefit and public pension increases to the CPI.

The IFS Green Budget sets out how tax and welfare reforms will impact in 2013-4. In their conclusion, the pattern is for a net tax ‘giveaway’ of £0.9 billion this year, but in context of £35.9 billion of net ‘takeaways’ since April 2010. In their analysis, the impact of changes introduced in 2013-4 have net impacts which will negatively affect incomes at the poorest deciles, while increasing incomes for the top three income groups – with the largest rise in the richest income group.

In the main, tax reductions introduced by the UK Government in 2013-4 include increasing the personal allowances and reductions in the rate of corporation tax and the corporation tax 'Patent Box', providing funding for a council tax freeze and freezing the increase in fuel duties planned for September, while welfare reductions include increasing benefits and tax credits by 1% (saving £505 million), linking benefits and credits to CPI (savings £425 million) and cutting housing benefit entitlement for under-occupancy of social housing (saving £490 million). Additionally, the funding for councils to provide rebates on council tax to low-income households is being reduced by £485 million this year, as well as freezes to child benefit (saving £270 million).

The specific impact on the incomes of Scottish households will be crucial for the impact that these changes might have on the Scottish economy. For example, the DWP impact assessment estimated that there are 80,000 recipients of housing benefits in Scotland, and they would lose on average £12 per week from the changes to Housing Benefit linked to under occupancy of social housing.

The Universal Credit also begins in Pilot areas during 2013-4, and is expected to save £70 million in its first year. The IFS call this "one of the biggest changes to the structure of the welfare system for working age people since 1948". It introduces a single benefit claim – reducing complexity – but also moves to make payments monthly, rather than more regularly, requiring recipients to manage their finances, including Housing Benefit, which are currently paid to the landlord, but will be included within the single Universal payment in future.

It is likely that the move to Universal Credit (UC) will be crucial for many people in Scotland and the UK, and have a significant impact on the incomes of those people. As usual, the practical experiences from the pilot areas must be taken on board prior to roll-out to ensure that any concerns about the working of the UC be carefully examined. Additionally, the reduction in benefits income that will coincide with UC – as well as changes to eligibilities for the UC – will have specific impacts on many local communities across Scotland.

Monetary policy

Inflation in February remained above the Bank of England's target rate of 2%, at 2.7%, in part driven by university tuition fees and energy, as well as food prices. Food price pressure has eased since the end of 2012 after increasing sharply in response to supply shocks to crop yields. February's Inflation Report by the Bank of England noted that "regulated prices" in education, energy and other areas could add 1.0% onto average Consumer Price Index over 2013 and 2014.

The latest minutes of the Bank of England's Monetary Policy Committee (MPC) note that the committee was split on whether to extend the asset purchase facility, known as quantitative easing. Of the nine member panel, three – including the Governor, Sir Mervyn King – favoured a £25 billion increase in the stock of asset purchases. Their case was based on an opinion that there was considerable slack in the UK economy and that above target inflation would not be worsened by some increased activity. Additionally they noted the case for persistence from prolonged unemployment and wasting of (physical and human) capacity.

The risks to activity in the UK – it is stressed through the latest MPC minutes – are on the downside, to persisting below-trend growth. Interestingly, the committee also discussed a range of other instruments which it might use to provide further monetary stimulus, if it were required. These include a reduction in Bank Rate (which is close to the lower bound at 0.5%, where it has been since March 2009), and "changing the marginal rate on remuneration on banks' reserves at the Bank of England". The latter option here might mean that depositors with the Bank would be charged for having money deposits, rather than receiving interest. Deputy Governor Paul Tucker has noted that negative interest rates on bank deposits would be "extraordinary", but that the Bank would think about whether there are constraints to setting such rates. Such a move would not be without international precedent – between July 2009 and September 2010 the Riksbank (the Swedish central bank) charged 0.25% on deposits, for example.

An additional argument has been raised in recent months over whether the Bank's target for inflation is sufficient, or whether there would be advantages in setting a target in terms of nominal GDP – e.g the sum of real GDP growth and inflation. In a recent speech, Charles Bean, a Deputy Governor of the Bank, suggested that it was sensible to reappraise the monetary policy framework on occasions. He concluded that in normal economic times the policy stance would be identical under either an inflation or nominal GDP target, but that three "real world caveats" suggesting that to change the target would not be useful. First, the recent recession appears to have involved both a significant negative shock on the demand and supply-side of the economy, with "the advantages of a levels target for nominal income less

clear under such circumstances". Second, he points to the possibility of longer-term inflation expectations being adjusted higher in response to longer periods of higher inflation. Third, he warns of the danger of low rates of interest leading to speculative asset booms, which could result from long-term commitments to loose monetary policy. The fact that changes are being discussed appears to reflect the Bank seriously considering the full range of tools at its disposal in the face of the sustained weakness of the UK economy.

Output

Gross Domestic Product (GDP) figures for Scotland were released on the 1st of February 2013, and showed that in the third quarter (July to September) of 2012, economic activity rose by 0.6%. In particular this was due to a strong performance in the production sectors, while service activity also rose. Construction activity fell by 0.4%, after positive growth in the second quarter. As noted elsewhere in the commentary, there were methodology adjustments and improvements made to historical GDP series which has significantly revised the path of GDP growth over the Great Recession. A point about the presentation of output growth figures in Scotland is addressed in Box 1.

The second estimate of UK growth in the final quarter of 2012 (released on 27th February) was unchanged from the preliminary estimate of a month earlier. It kept the estimated growth in the final quarter at -0.3%, with a quarterly contraction in manufacturing and services, and a small rise in construction in the quarter. The contraction in manufacturing was the largest fall since the first quarter of 2009 and meant that manufacturing output has contracted for five of the last six quarters in the UK. By contrast, it is estimated that manufacturing performance in Scotland has been marginally better over the same period (to the third quarter of 2012) where manufacturing activity increasing in the third quarter after three quarters of decline. The general trend in both datasets however, is of continued weakness of manufacturing and production.

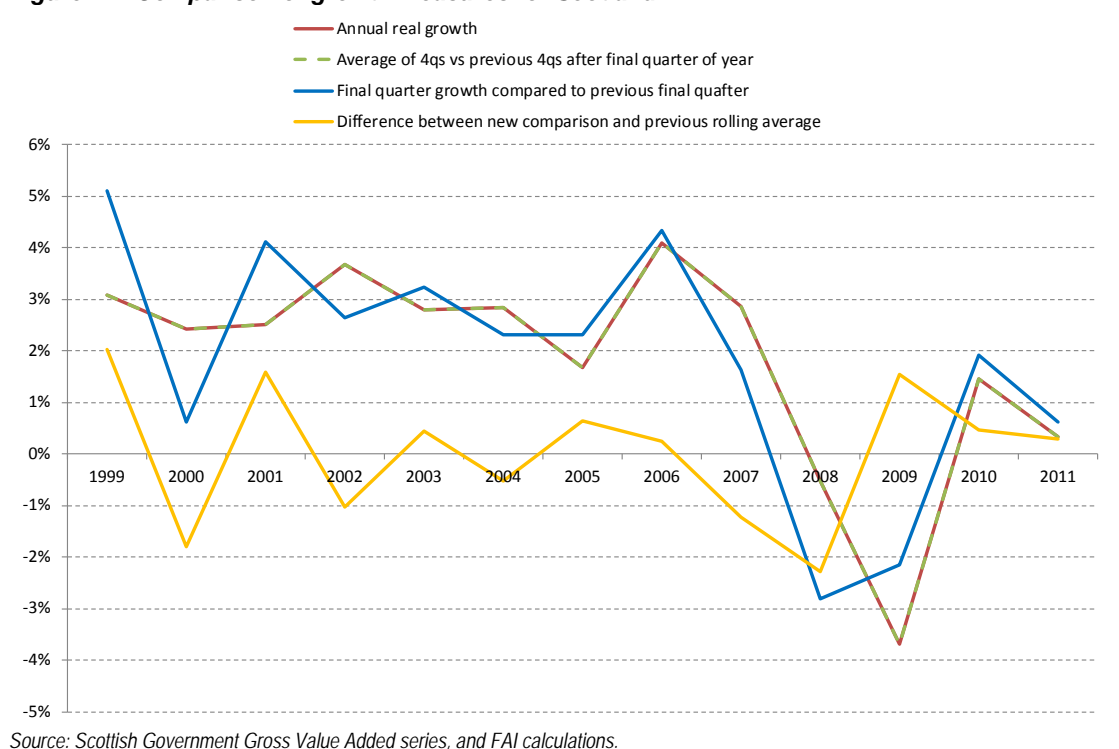
The OBR published its forecasts for UK growth on the 5th of December 2012. It forecasted growth of 1.3% in 2013, 2% in 2014 and 2.3% in 2015, revising down its forecasts made earlier in the year. The difference between their forecasts and outturn in growth was explained by "the weakness of net exports" – and export markets are anticipated to be weaker in the future than was previously assumed - although their report also notes that weak productivity growth will constrain the growth of incomes and a delay in the fall in inflation which would raise real incomes. It is noted that in their forecasts, the OBR are more optimistic for growth prospects than external forecasting organisations, such as the IMF and OECD.

Box 1: Presentation of output growth

One point (Paul Krugman might call it "wonkish") about output growth regards the presentation of GDP changes in the Scottish Government figures. Until the publication of Q3 2012 figures, quarterly growth figures were presented alongside changes on a rolling annual basis – that is, comparing the average of the most recent four quarters with the average of the previous (non-overlapping) four quarters. The latest publication does not provide this comparison, but compares the most recent quarter both to the preceding quarter and that of the same quarter in the year previously (e.g. Q3 2012 vs Q3 2011). We understand that this change makes the Scottish Government presentation of quarterly growth consistent with UK standard practice. However, that does not mean that it is necessarily the most helpful presentation.

This appears to be the same as calculating annual income growth for an employee by comparing payslips in one month of each year, rather than averaging pay over each month or looking at an employee's P60. It says nothing about the change in the value of income earned by that individual over the period, in the same way that comparing the output of the Scottish Economy in Q4 2012 with Q4 2011 says nothing about what has happened to Scottish economic activity in the intervening period. The earlier "four-quarters on four-quarters" results are a much better measure of the true change in activity over a year, and we will continue to present these results in the *Commentary*, additionally, this measure also matches the real annual growth that that our GDP forecasts predict.

The figure below compares the history of Scottish growth as it is currently estimated over the last decade. It explicitly compares growth on an annual basis (i.e. from comparing the annual GVA figures in the latest Scottish publication), those obtained from comparing the rolling four quarter average upon completion of the final quarter in each year, i.e. by comparing the average of four quarters in each year to the previous (non-overlapping) four quarters, and growth in the final quarter of each year compared to that same period in the previous year. The yellow line shows the differences between these two measures, and indicates that confusing these two could lead to significant misunderstand of the true rate of growth in a year.

Figure B1: Comparison of growth measures for Scotland

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 expectation through 2013 appear to be broadly in line with outcomes during 2012, at around 2%. The most recent wage findings report by the Bank of England in fact appear to suggest a small decline in average weekly earnings towards the end of 2012. 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. Recent research has suggested that real earnings have fallen to the same level as they were in 1999. 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.

Equity indexes have risen consistently over the last three months, with upward trends perhaps reflecting growing investor willingness towards risk, rather than upward revision of returns. Of course the very recent turbulence in equity markets after the Italian election result on the 25th of February are being suggested by some to represent the end of a relatively calm six month period for the Eurozone, which will be dominated by political events during 2013 – including the German elections in September – and so provide further uncertainty for financial markets.

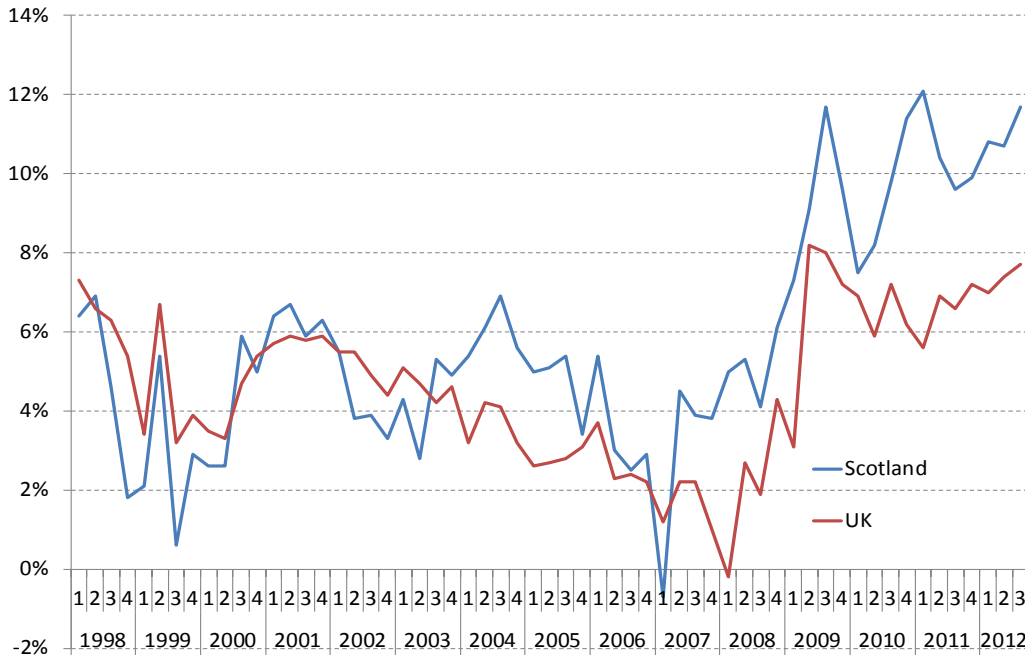
House price indices remain flat across Scotland and the UK, reflecting weak demand from the important first time buyers market. The flat prices are additionally delaying a return to the previously seen levels of house building, which would otherwise be a stimulant to construction.

Markit's Household Finance index for the United Kingdom fell in February, with living costs sharply increasing. While the overall index moved slightly downwards in the month, there were significant movements across income groups, with the top two income groups reporting rapid improvements in household finances, with a worse drop in the perception of household finances in the lowest two income groups. At 37.7 in February, the measure remains some distance away from the 50 base line of "no change".

Figure 1 shows how the household savings ratio has evolved to the third quarter of 2012 in both Scotland and the UK. These data imply that Scottish households have made more significant adjustments to their savings pattern than UK households. While through 2011 the gap between Scottish and UK savings ratios was closing, in the first half of 2012 this widened further. It has not yet reached

the same gap as during the end of 2010, although the current savings ratio of 11.1% in Scotland is 3.4 percentage points higher than in the UK.

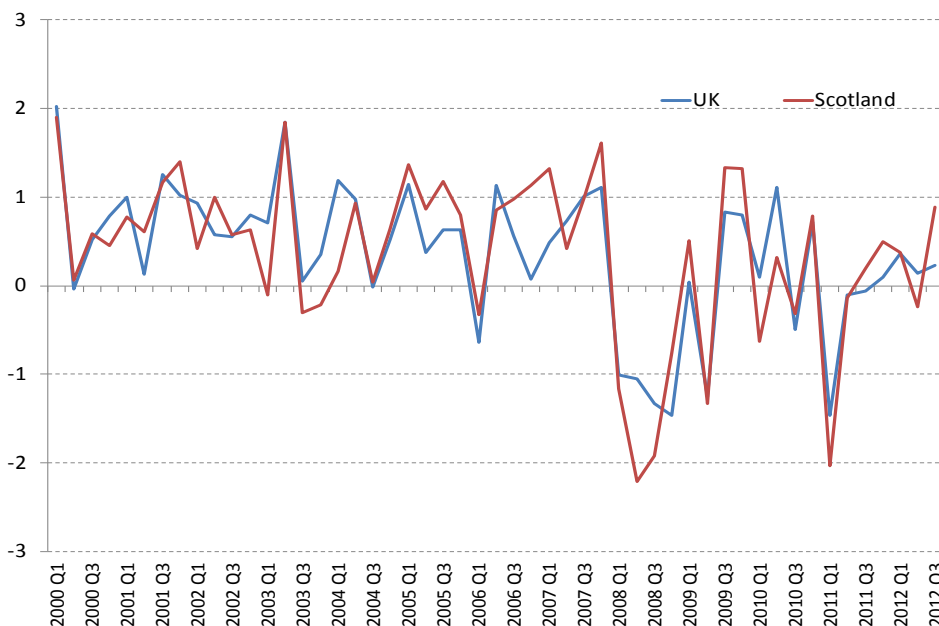
Figure 1: Household savings ratios, Scotland and UK, Q1 2000 to Q3 2012



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

Comparable Scottish and UK data on household income and consumption growth are available up to the end of the third quarter of this year. These show that after a real terms contraction in Q2, spending in Q3 grew by 0.9% in the quarter. UK consumer spending grew by only 0.23% in the same quarter (See Figure 2). In terms of relative to the pre-recession spending peak, Scotland and the UK are respectively 4.5% and 3.8% below the peak seen in the final quarter of 2007.

Figure 2: Household real consumption spending growth, Scotland and UK, Q1 2000 to Q3 2011



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

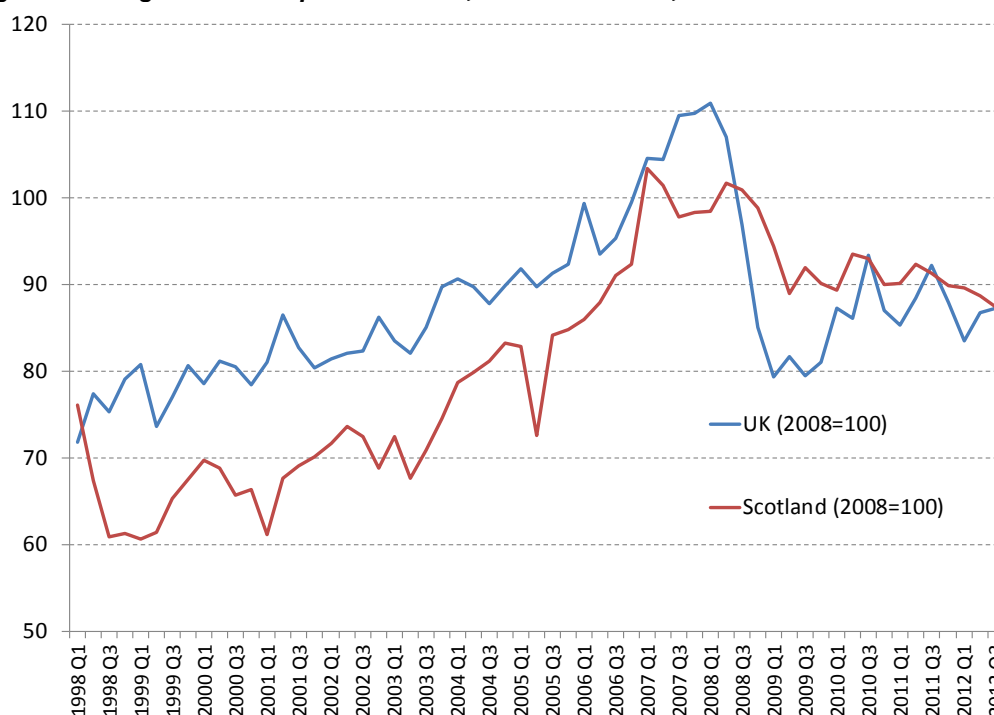
The Scottish Retail Index published on the 8th of February reported that the volume of sales fell by 0.5% in the last three months of 2012, while the value of sales was flat from the last quarter. Both measures were weaker in Scotland than the UK, which contradicts the pattern of Retail Sales Activity over the last few years. It remains in the “big ticket” durable goods market that households are postponing purchases, which demonstrates unwillingness to use store credit for such items: a key indicator of a persisting lack of consumer confidence about future income prospects.

Investment

The output of the Scottish construction sector – the sector most heavily affected by investment spending – fell in the third quarter of 2012, and remains well below levels seen during 2010 and 2011. In output terms, it seems likely that 2012 will be more like the output seen in the depths of the Great Contraction seen through 2009. Domestic housebuilding remains flat, while, as is noted in the *Business Surveys* section of this Commentary, the market appears to be firmly in “contraction territory” through the final quarter of 2012 – with 90% of firms reporting either ‘no change’ or a decline in activity. The surveys also noted a weakening of new orders and problems with procurement affecting the numbers of small construction firms looking to take on public projects due to upfront costs and limited success rates in the tendering process.

Figure 3 shows that real investment spending (including public and private spending) 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.

Figure 3: Real gross fixed capital formation, Scotland and UK, Q1:1998 to Q3:2012



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

Trade

The latest data on exports from Scotland to the (non-UK) rest of the world show that during the third quarter of 2012 Scottish exports grew by 0.8 per cent, but have fallen 0.8% on an annual basis. The Index of Manufactured Exports, published on the 15th of February 2013 reported the first increase in manufacturing export sales since the third quarter of 2011. Within this good news, the reliance on a single sectors performance was striking.

The major explanation for this growth was the return to growth (5.9% in the quarter) from the food and drink sector. This one category – with a 2007 weight of 26% of manufacturing exports – is the only

sector to see growth in the quarter of over 1.5%, and has grown its importance for Scottish manufactured exports significantly over the last few years. The latest figures show that it is only Food, Drink and Tobacco (up 2.3%) and Engineering and Allied Industries (up 0.4%) which have seen positive export growth over the last year.

The 23rd of January saw the 10th anniversary of the publication of the annual Global Connections Survey, reporting on all exports from Scotland – rather than the manufacturing element. In addition to rest of the world exports, this survey also covers exports to the rest of the UK. The headline news from this survey was an increase in export sales of £1.6 billion in 2011 compared to 2010.

While the USA continued to be the largest single first destination for Scottish exports – up £30 million to £3.5 billion in 2011 – growth in European markets continued, in particular the Netherlands (up £255 million) and France (up £430 million).

Most interestingly perhaps was the results on the export destinations of non-UK exports more generally. These suggested that Scottish export performance is potentially becoming more concentrated in major destinations, in particular the USA. Between 2002 and 2010 the share of exports going to the US rose from 11% to almost 15%. Other destinations also saw significant change in their imports of goods from Scotland. In June 2012's Commentary we looked at the impact of Greece exiting the Euro area and having an impact on Scottish activity through reduced demand for Scottish products. It was interesting to see therefore that in nominal terms the value of exports from Scotland to Greece fell by £40 million between 2009 and 2010. Also in current values, the last year saw a fall in the value of exports to non-EU Europe, the Middle East and Africa (down £65 million). There was a strong performance in sales to Asia – rising £180 million or 9% in cash terms, which reversed the downward trend seen in 2009 and 2010. The value of sales to Asia in 2011 however was still lower than 2007.

The most recent forecasts for the international environment suggest a worsening of countries' prospects as we begin 2013, extending into 2014. 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.

Markit's Flash Eurozone PMI survey fell to 47.3, down from 48.6 in January 2013, with an accelerating rate of contraction to that seen in previous months. This has typically been a good predictor of Eurozone GDP activity, with figures below 50 indicating a contraction in growth. The index has moved down sharply after recovering slightly towards the end of 2012. The rapid worsening appears to be reflecting a sharp deterioration in France and (particularly) the Peripheral countries, while the German output measure has risen now for three months in a row. The survey noted that the divergence between Germany and France was the worst since the survey started in 1998.

In the last quarter of 2012 the advanced estimates for the US economy reported a quarterly fall of -0.025%, equivalent to an annualised decrease of 0.1%. This has recently been raised to 0.1% on an annual basis in the second estimate, released on the 28th February. The third quarter had seen an annualised growth rate of 3.1%. Despite the sharp contraction, the underlying strength of the US economy remains strong, with expanding consumer spending, and increasing residential and non-residential investment spending. The major factor in the final quarter was significant downturns in federal government spending, which contracted in advance of the "fiscal cliff" by 15.0 percent on an annual basis.

The impact of Superstorm Sandy which hit the Northeastern US in late October was estimated to have destroyed around \$45 billion worth of assets, and could lead to insurance payouts of the order of \$28.1 billion. The impact of the storm on GDP however, is not quantified by the US statistical agencies, although it is likely to have particularly hit activity through the closure of factories and disruption of transportation.

The latest information on developments in the US manufacturing sector showed an expansion of the sector into February with the rate of expansion slowing slightly from January. There was expansion across most measures of manufacturing activity, with output, new orders, employment and backlogs of work all remaining in expansion territory. Only new export orders fell, perhaps reflecting the worsening conditions in the Eurozone countries.

Table 1: Economic growth forecasts for 2012 and 2013 for major Scottish export markets, plus UK, China, Euro area and world, including changes from earlier forecasts where available, %

	2013			2014		
	IMF (January 2013)	Revision (since October)	OECD (December 2012)	IMF (January 2013)	Revision (since October)	OECD (December 2012)
USA	2.0	-0.1	2.0	3.0	0.1	2.8
Netherlands	-	-	0.2	-	-	1.5
France	0.3	-0.1	0.3	0.9	-0.2	1.3
Belgium	-	-	0.5	-	-	1.6
Germany	0.6	-0.3	0.6	1.4	-0.1	1.9
Ireland	-	-	1.3	-	-	2.2
UK	1.0	-0.1	0.9	1.9	-0.3	1.6
China	8.2	0.0	8.5	8.5	0.0	8.9
Euro area	-0.2	-0.3	-0.1	1.0	-0.1	1.3

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

Forecasts for the Scottish economy: Detail

On the domestic side of the economy, with continued fiscal contraction at the UK level, we must focus on the outlook for household and investment expansion. Household spending growth appears to have slowed at the turn of the year, with retail sales falling. Earnings growth appears to have slid lower in the last quarter, remaining below the rate of increase in prices. In our central forecast, we have revised down our forecast for household consumption growth, which is in line with current surveys of the domestic outlook. Government expenditure growth is expected to continue its real terms contraction, with latest figures for CPPR suggesting that there could be steadier real terms reductions to 2015, as well as a “second wave” of consolidation post 2014/5 to ensure that the (deferred) deficit target is met by the revised point.

Business confidence remains damaged through to the end of 2012, with signs that increased activity at the end of 2012 will be under pressure coming into 2013. Construction indexes point to continued weak demand and low rates of orders growth, both from the public and private sector intentions. Commercial construction activity remains weak through 2012 and into 2013 on our central forecast. Our later than previously forecast return of pre-growth trend increases in domestic consumption delays the signs of private investment picking up strongly until 2014.

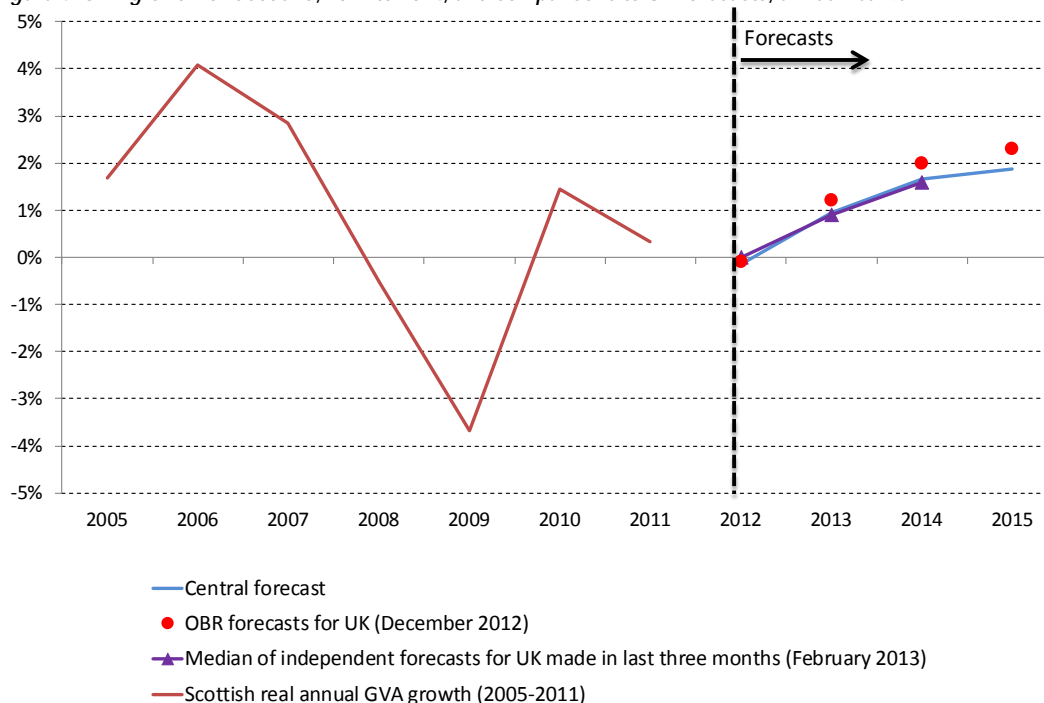
The external market for Scottish goods and services has considerably worsened in the last quarter, with growing polarisation of survey evidence in the Eurozone – Scotland’s major non-UK market for exports – as well as most forecasters revising down growth expectations for the UK economy over 2013 and 2014. Major indexes continue to suggest recession the Eurozone through the first half of 2013, which will be exacerbated as market uncertainty, linked to political uncertainty returns after six months of relative calm in the Eurozone. Downside risks remain, and political events through 2013 are likely to drive the return of growth in the short term. Recent experiences in Italy suggest that voters are not inclined to support governments that have imposed austerity plans, causing those measures themselves – designed to ensure the continuation of the Eurozone project – to be even more widely questioned. The bright spot in export markets remains the underlying strength of the US recovery – albeit with a final quarter of 2012 with low growth, largely for one-off reasons – and the Scottish economy has become ever more reliant on US demand for its exports over the last decade.

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 2012 to 2015. This is the first issue in which we have forecast 2015, and will be the last in which we forecast 2012. The model used is multi-sectoral, and where useful, results are reported for sub-aggregate sectors.

We begin with the (central) forecasts for growth in the Scottish economy. Our new forecasts for 2012, 2013 and 2014 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 December 2012, and the median of recent forecasts produced by professional forecasters for each year of the forecast window.

Figure 4: GVA growth for Scotland, 2012 to 2014, and comparisons to UK forecasts, annual real %



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

Our forecasts for real GDP growth in Scotland in 2013 and 2014 are now 0.9% and 1.7% respectively. These are lower than our forecasts from November 2012's *Commentary* due to continued weakness of domestic demand, in particular government spending and consumer expenditure, and weaker than anticipated growth in the rest of the UK and Eurozone markets to which Scottish exports are so reliant. The forecast for growth in 2013 has been revised down by 0.4%, while 2014's growth forecast is 0.5% lower. Any further delay from the political process leading to potentially critical disruption to activity in the Euro area is likely to produce downside risks to growth throughout the forecast horizon.

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

Table 2: Growth (%) by sector in the Scottish economy, 2012 to 2015

	2012	2013	2014	2015
Gross Value Added	-0.1	0.9	1.7	1.9
Production	-0.1	2.0	3.3	3.8
Services	-0.1	0.7	1.2	1.3
Construction	-0.1	0.6	1.1	1.3

Source: Fraser of Allander Institute forecasts

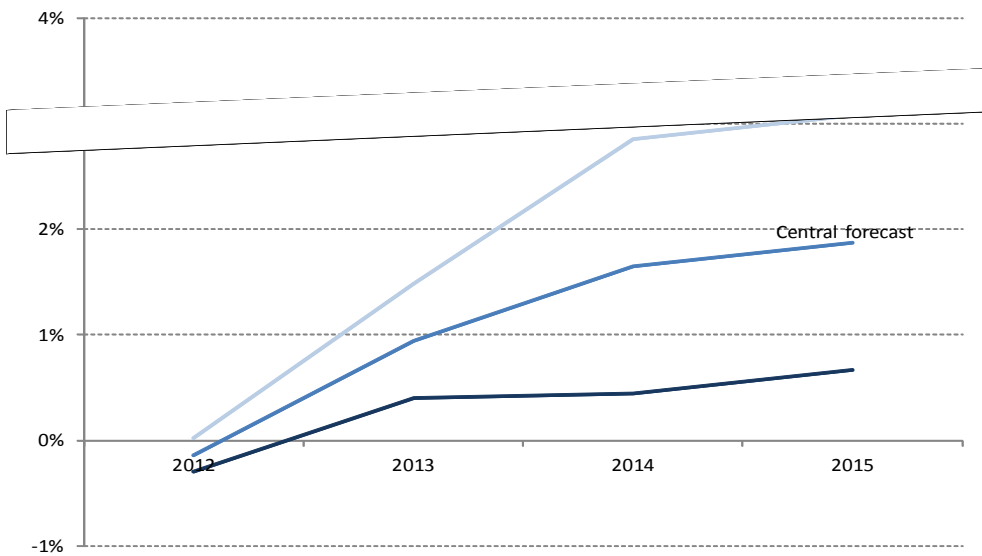
As recent GVA data for Scotland suggests, the impact of the ongoing recession is being felt across the Scottish economy, i.e. in many manufacturing sectors, as well as more cyclical downturns in construction and household spending on durable goods. This is occurring concurrently with continued consolidation of UK public finances and real terms government current spending reductions through to the end of our forecast horizon. As we noted in June's *Commentary*, the construction sector is likely to respond quickly

to upturns in private and public investment, where this occurs, but recent survey evidence indicates a continued weak outlook for the Scottish corporate sector making significant new investments – above those already announced.

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 spring period of a year, FAI forecasts have an average absolute error of 0.159 percentage points for the accuracy of the previous year (i.e. 2012 in this case). While for the year current in progress, our Spring forecasts have an average absolute error of 0.543 percentage points. The errors in forecasts for the following year (i.e. 2014) is 1.204 percentage points.

Again, we use the mean absolute error for the longest forecast period – 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**.

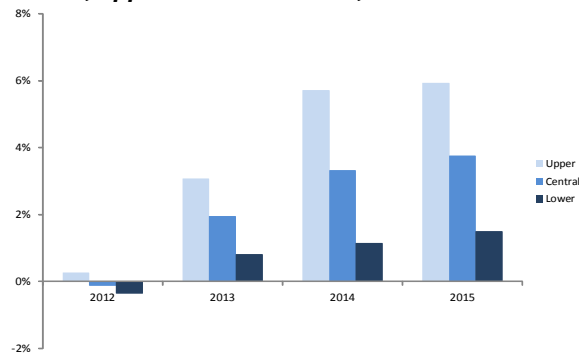
Figure 5: GVA growth for Scotland, 2012 to 2014, possible range of outturn growth



Source: Fraser of Allander Institute forecasts

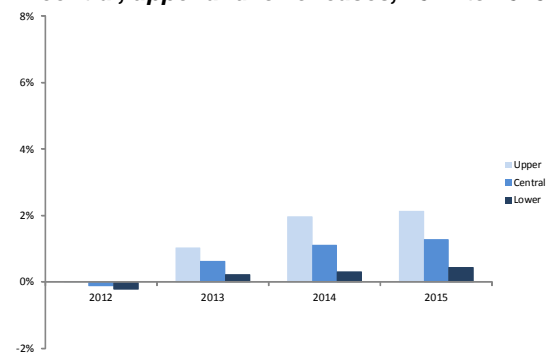
Figure 6, Figure 7 and Figure 8 show the forecasts of GVA growth in each of the aggregated sectors (“production”, “services” and “construction” in each year under the central and the lower and upper forecasts.

Figure 6: GVA growth forecasts for “Production” sector in central, upper and lower cases, 2012 to 2015



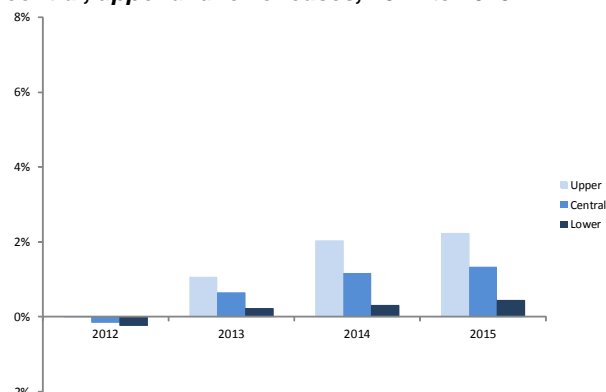
Source: Fraser of Allander Institute forecasts

Figure 7: GVA growth forecasts for “Construction” sector in central, upper and lower cases, 2012 to 2015



Source: Fraser of Allander Institute forecasts

Figure 8:
GVA growth forecasts for “Services” sector in
central, upper and lower cases, 2012 to 2015



Source: Fraser of Allander Institute forecasts

Employment

The most recent data for employment indicate that the Scottish labour market has weakened since improving during the first half of 2012. Employment of people of working age fell by 6000 in the most recent three month period, while the unemployment rate rose above 8 per cent and there was a 7000 increase in the numbers in the labour market but out of work. Detailed commentary on recent developments in the Scottish labour market is available in the *Labour market* section.

The most recent data on the number of (employee) jobs in the Scottish economy are available to the end of the third quarter of 2012. These currently indicate that the number of employee jobs in Scotland has increased during the first nine months of 2012 by just under 50,000. The majority of this increase was in the first half of 2012, with employee job numbers increasing only by 3000 between the second and third quarter. We forecast – and this is supported by more recent data on changes in employment, which is a measure of people rather than jobs – that there will be a 15500 fall in the number of jobs in the final quarter of 2012. Our 2012 employee jobs forecast is for the number of jobs at the end of 2012 to be up by 32,600 from the end of 2011.

Table 3: Forecasts of Scottish employee jobs (000s, except where stated) and net change in employee jobs in central forecast, 2012 to 2014

	2012	2013	2014	2015
Total employee jobs (000s), Dec	2,294	2,303	2,322	2,354
Net annual change (jobs)	32,650	9,400	19,200	31,800
% change from previous year	1.4%	0.4%	0.8%	1.4%
Agriculture (jobs, 000s)	27	27	29	30
Annual change	-5,200	450	1,250	1,300
Production (jobs, 000s)	245	253	264	278
Annual change	7,350	7,800	10,850	14,050
Services (jobs, 000s)	1,903	1,902	1,907	1,920
Annual change	37,250	-850	4,250	13,600
Construction (jobs, 000s)	118	120	123	126
Annual change	-6,800	1,950	2,850	2,850

Note: Absolute numbers are rounded to the nearest 50.

Source: Fraser of Allander Institute forecasts

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 slightly, largely due to a rise in the number of jobs in Production, although we have revised down the number of jobs added in 2013 from 16,950 to just over 9,000. Through 2014 and 2015 we expect the number of jobs to increase each year (by 0.8% and 1.4% respectively), with most of the job gains seen in the “Production” sector as the domestic-facing services sector to struggle to create employment opportunities in the face of slow or zero household spending growth. Service employment is forecast to grow more strongly in 2015, rising by almost 20,000 from the end of 2012. 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, 2012 to 2014

	2012	2013	2014	2015
Upper	36,850	21,400	44,950	59,100
Central	32,650	9,400	19,150	31,800
Lower	29,950	-3,100	-5,750	5,150

Note: Absolute numbers are rounded to the nearest 50.

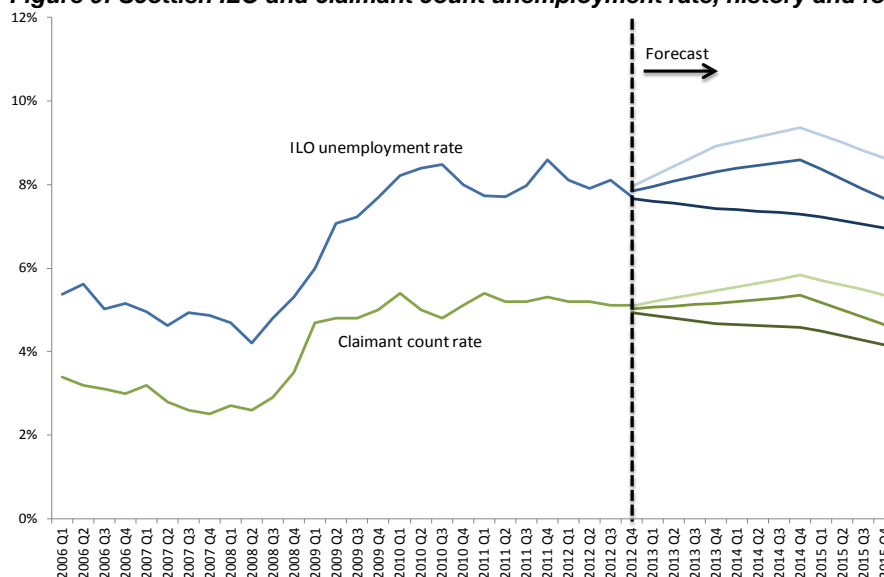
Source: Fraser of Allander Institute forecasts

Unemployment

We present the outturn data on unemployment at the end of 2012 and 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.

As is discussed elsewhere in the *Commentary* in the most recent quarter the level of unemployment has fallen on the ILO measure for both working age and all population, while the claimant count measure continues to record declines in the numbers receiving unemployment benefits.

Figure 9: Scottish ILO and claimant count unemployment rate, history and forecast: 2006 to 2015



Source: Fraser of Allander Institute forecasts

Our forecasted levels and rates of unemployment in Scotland at the end of 2012, 2013, 2014 and 2015 are given in Table 5. We have again 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 show the history of both ILO and

Claimant count unemployment rates, and our forecasts for these variables, between 2006 and 2015 in **Figure 9**.

Table 5: Forecasts of Scottish unemployment in central forecast, 2012 to 2014

	2012	2013	2014	2015
ILO unemployment	204,050	218,300	228,500	204,100
Rate ¹	7.8%	8.3%	8.6%	7.7%
Claimant count	137,650	141,900	148,511	130,192
Rate ²	5.0%	5.2%	5.3%	4.7%

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. ² = rate calculated as claimant count divided by sum of claimant count and total workforce jobs. The most recent labour market figures are detailed in the Labour market section of the Fraser Economic Commentary.

Grant Allan
28th February 2013

Review of Scottish Business Surveys

Overall

Signs of a modest improvement in the Scottish economy were evident in the more recent PMI reports, and in the Scottish Engineering report for Q 4 2012, and were more strongly evident in the Oil & Gas UK index (and commercial surveys as to UKCS drilling activity) but were less evident in other surveys. Whether or not the more recent monthly surveys are picking up signs of a recovery, whilst the quarterly surveys tend to reflect the weaker conditions through the fourth quarter, is uncertain. Nevertheless, the quarterly surveys suggest some signs of a slight improvement looking forward to Q1 2013. However, there is more agreement as to the increased activity in oil and gas sectors and it is likely that this is having a spill over effect into Scottish engineering.

Quarterly surveys (Lloyds TSB and Scottish Chambers) reported the Scottish economy remaining essentially weak during the final quarter of 2012 although there was an unexpected rise in manufacturing optimism for Scottish Chamber of Commerce (SCBS) respondents (and this echoes Scottish Engineering's report for Q4 2012, but would suggest some improvement in Q4 on the latest official export data). The outturn in all SCBS sectors in Q4 remained weak and the trends, although remained negative, generally eased. Business sentiment remained historically weak with only 19% of manufacturing, 13% of tourism, 10% of construction and 6% of retail respondents reporting being more confident than in the third quarter. In contrast 18% of manufacturing, 36% of construction, 47% of retail and 36% of tourism respondents reported being less confident as to the general business situation. In all sectors the main trends in activity remain negative although the downward trends eased slightly, more so in manufacturing and construction, prolonging the sense of weak, stagnating demand and continuing negative growth continuing into 2013.

The latest Lloyds TSB Scotland Business Monitor showed the Scottish economy stagnating in the three months ending November 2012. The Business Monitor noted the Scottish economy starting to slow in the second half of 2008. Following the worst ever result at the end of 2008, there had been a gradual improvement until the early part of 2010 leading to a recovery in the middle of the year but this was followed by a relapse in growth in early 2011 largely attributed to severe winter weather. The spring 2011 Business Monitor suggested a return to growth but the summer and autumn Monitors suggested the economy stagnating, with neither an improvement in the rate of recovery nor a return to recession. The summer and autumn 2012 Monitors again showed the economy stagnating. This latest Monitor shows this trend continuing in the three months ending November 2012, but expectations improving for the next six months. The latest survey showed that the overall net balance for turnover was -10%; a deterioration from the -3% of the previous quarter and the -3% of the same quarter one year ago.

Oil and gas services

Both internationally and domestically the outlook for the oil and gas sector in 2013 remains positive. The on-going interest and potential of shale reserves continues to influence both national energy policies and the global oil market, and interest in potential shale gas reserves continues to grow in a number of European countries, with signs of more interest as to the possibilities in the UK.

The latest available Oil & Gas UK quarterly index (Q3 2012) together with PwC and Deloitte's review of drilling activity (Q4 2012) all indicated rising drilling activity (up by a third) reflecting the 2012 tax changes, continuing demand and high oil prices. However, Oil & Gas UK noted concerns as to continuing skill shortages and rising costs limiting increases in business confidence. Nevertheless, M & A activity remains at a high level and a number of major investments have been announced by both major and independents. The 2013 Activity Survey (published 25th February) reported investment at the highest levels for thirty

years, reflecting UK tax changes aimed at encouraging growth in the sector. Investment rose to an estimated £11.4 billion in 2012 and is expected to rise to £13 billion in 2013. Production fell to 1.55 billion boe per day in 2012, down by 30% from 2010, but some upturn is anticipated over the next three to four years, given a continuation of the current fiscal and regulatory regime.

Private Sector

The Bank of Scotland Purchasing Managers Index (PMI) for the period November – January reported consistently rising trends. The index fell in November to 50.3, but rose in December to 51.2 and rose again in January to 52.3. Trading conditions were described as ‘challenging’ in November, on a ‘sound footing’ at the end of 2012, and ‘gaining momentum’ in January 2013. There were some signs that the upward pressures on costs abated slightly in January, when output and new work increased at a faster rate than previously in the Scottish private sector. Once again the growth in new business and employment was concentrated in the service sector, and the rate of decline in manufacturing was modest and declining. The rise in manufacturing export activity, noted in the PMI for December, has yet to be reflected in any significant signs of growth.

In comparison to the rest of the UK the Lloyds TSB England Regional PMIs for December 2012 and January 2013 indicated that activity was slightly higher than the English average, stronger than the north of England regions, and on a par with London. Significantly the index improved for all regions in January, with the exception of West Midlands.

Production

The Lloyds TSB Business Monitor for the three months to the end of November 2012 showed the net balance of turnover for production firms at +1%; a slight improvement on the -2% of the previous quarter but significantly down on the +9% of the same quarter one year ago. Production firms were generally more optimistic than service firms with production firms showing an overall net balance for turnover for the next six months at -2% compared to -8% for service firms. The Business Monitor reported concerns over credit availability particularly for production firms however the importance of credit costs fell for production firms. The Monitor also indicated that the sterling exchange rate continued to be of more concern to production businesses than service businesses.

Manufacturing

Business confidence improved during the final quarter of 2012 with a net balance of 1.1% of SCBS firms reporting increased confidence levels compared to -22% in the third quarter; business optimism also improved compared to the same period of 2011. Likewise Scottish Engineering members overall reported a rise in business optimism although negative trends were reported by large and medium sized firms.

During the three months to the end of December a net of 1.2% SCBS firms reported a decline in orders compared to -18% in Q3, the trend in total new orders declined by much less than had been forecast in the previous survey. Respondents are also less cautious as to the trends in orders in the first quarter of 2013. Average capacity utilisation improved although was down on the same quarter of 2011. Around half of SCBS manufacturing firms reporting working below optimum levels. Turnover is expected to rise for a net balance of firms in 2013. The net trend in profitability is also expected to rise over the coming year.

An improvement in orders in Q4 2012 was reported by Scottish Engineering firms, small and medium companies reported positive results while large companies showed equal numbers of companies reporting a drop in orders as reporting an increase. Within the sectors, electronics and mechanical equipment were buoyant in contrast to metal manufacturing and fabricators, although the trends remained weak.

The trends in investment in plant/machinery improved slightly during quarter four for a net balance of manufacturing firms in the SCBS although new investment continued to be directed towards replacement or to improve efficiency. Scottish Engineering firms also reported positive investment trends in the final quarter of 2012.

A net balance of SCBS firms reported a rise in total employment levels although around two thirds continued to report no change to overall levels. A quarter of firms increased pay during the three months to December and the average increase was 3.4%. 48% reported seeking to recruit staff, and difficulties remained limited. Scottish Engineering respondents also reported positive employment trends (notably for small and medium sized firms) and respondents to this survey also noted a rise in overtime working during the three months to the end of December 2012.

Construction

Business confidence weakened further in the fourth quarter for SCBS firms with more than 90% of construction firms reported no change or a decline in confidence levels and only 9.7% reporting a rise.

The latest Scottish Construction Monitor, a quarterly survey of employers in the Scottish construction industry carried out by Scottish Building Federation reported that confidence had subsided for the fourth consecutive survey period to -40%. Confidence fell by 34 points in 2012 to three points below where it was in the third quarter of 2010. More than two-thirds of all respondents were less confident about the prospects for their business in the year ahead compared to the preceding 12 months.

The trend in total new orders/contracts unexpectedly eased in the final quarter of 2012 for a net balance of SCBS firms; capacity utilisation rose to 79.4% to the highest average level since the second quarter of 2008. The downward trend in new SCBS orders eased from all sources although the stronger downward trends are forecast to resume early in 2013 and of any new orders/contracts awarded in recent months, two thirds reported that tender margins had worsened.

Cash flow trends continued to decline with only 3% of SCBS firms reporting an improvement. Turnover and profitability are still expected to be weak over the next 12 months together with continued pressure on margins. Almost 90% reported a desire for new orders/contracts.

The downward trend in employment continued in Q4 for a net of SCBS firms and although the downward trend eased it is forecast to be a temporary improvement. Recruitment activity among SCBS respondents rose as did recruitment difficulties; average pay increases rose from 2.0% in Q3 to 2.3%.

Problems with the current public procurement policies were highlighted in the Scottish Construction Monitor survey which asked a series of questions around public procurement and found that Scottish construction firms are spending considerable sums on unsuccessful public procurement bids. They reported that each pre-qualification questionnaire completed had only a one in thirty-six chance of securing new work. Another key finding was that almost two thirds of small construction firms say they have opted out of public procurement entirely over the past three years because the costs are so prohibitively high, anecdotal evidence from professional firms allied to construction echoes this trend. The survey found an average of more than three out of every four pre-qualification questionnaires completed by construction firms for public tenders failed to secure them a place on the tender shortlist. Even when shortlisted, an average of seven out of every eight tender submissions was unsuccessful.

UK construction firms reported a continuing fall in output levels in January (Markit/CIPS Construction PMI), reflecting weakening volumes in housing and civil engineering activity, although improved business confidence as to the outlook for business activity over the next twelve months was noted, although this may reflect hopes of an upturn in public sector investment spending.

Logistics and wholesale

Once again, business optimism amongst SCBS wholesalers continued to decline with slightly fewer than 12% of firms reporting an increase in business confidence; business confidence also remained more depressed compared to one year ago. The downward trend in sales was worse than expected from the previous SCBS with fewer than a fifth reporting an increase in sales; a net balance expect the decline to continue, though ease, in the first quarter of 2013.

Around 80% of SCBS wholesalers continued to report increased pressures from transport costs and more firms are now under pressure from raw material costs compared to previous quarters. Pay settlements

were cited as a pressure for almost 30% of firms. Fewer than half of firms expect to increase prices over the next three months. A net balance of 5% of firms expect an improvement in turnover. Once again most firms reported no change to investment plans; nevertheless the decline continued. SCBS Wholesale respondents, as expected, reported a net decrease in overall employment levels during the fourth quarter of 2012 and a net balance expected to shed staff in the first three months of 2013. Over a third sought to recruit staff; largely for replacement.

Retail distribution

Official data (ONS Retail sales - UK wide) and Scottish household expenditure suggest little improvement in retail activity. UK data indicates the rise of internet based sales now accounts for 3.7% of all food sales and 10.1% of all retail spending excluding fuel. Overall food stores saw a decline of 2.6% in the quantity purchased and an increase of 0.9% in the amount spent. Predominately non food stores saw a 1.7% increase in the quantity of goods bought and a 0.8% increase in spend compared to January 2012. In contrast department stores witnessed an 8.8% increase in the quantity bought and a 6.5% increase in spend.

Weak business confidence was widely reported by SCBS retail respondents in Q4 2012, although the trends were not as weak as in Q4 2011. Only 13% of SCBS respondents expect increased sales, as continuing concerns over consumer confidence remain evident, and in common with the ONS data the SCBS data reported smaller retail firms reporting weaker trends than larger ones.

Like the Bank of Scotland PMI, The Scottish Retail Sales Monitor (SRSM) conducted by the Scottish Retail Consortium and KPMG reported improving trends through November 2012 to January 2013. In December total Scottish sales increased by 1.5% compared with December 2011, when they had risen by 1.6%. The 1.5% increase was driven by non-food sales, which recorded their best performance since March 2011. Like-for-like sales also increased, by 0.3% on last December, when they had increased by 0.4%. But when taking account of shop price inflation at 1.5%, December total sales were flat in real terms. The SRSM reported January sales as being 2.1% higher than a year ago, but recognised that sales were particularly low in January 2011. Given continuing pressures on household budgets reports the retail sector continues to face continuing problems with more distressed sales and closures featuring through the year.

Further evidence of the changing retail landscape is highlighted in the latest PwC and Local Data Company analysis. This reported 353 store closures and 276 store openings in Scotland in 2012, with discounters, charity, payday loan and coffee shops increasing in numbers and declines in the numbers of card, computer, clothes and sports shops, together with reduced numbers of banks and travel agencies. Cost pressures remain historically high in the SCBS survey and generally increased in the final quarter of 2012. Transport costs and utility costs continued to be of particular concern. Pressures on margins remain widespread with around half of firms forecasting declining profitability and turnover during 2013.

Labour market activity continued to decline among SCBS firms with only 4% reporting or expecting an increase in overall employment levels. A quarter of firms reported increasing pay, and the average increase declined from 3.4% to 2.3%.

Tourism

Among SCBS tourism respondents the decline in business confidence continued during the final quarter of 2012 (-23%) although optimism levels were not as depressed compared to Q4 2011 (-45%). Slightly fewer than half of hotels reported a fall in visitors during the three months to the end of December; and a similar number anticipate a further decline in the first quarter of 2013. The trend was not as depressed as had been expected by respondents from the previous survey.

Average occupancy declined from 68% in Q3 to 60% for SCBS hotels although was slightly up on the same quarters of 2011 (57%) and 2010 (56%). In Q4 2012 the trends in demand for bar/ restaurant trade and conference/ function facilities continued to decline. In the three months to the end of December the pattern was one of extensive discounts and seasonal closures. These 'special offers' seem set to continue with a net balance of 22% expecting to decrease room rates in Q1 2013. The Visit Scotland Scottish Occupancy Survey for November 2012 showed that occupancy rates remained unchanged from

November 2011 with bed occupancy remaining at 42% and room occupancy remaining at 60%, although the overall figures concealed better room occupancy rates in 2012 compared to 2011 in Aberdeen/Grampian, Edinburgh/Lothians, Borders, Ayrshire and Glasgow/Clyde and weaker trends elsewhere.

More than 80% of SCBS hotels reported that the lack of tourist demand remained the primary business constraint. Competition, poor transport infrastructure, high fuel costs and weak marketing of the area also remained a concern to hotels. Only 12% of hotels sought to recruit staff and employment trends, as forecast, continued to decline. Little change is expected through the first quarter.

Outlook

Scottish manufactured exports rose by 0.8% in Q3 2012, after three quarters of negative growth, and export levels remain around 10% below their pre-recession level. The decline in engineering exports ended (Scottish Engineering Q 4 2012), although no real improvement is forecast for Q1 2013, apart from large firms. Likewise SCBS manufacturing respondents remain cautious as to improvements in export orders in the first quarter of 2013. SCBS construction respondents reported better than anticipated trends, and again there is some anecdotal evidence of rising activity amongst smaller firms at the front end of the sector. However the trends in retail and tourism remain generally weak, with widespread price cutting and discounts coupled with closures. The SCBS Q4 2012 survey concluded that the downward trends are beginning to ease with fewer firms now reporting or forecasting further declines, and the majority are now reporting either no change or an increase. However, the trends, with some exceptions, most notably oil and gas related manufacturing, are largely unchanged from a year ago, and are indicative of below trend growth continuing and of an economy bumping along the bottom of a recession rather than any substantial sense of a real recovery. The 'age of austerity' seems set to continue for a further year.

Cliff Lockyer/Eleanor Malloy
February 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 September – November 2012;*
6. *Markit/CIPS UK Construction PMI for January 2013;*
7. *Scottish Engineering's Quarterly Review Q4 2012;*
8. *The Bank of Scotland Markit Economics Regional Monthly Purchasing Managers' Indices for November, and December 2012 and January 2013;*
9. *Lloyds TSB England Regional PMI for December 2012 and January 2013;*
10. *The Scottish Retail Consortium's KPMG Monthly Scottish Retail Sales Monitors for November, and December 2012 and January 2013.*

Overview of the labour market

Inevitably interest in the Scottish labour market continues to focus on the trends in employment and unemployment and again we return to these themes. Concern is increasingly focusing on the rise in underemployment and the productivity puzzle - why has employment performed better in this recession, whilst the fall in labour productivity is larger and more persistent than in previous recessions. In addition the UK Government proposals reform public sector terms and conditions of employment continue to emerge as do a number of previously heralded changes to employment.

Underemployment

In December 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. A submission by 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 2006, almost two-fifths of respondents reported that their highest qualification was above that required for entry (i.e. they were overqualified)'.

In contrast, Bell's submission highlighted 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). In addition average hours worked have declined and since the onset of the recession there has been an increase in the numbers wishing to work longer hours.

The productivity – unemployment puzzle

Explanations as to why employment has been rising whilst productivity has remained depressed have explored the rising numbers of part time and self-employed employees, together with the decline in average hours worked. The IFS in exploring a number of dimensions of the UK 'Productivity Puzzles' in the Green Budget 2013 (see chapter 3) and argued that 'the UK labour market has changed in ways that make it more likely that adjustments (to labour costs) will come through hours or wages rather than headcount'. Increased labour market flexibility together with an increase in labour supply (due in part to changes in pension age, and in benefit systems making it harder to access and stay on benefit schemes). In addition it noted that the fall in aggregate productivity is largely driven by productivity falls within industries, notably finance & insurance and mining & quarrying.

Unlike the previous two recessions longer term lower real wages have contributed to allowing firms to continue to employ workers, and secondly business investment has remained lower for longer and labour may be being substituted for capital as demand remains uncertain.

Less attention has focussed on whether this reflects less adversarial employee relations (or weaker trade union powers and the changed regulatory regime) and a longer term structural change as more organizations, for a combination of technological, supply chain and work organization methods, have achieved optimum and more flexible staffing levels/hours as evidenced by the increasing numbers employed on flexible working hours and/or on agency/contract bases.

Employment law issues

As we noted in the June 2012 Commentary the Beecroft Report contained recommendations to change/simplify employment legislation in a number of areas. In October plans were announced for employees to accept reduced employment rights in exchange for shares. In return for shares valued between £2 – 50,000 employees would give up rights to unfair dismissals, statutory redundancy payments

and the right to request flexible working or time off for training. This was generally seen as essentially a niche idea, relevant to high value business start-ups, but of little relevance elsewhere. In January further proposals and consultations were announced in respect of: (a) Changes to sickness and absence. The Department of Work and Pensions announced the introduction in 2014 of a new, government funded, health and work assessment and advisory service to provide a state funded occupational health assessment for employees who are absent for four or more weeks. Additionally it will publish a revised guidance note for GPs stressing the importance of assessing an individual's health in relation to work in general rather than to a specific role. (b) A consultation notice as to the abolition of Service Provision changes in TUPE (dealing with outsourcing, bringing work back in house and or changing a service provider) and a number of other changes to TUPE relating to harmonisation/variation of terms and conditions post transfer, measures to enable changes and restructuring to take place more quickly, and changing the disclosure of information requirements. (c) Simplifying the use of 'settlement agreements' with legislation, a statutory code and guidance in place by mid-2013. (d) A twelve month pay cap to the compensatory award in unfair dismissals. (e) The introduction of tribunal fees - £250 - £350 depending on the claim (with the possibility of additional fees) for further hearings - in July 2013.

Further information as to the existence and extent of black listing of construction employees emerged in January. Evidence as to the blacklist emerged following action by the Information Commissioner's Office. Currently a rising number of claimants have initiated action against a number of construction firms.

Recent trends and statistics

The latest comparable figures on the labour market between Scotland and the United Kingdom in the quarter to December 2012 are summarised in Table 1. Labour Force Survey (LFS) data show that in the quarter to December the level of employment in Scotland fell by 11 thousand, to 2,460 thousand. Over the year to December 2012, employment in Scotland rose by 2 thousand. For the same period, UK employment rose by 154 thousand. The Scottish employment rate (16 – 64) – those in employment as a percentage of the working age population – was 70.7 per cent, down 0.1 per cent to one year earlier. For the same period the UK employment rate was 71.5 per cent, up 1.1 per cent compared to one year earlier. Scottish unemployment, in the quarter to December, fell by 13 thousand to 206 thousand, a fall of 25 thousand over the year.

Table 1: Headline indicators of Scottish and UK labour market, Oct - Dec 2012 (thousands)

Oct – Dec 2012		Scotland	Change on quarter	Change on year	United Kingdom	Change on quarter	Change on year
Employment*	Level (000s)	2,461	-11	2	29,730	154	584
	Rate (%)	70.7	0.1	-0.1	71.5	0.3	1.1
Unemployment**	Level (000s)	206	-13	-25	2,501	-14	-156
	Rate (%)	7.7	-0.4	-0.9	7.8	-0.1	-0.6
Inactivity***	Level (000s)	791	9	27	8,979	-94	-294
	Rate (%)	23.3	0.3	0.8	22.3	-0.2	-0.8

Source: Labour Market Statistics (First Release), Scotland and UK, September 2012

* 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)

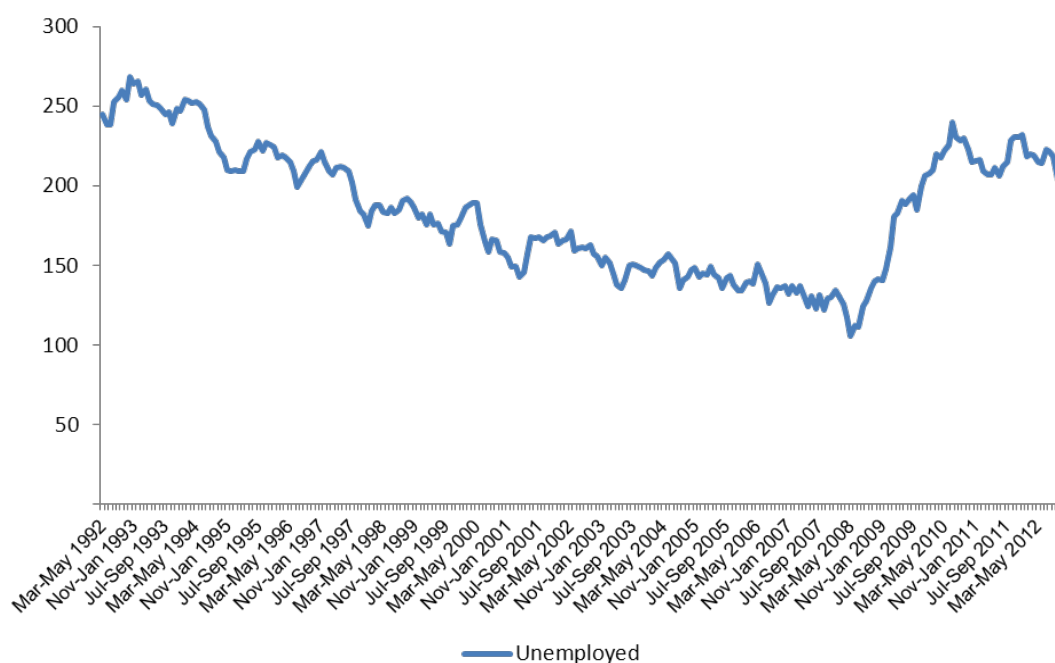
In considering employment, activity and unemployment rates it is important to remember the bases and relationships of these figures. LFS data (estimated) is provided for: (1) all aged 16 and over and (2) for all aged 59/64. The first measure (all aged 16 and over) leads to higher numbers in employment, 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 December 2012, the numbers employed rose by 2 thousand, whilst unemployment fell by 25 thousand – and the numbers of those aged 16-59/64 who are economically inactive rose by 42 thousand and the numbers economically active fell by 23 thousand.

Table 1 shows that for Scotland the preferred International Labour Organisation (ILO) measure of unemployment fell to 206 thousand, between October – December 2012, a fall of 25 thousand over the year. The ILO unemployment rate fell in the three months to December 2012 now stands at 7.7 per cent. This represents a 0.4 per cent fall over the last quarter and a 0.9 per cent 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 0.6 per cent over the year.

Figure 1 Trend in Scottish unemployment 1992 – Oct – Dec August 2012 (thousands)



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

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. If the same pattern is repeated, and unemployment does not rise in future months, then it may take approximately three years for unemployment to fall below 200,000, however, the more rapid rise in part time and self-employment (see figure 2 and table 5) would suggest that unemployment may well fall below 200,00 more rapidly.

Data on employment by age, derived from the Annual Population Survey, is available up to September 2012. In the year to September 2012 employment rates fell for those aged 16 – 24, but rose for those aged 16 – 64 and over 65. Employment rates for women (16 – 64) again were weaker than those for men. Table 2 illustrates the changing employment rates by age group for October – September 2004 onwards.

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

	All 16+	16 - 64	16 - 17	18 - 24	16-24	25 - 34	35 - 49	50 - 64	65+
Oct 04 - Sep 05	59.5	72.7	44.3	68.0	62.8	79.5	82.3	62.4	5.1
Oct 05 - Sep 06	59.9	73.0	43.3	68.3	62.9	79.7	82.9	62.9	5.3
Oct 06 - Sep 07	60.6	74.0	40.6	68.6	62.6	81.5	83.8	64.5	5.4
Oct 07 - Sep 08	60.9	74.2	40.1	67.9	61.9	81.6	83.7	66.0	6.0
Oct 08 - Sep 09	59.5	72.3	37.1	64.4	58.6	80.1	82.1	64.6	6.8
Oct 09 - Sep 10	58.3	71.0	31.1	62.7	56.2	77.9	81.1	64.2	6.6
Oct 10 - Sep 11	58.0	70.7	31.0	61.1	55.0	79.3	80.7	63.6	6.7
Oct 11 - Sep 12	57.9	70.8	28.8	58.4	52.5	79.7	81.5	64.1	7.5

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

Table 3: Activity, employment, unemployment and inactivity rates by Local Authority Area Oct 2011 – Sept 2012 (%)

	economic activity rate - aged 16-64	employment rate - aged 16-64	unemployment rate - aged 16-64	unemployment rate - aged 16+	% who are economically inactive - aged 16-64	% of economically inactive who want a job
Aberdeen City	81.6	76.2	6.6	6.4	18.4	29.2
Aberdeenshire	82.5	79.5	3.6	3.5	17.5	28.0
Angus	79.2	74.2	6.3	6.2	20.8	23.5
Argyll and Bute	77.8	72.0	7.5	7.2	22.2	28.5
Clackmannanshire	73.9	66.0	10.6	10.6	26.1	22.5
Dumfries and Galloway	75.9	68.6	9.7	9.2	24.1	24.5
Dundee City	71.4	64.8	9.2	9.2	28.6	33.0
East Ayrshire	75.0	66.5	11.3	11.1	25.0	23.6
East Dunbartonshire	78.3	73.4	6.3	6.1	21.7	27.7
East Lothian	78.8	73.5	6.8	6.6	21.2	22.5
East Renfrewshire	77.1	72.4	6.1	6.0	22.9	21.1
Edinburgh, City of	74.8	71.1	4.9	4.9	25.2	11.7
Eilean Siar	75.9	70.6	7.0	6.8	24.1	19.8
Falkirk	78.1	71.3	8.7	8.6	21.9	26.0
Fife	77.7	70.0	9.9	9.6	22.3	27.7
Glasgow City	70.8	62.4	11.8	11.8	29.2	25.5
Highland	81.6	78.2	4.2	4.1	18.4	29.0
Inverclyde	76.9	66.3	13.9	13.7	23.1	23.2
Midlothian	79.8	75.1	5.9	5.9	20.2	30.3
Moray	81.4	78.3	3.8	3.7	18.6	42.0
North Ayrshire	71.5	62.5	12.7	12.4	28.5	23.7
North Lanarkshire	78.6	68.8	12.5	12.4	21.4	26.6
Orkney Islands	84.7	80.8	4.6	4.4	15.3	37.0
Perth and Kinross	81.5	75.2	7.8	7.5	18.5	19.0
Renfrewshire	78.4	71.8	8.4	8.3	21.6	26.3
Scottish Borders	76.7	72.3	5.7	5.5	23.3	29.0
Shetland Islands	84.9	82.9	!	!	15.1	20.7
South Ayrshire	77.6	69.4	10.6	10.1	22.4	22.9
South Lanarkshire	78.0	73.1	6.4	6.3	22.0	25.7
Stirling	75.5	69.7	7.6	7.5	24.5	22.0
West Dunbartonshire	75.8	67.2	11.4	11.3	24.2	31.6
West Lothian	78.3	74.4	5.0	4.9	21.7	28.4

Source: Annual Population Survey (Nomis 25th February 2013)

! Estimate and confidence interval not available since the group sample size is zero or disclosive (0-2).

* Estimate and confidence interval unreliable since the group sample size is small (3-9).

- Estimate is less than 500.

- These figures are missing.

Inactivity for men aged 16 – 64 remained unchanged over the year, but fell by 5 thousand for women over the year.

In the year to September 2012 the changes in the reasons for inactivity were: student up 18 thousand, looking after family/home down 9 thousand, retired down 4 thousand and long term sick down 13 thousand. The numbers temporarily sick rose by 5 thousand. The majority 589 thousand did not want a job – but 194 thousand were inactive but wanted employment.

The most recent (seasonally adjusted) figure for Jobseekers allowance claimants (16+) in Scotland stood at 137 thousand in January 2013, down 5.2 thousand or 3.7% over the year (these figures are taken from table 7 in the Labour Market Statistics [First Release] February 2013. The claimant count rate at January 2013 stood at 5.0 per cent, or 6.4% 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 3 indicates the continuing significant differences in employment, unemployment and inactivity rates at the local authority level. In the year October 2011 – September 2012 employment rates varied from over 80% in Shetland and Orkney to between 65 - 70% in eight local authority areas and below 65% in three local authority areas. Likewise unemployment rates varied from 3.6% to 13.9%.

Table 4 provides some indications, although with reservations, of the changing pattern of employment since 2007/8, although it is difficult to argue for the strengthening of the 'hour glass model' of the labour market.

Table 4: Numbers and Percentages in employment by SOC (2010) October 2007 – September 2008 and October 2011 – September 2012

	Oct 2007 -Sep 2008		Oct 2011 - Sep 2012	
	Total	%	Total	%
Managers, directors and senior officials	223,700	8.8	205,500	8.3
Professional occupations	451,400	17.7	487,900	19.8
Associate prof & tech occupations	319,800	12.5	312,400	12.6
Administrative and secretarial occupations	298,800	11.7	262,700	10.6
Skilled trades occupations	313,900	12.3	280,800	11.4
Caring, leisure and other service occupations	234,700	9.2	236,900	9.6
Sales and customer service occupations	223,700	8.8	223,900	9.1
Process, plant and machine operatives	188,400	7.4	162,200	6.6
Elementary occupations	287,600	11.3	284,700	11.5

Source: Annual Population Survey, NOMIS

Notes: Rounding means totals do not add to 100

Total workforce job figures are a measure of jobs rather than people. Total seasonally adjusted jobs for the quarter ending September 2012 (the latest available figures) stood at 2,660 thousand (2,310 thousand employee jobs, 333 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 (October 2011 – September 2012), over the past year the number of employees has fallen by 14 thousand whereas the numbers of self-employed have risen by 16 thousand.

Table 6 indicates the numbers of full time workers in Scotland since the peak in employment have declined by 140 thousand whilst part time employment numbers recovered very quickly and are now 56 thousand

higher and self-employed 30 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 55 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 5: Total workforce jobs* by industry, Scotland, June 2006–2012 and Sep 2012 (thousands)

Industry	June 2006	June 2007	June 2008	June 2009	June 2010	June 2011	June 2012	Sep 2012
A : Agriculture, forestry and fishing	54	60	60	59	66	50	50	49
B : Mining and quarrying	28	30	30	29	31	30	35	38
C : Manufacturing	226	228	212	201	187	189	197	194
D : Electricity, gas, steam and air conditioning supply	10	13	16	19	21	18	19	20
E : Water supply; sewerage, waste management etc	18	17	16	14	113	19	19	18
F : Construction	194	203	199	185	173	179	174	179
G : Wholesale & retail trade; repair of motor vehicles etc	384	380	396	398	380	388	372	374
H : Transportation and storage	118	123	123	111	112	112	119	120
I : Accommodation and food service activities	190	188	191	186	179	190	199	199
J : Information and communication	73	79	69	68	69	74	80	77
K : Financial and insurance activities	107	91	98	100	91	92	87	83
L : Real estate activities	29	30	32	32	27	31	28	28
M : Professional, scientific and technical activities	154	161	176	174	171	183	219	215
N : Administrative and support service activities	180	192	200	185	197	191	200	200
O : Public administration & defence; social security	177	181	177	146	162	154	155	154
P : Education	200	192	208	208	197	200	197	196
Q : Human health and social work activities	399	383	398	401	381	372	373	374
R : Arts, entertainment and recreation	81	75	84	71	78	76	80	82
S : Other service activities	65	63	58	59	68	74	64	62

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

* *Workforce jobs are a measure of jobs rather than people*

Note: *There are revisions from previous figures and as of September 2011 ONS are highlighting figures with a coefficient of variation greater than 25%*

The Annual Population Survey (workplace analysis) suggests that between October 2007 – September 2008 and October 2011 – September 2012 the trends in part time employment outperformed those for full time employment in all age groups. In the 20 – 24 age group full time employment fell by 37,800 whilst part time employment rose by 13,200; for 25 – 49 full time employment fell by 73,300 but part time rose by 22,800 and for 50+ full time employment rose by 6,200 and part time by 28,100.

Figure 2 illustrates how the employment 'recovery' has been driven more 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. Table 6 (2) of the first release indicates that the usual hours of work of self-employed are lower than for full time employees and have declined. 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 had 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. Alternatively structural changes in energy and extraction may be contributory factors, as might the belief that the economy is moving to less skilled and to a period of lower productivity. However, analysis of public sector trends (see the section in the Commentary) suggests that part time numbers have declined more than full time staffs.

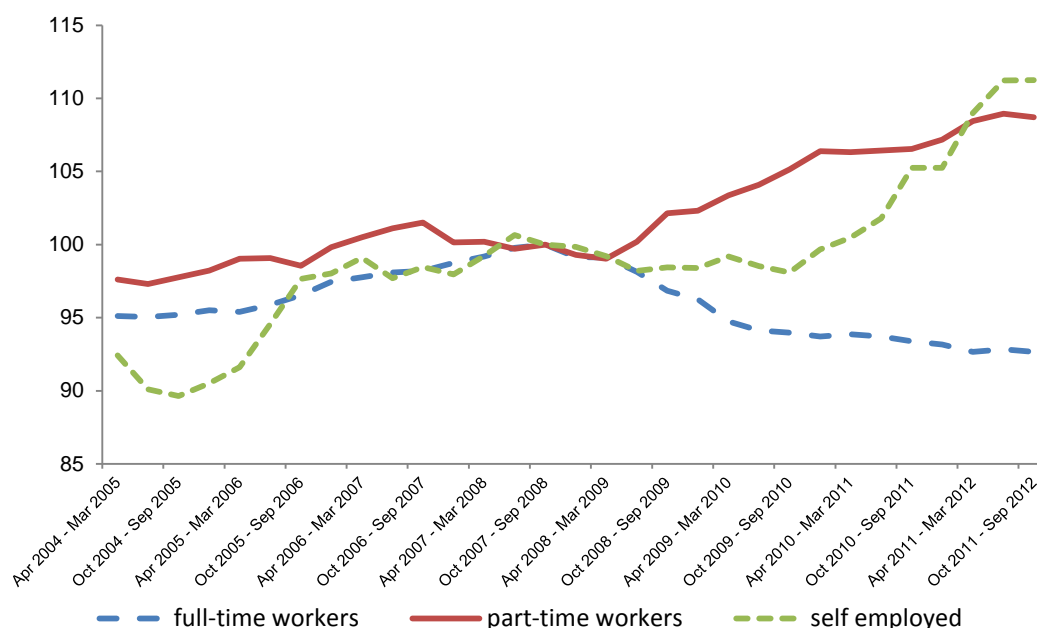
Table 6: Trends in total, full, part time, temporary and part time who could not find a full time job.

	All in employment							
	Total	Employees	Self employed	Full-time workers	Part-time workers	Workers with second jobs	Temporary employees	Couldn't 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 - Dec 2012	2,469	2,153	299	1,776	685	98	119	116

Source: Labour Market Statistics (First Release), Scotland, February 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 Trends in full, part time and self-employment since April 2004 (Oct 2007 – Sept 2008 = 100)



Tables 6 and 7 of the Labour Market statistics (first release) provide information of the claimant count. The figure for January indicates a total of 137,000 thousand claimants, down 5.2 thousand for the year. Of interest are the differing trends in the claimant count for men and women. The claimant count for men, 93 thousand, was down 5.6 thousand over the year, whereas the comparable figure for women, 44 thousand, was 0.4 thousand higher than a year ago.

Table 8 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 8,700 over the year and 15.5 thousand have been claiming for more than 2 years, up 8.1 thousand (or 108.9%) over the year.

Table 8: Total claimant count and computerised claims by age and duration (Numbers and percentage change over year to February 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	141,500	80,900	22,300	38,300
All 16+ % change over year	-6.3%	-6.8%	-9%	29.3%
All 18 – 24	37,100	24,300	5,900	6,900
All 25- 49	79,900	44,100	12,700	23,000
All 50 and above	23,600	11,800	3,600	8,400

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

As we noted in the November Commentary there are concerns as to the increasing gap between the low and high paid, in respect of the effects of unemployment on health and on social cohesion; Wilkinson's and Pickett's analysis of the social consequences of inequality (2009) surfaced again in the debate as to the economic issues of independence. As we noted in the previous Commentary data from the OECD (2011) indicates that income inequality amongst working age persons has risen faster in the UK than in any other OECD country since 1975 as is now well above the OECD average. The share of the top 1% of income earners increased from 7.1% in 1970 to 14.3% in 2005; in 2012 this has increased to 15% of all income.

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 (Q3 2012) indicates that there were 581,300 (552,100 excluding public sector financial institutions) employed in the public sector in Scotland, a decrease of 11,700 (2.0%) over the year. Employment in the devolved public sector declined by 5,700 (1.2%) to 486,000, due mainly to declines local government employment (5,300) and further education (down 900).

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Cliff Lockyer
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Public Sector employment in Scotland

Inevitably interest focusses on the recent trends in public sector employment; however, the themes of cuts, capacity and targets are indicative of more significant current and medium term issues affecting the public sector. Cuts in staffing and capacity (a 30% reduction in staff and loss of experienced managers) were seen as a contributory reason for the failures by the Department of Transport's West Coast rail franchise, as contributing to the failure to pick up the recent food contamination (Local Authorities in England collected some 21% fewer samples in 2011 – 2012 compared to earlier years), and underpinning concerns as to the reduced levels of fire service cover in London. The impact of cuts, capacity and targets on standards of care were highlighted in the publication the Francis Report (The final report of the Mid Staffordshire NHS Foundation Trust Public Inquiry) and we return to this later.

Public sector employment (based on headcount and excluding public sector financial institutions) rose between 1999 and 2006, but since 2006 has declined by 64,300. Although the movement of local authority staff both in and out of arm's length organizations, typically charities, makes 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 (Q3 2012) indicates that there were 581,300 (552,100 excluding public sector financial institutions) employed in the public sector in Scotland, a decrease of 11,700 (2.0%) over the year. Employment in the devolved public sector declined by 5,700 (1.2%) to 486,000, due mainly to declines local government employment (5,300) and further education (down 900).

A comparison between headcount and full-time equivalent data suggests that since 2009 the public sector in Scotland has been shedding more part-time than full-time jobs, between Q3 2009 and Q3 2012 headcount (total public sector) employment declined by 51,700, whilst the full time equivalent declined by 39,200.

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
Q3 1999	2,293,000	1,746,300	76.2%	546,300	23.8%	546,300	23.8%
Q3 2006	2,499,000	1,900,700	76.1%	598,400	23.9%	598,400	23.9%
Q3 2007	2,552,000	1,956,100	76.6%	596,100	23.4%	596,100	23.4%
Q3 2008	2,552,000	1,955,300	76.6%	596,700	23.4%	596,700	23.4%
Q3 2009	2,507,000	1,873,700	74.7%	633,000	25.3%	595,600	23.8%
Q3 2010	2,479,000	1,861,300	75.1%	617,700	24.9%	585,600	23.6%
Q3 2011	2,485,000	1,892,300	76.1%	593,000	23.9%	560,800	22.6%
Q3 2012	2,474,000	1,892,700	76.5%	581,300	23.5%	552,100	22.3%

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

- Notes Figures have been rounded to the nearest hundred. Total employment has been rounded to the nearest thousand.
- 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 5,300), public sector financial institutions (down 3,000) and the civil service (down 2,100). In percentage terms the largest declines have been in public sector financial institutions (down 9.4%) and further education colleges (down 6%).

Table 2 Public Sector employment by National Accounts classification (headcount) all Q3 2012 figures

	Total Public Sector	National Accounts Central Government Category					Total Central Gov.	Local Gov.	Public Corp	Public Sector Financial Inst.
		Civil Service	Other Public Bodies	NHS	Armed Forces	Further Education Colleges				
1999	546,300	48,500	14,400	129,700	15,000	15,700	223,400	293,600	29,300	
2006	598,400	52,400	19,200	150,000	12,800	16,700	251,100	320,900	26,400	
2007	596,100	50,000	22,700	154,200	12,200	16,900	256,000	315,200	24,800	
2008	596,700	49,400	23,700	156,500	12,000	16,900	258,400	313,200	25,000	
2009	633,000	51,300	23,900	159,800	11,900	16,000	262,900	304,500	28,100	37,500
2010	617,700	49,100	23,300	158,800	12,300	17,100	260,500	297,700	27,300	32,100
2011	593,000	47,900	21,800	154,500	11,700	15,100	251,000	284,000	25,700	32,200
2012	581,300	45,800	21,900	155,300	11,700	14,200	248,900	278,700	24,600	29,200

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.

Local Government

Table 3 indicates the changes in headcount by local authority and indicates a decline in Local Authority employment of 5,300 (1.9%) 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 highlight the increasing use of outsourcing, accounting for some 60% of the value of all public sector outsourcing contracts. It is estimated that 50% of council waste management services and 23% of HR, IT and payroll functions are now outsourced.

Education

Scottish Further education colleges have declined by 900 over the year to Q3 2012, and by 2,700 since Q3 2008 and further reductions are likely. As noted in previous Commentaries the publication of the Scottish Government's Reform of Post 16 Education and subsequent consultation paper outlined the Government's proposals for a very rapid restructuring of 35 colleges into 12 regions with a programme of mergers, collaboration, sharing services and courses. Three Glasgow colleges, John Wheatley, North Glasgow and Stow, have now signed a partnership agreement and are likely to merge in the second half of the year. In Edinburgh the newly created Edinburgh College (a merger of Telford, Jewel & Esk and Stevenson colleges) raised concerns as to the impact of funding reductions on staff numbers and the range of courses provided "the current pace of financial cuts runs the risk of creating a funding crisis and short-term staffing and educational difficulties" (Edinburgh College submission to the Scottish Parliament's education committee).

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

Year	2006 Q3	2007 Q3	2008 Q3	2009 Q3	2010 Q3	2011 Q3	2012 Q3	Annual Change H count	Annual Change %
Local Authority / Joint Board									
Aberdeen City	11,600	11,600	11,500	9,400	8,900	8,800	8,700	-100	-1.2%
Aberdeenshire	13,300	13,600	13,800	14,600	14,500	13,900	13,500	-400	-2.9%
Angus	5,700	5,700	5,800	5,700	5,600	5,500	5,400	-100	-1.0%
Argyll & Bute	5,500	5,300	5,300	5,400	5,200	4,800	4,700	-100	-1.2%
Clackmannanshire	2,800	2,900	2,900	2,800	2,800	2,600	2,600	0	1.4%
Dumfries & Galloway	8,400	8,300	8,200	8,300	8,200	7,800	7,700	-100	-1.7%
Dundee City	8,400	8,300	8,300	8,100	8,000	7,300	7,300	0	0.7%
East Ayrshire	6,900	6,900	6,800	6,700	6,600	6,500	6,200	-300	-4.1%
East Dunbartonshire	4,600	4,800	4,900	5,000	4,900	4,300	4,300	-100	-1.3%
East Lothian	4,900	5,000	4,900	5,000	4,800	4,700	4,600	0	-0.2%
East Renfrewshire	4,600	4,800	4,800	4,800	4,600	4,500	4,500	0	0.4%
Edinburgh, City of	20,600	20,500	20,100	19,000	18,500	17,800	17,700	-100	-0.5%
Eilean Siar	2,500	2,600	2,600	2,600	2,500	2,500	2,400	-100	-3.4%
Falkirk	7,700	7,900	8,000	8,100	7,900	7,400	7,500	100	1.4%
Fife	23,400	22,500	22,500	22,800	22,400	21,100	20,400	-800	-3.7%
Glasgow City	37,800	33,500	31,800	23,300	22,300	21,600	20,700	-900	-4.3%
Highland	12,700	12,600	12,700	12,800	12,700	12,100	10,000	-2,100	-17.4%
Inverclyde	5,200	5,200	4,800	4,800	4,600	4,400	4,300	-100	-1.7%
Midlothian	4,200	4,600	4,700	4,700	4,800	4,600	4,500	-100	-1.8%
Moray	5,000	4,900	5,100	5,200	5,100	4,900	5,000	100	1.3%
North Ayrshire	7,300	7,500	7,500	7,300	7,100	6,800	6,700	-100	-0.8%
North Lanarkshire	18,500	18,000	17,900	18,200	17,200	16,300	16,200	-100	-0.8%
Orkney Islands	2,100	2,200	2,400	2,400	2,400	2,300	2,400	0	0.1%
Perth & Kinross	5,900	6,000	6,100	6,100	6,000	5,900	5,900	0	0.4%
Renfrewshire	9,300	9,100	8,800	8,600	8,300	7,500	7,800	300	4.0%
Scottish Borders	5,700	5,800	5,800	5,700	5,700	5,600	5,500	-100	-2.3%
Shetland Islands	3,600	3,700	3,800	4,100	4,200	4,000	3,800	-200	-4.1%
South Ayrshire	6,000	5,700	5,700	5,600	5,600	5,300	5,200	0	-0.5%
South Lanarkshire	16,600	16,000	15,800	15,900	15,500	14,700	14,800	100	0.7%
Stirling	4,400	4,500	4,400	4,400	4,500	4,100	4,200	0	0.8%
West Dunbartonshire	6,000	6,200	6,300	6,600	6,100	6,100	5,700	-300	-5.3%
West Lothian	8,300	8,300	8,400	8,500	8,400	7,800	8,000	100	1.9%
Total Fire Joint Boards	5,800	5,700	5,800	5,800	5,700	5,600	5,400	-200	-3.1%
Total Police Joint Boards	24,200	23,600	23,800	24,700	24,700	23,900	23,900	100	0.4%
Total Valuation Joint Boards	700	700	700	700	600	600	600	0	-1.8%
Total Regional Transport Partnerships (SPT)	700	700	700	700	700	600	600	-100	-8.2%
SCOTLAND	320,900	315,200	313,200	304,500	297,700	284,000	278,700	-5,300	-1.9%

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.

A continuing problem for universities has been the reduction in the numbers of overseas students and hence income, due in part to the UK Government seeking to reduce numbers of migrants seeking to enter the UK. Data for 2011 – 2012 suggests significant declines in the numbers of students from India, Nigeria and Pakistan coming to Scottish universities, although there was some improvement in numbers from other countries. Concerns have also been voiced that a number of the proposals in the Post – 16 Education (Scotland) Bill could reduce the autonomy of Scottish universities.

Transport

The issue and provision of free bus travel remains a concern. It is estimated that £34 million of the £180 million spent on free bus passes in Scotland went to people still working, and concerns remain that the provision will be reduced. A number of possible reductions to bus routes were announced following a cut in funding for the Scottish Government's free bus scheme, the rate is to be cut by 13% over two years – but eased by a £10 million emergency investment in 2013 – underlying this is the funding shortfall of £13 million in 2012/2013 as demand exceeded the £187 million available. Proposed industrial action by RMT over new flexible work patterns being proposed by Serco, the new operators of Orkney and Shetland ferries, was suspended in December. Elsewhere ferry fares to the Western Isles, Coll and Tiree will increase by 10% in 2013.

Health

Concerns over the contamination of processed food coincided with an Audit Scotland Report 'Protecting Consumers' a review of councils' trading standards services. The report noted the reductions in staffing and budgets and concluded the long-term viability of councils' trading standards services is under threat. Councils are increasingly targeting their resources at the highest risk areas and reducing work on the lowest risks, but this requires good intelligence, which is not always available. "However, the reduction in consumer advice and support means that some consumers will not get the help they need when things go wrong. Nearly a quarter of the Scottish population now live in areas where they will not necessarily receive support for civil matters from councils' trading standards services." (Audit Scotland).

The numbers (headcount) employed in the NHS rose by 800 to 155,300 Q3 2011 – Q3 2012 (see table 2). As we noted in the previous Commentary NHS spending in Scotland is currently roughly a third of the annual Scottish budget. As the Audit Scotland's report noted the NHS budget rose by £232m in 2011-12 in cash terms. "The Scottish government's 2011 spending review outlined a 4.2% real-terms decrease in NHS funding in the five years to 2014-15." There are clearly pressures building in the system from increasing costs, rising expectations and increasing demand and changes to policies are increasingly inevitable.

The adverse impact of performance management has been evident in two reports into the National Health Service. First, Audit Scotland (February 2013) noted 'the combination of shorter waiting times targets and increased numbers of patients added to waiting lists means NHS boards are facing increasing challenges to treat patients within the required time. It found evidence of the application of false periods of unavailability to patient records to appear to meet waiting time targets' (para. 4 p 3), and a culture of managerial pressure on staff to find ways around the system to avoid failing to meet targets (see part 2 of the report pages 21 – 30 for examples).

Secondly, the Francis Report (The final report of the Mid Staffordshire NHS Foundation Trust Public Inquiry) highlighted a series of major failings which led to poor standards of care and contributed to the premature deaths of hundreds of patients. Francis noted (para. 76 Executive Summary) "Stafford was not an event of such rarity or improbability that it would be safe to assume that it has not been and will not be repeated or the risk of a recurrence was so low that major preventative measures would be disproportionate". As the president and vice presidents of the Royal College of Physicians of Edinburgh noted "the contributing circumstances have the potential for this to occur in any hospital under pressure, and leave no room for complacency... the lessons learned are too important to ignore, must be acted upon and result in cultural change to avoid repetition".

The Francis report highlighted issues of poor leadership, tensions between medical and management staffs, a negative culture, inaccurate self-declaration of its own performance, a failure of professional

associations to support staff who voiced concerns and failure of external agencies to accurately monitor performance.

The unintended and negative failings of performance management target systems, especially when coupled with performance based pay (either organizational or individual) is well documented in management literature, as contributing to a 'tick box culture' and a focus on outputs rather than processes. It is questionable whether the best route to raise or ensure compliance with fundamental standards is best served by a combination of SMART objectives and incentives.

Emergency Services

As noted in the November 2012 Commentary the appointment of the new chief constable for the Scottish national police force led to some clarification as to the scale of initial job losses, with up to 3,000 mainly support jobs (in HR, finance and procurement etc.) to be lost, mainly by voluntary redundancies and early retirement, and to proposals to reduce police estates by 20%, implying some reductions to the number of police stations. It is likely that some of the civilian job losses will lead to police officers taking back some of this work, and the trend towards a more porous divide between police officers and civilian staffs, a feature of future years, reduced in the period to 2015. The protection of police officer numbers may well be by standardising terms and conditions and at the expense of reductions in hours, overtime and conditions.

Issues of management control and responsibility arose in a well-publicised disagreement between the Scottish Police Force and the Scottish Police Authority, as to the implications of the new legislation in terms of the control of HR, finance, other back office functions and civilian staffs. Concerns that the SPA would not delegate control of staff to the new Police force would make it much harder for the new chief constable to effectively manage staff and resources and in recognition of this a number of finance and HR staff will now be placed under the chief constable's control. Audit Scotland, in its Overview Report into best value in police authorities, echoed these concerns: "It is critical that the respective roles of the Scottish Police Authority, the Police Service of Scotland, local authorities and their partners are clearly understood and that policing services are managed in accordance with well-established principles of good governance and accountability" (overall conclusions para. 22).

The Fire Services in England are responding to reduced budgets by shifting to fire prevention and risk analysis, Greater Manchester has been reported as reducing front line staff by a third, but its chief fire officer noted the advantages of initiating changes in more buoyant economic times, and argued that there was no quick fix for slimming the public sector without damaging the services the public receives. Resources had been successfully taken out of the system by managing a reduction in demand, but there are obvious limits to such policies.

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Cliff Lockyer
February 2013

The spatial pattern of growth and economic equality in Scotland, 1997-2010

Grant Allan, University of Strathclyde

1. Introduction

Recently published Gross Value Added (GVA, a measure of economic output) data available at the statistical "NUTS3" level allow us to explore developments in the spatial distribution of economic activity across sub-regions of Scotland. Together with a second dataset on the distribution of household incomes, we can explore whether the observed spatial pattern in economic activity is mirrored by changes in household income for the same sub-regions. This gives an opportunity to explore Scotland's economic growth at the sub-regional level.

In addition it offers an opportunity to:

- 1 Explore the patterns of growth across the Scottish sub regions;
- 2 Examine the changing patterns in GVA per head across the Scottish sub regions;
- 3 Consider income trends across the regions;
- 4 Consider spatial economic inequality over time across these regions.

In this preliminary paper we outline these four areas and initial considerations as to the data. It is not the purpose of this short note to *explain* observed growth differences, but to understand the scale – and persistence – of economic outcomes across the sub-regions of Scotland between 1997 and 2010.

The working

GVA data at NUTS3 level across the UK were published by National Statistics on the 12th of December 2012. This gave GVA in current (i.e. cash) prices for ten industries in each of twenty-three sub-regions of Scotland. It is unfortunate that these sub-regions do not necessarily equate to those of the (32) Scottish local authorities as this could allow for better alignment of policy activities with outcome data. In some cases, data are available for aggregated local authority areas (for example, "Angus and Dundee City", "Clackmannanshire and Fife" and "Aberdeen City and Aberdeenshire") while others have groupings which go across two local authority areas (for example, "Lochaber, Skye and Lochalsh, Arran & Cumbrae and Argyll and Bute").

A few steps are required to adjust the data into a form appropriate for this analysis. Firstly, we convert the cash GVA series for each industry in each sub-region into a real series. We use a common set of prices to correct for changes in the price level over the period. This is done using UK industry-specific GVA deflators, obtained from UK current and constant price series¹ for each industry's annual GVA to convert all prices to 2006. This gives us a real GVA series for each sub-region across Scotland. Secondly, we sum the sub-regional GVA data to a Scottish total and calculate the annual growth in real terms from this Scottish data series. For both the Scottish and sub-regional data series we calculate the cumulative growth in real GVA from 1997. To show the performance of sub-regions relative to Scotland as a whole (Figure 1) we subtract the Scottish cumulative growth series from those for the sub-regions of Scotland. Scottish real GVA series we obtain is slightly different to that produced by the Scottish Government. However, the cumulative growth of the Scottish economy under both measures is broadly comparable (24.21% from summing the estimated real regional GVA and 22.74% from the Scottish government figures directly).

We begin by outlining what regional economic theory suggests about the likely spatial pattern of economic growth. We then explore the changing geography of Scotland's economic performance between 1997 and 2010.

2. An overview of growth and convergence in regional economic theory

Conventional neoclassical regional growth theory suggests that – in the absence of regional specialisations, and with labour and capital able to move between regions – GDP per head will equalise across regions in the long run. If, in the short run, one region sees a boost to growth – perhaps either through a productivity increase or following an increase in demand for that region’s traded goods - this will impact on the relative productivity of capital and labour in that region (Armstrong and Taylor, 2000). Over time, capital flows and migration produce a correcting process by which per capita growth in lagging regions converges on the previously leading regions. The overall level of GDP, of course, may differ between regions but will be equalised on a *per capita* basis as population will be higher in the higher GVA region.

The view of whether equalisation of outcomes arises in more recent regional growth models is neatly summarised by Gardiner *et al* (2012, p. 6-7):

“Spatial differences in economic performance, rather than setting off automatic self-correcting processes, are likely instead to be self-reinforcing: spatial economic imbalance, in the sense of regional disparities in growth and incomes, may not only be persistent but may in fact intensify over time. More of these ‘imbalance’ theories predict that spatial agglomeration of economic activity is an inevitable result of increasing returns effects”.

The early regional growth models (for example, Kaldor, 1970; Dixon and Thirwall, 1975) speculated that differences in growth rates and per capita incomes may persist “as a consequences of a virtuous circle of growth, partly as a result of agglomeration economics, which emerge in high-growth regions as a result of the clustering of economic activities” (Gripaios *et al*, 2000, p. 1161).

The more recent New Economic Geography (NEG) literature (Krugman, 1991) formalised a “core-periphery” model of economic development. NEG theory suggests that the “geographic structure of the economy depend[s] on a few key parameters: transportation costs, economics of scale and factor mobility” (Krugman, 2011, p. 3). In the early NEG models, firms were subject to monopolistic competition, giving firms economics of scale and suggesting a concentration of production: “Under the right circumstances, this could produce a circular causation in which concentrating production fed on itself” (Krugman, 2011, p. 4). The key issue here is that sectors subject to increasing returns (which tend to be highly productive) become geographically concentrated. Of course, whatever leads to their being agglomeration economies its central proposition is that economic activity would concentrate in particular regions and we would not see convergence in GVA per capita.

Recent regional growth theories therefore suggest that market forces will not deliver growth which is evenly distributed across a country. However, it is not clear that concentration of activity helps or hinders the country’s overall growth rate (Gardiner *et al*, 2012). Under certain assumptions, geographical concentration of activity could simultaneously benefit growth of the region and the nation (e.g. Baldwin *et al*, 2004). However, a large body of recent empirical work suggests policy aimed at dispersing activity across regions is the only way to both reduce growth differentials and increase the overall growth rate (Cerina and Mureddu, 2009).

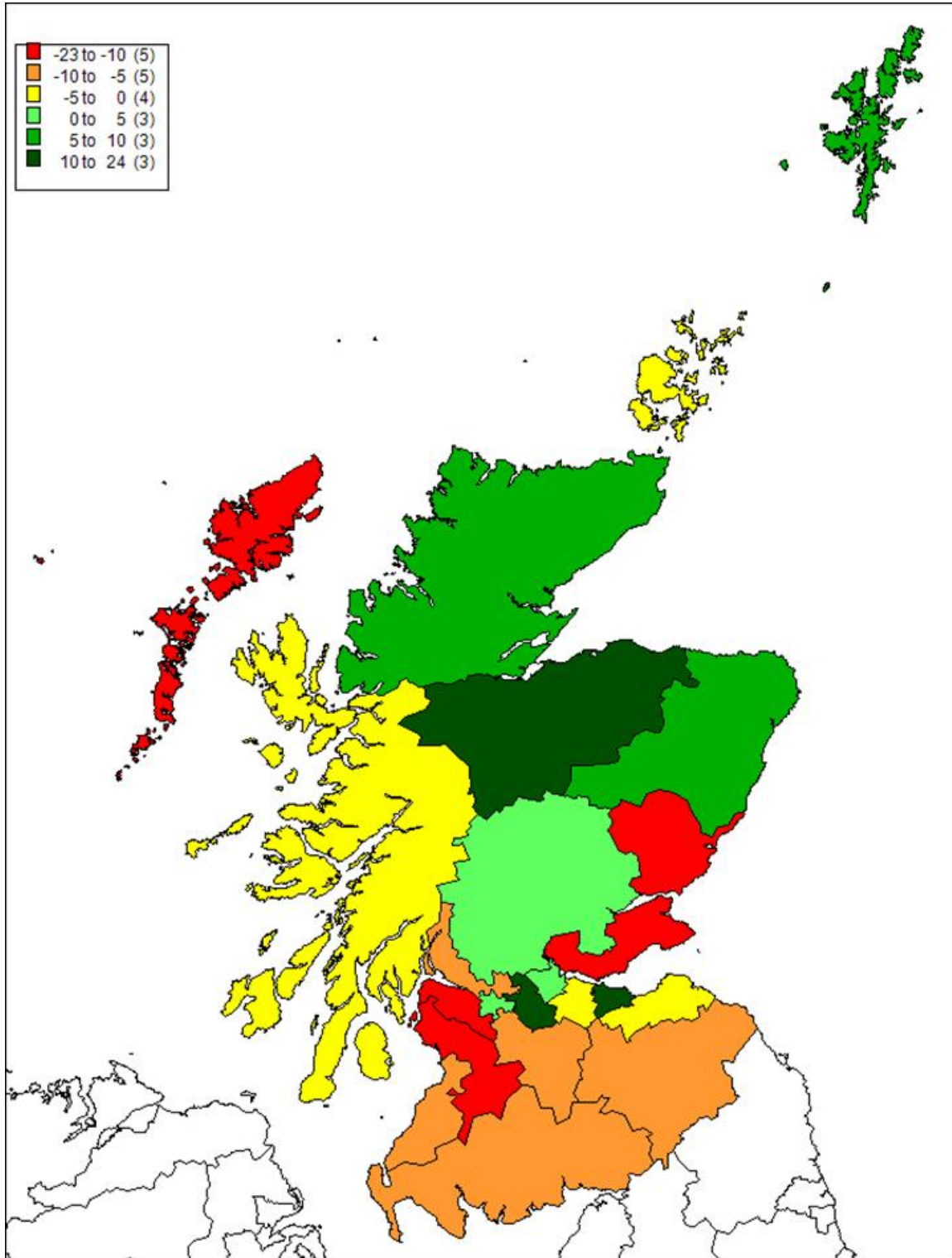
3. Growth across the sub-regions

We first begin our empirical analysis by looking at the differences in total (i.e. cumulative) economic output growth between each sub-region and the Scottish economy as a whole between 1997 and 2010. If the Scottish growth rate had been matched in each sub-region, then the growth differentials would be zero. Numbers above (below) zero indicate sub-regions with a stronger (weaker) growth performance over this period than the Scottish economy as a whole. The cumulative differences are mapped in Figure 1.

Figure 1 shows the striking disparity of economic outcomes across Scotland over this relatively short period of time. Recall from Box 1 that the Scottish economy grew by 24.2% in real terms over this period. There are five sub-regions with growth performances more than 10% worse than Scotland as a whole. The worst performing sub-region is “Inverclyde, East Renfrewshire and Renfrewshire” (-22.9%) with other poorly performing regions being “East Ayrshire and North Ayrshire mainland” (-18.0%) and “Angus and

Dundee City” (-12.6%). The “Inverclyde, East Renfrewshire and Renfrewshire” relative growth figure therefore suggests that in real terms the GVA in this sub-region expanded by less than 2% over the period. At the other end of the spectrum, in three sub-regions growth was more than 10% higher than growth in the Scottish economy as a whole. Leading these was “Inverness & Nairn and Moray, Badenoch and Strathspey” (+23.5%), “North Lanarkshire” (+12.0%) and “City of Edinburgh” (+11.2%).

Figure 1: Cumulative real GVA growth for the 23 Scottish NUTS3 regions relative to Scotland as a whole, 1997-2010



Concentration in major city economies

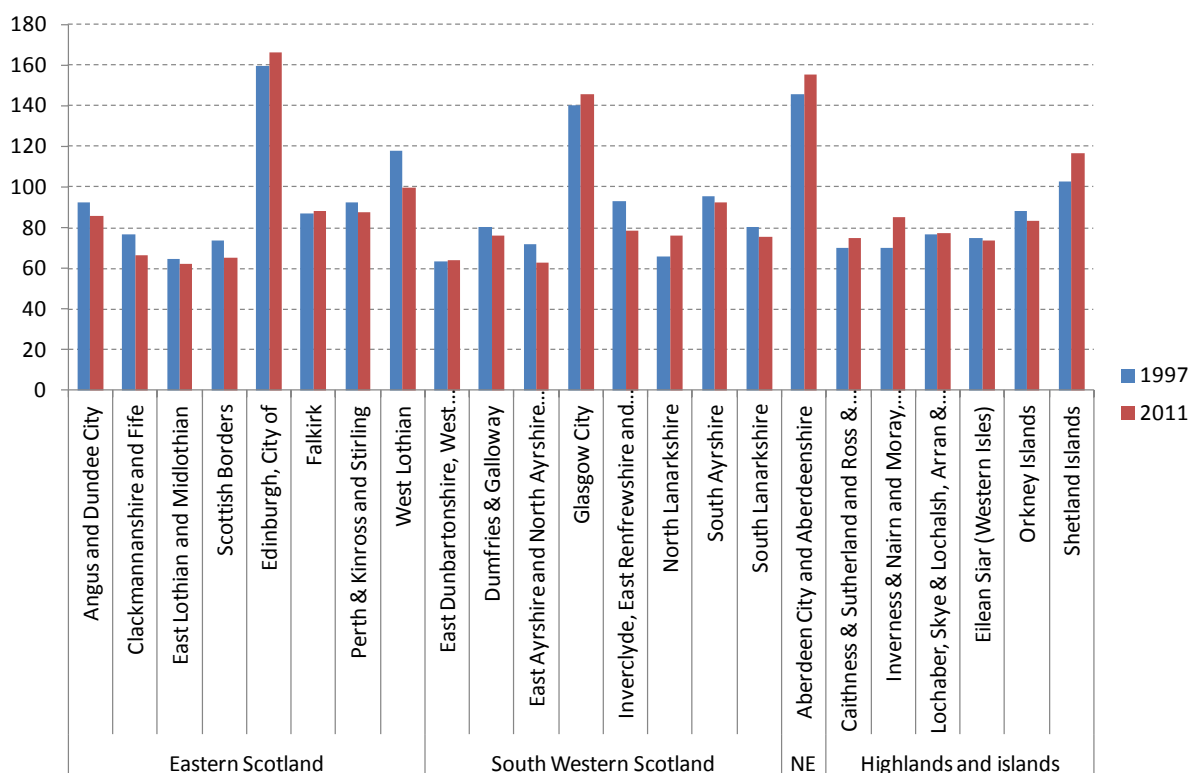
The performance of the cities of Scotland over this period is also evident from Figure 1. The regions containing Aberdeen, Glasgow and Edinburgh dominate the Scottish economy and have all grown relative to the Scottish economy over the period. The share of Scottish activity in the three regions containing these centres has gone from 43.0% to 45.8%, increasing by almost 2 percentage points since 2004.

Scottish economy moving northeast

Generalising across the sub-regional geography of Scotland, we can see an apparent northeast/southwest divide in terms of economic output growth. No sub-region below the central belt outperformed the growth seen across Scotland. The central economies between Glasgow and Edinburgh (including these areas) and those in the north and northeast of mainland Scotland have seen faster growth. This is not to understate the continued importance of those economies in the south and west, but to demonstrate just how far growth in the north and north east has dominated much of the recent growth of the Scottish economy. Interestingly, the island economies of Eilean Siar, Orkney Islands and the Shetland Islands have had a mixed outcome over this period, seeing output change of -11%, -3% and 6% respectively compared to the Scottish average.

4. GVA per head across the sub-regions

Figure 2: GVA per head by sub-region in 1997 and 2011 (Scotland = 100)



Note: "NE" refers to North Eastern Scotland, of which "Aberdeen City and Aberdeenshire" is the only NUTS3 sub-region.

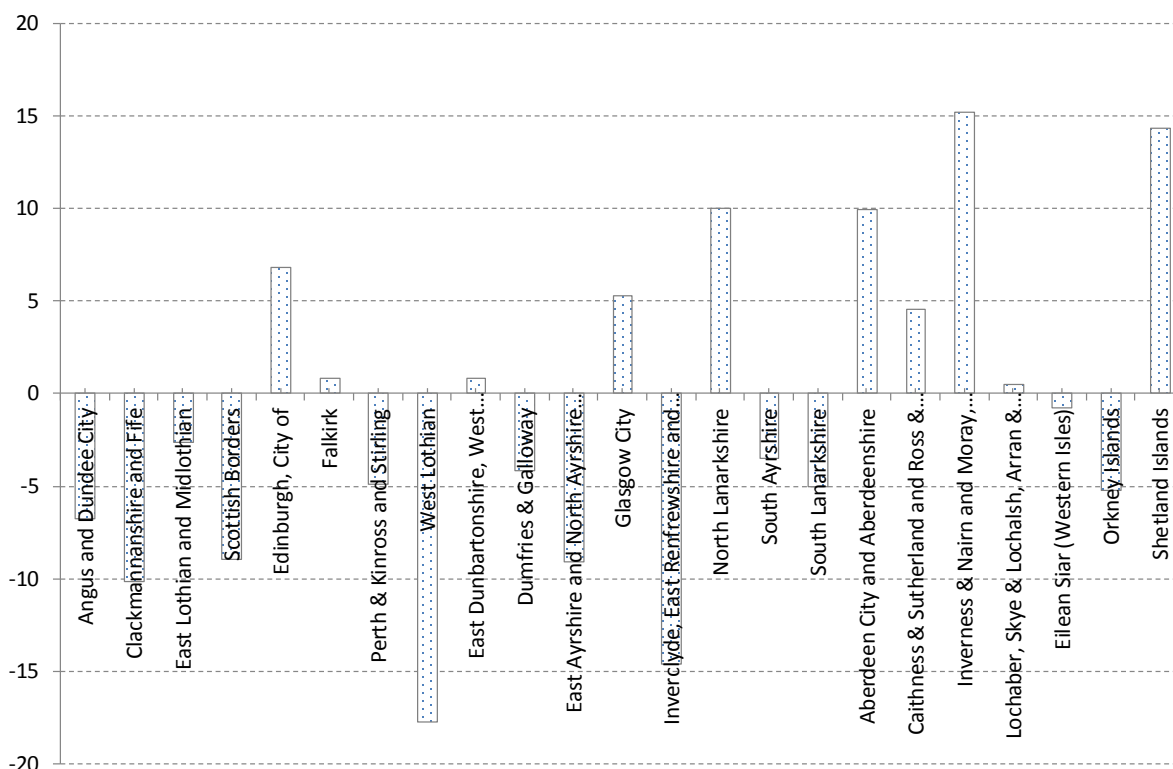
Figure 2 shows the level of GVA per head for each sub-region in 1997 and 2011. GVA is on a workplace basis, and so is earned where employees work, rather than where they live, while resident population figures for each sub-region are used to construct the per capita measures. What is striking is the sheer range of per capita economic outcomes across Scotland. As indicated earlier, the major city economies (Glasgow, Edinburgh and Aberdeen) dominate on this measure, with respective GVA per head measures in 2011 46%, 55% and 66% higher than the Scottish average. The lowest figures are found in the sub-regions of East Lothian and Midlothian (38% below the Scottish average for that year), East Ayrshire (37% below), East Dunbartonshire, West Dunbartonshire and Helensburgh and Lomond (36% below), Scottish

Borders (35% below) and Clackmannanshire and Fife (34% below). It might come as a surprise to some that no sub-region in the Highlands and Islands has a GVA per head more than 26% below the Scottish average.

Secondly, Figure 2 demonstrates the considerable persistence in sub-regions' relative economic position. No sub-region, for instance, has increased its GVA per head from below to above the Scottish average over this time period.

Figure 3, on the other hand shows the changes in sub-regions relative GVA per head figure (i.e. the percentage points difference between that regions GVA per head relative to the Scottish overall in 2011 minus the regions relative GVA per head in 1997). Positive values therefore indicate that the sub-region has improved on this measure between the start and end dates of these data.

Figure 3: Percentage points change in GVA per head for each sub-region relative to the overall Scotland average, 1997 and 2011



The results in Figure 3 show again the widening of economic outcomes across the sub-regions of Scotland over the period 1997-2011. The largest changes are seen in Inverness & Nairn and Moray, Badenoch and Strathspey (up 15 percentage points) and Shetland Islands (up 14 percentage points). What becomes striking from this chart is the relative increase in GVA per head of Edinburgh (up 7 points) and Falkirk (up 1 point) while all other “Eastern Scotland” sub-regions see a decline in GVA per head. In the West of Scotland, only Glasgow, North Lanarkshire and East Dunbartonshire see an increase while the other five sub-regions see a relative decline.

As Henley (2005) points out, however, commuting will affect the measured GDP per capita figures where the resident population is used as the denominator in this equation: “the published data are characterised by the feature that areas of high inward commuting and low resident population have significantly higher levels of GDP/GVA per capita than would be observed under a strictly residence-based definition” (p. 1249). This would not be a problem if each region identified a single travel-to-work area, and there was no commuting between regions.

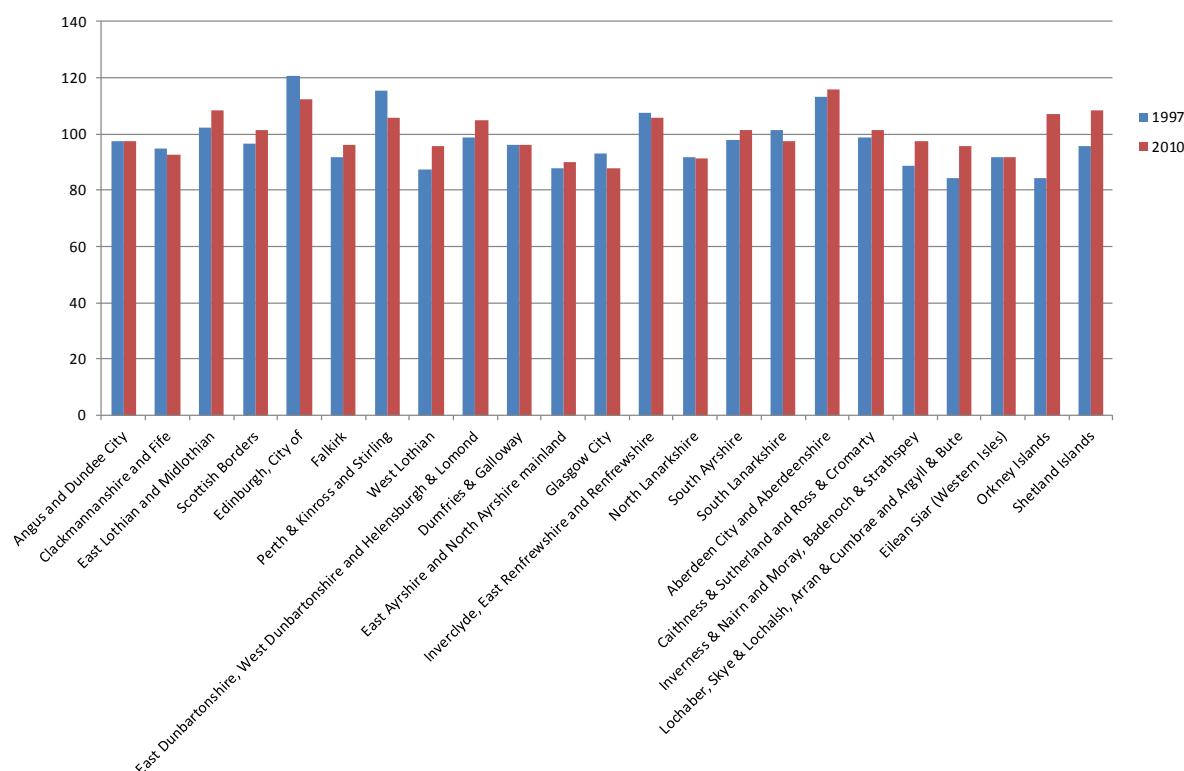
5. Income across the sub-regions

Of course, the Scottish economy is not distinctly separated into 23 separate labour markets, mapping to each of our sub-regions. In practice, there is extensive commuting activity between sub-regions, in particular from the areas around major cities. The most recent data for Scotland shows that for example, only 51% of those who work in Glasgow and 65% of those who work in Edinburgh actually reside in the city, with both having extensive commuting from neighbouring areas.

While economic activity has concentrated in the urban economies, commuting will mean that incomes earned in urban employment should be counted as accruing in the domestic sub-region. Of course, the measure of economic activity used earlier – GDP – is the sum of operating surplus and wage income. While there are no measures for operating surplus across the 23 regions of Scotland within the same dataset, we therefore examine household income alone. Of course, the income measure will include any such incomes accruing to households from operating surplus, for example through ownership profits, dividends, etc., as well as non-employment income such as (public and private) pensions and other transfers, such as welfare payments.

We can compare (current price) Gross Disposable Household Income (GDHI) across the same 23 sub-regions of Scotland. There are no price indices for the sub-regions, and so these differences do not necessarily represent differences in households' purchasing power. For ease of direct comparison to the earlier GDP per head figures (Figure 2), we show the figures relative to the Scottish average in 1997 and 2010.

Figure 4: GDHI per head by sub-region in 1997 and 2010 (Scotland = 100)



What is immediately clear from comparing Figure 2 and Figure 4 is the much more equal spread of income when compared to economic activity. No sub-region has an income per head figure which is further than 20% greater or lower than the Scottish figure. This contrasts significantly with the concentration seen earlier. Secondly, we can see that several regions in the “Highlands and islands” area of Scotland have made significant increases in their income per head over these years. GDHI per capita compared to the Scottish average in “Shetland Islands” and “Lochaber, Skye & Lochalsh, Arran and Cumbrae and Argyll

and Bute” has risen by over 10 percentage points over this period, while the largest rise was seen in Orkney Islands, increasing from 84 (Scotland=100) to 107 between 1997 and 2010.

What is surprising is that for the major cities of Glasgow and Edinburgh, income per capita of residents has actually fallen relative to the Scottish average between 1997 and 2008. The fall was of 9 percentage points for Edinburgh residents and 5 percentage points for Glasgow residents, relative to the Scottish average. Sub-regions neighbouring these cities have not seen such large reductions, perhaps suggesting that urban employment and suburban residence has become a growing phenomenon over this period.

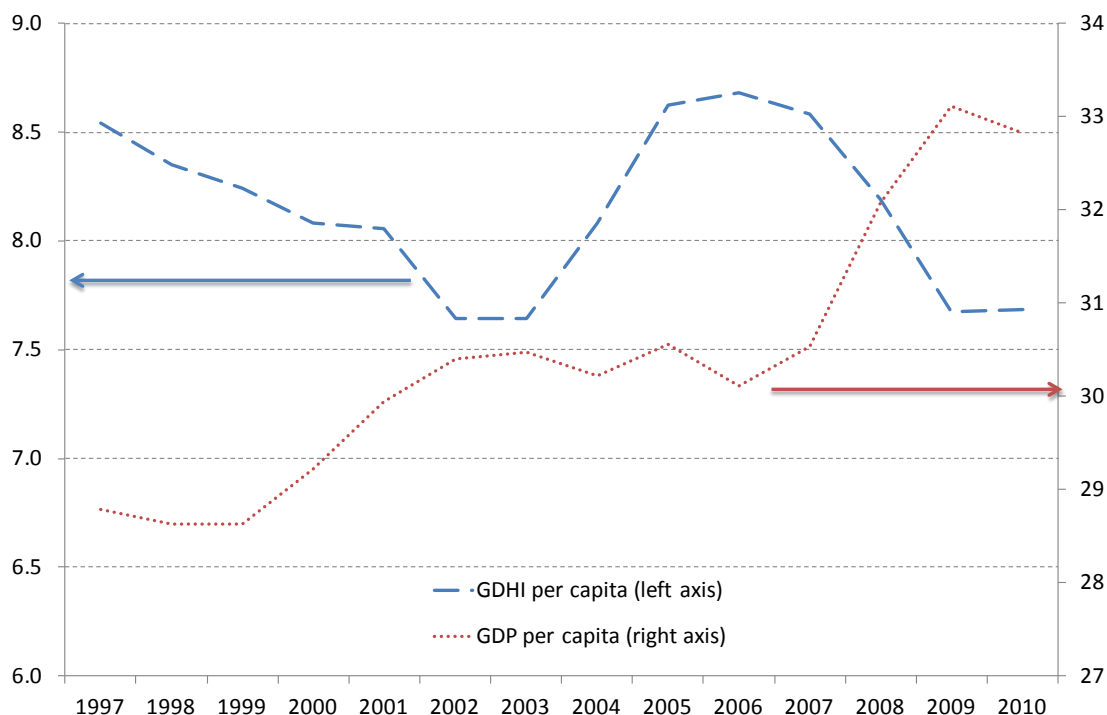
6. Spatial economic equality over time

We have argued in Sections 3 and 4, that there appears to have been increasing equalisation of household income across the sub-regions of Scotland, while economic activity has been increasingly concentration in the major cities. To confirm this, we should use a measure of dispersion which can be calculated over each year of the sample, rather than simply the start and end points. The EU used a “derived indicator” to show the dispersion of GDP per inhabitant across regions of each EU country (EU, 2012) for specific year, t . This measure takes into account the absolute difference between GDP per capita in each (sub) region, y_i , and the average GDP per head for the region/nation, Y , and the population size of the (sub) region, p_{it} , and the region/nation, P_t .

$$D_t = 100 \frac{1}{Y_t} \sum_{i=1}^n |y_{it} - Y_t| (p_{it} / P_t)$$

If GDP per head is equal across all regions, the value for D falls to zero, while higher values will be consistent with a more unequal distribution. For example, a value of 10% indicates that the (population weighted) average of GDP per capita varies from the national average by 10%. By tracing the level of this variable in each year we can see how sub-regional economic equality has evolved over the period of our data.

Figure 5: Dispersion index for GDP per capita and GDHI per capita, 1997 to 2010



The dispersion indexes for GDP per capita and GDHI per capita in each year between 1997 and 2010 are shown in Figure 5. Note that the dispersion index for GDP per capita is shown in the red (dotted) line, with the scale on the right axis, while the index for GDHI per capita is shown in the blue (dashed) line with the scale on the left axis.

Firstly, from the scale of each axis in Figure 5 we can see that the level of dispersion across the sub-regions for income (GDHI) per capita is much lower than for GDP per capita. As discussed above, this in part reflects the pattern of economic activity in specific regions of Scotland, including the major cities. In 2010, GDP per capita in each sub-region differs from the national average by an average of 32.8%, while income per capita in each sub-region is on average 7.7% different from the national average.

Secondly, both series have quite different trajectories over the sample period. GDP per capita has become considerably more unevenly distributed, increasing from 28.7% to 32.8% (and actually falling back from 33.1% in 2009). Much of the increase in the index for GDP per capita occurs in 2008 and 2009, after staying relatively stable between 2002 and 2007.

Finally, the GDHI per capita series appears to be consistent with the findings of Dewhurst (1998)'s earlier work looking at the GB counties. That earlier research found that richer (poorer) regions do better than poorer (richer) regions during times of strong (weak) national growth. In the period of strong Scottish growth between 2000 and 2007, the dispersion of GDHI per capita increased from 8.1% to 8.5% indicating a growing inequality of incomes. Since 2008 and during the stages of the Great Recession, the dispersion of GDHI per capita has reduced. Of course, this analysis is only a first attempt at understanding the scale of economic inequality in Scotland over this time period and further work would be required to pin down the precise nature of changing income equalities.

7. Conclusions

We have examined the economic performance of twenty-three sub-regions of Scotland between 1997 and 2010. These recently published data have allowed us to investigate changes in GDP and household income per head of population, as well as the changes in the level of activity in each sub-region compared to the Scottish growth rate.

We have found that the spatial concentration of economic activity has increased over the last fourteen years, reflecting a growing spatial economic inequality across sub-regions in Scotland. The growth in economic activity in the major cities of Scotland – Glasgow, Edinburgh and Aberdeen – has outperformed the Scottish economy as a whole over this period. 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. Such findings appear to be consistent with theories of cumulative causation of regional growth, where firms benefit from locating in urban areas through being able to take advantage of external economies, such as thick labour markets and being closer to larger product markets. Interestingly, over the period covered by data, the income per capita for *residents* of both Glasgow and Edinburgh relative to the Scottish average has actually fallen.

There has also been a widening over the last fourteen years of measured GVA per capita across the sub-regions of Scotland, although this does not take account of significant commuting patterns. Unlike measures of economic activity, the data suggest that the spatial equality of household income has actually improved between 1997 and 2010. Spatial equality in household per capita income appears to have slightly deteriorated between 2000 and 2007. Since 2008 however, income equality has improved, although the changes are relatively small. In the same period since 2008, equality of economic activity has sharply worsened.

The analysis in this paper suggests a number of areas for further research. First, it would be useful to understand more about whether the Scottish pattern of urban concentration of economic activity is replicated in other regions of the UK, and to what extent, if any, developments in Scotland are unique. Second, it would be revealing to explore how much of these observed sub-regional differences are the results of sectoral, demographic or other factors. To the extent that high-value service-sector activities, such as finance and business services, including IT, require access to pools of skilled talent, and benefit from proximity to the market for their products, then a sectoral explanation for concentration of activity in urban centres might be persuasive. Finally, and perhaps most importantly for policy, is the question of

whether concentration of activity in specific regions helps or hinders growth in Scotland, as a whole. There is persuasive evidence, including that by Professor Stiglitz of the Scottish Government's Fiscal Commission, that growing income inequality restricts economic growth and makes that less stable. Whether the same was true for spatial economic equality is an important issue for sub-regional government policy within Scotland.

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The technology company development journey – from concept to commercialisation

Iain Inglis, Scottish Enterprise
Kenny Richmond, Scottish Enterprise

Introduction

It is widely recognised that Scotland has competitive advantage in key areas of science and technology within its research and company base. However, the nation performs relatively poorly in terms of numbers of active entrepreneurs, business start-ups and creation of high-growth technology businesses within knowledge intensive industries. Scotland needs to rapidly commercialise those technologies where there is both a strong market opportunity and an ambition to create or grow a company of scale. The Scottish Government's Economic Strategy (Scottish Government, 2011) highlights the role that commercialisation can play in contributing to economic growth and Scottish Enterprise (SE) has built a clear strategic commitment to commercialisation: developing and investing in a number of initiatives and programmes to support the conversion of science and technology based ideas into products or services which deliver value to a particular market.

With the ambition of converting the country's wealth of research assets into economic assets, a better understanding of the mechanics and transitions by which technology based ideas are transformed into marketable goods and services across the 'concept to commercialisation' paradigm is key to improving success rates and economic benefits for Scotland. This paper sets out the key findings from primary research that gives a unique insight into the experience of 32 companies that have been supported by SE. The research evidence highlights the challenges involved in the commercialisation process and path to market for Scottish-based technology companies, whose origins may be existing technology businesses, university spin-outs or start-up companies, and is the first in-depth analysis of its kind in Scotland.

Commercialisation and economic growth

Policy makers have long recognised the contribution of commercialisation (defined as the conversion of ideas into successful commercial ventures) to economic growth and productivity improvement. Where technological innovation (most commonly comprising incremental change within existing industries) is critical to long-term economic growth, transformational economic growth can occur only with the introduction of truly new goods and services, i.e. radical technological innovations that disrupt markets and create new industries.

Few relationships are more broadly supported by both theory and empirical evidence than successfully exploited technological innovation and sustained economic growth; and yet until around 20 years ago economists focussed little on the process by which ideas are transformed into new products and services, or how new industries and sectors of economic activity are formed and develop.

While the process through which a scientific or technological idea with potential commercial value is successfully converted into marketable products and/or services is highly complex (a complexity catalysed more recently by rapid advances across scientific frontiers), understanding the concept-to-commercialisation transition is essential in the formulation of both business strategy and public policy.

"You can have the best technology in the world, but for successful commercial implementation the essential focus has to be delivering innovative, on-time and cost effective solutions the market requires"

*- Des Gibson, Chairman & CEO, Gas Sensing Solutions
(The Royal Society of Scotland: Science Scotland. Issue 12 Spring 2012)*

Looking at the nation’s assets, from a technology perspective Scotland’s research base has a good track record of producing outputs with global recognition. The Royal Society of Edinburgh (2012), however, highlight that Scotland has a less convincing record of ‘commercialising these at the speed and scale necessary to translate them into internationally compelling propositions’.

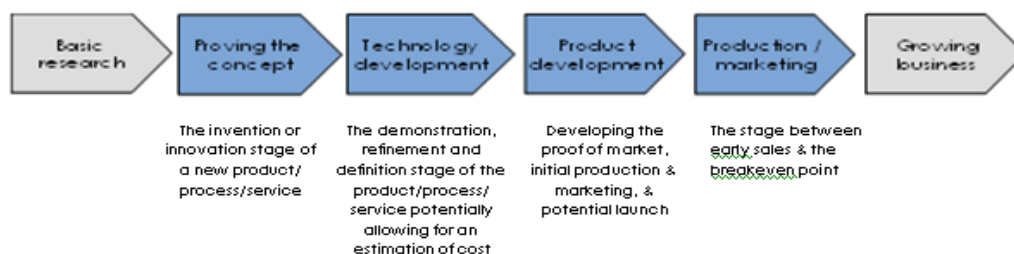
The commercialisation process

As part of the aim to improve Scotland’s commercialisation performance, SE undertook a strategic review of its commercialisation activity spanning the period 2004-2008 (SE, 2009). A follow-up review (via face-to-face interviews with 32 SE supported beneficiary companies over the period 2008 to 2011) was published in 2012 (SE, 2012) and identified a number of key findings in establishing critical success factors in the journey to successful commercialisation, including:

- the need to build strong commercially focussed management and leadership teams who can establish route to market early in the process and who show ambition to sell in to international markets;
- the importance of an outward looking perspective and the need to build strong competitive positions by establishing new connections and building relationships with universities, customers, competitors, as well as via widening supplier relationships; and
- the importance of access to finance when time to product launch is increasingly critical but where companies are taking longer to get to market and at greater cost; though successful companies are getting better at attracting new sources of finance and support from outside Scotland.

The research exercise adopted the ‘Branscomb Model’ (see Figure 1) as the framework for conceptualising the company ‘journey’, allowing a mapping of company development from ‘basic research’ through to a ‘growing business’ across four key stages (Branscomb and Auerswald, 2002). While it is recognised that this framework represents an idealised view of technology progression (i.e. in reality the journey is often neither a linear process nor easily phased), the model includes multiple parallel streams and iterative loops making the approach a readily understood concept with which to engage businesses.

Figure 1: The Branscomb Model



The characteristics of the survey sample, according to technology development stage and trading position at the time of interview, are summarised in Table 1 below:

Table 1: Company characteristics

Company Characteristics		Branscomb Stage	
Sample size	32	Proving the Concept	3%
Origin	44% spin outs	Technology Development	22%
Status	91% limited company	Product Development	22%
Sector	44% enabling technology* 41% life sciences	Production/Marketing	31%
Trading status	34% pre-revenue	Growing Business	22%

* defined as technologies that can be applied across more than one sector, such as electronics, high-value manufacturing, advanced materials, digital technologies, photonics and sensors, etc.

In an attempt to better understand this complex and important area of government policy, the remainder of this paper draws on the research study findings and outlines the key enablers and blockers to successful commercialisation, considers policy implications and identifies future research activity.

As the recession and anaemic recovery has taken its toll businesses are taking longer to get to market, are finding time to product launch becoming more critical and that it is costing more, though they are getting better at attracting new sources of finance and support from outside Scotland

Development time to get to market is lengthening

A common difficulty cited by companies across each of the development stages was 'time to completion', with the evidence suggesting it is now taking an average of 5 years (60 months) to get to market from the initial 'proving of concept', 4-5 months longer than the sample of companies were reporting pre-recession. These findings mirror the company experience across other economies, with the time taken for a company to go from initial investment to IPO lengthening around the world since 2000, correlating strongly with conditions in the wider macro economy: the average time to flotation during the highs of the dotcom boom was around 3 years before increasing to 5-6 years in the aftermath of the dot com crash and lengthening further to historic average highs of 7+ years (NESTA, 2010).

From a sectoral perspective, as would be expected, companies in the 'enabling technology' field were slightly quicker through all commercialisation stages than those in 'life sciences', due to the less human-focussed element and the need for regulatory approval. This is similar to findings of other research studies (Nesta, 2010). When disaggregating the results by business origin, spin-outs indicated a shorter 'product development' stage (9 months vs 13 months across the sample), possibly due to the amount of early-stage development that occurs within a spin-out prior to company launch.

Current challenges facing companies affecting stage length are, in order of importance:

- difficulty in raising finance (which is having a negative effect on cash flow, and, therefore, product/service development timescales, and while equity finance is accessible it is taking time to negotiate);
- commercial skills gaps (specifically during 'product development' and 'production/marketing' stages which acts to slow down products getting to market and in some cases resulting in staggered product launch);
- technical uncertainty (increasing duration of the 'product development' stage);
- technology skills gaps (increasing duration of early stage 'technology development' and 'product development' stages);
- sales cycles taking longer than anticipated (mainly via establishing the sales process and setting up distribution channels);
- regulatory approval taking longer than anticipated; and
- difficulty in finding partners/collaborators to support product development.

And as a result it is costing more

An increase in stage length is negatively affecting a number of companies who are either running out of money or having to spend more time than the pre-recession sample sourcing investment to the detriment of other business priorities. It is encouraging, however, to note that the companies appear to be raising the finance required (even if they are working harder for it and it is taking longer to source) suggesting well developed investor-ready propositions.

From an absolute perspective, companies are needing more money to get to market and are funding this in various ways: median costs are indicated to have risen by around 20% to £920,000 since the financial crisis, though it is acknowledged this finding is influenced by the mix of sectors supported (the sample contains a number of life science companies and spin-outs that have the potential to achieve a scale of impact but which require higher development costs).

Disaggregating the proportion of expenditure by the respective development stages highlights clear peaks at the 'product development' and 'growing business' stages: at 6%, 16%, 34%, 7%, 37%. Sitting behind

these averages is clear industry variation, e.g. technology development costs for software businesses is close to nil versus around 13% for the bio-pharmaceutical industry.

In terms of use of funding, typically around 60% of expenditure goes to labour input vs 40% for development and running costs. Comparing to studies undertaken in other geographies (Booz Allen Hamilton, 2003; Auerswald et al, 2005), the proportion of expenditure at 'product development' by these Scottish companies is a significantly lower proportion, indicating a better balance across the stages and a likely ability to use resources more efficiently, a valuable skill in today's business environment. The downside to this, however, is the 'drip-feed' nature of early-stage funding for potential high-growth businesses means they often find themselves in the resource consuming process of actively seeking the next capital injection which is to the detriment of the development of the business itself.

With companies funding finance requirements in a variety of ways with public sector support remaining crucial and with sources beyond Scotland being accessed

A wealth of research highlights the complexity and scale of the financial architecture required to support the journey to commercialisation, particularly those engaging in novel applications that are inherently risky ventures for potential investors (see for example Technology Strategy Board, 2011). As a result of the changing financial climate, and the associated increased costs involved in securing funding, companies are using a different mix of investment and sources of finance to develop and grow.

In terms of scale, early-stage technology companies often require large up-front capital injections with regular follow-on tranches of investment. On account of holding intangible assets rather than tangible collateral, and with a likely lengthy lead time to revenue generation, finance is typically hard to obtain from conventional debt financing sources.

The champions of early-stage technology projects identified as part of this research are making use of a wide variety of funding options such as angel networks and venture capital finance. Further, as funding tightens across the domestic public sector, successful companies are seeking support beyond Scotland to UK and European sources, via for example the Technology Strategy Board (TSB), the Department for Business, Innovation and Skills (BIS), the Department for Energy and Climate Change (DECC), the National Institute for Health (NIH) and the NHS in order to help fill funding gaps.

The importance of public sector investment (which acts to provide direct support and help create the necessary conditions to attract private investment) can be seen in the mix of funding available such as co-investment with private funds (both venture capital and angel financing) and the uptake of 'bridging' funding vehicles to facilitate external private investments in early-stage businesses. Other research has highlighted that whereas public funds hardly featured during the dotcom era, they now they participate in around 40% of all venture capital deals and 55% of all early-stage deals (NESTA, 2010).

Figure 2 sets out the mix of investment and finance sources used to grow and develop the SE supported businesses, disaggregating total financial contribution by source and distribution of spend according to Branscomb stage and with the majority of spend denoted within the shaded areas. From this it is clear that:

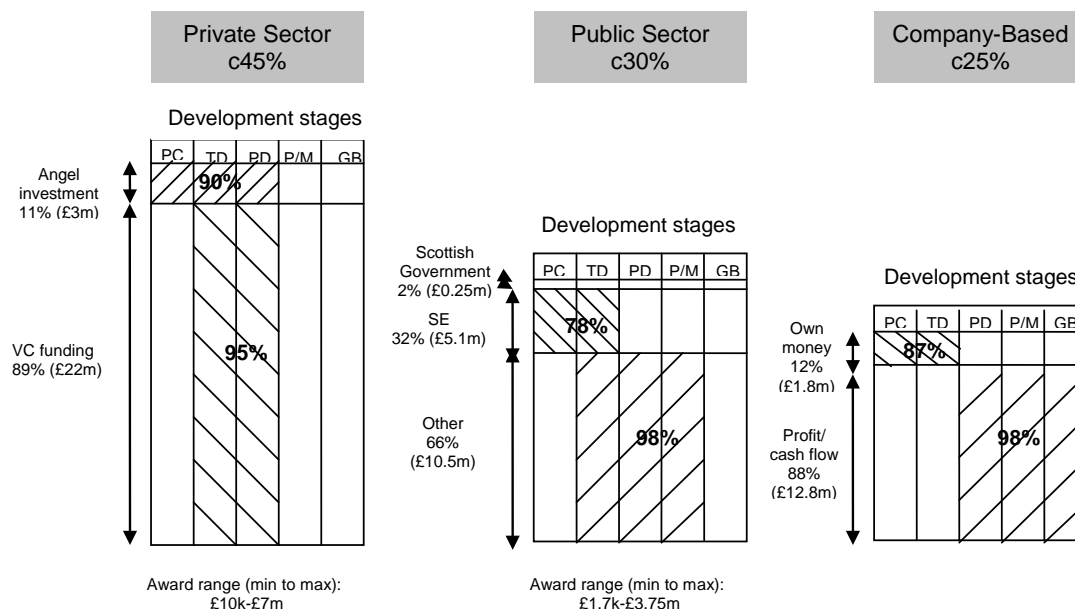
- *private (equity) sector* investment – contributed around 45% across the stages. At any point 45%-70% of businesses are using this type of funding, peaking at the 'product development' stage
 - more life sciences than enabling technologies companies accessed private investment, possibly explained by the higher development costs associated with life science activity
 - spin-out companies accessed less private finance at early-stages of development than non-spin outs, but on reaching 'production/marketing' this situation reversed, possibly because of the earlier support within a university environment and comparatively low running costs when located within a university;
- *public sector* support contributed around 30% of total funding requirements with the majority of monies accessed at an early stage. While often unmatched by private sector funding during the 'proving the concept' stage, by early stage 'technology development' public sector funding becomes 100% match funded (60% by the private sector and 40% with

company/own money). Around 90% of businesses access public sector funding by the 'technology development' stage;

- the proportion of *company own finance* reinvested in the business, at close to 25%, increases as companies move towards the 'growing business' stage as they begin generating sales, undertaking contract work and generating income from licenses;
- companies are funding future plans from their *own cash* at the early stages of the development journey, used by around 60% of businesses during the 'proving the concept' stage', which falls to around 1 in 8 of businesses by the 'growing business' stage;
- no companies in the sample accessed *bank* funding with many having been turned down for general bank finance.

Despite the increased cost requirements highlighted earlier, the effects of the financial climate and the resulting changing focus of risk capital markets, the key message from this research is that in spite of the difficulty experienced in raising funding and the resource-intensive nature of doing so, SE supported businesses are developing sufficiently attractive investor-ready propositions and that funding requirements are being met.

Figure 2: disaggregation of overall financial contribution to project funding



Companies are building strong management and leadership teams, focussing on their human capital in order to address key skills gaps and identifying route(s)-to-market early in the process

The research highlighted a series of inter-connected critical success factors that include:

- *management team experience*: requiring individuals with a track record of product development, planning for success and successful execution of commercialisation plans in order to plot a course through the development process and anticipate potential hurdles on the journey to market;
- *human capital & capability*: ensuring that the right stock of knowledge exists across the business to enable it to participate effectively in the marketplace;
- *market focus as opposed to technology focus*: focusing on route(s)-to-market from early-stage 'technology development' and the ability to execute early sales which gives both credibility to the company and confidence to the sales team.

The role of effective leadership

Developing investor-ready propositions at the earliest stage is a key component in the development of a successful technology business, where chances of success are closely correlated to the commercial experience of the management team. An increased commercial focus ensures the ability to build a stronger competitive position by identifying company priorities, assessing capabilities, defining potential performance gaps and determining investment requirements at the earliest stage. The ability to recognise the importance of identifying route-to-market and the value of export markets from the outset ensures positioning of the business to overcome the hurdles to be faced and sets it on the course towards successful product/service exploitation.

Expansion of leadership teams and/or teams with improved capability is a key theme, with the sample of companies clearly focussing on management team capability at an early stage (80% of management teams have a track record of starting businesses and 40% of businesses are committed to formal training to strengthen skills and fill gaps, such as understanding of intellectual property, marketing, market research and sales).

University spin-outs were more likely to undertake management training (around 95%) compared to start-ups (around 75%). A higher proportion of spin-outs also sought support to build their management team (circa 40% compared to circa 25%). This greater need for training and support in spin-outs businesses allies with the perception that the majority of senior management teams originate from a non-commercial background. The high level of training is evidence of progressive, learning organisations that understand this need and are acting to create sustainable businesses.

Stock of human capital

Human capital reflects a large part of the stock of knowledge and capability within a business (defined as the knowledge, skills, behaviours and commitment of employees), and is a key input to innovation, where skill levels are often used as a measure of the quality of labour input. Acting as one dimension of a firm's intangible assets, these elements are key differentiators in building the organisational capability that supports execution of the commercialisation plan (Robinson and Sexton, 1994). The Technology Strategy Board (2010) asserts that a diverse range of skills 'from market analysis to technology development, and from intellectual property management to business modelling' are required, but that it is inherently difficult for businesses developing disruptive technologies to appoint an experienced workforce with these associated skills.

Across the development stages, the research identified a number of key themes:

- skills barriers peaked during 'production/marketing' with 60% of companies citing barriers/shortages, with barriers also at the 'product development' and 'growing business' stages acting as a brake and contributing to increased stage length;
- technology skills gaps are evident during early stage 'technology development' and the 'product development' stage, while sales and marketing skills gaps are also recognised throughout the development process, peaking at the 'product development' and 'production/marketing' stages and again acting to slow the time it takes for products to get to market;
- the use of private sector consultants to fill skills gaps across all stages is used widely, peaking at 45% of businesses at the 'production marketing' stage and 40% during the 'growing business' stage.

Examples of specific skills gaps cited include:

- sufficiently experienced and skilled design engineers or lead scientists (affecting all development stages);
- engineering graduates with industry/practical experience;
- graduates with good technical skills; and
- sales, marketing and business development skills (cited from early in the development cycle, often as early as 'technology development').

In the short term, as businesses progress to develop a portfolio of products/services, gaps may remain through companies having insufficient finance to recruit the right calibre of individual full-time or being

unable to source personnel within the product development timescales. The expansion of business and technical networks, and specifically the increased links with universities, has the potential to minimise such gaps. Further, in the medium-to-longer term, businesses stated that they expected commercial skills gaps to narrow.

Early market focus

There is clear evidence from the research that companies are focusing on understanding preferred route(s)-to-market at an early stage in company development. Developing a clear route to market is essential for the commercialisation of any new product/service and is identified as a key element in the ecosystem for successful businesses, whether the most complex and expensive 'develop, manufacture, sell' option or lower-cost, lower-risk licensing agreements or distribution partnerships. It is a complicated, resource intensive process to set up and get right requiring an understanding of the hurdles to be overcome, such as barriers to entry and growth opportunities in target markets, patenting costs, regulatory compliance and national/regional procurement regulations. Selling a product directly to the market requires appropriate skills in branding, design and marketing, while selling in overseas markets requires additional patent protection as well as an understanding of export and distribution costs.

A high proportion of companies surveyed cited engagement with Scottish Development International (SDI) from an early stage. This aligns with the idea of an earlier market focus, and in particular export market development, where companies were using SDI for trade missions, exploring the market and helping develop future distribution channels.

An increased focus on accessing overseas markets highlights improved strategic thinking. The benefits of exporting to a wide range of markets (commonly) include a greater probability of survival and financial performance, as well as enabling companies to specialise in areas of relative strength, become more efficient, increase productivity, increase innovation intensity and reduce market risk by diversifying their customer base. During the 'growing business' phase 80% of businesses reported export sales as a key objective, to be achieved via joint venture or distribution arrangements and with over 80% of revenues projected to be generated by export sales by 2016.

Companies are building strong competitive positions and are outward looking in their perspective

As the mechanics of innovation and commercialisation become better understood, it is clear they rarely occur in isolation but rather reflect a highly interactive and multidisciplinary practice undertaken by a growing a diverse network of actors (OECD, 2010).

Access to complementary sources of knowledge acquisition act to offset elements of uncertainty and/or lack of in-house capability while catalysing the potential to create radically new products/services (Marvel, 2012). The research reveals that the SE supported companies are outward looking and building a strong competitive position at an early stage in the development process.

Successful commercialisation often requires the ability to co-operate effectively with other key actors, whether informal in nature (via networks) or through formal contracting. Actors include both the private sector (with companies as suppliers, customers, competitors and consultants) and the public sector (incorporating universities, government research institutions, funding agencies, etc).

Wider evidence highlights that as the complexity and costs of technology driven innovation increase, more businesses are using partnerships to help to reduce lead times and increase market responsiveness. More businesses are also now collaborating in areas of non-technical innovation in order to expand the pool of innovative ideas they have access to and widen the scope of expertise on their innovation projects.

The research highlights a group of companies who recognise the importance of collaboration and open innovation with other businesses, universities and support providers. Key highlights from the research include:

- a high proportion of companies working with universities across development stages, for example circa 75% during the 'proving the concept' and early stage 'Technology Development' stages; and
- recognition that where companies faced difficulty in making connection with customers until late in the development process this often resulted in costly and time consuming product re-engineering.

Lessons for policy support

As discussed, a number of significant barriers to successful execution of business plans have emerged from the research exercise, a number of which have a distinct policy focus. Public sector assistance (particularly from SE) is viewed by all the supported companies as contributing to successful development suggesting future, targeted policy intervention is not only valid but welcome. Building on SE's approach to commercialisation, further policy development activity has focussed in the following areas: *lack of finance* (specifically ways to try and address the gap of getting significant - £1m plus -investment into companies) and *acceleration of project timing*, where targeted responses include:

- trialling the potential use of new powers for Young Innovative Enterprises (offering aid of up to €1m to small enterprises less than six years old) to develop products/services/processes which are technologically new and carry a risk of technological or industrial failure;
- active engagement with SDI in promoting opportunities with non-Scottish investors; and
- activity by the Scottish Investment Bank to engage with investors based outside Scotland;

Other areas SE are exploring to improve future commercialisation outcomes include:

- promoting entrepreneurialism; and
- providing a more joined-up approach to SE's product support offering to help make the transition from pre-company formation support to company specific support more fluid and seamless and to enable this transition to happen at the optimal time point.

Conclusions

This research suggests that line-of-sight to market, time to product launch, access to finance and cost control, strength and depth of management and leadership teams, connectivity across the innovation system and both access to, and utilisation of, human capital are key factors faced by Scottish technology companies in the development of intellectual property, the transition to successful commercialisation of resulting new or improved products/services and in the execution of ambitious growth plans. These elements are all barriers an economic development agency can assist businesses to overcome. To this end, and in order to continue to develop a more complete understanding of this complex area, a programme of future research is planned centred around the longitudinal tracking of the company journey with the aim of complementing the growing evidence base from which to develop policy based practice.

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Free Personal Care for Older People: A Wider Perspective on Its Costs

David N.F. Bell, University of Stirling
Alasdair G. Rutherford, University of Stirling
Robert E. Wright (*) University of Strathclyde

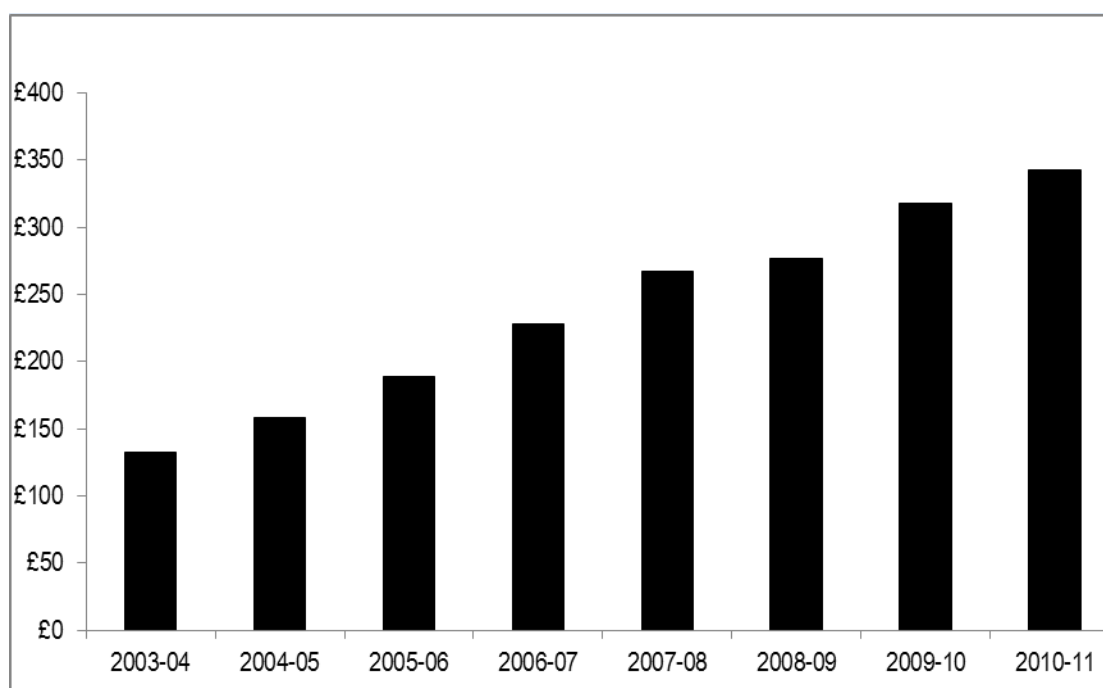
(*) Corresponding author: Department of Economics, University of Strathclyde, 130 Rottenrow, Glasgow, Scotland, G5 0TP, Tel: +44 07759628138, E-mail: r.e.wright@strath.ac.uk

Abstract: The paper comments on the so-called “Free Personal Care (FPC)” policy established in Scotland in 2002. FPC is the legal entitlement of people aged 65 and older, who have been assessed by the council as having personal care needs, to receive services that will assist them in their day-to-day activities. One view is that FPC may not be affordable in its current form because population ageing will increase dramatically the numbers eligible for assistance in the future. This paper discusses ways in which FPC may actually lower the total per-person cost of accommodating Scotland’s ageing population.

Introduction

The *Community Care and Health Act 2002* established a policy of “Free Personal Care (FPC)” in Scotland. A similar policy does not exist in the other countries of the UK. FPC is the legal entitlement of people aged 65 and older, who have been assessed by the council as having personal care needs, to receive services that will assist them in their day-to-day activities. These services include assistance with personal hygiene, eating and drinking, immobility problems, management of medication and personal safety. In addition, various aids may be supplied free of charge by the council, if deemed necessary, to support a person’s health and well-being. The introduction of FPC was a radical change in long-term care policy in Scotland and a clear departure from the rest of the UK.

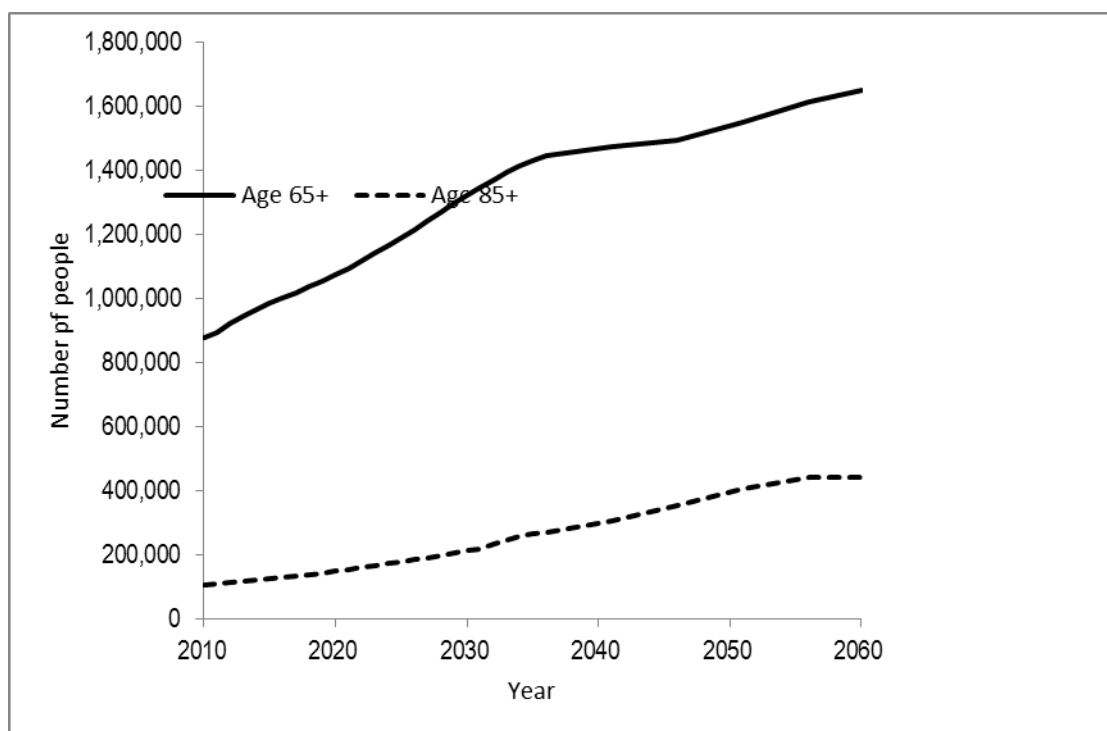
Figure 1 Total Expenditure on Personal Care Services at Home, Scotland, 2003-4 to 2010-11 (£millions)



Source: Scottish Government (2012a)

It has also proven to be a popular policy, with the number of people receiving care services growing considerably since its introduction (see Bell and Bowes, 2012). It is not surprising therefore that the amount of money spent on FPC has also increased. The scale of this increase is shown in Figure 1, which indicates that expenditure on personal care services at home increased from £133 million in 2003-04 to £342 million in 2010-11 (Scottish Government, 2012). This represents an increase of almost 160 per cent. In the same period, the number of people aged 65+ (those eligible for FPC) increased by around 9.2 per cent (Scottish Government, 2012b). Given the differences in these two changes, it is not surprising that the expenditure per-person aged 65+ has increased by about £146 in 2003-04 to £345 per head in 2010-11 (Figure 2). This supports an expenditure/population aged 65+ elasticity of +10.5!

Figure 2 Population Aged 65+ and 85+ Scotland, 2010-2060

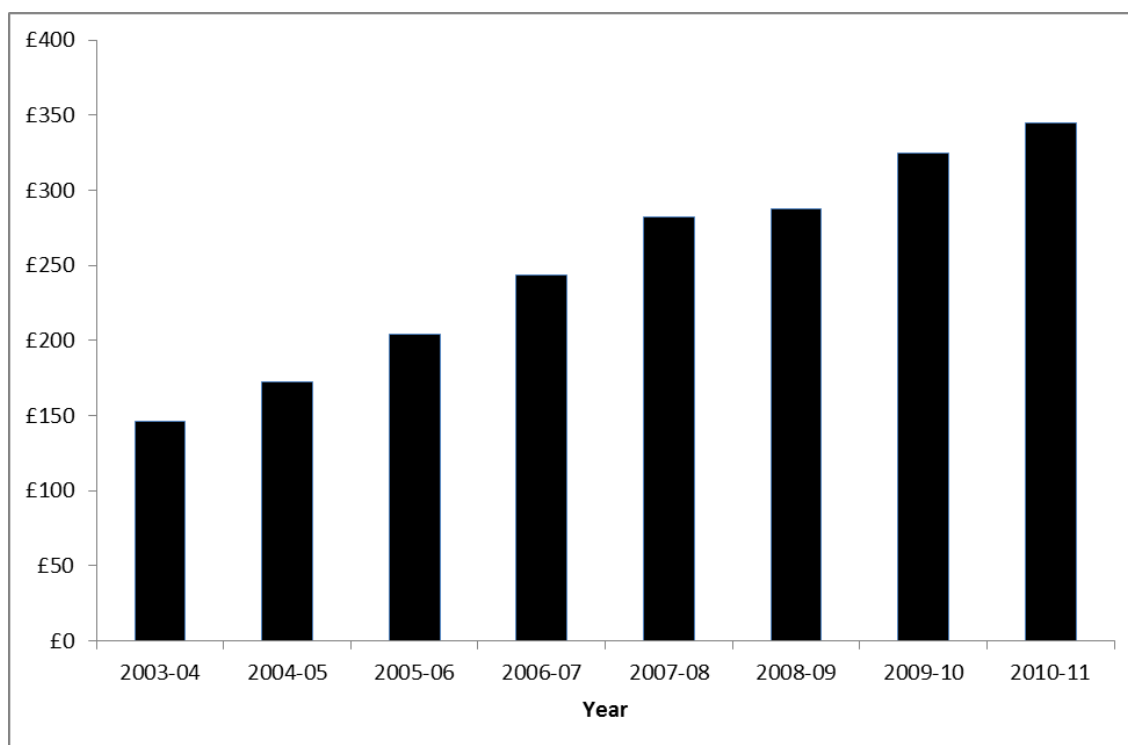


Source: Scottish Government (2011)

The large increase in the cost of FPC has led for some to argue that it may not be affordable in current form because population ageing will increase dramatically the numbers eligible for assistance in the future. The scale of this increase is shown in Figure 3. This figure shows the expected increase in numbers of people aged 65+ and 85+ up until 2060, based on the most recent set of “official” population projections (Scottish Government, 2011). The projections suggest the numbers aged 65+ will likely double and the numbers aged 85+ will likely triple over the next five decades. When the expected growth in the numbers eligible is combined with the past growth in expenditure per head, it is not difficult to conclude that the policy will not be viable in the future.

This conclusion is short-sighted—if not incorrect—since it fails to consider expenditure on FPC relative to the expected total expenditure needed to accommodate the ageing population. By “accommodate” we mean ensure that there is not a large reduction in the average standard of living of older people in the future. In this respect, FPC may lower the “total” per-person cost of accommodating the ageing population. That is, total government expenditure may be lower with the policy in place compared to its absence. FPC is not necessarily cheaper than private home care, but instead this assumes that individuals with lower wealth would switch to subsidised residential care if faced with having to pay for home care. However, we are under no illusion that FPC will make doing so “cheap”. In addition, it is no guarantee against average standard of living reductions in the future. There is no “quick fix” way to pay for an ageing population.

Figure 3 Total Expenditure on Personal Care Services at Home Per Person Aged 65+, Scotland, 2003-4 to 2010-11 (£)



Source Scottish Government (2012a, 2012b)

Substitutability of Different Types of Care

In Scotland, like most high-income countries, long-term care is provided in a variety of different residential settings. The cost of long-term care is shared between the public and private sectors. For our purposes, it is helpful to simplify reality and focus on two main residential settings. The first is the individual's "own home". The second is some form of "care home". By "care home" we mean any private or public institution that provides the level of support needed. Care homes differ considerably in the level of support offered. It is useful to think in terms of the care on offer ranging from "low" to "high" in terms of both time devoted to and cost of caring. One example is a "nursing home" that provides hotel, personal care and medical care services for individuals with dementia or low levels of physical mobility. A second example is "sheltered accommodation" where the support is often only the security and monitoring of a group of rented flats or small houses. A third example is a geriatric long-stay wing in an NHS Scotland hospital.

One of the outcomes of FPC is that it increases the duration an individual is able to live in their own home. Since there is a strong desire from people to live in their own home as long as possible, FPC has the additional advantage of providing people with what they want. Without such services, living "at home" might not be feasible. Economic theory suggests that there will be a certain amount of substitutability between different types of care. Despite this, to date there has been no rigorous empirical research aimed at estimating the degree of substitutability. This seems remarkable since the abolition of FPC may increase the numbers living in care homes. A share of individuals who are unable to remain in their own home without the type of services offered by FPC would move into care homes. The size of this share is a total unknown.

It is important to note that care homes are not "free to all" in Scotland. Individuals with property asset and savings above a minimum (currently £25,000) are required to self-fund their residential care. Such individuals would have an incentive to remain in their own homes even if FPC was withdrawn. It is only those with no property or savings that would find residential care to be "free" and so preferable to privately buying home care. Regardless, the cost to the government is much higher in the care home setting compared to the own-home setting on a "per-head" basis. In our view there has not yet been a careful

study of how large the cost difference to the tax-payer is between the two care settings. However, all estimates we have seen suggest that it is sizeable.

FPC has likely affected the so-called “balance of care” in Scotland. It is government policy to provide a wide range of social, medical and care services outside the institutional setting. It has caused significant organisational changes in the way in which health and social care provision is delivered. That is, changes have likely occurred as a consequence of FPC and not through direct legislation. A key example is the switch in emphasis from hospitals and residential care to “care at home”. This does not imply that hospital and nursing homes are direct substitutes for home care. However, residential care and home care are, at least partially, substitutable. Indirect evidence consistent with this shift includes: (1) the number of “occupied geriatric long stay beds” decreased by 39% between the period 2003 and 2008; (2) The number of “long stay residents aged 65+ supported in care homes” decreased by 4% between 2002/3 and 2009/10; and (3) the number of “NHS delayed discharges within the six week discharge planning period” decreased by 93.2 % between January, 2001 and October, 2010. Further examples can be found in Bell and Bowes (2012). As mentioned above, the population has continued to age in this period so one might expect growth—and not decline—in such indicators. Based on this evidence, it is not unreasonable to hypothesise that FPC has been associated with a shift away from more expensive types of institutional care.

Care Supplied by Family Members

What is noticeable lacking in the discussion above is the role that family members play in providing care. Table 1 presents some estimated care rates calculated from various years of the *BHPS: British Household Panel Survey* (Taylor et al., 2010). It is worth stressing that Scotland, unlike England, Ireland and Northern Ireland (and most other high-income countries), does not have a longitudinal survey of ageing. Therefore, there is no high quality longitudinal data relating to the amount of care provided by family members and care rates must be pieced together from various less than ideal sources (such as the BHPS).

Table 1 Unconditional Care Rates: Percentage Receiving and Providing Care, Scotland

Age Group:	65-74	75-84	85+	65+
(A) Receives care from inside the household from family member (N=3,369)	8.3%	12.9%	17.4%	11.0%
(B) Receives care from outside the household from children (N=1,012)	39.1%	43.1%	36.1%	40.4%
(C) Receives formal care (N=3,369)	6.1%	15.7%	33.8%	12.7%
(D) Provides informal care (N=3,369)	21.7%	17.6%	5.5%	18.5%
<i>Notes: Care inside the household is estimated from British Household Panel Study data 1991 to 2008 for Scotland. Care outside the household is estimated from BHPS data 2001, 2002 and 2006 for Scotland when a question about help from children was asked. Population percentages are shown, with observations weighted using the BHPS longitudinal population weights.</i>				

Table 1 reports what can be termed the “unconditional” care rates broken down into three age groups estimated from the BHPS. The care rates are simply the percentage receiving care from family members such as a spouse, sibling or children. The data suggest that 12.7% of people aged 65+ receive some form of formal care (either FPC or paid for privately) compared to 40.4% who receive care from children not living with them. In addition, 11.0% receive care from another family member living with them. What is clear from these estimates is that family members contribute a considerable amount of care. These estimates however are simply participation rates and not a measure of the quantity or quality of care provided (e.g. hours spent per week providing care, number of visits per or type of provided). There is a commonly held view that family members provide “more care” than “the state” in Scotland based on participation rates of the type we measure. However, if state care is covers more intensive tasks then the state could be providing forms of care not readily available from unpaid carers.

Table 2 reports what can be termed the “conditional” care rates, and selected demographic characteristics, of older households broken down by age group. They are “conditional” in the sense that they are based on the existence of family members of a certain type (e.g. children). The table highlights the role played by spouses in providing care. However, the number of households with spouse present decreases dramatically with age, with almost three-quarters of those households containing an individual aged 85+ being single person household (mainly women). The data suggest that 57.1% receive care from children not living with them. As a general remark, the estimates presented in Table 2 suggest even more strongly that family members—both living and not living with them—are important providers of care.

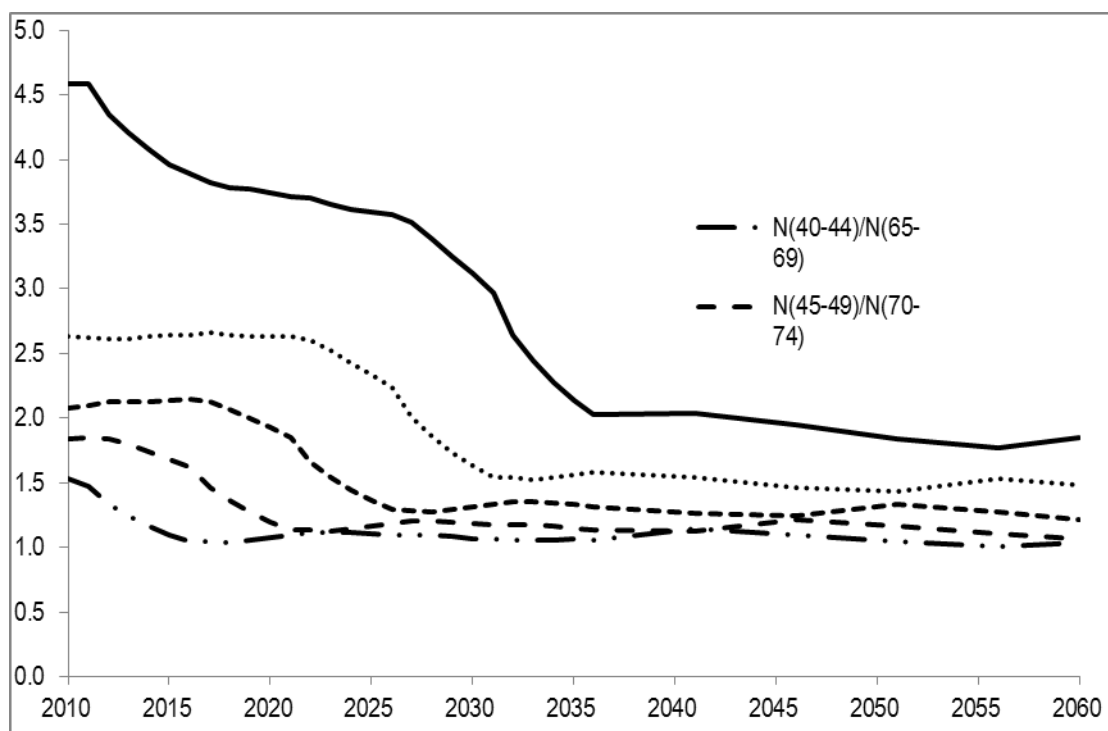
Table 2 Conditional Care Rates: Percentage Receiving Care, Scotland

Age Group:	65-74	75-84	85+	65+
Demographic characteristics				
Average household size	1.8	1.6	1.5	1.7
Per cent one-person households	29.3%	49.5%	73.1%	41.7%
Per cent living with spouse	65.5%	45.4%	11.1%	52.1%
Per cent living with children	6.7%	4.8%	14.7%	6.8%
Per cent living with siblings	1.3%	0.1%	0.0%	0.7%
Care rates				
(A) Receives care from inside the household from family member (N=1,905)	11.7%	25.5%	64.2%	18.8%
Spouse (N=1,719)	11.2%	23.1%	25.9%	15.6%
Children (N=218)	8.9%	28.2%	95.4%	33.4%
Sibling (N=17)	28.5%	--	--	32.5%
(B) Receives care from outside the household from children (N=1,012)	52.0%	63.9%	59.5%	57.1%
Personal care (N=744)	0.2%	2.3%	4.5%	1.4%
Housework (N=744)	17.9%	27.5%	40.0%	23.3%
<i>Notes: Care inside the household is estimated from British Household Panel Study data 1991 to 2008 for Scotland. Care outside the household is estimated from BHPS data 2001, 2002 and 2006 for Scotland when a question about help from children was asked. Population percentages are shown, with observations weighted using the BHPS longitudinal population weights.</i>				

Is it reasonable to assume that the significant care contributions that family members make (especially children) will continue into the future? This seems unlikely given demographic patterns. The baby boom generation is both a “large cohort” and “low fertility” generation. What this implies is the potential supply of “children as carers” will plummet. This demographically-determined outcome rarely enters the FPC debate but it is of central importance. Put rather dramatically, relative to the current cohorts of older people, the potential carers of the future were “never born”.

Figure 4 demonstrates the seriousness of this point. The figure shows various population ratios defined as the number of individuals in two age groups separated by 25 years based on the most recent set of population projections (Scottish Government, 2011). For example, the number of people aged 40-44 relative to the number of people age 65-69. In this exercise, we assume that the average age of childbearing is 25, although the average age of child-bearing has increased. Given this assumption, these figures can be thought of as “children-to-parent” ratios or as measures of cohort-specific measure of fertility. For our purposes they represent the maximum potential number of children who can provide care (supply) relative to the maximum number of parents who may need care (demand). As Figure 4 shows, regardless of the combination of age groups considered, the ratio is expected to plummet in the future. In the future there will simply be fewer adult children available to assist in the caring of their elderly parents. This suggests that FPC will become an even more important sources of care services in the future, since for an increasing number of people it will become the only option that will allow them to stay in their home.

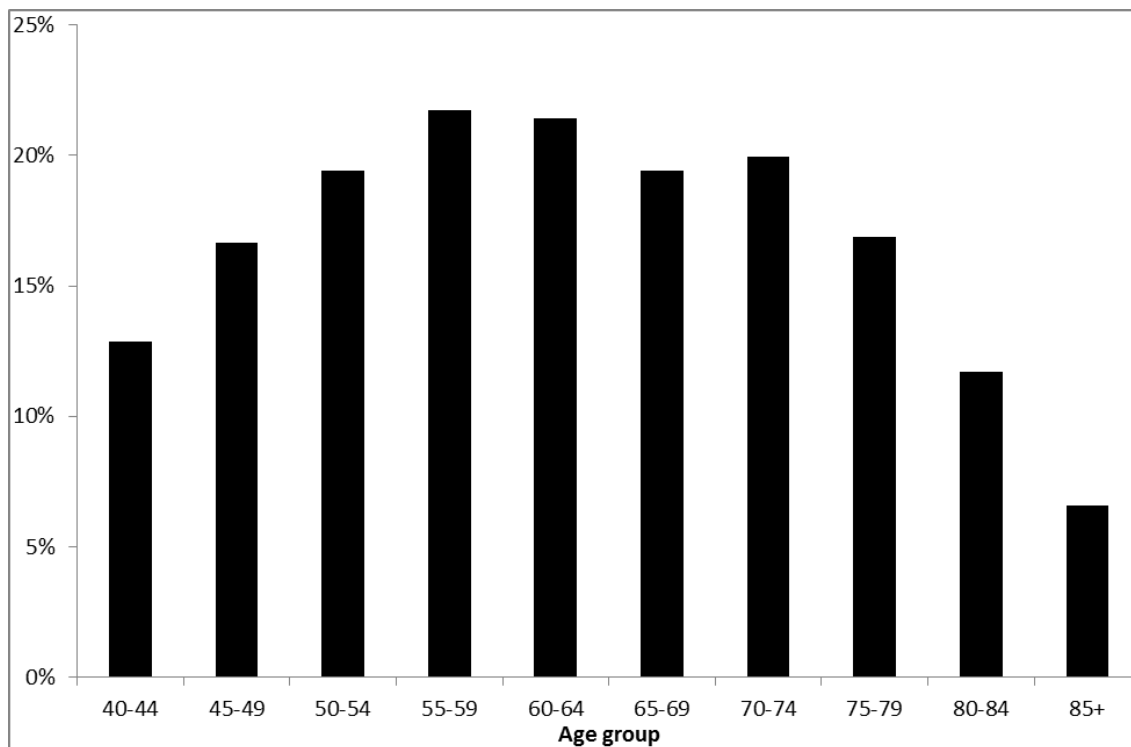
Figure 4 "Children-to-parents" Population Ratios Scotland, 2010-2060



Source: Scottish Government (2011)

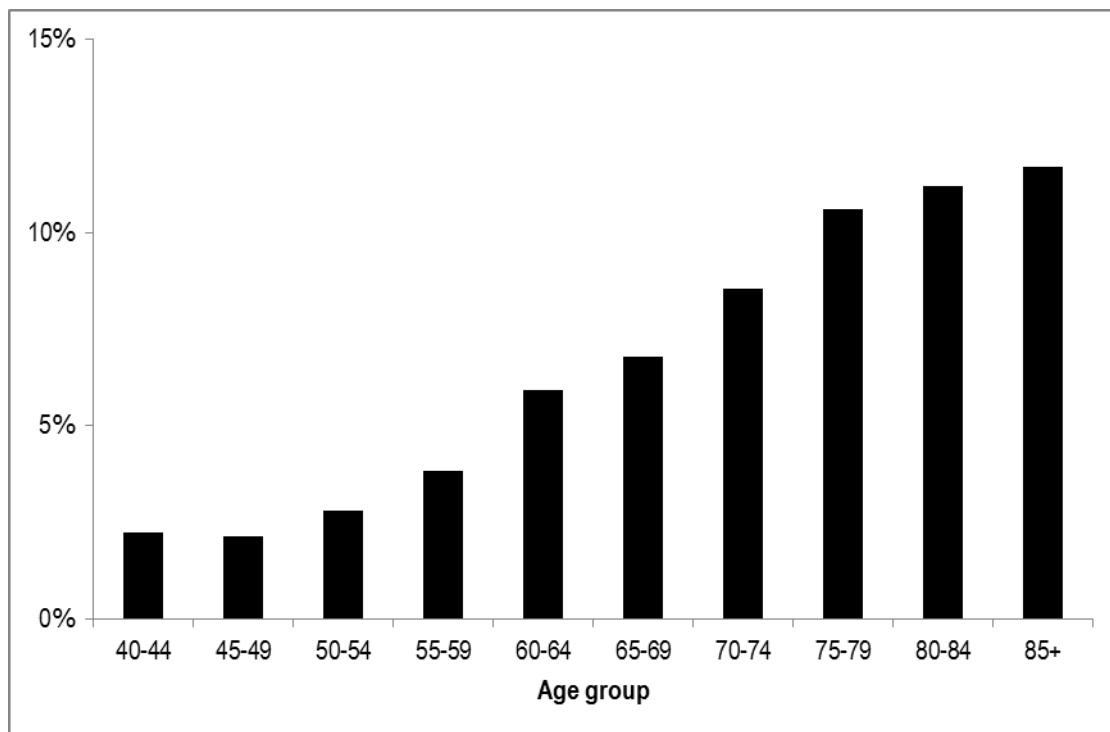
Figures 5 and 6 show the percentages providing and receiving care broken down by age for the UK as a whole, estimated with data from the BHPS. There are simply too few cases in this dataset to generate the analogous Scotland-specific estimates. Figure 5 suggests that there is an inverted U-shaped relationship between age and care provision. The rate peaks in the age range “55 to 64” age range and then drops off considerably. On the other hand, as is suggested in Figure 6, there is a steep upwards sloping relationship between age and receiving care. We have no reason to believe that a similar set of relationships does not exist for Scotland. These figures are consistent with Figure 4, which shows that there is a switchover from those giving care to those receiving care around the age of 65. At this point, unpaid care from younger generations becomes more important.

Figure 5 Percentages Providing Care by Age Group, United Kingdom



Source: BHPS (various years)

Figure 6 Percentage Receiving Care by Age Group, United Kingdom



Source: BHPS (various years)

Concluding Comment

In its current configuration, Free Personal Care for older people is an expensive policy and will become even more expensive in the future as the Scottish population ages. However, this does not mean that it necessarily increases the per-head cost of accommodating the ageing population. It is also likely that if the policy was abolished, there would be a substitution towards more expensive forms of care such as care homes, hospitals and other institutions, at least amongst individuals incapable of self-funding their care. For many elderly Scots, moving into a more formal setting would be their only option. In addition, Scotland's demography is such that in the future there will be fewer adult children available to help care for their elderly parents. It is dangerous to assume that the significant amount of care provided by the current generation of adult children (i.e. the so-called "baby boom") will be replicated by the next generation of adult children (i.e. the so-called "baby bust").

This is not to say that the policy can't be made more cost effective. In fact this must be a priority. For example, this can be achieved by increasing efficiency through economies of scale in service production, competitive tendering in service provision and the privatisation of certain aspects of care delivery. Of course, pursuing such policies is quite controversial. There is a risk that quality of care may be sacrificed, so wellbeing of older people might not be maintained even if costs are driven down.

The overall cost of the policy could be reduced—perhaps substantially—by means-testing, which already takes place for care home funding. This will only be true if the overall cost increase of administering the means-testing is lower than the cost savings made by excluding those with higher levels of savings and/or wealth from the programme. In addition, costs will not be reduced (or reduced less than expected) if means-testing results in a substitution towards more expensive forms of institutional care. Removing the subsidy for home care, while still subsidising residential care, might cause some older people to switch between these forms of care. Both policies would have to be reviewed together. There is some evidence that means-testing increases stigma, which may lead to lower take-up rates, and consequently raises issues relating to fairness and equity.

Finally it is worth stressing that there is a clear preference amongst older people to remain in their homes as "long as possible". For many older people, the transition from their own home to an institution is not an easy one. FPC is a policy that has been instrumental in allowing older people to realise their preferences of living in an environment that is known to them, without causing a significant net increase in the overall costs of care provision when compared with alternative social care policies.

February 2013

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