Scotland's improving economic performance: a long-term comparative study

by John McLaren

There has been much comment of late to the effect that Scotland's historical growth rate has been poor, relative to both the UK and to other countries.[1] This paper takes a contrary view. Firstly, based on figures for Gross Domestic Output (GDP) per capita, acting as a proxy for the rise in the standard of living, it argues that Scotland's long-term growth rate is very similar to that of the UK. Secondly, using the same measure, when Scotland's performance is compared internationally, it is shown to have improved over the last three decades relative to other developed economies. Thirdly, it is shown that much of the worsening seen in Scotland's performance, relative to the UK, since the mid-90's can be attributed in large part to methodological inconsistencies in the collection of data for Health and Social Work services. The paper concludes by considering some of the ways that a better understanding of the relative performance of the Scottish economy might be achieved and warns of the potential dangers of reinforcing a negative view of the Scottish economy.

Scottish versus UK growth

The official Scottish Executive figures[2] show that Scotland's 30 year GDP growth rate, at 1.6%, is significantly lower than that for the UK, at 2.1%. It is true that such a variation, 0.5 of a percentage point, over a thirty-year period can make a large difference to long-term growth. (At 1.6% the economy grows by 60% in 30 years, whereas at 2.1% it grows by almost 90%.) However, it is important to understand the reasons for this headline difference of 0.5 % and how valid it is.

There are a large number of ways that prosperity can be measured. Adjustments for many different aspects of timing, output and population can be made, and all with some validity. In the context of the GDP figures highlighted above, there are three adjustments in particular that are important in getting to a better understanding of Scotland's performance.

The first, and most important, adjustment is to take into account changes in population. While the original GDP figures relate to gross national wealth it is really individual personal prosperity that determines well-being. As the economic historian Professor Nick Crafts puts it, "Traditionally, economists have taken the long run or trend rate of growth of real GDP per person to be the best available measure of an economy's achievement in raising living standards".[3] This view is endorsed by the OECD, who also point out that, rather than GDP growth, it is "growth rates in GDP per capita which are more relevant from a national living standard perspective".[4]

The point of such an adjustment can be illustrated using an extreme example. If another Great Plague was to decimate the population and reduce it by a third, then national GDP would fall, simply because there were fewer people working, but personal prosperity need not have fallen, indeed it may rise as land and capital are shared amongst fewer people. Making adjustments for recent population changes for Scotland and the UK is simply taking this effect into account, just on a smaller scale, in order to allow for a better understanding of how living standards are growing.

There are two other adjustments that can also be influential in understanding Scotland's true position. The first is in relation to oil and gas related activities. The rationale for this adjustment is based on the fact that it is not comparing like with like if UK Continental Shelf (i.e. North Sea Oil (NSO)) activity is included. In National Statistics data, all NSO activity is credited to a separate region of the UK (what was 'the Continental Shelf', now called 'Extra-Regio'[5]). Therefore its activity is included in the UK figures but excluded, apart from some service related activities, in the figures for Scotland. Were it possible to split NSO activity between Scotland and the UK then a comparison could properly be made, but data does not allow for this. Hence, the comparison excluding NSO activity from the UK data gives a truer comparison of relative performance.

The other adjustment is made in relation to which time period is being considered. The Executive figures mentioned above cover the period 1973-2001. Table 1 shows the figures for other periods, including the longest period available, 1963-2001.

Table 1 shows the results from making such adjustments. The overall effect is to make the growth rates of Scotland and the UK almost identical in the three long run periods shown, with the difference never greater than 0.1 of a percentage point. In particular, over the longest period available, 1963-2001, Scotland's growth rate is slightly higher.

Vol.28 No.2, pp.42-48.

Table1: Gross Value Added in Scotland and the UK, annual average growth rates

	All Sectors		*All Sectors, exc Oil & Gas*		*All Sectors, exc Oil & Gas, adj for pop'n*	
Period	*Sc*	*UK*	*Sc*	*UK*	*Sc*	*UK*
1963-2001	2.1	2.4	2.1	2.2	2.1	2.0
1973-2001	1.6	2.1	1.6	1.8	1.7	1.6
1983-2001	2.2	2.6	2.2	2.7	2.3	2.4

Sources: ONS & SE-ELLD, GROS

Note: Figures shown relate to GDP (output based) at constant basic prices (GVA under ESA 95)

International comparisons

GDP per capita can also be used to allow a judgement to be made over Scotland's relative performance when looked at from an international perspective. Table 2 makes such an international comparison by showing growth rates for 'developed' economies over three decades. Within the 'developed' country economies, performance has been split into 'high', 'medium' and 'low', with medium being roughly defined as between 1.75 - 2.25 % annual growth.

Table 2 also shows the performance for EU 'Cohesion' countries (Greece, Ireland, Portugal and Spain) and 'developing' countries. The 'Cohesion' economies were classified as such by the EU, as their GDP per capita was significantly below (around two-thirds) the EU average. The 'developing' countries, as defined by the UN, include the fast growing Far East economies. The purpose of classifying countries in this way is to allow for a better comparison of economies at similar stages of economic development at the data's starting point of the early 70's, and so to judge which countries have performed well and which badly.[6]

Table 2 shows that Scotland's performance has been improving over time. From a 'low growth' performer in the 70's it has improved to a 'medium growth' performer in the 80's and 90's. It also moved ahead of the UK in the 90's. This is quite important as its better performance in the 80's may have been caused by a close association with the 'high growth' UK economy of that decade. This does not appear to have been the case in the 90's.

Prosperity and population

It can be argued that national prosperity is also important and that a growing population is a healthy sign. But here too the data points to an improving Scottish performance over the past 30 years. While Scotland's population was slowly falling from the mid-70's to the end of the 80's, this decline slowed in the 90's, there was even a small rise between 1989 and 1995. This rise was reflected in the net emigration figures for Scotland.[7] From the 50's through to the 80's there was large scale net emigration that offset the natural increase in the Scottish population. In the 90's however this position significantly improved and although there was still net emigration, it was the lowest figure, by decade, for over 150 years. In addition, for the first time in over half a century, there were a number of years of net immigration.

Besides emigration, the natural change in the Scottish population (births – deaths) poses a potential future problem for Scotland. Almost uniquely in terms of the EU-15, Scotland's death rate (11.3 per 1000 population) is significantly above its birth rate (10.4 per 1000 population). Only Germany is in a similar position. This is not due to a low birth rate, Scotland's fertility rate is only just below the EU-15 average, rather it is caused by an exceptionally high death rate, well above that of any of the EU-15. So it may be that more attention needs to be paid to lowering the death rate than increasing the birth rate.

The United Nations (UN)[8] projects that the populations of most developed countries will fall over the period to 2050. Scotland's expected fall, of around 15%, is similar to that projected for the Czech Republic and Japan, but lower than for Switzerland (-19%) and for Italy (-22%). Even countries like Portugal (-10%) and Finland (-5%) are projected to have declining populations.

While Scotland's population and migration performance improved in the 90's, there are still problems to be overcome. Maintaining or improving the migration performance and improving Scotland's death rate are key issues. However, as the UN figures highlight, in the future there will be increasing importance put on improving productivity as the route to increasing national wealth.

Scotland versus UK - post 1995

Looking more closely at Scotland's apparently disappointing recent growth record, we find that this relative sluggishness, in comparison to the UK, started in the mid-90's and has accelerated since 2000.

Why has Scotland's performance declined in comparison to the UK since 1995? This question is particularly puzzling as over much of this period the Electronics and Financial Services sectors were still booming and Scottish productivity was above that of the UK.[9]

Figures released by the Scottish Executive in April 2003[10] shed new light on Scotland's recent economic performance, particularly in comparison to that of the UK as a whole.

Over the period 1995 to the third quarter of 2002, Scotland's economy grew at only two-thirds of the rate of the UK, a gap of 6 percentage points in total. However, this

recent decline came about during two distinctively different time periods, the first from 1995 to 2000 and the second from 2000 to 2002Q3. During each period the UK grew by 3% more than Scotland. The first period saw manufacturing growth in Scotland stronger than in the UK but not enough to compensate for the slower services growth. In the second period the reverse was the case, with the rapid decline of manufacturing outweighing a better services performance.

An adjustment should again be made for population change over the period in order to get a clearer picture of the change in growth of living standards. From 1995 to 2001 Scotland's population fell by 0.8 of a percent, while the UK's grew by 1.6 %. So, up to 2001, 2.4 % of the 6% gap can be accounted for by population change which does not impact on GDP per capita.

Table 3 zooms in on this big picture to learn more from the detail about relatively good and bad performances. Doing so highlights some familiar features and some that are less familiar.

Table 2: Rates of growth of real GDP per capita, (annual averages)

Country	*1970-1980*	*Country*	*1980-1990*	*Country*	*1990-2000*
Developed economies					
High		*High*		*High*	
Iceland	5.2	Japan	3.5	Norway (1)	2.8
Norway (1)	4.2	Finland	2.7		
Japan	3.3	UK	2.5	*Medium*	
Belgium	3.2			Australia	2.3
Finland	3.1	*Medium*		Holland	2.2
Italy	3.1	USA	2.2	USA	2.2
Canada	2.8	Italy	2.2	*Scotland*	*2.1*
France	2.7	*Scotland*	*2.1*	UK (1)	2.1
		Belgium	2.0	Denmark	2.0
Medium		Norway	2.0	Belgium	1.8
Holland	2.1	Denmark	1.9	Finland	1.8
USA	2.1	NZ	1.9	Canada	1.7
Denmark	1.8	Sweden	1.9		
UK (1)	1.7	France	1.8	*Low*	
		Australia	1.7	Iceland	1.6
Low				France	1.4
Scotland	*1.6*	*Low*		Italy	1.4
Sweden	1.6	Holland	1.6	Sweden	1.4
Australia	1.5	Iceland	1.6	NZ	1.2
Switz'd	1.2	Canada	1.5	Japan	1.1
NZ	0.5	Switz'd	1.5	Switz'd	0.2
EU defined cohesion (2)					
Greece	3.6	Ireland	3.3	Ireland	6.4
Portugal	3.4	Portugal	3.1	Portugal	2.5
Ireland	3.3	Spain	2.5	Spain	2.5
Spain	2.5	Greece	0.2	Greece	1.9
UN defined developing					
Korea	5.8	Korea	7.6	Korea	5.1
Mexico	3.3	Mexico	-0.3	Mexico	1.7

Source: "The Sources of Economic Growth in the OECD Countries", OECD, 2003; Scottish Executive; ONS

Notes: (1) UK and Norway measures are both including NSO. Measured as mainland only (i.e. excluding NSO), growth rates for the 90's would fall to 2.0% and 2.2% respectively. (2) The 'Cohesion' economies were classified as such by the EU as GDP per capita was significantly below the EU average prior to the reform of Structural Funds in the 80's.

Table 3: A breakdown of the post 1995 performance for Scotland and the UK

Industry	*Sc*	*1995 weight UK*	*% change 1995-2002Q3 Sc*	*UK*	*% change 1995-2000 Sc*	*UK*	*% change 2000-2002Q3 Sc*	*UK*
Total	1000	1000	13	19	12	15	1	4
Agriculture, etc	30	18	0	-7	-1	0	-1	-7
Mining etc	16	26	9	-3	17	7	-7	-9
Electricity, gas, water	31	24	5	16	14	11	-8	5
Manufacturing	226	219	-6	-1	16	5	-19	-6
Chemicals	20	24	32	18	28	12	3	5
Metals etc	19	25	-8	-11	-2	-4	-6	-7
Mechanical Engineering	16	19	-6	-13	-5	-10	-1	-3
Electrical Engineering	60	28	3	11	68	45	-61	-23
Transport Equipment	12	20	-36	13	-9	16	-30	-3
Food, drink, tobacco	35	29	-10	2	-7	0	-3	2
Textiles	16	12	-33	-36	-19	-22	-17	-18
Paper etc	22	28	-16	-1	-2	-1	-14	0
Other	26	34	-12	-6	-11	-3	-1	-3
Construction	64	52	6	23	9	10	-3	12
Services	632	662	22	29	11	21	10	6
Wholesale, retail	104	117	31	34	25	23	5	9
Hotels, restaurants	30	29	13	-4	5	0	8	-3
Transport,Communications	76	80	36	47	16	40	17	5
Financial Intermedian[11] (1)	41	66	57	28	39	21	13	6
Real Estate,Business	153	186	31	41	10	30	19	8
Public Admin,Defence	40	61	8	2	7	-1	1	3
Education	80	56	12	9	9	7	3	2
Health, Social Work	92	65	-6	25	-10	15	4	8
Other services	43	43	42	30	18	21	20	7

Sources: ONS, Scottish Executive

Over the period 1995-2000:

-7 Manufacturing grew at over three times the rate in Scotland as in the UK, due to the boom in electronics and bolstered by a good performance in the Chemicals sector.

-7 However, Scottish services grew at only half the rate of UK services. While Scottish Financial Services outgrew the UK, the performance in areas like Transport & Communications, Real Estate & Business and Health & Social Work was much poorer.

-7 Due to the relative importance of manufacturing and services to the economy, the weight given to services is almost three times that given to manufacturing, this led to Scotland's underperformance.

Over the period 2000 to 2002Q3:

-7 Manufacturing has slumped throughout the UK, but at three times the UK rate in Scotland. This is largely accounted for by the decline in Electronics.

-7 Scottish services outgrew the UK, largely through some catch-up in the Transport & Communications and Real Estate & Business sectors. However, Health & Social Work continued to underperform.

For the period as a whole:

-7 In manufacturing, Scotland's best performer has been Chemicals, but this has been overwhelmed by the relatively poor performance in Electronics and Transport Equipment.

-7 In services, Financial Services, Hotels & Restaurants and Other Services have performed relatively well but Transport & Communications, Real Estate & Business and Health & Social Work have under-performed.

In trying to explain these relative performances some are easier to interpret than others.

-7 The rise and fall of Electronics is well documented, although the overall underperformance against the UK still comes as a surprise.

-7 The good performance of Chemicals in Scotland is unlauded but not unlikely.

-7 Scotland's good Financial Services performance has also been well recorded.

-7 The slower Scottish growth in Transport & Communications and Real Estate & Business is not difficult to accept, although the reasons for Scotland's catch up post 2000 are more difficult to interpret.

-7 But the most difficult impact to assess is Scotland's underperformance in the Health and Social Work sector.

Health and Social Work

The extent of this sector's under-performance, down 6% in Scotland while up 25% in the UK, allied with the importance of the sector, almost 10% of Scotland's economy in 1995, has had a very significant impact on Scotland's performance over the period as a whole. Indeed if this sector had grown at the same rate in Scotland as in the UK, half the growth gap (3%) since 1995 would disappear.

Why does this disparity arise? The answer comes in two parts. The first relates to a statistical oddity in the 1997 to 98 figures, where output is recorded as having fallen by 7% in one year. Scottish Executive statisticians are aware of this anomaly, which relates to recorded employment figures. But they have found it difficult to resolve because the statistics were recorded five years ago and checking this far back presents major difficulties. They are currently considering options for making an appropriate adjustment.

The second part of the answer relates to different methodologies being used. The UK figures are output-based, i.e. they record health activity based on a weighted index of the number of treatments and operations received by patients.[12] The Scottish data is input-based, i.e. they record health sector activity based on the number of doctors, nurses, etc, employed. Scottish Executive statisticians are currently considering whether the UK methodology can, and should, be replicated for Scotland, in discussion with the ONS.

The impact of using these different measures can be estimated by looking at available series of consistent data for employment and public health and personal services expenditure.

On employment, ONS[13] records employment in the Health and Social Work (HSW) sector as growing by 9% between 1995 and 2002 in the UK, while in Scotland growth was only 1%.

On public expenditure on health, ONS data[14] shows that this rose, in real terms, by 36% between 1995 and 2002 for the UK, and by approximately 25-30%[15] for Scotland over the same period.

Both the employment and the expenditure measures suggest that some, but not all, of the differential in GVA performance is valid, but that the different methodologies used could account for upto half of the difference remaining after the 97-98 data adjustment. However, only once comparable figures for Scotland are compiled will a clearer picture emerge.

It seems likely that, if the Scottish HSW sector figures were compiled on the same basis as for the UK, and if population changes were again adjusted for, Scotland's overall performance would have been similar to the UK's between 1995 and 2000, but still below it between 2000 and 2002, although not to the extent shown in Table 3.

Summary and conclusions

The comparative figures in this article illustrate that:

1. the performance of Scotland and the UK, in terms of changes to standards of living (GDP per capita) have been very similar in the long run.
2. Scotland's international performance over time has been improving in comparison to other 'developed' economies.
3. close inspection of Scotland's post-1995 downturn relative to the UK shows that there are significant methodological inconsistencies in relation to the Health and Social Work sector data for Scotland and UK. If these were adjusted for it is likely that Scottish standards of living maintained its improved position relative to the UK up to the end of the decade. Only post 2000 does there appear to have been a relative downturn.

Lessons

What are the lessons that can be drawn from these findings?

One important lesson is that the story of Scotland's economy in recent times is not a simplistic one of constant underperformance. The negative economic story that has been told up to now is only one interpretation of the data. An alternative view is of a Scotland which has improved its

relative rate of growth in living standards and which has improved its migration and population performance. This would help to explain why Scotland does not feel poor and stagnant and why the labour market is relatively healthy.

It is also important that we do not mix up judgements over simple GDP growth with those over GDP per capita growth. Spurious claims are often made to the effect that if only Scottish GDP had grown at the rate of some other country then each Scot would be £X, 000 better off.[16] In most cases this is comparing apples and pears as the higher growth in total GDP has come largely through an increasing population, not through an increasing standard of living. The two impacts are quite different. For example in the 90's New Zealand GDP grew at a reasonable 2.6% per annum, whereas it's GDP per capita grew at a poor 1.2% per annum. In other words its population was growing and with it overall output, but productivity was low and so standards of living grew slowly.

Another important lesson is that the regional GDP figures for Scotland are not sufficiently reliable, and require further investment in Scottish Executive statistics and statisticians. The move to quarterly data and the, imminent, move to chain-linking[17] are both improvements but the inherited problems, some of which have been highlighted here, are difficult to revisit. In addition, these measurement problems are made worse in the light of wider questions about GDP as an economic measure, particularly its ability to capture quality changes and productivity gains in public services. These issues are very germane to Scottish data given our large public sector. Future improvements in the collection and analysis of the data will be crucial in creating a better understanding of how our economy is really performing.

Actions

If these are the principal lessons, what are the recommended actions that would improve matters?

There is an urgent need to improve the analysis and understanding of the Scottish economy. This could be achieved by the introduction of a Scottish National Development Plan, based on the very successful Irish model.[18] The objective would not be to plan the economy as a whole but to model and forecast it in such a way that the blockage points could be identified where government should rightfully intervene e.g. housing market/planning, transport etc. To do this well would take considerably more resources than are currently used in this area, but there would still be a relatively minor sum in terms of the Enterprise and Lifelong Learning Department's budget.

Such a Plan, along with the background work necessary to create, evaluate and update it, would lead to a far greater number of government economists and statisticians, academics, private sector and independent research bodies becoming involved in analyzing the Scottish economy. This, in turn, would lead to the provision of more and better evidence based policy prescriptions for economic and government policies. If Scotland had such a set up we would not have witnessed the current problems in interpreting the Health and Social Work figures or the recent revisions to Agriculture sector data, as the data would be subject to far greater scrutiny.

Until regional UK GDP figures are more reliable it may be better to concentrate instead on alternative top line indicators, for example, unemployment. This measure is not without its own data problems, the two different measures reported[19] have sometimes moved in different directions in recent years and the size of those of working age that are registered as long term sick or disabled rather than unemployed is worryingly high. Nevertheless, it is probably a more robust figure at present than GDP and may well be a better proxy for well being than GDP per capita. But labour market statistics are a relatively static measure of economic performance, we also need a dynamic measure to capture productivity gains, so GDP will remain important, but balanced by other measures.

Future debate

In terms of further work needed, even with the findings given here there are still a lot of unanswered questions thrown up by the data:

-7 Has government policy intervention played a role in the improvements seen and if so what does it teach us?

-7 What is at the root of Scotland's good services performance post 2000?

-7 How crucial is it for Scotland's population to start growing again, or at least stop falling?

Current political debate in Scotland points to the need to link population dynamics to economic performance. The point is accepted by the Scottish Executive. Jack McConnell, the First Minister, has stated: "Over recent years, Scotland's population has been at best stagnant, at worst decreasing. Unless we tackle this issue head on, we will not be able to meet the growth challenge.".[20] While this article questions, to some extent, this conclusion, it is true that population trends will become increasingly important as the changing age structure within Scotland works against output per capita continuing to improve. There are two causes of Scotland's stagnant population: a high death rate and a low (negative) immigration rate. The former needs to be tackled through health and social policies. On the latter, economists presently accept that the most important driver behind migration is economic, especially the hope that by moving, individuals will improve their own and their family's economic circumstances. [21]

If the message being put over by our politicians and media to those in the job market in Scotland, the UK and overseas, is that the Scottish economy is stagnating, this

becomes a negative component of the information set they will use to determine where to work, or where to search for work. The perception that the Scottish economy performs poorly compared to the rest of the UK could become an important explanation for the stagnant Scottish population and ultimately help to make the prophets of dooms predictions come true. Yet, as this article has argued, when economic performance is measured in terms of rising standards of living, Scotland is as good a place in which to settle, to work and to bring up children, as the rest of the UK.

There are dangers in not being alert to economic slowdown and its causes, but equally there are dangers in being overly pessimistic, based on partial analysis. It is for this reason that Scotland needs a better, more informed, debate over its economic circumstances than has taken place in recent times.

Endnotes

1. See for example: Douglas McWilliams, Andrew Wilson and Jim Mather, George Kerevan, all in "Scotland's Economy: New Ways Forward", Policy Institute, 2002; and Alex Salmond, The Scotsman, 3rd March 2003
2. See "Scottish Economic Report: February 2003", Scottish Executive
3. See "Britain's Relative Economic Performance, 1870-1999", Institute of Economic Affairs, 2002
4. See "The Sources of Economic Growth in the OECD countries", OECD, 2003
5. Extra-Regio also includes the activity of UK embassies overseas and armed forces stationed abroad, both of which are small in comparison to Continental Shelf activity
6. "Mature economies have fewer opportunities for extensive growth than their developing counterparts. There is no large agricultural sector from which labour and capital can be drawn to higher productivity manufacturing and tradable service activities. Moreover, the scope for educational improvement and skill enhancement, while present, is much less. Hence, research has found that amongst countries and regions with not widely dissimilar structural and behavioural charectaristics initially poor areas grow more quickly thus promoting convergence in GDP per head." Brian Ashcroft in "Scotland's Economy: New Ways Forward", Policy Institute, 2002
7. See "Scotland's Population 2001 – The Registrar General's Annual Review of Demographic Trends", General Register Office for Scotland (GROS), 2002, for data on population, migration, and birth and death rates
8. See "World Population Prospects: The 2002 Revision", United Nations
9. ONS National Accounts for regional productivity show Scotland to be above the UK average in terms of both output per hour worked and output per job filled foe each year over the period 1996-99, except for output per filled job in 1999
10. See "Scottish Economic Statistics, 2003", Scottish Executive
11. UK figures exclude Financial Intermediation Services Indirectly Measured (FISIM)
12. UK figures exclude Financial Intermediation Services Indirectly Measured (FISIM)
13. In fact ONS currently use English/Welsh figures and assume similar growth for Scotland as comparable data is not available for Scotland
14. See "Labour Market Trends", Tables B12 and B16
15. See "Public Expenditure Statistical Analysis", (PESA) H M Treasury, chapters 3 and 8
16. Long run comparative data for Scotland is not available but an estimate can be made using PESA data along with current Scottish Executive data.
17. See Alex Salmond in The Scotsman, 17th February, 2003
18. Chain linking involves updating industry weights on an annual basis rather than the current 5-yearly rebasing which occurs at present.
19. See www.ndp.ie website for details on past and present Irish NDP's
20. The two different measures are compiled, based on the International Labour Organisation (ILO) definition and the claimant count definition
21. Speech to Edinburgh Chamber of Commerce, March 25 2003
22. Cairncross, F. "The Longest Journey: Survey of Migration", The Economist, Nov 2, 2002; "Migration within Britain for job reasons", Labour Market Trends, April 2003.