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### **Notes to contributors**

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

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# Outlook and appraisal

## Overview

Scotland and the UK are lagging behind as the rest of Europe, Japan and the United States start to recover from recession. The UK remained in recession in the third quarter and it seems likely that will be the outcome for Scotland too. Consumer spending remains weak, which is in part a consequence of the internationally high levels of debt held by UK households before the recession and the impact of falling asset prices and lending restrictions. But in the UK there are a wide range of indicators that can be cited, which suggest that a recovery is now underway. There is a widespread expectation that the UK economy will come out of recession in the fourth quarter of this year exhibiting a small but positive growth rate. The situation in Scotland is more difficult to call.

The Scottish economy has contracted by slightly more than the UK over a shorter period. The evidence appears to suggest that the greater fall in Scottish GDP during the recession has been down to weaker service sector performance, principally financial services and real estate and business services. Recent surveys reveal rising expectations and an emerging recovery in Scottish manufacturing, but little sign in other sectors surveyed. Indications of recovery are weaker here than in many other UK regions. We therefore expect Scotland to emerge from recession in the fourth quarter, with likely growth around +0.2%, but less strongly than the rest of UK. And there remains a lower probability that the recession will not end in Scotland in the fourth quarter even though it does so in the UK economy as a whole.

It would be a mistake to conclude that the economy's troubles are over once growth resumes and the recession ends. The Scottish economy is likely currently to be at

least 8% below where its GDP would have been in the absence of recession. As long as this output gap persists there will be a deflationary dynamic in the economy as aggregate supply exceeds aggregate demand and unemployment is likely to continue to rise or remain high. Research by NIESR in London reveals that in previous UK recessions recovery to pre-recession output has never taken less than 40 months, or three and one-third years, and in the 1930s depression and the 1980s recession recovery took around 50 months or just over 4 years. Secondly, with the exception of the 1990-93 recession all of the previous recessions exhibited “double-dip” behaviour to varying degrees, with the second downturn occurring 18, 28 and 30 months after the initial pre-recession peak. While recovery in growth is emerging it will clearly be some time before pre-recession output, employment and unemployment levels are restored.

Domestic Scottish and UK consumer and investment demand may remain weak for some time as both households and firms seek to strengthen their balance sheets. The availability of sufficient bank credit to fully finance the recovery remains a source of continuing concern. The significant fiscal consolidation that is in prospect as the UK government seeks to reduce its deficit and stabilise, possibly reducing its debt position will serve to reduce domestic demand and spending. There are clear concerns that the fiscal consolidation might occur too soon before the necessary switching to export-based growth can be achieved. In addition, concerns have been raised that the volume of money pumped into the world economy through quantitative easing, historically low, almost zero, interest rates and a declining US dollar, are fuelling a bubble in (risky) asset values. The concern is that the bubble will burst affecting real incomes and spending when monetary policy is tightened again and when the value of dollar stabilises. This also raises the issue whether monetary authorities should be targeting asset price bubbles directly. For all these

reasons the prospect of a double-dip recession is therefore present.

We take the view that the Scottish recovery may be weaker than in the UK for several reasons. The bias in the structure of the Scottish economy towards the public sector – 22% of GVA against 18% in the UK – means that the base for expansion is smaller here. The anticipated fiscal consolidation could be greater and/or have a greater impact on activity in Scotland. More technically, purchasing linkages between activities in Scotland – and hence multipliers – tend to be lower than in the UK because the Scottish economy is smaller and more open. Direct increases in demand tend to ‘leak out’ more than at the UK level. This may be offset, though, if the Scottish economy enjoys a stronger export boost through its greater openness. But the increased exporting necessary to the recovery puts a premium on the performance of manufacturing. We remain concerned that Scottish manufacturing has the size, diversity and capability to take full advantage of a lower exchange rate and the recovery of global demand. If Scottish households seek to recover their net asset position by more than their UK counterparts then recovery will, other things equal, be weaker here. Finally, if the two main Scottish banks, key beneficiaries of taxpayer funded support, are less willing to lend because of the need to rebuild their balance sheets to stabilise and raise their share price, then the Scottish economy may recover more slowly for this reason.

Against this background our central forecast is for a decline in GDP/GVA of -5% this year. Compared with the Treasury’s average of new forecasts for the UK, we are now forecasting that the Scottish economy will perform less strongly than the UK in 2009 on all three scenarios. Our forecasts for 2010, 2011 and 2012 represent an improvement on our June position reflecting the evidence of stronger global recovery, albeit with the UK lagging. By 2011, household spending will be rising again and

will strengthen further in 2012, as do exports with investment also increasing from 2011. But we are forecasting large annual reductions in government spending from 2011. For these reasons growth rises to 1.1% and 1.6% in 2011 and 2012 but remains below trend. It is also worth noting that in 2010 in our central scenario we are allowing for one quarter of negative growth reflecting the headwinds buffeting the economy that we noted above. In the low growth scenario these headwinds are sufficient to produce two quarters of negative growth in the second half of 2010: a “double-dip” recession.

On jobs, employment continues to fall through this year and next by more than 160,000. Net jobs growth will return in 2011 strengthening in 2012 but net job creation over these two years of nearly 52,000 indicates a slower recovery, with a net loss of 108,000 jobs over the period. Nevertheless recovery is stronger than our forecast in June. Net job losses over the 2009-12 period mainly occur in the service sector and in financial services in particular.

On unemployment, we have made further upward revisions to our forecasts reflecting the lower GVA forecasts for 2009 and the evidence of fairly rapid falls in employment and rising employment in the first quarter of 2009. Our central forecast is for ILO unemployment to rise from 200,082 (7.6%) in 2009, to 234,105 (9.2%) in 2010, but then to fall to 212,661 (8.7%) in 2011 and 172,815 (7.7%) in 2012.

### Recent GDP performance

The most recent official government GDP data for the Scottish economy were published on 21 October and refer to the second quarter of 2009. After the almost unprecedented contraction of -2.5% in the first quarter in both Scotland and the UK, Scottish gross value added at real basic prices fell by a further -0.8% between April and June compared to a smaller contraction of -0.6% in the UK – see Figure 1.

Scotland's GDP has therefore contracted by 6% over the four quarters since the recession began in second quarter of 2008. This is a slightly greater loss of net output than the

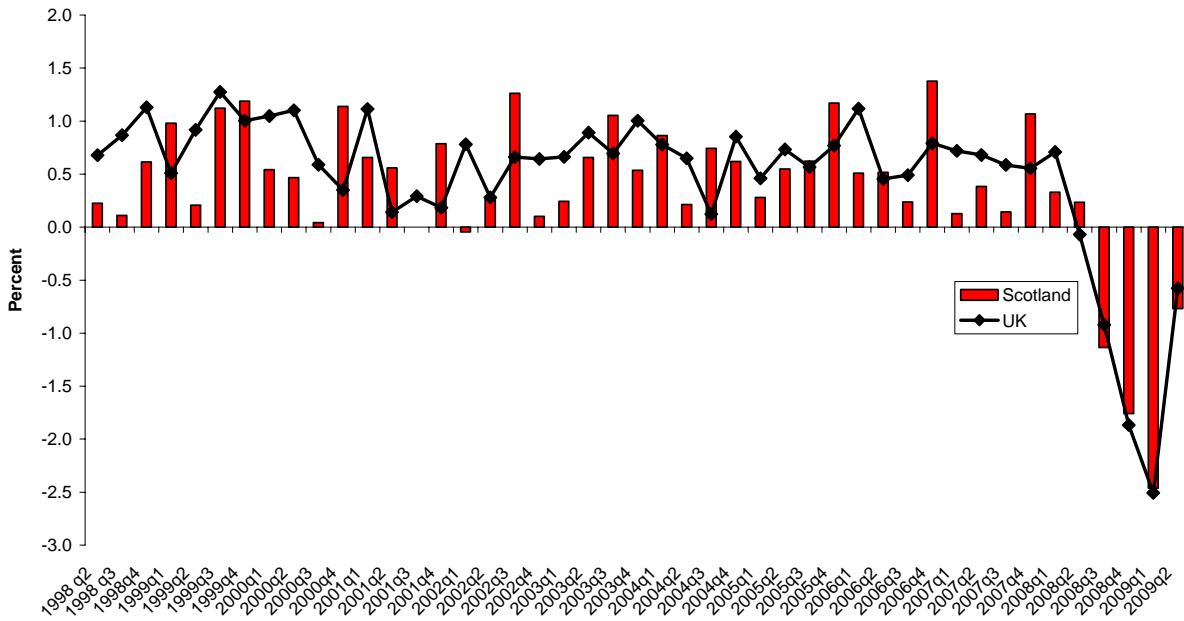
drop in the UK as a whole, which amounted to 5.8% over the *five* quarters from the start of recession in the first quarter of 2008. The decline in GDP in Scotland has largely mirrored the decline in the UK as Figure 1 shows but nonetheless, on the data so far, the recession in output has been more severe here.

Despite the larger drop in second quarter output in Scotland compared to the UK, the *service sector* – accounting for 74% of overall GVA – did better here. Service sector GVA fell by -0.4% in Scotland while UK services contracted by -0.6% – see Figure 2. But the other broad sectors *manufacturing* (14% of GVA), *construction* (7% of GVA) and *electricity, gas & water* (3% of GVA) performed worse in Scotland during the second quarter. Manufacturing GVA fell by -0.3% in Scotland against a fall of -0.1% in manufacturing in the UK – see Figure 3. The construction industry in Scotland has continued to experience further marked contractions with GVA falling by -2.8% in the second quarter compared to a fall of -0.8% in the industry in the UK – see Figure 4. Finally, output in electricity, gas & water fell by -11% during the quarter compared to a fall of -3.6% in the UK.

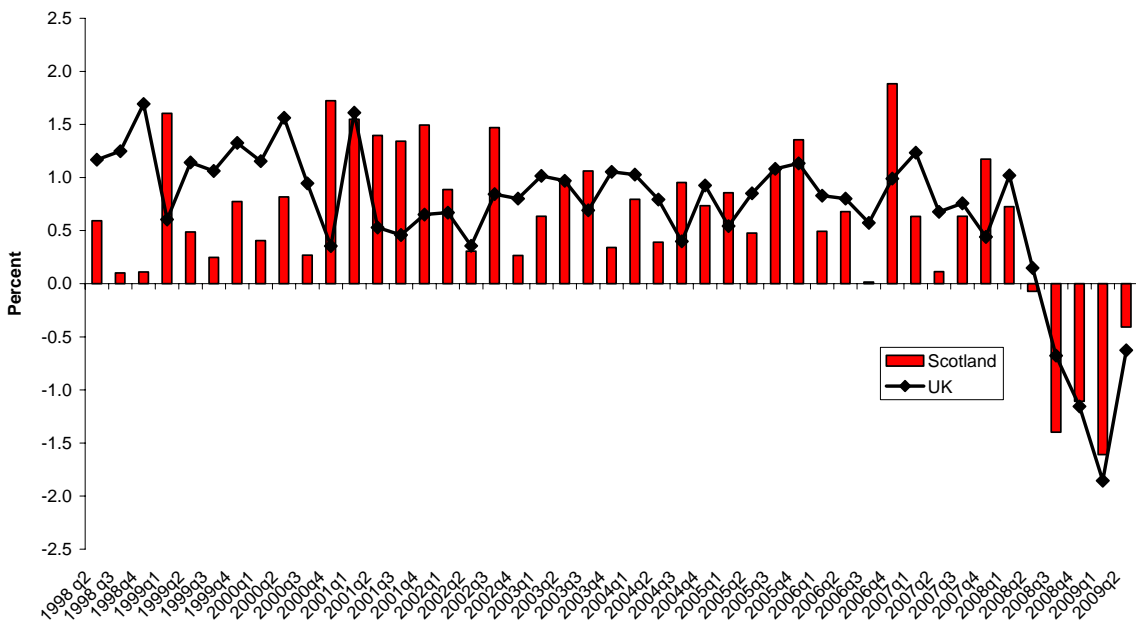
Over the course of the recession service sector GVA in Scotland has fallen by -4.45% while the contraction in UK services amounts to -4.25%. Manufacturing GVA has fallen by -12.37% during the recession, which interestingly is slightly less than the fall of -13.81% in UK manufacturing. Dating the start of the recession in construction as 2008q2 in Scotland and 2008q1 in the UK, output in the industry has fallen by -13.24% and -13.73%, respectively. However, there is a good case for arguing that the recession, or structural downturn, in Scottish construction began after 2006q3 with output falling continuously apart from 2008q1 and 2008q2. This decline has not been mirrored in UK construction. The loss of output in Scottish construction over this longer period amounts to -15.73%. The data on manufacturing and construction in particular highlight the outcome of some of the key dimensions of the present recession: its roots in the bursting of a commercial property and housing bubble and the indirect world-wide consequences for trade significantly depressing manufacturing output due to the much greater importance of export activity in the sector.

Within services, the main sectoral drivers of contraction in the second quarter were *hotels & catering* (3% of overall GVA), *transport & communication* (7% of GVA), *financial services* (8% of GVA) and *retail & wholesale* (11% of GVA). Activity in hotels & catering fell by -3.3%, compared to a contraction of -1.2% in the sector in the UK. This provides one, all be it partial, indicator that tourism to Scotland has not benefited by much so far from the declining value of the pound sterling and by the “Homecoming Scotland” events. GVA in transport & communication services fell by -1.4%, a little better than the -1.8% contraction experienced in the

**Figure 1: Scottish and UK Quarterly GDP Growth, 1998q2 to 2009q2**

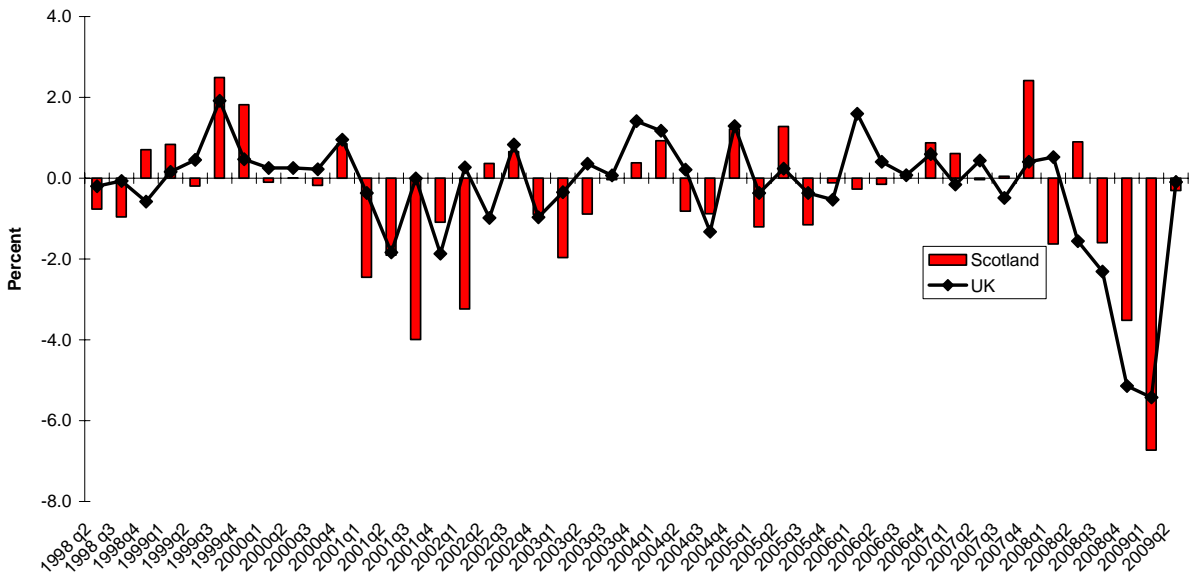


**Figure 2: Scottish and UK Services GVA Growth at constant basic prices 1998q2 to 2009q2**

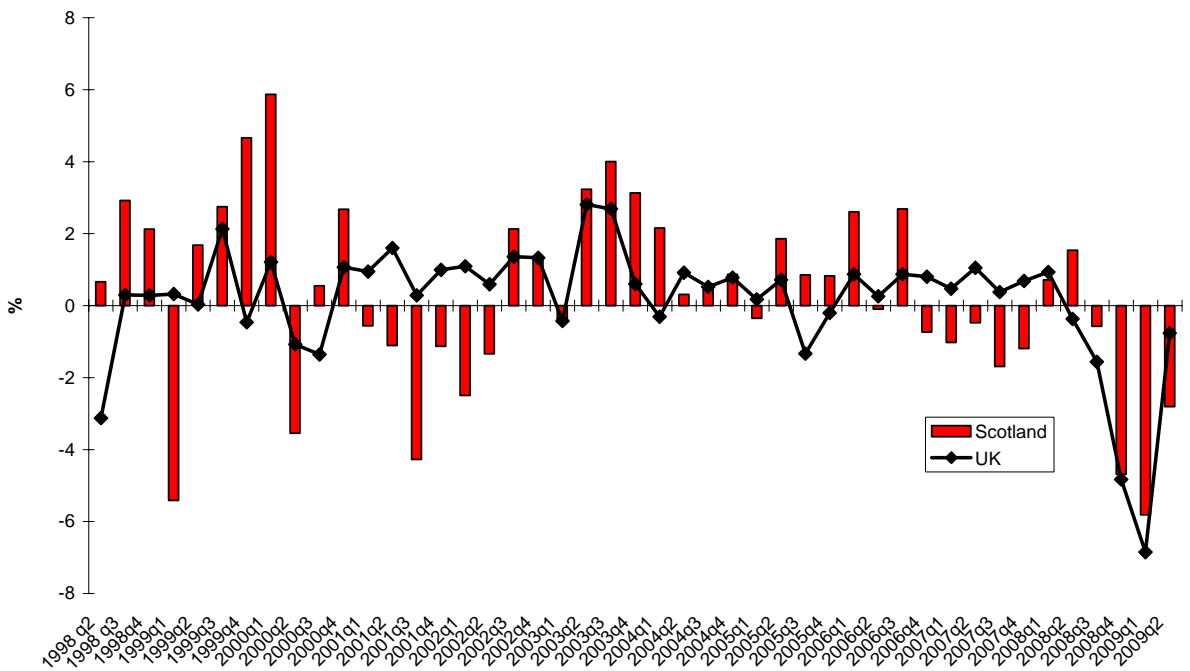




**Figure 3: Scottish and UK Manufacturing GVA Growth at constant basic prices 1998q2 to 2009q2**



**Figure 4: Scottish and UK Construction GVA Volume Growth 1998q2 - 2009q2**



UK. Retail & wholesale GVA contracted by -0.4%, a little more than the -0.3% fall in the sector in the UK. But financial services contracted by 1% in Scotland compared to a rise of 0.2% in the sector in the UK – see Figure 5.

The main reason for the outturn in services being more favourable in Scotland than in the UK is largely explained by the stronger performance in Scotland during the quarter of *real estate & business services* (REBS) and *public administration, education and health*. These two sectors together account for 40% of Scottish GVA with REBS contributing 18% and the public sector 22%. REBS grew by 0.2% in the second quarter whereas its UK counterpart contracted by -1%. It is difficult to explain why this heterogeneous sector should have grown more strongly in Scotland during the quarter. However, approximately one half of the sector is property related and so the recent pickup in housing market transactions might have been reflected in greater activity amongst Scotland's estate agents.

Within manufacturing there were some interesting variations in sectoral performance both absolutely and relative to the UK in the second quarter. The weaker overall performance of Scottish manufacturing (-0.3%) compared to UK manufacturing (-0.1%) in the quarter was largely down to weakness in 4 sectors. *Other manufacturing* (3% of overall GVA), which includes *paper, printing & publishing*, contracted by -0.2% compared to growth of 1.2% in the sector in the UK. The chemicals industry continued to suffer badly in Scotland with a drop in output of -4.2% compared to an increase of 0.9% in the UK. The *chemicals* industry in Scotland has now lost a quarter (-25.1%) of its GVA over the three quarters since 2008q3. The *metals* sector (1% of GVA) also experienced a significant cutback in the second quarter with output falling by -8.5% in Scotland compared to a fall of -3.2% in the UK. Finally, transport equipment (1% of GVA) saw a fall in production of -5.3% in Scotland compared to *growth* of 4% in the UK.

But while manufacturing performance was generally weak in the second quarter and weaker than UK manufacturing, there were perhaps unexpected exceptions. We noted the weakness in transport equipment but other parts of engineering, and engineering as a whole, performed well. Electronics (3% of GVA), which has lost more than 16% of its output in Scotland during the current recession exhibited positive growth of 5.8% compared to a *fall* in GVA of -0.9% in the sector in the UK. In addition, mechanical engineering (1% of GVA) also recorded positive growth of 0.1% while its UK counterpart contracted by -3.1%. Overall, Scottish engineering grew by 1.6% in the quarter compared to 0.1% in the sector in the UK. One other manufacturing sector, food & drink, performed strongly in the quarter displaying growth of 2.3% compared to 0.1% growth in the sector in UK. Most of this growth occurred in the food sector.

## An end to Scotland's recession?

### Background

Figures 6 and 7 chart the performance of key sectors in Scotland both before and during the recession. Figure 6 indicates that all key growth sectors have been affected by the recession with the exception of the public sector.

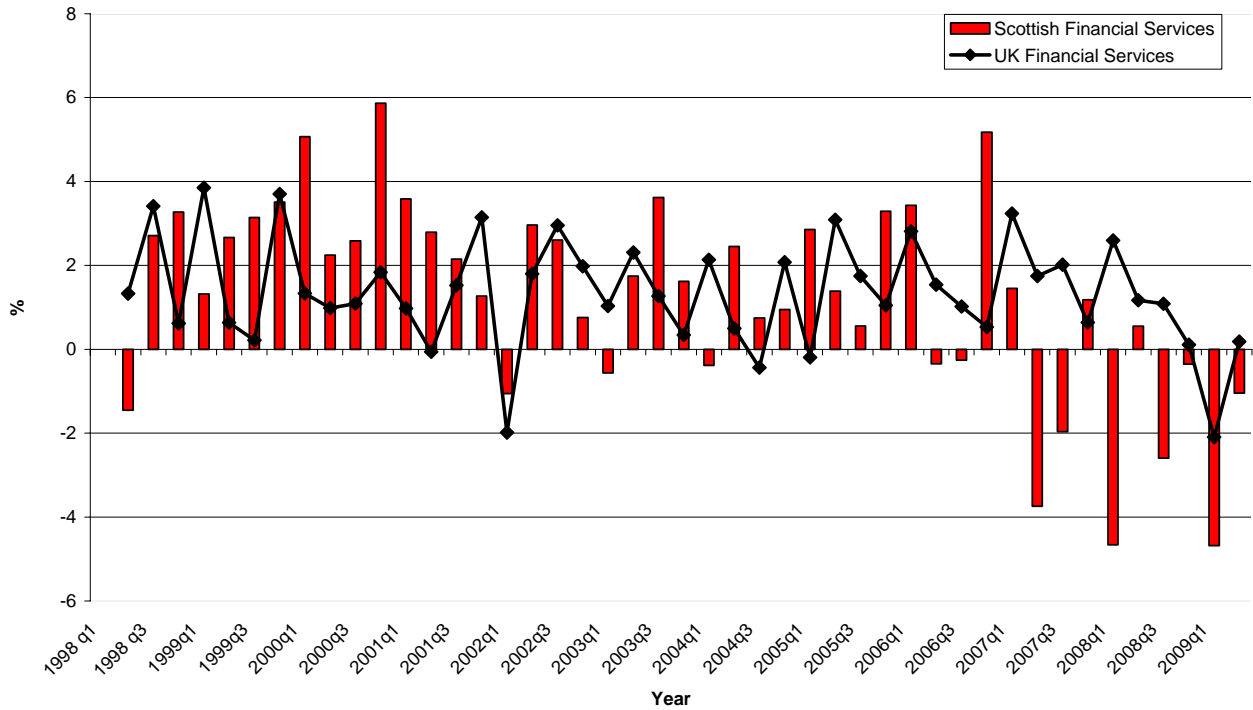
Figure 7 reveals the percentage decline by sector during the recession from the peak reached before the downturn. In sectors such as construction and financial services where there have been some fluctuations in GVA during the decline we have made a judgement as to the start of the recession in the sector. The latest data allow us to reaffirm some of our earlier conclusions about the course of the recession in Scotland and make a judgement on when we expect the recession to end.

First, the recession began in construction, spread to financial services, then to manufacturing, with electronics and other manufacturing initially affected. Other service sectors such as REBS, other services and transport & communication then started to turn down. Latterly, sharp falls in GVA in other manufacturing sectors such as Chemicals and mechanical engineering occurred.

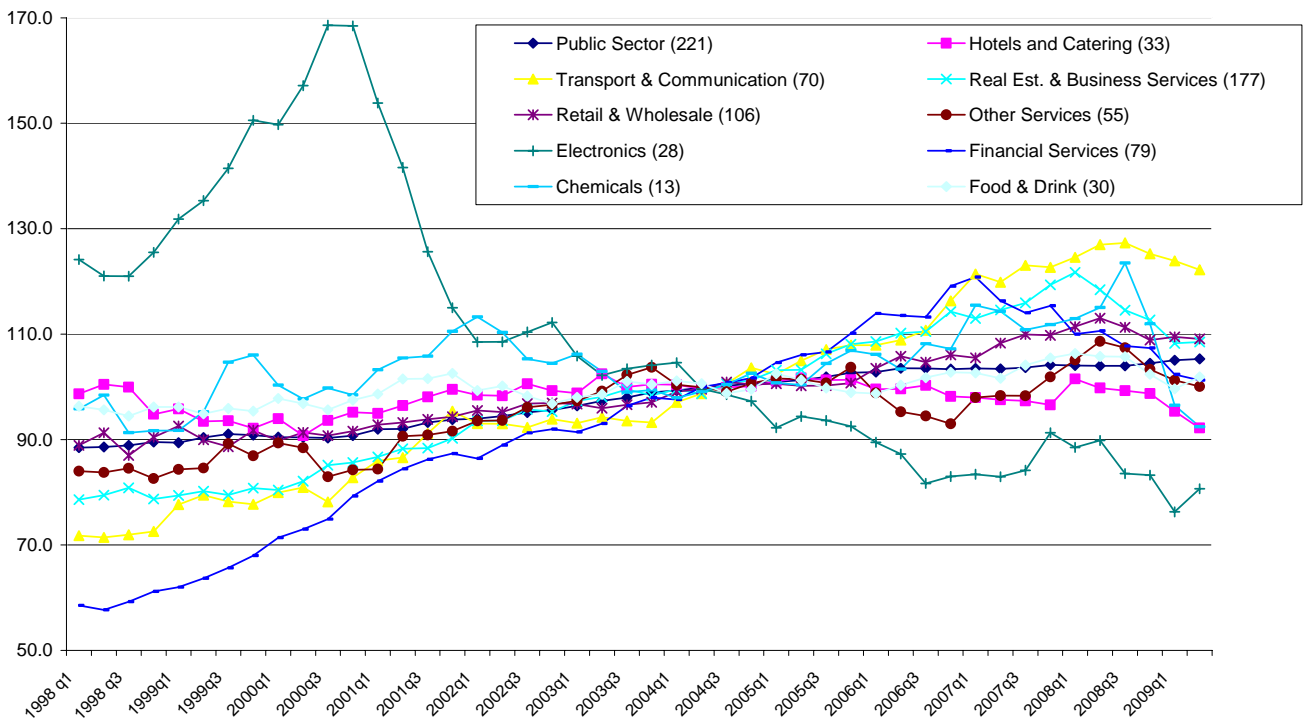
Secondly, against a background of a fall in Scottish GDP of 6% during the recession to date it is evident that some sectors have suffered disproportionately. One must be careful of a direct numerical comparison with the aggregate Scottish performance because the downturn began earlier or later in several sectors. Nevertheless, two sectors, chemicals and other manufacturing have lost more than 20% of their GVA, 25% and 21% respectively. And the loss of output in chemicals has occurred in just three quarters. Of the six sectors experiencing contractions between 10% and 20% in the recession, three are export-oriented, manufacturing sectors: electronics, transport equipment and mechanical engineering. The other three are strongly associated with the property/finance cause of the recession: construction, financial services and REBS. The sectors declining between 0% and 10% are mainly in the service sector: hotels & catering, retail & wholesale, other services, and transport & communication. The remaining sector is in manufacturing: food & drink. Overall, the global impact of the property bubble burst and credit crunch has been on international trade and hence principally on manufacturing. Clearly, indirect impacts from reduced manufacturing output and from lower domestic household expenditure will affect output in local services.

Thirdly, we also note in Figure 7 that four sectors appear to have reached a trough in their activity in the first quarter of this year. So, in these sectors the recession may already be over: electronics, REBS, food & drink, and mechanical engineering. Yet, the probability that the Scottish economy as a whole will have moved out of recession in the third quarter is low. We shall not have outturn data for third quarter Scottish GDP until January 2010, and so for the

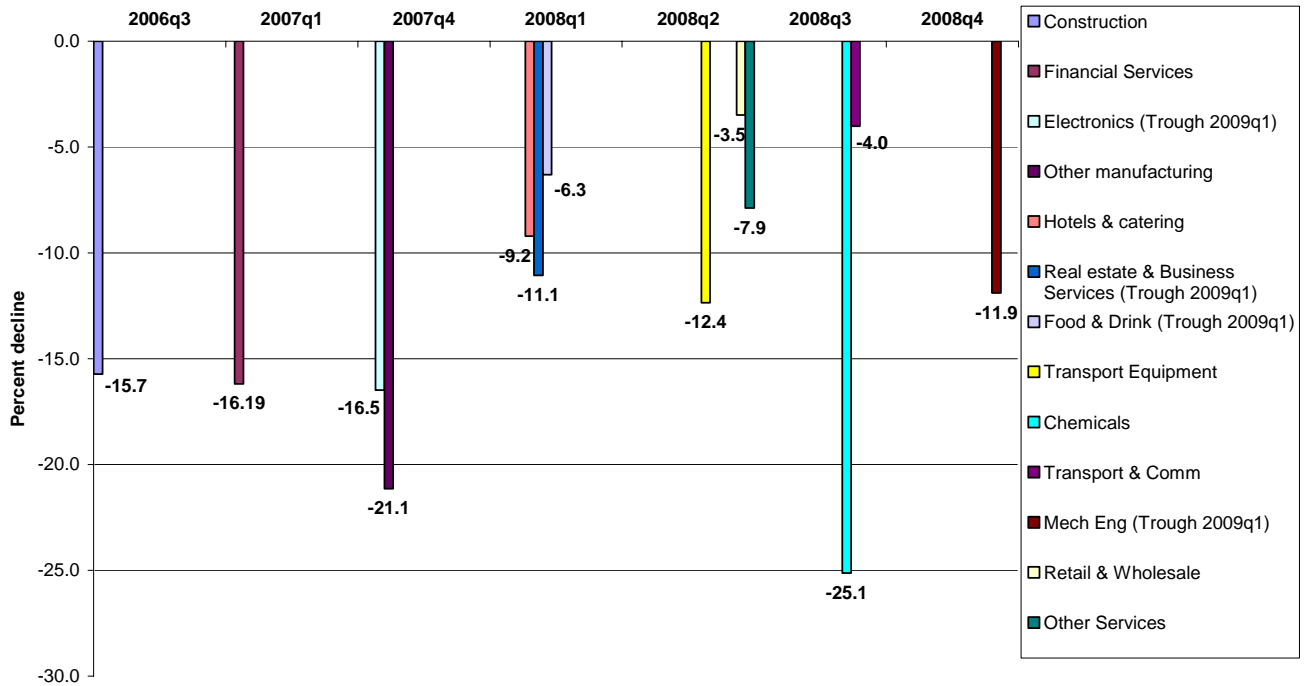
**Figure 5: Scottish and UK Financial Services GVA Growth at constant basic prices 1998q2 to 2009q2**



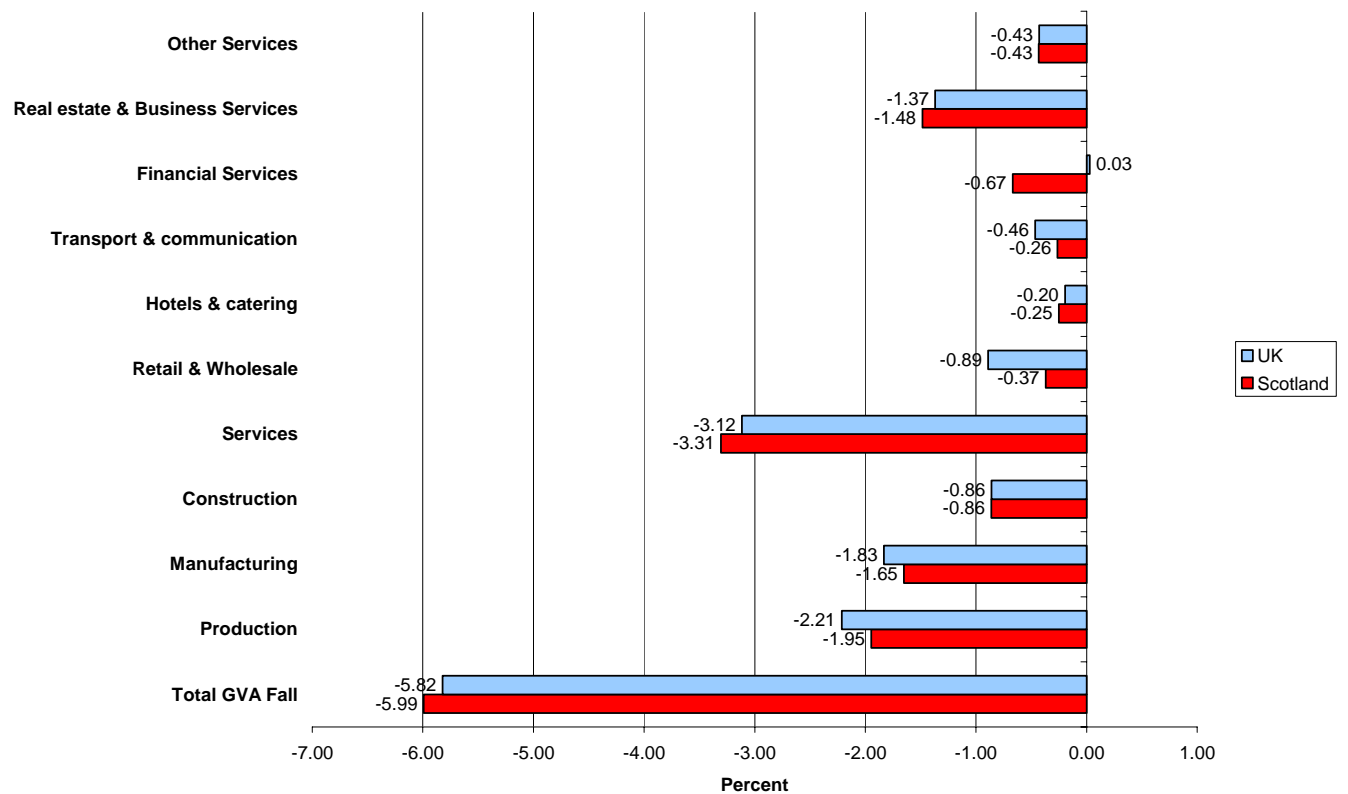
**Figure 6: Growth of key sectors in Scotland 1998q2 to 2009q2**



**Figure 7: GVA percentage decline to 2009q2, or to trough, from latest peak, by sector**



**Figure 8: Weighted Sectoral contribution to GVA decline in recession to 2009q2 in Scotland and UK**



moment we must make a prediction drawing on a range of indicators.

### *Likely third and fourth quarter outcomes*

GDP in the OECD area stabilised in the second quarter of the year and major countries such as France, Germany and Japan returned to positive growth, although not Italy and the United States. However, UK GDP contracted by -0.6% in the second quarter, and then contracted further, by -0.4%, during July to September. In contrast, the United States returned to positive growth in the third quarter. There was much shock in the City when the UK third quarter figures were published because there was a widespread expectation that the UK either would come out of recession, or stabilise with close to zero growth. While the size of the continuing downturn was surprising, a fall in GDP was not unexpected. Indeed, the OECD in September had suggested an annualised fall in GDP in the UK in the third quarter of around -1%. There remains the strong possibility that the third quarter UK figure may be revised upwards as with the second quarter data, which were revised from -0.8% to -0.6%. This would move the outturn data more into line with the survey data for the period. However, it seems unlikely that the revision would be sufficient to bring the UK out of recession in the third quarter suggesting that the UK economy is clearly lagging other major economies. The latest data reveal that the 16-country eurozone grew by 0.4% in the third quarter, the 27 country EU grew by 0.2% in the quarter and the lead EU economy, Germany, grew by 0.7%. From a UK standpoint both external and domestic demand are rising and domestic demand is likely to receive a boost right across the UK in the current quarter as household spending rises temporarily in anticipation of the reinstatement of the VAT reduction at the end of the year. So, there is a strong expectation that it will be the fourth quarter when the UK economy is seen to emerge from recession.

The survey evidence for Scotland (See **Review of Scottish Business Surveys** in this Commentary) reveals rising confidence and improvements in orders and sales growth. Manufacturing activity appears to have strengthened considerably ahead of expectations in the third quarter in almost all of the surveys. The Scottish Chambers' Business Survey (SCBS) revealed a positive balance on total new orders for the first time since the first quarter of 2008. The small positive balance on expected new orders reported in the second quarter strengthened further in the third quarter. Capacity utilisation was rising, although the net balance on investment intentions continued to be negative all be it at a lower rate and employment trends continued to be negative. In the SCBS for the third quarter, tourism trends were better than expected with a positive net balance on total visitor demand for the first time since the fourth quarter 2007. However, the trends in construction and retail & wholesaling were less buoyant. Negative net balances on orders or sales suggest that demand was continuing to fall. In retail and wholesale the declining negative net balance

suggests that the decline in demand was slowing in the third quarter. But in construction a larger negative net balance on total new contracts and new orders suggests little slowing in the rate of decline.

So, the partial survey data from the production side would appear to imply that it is unlikely that the overall Scottish economy will have experienced positive growth in the third quarter. There is evidence of a clear improvement compared with the second quarter but our judgement would be that the outturn for GVA growth in the third quarter will closely parallel the UK outturn of -0.4%. On the balance of probabilities, a high growth scenario would be likely to see zero growth in the third quarter, or a bottoming out, while a low growth expectation would see continued negative growth of perhaps -0.6%, a little better than the second quarter outturn.

There is a widespread expectation that the UK economy will come out of recession in the fourth quarter of this year exhibiting a small but positive growth rate. We agree with this view since there are a wide range of indicators that can be cited on both the demand and supply sides, which suggest that a recovery is underway. However, the situation in Scotland is more difficult to call. The SCBS in October saw clear signs of rising expectations and an emerging recovery in manufacturing, but little sign in the other sectors surveyed. Some surveys that include a rest of UK comparison, such as the Markit Regional PMI for September reveal that the indications of recovery are weaker here than in many other UK regions. In contrast, the CBI Industrial Trends survey in October suggested that Scottish manufacturing had been more buoyant than its UK counterpart over the preceding three months, with stronger growth in orders and output predicted for the fourth quarter. Against this background we take the view that there is a good chance that Scotland will emerge from recession in the fourth quarter, with likely growth around +0.2%, but less strongly than the rest of UK. But there also remains a lower probability that the recession will not end in Scotland in the fourth quarter even though it does so in the UK economy as a whole.

### *Scotland versus UK performance*

We noted in earlier *Commentaries* that the Scottish economy tends to experience a shallower contraction during recession than the UK as a whole. In the November 2008 *Commentary* we observed that the reasons for this are complex, reflecting the different structure of the Scottish economy, the behaviour of key actors in the economy and the source of the recession. Other things equal, a somewhat bigger public sector in Scotland and fairly high levels of income compensating social security payments have helped the economy weather downturns in private sector market demand for goods and services. In addition, the higher Scottish household propensity to save has tended to relatively protect Scottish household expenditure from interest rate hikes as it did in 1991.

Moreover, the lower degree of home ownership, lesser willingness to take on debt also helped Scotland to avoid recession in that year.

But the evidence to date in the present recession is that GVA has contracted by slightly more than the UK even though the Scottish economy was a quarter later into recession. The phrase “slightly more” should be stressed because the gap is unlikely to be statistically significant and so commentators such as ourselves should not make too much of it. We also note that the Scottish GVA data are recognised by the Office of the Chief Economic Adviser as “generally ... less reliable than the equivalent estimates for the UK, primarily because the UK figures are produced by balancing three independent sets of estimates.”<sup>i</sup> The possibility of revisions is therefore great. In addition, Colleagues at the Centre for Public Policy for Regions have noted some difficulties and possible errors in the Scottish GVA estimates<sup>ii</sup>. But accepting the Scottish GVA statistics as published, what is different about the present recession?

In November 2008 we raised the possibility that Scotland might do worse than the UK in the recession that was then in prospect. This was principally because we took the view that the impact on banking and financial services would be bigger here than in the UK due to the scale of the losses on sub-prime and impairments facing the two principal Scottish banks, RBS and HBOS, compared to other UK banks. This prediction has, so far, proved to be correct, with GVA of financial services in Scotland contracting by -5.7% between the fourth quarter of last year and the second quarter of 2009, while GVA in UK financial services only fell by -1.9% over the same period. Moreover, financial services in Scotland was contracting some time before the fourth quarter of last year – see Figure 7 – which was not the case in the UK. Whether this can be attributed to the recession or a structural adjustment in the industry disfavouring Scotland is a moot point. In addition, further contraction in Scottish banking is set to come although it may affect employment more than output if efficiency savings are secured through restructuring. It should be also noted that financial services are slightly more important in Scotland, 8% of GVA, than in the UK, 7% of GVA, hence the significance to the Scottish economy of a given percentage change in financial services GVA is marginally greater. The application of those weights to the respective reductions in GVA in financial services in Scotland and the UK, for the period of the downturn in overall Scottish and UK GDP suggests that aggregate Scottish GVA/GDP would have fallen by 0.7% more than UK GDP – see Figure 8. Other things equal that is more than sufficient to account for the gap in favour of UK GDP.

However, other things were not equal as Figure 8 reveals. Production and construction GVA contracted by more in the UK than in Scotland during the recession, which would have served to reduce the gap by 0.26% and so reinforce

the point that greater decline in financial services here is sufficient to explain the marginally greater loss of output in Scotland during the recession. But against that must be set the weaker performance of REBS in Scotland during the recession, which served to worsen the gap in Scottish GDP relative to the UK by 0.11%.

So, overall, there is a strong case to make that the marginally greater fall in Scottish GDP during the recession has been down to weaker service sector performance, principally financial services and real estate and business services (REBS) to a lesser extent.

There may be additional and complementary reasons why the overall contraction in GVA has been greater in Scotland, which can be offered as hypotheses:

- a) Scottish banks may be lending less to Scottish based firms than other banks.
- b) Scottish households may have cut back spending more than their rest of UK counterparts.

There is little evidence to support any of these as far as their effect on the scale of the downturn relative to the UK.

On a) while there is some anecdotal evidence that it has been easier to get loans and better financial terms from the banks in Scotland that have not been heavily supported by the state following the ‘credit crunch’, there is no indication from the GVA data to the second quarter that the reduction in the level of GVA in Scotland has been systematically greater across sectors than in the UK. The more rapid rate of decrease in Scottish GVA, which has affected many sectors, may, though, be partly a consequence of greater restriction on overdrafts, provision of working capital, and tighter terms on new credit. Across the UK there has clearly been a fall in bank lending, in part because of a flight of lending from foreign banks but also as UK banks have sought to restructure their balance sheets following the impairments and losses incurred in the ‘credit crunch’. But what cannot be established is whether in both Scotland and the UK the lower level of lending is simply, as the banks contend, a *consequence* of the recession, or whether it is a principal *cause*. These competing views will be put to the test as demand in the economy recovers.

On b) given that Scottish households have a historic tendency to save proportionally more of their income than their UK counterparts, there is the fear that the cutback in Scottish household spending would be more severe in the present recession. This reflects the view that Scots households would make a more prudential response to scaling down debt levels in response to tightening credit availability and falling asset prices. However, the comparative buoyancy of retail and wholesale in Scotland during the recession to 2009q2 – see Figure 8 – suggests that this affect has not been present so far. However, business surveys such as the SCBS highlight the

weakness in orders and sales to the domestic Scottish market compared to rest of UK and abroad, although this may reflect a weakness in demand from other producers in Scotland rather than Scottish households. Furthermore, the hypothesised greater tendency of Scottish households to limit spending may be more relevant to the recovery than the downturn. In this connection, the finding in the Markit Regional PMI in September that the rate of improvement was slower in Scotland than in other UK regions could be salient.

### The dynamics of recovery

It would be a mistake to conclude that economy's troubles are over once growth resumes and the recession ends. We have seen that both Scottish and UK economies have lost around 6% of GDP since the recession began and for Scotland at least a little more output may be lost before the recession ends. A key issue, then, is how quickly will the economy get back to pre-recession levels of output. A further issue is when the economy will get back to where it would have been in the absence of recession. Here we need to take into account trend growth prior to the start of recession. So, a 2% per annum trend growth means that a further 2% of GDP will have been foregone for each year of the recession and subsequent below trend growth in the recovery. Assuming that the recession has not lowered trend growth – which is a possibility - then to the latest data point, 2009q2, the Scottish economy is likely to have been 8% below where its GDP would have been in the absence of recession. As long as this output gap persists there will be a deflationary dynamic in the economy as aggregate supply exceeds aggregate demand and unemployment is likely to continue to rise or remain high.

Recent work by the National Institute for Social and Economic Research in London charts the percentage fall in UK GDP from the pre-recession peak until output fully recovered in the Depression of 1930-34 and the recessions of 1973-76, 1989-83, 1990-93 and the current recession. The data are graphed in Figure 9.

The chart reveals two key issues that are worthy of consideration: the length of time taken to fully recover and the frequency of setbacks in the recovery, especially a "double-dip". First, recovery to pre-recession output has never taken less than 40 months, or three and one-third years, and in the 1930s depression and 1980s recession recovery took around 50 months or just over 4 years. Secondly, with the exception of the 1990-93 recession all of the previous recessions exhibited "double-dip" behaviour to varying degrees, with the second downturn occurring 18, 28 and 30 months after the initial pre-recession peak.

The key question is whether this historical evidence has any relevance to recovery from the present recession both in the UK and Scotland, for which we do not have comparable data to conduct a similar exercise to that undertaken by NIESR for the UK.

The Governor of the Bank of England in his Inflation Report press conference on 11 November 2009 draws conclusions about the present recession that reflect the historical experience charted by NIESR. It is worth quoting some of his words:

"...small movements in quarterly growth rates will not alter the extent of the challenges now facing the economy, such as the scale of the fall in output over the past eighteen months. The UK economy is facing a prolonged period of balance sheet adjustment. That will not be achieved in a few quarters. .... Despite a recovery in economic growth, output is unlikely, at least for a considerable period, to return to a level consistent with a continuation of its pre-crisis trend."<sup>iii</sup>

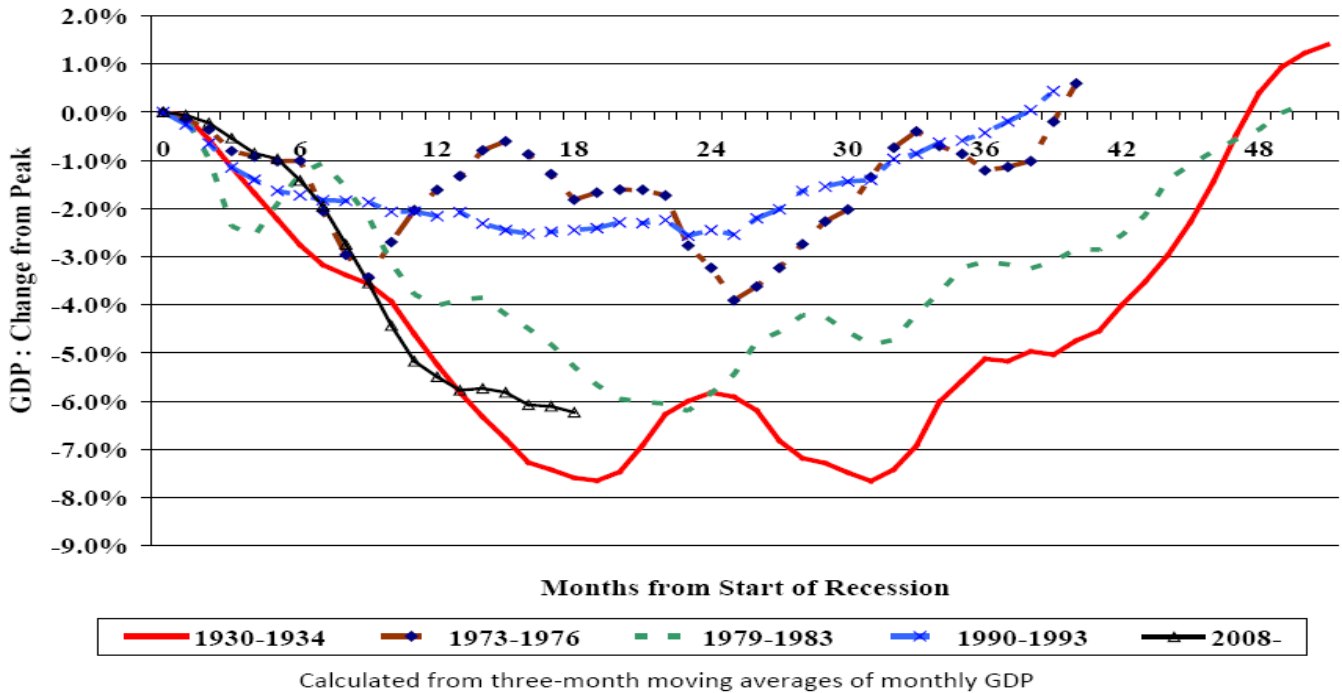
Growth is returning right across the world economy, even though world trade and economic activity remain below pre-recession levels. Indeed, while recovery in the UK and Scotland may be lagging, global indicators of recovery are ahead of expectations in much the same way as the scale and rapidity of output decline confounded earlier expectations. The significant monetary and fiscal stimuli is clearly having a positive effect on demand in many countries, even though there are concerns, especially in Britain, that the impact of quantitative easing may be muted by sub-optimal bank lending. The openness of the Scottish economy to trade and investment flows should ensure that the benefits accrue to Scotland even if domestic investment and consumer demand continues to remain weak. A near 25% fall in the value of sterling makes the Scottish and rest of UK economies well placed to take advantage of the upturn in global demand. Yet, as the Bank's recent Inflation Report notes: "... there are a number of headwinds that are likely to impede the recovery."

Domestic Scottish and UK consumer and investment demand may remain weak for some time as both households and firms seek to strengthen their balance sheets. The availability of sufficient bank credit to fully finance the recovery remains a source of continuing concern. The significant fiscal consolidation that is in prospect as the UK government seeks to reduce its deficit and stabilise, possibly reducing its debt position will serve to reduce domestic demand and spending. There are clear concerns that the fiscal consolidation might occur too soon before the necessary switching to export-based growth can be achieved. In addition, concerns have been raised that the volume of money pumped into the world economy through quantitative easing, historically low, almost zero, interest rates and a declining US dollar, are fuelling a bubble in (risky) asset values. The concern is that the bubble will burst affecting real incomes and spending when monetary policy is tightened again and when the value of dollar stabilises<sup>iv</sup> This also raises the issue whether monetary authorities should be targeting asset price bubbles directly. For all these reasons the prospect of a double-dip recession is therefore present.

**Figure 9: The Profile of the Depression: Months from the Start of the Depression and UK Recessions**

**Source:** National Institute for Economic and Social Research 5 November 2009

[http://www.niesr.ac.uk/pdf/051109\\_144552.pdf](http://www.niesr.ac.uk/pdf/051109_144552.pdf)



We take the view that the Scottish recovery may be weaker than in the UK for the following reasons:

- The bias in the structure of the Scottish economy towards the public sector – 22% of GVA against 18% in the UK – means that the base for expansion is smaller here.
- The anticipated fiscal consolidation could be greater and/or have a greater impact on activity in Scotland. This depends on a number of unknowns such as: where the UK cuts fall in relation to reserved and non-reserved activities; the scale of the UK cuts, which in part depend on future GDP growth and interest rates; the nature of any tax increases; and the decisions of the Scottish Government.
- More technically, purchasing linkages between activities in Scotland – and hence multipliers – tend to be lower than in the UK because the Scottish economy is smaller and more open. Direct increases in demand tend to ‘leak out’ more than at the UK level. This may be offset, though, if the Scottish economy enjoys a stronger export boost through its greater openness.
- But we noted our concerns in the June 2009 Commentary that the increased exporting necessary to the recovery puts a premium on the performance of manufacturing (68% of exports abroad from Scotland are manufactured goods).

We remain concerned that Scottish manufacturing has the size, diversity and capability to take full advantage of a lower exchange rate and the recovery of global demand.

- If Scottish households seek to recover their net asset position by more than their UK counterparts then recovery will, other things equal, be weaker here.
- Finally, if the two main Scottish banks, key beneficiaries of tax-payer funded support, are less willing to lend because of the need to rebuild their balance sheets to stabilise and raise their share price, then the Scottish economy may recover more slowly for this reason.

### Forecasts

Our latest forecasts for the Scottish economy have been prepared against the economic and policy background considered above and discussed in considerable detail along with the forecasts in the section on **Forecasts of the Scottish Economy** below.

Given the continuing climate of uncertainty and the significant data revisions to both Scottish and First Release UK data, we adopt the practice of recent **Fraser Economic Commentaries** and present three alternative scenarios for growth, employment and unemployment in the Scottish economy: we label the scenario that we feel is most likely “central”, with “high growth” and “low growth” as two respectively upper and lower growth alternatives. The



## GVA Forecasts

Table 1: Forecast Scottish GVA Growth in Three Scenarios, 2009-2012

GVA Growth (% per annum)		2009	2010	2011	2012
High growth		-4.9	1.6	1.8	2.1
Central	<i>June forecast</i>	-1.9	-0.5	1.6	2.1
		<b>-5.0</b>	<b>0.1</b>	<b>1.1</b>	<b>1.6</b>
Low growth	<i>June forecast</i>	-2.9	-0.9	0.6	1.4
		-5.2	-0.7	-0.1	0.5
	<i>June forecast</i>	-3.8	-1.7	-0.2	0.4

Table 2: Forecast Scottish Net Jobs Growth in Three Scenarios, 2009-2012

Net job no's		2009	2010	2011	2012
High growth		-126,915	-352	36,025	44,154
Central	<i>June forecast</i>	-62,827	-23,152	33,584	45,174
		<b>-130,776</b>	<b>-29,615</b>	<b>20,292</b>	<b>31,467</b>
Low growth	<i>June forecast</i>	-84,399	-51,451	11,301	26,824
		-134,864	-46,593	-3,409	6,788
	<i>June forecast</i>	-103,579	-66,894	-3,722	6,847

Table 3: Forecast Scottish ILO and Claimant Count Unemployment in Three Scenarios, 2009-12

		2009	2010	2011	2012
<b>ILO unemployment</b>					
High growth %		7.2%	7.6%	6.5%	5.0%
Central %		<b>7.6%</b>	<b>9.2%</b>	<b>8.7%</b>	<b>7.7%</b>
	<b>Numbers</b>	200,082	234,105	212,661	172,815
Low growth %		8.2%	10.5%	11.0%	11.0%
<b>Claimant count</b>					
High growth %		4.5%	4.6%	3.7%	2.8%
Central %		<b>4.9%</b>	<b>5.8%</b>	<b>5.2%</b>	<b>4.2%</b>
	<b>Numbers</b>	136,821	160,087	145,423	118,175
Low growth %		5.3%	6.7%	6.8%	6.5%

“central” scenario is that which is most likely, while the “high growth” and “low growth” scenarios reveal the range of possible outcomes for the Scottish economy foreseen for future developments from November 2009 through 2010 to 2012

The key GVA forecasts are summarised in Table 1 along with our June forecasts for comparison. We shall primarily focus on our central forecast here. It is clear that we have revised downwards considerably our GVA forecast for 2009 to -5.0%. The narrow gap between the forecasts on the three scenarios for 2009 is mainly due to the fact that we already have two of the four quarters of outturn data. The predicted contraction of output in 2009 is appreciably lower than the June central forecast due to a significant

reduction in household spending, weaker tourism expenditure and a larger reduction in investment demand. The growth of government spending is positive this year and export demand is recovering. In 2010, there is some recovery in Scottish household spending but it still remains below 2009 levels. Government spending continues to rise but at a reduced rate. Tourism demand begins to recover but aggregate investment remains low. In contrast, export demand to both the rest of the world and rest of UK picks up. GVA is forecast to be largely flat in 2010 with 0.1% growth projected. However, the discussion above and in the **Forecasts of the Scottish Economy** section below suggests that demand in the global economy is recovering more quickly than anticipated in June and so we are forecasting stronger growth in 2010.

By 2011, household spending will be rising again and will strengthen further in 2012, as do exports with investment also increasing from 2011. But we are forecasting large annual reductions in government spending from 2011. For these reasons growth rises to 1.1% and 1.6% in 2011 and 2012 but remains below trend. It is also worth noting that in 2010 in our central scenario we are allowing for one quarter of negative growth reflecting the headwinds buffeting the economy that we noted above. In the low growth scenario these headwinds are sufficient to produce two quarters of negative growth at the in the second half of 2010: a “double-dip” recession.

### *Employment forecast*

The principal forecasts for net jobs growth are presented in Table 2. On our central scenario employment continues to fall through this year and next by more than 160,000. Net jobs growth will return in 2011 strengthening in 2012 but net job creation over these two years of nearly 52,000 indicates a slower recovery, with a net loss of 108,000 jobs over the period. Nevertheless recovery is stronger than our forecast in June.

Even on the high growth scenario net jobs in Scotland in 2012 are around 47,000 lower than in 2008. On the low growth scenario, the number is 177,000. At the sectoral level in the central scenario, the burden of jobs losses is born by the service sector, which might be expected given its relative size. In services, we expect some 95,000 net jobs to be lost during 2009 and 2010, with jobs growth returning thereafter. Of these lost jobs, around 26,000 are expected to occur in financial services. Manufacturing and construction job losses are projected to amount to nearly 39,000 jobs and 23,000 jobs, respectively, with net job creation beginning again in both sectors in 2011.

### *Unemployment forecast*

Table 3 presents our main forecasts for unemployment over the 2009 to 2012 time horizon.

We have again revised upwards our forecasts for unemployment compared with the previous Commentary in June. This reflects the lower GVA forecasts for 2009 and the evidence of fairly rapid falls in employment and rising unemployment in the first quarter of 2009. Unemployment has been rising more rapidly in Scotland than in the UK, but this shouldn't necessarily be taken as indicating that

Scotland is doing worse in recession. A recession that affects different parts of the country equally would, other things equal, tend to raise the rate of unemployment more quickly in those regions with lower unemployment rates. The ILO unemployment rate in Scotland is currently 7.2% and remains below the UK rate of 7.9%. What happens to the future course of unemployment in Scotland depends not only on the loss of jobs but on the extent to which people who lose their jobs switch into inactivity, or migrate, rather than switch into unemployment.

We have previously taken the view that the recession in jobs and unemployment may be weaker than the recession in output. This is because the Scottish and UK labour markets are more “flexible” than they were in the 1980s. Employers will seek to hold on to core workers and will do so if there is the prospect of introducing short-time working, cutting wages, salaries and bonus payments, and letting go of part-time and temporary workers. The **Overview of the Labour Market** section below notes that in the year to March 2009 the percentage declines in part-time and temporary workers were higher than the decline in full-time employees. However, the section notes that there are limits to flexibility and that these limits may be approaching. A quick recovery in GVA growth will make it easier for companies to hold on to staff but a more slow recovery will make that task more difficult. In addition, we are likely to see rising job losses in the public sector with the flow of announcements of actual and planned job reductions in local government currently rising and set to rise further in 2010.

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### Endnotes

<sup>i</sup> *GDP for Scotland for the 2<sup>nd</sup> Quarter of 2009*, **Statistics publication Notice**, Scottish Government, page 2.

<sup>ii</sup> Centre for Public Policy for Regions

<http://www.cppr.ac.uk/centres/cppr/analysisofthescottisheconom/>

<sup>iii</sup> Inflation Report Press Conference, Wednesday 11 November 2009, Opening Remarks by the Governor.

<http://www.bankofengland.co.uk/publications/inflationreport/irspote111109.pdf>

<sup>iv</sup> Nouriel Roubini “Mother of all carry trades faces an inevitable bust”, *Financial Times*, 1 November 2009.

Brian Ashcroft  
13 November 2009

# The Scottish economy

## Forecasts of the Scottish economy

### Economic background

It is five months since the last forecasts of the Scottish economy were published in the *Fraser Economic Commentary*. In that time, we have seen confirmation that Q2 growth was down 0.8% on Q1 2009, meaning that Scotland has now seen four quarters of consecutive negative growth. The rate of negative growth appears to have slowed, with Q1 2009 seeing a 2.5% quarterly reduction. Scottish GDP in Q2 was down 6.1% from its peak in Q2 2009.

We noted in June's forecast that growth prospects for Scotland would be significantly affected by the duration of the global downturn and the speed by which policy decisions feed through to restore confidence across the economic system. With continued low economic activity across Scotland and the UK, only in some figures for Q3 2009 are we beginning to see some signs of economic recovery in some key markets for Scottish goods and services. As a result, since June most commentators have revised down their forecasts for growth in 2009, and we are no exception.

Forecasts for growth in 2010 in Scotland's major export markets remain broadly similar to those made earlier in this year, indicating a growing feeling that the worst of the downturn may be past. The most recent survey data on business confidence in Scotland, summarised elsewhere in this issue of the *Fraser Economic Commentary*, suggest that there are rising net balances in business confidence – not necessarily across all sectors of the Scottish economy – although there also concerns as to the pace at which the Scottish economy returns to growth. The Scottish Chambers' Business Survey, for instance, reports that survey respondents in manufacturing, wholesale distribution and tourism were reporting rising confidence, while the declines in confidence seen earlier in 2009 in the important construction and retail sectors were lessening.

While the speed of the return to growth in Scotland will be intimately tied to economic growth elsewhere, particularly in major trading partners, we remain uncertain as to the future pattern of growth in Scotland over the coming years. As with previous forecasts, we present three scenarios for growth for the three years from 2009. Our central scenario is the one which we feel is the most likely, but clearly apparent uncertainty in the macroeconomic environment, combined with often substantial revisions to GDP data between quarters, leads us to have a "high growth" and "low growth" alternative scenarios around this central scenario. In this article we report the new forecasts for

Scottish GDP growth as well as forecasts for the future for the Scottish labour market.

Firstly, we examine some of the key economic policy developments since June's forecasts, and likely developments over the coming months.

The unprecedented monetary response of the UK authorities to the economic environment has continued. Interest rates were held at 0.5% by the MPC at their meeting in November, the eighth month this rate has remained unchanged. Interest rates have similarly been kept at historic low levels in the Eurozone and the US. In the UK, the Bank of England has extended its programme of "quantitative easing" (QE). In August, the Bank's Monetary Policy Committee decided that the QE programme should be extended to £175 billion, and on the 5<sup>th</sup> of November, the MPC voted to increase the size of the QE programme by a further £25 billion, up to £200 billion in total. Between March and the 6<sup>th</sup> of November, purchases of almost £174.9 billion have been made through this facility.

An initial assessment of the impact of QE on the UK economy was made by Charles Bean (a member of the MPC) in October 2009 (Bean, 2009). He points to a number of data to show the impact of QE. Firstly, in his assessment, the spread on gilt yields (the difference between gilts and expected future Bank Rates) has reduced by around ¾ percentage points, while there have not been the same movements in the Eurozone, where no purchases of Government debt have occurred, or the US, where the Federal Reserve activities have purchased a smaller share of the government debt market. Secondly, corporate bond spreads have reduced, while equity prices have risen by almost half since March 2009. UK corporations have issued more than the annual average number of bonds with £60 billion issued, compared to an average of £40 billion. Bean notes that the aim of the policy is to get the annual rate of nominal spending back to around 5% or so, while over the last year nominal spending has fallen by almost 5%. His assessment concludes that "we will probably never know exactly how effective the policy of QE has been, for the simple reason that we can never know with precision what would have happened in its absence. My only confident prediction is that academic economists and their PhD students will be poring over the topic for decades to come" (Bean, 2009, p. 6).

The Budget in April 2009 announced the extension of some of the packages introduced in November 2008's Pre-Budget Report (PBR), including the reduction in the rate of VAT. This commenced from 1<sup>st</sup> December 2008, when VAT was reduced to 15% from 17.5%. This was announced as a temporary programme, and will be removed from 1<sup>st</sup> of January 2010, when VAT will return to 17.5%. Capital expenditures have been brought forward at both UK and Scottish levels, with £3 billion brought forward in the UK 2008 PBR. The Scottish Government's budget for 2010-11,

announced in September 2009, sought to balance the expected "squeeze" on public spending over the years from 2011. Accelerated capital spending for 2010-11, include spending on the rail network across Scotland, the prisons system and school buildings. To preserve capital budgets in future years the Scottish Government announced its decision to cancel the proposed Glasgow Airport Rail Link (linking Glasgow Airport to Glasgow City Centre, through a new line between Paisley and the Airport). The proposed budget has now entered its committee stage, and will likely be debated early in 2010.

In light of recent large increases in Government borrowing at UK level, and related pressures on government budgets over coming years, it is unlikely that UK and Scottish government expenditure from 2011 will drive economic activity and growth over the medium-term. It is likely that the next decade will see significant cuts in government spending at all levels, i.e. central and local government spending. For example, CPPR estimated an 8.5% reduction between 2009-10 budgets and the budget at the end of 2013-2014 (CPPR, 2009). Scotland's growth prospects compared to the rest of the UK will to some extent depend upon not only the extent to which the private sector returns to positive growth, but the extent to which government spending is reduced.

Key for future developments in the Scottish labour market will be the larger share of employment in public sector. Latest figures (James, 2009) show that public sector employment in Scotland in Q4 2008 was 23.0% of all in employment, while across the UK, 19.8% of total employment was in the public sector. The share of employment in the public sector in Scotland has remained relatively constant between Q4 1999 and the most recent data, while across the UK public sector employment was slightly higher than in Q4 1999 (19.2%). While these facts could insulate the Scottish labour market from the worst of the most recent downturn, the anticipated future changes in public expenditures may be expected to hit hardest those areas where, other things being equal, the public sector has a larger share of employment.

Further complicating the position of forecasters in what are uncertain times, the Chief Economic Advisor notes in "State of the Economy" (August 2009), the large uncertainties in calculating GDP and GVA at the regional level have led to a number of significant revisions to the estimated figures. At the UK level, Q2 2008 growth was revised downwards in June 2009 meaning that quarterly GDP change turned negative in Q2 2008. We continue to present three scenarios for Scottish GVA changes, in part due to these significant alterations to GVA, and will continue to monitor our forecasts in light of any future revisions to GVA data for Scotland.

### **The Scottish economy**

In the last quarter for which data are available (Q2 2009, published on 22<sup>nd</sup> April 2008), the Gross Domestic Product

in Scotland fell by 0.8% from the previous quarter (Q1 2009), which had fallen by 2.5% compared to Q4 2008 as noted in the introduction above. Scotland officially entered recession after the second consecutive quarterly decline in GDP in Q4 2008 and has now seen four quarters of negative GDP growth. The decline in GDP in Q2 2009 is significantly less than the decline in Q1, and less than that seen in Q3 and Q4 2008, leading some commentators to suggest that the decline in the size of the GDP decreases is a sign that the worst of the economic downturn is over.

In Q2 2009, the decline in the service sector continued, with an overall decline of 0.4%, after falling 1.6% in Q1 2009. Some 74.2% of Scottish activity is in this broad industrial grouping, and these sectors had contributed most to the recent growth of the Scottish economy. Within the service sector, there were large quarterly falls in Hotels and Catering (-3.3%), Communications (-2.9%), Other services (-1.2%) and Financial services (-1.0%). Retail and wholesale's contribution to Scottish GDP also declined in Q2, down 0.4%. These falls were partially, but not wholly offset by a strong performance in Public admin, education and health, which grew by 0.2% in Q2, helped in part by a 1.0% growth in Health and Social Work. Gains were seen in Real estate and business services (0.2%), which showed its first quarter on quarter growth since Q1 2008. Financial services was down 1.0% in the quarter, continuing its decline from a high reached in Q1 2007, and down 7.0% over the last four quarters compared to the preceding four quarters.

Production sectors, responsible for 17.7% of Scottish GDP, declined 1.9% in Q2 and continued the decline that began in Q3 2008. The decline in the most recent quarter was less than that of Q1 2009 (-5.6%) and Q4 2008 (-3.8%). Within the production sectors, large falls were seen in Electricity, gas and water supply (-11.0%), while the Mining and Quarrying sector displayed its first positive quarterly growth since Q2 2007. There was a decline in Manufacturing (-0.2%) driven by a combination of significant reductions in the contribution to GDP from Refined petroleum products and nuclear fuel (-9.1%), Metals and Metal products (-8.5%) and Chemicals and man-made fibres (-4.2%), and positive growth in Food and Tobacco (4.8%) and Electrical and Instrument Engineering (5.8%). The Construction sector reported a fourth subsequent quarter of declining value added, falling by 2.8% in Q2, reduced from a fall of 5.8% in Q1. The broad-based sectoral nature of this recession thus continues, with a few notable exceptions.

Labour market developments in Scotland to the end of August 2009 showed falling employment and increasing unemployment from what had been historic highs and lows respectively. Employment of those aged over 16 between June and August stood at 2,497 thousand, down 41,000 (or 1.6%) on the same period one year previously. The employment rate for those of working age was down from 74.4% to 74.0% in one quarter, and down from 76.0% in

the same quarter one year previously. The number of people over the age of 16 who were unemployed rose by 67,000 over the last year, approximately twice the rise reported in the last commentary for the year to April 2009, and now stands at 194 thousand. The number of those receiving unemployment-related benefits stood at 132,600 in September 2009. The claimant count figure is up 49,000 since September 2008.

### Final demand and recent trends

The FAI forecasting model acknowledges the drivers of economic activity in the Scottish economy to be consumption, government spending, investment, tourism and exports (to the rest of the UK and the rest of the World). For all three scenarios considered the recent trends in each of these measures, as well as recent survey evidence, are discussed below.

#### *Consumption*

- Data being developed on Scottish Household final consumption expenditure, release in 28<sup>th</sup> October through the Scottish Government's Scottish National Accounts Project (SNAP), show that Q2 2009 saw the third consecutive decline in current price Scottish household expenditure, following on from the declines in Q4 2008 and Q1 2009. Nominal Scottish household spending was down 0.21% in the quarter, and 3.4% lower than the same quarter one year before. The decline in Q1 2009 was 2.34%, so there would appear to be evidence that the decline in household expenditure appears to be moderating. These data are not National Statistics, and so should be considered experimental, but do serve to give a potentially vital insight into trends in household spending – which is crucial for economic activity – at the Scottish level.
- Figures from the Scottish Retail Consortium confirmed that like-for-like sales in September 2009 were 1.5% higher than the same month one year earlier, and total sales were up 4.3%. These are nominal figures, so could indicate that households are protecting expenditures in the sectors covered by this survey, and making reductions in other areas.
- On large-scale purchases, one of the most visible sectors recently has been the motor industry, which saw large reductions in out at the start of 2009. Recent sales data from the Scottish Motor Trade Association (SMTA) reported that new car registrations in October 2009 were up 45% on new car registrations in October 2008. The SMTA explain this as being significantly aided by the UK Government's car scrappage scheme which gives

car owners a £2,000 discount on a new car when they trade in a car more than ten years old which they have owned for over 12 months. Initially, £300 million was allocated to the scheme, which would run until February 2010 or until the funding is used up. In September, the UK Government extended the fund by £100 million, meaning that the fund would cover up to 400,000 vehicles.

- One key issue will be the extent to which the VAT increase from January 2010 and the scrappage scheme, running out in February 2010, have been bringing car sales forward that would otherwise happen in that year.
- The Halifax House Price Index reported (23<sup>rd</sup> October 2009) that Q3 2009 saw a 5.3% rise in house prices compared to Q2 2009, however prices are down 6.3% compared to the year previous. On their measure, average UK house prices have fallen 7.4% annually, meaning that Scottish house prices have been more resilient.

### *Government spending*

- Across the advanced economies, government spending has stepped in to provide a fiscal stimulus to economic activity in 2009 and 2010. The extent of these packages ranges from around 2% of GDP in the UK to around 5.5% in the US, and includes a range of tax or spending initiatives. There is considerable uncertainty over the impact that the removal of these packages will have.
- Further, but related to the above point, public finances across most developed countries are at levels which are typically seen as unsustainable over the long-run, requiring some reductions in spending over the coming years. The Institute of Fiscal Studies, for instance, have forecast average declines of 2.3% per year for the three years from 2011-12. Before that year however, which would be after the next Spending Review, public expenditures appear set to be reduced. In his May "State of the Economy" report, Scotland's Chief Economic Advisor's (May 2009) noted that spending controlled by the Scottish Government through the Departmental Expenditure Levels, which makes up the principal element of discretionary spending at the disposal of the Scottish Government, will grow by around 4.5% in 2009-10, but decline by 1.7% in 2010-11. This will be, in part, due to the reallocation of capital spending from 2010-11 forward to 2009-10 as part of the Economic Recover Plan.

### *Investment*

- There are no figures available for investment in Scotland, but business investment figures are

reported for the UK. UK figures for business investment in Q2 2009 were published in September. These reported that business investment fell 10.2% from Q1 2009, and was 21.8% lower than Q2 in 2008, clearly illustrating the significant impacts on investment through the current economic downturn.

- Total business investment in real terms across the UK was lower in Q2 2009 than in Q3 2006 across the majority of sectors where investment data is reported.
- Scottish Engineering and Scottish Chambers both reported falling investments in Scotland, indicating some support for the link between investment at the Scottish and UK levels. Going forward, there appear to be low expectations of significant increases in investment over the short term, with only 16% expected to increase investments.

### *Tourism*

- Visit Scotland figures showed that in July and August hotels occupancy levels were higher than those in the same month in 2008, and while room occupancy in June was unchanged compared to June 2008, bed occupancy was higher, indicating that there was some signs that the forecasts of a good year for tourism were observed. The "staycations" forecast in June's commentary – where overseas holidays were swapped in favour of domestic holidays by Scottish families during 2009 – might be confirmed when later data becomes available, but there is some support for this from the limited evidence available so far.
- An ongoing issue was the extent to which occupancy was sustained by discounting, and this will have implications for the contribution to GVA of the hotels and catering sector.
- Q2 2009 (for the period April to June) figures for the hotels and catering sector revealed a drop of 3.3%, but this is before any of the higher occupancy figures reported in the paragraph above. We would be interested in seeing how these higher occupancy figures translated into greater contributions to GVA in Q3, which will be available into the New Year.
- It is likely that the Homecoming Scotland programme of events for during 2009 have protected some sectors in particular areas through the year, and partly been responsible for the increase in occupancy figures observed over the summer months.
- Into the future, the nature of tourism offerings could be expected to be affected by the economic

downturn, although one would expect that this effect would not be homogenous across all categories of tourism. Niche tourism offerings, such as sport and adventure tourism, could continue to protect Scotland's tourism offering compared to that of other regions, however, due to increased joblessness and possibility of unemployment it is likely that it will be well into 2010 before tourism numbers and spending see increases.

### *Exports to the rest of the UK*

- While there is not separately identified evidence available on recent changes in exports from Scotland to the rest of the UK, this is the most important destination for Scottish goods after Scottish domestic consumption (which would include households, government (central and local), investment and tourism). The 2004 IO tables show that exports to the rest of the UK were worth more than double the value of exports to the rest of the world. This data is the most recent we are able to find comparing exports to the rest of the UK and exports to the rest of the World, but we would not expect that this ratio would have changed over years since it was published. Clearly, additional data would greatly help us to understand changes in demand in this important market for Scottish goods.
- Forecasts for the UK, as alluded to in the introduction, have been revised down slightly since we forecast in June. The average of new (within the last three month) independent forecasts for the UK economy is -4.3% in 2009, with the same measure in 2010 forecast at 1.3%. There is considerable uncertainty over estimates for UK growth in 2010 apparent from the range of new independent forecasts between -0.5% and 2.2%.
- As noted elsewhere in this edition of the *Fraser Economic Commentary*, Scottish Chamber and CBI respondents reported trends in total rest of UK orders which were better than previous quarters Scottish Engineering survey respondents also reported an improvement in the trend in export demand. This could be consistent with a strengthening of the market for goods in the rest of the UK as we move into 2010.

### *Exports to the rest of the world*

- The most recent figures on total Scottish exports to the rest of the World reveal that in 2007 Scotland exports totalled £20.6 billion, of which £13.6 billion came from exports of Scottish manufacturing. The largest single sector for exports to the rest of the world was the food and beverages sector, exporting £4.6 billion in 2007,

and showing the ongoing importance of this sector for Scottish exports.

- For data after 2007, we are reliant on the Index of Manufactured Exports, which tracks developments in this most important industry. Recent data from October 2009 suggest that manufactured exports from Scotland fell by 0.7% in real terms between Q1 and Q2 2009, down some 8.5% on the level one year previously. The greatest declines were in chemicals, coke, refined petroleum and nuclear fuel and wood, paper, publishing and printing (down 6.0% and 12.0% in the last quarter respectively).
- In the year to Q2 2009, the biggest declines in export activity were reported in metal and non-metal products sector and textiles, fur and leather (down 20.7% and 17.0% respectively).
- As of October 2009, some recent experimental data published by the Scottish Government through SNAP the cash values of manufacturing exports from Scotland to the rest of the World showed that ROW exports totalled £3,470 million (in current prices). Engineering and allied industries was the largest share of these exports, worth almost 43% of total manufacturing exports.
- The Global Connections survey provides evidence for the most important markets around the world for Scottish exports, and dates from 2007. The USA was the most common destination for Scottish exports, followed by France, the Netherlands, Germany and Ireland. The downturns in these countries discussed in the introduction, sets the background to some difficult trading conditions for Scottish exports over 2009. It is likely that the growth performance of these countries will drive the pace of recovery in Scottish aggregate, and manufacturing, export demand over the coming years. Longer term, the extent to which new markets can be found for Scottish goods will be vital for the return to growth of the Scottish manufacturing sector.
- Recent IMF and OECD growth forecasts for these five key export markets in coming years are given in the table below. Readers should note that the IMF forecasts date from October 2009, while those for the OECD were published in June's Economic Outlook (the next issue of which is due to be released before the end of 2009).
- Several points can be noted from the above table for forecast growth rates for the export markets for Scottish goods. Firstly, US GDP growth is forecast

**Table 1: Growth forecasts for top five export markets for ROW exports from Scotland, % year on year change, plus United Kingdom and Euro Area**

		2009		2010	
		IMF	OECD	IMF	OECD
1	United States	-2.7	-2.8	1.5	0.9
2	France	-2.4	-3.0	0.9	0.2
3	Germany	-5.3	-6.1	0.3	0.2
4	The Netherlands	-4.2	-4.9	0.7	-0.4
5	Ireland	-7.5	-9.8	-2.5	-1.5
-	United Kingdom	-4.4	-4.3	0.9	0.0
-	Euro Area	-4.2	-4.8	0.3	0.0

**Sources:** International Monetary Fund, Regional Economic Outlook: Europe, Securing Recovery, October 2009 and OECD Economic Outlook, June 2009

**Table 2: Main forecasts of the Scottish economy (central scenario), 2009-2012**

	2009	2010	2011	2012
Gross Value Added	-5.0%	0.1%	1.0%	1.6%
Manufacturing	-11.3%	0.1%	2.8%	4.2%
Construction	-4.3%	0.2%	0.8%	1.3%
Services	-3.5%	0.1%	0.6%	1.0%

**Table 3: Forecasts for aggregate GVA growth in the Scottish economy under three scenarios, 2009-2012**

	2009	2010	2011	2012
High growth	-4.9%	1.6%	1.8%	2.1%
Central	-5.0%	0.1%	1.1%	1.6%
Low growth	-5.2%	-0.7%	-0.1%	0.5%

**Table 4: Forecasts of Scottish employment (jobs, 000s) and net employment change in central scenario, 2009-2012**

	2009	2010	2011	2012
Total employment (000s)	2,258	2,228	2,248	2,280
Net annual change (jobs)	(130,776)	(29,615)	20,292	31,467
% annual change	-5.5%	-1.3%	1.0%	1.4%
Agriculture (jobs, 000s)	29,370	29,518	30,183	31,221
Annual change	-3380	149	665	1038
Manufacturing	226,949	219,504	226,069	236,272
Annual change	-31354	-7445	6565	10203
Construction	123,274	114849	115788	117255
Annual change	-14476	-8425	940	1466
Services	1878,185	1864291	1876413	1895173
Annual change	-81565	-13894	12123	18760



**Table 5: Forecast Scottish net jobs growth in three scenarios, 2009-2012**

<b>Net job no's</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
High growth	-126,915	-352	36,025	44,154
Previous high forecast	-62,827	-23,152	33,584	45,174
Central scenario	-130,776	-29,615	20,292	31,467
Previous central forecast	-84,399	-51,451	11,301	26,824
Low growth	-134,864	-46,593	-3,409	6,788
Previous low forecast	-103,579	-66,894	-3,722	6,847

**Table 6: Forecasts of Scottish unemployment, central scenario 2009-2012**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
ILO unemployment (000s)	200,082	234,105	212,661	172,815
Rate <sup>1</sup>	7.6%	9.2%	8.7%	7.7%
Claimant count	136,821	160,087	145,423	118,175
Rate <sup>2</sup>	4.9%	5.7%	5.2%	4.3%

**Notes:** <sup>1</sup> = rate calculated as total ILO unemployed divided by total of economically active 16+ population. <sup>2</sup> = rate calculated as claimant count divided by sum of claimant count and total jobs.

**Table 7: ILO unemployment rate and claimant count rate measures of unemployment under each of the three forecast scenarios**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<i>ILO unemployment rate</i>				
High growth	7.2%	7.6%	6.5%	5.0%
Central	7.6%	9.2%	8.7%	7.7%
Low growth	8.2%	10.5%	11.0%	11.0%
<i>Claimant count rate</i>				
High growth	4.5%	4.6%	3.7%	2.8%
Central	4.9%	5.8%	5.2%	4.2%
Low growth	5.3%	6.7%	6.8%	6.5%

to be stronger in 2009 than 2008 at 1.5%, however other key export markets remain weak. The fifth largest export market in 2007 was Ireland, which is forecast to see a contraction in GDP of 2.5% in 2010, lessening any prospect that demand from that country could support a growth in demand for Scottish goods and services.

- The IMF World Economic Outlook predicts world aggregate output will decline by 1.1% in 2010, and 2010 is predicted to see stronger growth, with world output increasing by 3.1%. These figures have been revised upwards since the previous World Economic Outlook of July 2009, indicating some softening of the most bleak forecasts for the world economy. Interestingly, the UK is one of the few advanced economies identified by the IMF as

having its growth forecast for 2009 revised downward between July and October 2008. At the same time, UK growth in 2010 was revised up between these publications.

- The pattern of growth forecasted for 2010 is that the strongest growth will be seen in emerging and developing countries, such as China (9.0% forecast for 2010), India (6.3%) and the "ASEAN-5" countries of Indonesia, Malaysia, Philippines, Thailand and Vietnam. If exports are to drive the Scottish recovery then finding new markets in these countries could be important for a quicker return to a growth trajectory.

## The forecasts: Background

As with the most recent forecasts published in the last four Economic Commentaries, we have again three alternative scenarios for growth, employment and unemployment in the Scottish economy: we label the scenario that we feel is most likely “central”, with “high growth” and “low growth” as two respectively upper and lower growth alternatives. We contend that these three scenarios capture the range of outcomes that are possible, given that there are considerable uncertainties surrounding any specific single or point estimates to the “central” forecast. The significant revisions to GDP growth forecasts discussed above and seen particularly over the last year, suggest that a scenarios approach is sensible in the current uncertain economic climate – when first estimates of growth may be revised significantly some quarters into the future. While not presently explicit probabilities for each of these outcomes, we forecast that the “central” scenario is that which is most likely, while the “high growth” and “low growth” scenarios reveal the range of possible outcomes for the Scottish economy foreseen for future developments from November 2009 through 2010 to 2012.

## The forecasts: Detail

In the three scenarios considered, the following features are assumed to influence the factors of demand, and economic activity, across the Scottish economy:

### *Household*

In the central scenario, we forecast a significant reduction in household expenditure in 2009, slowly recovering through 2010, but still slightly down on 2009 levels, although returning to increasing expenditure from 2011 and into 2012. In the low scenario, household expenditure is damaged through lower consumer confidence and persistent unemployment. Spending falls in 2009, 2010 and (slightly) in 2011 in this scenario. In the high scenario, consumer confidence rebounds faster than expected in our central scenario, returning to positive growth (albeit, gingerly) in 2010 before returning to trend increases in expenditure through 2011 and 2012. This scenario could be consistent with lower than currently expected increases in joblessness, and recovery of consumer confidence, supported by access to, and demand for, household credit facilities.

### *Government*

In the central scenario we forecast an increase in government spending through 2009, with a reduced increase in spending in 2010. From 2011 we forecast increasingly large annual reductions in aggregate spending, which are reduced by 2.0% in 2012. In the high (low) scenario, government spending also falls from 2011, but by smaller (higher) amounts, in part supported by assumed economic activity keeping taxation income higher (lower) than is assumed in the central case.

### *Exports*

In the central scenario we forecast a slow return to growth in world trade in 2009, with a return to positive growth (as predicted by the IMF in October 2009) in 2010 and continuing through 2011 and 2012. This is reflected in a forecast demand for exports to the rest of the world from Scotland. Such a response could be indicative of Scottish exports securing markets in developing economies, which are forecast to see high levels of economic growth over the coming years, while more developed countries are predicted to see slower increases in growth. Recent changes in growth forecasts are discussed in the section above. In the high and low growth scenarios, this return to positive growth in exports takes less and more time respectively. Exports to the rest of UK follow a similar pattern in the central case, returning to positive growth in 2010. In the low scenario we forecast a small increase in export demand from the rest of the UK in 2010.

### *Tourism*

Tourism is assumed to recover from challenging conditions through 2008 and 2009 in our central case, by 2010, seeing some sustained growth in 2011 and 2012. Under the High scenario, significant growth is seen in aggregate tourism spending in 2010, perhaps reflecting faster than anticipated recoveries in growth in markets important for Scottish tourism, and the habits formed by Scottish households through increased domestic holidays in 2009.

### *Investment and stocks*

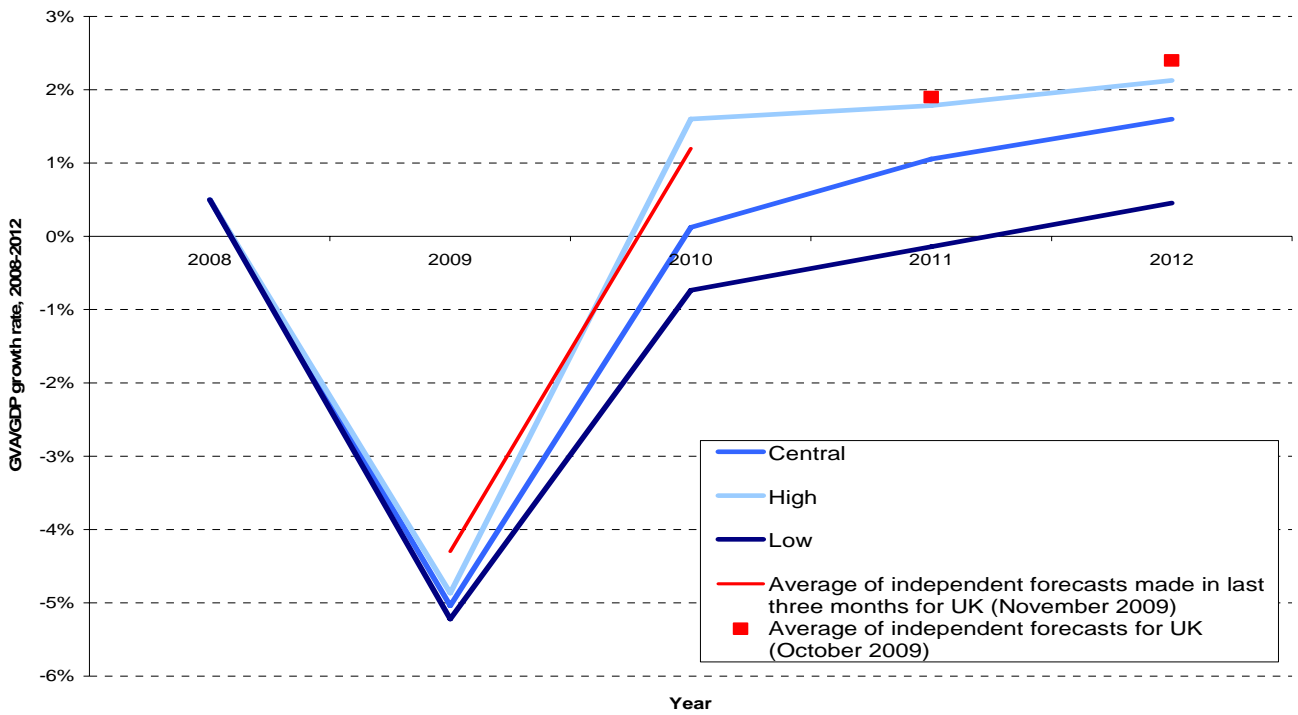
As discussed above, 2009 has seen significant reductions in investment demands as the economic environment has worsened. Most commentators expect the recovery in investment to be partly driven by the supply of credit, but also the demand for credit from companies, which will be explicitly linked with returning business confidence. A number of Scottish Engineering and Scottish Chamber survey respondents anticipated increasing profitability over the next twelve months, hinting that there is some optimism for increasing investment. We forecast that aggregate investment levels in 2010 will remain lower than 2009, albeit only slightly, and begin to increase from 2011. Our high scenario sees investment increasing from 2009 levels in 2010, although the increase is forecast to be small.

## Results

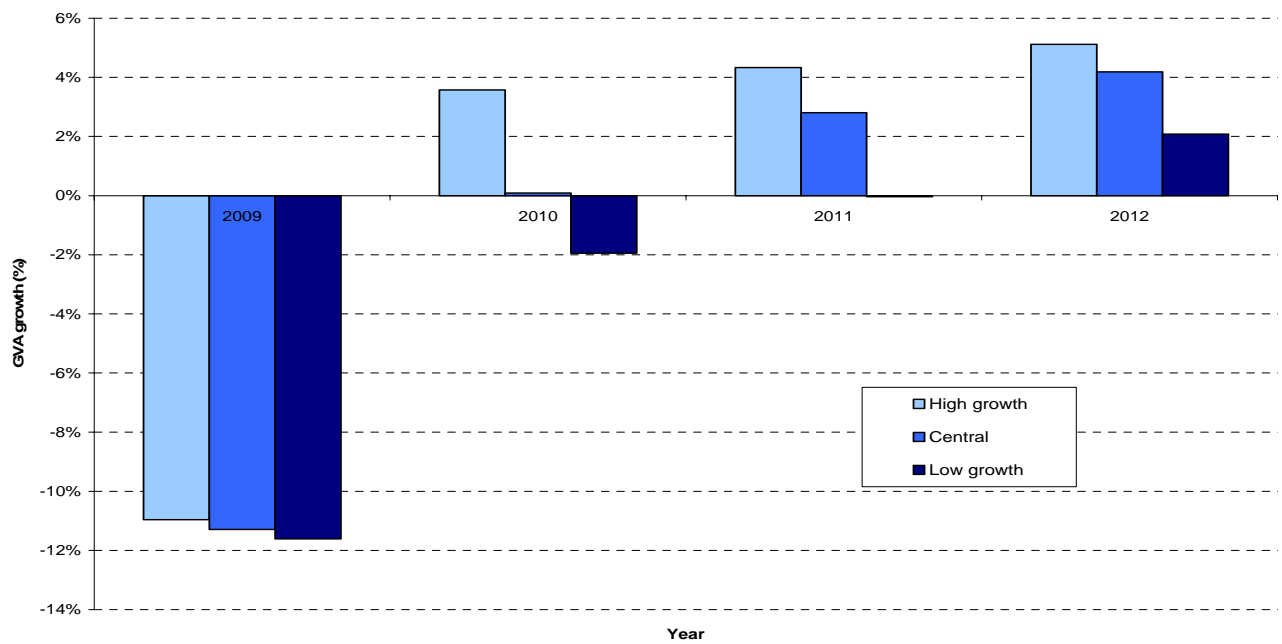
### **Gross Value Added**

The forecast GVA for Scotland in 2009 under all three scenarios is negative. We forecast all three scenarios out to 2012, by which time GVA growth in all scenarios is forecast to be positive, although the time path of changes is faster in the High growth scenario, and lower in the Low growth scenario. Scotland is forecast to return to positive growth in 2010 in both the Central (0.1%) and High growth (+1.7%) scenario, but the Low growth scenario sees negative growth in 2011 (-0.7 and -0.1).

**Figure 1: GVA growth 2008 and forecasts to 2012, Scotland and the UK**



**Figure 2: Forecasts of GVA growth in manufacturing, 2009-2012**



These scenarios are presented in Figure 1, alongside (for comparison) the average of new forecasts (i.e. those made in the last three months to November 2009) for the UK as a whole. Forecasts for the UK in 2011 and 2012 were collected by HM Treasury in October 2009, and these are also shown in Figure 1. The average of independent forecasts for the UK in each of 2011 and 2012 remain unchanged from those reported in June 2009's Commentary.

We are forecasting that the Scottish economy will perform less strongly than the UK in 2009 in all three scenarios, while less well (0.7%) than the average of independent forecasts for the UK in 2010 (1.2%) in our Central scenario. As with previous experience of recessions (discussed in detail in June 2009's Fraser Economic Commentary, and for the reasons given above), we anticipate the Central scenario will see a slower return to growth in Scotland than the UK as a whole, with all scenarios forecasting lower growth in Scotland than the average of independent forecasts for the UK in 2011 and 2012.

Under the Central scenario, GVA growth returns to positive annual growth in 2010 (+0.1%) and 2011 (+1.0%). In 2012, Scottish growth is forecast to be 1.6%. Our central scenario for 2009, and the forecast for the sectors under this scenario are given in Table 2. Table 3 shows the GVA forecasts under each of the three scenarios. Under the Low growth scenario, negative growth is also seen in 2009, 2010 and 2011, with the Scottish economy not returning to positive growth in this scenario until 2012.

We also present forecasts for GVA change in Scotland at broad industry levels for manufacturing and services, as well as the construction sector, under each of the three scenarios – Central, High growth and Low growth. Figure 2 shows the GVA change in Manufacturing under each of these three scenarios, while Figure 3 shows the GVA change in Services. Figure 4 shows the change in forecasted GVA annually in the construction sector between 2009 and 2012.

Across the aggregate manufacturing sector (shown in Figure 2), a recovering from negative GVA growth in 2009 occurs in 2010 in the Central scenario, although there is a small positive GVA growth forecast for 2010 under the High growth scenario. In 2011 and 2012, all three scenarios forecast positive GVA growth in the manufacturing sector, with growth ranging from 2.1 to 5.1% in 2012. Key to the speed of this recovery will be the growth of external demand for products, which have been revised upwards since June's commentary due to the revisions for growth, and demand for imports, in key Scottish manufacturing export markets seen since June's commentary.

## Employment

Our forecasts for employment for each of the three scenarios are given in Table 4, along with the net aggregate employment change over the year. The

employment figures relate to jobs, not FTEs, and are calibrated on the Employers' Quarterly Survey Series, as given in Table 6.06 of the Economic and Labour Market Review, published by National Statistics. This gave total jobs in Scotland over the year 2008, as 2,387,500. As we have previously forecast, we anticipate in our Central scenario that total employment in Scotland will fall in aggregate in both 2009 and 2010.

In the Central scenario, employment is forecast to decline by 130,776 in 2009 and by 29,615 jobs in 2010. Job numbers begin to increase in 2011 and 2012. Total jobs in 2012 are forecast to be around 109,000 lower than the jobs total for 2008 (a year when historic highs and lows respectively for the employment rate and unemployment rate were seen in Scotland). The Low growth scenario forecasts that around 103,500 jobs are lost in 2009, and a further 67,000 in 2010. In that scenario, total jobs lost between 2009 and 2012 are 167,000, while in the High growth scenario, the recovery in 2011 and 2012 sees job numbers recover towards their previously measured historical highs, and job numbers in 2012 are around 7,000 lower than their level in 2008. In all scenarios, total job numbers decline in 2009 and 2010.

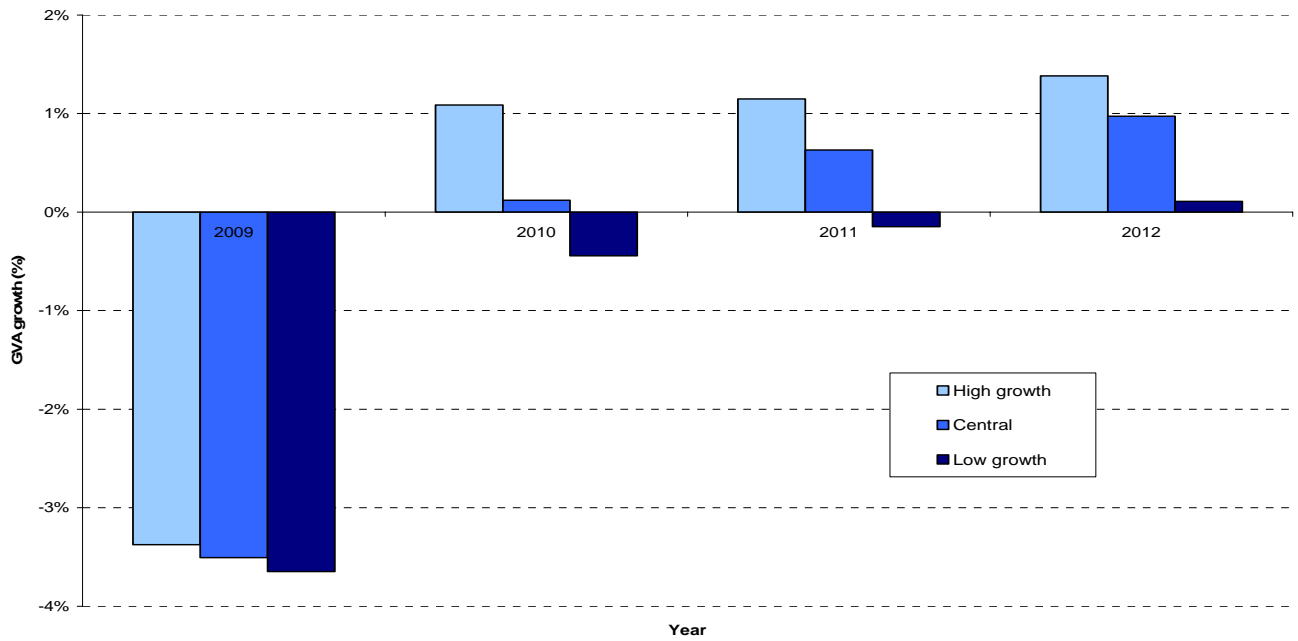
Table 5 shows the net annual growth in jobs in each of the three scenarios, and how these have changed since our last forecast.

Looking at the sectoral breakdown for these employment changes, in all scenarios the Services sector sees the largest decline in job numbers in both 2009 and 2010. Overall, the number of service sector jobs are forecast to fall by 81,565 in 2009 and a further decline of 13,894 in 2010. Financial services is forecast to be especially badly affected, losing almost 14,849 jobs in 2009 and 11,616 jobs in 2010, but large job losses in 2009 are also forecast in real estate and business services, retail and wholesale, and hotels and catering sectors.

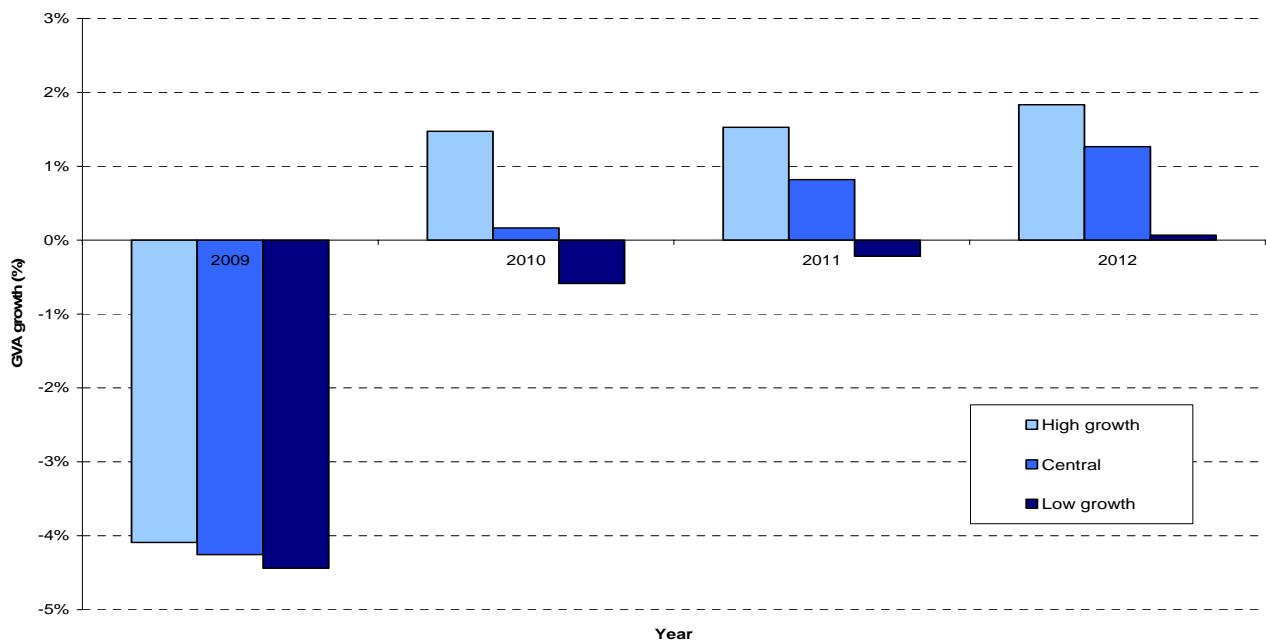
The construction sector is forecast to lose around 14,476 jobs in 2009, and a further 8,425 in 2010, and see a slow recovery through 2011 and 2012. As with the aggregate jobs total, the total jobs in construction in 2012 remain below levels of 2008. In the High growth scenario, job losses in construction are smaller in 2009, and fall by over 14,000 while recovering to job growth of over 2000 in 2012. As mentioned earlier in this section, the construction sector has tended to see both quicker, and earlier, declines than the rest of the economy, and in previous upswings would be likely to see increased activity ahead of much of the economy. The slower than previous growth in the private housing sector may contribute to the upswing increase being less than in following previous recessions in Scotland.

Manufacturing jobs fall in 2009 by over 31,000 in the Central scenario, with a range from 32,232 to 30,433 in the Low and High growth scenarios respectively. Within this

**Figure 3: Forecasts of GVA growth in services, 2009-2012**



**Figure 4: Forecasts of GVA growth in construction, 2009-2012**



broad sector, the most heavily hit sectors in 2009 will be those which rely upon export markets for the destination of their output, and so falls in employment are forecast in metals and non-metal products (down 3,829), mechanical engineering (down 3,098) and mining and quarrying (down 3,636). Key to the response in the labour market will be the extent to which labour hoarding occurs in the face of the recession, and evidence suggests that while there have been some increase in anecdotal labour hoarding, there has been growing unemployment on the most recent data. This might suggest that the impact on jobs could be more significant than was initially felt earlier this year. When positive GVA growth does reappear, perhaps through 2010 in our Central and High scenarios, it may be beyond 2012 before we see the numbers in employment reaching the highs for employment seen in 2007.

## Unemployment

We present our forecasts for unemployment for 2009-2012 in Scotland, as measured by the ILO definition as well as those claiming unemployment benefit, in Table 6. The preferred measure of unemployment is the ILO definition, as given by the Labour Force Survey. This measure is preferred as it reveals the extent of labour which is unemployed and available for work, rather than that portion of the available Scottish labour force which is currently in receipt of unemployment benefit.

The forecasts for unemployment in 2009 and through 2010-2012 have been revised upwards from forecasts published in the last Fraser Economic Commentary, given the speed of the reduction in employment and increasing unemployment observed in the first quarter of 2009, and in line with our revision downwards of our central scenario forecasts for Scottish GVA in 2009. Until the recent

economic downturn, the Scottish labour market had been outperforming that of the UK when measured by employment rate, and had seen historically high levels of employment and low levels of unemployment. Of crucial importance to realised levels of unemployment will be the extent to which people who lose employment switch into the unemployed, or move into labour inactivity, i.e. unemployed but not available for work. As of November 2009, and as reported in the Chief Economic Advisor's report, the increase in the Scottish ILO unemployment rate in Scotland over the last year (2.7 percentage points) was greater than the increase in the UK as a whole (up 2.4 percentage points).


Table 7 shows the ILO and claimant count measures of unemployment under each of the three scenarios of our forecasts.

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Grant Allan  
11 November 2009



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# Review of Scottish Business Surveys

## Overall

A sense of rising confidence and improving business activity was increasingly evident in business surveys over the summer months, although this did not apply to all sectors. In July Scottish Engineering, commenting on the results for the second quarter, noted that 'manufacturing remains in the doldrums' and whilst there was a marginal improvement in orders the 'green shoots of recovery have yet to appear.' In October it noted, in response to the survey results for the third quarter, 'manufacturing looks to be turning the corner', and 'capacity utilisation creeps up'. The CBI Scottish Industrial Trends in the second quarter noted the rate of decline in domestic and export orders eased, but there were 'few signs of export improvement. The Scottish CBI noted the continuing concerns as to finance and the deflation in both export and domestic prices. By September the Markit UK Regional PMI (the Scottish version is no longer published) reported an improvement in business activity in Scotland, although the rate of improvement was slower than in other UK regions. The Lloyds TSB monitor (September 2009) indicated 'the Scottish economy is on track to exit recession later this year', although noted that the Scottish economy has not yet returned to growth 'but is nearer to the point of turnaround between decline and growth'.

The Scottish Chambers' Business Survey reported in July that there was much clearer evidence in the results for the second quarter that the first stage of the recession, a period of sharp decline in confidence, orders, sales and activity, is coming to an end, and there are more signs of both an easing in the rate of decline, and signs of some pick up in orders and activity and recruitment, although pressures on margins remain at high levels. At the end of the third quarter it reported 'clear signs of an emerging recovery in manufacturing and a 'good summer' in tourism, with rising confidence in manufacturing, wholesale distribution and tourism, together with a lessening in the decline in confidence in construction and retail.'

Data from the Scottish Chambers' Business Survey illustrates well the trends in business confidence since 2006. Across most sectors rising net trends in business confidence were reported in the first half of 2007. These were followed by sharp and ferocious declines in 2008 and the first quarter of 2009, with net trends of over 60% of manufacturing and 70% of construction, wholesale, retail and tourism respondents reporting declining confidence. Rising net trends re-emerged in manufacturing in Q2 2009 and strengthened significantly in Q3 2009. In contrast

confidence remained negative in construction and rose only marginally in tourism.

Data from the Scottish Chambers' Business Survey suggests pay pressures remained subdued through the summer. The percentages of respondents increasing pay in the third quarter ranged from 3% of construction to 21% of manufacturing, and average pay increases ranged from 2.1% in manufacturing to 4.5% in retail. Average pay increases in manufacturing and construction remain at historically low levels. Recruitment activity in all sectors remained low ranging from 19% in construction, 23% in retail to 37% in manufacturing and 59% in tourism;

## Oil and Gas

The severe downturn in oil and gas prices continued to impact on activity and investment plans. The leading organisation in the sector, Oil and Gas UK, reported that capital investment in 2008 was some 6% lower than in 2007 and is anticipated to ease through 2009 and 2010. More recently Subsea UK noted 'the short term outlook remains tough' as operators sought to cut costs and reduce activity, and only forecasts an improvement in activity in 2010.

## Production

The latest Lloyds TSB reported production businesses still experiencing difficult conditions, 'although the rate of decline has been arrested'. It noted the recession in production is deeper and longer lasting than in services, and the production sector is further away from a return to growth. According to Markit UK Regional PMI Scotland recorded only a marginal increase in private sector output during October.

## Manufacturing

### *Optimism*

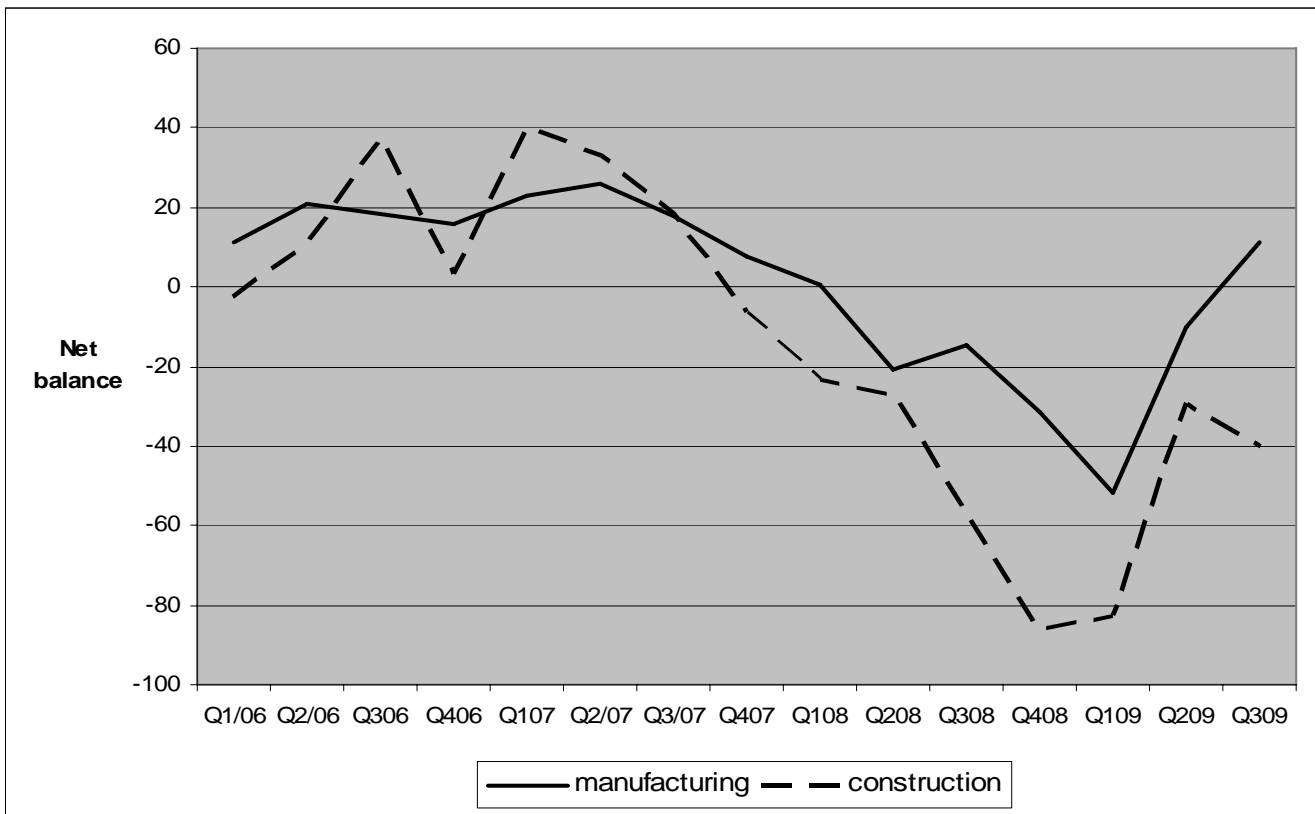
Both Scottish Engineering and Scottish Chambers reported rising confidence trends in business confidence in the third quarter. Scottish Chambers noted business confidence improved further in the third quarter rising strongly from a net balance of 9% in Q2 to 32%, whilst Scottish Engineering reported a net balance of 20% for the same quarter. Declining confidence was only reported by 10% of Scottish Chambers manufacturing and 14% respondents of Scottish Engineering respondents.

### *Orders and Sales*

Scottish Chamber and CBI respondents reported the outturn in total new orders and export orders was marginally better than expected and the actual trends in total, Scottish and rest of UK orders, whilst remain weak, are better than in previous quarters. There was a further improvement in export orders. In contrast Scottish Engineering reported continuing net declines in orders,

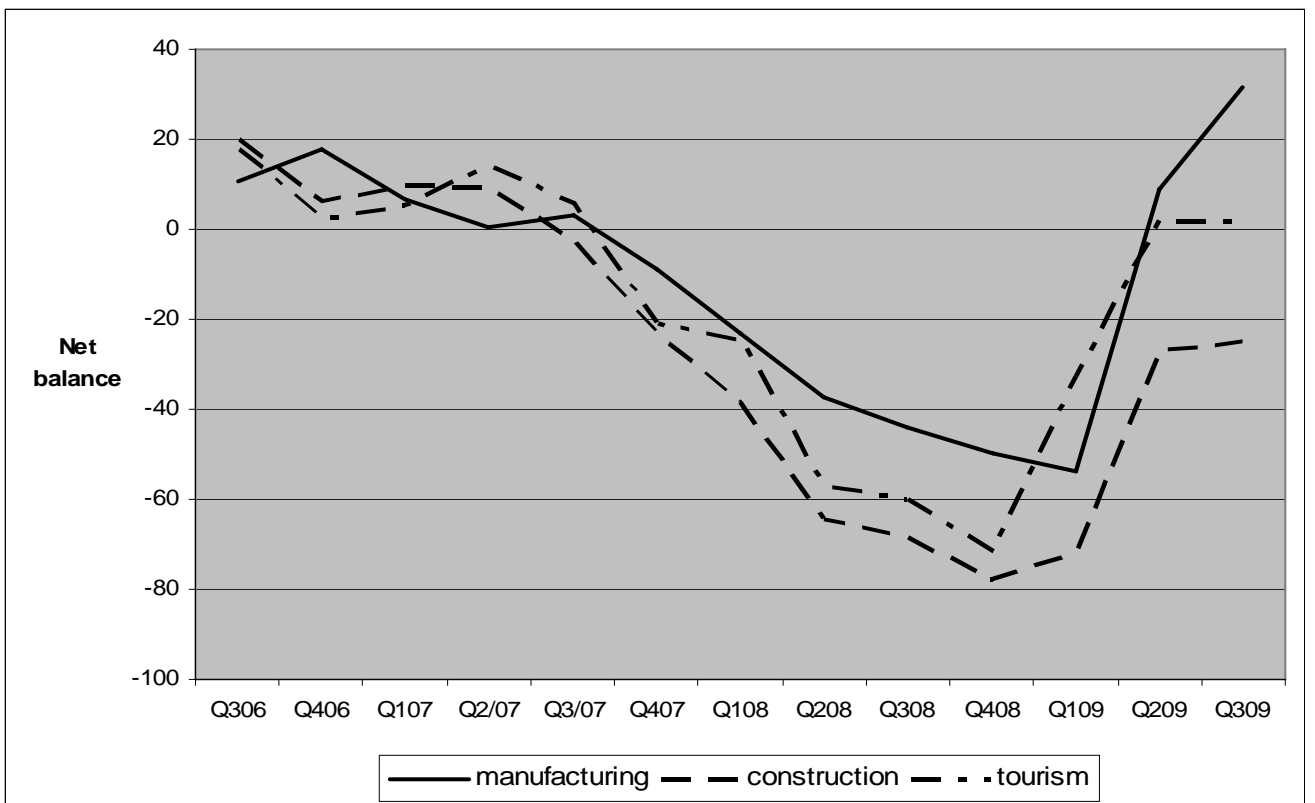
**Total orders/contracts (net balances)**

Source: Scottish Chambers' Business Survey



**Business confidence (net balances)**

Source: Scottish Chambers' Business Survey





although at reduced rates over the previous two quarters. Both Scottish Chambers and Scottish Engineering respondents reported an improvement in the trend in export demand, although this was stronger amongst Scottish Chamber respondents

Scottish Chamber respondents reported a continuation of the declining trend in the level of work in progress, but the rate of decline was slower than in the second quarter. Average capacity used rose marginally by 0.8 percentage points to 71.6%, although 57% (71% in quarter 2) reported capacity used was below preferred levels. Pressures to raise prices continued to moderate.

### *Investment*

Both Scottish Engineering and Scottish Chambers reported negative trends in investment. Overall investment trends eased and only 16% expect to increase investment and 5% anticipate increasing their leasing of equipment over the coming year. Cash flow trends continued to ease, but at a more modest rate than in the past four quarters. The anticipated trends in turnover and profitability improved with 40% and 34% of respondents respectively reporting an increase over the twelve months to September 2010; although once again Scottish Engineering respondents are more cautious as to price trends.

### *Employment*

Two thirds of Scottish Chamber respondents reported and expect no change in total employment levels with a small net balance reporting a decline. Scottish Engineering respondents likewise reported a decline in both employment and hours worked and expect the decline to continue through the fourth quarter. The CBI respondents were more confident and anticipate a slight rise in employment in the fourth quarter.

## **Construction**

### *Optimism*

Data from the Scottish Chambers' Business Survey suggested that business confidence remained weak through the third quarter, with only 11% reporting being more confident compared to the previous quarter. Thirty-six per cent, compared to over 42% of respondents in quarter two, reported being less confident. The net trend in business optimism remained negative, only improving marginally from -27% in quarter 2 to -25% in quarter three.

### *Contracts*

The rate of decline in the net trend in new contracts increased from -30% in the second quarter to -40%. The trends in orders from all sectors continued to decline although the rate of decline in public sector orders eased. Demand remained depressed with 50% reporting downward trends in total new orders and 72% declining levels of domestic/house build contracts. The proportion

reporting working below optimum levels rose slightly to a net of 75%.

Expectations as to turnover trends over the next year remained depressed, although did not deteriorate further in the third quarter. A net of -31% (-37%, -64%, -65%, and -37% in the previous four quarters) anticipate declining turnover trends over the next year. A net of -44% (-59% - 78%, -78% and -54% in the previous four quarters) anticipate declining profitability over the next twelve months. And a net of 64% of construction firms anticipate declining tender margins over the next twelve months.

Average capacity rose by two percentage points to 74% but 50% (44% in the previous survey) expect a declining trend in the level of work in progress.

### *Employment*

A third of firms reduced total employment levels with only 6% reporting an increase in employment and recruitment again remained at very low levels. Only 3% of respondents reported increasing pay in the third quarter by an average of 3.5%.

## **The service sector**

The latest Lloyds TSB Business Monitor noted a marked easing in the rate of decline in turnover in new and repeat business in the service sector, and suggested the Scottish service sector is close to where growth will be resumed. Expectations for the next six months are more positive than in previous quarters, and a net of 3% of service firms anticipate increasing turnover in the six months to February 2010.

## **Retail distribution**

The Scottish Retail Consortium's Monitor for September reported increased sales 'Customers' mood improving' as like for like sales were 1.5% higher than in September 2008 and total sales were up 4.3% on a year ago. Underpinning these figures was the increase in food sales (up 2.4% on a like for like basis). However, firms remain cautious and discounting of prices remains widespread.

### *Optimism*

The Scottish Chambers survey for the third quarter reported that the long running negative trend in business confidence eased further from -27% to -8% (the least depressed figure since quarter 4 2007). However, more than half of firms were less confident compared to the same quarter one year ago.

### *Sales*

Scottish Chambers survey data for the retail sector reports unweighted sales trends, as such the trends reflect the trends reported by independent retailers as well as the major multiple retailers, this tends to understate the overall trends in sales. The proportion of respondents reporting and expecting declining sales in the third and fourth

quarters remains historically high. Nevertheless the rate of decline in actual and expected sales has continued to ease. Almost half of respondents reported and expect declining sales trends.

The value of total new sales declined for 45% (64% in quarter two) of firms and 41% (68% in quarter two) expect a further decline during the three months to the end of December 2009.

### *Finance*

A net of -15% of retailers anticipate declining turnover (compared to -49% in the previous quarter), and a net of -36% (-51% in the previous quarter) anticipate declining profitability over the next year, suggesting continued pressures on margins, although perhaps beginning to ease.

### *Employment*

For a further quarter no responding retail firms increased total employment levels and only a small number expect to increase total employment levels during the three months to the end of December. Only 23% of firms attempted to recruit, although historically low it was an improvement compared to quarter two (18%). Nineteen percent of firms increased wages by 4.51%.

### **Tourism**

#### *Optimism*

According to the Scottish Chambers' Business Survey the overall level of business confidence remained positive in the third quarter and unchanged from the previous quarter, and was stronger than in the same quarter in 2008. A net balance of firms also reported being more confident compared to one year ago.

#### *Demand*

Both Visit Scotland and Scottish Chambers reported better trends in the summer than in the previous year. Visit Scotland data for June indicated a two percentage point increase over the June 2008, July indicated a five percentage point increase in bed occupancy compared to July 2008 and the August 2009 suggests a two percentage point rise in room occupancy over the same month in 2008. Scottish Chambers reported the outturn in the third quarter was better than anticipated. Forty-four percent, compared to 21% in quarter two reported increased demand for accommodation. The trends in demand from Scotland and RUK improved for the first time since quarter four 2007. Demand from abroad and business trade continued to decline but the rates of decline eased. Average occupancy rose from 54% to 72.7% (marginally higher than in Q3 2008, but lower than in Q3 2007).

Data from Visit Scotland indicated average hotel bed occupancy for August 2009 was 66% and for 80% room occupancy. Visit Scotland data noted that whilst nationally

the average length of stay has dropped slightly over the past year, this has not been the case in all regions, with Edinburgh and Dumfries & Galloway reporting the larger increased duration of stays. Additionally Visit Scotland data suggested less evidence of visitors moving to lower graded hotels.

Looking forward to the fourth quarter, Scottish Chambers noted respondents expecting to reduce room rates and the discounting of prices were anticipated to be widespread.

### *Employment*

Scottish Chambers data for the third quarter noted changes in employment levels were reported by fewer than half of firms. Net declining trends in full time (-21%), part time (-18%), seasonal (-51%) and overtime working (-56%) were reported.

### **Outlook**

Scottish Chambers data suggest manufacturing trends in the third quarter offer the clearest signs of an emerging recovery, tourism has benefitted from a good summer, but pressures on margins may cause problems in the fourth quarter. However, uncertainty, fears of the recovery stagnating, and limited capital spending remain concerns. Generally for Scottish firms working levels remain well below optimum levels in manufacturing and construction, and competition for demand/sales remains widespread in retail and tourism leading to widespread and early seasonal discounting of prices. Pressures on margins and likely pressures on raw material and other costs highlight the fragility of the recovery. The labour market remains weak with few signs of an improvement for the fourth quarter.

Eleanor Malloy/Cliff Lockyer  
November 2009

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

1. The Confederation of British Industries Scottish Industrial Trends Survey for the second and third quarters of 2009;
2. Lloyds TSB Business Monitor 47 for the quarters June – August 2009 and expectations to February 2010;
3. Scottish Engineering's Quarterly Reviews for the second and third quarters 2009;
4. The Markit Economics Regional Monthly Purchasing Managers' Index to end September 2009 and Markit UK Regional PMI Nov 2009;
5. The Scottish Retail Consortium's Monthly Scottish Retail Sales Monitor for September 2009;
6. The Scottish Chambers of Commerce Quarterly Business Survey, reports for the second and third quarters of 2009;
7. Oil & Gas UK 2008 Activity Survey;
8. Visit Scotland Occupancy Survey August 2009.

# Overview of the labour market

Inevitably current interest in the Scottish labour market continues to focus on the trends and patterns in the unemployment figures and again in this issue we note recent changes in Scottish labour market trends. Initially, however, the increasing recognition of the likelihood of widespread job losses in public sector and recent disputes involving postal services and threats of industrial action by British Airways cabin crew prompt a consideration of both the trends in public sector employment and of trade union membership.

In quarter 2 2009 there were 572,200 employed in the Scottish public sector (excluding the 6.9% or 42,500 employed by RBS and Lloyds who have been reclassified as public corporations), of which 44.6% were employed in local government (excluding police and fire services) and 26.3% in the NHS. Recent changes in the numbers employed within local government have been affected by the transfers of local government departments to arms length external organisations, most recently being the transfer of Glasgow City's Direct and Care Services department to an ALEO, one of a number of such developments affecting culture and sport, community and safety services.

The numbers employed (full time equivalents) in Scottish local authorities are as follows: 56,800 teachers, 40,00 other education staff; 43,600 in social work; 29,300 in police and related services; 5,700 in fire services and 85,500 other staff. The numbers employed by local authority (excluding police and fire service staff) range from over 23,700 in Glasgow City; between 15,000 and 19,300 in Edinburgh City; North and South Lanarkshire to under 5000 in East Lothian, East Renfrewshire, Inverclyde, Midlothian, Orkney and Shetland. Initial proposals by a number of councils indicate that these numbers are likely to reduce quite significantly over the next few years.

Concerns that recent industrial disputes and the onset of public sector cuts will herald a period of more substantial industrial unrest and a new 'winter of discontent' paralleling the disputes in 1978 – 79, by mainly local authority employees, need to balance the changed landscape of employment patterns, legislation and trade union membership levels with the distribution of union membership. Nationally in 1979 trade union membership was some 13 million, or 55.4% of the workforce. In 2008 union membership was 6.9 million and union density had fallen to 27.4% of all employees (or 25.3% of all employed). In Scotland union density was 32.9% in 2008, this ranged from 65.6% of public sector and 17.5% of

private sector employees. However, union membership remains highest in public administration and defence, education, electricity, gas and water supply and in health and social work, and given the nature of the sector and historical bargaining arrangements the public sector has been a major contributor to the number of days lost in recent years (in 2002 two disputes in public administration accounted for some 60% of days lost).

## Recent trends and statistics

Comparable figures on the labour market<sup>1</sup> between Scotland and the United Kingdom in the quarter July – September 2009 are summarised in Table 1. Labour Force Survey (LFS) data show that in the quarter to September 2009 the level of employment in Scotland fell by 3 thousand, to 2,500 thousand. Over the year to September 2009, employment in Scotland fell by 56 thousand. For the same period, UK employment fell by 490 thousand. The Scottish employment rate – those in employment as a percentage of the working age population – was 73.9 per cent, down 2.4 per cent compared to one year earlier. For the same period the UK employment rate was 72.5 per cent, down 1.9 per cent compared to one year earlier.

In considering employment, activity and unemployment rates it is important to remember the bases and relationships of these figures. LFS data 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.

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 an emerging pattern, they are categorised as economically inactive, as such the unemployment rate remains unchanged whilst the activity and inactivity rates change.

Table 1 shows that for Scotland the preferred International Labour Organisation (ILO) measure of unemployment rose significantly to 194 thousand, between July - September 2009, or by 67 thousand over the year<sup>2</sup>. The ILO unemployment rate rose in the three months September 2009 and now stands at 7.2 per cent. This represents a 0.2

**Table 1: Headline indicators of Scottish and UK labour market, July - September 2009**

July - September 2009		Scotland	Change on quarter	Change on year	United Kingdom	Change on quarter	Change on year
Employment*	Level (000s)	2,500	-3	-56	28,927	6	-490
	Rate (%)	73.9	-0.1	-2.4	72.5	-0.1	-1.9
Unemployment**	Level (000s)	194	4	67	2,461	30	629
	Rate (%)	7.2	0.2	2.5	7.8	0.1	2
Activity*	Level (000s)	2,694	2	11	31,389	35	140
	Rate (%)	79.8	0.1	-0.3	78.9	-0.1	-0.2
Inactivity***	Level (000s)	653	-2	13	7,997	41	132
	Rate (%)	20.2	-0.1	0.3	21.1	0.1	0.2

Source: Labour Market Statistics (First Release), Scotland and UK, November 2009

\* 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)

**Table 2: Employee jobs by industry, Scotland, June 2009**

SIC 2003	All jobs (seasonally adjusted)	All jobs	Agriculture, Forestry and Fishing	Mining Energy and Water Supplies Industries	Man- ufacturing Industries	Construction	Distribution etc, transport etc, finance and business services	Education, health, public admin and other services
Section		A-O	A,B	C,E	D	F	H-K	L-O
Sep 05	2,373	2,373	32	37	232	129	1,102	842
Mar 06	2,376	2,368	31	36	224	135	1,094	848
Sep 06	2,361	2,360	33	38	224	138	1,085	841
Mar 07	2,380	2,371	34	41	222	145	1,082	847
Sep 07	2,389	2,389	33	43	222	139	1,108	844
Dec 07	2,391	2,400	25	42	220	139	1,127	847
Mar 08	2,392	2,382	28	42	218	137	1,109	849
Jun 08	2,396	2,396	35	42	216	136	1,114	853
Sep 08	2,389	2,387	35	41	216	138	1,104	852
Dec 08	2,374	2,385	33	41	212	140	1,103	856
Mar 09	2,362	2,354	37	40	206	139	1,075	858
Jun 09	2,339	2,339	29	41	203	130	1,074	861

**Table 3: Claimant count by age and duration (computerised claims only) percentage change over year to October 2009**

	All computerised claims	Up to 6 months	Over 6 and up to 12 months	All over 12 months
All 16+ numbers	128,900	87,900	26,400	14,700
All 16+ % change over year	55	39	115.1	89.6
All 18 – 24 change over year	52.6	39.3	160.7	147.9
All 25- 49 change over year	55.5	38.3	105.2	86.7
All 50 and over change over year	60.4	42.4	104.1	88.5

per cent rise over the last quarter and a 2.4 per cent rise relative to the same period a year earlier. The comparable ILO unemployment rate for the UK stands at 7.8 per cent, and is up 0.1 per cent over the most recent quarter, and up 2 per cent over the year.

The economically active workforce includes those individuals actively seeking employment and those currently in employment (i.e. self-employed, government employed, unpaid family workers and those on training programmes). Table 1 shows that the level of the economically active rose by 0.1 per cent between July and September 2009. There were 2,694 thousand economically active people in Scotland during Q3 2009. This comprised 2,500 thousand in employment and 194 thousand ILO unemployed. The level for those of working age economically inactive fell in the last quarter, down 0.1 per cent on the previous quarter to 653 thousand people. This indicates an increase of 0.3 per cent in the number of people of working age economically inactive over the last year.

The most recent (seasonally adjusted) figure for Jobseekers allowance claimants in Scotland stood at 134.8 thousand in October 2009, up 46.9 thousand or 55.3% over the year. The claimant count rate in October 2009 stood at 4.8 per cent. This is up 1.7 per cent over the year. The UK claimant count rate in October 2009 was 5.1 per cent, unchanged from the previous month and up 1.9 per cent over the year.

Unemployment data at the Scottish constituency level for July 2009 is available in a SPICe Briefing, with more recent figures available in November.

<http://www.scottish.parliament.uk/business/research/briefings-09/SB09-56.pdf>

The most recent figures for the number of employee jobs by industrial activity are detailed in Table 2. Employee job figures are a measure of jobs rather than people. Total seasonally adjusted employee jobs for the quarter ending June 2009 (the latest available figures) stood at 2,339 thousand. The number of jobs in the manufacturing industry continues to fall, and now stands at 203 thousand,

down 3,000 on the previous quarter, and down 13 thousand against the same quarter one year earlier. The number of jobs in the service industry fell by 1,000 over the last quarter to 1,074 thousand, and there are now 30 thousand fewer jobs in the service industry than the same period ending a year earlier.

Table 3 provides some limited indications of the experience of unemployment in terms of claimant count by age and duration. The pattern over the year suggests a higher percentage rise in claimants over 50, but significantly it is the age group 18 – 24 that has witnessed the largest percentage increase in unemployment over 6 months, although the numbers are low. Over the past years the numbers of 18 – 24 who have been claiming Job Seekers allowance over 6 and up to 12 months has increased by 3,800 and for those over 12 months by has risen by 500.

## Outlook

In the year to September 2009 the total in employment fell by 56,000 and unemployment rose by 67,000 to 194,000 and the numbers economically inactive rose by 13,000 over the year. The trend in unemployment is increasing and the latest rate is significantly higher than a year ago. In the year to March 2009 (the latest available data) the percentage declines in part-time and temporary workers were higher than that for full time workers. Over the next quarters the scale of job losses in finance and the public sector may be clearer. For both part-time and temporary workers the inability to find either a full time or a permanent job was more evident than a year ago. The 'flexible workforce' has been cited as one reason for unemployment rates to be lower than had been feared, but the limits to flexibility may be approaching.

Rationalisation in both the private and public sectors will contribute to unemployment in the short and medium term. Within the private sector the initiatives by British Airways, Diageo and the banks are likely to be followed by other companies seeking to rationalise production/services and reduce costs. Within local government the flow of announcements of actual and planned job reductions is increasing and is set to increase more substantially in 2010.

**Endnotes:**

<sup>1</sup>The Census 2001-consistent population figures at local authority level were released in February 2003. This has allowed the production of interim regional LFS estimates. The population data only cover the periods up to mid-2001. The data presented here are taken mainly from Labour Market Statistics, May 2008 and are consistent with the updated LFS data available on NOMIS from Summer 2004. Labour Market Statistics continue to report data for Scotland at the quarterly level, so this will continue to form the basis of our analysis of movements in the labour market between quarters.

<sup>2</sup>The Labour Force Survey definition of ILO unemployment takes precedence over the claimant count measure. ILO unemployment is much less sensitive to changes in the regulations governing unemployment benefit, and conforms to a widely accepted standard to allow for more meaningful cross-country comparisons.

Cliff Lockyer  
November 2009

# Economic perspectives

## The defence industry in Scotland

Stewart Dunlop, Fraser of Allander Institute, Department of Economics

### Introduction

*“The defence industry is vital to Scotland”<sup>1</sup>*

The above quote from the recent House of Commons Scottish Affairs Committee report concerns the volume of economic activity that the defence industry supports in Scotland. We examine this issue below and find that it can be difficult to accurately establish the importance of defence to the Scottish economy. Defence issues are ultimately political decisions and we also argue that this dearth of information is important in the light of a number of political developments that could potentially affect the contribution that defence makes to Scotland. We discuss a number of these developments and attempt where possible to gauge their impact, but it is clear that our ability to make rational choices on defence would be improved by an improved set of figures on the economic consequences of defence decisions.

The significance of defence at a community level is well illustrated by the UK Government’s recent decision to cancel its planned restructuring of the missile testing site in the Western Isles. The decision to cancel, which would have saved an estimated £50 million but involved the loss of 125 jobs on Benbecula, was taken because the economic costs to the local economy were considered to be too high, a point made by the Scottish Secretary:

“The potential savings to the Ministry of Defence were not worth the cost to the islands’ economy. It just wasn’t a price worth paying for the island”<sup>2</sup>.

### The defence industry in Scotland - background

While it can difficult to establish its importance even in terms of a simple measure such as employment, there is little doubt that defence is an important sector in Scotland. We look at two key indicators of defence in Scotland, the first of which is the number of military and associated civilian personnel. Outside the military, Scotland also has several large-scale defence contractors, including Babcock International at Faslane and Rosyth and BAE Systems Surface Ships shipbuilders in Glasgow and a number of global companies who maintain a presence in Scotland because of defence work, including Raytheon, Thales and others.

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

## Service personnel

Table 1 details the 2007 level of service employment in Scotland. The UK Government's Defence Analytical Services and Advice (DASA) database shows that 12,400 military service men and women were stationed here, around 7.6% of the UK total. To a small extent Scotland benefits less than proportionately than the rest of the UK from this part of defence, given its current UK population share is around 8.4%<sup>3</sup>.

While small relative to, for example, the estimated 220,882 jobs in Manufacturing<sup>4</sup>, the 12,400 military jobs clearly constitute a substantial source of employment. As the example above shows, however, defence employment may be very significant locally. Table 2 below illustrates this by detailing employment in six areas, which together account for 86% of all service employment in Scotland.

The larger economies of Glasgow and Edinburgh mean that in relative terms the contribution service personnel make to overall activity is relatively limited. It is clear, however, that service employment is significant in areas like Fife and Highland, and is particularly important in Moray and in Argyll & Bute. We also note that looking at employment by Council, the lowest level published, does not allow us to identify the extent to which small areas within these regions may rely on the military as a source of jobs.

Table 3 below gives some indication of the local importance of military employment by examining its size (relative to both total working population and population in employment) in three of the smaller areas. The figures for Argyll & Bute and Moray make clear the extent to which both rely on defence for a significant volume of their overall economic activity.

## Non-service personnel

The military also employ civilians, and DASA (2007) figures show around 6,500 civilian jobs at military facilities in Scotland (Table 4). DASA therefore estimates that a total of 18,900 people were directly employed in the military sector in Scotland in 2007.

## Recent employment change

It is also interesting to observe how military employment has changed in recent years. According to DASA figures, Scotland's dependence on military employment has been falling - armed service employment in Scotland fell by over one-third from 19,300 to 12,400 between 1990-2007. Civilian employment also fell by over a third between 1997-2007, from 10,300 in 1997<sup>5</sup> to 6,500 in 2007.

It is likely that some of the change over this relatively long period simply reflects political change – a "Cold-War effect" is likely to have had some influence on this long-term reduction in numbers, as global political developments have meant a reduced need for armed forces since the early 1990's. This is indeed borne out by the fact that the

number of servicemen in the UK was 56,000 lower in 2007 than in 1997.

However, it is worth noting here that Scotland has experienced a substantially greater proportionate fall in employment when compared to the UK as a whole. Table 5 below shows the change in total employment, military and civilian, since 2000<sup>6</sup>, when any effects of the 1990's geopolitical developments have presumably worked through. Scotland has clearly seen a disproportionate reduction in all UK employment in more recent years. It is difficult to conclude anything other than that the contribution of military employment has fallen over time, and more so in Scotland than in the UK as a whole

## Defence contractors

The other key aspect part of Scotland's defence dependency is contractors who undertake defence work in Scotland. Since this paper is attempting to examine Scotland's total dependence on defence we focus principally on the number of jobs supported in contractors, since this would allow us to estimate total employment in both the military and contractor sectors.

### *i) DASA estimates*

We begin by looking at official estimates on Scottish employment supported by UK military spending. DASA has developed estimates of the number of direct full time jobs in the UK that are supported by Ministry of Defence (MOD) spending and Table 6 details these for Scotland and the UK as a whole<sup>7</sup>.

The table appears to highlight two interesting results. It shows firstly that the estimated number of jobs in companies in Scotland supported by MOD expenditure fell by 30% in the four years to 2006/07. Coupled with the reduced level of service employment discussed earlier, this would indicate that Scotland's overall dependence on defence had fallen substantially. Secondly, Scotland's share of total UK defence employment also fell sharply, from around 8% in 2002/03 to 5% in 2006/07, suggesting that Scotland's defence contractors have lost comparative advantage compared to the UK.

However, an examination of the basis of the figures in Table 6 casts considerable doubt on the accuracy with which they actually measure the number of jobs in Scotland supported by MOD spending. For example, DASA itself notes that the regional location codes on which the estimates are based can fail to distinguish how MOD contract expenditure is divided between the direct contractor and its sub contractors – if a sub-contractor is located in a different region from the main contractor, the underlying assumptions on regional expenditure will fail to match actual regional expenditure. The codes also fail to take account of changes in spending between regions over time – given that MOD contracts may last many years, movements of production between regions during the course of a contract may not be captured. Finally, the



**Table 1: Service personnel**

<b>UK Regions</b>	<b>Number (FTE)*</b>	<b>% of Total</b>
England	140,300	86.5
Wales	5,000	3.1
Scotland	12,400	7.6
Northern Ireland	4,500	2.8

**Source:** - UK Defence Statistics 2008, Table 2.3

\* Full-time equivalent

**Table 2: Service personnel**

<b>Selected Scottish Regions</b>	<b>Number*</b>
Moray	3,100
Argyll and Bute	2,980
Edinburgh	1,550
Fife	1,460
Highland	620
Glasgow	560
<b>Total</b>	<b>10,270</b>

**Source:** DASA, TSP 10, Table 5.1

\* Full-time equivalent

**Table 3: Military personnel as:**

	<b>Moray</b>	<b>Argyll &amp; Bute</b>	<b>Highland</b>
% of working age population	5.9	5.5	0.5
% of population in employment	6.9	6.8	0.6

**Source:** DASA, National Online Manpower Information Services (NOMIS)

**Table 4: Civilian personnel**

<b>UK Regions</b>	<b>Number (FTE)*</b>	<b>% of Total</b>
England	65,500	83.0
Wales	2,400	3.0
Scotland	6,500	8.2
Northern Ireland	4,500	5.7
<b>Total</b>	<b>78,900</b>	<b>100.0</b>

**Source:** UK Defence Statistics 2008, Table 2.3

\* Full-time equivalent

**Table 5: Fall in UK military employment, 2000-2008**

	%
United Kingdom	6.2
England	1.9
Wales	39.8
Scotland	17.9
Northern Ireland	23.7

Source: UK Defence Statistics 2008, Table 2.3

**Table 6: Employment dependent on UK military expenditure**

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
UK	135.0	135.0	123.0	130.0	135.0
Scotland	10.0	10.0	9.0	9.0	7.0

Source: Ministry of Defence

**Table 7: Employment in the naval, aerospace and defence industries, Scotland 2006**

	Number	%
Naval	7,291	45.0
Aerospace	4,537	28.0
Defence	4,375	27.0
<b>Total</b>	<b>16,203</b>	<b>100</b>

Source: ADS Scotland, Aerospace, Defence and Naval, Survey 2006

**Table 8: Employment created by BAE Systems**

	Initial employment	Additional employment	Total employment
<b>Total</b>	<b>3,404</b>	<b>2,312</b>	<b>5,717</b>

procedure used to estimate employment is based on the structure of UK production in 1995.

There is clearly a considerable amount of doubt on the accuracy of the DASA estimates. Our best assessment is that official UK government estimates actually provide very little useful guidance on the size of the economic contribution that defence spending makes to the Scottish economy. DASA developed the figures in Table 6 specifically in response to questions from MPs and MSPs on the importance of defence to regional economies, but they appear to tell us very little about this and the estimates clearly need to be revisited.

### *ii) ADS Scotland survey*

An alternative source of information on defence contractors is the annual Scottish survey undertaken by ADS, an industry body representing the Aerospace, Defence and Security industries. We look below at the ADS 2006 survey findings, approximately the same period as the 2006/07 DASA figures discussed above.

We would ideally in the present context like to gauge the total amount of private sector employment created by defence spending in Scottish based contractors, and the ADS survey does go some way towards this. However, it only covers companies involved in aerospace, defence or security. Companies outside these sectors are not included, and ADS figures do not include employment in other sectors that may sell to the MOD.

Secondly, the total amount of activity that is defence dependent is not always apparent. For example, ADS stated to the Scottish Affairs Committee that some aerospace work is defence-related, but the proportion of this is not recorded.

Finally, ADS survey includes figures both for a Defence and a Naval sector. However, they have informed us that their Naval sector is wholly supported by defence spending, and we discuss it below as part of defence-dependent employment.

The 2006 ADS survey shows that Aerospace, Defence and Security employed a total of 16,203 people in Scotland (Table 7). Assuming that Naval is wholly supported by defence spending, Defence and Naval together account for 11,666 jobs. This is around two-thirds above the DASA estimate of 7,000 jobs, even though the ADS survey does not include all MOD spending. A comparison of the 2007 ADS survey with the results of the previous year also show that employment in the Defence and Naval sectors actually grew by over 13%. The suggestion that employment in contractors increased, albeit based on one year's data contrasts strongly with the DASA findings.

The ADS survey details other important characteristics of the industry's economic importance. Firstly, the sector spent a significant amount on Research & Development in

Scotland, £74 million in 2006. Reflecting this, ADS argue that the sector is important not only on account of the number of jobs it provides, but also because of the type of jobs – 5,100 employees are graduates, almost one-third (31.5%) of the total workforce. This high skill level is reflected in industry wages which are around 34% above the Scottish average.

It also points to the industry's position as a supplier of apprenticeships. It provided around 600 apprenticeships in 2007, which it claims was around half of the Scottish total. Figures supplied to us by BAE Systems Surface Ships also confirm the importance of the industry's role on this measure – the company has the largest apprenticeship scheme in Scotland, with over 500 apprentices taken on in the last five years.

### **Spin-off effects**

All of the above employment estimates show only the direct jobs supported by military expenditure. They include only employment at military bases or in contractors, and do not take account of any multiplier effects that result from wage spending by employees or by contractor spending at suppliers.

There is a very limited amount of information on the further impact of defence contracts, and it is of interest here to note that the MOD itself apparently has no knowledge of the spin-off impact of its own Carrier programme. When asked in a parliamentary question to estimate the indirect jobs created as a result of the carriers, the Minister for Defence procurement replied that the MOD "do not hold information relating to the number of indirect jobs"<sup>8</sup>.

Recent research by the Fraser of Allander Institute does provide some measure of the extent to which one major contractor, BAE Systems Surface Ships, creates employment across the wider Scottish economy<sup>9</sup>. Table 8 shows estimates of their total employment impact in Scotland. This shows that the company's 3,404 employees in Glasgow support a further 2,312 jobs in Scotland once wage spending by employees and spending at local suppliers is taken into account. Every one job in Glasgow was estimated to support a further 0.68 of a job elsewhere in Scotland. The study also estimated that the £102.4 million worth of wages paid to employees in Glasgow supported a total of £156.4 million worth of Scottish wages.

It is clear that the number of direct employees in defence must account for only a minimum estimate of the extent to which the defence industry supports employment in Scotland, but the current position is that we actually know little of this aspect of the industry's wider impact. Further information on this type would clearly help to assess the overall importance of defence in Scotland.

### **The outlook for defence**

As mentioned, a key issue surrounding defence is that decisions are ultimately political ones. We now examine a

number of political developments that could affect the industry in Scotland, all of which could directly affect the amount of activity and employment it supports.

### Public expenditure

The most immediate current issues surround the UK's current fiscal problems and all three major UK political parties have recently signalled the need to restrain public expenditure. The MOD's current budget is estimated at £32.6 billion in 2007/08, about 2.5% of UK GDP<sup>10</sup> and there have been concerns about whether a budget of this size can be exempt from cuts.

Both the current UK government and the main opposition party have committed themselves to holding a Strategic Defence Review (SDR) that will define the UK's future military role for the forthcoming decade, and both parties have understandably been reluctant to spell out plans for defence in advance of this. However the SDR will not report until 2011. We simply do not at present know how pressure on the public finances might affect the UK government's future plans for defence. Recent statements by the Secretary of State for Defence have thrown some doubt on the Government's overall support for the defence budget. The Minister recently warned military leaders that they must "live in the real world" and said that the government "cannot exclude major shifts in the way we use defence spending".<sup>11</sup>

The other main UK parties have signalled that defence spending either could (in the case of the Conservatives) or will (Liberal Democrats) be reduced. The Conservatives have indicated that they will instigate a defence review "quickly" should they form the next government, and have also said that this will examine a number of major defence projects. As the quote below confirms, such a review could include two major Scottish defence contracts, the aircraft carriers currently being constructed in Glasgow (later to be fitted at Rosyth) and the nuclear facilities at HM Naval Base Clyde:

"Whether ... the armed services need ... to project power through a proper navy and carriers: having the best replacement there is for an independent nuclear deterrent - these are reasons for all these things. But clearly, when you are reviewing spending, you have to review all spending"<sup>12</sup>

The Shadow Chancellor has also implied that the new carriers are one of the major defence projects potentially subject to review<sup>13</sup>, and has said in particular that he wishes to examine the "break clauses" on the project.

BAE Systems Surface Ships signed contracts to build the carriers in July 2008 and construction began in July this year. Construction is being undertaken at several yards in the UK and work will be ongoing in Glasgow until 2014 and 2016 respectively. Final assembly of the ships has also

begun at Rosyth in Fife. The carrier programme guarantees shipbuilding on the Clyde until 2016 and will also create work in Fife after that.

It would extremely controversial to halt work that has already begun. As shown earlier, the company building the carriers is estimated to support a total of over 5,000 jobs in Scotland. The current position is that UK ministers have recently said that they will "continue to support the two shipyards"<sup>14</sup> and the SNP have also said that they strongly support the decision to build the carriers. We are not aware of any Liberal Democrat statement on the carriers. A recent pamphlet by the party's Treasury spokesman<sup>15</sup> did suggest that that major savings could be made in the defence budget by cancelling or scaling down weapons systems, but suggested that the main targets were Eurofighter, the A400M transport aircraft and Trident.

As noted, the carrier programme effectively sustains work on the Clyde until 2016. In addition, the MOD has also signed a Terms of Business Agreement (ToBA) with BAE Systems. The agreement, which intends to protect key industrial capabilities in British shipbuilding, gives the company a minimum of 15-years exclusivity on design, build and support for specified MOD shipbuilding programmes.

The MOD has made it clear that the ToBA does not "commit the MOD to any particular level of expenditure in any geographical location" or specify how BAE Systems should plan its work<sup>16</sup>. However, recent years have seen Scotland performing strongly against the UK shipbuilding industry. For example, Scotland's share of the UK shipbuilding sector rose from 22% to 33% between 2002/07 and Scottish Government figures show that its overall contribution to Scottish GVA rose from 0.29% to 0.58% in the same period<sup>17</sup>. This recent strong performance shows that Scotland appears to be gaining comparative advantage in shipbuilding and it is a source of concern that uncertainty over the carriers may affect Scotland's ability to contribute to future programmes.

Another key defence contract affecting Scotland is Trident. The UK parliament voted to take the first steps towards renewing Trident in 2007<sup>18</sup>. The decision was supported by both main UK parties. The UK government has recently said that there is "no intention on this Government's part of moving our position on Trident"<sup>19</sup> and the Conservatives have said that while maintaining some form of UK nuclear deterrent is "non-negotiable"<sup>20</sup> it has refused to rule out reviewing Trident.

The Liberal Democrats are the only party to have made firm commitments on defence, including a recent statement that they would not renew the Trident programme. The party accepts that public spending must fall and the UK's fiscal position is undoubtedly the key reason behind this decision. However, it is also important to note that the Liberal Democrats are also the first mainstream UK party to

accept the argument that Trident no longer meets the UK's defence needs, in effect saying that it is both unnecessary and unaffordable.

Discussions over Trident are not new – its geopolitical justification has been subject to scrutiny since the demise of the Soviet Union, and Clarke (2004), for example, argues that:

“the rationale for a strategic nuclear deterrent is increasingly weak....A world dominated by a single superpower hegemon...is not a world which gives minor players much of a role in strategic deterrence. It is scarcely conceivable that that other known nuclear powers such as India, Pakistan or North Korea or even near nuclear powers such as Iran could become a strategic threat to the UK homeland...whatever British interests might be threatened.”<sup>21</sup>

The Liberal Democrat leader recently summarised his party's position as follows:

“a cold war missile system designed to penetrate Soviet defences ... at any time...from any location anywhere round the planet, is not our foremost security challenge now. We have got to be grown-up and honest about it”.<sup>22</sup>

The party has begun its own review of how Britain could operate a scaled-down deterrent, but have said that it would be an “unhappy event” if this concluded with Britain retaining a nuclear deterrent. We examine the position on Trident further below.

### European defence cooperation

Public expenditure problems have also caused some to argue that if UK is unable to afford to sustain all of major current defence contracts then greater European cooperation in defence as a possible way forward. One proponent of this view is Sir Malcolm Rifkind, a former UK Secretary of State for Scotland, Defence and Foreign Affairs<sup>23</sup>. He argues that the current defence budget is simply “too big to be exempt from cuts”. One or other of the major projects is likely to be cancelled, and he suggests that “the most likely casualties are the aircraft carriers, the joint strike fighters and even Trident submarines”.

The argument that greater cooperation may substitute for nationally-based defence policies is obviously likely to prove highly controversial and is almost certainly some way off. However, greater cooperation across a wide range of political functions has been an ongoing feature of the European Union since its inception, and will further increase with the Lisbon Treaty's ratification. The underlying argument, that it is extremely difficult to envisage situations where a threat to the security of any one European Union member could not be considered as threat to all, means European cooperation in defence is,

according to Menzies Campbell, “not only good military sense, it is a political necessity as well”<sup>24</sup>.

The choice is between unaffordable national domestic capability and a greater pooling of defence capability at the regional level. If it is indeed the case that existing defence budgets proves to be unsustainable across Europe, the case for pooling resources does appear to strengthen and any move towards greater cooperation would clearly result in reduced defence spending. Where Scotland comes into this is difficult to say. Sir Malcolm himself gives little guidance on this except to argue that each country should specialise in the area which is most important to its own security – “for the UK, this would be maritime, for Germany its land forces”.

### Constitutional change

The other key political issue is the prospect of constitutional change. Scottish independence could in theory affect any part of the defence sector in Scotland, since there would have to be a process of negotiation concerning ownership of defence assets following the break-up of the UK. In truth, we know little about how either military employment or employment in defence contractors would actually be affected. The SNP has recently said that an independent nationalist administration would be happy to allow existing UK military forces to continue to be based in Scotland, stating that since Scotland and the rest of the UK would remain “friends and allies”, it would be “perfectly possible to share basing, procurement and training facilities with the rest of the UK”<sup>25</sup>. Predictably, this suggestion was immediately dismissed by other parties, who argue that what remains of the UK would have little interest in either retaining military resources or placing work with defence contractors. A Scotland Office source argued that:

...The Royal Navy would not give contracts to a foreign country...in all, 20,000 defence-related jobs would be at risk...no Trident, no Nimrod, no Kinloss<sup>26</sup>.

An outbreak of clarity from the political parties seems to be an unlikely prospect at the moment – notably, the Scottish Affairs Committee recently divided along party lines over whether its recent report should “refrain from speculation about any effect the establishment of an independent Scottish state might have on the provision of defence jobs within Scotland's territorial boundaries”<sup>27</sup>.

The constitutional question also raises particular issues concerning the nuclear facilities at HMNB Clyde. In 2002, Chalmers and Walker began their analysis by noting that among the states that possess nuclear weapons, “the United Kingdom is now regarded as one of the least problematic”, owing to, inter alia, its stable democracy, disciplined military forces and cooperative approach to international security<sup>28</sup>. The thrust of this paper was on how Scottish independence might impact on the UK's nuclear capability, particularly because the UK's only

nuclear weapons delivery mechanism is located in Scotland - with independence, what remains of the UK would then have its sole delivery mechanism located in a foreign country.

The scenario outlined by Chalmers and Walker was that the advent of an independent Scotland under a nationalist administration would almost certainly result in the removal of nuclear weapons from Scotland. There is in fact little doubt that such a government would indeed insist on their removal - the SNP is a longstanding opponent of nuclear weapons, and its defence spokesman reiterated its stance as recently as last month, saying "No independent nation of five million has nuclear weapons, and nor should we"<sup>29</sup>. Like the common European defence policy outlined above, Scottish independence has yet to become a political reality. However, the possibility of Scotland having to face the choice over whether to retain nuclear weapons, as part of the wider decision over independence itself, has clearly become a more immediate issue with the election of an SNP administration in Holyrood in 2007 which proposes to hold an independence referendum. The economic effects of removing the weapons will be an important feature of this debate and it would clearly be useful to have some indication of the impact of this.

It is clear that HMNB Clyde is a substantial local economic resource. As noted earlier, MOD figures indicate that just under 3,000 servicemen and women are stationed in Argyll & Bute. In addition, employment figures provided to us by Babcock Marine further emphasise the importance of Faslane and Coulport to the local area. Babcock Marine, who service and maintain Trident at Faslane, employs 1,320 people at HMNB Clyde and 75% of its employees live within 10 miles of the base. Direct employment is thus around 4,300 jobs, a figure that does not include any MOD civilian personnel employed alongside the military, or any measure of the size of spin-off effects.

The study published jointly by the Scottish Campaign for Nuclear Disarmament and the Scottish Trades Union Congress (SCND/STUC)<sup>30</sup> in 2007 is the only recent attempt to estimate the impact of removing Trident from Scotland. This study estimated that the removal of Trident would result in a loss of 2,191 jobs. However, some of the assumptions underlying this figure are clearly untested. For example, the estimate depends on there being no net reduction in the 500 Royal Marines designated to protect Trident, on the assumption that they would simply be allocated a new role and remain in Scotland. This seems unlikely given that they have the specific role of guarding Trident.

The report also estimated that between 1,300 – 1,600 sailors at HMNB Clyde were dependent on Trident. However, its estimate that only a total of 300 service jobs would be lost by cancelling Trident is based on its assumption that only 300 of these sailors are Scottish – sailors recruited from outwith Scotland are excluded.

Despite the fact that these jobs are in Scotland because of Trident, they are not counted as part of the reduction in military jobs in Scotland associated with cancelling Trident. The report also argues that the savings in public spending created by cancelling Trident could be used to create local employment in other industries<sup>31</sup>, a state of affairs that will be more difficult to sustain in an era where overall public spending requires to be cut.

## Conclusions

Difficult choices on defence will need to be made in the future. Defence is an important issue in a number of current political debates, but we currently lack clarity on the consequences of the choices that will at some point need to be made. Official figures are lacking in many important respects and may even be misleading. Given also that these decisions will ultimately be made by voters, it would clearly assist the public if the political parties would spell out in more detail both what they believe are realistic options and the consequences of these. Neither of these situations seems likely to improve in the near future, but until we have this information we are making decisions in the dark.

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## Endnotes

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5. DASA does not provide an estimate of civilian employment before 1997.
6. Other factors are obviously at work in Northern Ireland.
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31. For example, it argued that a significant number of former MOD employees could retrain to join the police force.

# Energy efficiency and the rebound effect

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## Introduction

In recent years the argument that rebound effects, triggered by economy-wide price and income effects, may partially or wholly offset reductions in energy consumption expected from energy efficiency improvements has gained a great deal of attention in both academic and policy arenas. In the UK, a report by the House of Lords (2005) raised the question as to whether this argument provides an explanation as to why total energy consumption in the UK hasn't fallen in line with increased energy efficiency. In response, the UK Research Councils have funded research, first through the UK Energy Research Centre (UKERC) and now at the University of Strathclyde to investigate the conditions under which rebound effects may occur in the UK economy. The UKERC project involved an assessment of the evidence on rebound effects from increases in energy efficiency in production and/or in consumption, at both the micro level (direct and indirect rebound effects at the individual/firm level) and at the macro level (economy-wide rebound effects as a result of increased energy efficiency in any individual firm/sector etc) and is reported in Sorrell (2007). The current 3-year research project (ending September 2010) based in the Fraser of Allander Institute and Department of Economics at the University of Strathclyde, titled 'An empirical general equilibrium analysis of the factors that govern the extent of

energy rebound effects in the UK economy', focuses specifically on the issue of economy-wide rebound effects using empirical computable general equilibrium models of the UK and Scottish economies. The purpose of this paper is to provide an introduction to the rebound argument, drawing on evidence from the Scottish and UK models. It will be followed in the next issue of the Fraser of Allander Institute Economic Commentary, which will give more detailed results from the project.<sup>1</sup>

## The rebound effect

The rebound argument (now commonly referred to as the Khazzoom-Brookes Postulate in recognition of two independent contributions by Brookes, 1990, and Khazzoom, 1980) is not a new idea. Almost 150 years ago, in 1865 an economist named Stanley Jevons (Jevons, 1865) talked about a "confusion of ideas" regarding the productive use of fuel and diminished consumption. His argument was that if we increase the utility or benefit we get from something there is an impact on its implicit price. Thus, if we have an increase in (non price induced<sup>2</sup>) efficiency in use of energy, this lowers the implicit or effective price of energy (i.e. we can have more consumption/production per physical unit of energy at any given price level). Moreover, if we have local supply of energy, the decreased energy requirement per unit of consumption/production) will put downward pressure on actual energy prices also, giving further impetus for rebound.

Note that this argument is not specific to energy. The same process would apply if, for example, there were an improvement in efficiency in the use of labour (and perhaps the rebound argument is easier to grasp in that context – we don't expect increased labour productivity to lead to mass unemployment; rather we expect economic activity, including employment, to benefit from what is basically a positive supply-side shock to the economy).

## Ranges of the rebound effect

It is important to note that the presence of rebound effects in response to an increase in energy efficiency doesn't necessarily mean the energy consumption will increase. It may just mean that we need to work harder to gain reductions in energy consumption from increased energy efficiency. Table 1 below shows four ranges of the rebound effect (see Turner, 2009, or Anson and Turner, 2009, for fuller details).

The 0% rebound (R) case would seem unlikely as this would seem to imply absolutely no price responsiveness in the economy whatsoever. However, as will be discussed in more detail in the second article from this project to be published in the next issue of the *Fraser of Allander Institute Economic Commentary*, our research has suggested that negative rebound effects (i.e. economy-wide reductions in energy consumption that are proportionately larger than the increase in energy efficient) may be a possibility where there is local energy supply (as



**Table 1: Ranges of the rebound effect**

Rebound effect	Implication for energy efficiency improvement
0%	<b>All</b> of the energy efficiency improvement is reflected in a fall in the demand for natural energy units.
0 – 100%	<b>Some</b> of the energy efficiency improvement is reflected in a fall in the demand for natural energy units, but partly offset by increased (direct and derived) demand for energy as effective and/or actual energy prices fall.
100%	The reduction in energy demand from the efficiency improvement is entirely offset by increased demand for energy as prices fall.
>100%	The energy efficiency improvement leads to an <b>increase</b> in the demand for energy in natural units that outweigh the reduction in demand from the efficiency improvement. Such a phenomenon is labelled as a ' <b>backfire effect</b> '.

in the case of Scotland). This may occur as a result of negative multiplier effects in energy supply sectors as demand contracts in response to the initial efficiency improvement and/or disinvestment effects (shedding of capital stock) in energy supply if revenues fall with decreasing prices (see Turner, 2009, and Anson and Turner, 2009).

The 0-100% range means that we have positive rebound, but a net decrease in energy consumption. Thus, one possibility that was raised in the earlier presentation of this paper at an EU public hearing on energy efficiency policy<sup>3</sup> is that it may be possible to adjust the size of the energy efficiency improvement to achieve a desired reduction in energy consumption. For example, with 20% rebound a 10% efficiency improvement would imply actual energy savings of 8%. If a 10% reduction in energy consumption is required, the 20% rebound effect would have to be compensated for in setting the size of the energy efficiency improvement. In this simple example, a 10% reduction in energy consumption would require a 12.5% increase in energy efficiency with 20% rebound.<sup>4</sup> Note that the magnitude of the rebound effect will be the same after the adjustment: we are simply compensating for it, not eliminating it. Moreover, as discussed below, in practice, the size of the rebound effect should be determined through economy-wide empirical analysis as is likely to vary depending on (a) the economy in question, (b) the type of activity targeted with an energy efficiency improvement, (c) costs associated with introducing the energy efficiency improvement and (d) passage of time (adjustment of the economy) following the introduction of the efficiency improvement. Thus, the actual compensation required to entirely offset rebound would be difficult to quantify, particularly given issue (d), as the economy may

take some time to adjust to a new equilibrium (see results below for Scotland)

However, no such compensation can be made in the bottom two cases in Table 1 where R is greater than or equal to 100%. Here the demand response to falling actual and/or implicit energy prices acts to entirely offset any energy savings from increased energy efficiency. Where we have a net increase in energy consumption (and, of course, energy-related pollution), this is an extreme case of rebound, referred to as backfire. Here a larger energy efficiency improvement will lead to a larger increase in energy consumption. Therefore, again, it is important to employ an empirical framework to quantify the economy-wide rebound effect: where backfire is a likely outcome, increasing the size of the energy efficiency improvement will be a counter-productive strategy.

The next question, then, is what determines the economy-wide/macro rebound outcome for any given improvement in energy efficiency?

### **Economy-wide demand and supply responses to increased energy efficiency in production sectors**

Turner (2009), with attention on increased energy efficiency in production rather than final consumption (considered briefly later in this paper), identifies a number of economy-wide effects that have now become accepted in the wider literature. These are considered below.

The first effect is what we would expect, and what motivates the use of energy efficiency to reduce energy consumption:

1. **The technical/efficiency effect**, where we need less energy to produce a given unit of output.

However, as explained in the introduction above, this triggers a decrease in the effective and possibly the actual price of energy, which in turn leads to four different types of (direct and derived) demand responses, identified as effects 2-5 below:

2. **Substitution effects**, where energy is substituted for other inputs, as it is now effectively cheaper

3. **Output/competitiveness effects** (eg on exports) as local production costs (and thus output prices) fall as a result of this beneficial supply-side shock (note that this effect is the main source of positive GDP and employment effects in the sector targeted with the efficiency improvement, and in the wider economy); and

4. **Compositional effects**, since different goods vary in their energy intensities we get a change in structure of output in the economy in favour of more energy intensive activities<sup>5</sup>

5. **Income effects** on household direct and indirect use of energy (even where households are not directly targeted with the efficiency improvement).

However, decreases in actual energy prices and falling demand may also trigger negative responses in energy supply. First, in response to the efficiency effect (effect 1) above, there will be:

6. **Negative multiplier effects in energy supply sectors** as demand for the output of these sectors falls, though these may be negated by the positive demand response under effects (2) to (5).

However, if the positive demand response to falling actual energy prices is not sufficient to prevent revenues from falling in energy supply sectors, it is possible that another negative supply effect may occur:

7. **Disinvestment effects**, where reduced demand leads to decreased actual energy (local and/or imported) prices and revenues - falling returns in energy supply activities sectors lead to capital disinvestment and contraction in the elasticity (responsiveness) of energy supply to changing demand.

The potential for disinvestment effects is discussed in Turner (2009), where we also argue that the basic argument may also be applicable at the global level where, despite OPEC's command of marginal supply, downward demand pressures do exert downward pressure on prices. A working paper by Wei (2009) considers the issue of supply responsiveness more generally. These issues will be discussed more fully in the second article on this project in the next issue of the *Fraser of Allander Institute Economic Commentary*.

## How important are each of these effects in determining rebound? An empirical question

The magnitude of rebound for any given efficiency improvement depends on relative importance of effects 1-7 (1, 6 and 7 put downward pressure on energy demand, 2-5 put upward pressure on energy and other demands). This, in turn depends on the structure of the particular economy where the efficiency improvement occurs, openness to trade, demand responsiveness to changes in prices, supply constraints, which activities are targeted with the efficiency improvement etc, etc. This means that analysis of potential macro-level rebound effects for any particular economy requires an empirical economy-wide modelling framework for that economy. This is commonly referred to as applied or computable general equilibrium (CGE) analysis (see Sorrell, 2007, and Hanley et al, 2009, and/or Turner, 2009, for examples and fuller discussion).

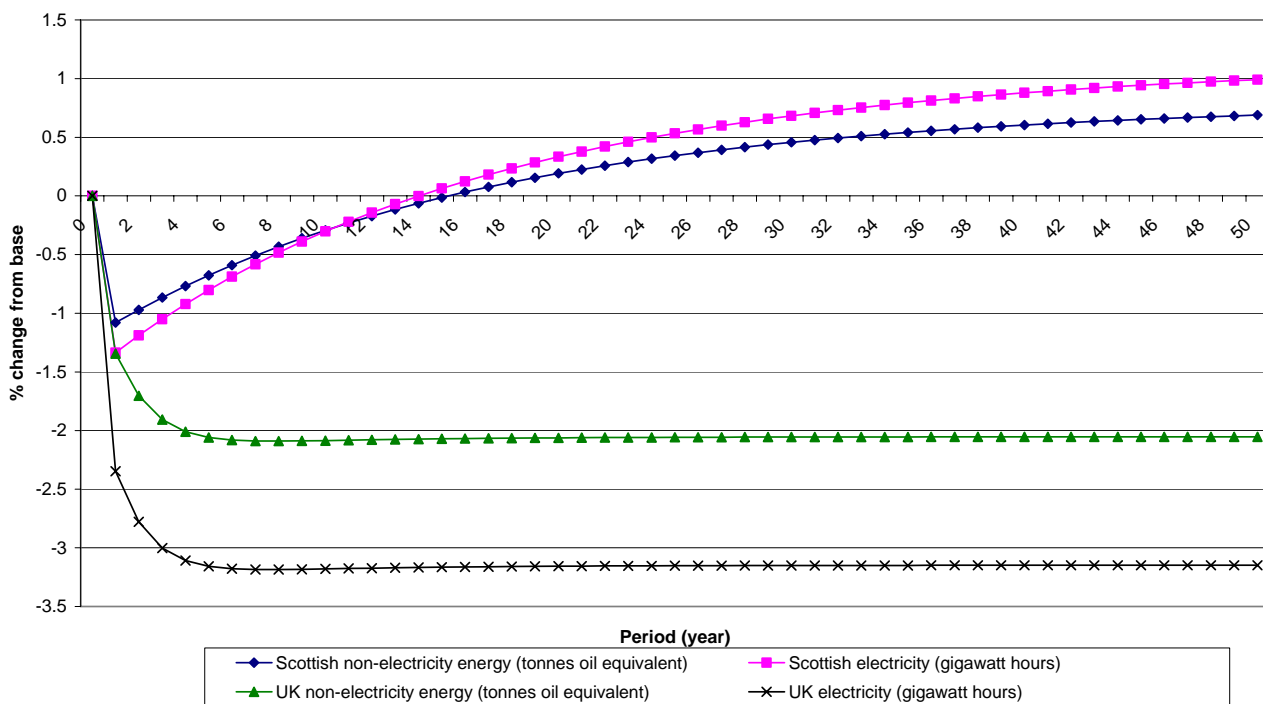
It is important to note that rebound analysis, particularly system-wide rebound analysis is a relatively new area of research. Both theoretical work and empirical evidence limited but are currently gaining a great deal of attention in environmental and energy economics fields and the literature is growing rapidly along with research activity.

## Current research at the Department of Economics, University of Strathclyde

As explained in the introduction above, leading on from the UKERC work reported in Sorrell (2007), the Fraser of Allander Institute economy-energy modelling team have been funded by the UK Economic and Social Research Council to conduct a project titled 'An empirical general equilibrium analysis of the factors that govern the extent of energy rebound effects in the UK economy'. The duration of this project is 3 years, from October 2007 to September 2010 (ESRC Reference: RES-061-25-0010). While the empirical work in this project has largely been focussed on the UK (e.g. Turner, 2009) and Scotland (Hanley et al, 2009, and Anson and Turner, 2009) – though there has also been some work on the Spanish case (see Hernandez and Turner, 2009) – we have been able to draw more general analytical insights to help development of the wider rebound research field, in both theoretical and empirical terms (e.g. the disinvestment effect identified above is established in Turner, 2009).

To date, the project has focussed on efficiency improvements in energy use in production. Work is forthcoming on energy efficiency increases in household energy consumption; however, at this stage we can anticipate that, in contrast to increased energy efficiency in production activities, there will be no direct positive supply shock (increased productivity and GDP), rather simply the reduction in demand that triggers price and income effects (although the both of these factors may indirectly have a positive impact on GDP).

**Figure 1: Percentage change in total energy consumption in Scotland and the UK in response to a 5% improvement in energy efficiency in all production sectors (applied to locally supplied energy)**



**Table 2: Long-run impact of varying the target of 5% energy efficient improvement in Scottish production (percentage changes from base year)**

	All sectors 1-25	Energy supply sectors 21-25	Non-energy supply sectors 1-20
Total electricity consumption	1.15	2.34	-1.21
Electricity rebound effect (%)	131.6	249.5	41.4
Total non-electricity consumption	0.81	1.60	-0.82
Non-electricity energy rebound effect (%)	134.1	243.8	34.8

See Appendix 1 for sector identification

Our key empirical result for Scotland, illustrated in Figure 1, is that we find large backfire effects when local energy supply targeted with efficiency improvement (these sectors are heavily traded) – see Hanley et al (2009). In contrast, in the UK case rebound is more constrained by supply response to falling prices, so that while the reduction in energy consumption is proportionately less than the increase in energy efficiency, there is still a net reduction (see Turner, 2009, for more details on the UK results).

Figure 1 shows the results of simulating a very simple 5% increase in energy efficiency in all production sectors of the

Scottish and UK economies respectively using our CGE models of the Scottish economy, SCOTENVI, and of the UK economy, UKENVI. In the initial stages of our research we have simulated very simple energy efficiency shocks as this allows us to identify and consider the key drivers of rebound effects. In these results we do not attempt to consider how the efficiency improvements may be achieved. This will be the focus of future research.

What the results in Figure 1 demonstrate is that, because of the system-wide response to falling actual and effective energy prices, particularly in an economy like Scotland (a producer and exporter of energy), reductions in energy

consumption due to increased efficiency are likely to be partially or even wholly offset by increased demand for energy (i.e. rebound effects will occur). Indeed, the Scottish results are particularly striking. While the amount of electricity consumed in Scotland initially falls (in the early stages the output of the Scottish electricity sector increases as a result of increased export demand), 15 years after the introduction of the efficiency improvement it has risen above its initial level. Non-electricity energy consumption follows a similar pattern, with the rise above the base year value occurring one period later.

There are two key clear implications of the results in Figure 1. First, it is important to examine the adjustment process of the economy in response to a shock such as increased efficiency in the use of energy in production. This is illustrated particularly in the Scottish case, where the short run impacts of the efficiency improvement are qualitatively different to the long run ones. Second, the qualitative difference in the Scottish and UK results demonstrate that it is important to carry out economy-specific empirical analysis.

As noted above, in the Scottish case the backfire effects (net increase in energy consumption across the Scottish economy) are driven by the fact that energy efficiency increases in all Scottish production sectors, including the relatively energy-intensive and heavily traded energy supply sectors. In Table 2, we show the long-run results of focusing the 5% increase in energy efficiency separately in energy supply and non-energy supply sectors (Appendix 1 gives a breakdown of the production sectors identified in the Scottish model). We define the long-run equilibrium where population and capital stocks have fully adjusted to the shock (this is not quite achieved in the Scottish case in Figure 1, even after the 50 years illustrated, but more than 85% of the adjustment in energy consumption has taken place at this point in time). The third column of Table 2 shows that backfire does not occur when we do not include the Scottish energy supply sectors in the energy efficiency improvement.

Hanley et al (2009) present fuller sensitivity results for the Scottish case, including the impacts of varying what we assume about the degree of price responsiveness in direct and derived energy demands.

### **Factors that may dampen/mitigate rebound**

What can we say now to help policymakers think about mitigating the rebound effect? First of all, it is important to remember that some degree of rebound in response to increases in energy efficiency may not be too problematic (certainly not enough to prevent us from attempting to increase efficiency, particularly in production, which will almost always lead to positive economic benefits in the activity where efficiency improves, and in the wider economy). It simply means that we are likely to have to work harder, factoring in rebound (which will require empirical analysis) when setting energy efficiency targets

to meet desired decreases in energy consumption (and rebound will differ across economies, and different production and consumption activities within each economy, with the implication that common targets for energy efficiency may not be possible - energy consumption targets may be more appropriate).

Having said this, there are a number of factors that will mitigate or otherwise affect the magnitude of rebound effects:

- Price induced efficiency in energy use – e.g. energy taxes – won't trigger rebound as above and could possibly be used in coordination with policies aimed at technological progress (which do), of course taking into account likely distortive effects (again, CGE analysis can be used for scenario analysis). Indeed, in the context of energy efficiency from technological progress, there may be potential for a 'double dividend' effect, depending on how revenues are recycled (see below).
- The costs of introducing efficiency improvements will affect rebound – e.g. in production, if increased costs act to entirely offset reductions in effective price of energy, may mean zero or even negative rebound (see Allan et al, 2007). There is also an issue in terms of when costs are incurred (rebound effects will be triggered immediately)
- The use of increased government revenues generated as a result of increased productivity will also affect rebound, eg:
- Recycling as additional government expenditure – In Allan et al's (2007) UK results, this leads to a composition effect in favour of less energy-intensive government demands
- Lowering tax rates – Allan et al's (2007) UK results suggest that this will exacerbate income effects driving rebound.
- Alternatively, revenues could be directed towards subsidising investment activities etc that would facilitate increases in energy efficiency (linking back to the issue of costs in the previous bullet point).

The key issue here is that it is crucial to develop understanding of what drives rebound effects in considering where efficiency improvements should be targeted and how they should be implemented. We also need to understand what will mitigate rebound (but give attention to possible negative implications for energy supply sectors, e.g. from negative multiplier and disinvestment effects). This paper is intended as a first stage in this process. The main conclusion is that rebound

effects must be factored into the setting of energy efficiency targets, and that appropriate economy-wide modelling techniques should be employed to estimate potential rebound effects on a case-by-case basis.

## Conclusions

This paper has considered the nature of what has come to be known as the 'rebound' effect in considering energy efficiency improvements as a means of reducing energy consumption (and associated pollutants, particularly greenhouse gas emissions), taking Scotland as an empirical example. Our main conclusion is that the rebound effect is an empirical phenomenon and should be considered on a case-by-case basis for energy efficiency improvements (a) in different economies; (b) in different sectors/activities of any one economy; (c) in the context of different methods that may be adopted to increase energy efficiency and their associated costs; (d) the adjustment process of the economy. The core conclusion is that any reductions in energy consumption are likely to be proportionately smaller than the energy efficiency improvement and in some circumstances the net effect of increased efficiency may be an increase in energy consumption. Two main recommendations are that (a) energy efficiency improvements should be a policy objective, given the economic benefits that will result throughout the economy, but that (b) empirical estimates of potential rebound effects must be factored into energy efficiency targets set in order to reduce energy consumption.

Finally, the reader is reminded that the results presented here are initial findings of the ongoing ESRC-funded project on examining the potential for and main drivers of rebound effects in the Scottish and UK economies. Fuller project details, outputs and results can be found at the project pages on the ESRC Today web-site, which can be accessed via the following link:

<http://www.esrcsocietytoday.ac.uk/esrcinfocentre/viewawardpage.aspx?awardnumber=RES-061-25-0010>

There will be a non-technical presentation of final project results at a stakeholder seminar to be held in the late summer of 2010. If you would like to attend this seminar, and/or to be placed on our mailing list to receive our project newsletter and other updates, please contact the author at [karen.turner@strath.ac.uk](mailto:karen.turner@strath.ac.uk).

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## Footnotes

<sup>1</sup>More details on this project, along with all project outputs to date, can be found on the ESRC Today web-pages at <http://www.esrcsocietytoday.ac.uk/esrcinfocentre/viewawardpage.aspx?awardnumber=RES-061-25-0010>. Key project results to date can be found in Allan et al (2008), Hanley et al (2009), Turner (2009) and Anson and Turner (2009).

<sup>2</sup>An example of a price induced change in energy efficiency may be the use of taxes to raise the price of and reduce demand for energy. This will not trigger the rebound effect. In this paper we are concerned with increased energy efficiency resulting from technological progress. However, price instruments such as energy taxes may be an appropriate tool to offset rebound effects and/or raise revenues that may be used to facilitate energy efficiency improvements.

<sup>3</sup> An earlier version of this paper was presented to the Public Hearing on Energy Efficiency Policy for End-Users, organised by the European Economic and Social Committee (EESC) and the Italian Council of Economy and Labour (CNEL), held in Rome, July 2009.

<sup>4</sup> Actual energy savings will equal  $(r-1)p$ , where  $p$  is the percentage increase in energy efficiency (e.g. 8%) and  $r=R/100$  (i.e. in proportionate terms – e.g. 20% rebound means  $r=0.2$ ). So, with 20% rebound a 10% efficiency improvement would imply actual energy savings of 8% ( $1-0.2=0.8$  times 10). Thus, if instead of a target for energy efficiency, we have a target for reduced energy consumption - e.g. 10% - the energy efficiency improvement required to achieve this will be greater. If we want a an  $X\%$  reduction in energy consumption, the required proportionate increase in energy efficiency will take the form of  $1/(1-r)$  times  $X\%$ . If we take  $X\%$  to equate to 10%, this means that, if rebound were 20%, energy efficiency would actually need to increase by 12.5% ( $1/0.8$  times 10).

<sup>5</sup> See footnote 2. This is why energy intensity in Figure 2 should be considered an imperfect proxy for energy efficiency.

**Appendix 1: Sectoral breakdown of the 1999 Scottish  
AMOSSEVI model**


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1	AGRICULTURE	1
2	FORESTRY PLANTING AND LOGGING	2.1, 2.2
3	FISHING	3.1
4	FISH FARMING	3.2
5	Other mining and quarrying	6,7
6	Oil and gas extraction	5
7	Mfr food, drink and tobacco	8 to 20
8	Mfr textiles and clothing	21 to 30
9	Mfr chemicals etc	36 to 45
10	Mfr metal and non-metal goods	46 to 61
11	Mfr transport and other machinery, electrical and inst eng	62 to 80
12	Other manufacturing	31 to 34, 81 to 84
13	Water	87
14	Construction	88
15	Distribution	89 to 92
16	Transport	93 to 97
17	Communications, finance and business	98 to 107, 109 to 114
18	R&D	108
19	Education	116
20	Public and other services	115, 117 to 123
	ENERGY	
21	COAL (EXTRACTION)	4
22	OIL (REFINING & DISTR OIL AND NUCLEAR)	35
23	GAS	86
	ELECTRICITY	85
24	Renewable (hydro and wind)	
25	Non-renewable (coal, nuclear and gas)	

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# Devolved immigration policy: will it work in Scotland?

Professor Robert Wright and Irene Mosca, Department of Economics

## 1. Introduction

In February 2005, the then Home Secretary Charles Clarke outlined a “five year plan” aimed at changing fundamentally the way immigration to the United Kingdom is managed. Central to this plan is the adoption of a “points-based system” (PBS), where applicants are allotted points or “scored” for possessing human capital characteristics that make them more employable, such as education, technical skills, and work experience. If some threshold level of points is achieved (which can be varied), then the individual is entered into a pool of individuals who will eventually be allowed to immigrate to the UK (usually conditional on satisfactory security and medical checks). With such a system the policy shifts away from matching “jobs to people” to matching “people to jobs”. Such a shift is desirable since immigration can be used to strategically fill job vacancies and help plug skills gaps caused by population ageing and labour force decline. Although the UK Government has tended to portray this system as new and novel, it is not—it is a minor variant of the system introduced in Canada in 1967 and copied by Australia in 1973. What does this new system mean for Scotland, a country with a government committed to maintaining historical high levels of net-migration?

## 2. UK Points-based immigration system

The UK PBS will eventually replace the system that includes over 80 ways to immigrate to the UK. The old system is clearly idiosyncratic, if not ad hoc, and is both inefficient and expensive to administer. The new system consists of five “Tiers”, with each tier focussing on a different type or class of immigrants. The basic structure is summarised in Table 1. The “Tier 1 General immigrant” category is aimed at allowing high-skill individuals to come to the United Kingdom to look for work or self-employment. Such an individual does not need an employment offer. Likewise, an individual intending to be self-employed does not need to present a detailed business plan. Such individuals when they apply to immigrate are given points for educational qualifications, previous earnings, United Kingdom experience and age. It is worth noting that “Tier 3”

of the UK PBS is currently suspended. This Tier is aimed at the management of lower- and low-skill immigration. However, no date has been given for when this part of system will be re-introduced. In fact there is very little discussion of this and the focus is on rolling out the remaining tiers to plan. Although few politicians will admit it, their expectation is that immigrants from those mainly central and eastern countries that joined the European Union in 2004 (the so-called “A8 countries”) will continue to be the main source of low-skill immigration, with Poland being the biggest single source.

At the moment, an individual wishing to immigrate to the UK must score at least 75 points to “jump” the first hurdle. In addition, the individual needs to fulfill an “English language requirement”. In order to “jump” this second hurdle, a relatively high standard of written and spoken English is required i.e. a “Band 6” score on the International English Language Testing System (IELTS) or a degree from an English-language institution of higher education. A Band 6 IELTS score is similar to what most higher education institutions in Scotland require from students whose first language is not English. It is hard to judge whether 75 points is a high or low threshold. The system has not been up and running for very long and to date little data has been made available to (non-government) researchers. However, our analysis of both the Canadian and Australian systems suggests that this threshold is indeed high, especially when it is coupled with a far from trivial English language requirement.

Will the introduction of this points system lead to lower levels of immigration to the UK? The answer to this question is a clear “maybe”. It all depends on whether the 75 points hurdle is increased or decreased in the future. If it is increased, then immigration will decrease. If it is decreased, then immigration will increase. In this sense, the hurdle is like a price with the government acting like a monopoly setting price to generate a certain quantity. Therefore people who have concluded that the introduction of a PBS in the UK will lower immigration levels are wrong. To illustrate this point, we can consider what happened in Canada. In September 2003, the Canadian government lowered the minimum points needed from 75 to 67, in order to meet higher immigration targets. Given the nature of the system, most commentators concluded that this change was a sizeable reduction, with the result (somewhat unsurprisingly) being that immigration levels were higher in subsequent years.

Our view is that the minimum number of points in order to be eligible to immigrate to the UK will be increased in the future. This will make the UK an even more difficult country to immigrate to for people outside the EU. In the last national election, all three major political parties committed themselves to reducing immigration levels “if elected”. It seems likely that in next spring’s national election, immigration policy will be even more central. It is not difficult to understand why the main political parties are



**Table 1: Summary of structure of the UK points-based immigration system (PBS)**

<b>Tier</b>	<b>Statement of intent</b>	<b>Applications open</b>
Tier 1: General	7 December 2007	30 June 2008
Tier 1: General (India)	7 December 2007	30 June 2008
Tier 1: General (Worldwide)	7 December 2007	30 June 2008
Tier 1: Investors	7 December 2007	30 June 2008
Tier 1: Entrepreneurs	7 December 2007	30 June 2008
Tier 1: Post-study		
Tier 2: Skilled workers with a job offer	March 2008	27 November 2008
Tier 3: Limited numbers of low skilled workers needed to fill temporary labour shortages	This tier is currently suspended	
Tier 4: Students	Due March 2008	March 2009
Tier 5: Youth mobility and temporary workers	Due March 2008	27 November 2008

**Source:** Home Office Border and Immigration Agency

**Table 2: Maximum points – Canada and Quebec immigration systems**

<b>Characteristic</b>		<b>Canada</b>	<b>Quebec</b>
Education		25	11
Employment experience		21	10
Arranged employment		10	15
Age		10	10
Language		24	24
	English	16 (8)	6
	French	8 (16)	18
Adaptability		10	10
	<b>Total</b>	<b>100</b>	<b>80</b>

**Table 3: Inter-provincial migration rates – foreign-born versus native-born Canadians**

<b>Census</b>	<b>Native-born</b>	<b>5-year rate</b>		<b>p-value</b>
		<b>Foreign-born</b>		
2001	3.5%	2.8%		<0.01
1991	4/1%	4.1%		<0.01
1981	5.3%	5.3%		<0.01
<b>Census</b>	<b>Native-born</b>	<b>1-year rate</b>		<b>p-value</b>
		<b>Foreign-born</b>		
2001	1.0%	0.8%		<0.01
1991	1.3%	1.0%		<0.01

**Note:** It is not possible to calculate the 1-year rate for 1981 since the necessary question was not asked on this census.

**Source:** Authors' calculations

**Table 4: Inter-provincial migration rates – immigrant cohort and matched samples – 2001 Canadian census**

Rate	Census	Cohort	Immigrant cohort sample	Matched sample	p-value
5-year rate	2001	1996	6.2%	4.1%	<0.01
1-year rate*	2001	2000	2.4%	1.4%	0.05

**Notes:** 1996 (2000) cohort includes immigrants who first obtained landed immigrant status between January 1, 1996 (2000) and May 15, 1996 (2000)  
Number of immigrants = 1,989 (5-year); 2,365 (1-year)  
Number of matches = 350,387 (5-year); 530,940 (1-year)  
Number of draws = 500  
(\*) does not include Atlantic Canada or the Territories

**Source:** Authors' calculations

concerned with immigration. Immigration to the UK has increased sharply over the past decade and is now at a historically high level. Furthermore, the bulk of immigrants still settle in London and the South-east of England. This is also the part of the country where anti-immigration sentiment is growing. It also happens to be the area of the country where General Elections tend to be won or lost given about 25 per cent of the UK population is concentrated there.

What does all this mean for Scotland? The question then becomes how does one increase immigration to Scotland (as the Scottish Government appears to want) and at the same time reduce immigration to the United Kingdom (as UK Government appears to want)? At first these policy objectives may appear to be totally incompatible. Immigration policy is set for the UK "as a whole" by the UK Government and any policy that reduces immigration to the UK "as a whole" will also reduce immigration to Scotland. This will certainly be true unless immigrants to the UK are required to reside and work in a particular region for a minimum period of time. However, there is nothing in the points-based system that takes into consideration the different demographic conditions that exist across the UK.

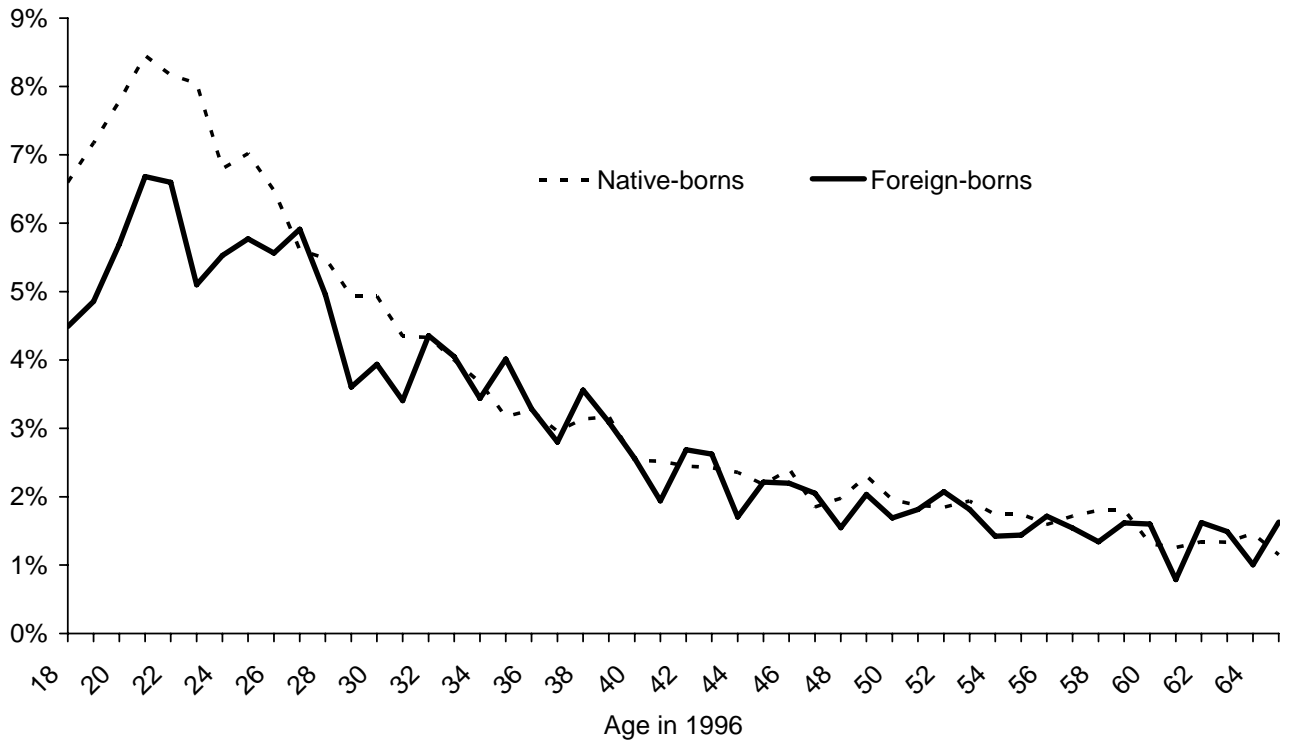
### 3. Adding regionality to immigration policy

Regional differences are a key feature of Canadian immigration policy. These differences are reflected in the immigration system. All the ten provinces of Canada (and one of its three territories) have agreements with the federal (Ottawa) government relating to immigration which takes into consideration specific provincial (territorial) requirements. Beginning in the late 1990s, "Provincial Nominee Programmes" (PNPs) have been established. PNPs are negotiated agreements that essentially mean that responsibility for immigration is shared between the provincial and federal governments. Similar agreements exist between the territorial and federal governments in Australia, although regionality is less central in Australian immigration policy.

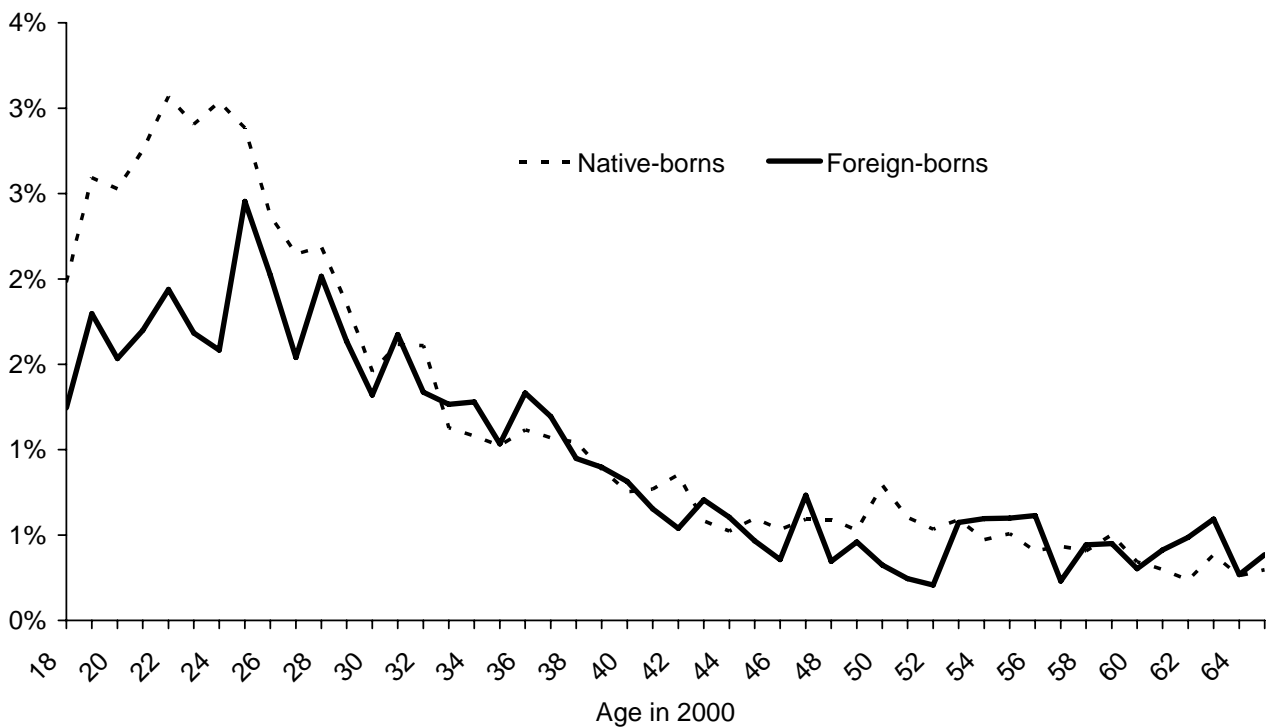
In practise these programmes mean that applicants with certain skills face a lower immigration threshold if they agree to live, work and stay in a particular province/territory for a minimum period of time. This minimum period of time is often 1,095 days of residence, which is also what is needed to be eligible for Canadian citizenship. Once citizenship is obtained (or the minimum period expires), the individual can reside anywhere in Canada. One of the main reasons PNPs were introduced was to counter the historical tendency of immigrants to concentrate in the three main cities of Toronto, Montreal and Vancouver. They are based on the empirical regularity that once an immigrant arrives in one province, after two years of residence, the probability of moving to another province drops off considerably. In other words, if you get people to a particular region in the first place, there is a high probability that they will stay permanently. The Canada-Quebec Accord (CQA) goes one step further and essentially devolves responsibility for immigration to the province of Quebec. In this arrangement, potential immigrants apply directly to the Province of Quebec and not the Dominion of Canada. The CQA is also a points-based system. However, the weighting is different, as is shown in Table 2. Essentially the CQA system awards fewer points for education/qualifications/employability and more points for knowledge of the French language. Quebec "picks" the immigrants and the federal government issues the visas and work permits, and administers the medical and criminal background checks.

The UK PBS could easily and quickly be modified along these lines to meet Scotland's needs by allotting more points to applicants who agree to live, work and stay in Scotland. Immigrants who choose this option could be issued with a visa that states that they are only allowed to work in Scotland. The period of this permit should be the same amount of time needed to applying for citizenship, which can be varied. This simple modification will only work if the government is serious about enforcing the terms of the residence requirement. Those who fail to do so

**Figure 1: Five-year inter-provincial migration rate - 2001 Canadian Census**



**Figure 2: One-year inter-provincial migration rate (%) - 2001 Canadian Census**



would have their work permit revoked and would no longer have the right to work. Since a “deal is a deal”, the government must be prepared, as a last resort, to deport those who fail to live up to the agreement. Given the UK Government has promised to be “tougher” on refugees and asylum seekers in terms of enforcing deportation orders (and numbers are falling), this does not seem to be a massive leap forward in “policy”.

#### 4. Do provincial nominee programmes work?

It is often argued that one reason for not devolving responsibly for immigration to Scotland is that Provincial Nominee Programmes “don’t work” in the sense that people do not stay in the province or territory they agreed to immigrate to. At face value, this seems unlikely since the sanctions are considerable for breaking the immigration contract. However, if it was true, then we would expect to see high rates of interprovincial migration in the years immediately after arrival. This of course is a legitimate question that could be answered empirically. However, in our search through the literature, we found no studies that specifically addressed this issue. We did however find a number of studies that demonstrate that the inter-provincial migration behaviour of native-born and foreign-born Canadians is surprisingly similar (e.g. Edmonston, 2002; Finnie, 2000; Lin, 1998; Newfold, 1996; Nogle, 1994; Robinson and Tomes, 1982).

In order to address this issue more directly we have analysed micro-data collected in the 1981, 1991 and 2001 Canadian censuses. Questions were asked about where respondents lived one and five years earlier so it is possible to calculate inter-provincial migration rates for native-born and foreign-born individuals. In 2001, there were few Provincial Nominee Programmes up and running although the separate system for Quebec had been in place for a decade. In this sense we are effectively considering what can be termed the “before period” when PNPs were not a central feature of Canadian immigration policy. In our future work, we will compare this to the “after period” with data from the 2006 Census (once it becomes available).

These calculations are summarised in Table 3. Three points are worth noting. In all comparisons, the rate of inter-provincial migration is higher for native-born Canadians and this difference is highly statistically significant. The second is that the rate for both of them has declined over time. The third is that 2001 5-year rates of 2.8% and 3.5% and 1-year rates of 0.8% and 1.0% do not seem especially large. In addition, as is shown in Figures 1 and 2, the inter-provincial migration rate is much higher for native-born Canadians in the younger age groups.

It is also possible with census data to calculate inter-provincial migration rates for specific cohorts of immigrants since the year of immigration is also collected. With the 2001 census, we have calculated the 5-year migration rate

for the cohort who immigrated in 1996 and the 1-year rate for the cohort who immigrated in 2000. These rates provide a more detailed picture in the period immediately after arrival. However, there is no natural comparison group since there is no cohort of “non-immigrants”. On their own such rates do not have much meaning. In attempt to provide a comparator, matching methods are used (see Heckman, Ichimura, and Todd, 1997, 1998a, 1998b). Space does not allow for a detailed discussion of these methods but the basic idea is simple. You select a set of characteristics that are thought to be correlated with migrating. Our list included: age, sex, marital status, education, presence of children and province/territory of residence. For every immigrant in the same sample you select a native-born individual with the same characteristics. You then calculate the difference in the migration rates between the two groups. The approach is quasi-experimental in the sense that the immigrants make up the “treatment group” while the matched sample of hypothetical individuals make up the “control group”. The results based on the 2001 census are shown in Table 4. For the 1996 immigrant cohort, the percentage that had moved province five years later was 6.2%. This rate is higher than the rate for the matched sample rate of 4.1%. This difference is statistically significant at the 1 per cent level. For the 2000 immigrant cohort, the percentage who had moved province one year later was 2.4%. This rate is again higher than the rate for the matched sample rate of 1.4%. However this difference is only statistically significant at the 5 per cent level. Taken at face value, these rates do not seem “high” remembering that there will be few PNP immigrants in these cohorts.

#### 5. Concluding comments

As it stands at the moment, there is absolutely nothing in the UK points-based system that will make it easier for the Scottish Government to deliver on its promise of reversing Scotland’s population decline. There is nothing in it that will attract people to Scotland. The Government’s electoral promise to reduce immigration to the UK will also reduce immigration to Scotland. It is somewhat surprising that the UK Government praises the Canadian and Australian immigration systems yet at the same times ignores the fact that regionality is a cornerstone of both. Scottish specificity could easily be built in through bonus points or lower thresholds for those who agree to live, work and stay in Scotland for a minimum period of time. Or the responsibility for immigration could be transferred to the Scottish Government along the lines of the Canada-Quebec Accord. In fact, points-based systems with regionality operate better than country-wide systems. Systems of the later type simply attract immigrants to areas with high immigrant concentrations, since chain migration is a feature of unrestricted or unmanaged migration flows. In this sense, modifying the UK PBS is not a situation of applying principles that are in any sense “new and unproven”—it is only a matter of political will.

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<sup>i</sup> Inflation Report Press Conference, Wednesday 11 November 2009, Opening Remarks by the Governor.  
<http://www.bankofengland.co.uk/publications/inflationreport/irspnote111109.pdf>