CPPR Working Paper 29

ECONOMIC GROWTH – PAST TRENDS AND FUTURE PROSPECTS OF ADVANCED ECONOMIES

John McLaren
June 2012

ECONOMIC GROWTH – PAST TRENDS AND FUTURE PROSPECTS OF ADVANCED ECONOMIES

INTRODUCTION

The main purpose of this article is to consider the future prospects for economic growth in advanced economies, including the UK and Scotland, in the light of recent past trends.

In general, the data used throughout this article is shown in terms of GDP per capita (in constant price terms). Both academic economists (eg. Nick Crafts[1]) and economic institutions (eg. OECD[2]) consider that changes in GDP per capita are more relevant than simple GDP growth, in terms of judging the shifts in real living standards.

However, in most of the following discussion, the same general conclusions would also be valid in a GDP growth context.

Part One looks at how slow any bounce-back in economic growth has been, following the latest recession, especially in comparison to other recessions.

Part Two looks at changes to economic growth rates over the past four decades for advanced economies and what this might imply for future growth rates.

Part Three looks at sources of economic growth and what areas of economic policy need to re-considered in order to improve future prospects.

Part Four provides a brief summary.

[1] 'The Global Economy in the 1990's, a long run perspective', Ed. Rhode & Toniolo, Chapter 2, Nicholas Crafts, Cambridge University Press, 2006.

[2] See 'The sources of economic growth in the OECD countries', OECD, 2003.

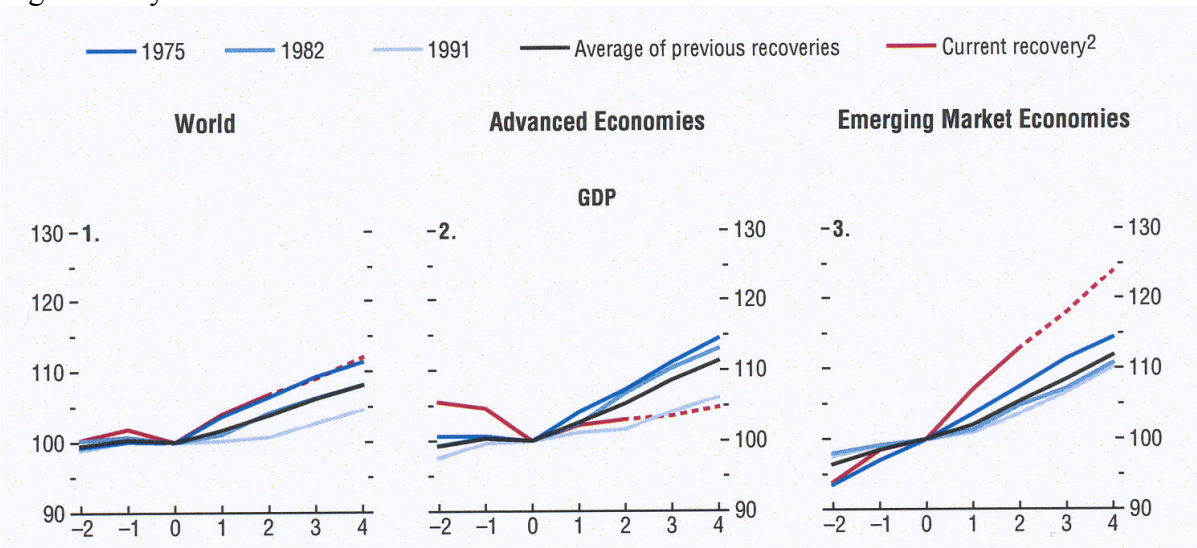
Part 1 – THE CURRENT RECESSION VERSUS PAST RECESSIONS.

It is well known that the developed countries, or 'advanced economies', of the world have struggled to emerge from the current 'Great Recession'[3]. In comparison to previous world downturns the bounce-back has been anaemic and in some cases insufficient to regain the peaks seen in 2008.

Worldwide performance

Figure 1 shows the position for the world as a whole, for advanced economies and for emerging market economies, in terms of growth in GDP during this recession and the three previous slowdowns.

Figure 1: Dynamics of Global Recoveries



(years on x-axis; t=0 in the year of the trough; indexed to 100 at the trough; in real terms)
Source: IMF World Outlook, April 2012, Box 1.2

What can be seen in Figure 1 is that:

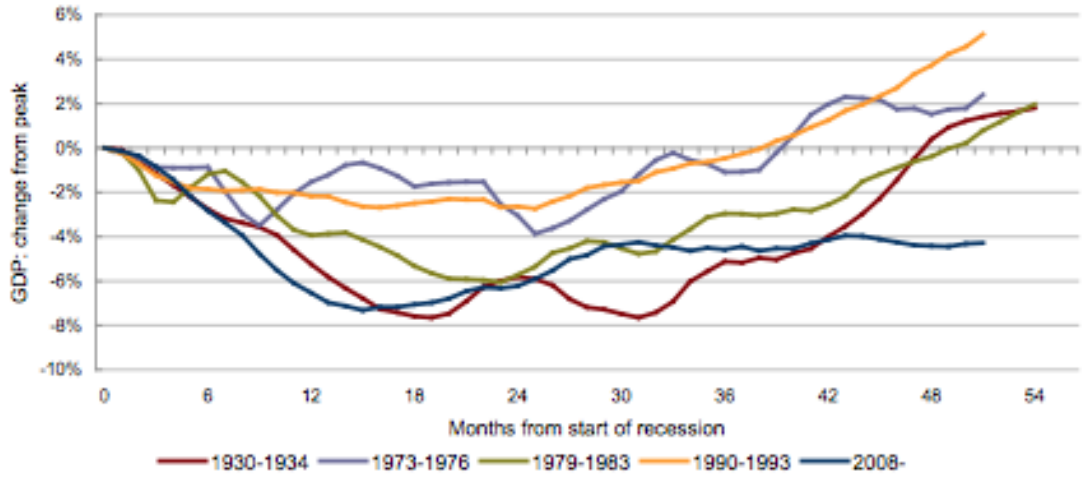
- for the 'advanced economies', the recovery has been very shallow, imitating what happened in the 90s. However, in contrast to the 90s, the size of the current downturn is much greater, hence the expectation that the bounce-back would be strong, and the disappointment that it has been so weak.
- for emerging market economies, the recovery has been stronger than after any earlier downturn in the past 50 years.
- for the world as a whole, the recovery has been above average and in line with that seen in the 70s.

[3] This is the term now commonly used by the IMF, NIESR and others, to describe the current situation.

UK performance

This 'advanced economies' performance is mirrored in the performance of the UK economy, in comparison to previous downturns. Figure 2 illustrates this point.

Figure 2: the UK profile of recession and recovery



Calculated from three-month moving averages of monthly GDP.

Source – NIESR

UK GDP remains about 4% below its 2008 peak, a poorer performance than during any of the previous downturns over the last 50 years, or indeed compared with the 1930s. By this stage of the cycle, in earlier downturns, GDP had returned to, or risen above, its earlier high.

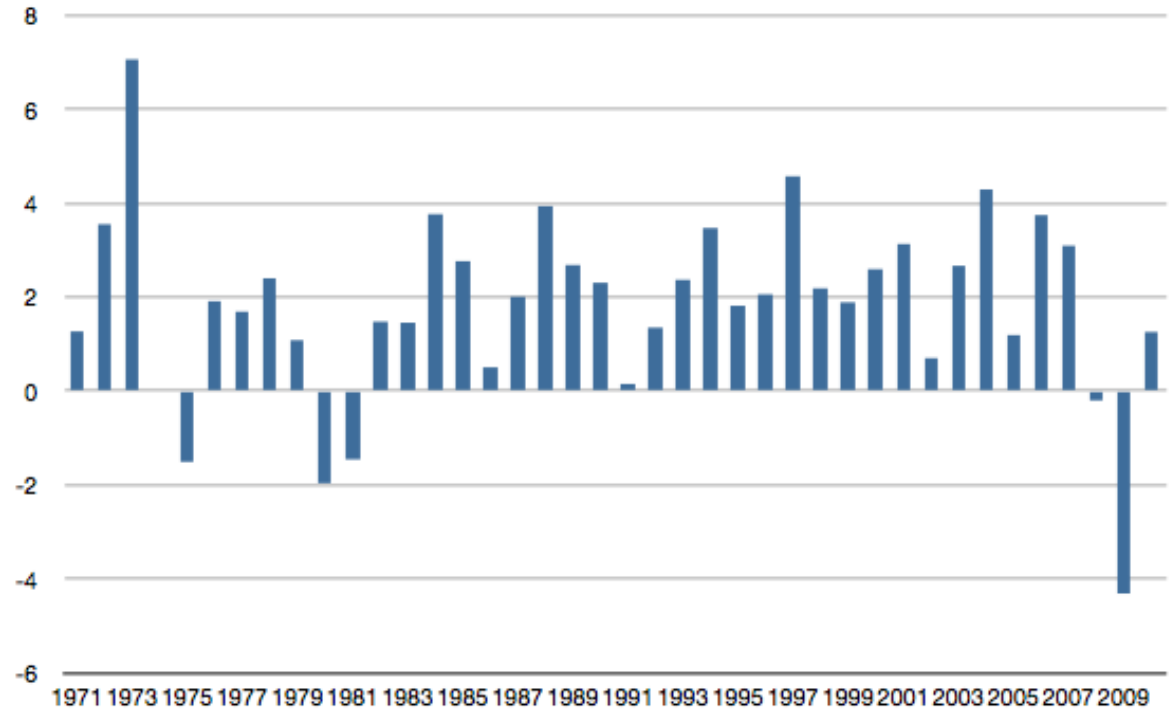
Scottish performance

The current 'Great Recession' saw an overall fall in Scottish GDP of around 4½%. This is much more than in any of the previous recessionary periods (see Chart 1 and Box1). In addition, the length of the downturn in Scotland is only comparable with that seen in the 80s, though again, the position now, four years after peak output, is much worse than at the same point in the 80s (-3% on peak output now versus -½ % in the 80s).

Scotland during downturns

Mid 70s – No growth in 1974, fall of output 1.5% in 1975, followed by 3 years of around 2% growth.
Early 80s – Fall of 2% and then 1.5% in 1980 and 1981, followed by 2 years of growth around 1.5% and then 2 years of above trend (ie, over 1.8%) growth.
Early 90's – Growth of only 0.1% in 1991, followed by growth of 1.4% then 2 years of above trend growth.

Chart 1: Scottish annual GDP growth rates, %, 1971-2010



Source: Scottish Government

What might be the cause(s) of this poorer recovery in economic performance in advanced economies?

Depth and breadth of worldwide recession

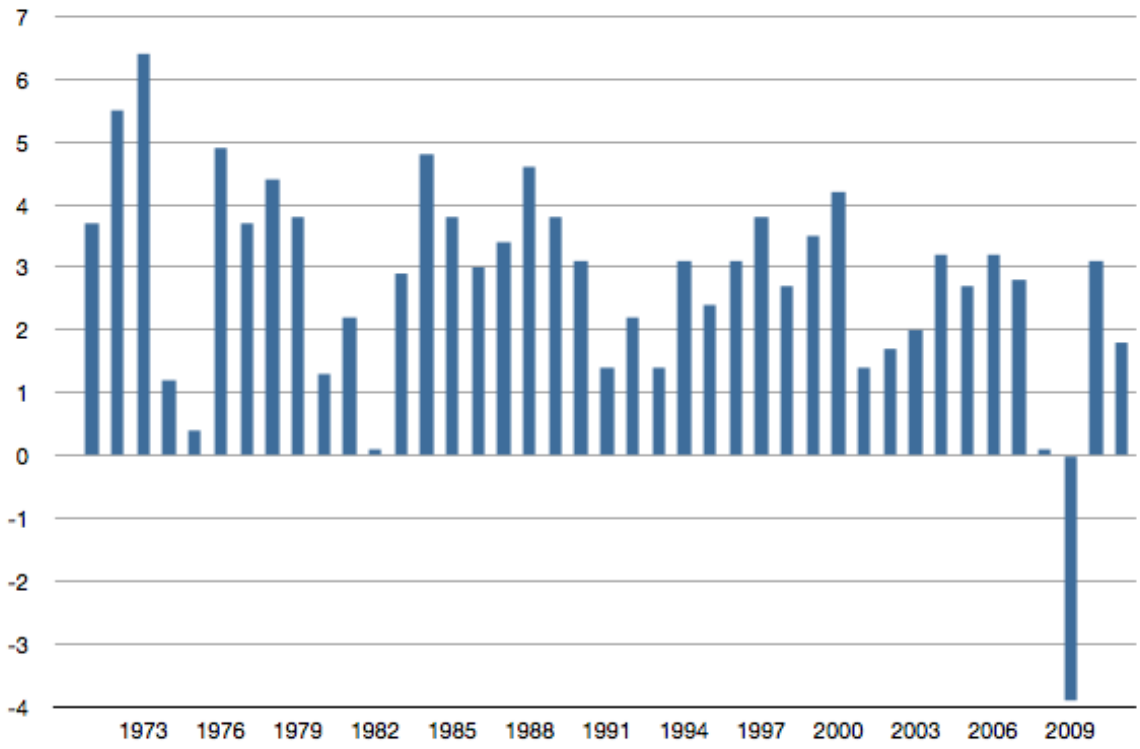
Part of the explanation is relatively simple. In previous recessions the downturn for advanced economies was not so universal and not so deep.

It is clear from Figure 1, as well as from OECD data[5], that the depth of this recession far exceeds that of any of the preceding recessions back to the 70s. In fact, prior to 2009 (when output fell by 4%), at no time, back to 1970, did the OECD area suffer an annual fall in output (see Chart 2).

Even in GDP per capita (ie. living standards) terms, each of these earlier recessions had involved a fall of less than 1% of GDP and only lasted for 1 year, while, the latest recession lasted 2 years and involved an overall decline in GDP per capita of 5% during that time.

In particular, past recessions that we remember in the UK tended to coincide with those experienced in the US, hence the anglo-american experience concentrates on 1974, 1980-82 and 1991. However, in 1974, apart from the UK and the USA, only 3 other OECD countries contracted (Denmark, Greece and Japan). In 1980-81, apart from the UK, only one national economy (Denmark) contracted in both years. In 1991 both Germany and Japan grew strongly (3% and 5% respectively) as did France, Italy, Spain and many others.

Chart 2: OECD annual GDP growth rates, %, 1971-2011



Source: OECD database

The impact of this, less than pervasive, worldwide decline in previous downturns was twofold:

- there was little, or no, decline in overall OECD output
- it allowed strugglers to return to growth by tapping into a number of, still growing, export markets.

This gives some clue as to why the current 'Great Recession' has proved so difficult to recover from, it is both deeper and more widespread than before. Only those countries with close trading links and/or control of sought after raw commodities (like Australia) have managed to avoid recession. Most 'advanced economies' lack such strong links with the faster growing BRICS and other 'emerging market economies'.

However, there is another aspect of 'advanced economies' growth that poses difficult questions with regards to whether we might reasonably expect a return to historical growth rates. This relates to the general slowing of economic growth over recent decades in the OECD.

Part 2 - CHANGES IN GROWTH PATTERNS

Table 1 shows the annualised growth rates for 23 'developed' OECD countries for the 70s, 80s, 90s and 00s.[6]

Table 1: Annualised growth rates, in constant price terms, GDP per capita

	Decades					
Countries	**70s**	**80s**	**90s**	**00s**	**(00 to 07)**	**1970-2010**
Ireland*	3.3	3.3	6.0	0.7	3.0	3.3
Norway	4.1	2.1	3.1	0.6	1.6	2.5
Portugal*	3.6	3.1	2.7	0.2	0.6	2.4
Finland	3.4	2.6	1.7	1.4	2.9	2.3
Iceland	5.2	1.6	1.5	0.9	3.1	2.3
Austria	3.5	2.0	2.2	1.1	1.7	2.2
Japan	3.2	4.1	0.9	0.7	1.5	2.2
Spain*	2.6	2.6	2.5	0.7	1.8	2.1
United Kingdom[7]	1.8	2.6	2.6	1.1	2.4	2.0
Belgium	3.1	1.9	1.9	0.8	1.4	1.9
Germany	2.8	2.2	1.6	1.0	1.4	1.9
OECD**	2.5	2.3	2.0	0.9	1.7	1.9
Canada	2.8	1.6	1.9	0.8	1.5	1.8
Greece*	3.6	0.2	1.8	1.8	3.7	1.8
Netherlands	2.3	1.7	2.5	0.9	1.6	1.8
USA	2.2	2.3	2.2	0.6	1.4	1.8
Scotland	**1.5**	**2.1**	**2.2**	**1.2**	**2.4**	**1.8**
Australia	1.3	1.5	2.4	1.5	2.1	1.7
France	3.1	1.8	1.5	0.5	1.1	1.7
Italy	3.3	2.4	1.6	-0.2	0.7	1.7
Sweden	1.6	1.9	1.7	1.5	2.6	1.7
Denmark	1.9	2.0	2.2	0.2	1.3	1.6
New Zealand	0.7	1.3	1.6	1.3	2.1	1.2
Switzerland	1.1	1.6	0.5	0.9	1.2	1.0

Sources: OECD, Scottish Government

- *EU 'cohesion' countries[8]. ** OECD here incorporates an estimate over 34 countries.*

Data comparability issues

While the data is (with the exception of Scotland) taken from the OECD's database, there will inevitably be some comparability and consistency issues arising across so many countries and so many years.

Changing the start/finish points for calculating growth rates would affect the results growth rates over time (see later on the OECD study across decades for some reassurance on this point). However, the slowdown in growth seen in the 00s still stands out, even allowing for the possibility of some changes at the margin due to different methodologies and start/finish dates.

[6] All Eastern European countries have been excluded (data was not available for these countries until the 90s), as have UN defined 'developing' countries like Turkey, Mexico and Korea. Luxembourg has also been excluded due to the exceptional nature of its economy with regards to 'commuting' workers from neighbouring countries. EU classified 'cohesion' countries could also be argued to be at a different state of development over this period but are included here, though highlighted as such.

[7] The OECD data uses expenditure based GDP whereas Scottish data uses output GDP. UK growth rates are almost identical under both measures, except for the 90s when the output base growth rate is lower, at 2.4%.

[8] The original EU cohesion countries (Spain, Portugal, Ireland and Greece) were so designated due to their relatively low level of standard of living. EU funds were made available at a greater scale than elsewhere in the EU in order to allow for convergence with the average EU standard of living.

There are a number of interesting points that emerge from an analysis of this table.

First, taken across all four decades the average growth rates for the 23 'developed' countries ranges from 3.3% (Ireland) to 1% (Switzerland[9]). Removing the top and bottom outliers (Ireland, Norway and Portugal at the top and Denmark, New Zealand and Switzerland at the bottom) gives a much narrower, from 2.3% (Finland and Iceland) to 1.7% (Australia, France, Italy and Sweden) across the remaining 17 countries.

This range may seem quite narrow but over the full 40 year period it amounts to an accumulated difference of 148% (at 2.3%) growth versus 96% growth (at 1.7%), which illustrates how small differences in growth have a large effect when compounded over time.

The full 40 year annual growth rate figures also show that outstanding performances (whether high, as with Ireland in the 90s and Japan in the 80s, or low, as with New Zealand in the 70s or Switzerland in the 90s) over a single decade are not sustained over longer periods of time.

Second, decade by decade there appears to be a slowing of growth rates. This is seen for the OECD as a whole, but is even more pronounced in many EU economies, including: Belgium, Finland, France, Germany, Italy, Portugal and Spain.

In particular, the 00s has turned out to be a decade of relative underperformance in terms of the growth of living standards[10].

Third, unlike in earlier decades there are no high growth economies in the 00s. The best performance comes, somewhat unexpectedly, from Greece, but at only 1.8% per annum. This is followed by Sweden and Australia (both 1.5% pa). Also, for the first time a country (Italy) exhibited a negative annual growth rate (-0.2% pa) over a decade.

Even before the downturn, ie up to 2007, the 00s had been a relatively slow growth decade. The 00s to 2007 exhibited the slowest annualised growth rate for the OECD as a whole, and for 12 of the 23 countries shown, in comparison to the previous 3 decades. This slowdown was particularly noticeable for the USA, declining from previous decade averages of around 2¼% to under 1½% a year.

Fourth, Scotland's growth rate was relatively poor in the 70s but had improved to around the OECD average in the 80s and 90s. In the 00s Scotland's performance was above the OECD average and in line with that for the UK. However, the 00s were still the slowest decade for growth for Scotland. Relative to the UK, Scotland underperformed in each decade up to the 00s[11].

---

[9] While Switzerland's GDP per capita growth rate is poor, it tends to have a higher GNP than GDP, the reverse situation to countries like Ireland, which could improve its growth rate over time.

[10] The impact of growing inequality, in countries like the UK and the USA, over this period could further compound this decline in living standards for the median, or 'typical', household and especially for that of lower skilled/lower income households.

[11] Note, however, that this finding is inconsistent with the Scottish level of GDP per capita around 2000, which was only about 6 percentage points lower than for the UK. This reason for this inconsistency is unknown at present. Current price, Regional Accounts data suggests that the discrepancy does not appear to be due to the inclusion of North Sea activity in the UK figures (where output - in volume terms - peaked in 1999/2000).

[13] 'The sources of economic growth in the OECD countries', OECD, 2003.

Fifth, in 2003, the OECD published a widely referenced paper[13] that looked at GDP per capita growth performances across OECD countries over recent decades.

This study attempted to adjust for differences in cyclical positions across countries. Such adjustments made little difference to annualised growth rates in the majority of cases (seldom shifting annual growth rates per decade by more than +/- 0.3 of a percentage point). This suggests that the decade by decade results shown in Table 1 should be fairly accurate.

The study found that "*For the OECD area as a whole, cyclically adjusted GDP growth was, on average, lower in the 1990s compared with previous decades, continuing the well-documented long-run slowdown in growth rates*." This slowing down of growth would appear to have continued, indeed worsened, in the 00s.

A return to 'average' growth?

Most governments and forecasting bodies in OECD countries are expecting a return to more 'normal' (ie the long run, or historical, average) growth rates in the future.

For example, in the UK, the Office for Budget Responsibility (OBR) assumes a return in the medium to long term for UK productivity growth (GDP per hour) of 2% per annum. This is based on a simple average taken over the past 50 years[22]. Such a growth rate would be almost twice that seen in the 00s in the UK.

But is the idea of such a 'standard' growth rate still relevant? The evidence from Table 1 suggests not. Rather, it suggests that economic growth in advanced economies has been slowing over the past four decades.

If such lower economic growth continues then it will clearly impact on the growth of future living standards, as well as on future employment prospects.

It will also impinge on the timing with regards to fiscal and debt rebalancing. Currently a return to past growth rates in GDP is expected to help deliver much of the adjustment in the fiscal position in the UK, and elsewhere. Without these historic growth rates returning, the government's fiscal rebalancing date(s) will need to be delayed or, alternatively, greater fiscal austerity will be required.

[22] 'Fiscal Sustainability Report', July 2011. The OBR also include productivity variants of 1.5% and 2.5%.

Part 3 – THE SOURCES OF ECONOMIC GROWTH AND HOW THEY MIGHT BE STRENGTHENED

Sources of growth

Growth in GDP per capita can be broken down into two main areas: productivity, usually measured as output per hour worked, and total hours worked. The latter is a combination of average hours per worker and the proportion of the population who are actually working.

Productivity

In terms of labour productivity it is important to differentiate between a rise in such productivity stemming from reduced employment (as some countries have experienced during the Great Recession in many countries) and a rise due to an increase in an economy's technological dynamism.

The latter drives growth of both the economy and of employment. Such growth might arise through: capital deepening; an improvement in labour quality; or a factor known as total factor productivity[24] (TFP), ie. the organic 'extra' output that is generated by the way that a particular set level of skills and capital are combined. TFP is sometimes calculated as the residual that remains after more readily measurable factors have been adjusted for eg. human capital (labour quality) and investment levels (capital deepening).

Unfortunately, existing analysis does not break down these elements in a way that can be compared with Table 1. Such analysis tends to: concentrate on the EU and the USA; does not do so decade by decade; does not go beyond 2007; and concentrates on the market economy only.

Table 2 does however give some flavour of how the different elements contributions are distributed.

Table 2: Decomposition of output growth, market economy, EU and USA, 1980-2005

	European Union (10)		United States	
	1980-95	95-2005	1980-95	95-2005
Market economy output	2.1	2.2	3.2	3.6
- Hours Worked	-0.5	0.7	1.3	0.7
- Labour Productivity	2.5	1.5	1.9	2.9
- Labour composition	0.3	0.2	0.2	0.3
- Capital per hour	1.2	1.0	1.0	1.3
- ICT	0.4	0.5	0.7	1.0
- non-ICT	0.8	0.4	0.3	0.3
- Total-factor productivity	1.7	1.1	1.6	2.6

Source: Table 2.1, 'Economic growth in Europe: a comparative industry perspective', Timmer et al, 2010.

Best estimates suggest that for advanced economies **capital deepening** has often been the most important factor in labour productivity growth, although over time the emphasis has moved from non-IT sources to IT ones.[25]

In terms of **labour skills**, this element has tended to contribute the least, across most advanced economic regions[26]. While low, its contribution tends to have been more consistent than for other factors.

The impact of **TFP** on growth has been different when looking at the EU(10) vs the USA. Over the period 1980-1995 TFP in market economy activities grew at a similar rate in both regions, whereas over the period 1995-2005 it grew much faster in the US (see table 2). In contrast, the relative growth rates in capital deepening over these two periods were quite similar.

Much TFP research work concentrates on the market economy sector, but when the public sector is considered, results can look very different. For example, the TFP contribution has been found to be negative in the public sector since 1979 for the UK and the US, and roughly neutral for the EU[27]. This is the opposite finding, for the EU vs the US since the mid-to-late 90s, to that seen in the market sector. In the public sector it is usually labour quality improvements that contribute most to rises in productivity, although such productivity gains are generally much lower than seen in the market sector, a finding seen across all countries.

Hours worked

At different periods over the last 40 years the total hours worked impact on the growth rate has been both negative and positive. Overall though, there has been a general move over time for hours to fall and for the participation rate to rise, with the two effects to some extent offsetting each other.

For example, at the EU(15) level, analysis suggests that for the period 1995-2003 total hours worked rose on average[29], (although the average hours worked fell[30]), whereas in the period 1973-1995 total hours worked also fell.

The impact such labour participation and average hours worked changes can have on relative growth measures is highlighted by the position of the EU(15) vs the US in the period from 1970 to 2000. Over this period the EU(15) improved its GDP per hour position from around 75% of the US performance to almost matching it. However, due to declining relative hours worked, relative GDP per capita between the two stood still, at just under 80%[31].

---

[25] See 'A retrospective look at the U.S. Productivity Growth Resurgence', Jorgenson et al, Journal of Economic Perspectives, Vol 22, Number 1, 2008 and 'UK Economic Performance Since 1997: Growth, Productivity and Jobs', Figure 3, Corry et al, LSE Centre for Economic Performance, November 2011.

[26] References as previous footnote.

[27] 'UK Economic Performance Since 1997: Growth, Productivity and Jobs', Figure 3, Corry et al, LSE Centre for Economic Performance, November 2011.

[29] 'The Global Economy in the 1990's, a long run perspective', Ed. Rhode & Toniolo, Chapter 2, Nicholas Crafts, Cambridge University Press, 2006, Table 2.11.

[30] Mourre, G. (2009). 'What explains the differences in income and labour utilisation and drives labour and economic growth in Europe? A GDP accounting perspective'.

[31] 'Economic growth in Europe: a comparative industry perspective', Timmer et al, Chapter 2, 2010, Cambridge University Press, Figure 2.1.

Debt Overhangs

Beyond the issue of re-invigorating economic growth, careful consideration also has to be given to how to deal with existing debt overhangs in many countries. These national debt ratios are, and are forecast to remain for some years to come, at historically high levels. Recent research has indicated the long run damage that this can have on economic growth rates[32]. This research finds that countries with a public debt overhang (defined as an episode where the gross public debt/GDP ratio exceeds levels 90% for 5 years or more) have lower growth rates that last for considerable periods of time, "*implying a massive cumulative output loss*". While it is difficult to be exact about countries gross public debt levels, known positions suggest that a number of countries currently fall in, or very near to, this category. As well as the 'usual suspects' (Belgium, Iceland, Greece, Japan, Italy, Ireland, Portugal), other countries that may similarly suffer include the UK and the USA.

This finding provides further food for thought on just how quickly, and by how much, debt levels need to be reduced in the coming years. If this rebalancing is not done successfully then the next generation may be saddled with not only the debts of their parents, but also a slow growth future.

[32] See 'Debt Overhangs: Past and Present', Reinhart, Reinhart & Rogoff, NBER Working Paper 18015, 2012.

Potential growth sources – future prospects

Some longstanding economic problems need to be addressed more successfully than they have been in the past, in order to avoid a continuing slowing of the rise in our living standards[33]. With that in mind the following are key policy areas that most advanced economies, including the UK and Scotland, need to consider further.

Productivity

Capital deepening

- On the downside, in times of continuing government austerity there is likely to be reduced scope for some time to come in terms of 'pure' public investment.

- This means that such investment is more likely to involve the private sector, or joint public-private (P-P) sector ventures. This extended degree of P-P collaboration will be a test for the willingness and creativity of OECD governments in making such alliances work effectively and efficiently.

- In particular, most countries will have growth improving opportunities in relation to the poor condition or inadequateness of some of their infrastructure, particularly in relation to transport (ie. congestion in terms of air travel, roads and rail).

- More investment in R&D. In the case of the UK and Scotland, for example, this relates to the relatively low share of expenditure on R&D on their knowledge base and in terms of the share of the workforce who work in 'research'[34];

- Expansion of capacity in export activities that are geared towards the rapidly expanding middle classes in 'emerging market economies' like China and South America. Again this will be challenging for the UK and Scotland as more and more OECD countries begin to target these high growth economies.

Labour Quality

- On the downside, the improvement of schooling and expansion of higher education experienced over the past 40 years may not be realisable again, or at least to the same degree, in future years, depressing productivity gains.

- Nevertheless research shows that opportunities exist in the UK and Scotland on the schooling side in terms of reducing variation in standards (see OECD national PISA reports) and in terms of improving vocational/further education outcomes (eg, vs Germany).

- Further opportunities will also arise in relation to:
  - On going training and apprenticeships, within companies
  - Training in the future skills most needed eg, in the likely expansion of the social care sector

[33] A further important issue, not covered here, concerns the impact of the distribution of wealth, from whatever growth occurs, on median households living standards.

[34] See OECD comparable statistics for each of these categories. This data shows the UK to be well below the OECD average and much lower than countries like the USA, Sweden and Finland.

- Higher Education, in terms of the extent to which UK students and staff become more involved in post graduate studies and in business related R&D.

TFP

- On the downside, the biggest gains from IT may have already been taken up.
- However, more and better use of IT in Europe, in particular catching up with the USA's use of IT in market activities, seems realisable.
- Better use, or greater uptake, of IT in public services in order to reverse the nil, or negative, TFP that has been found in this sector over recent decades.
- Other, non-IT related, areas of consideration, include: planning rules; competition and regulation (eg, in relation to the high cost of Health care in the USA); and the potential for a greater degree of international marketisation of 'public' services like healthcare and tertiary education.

Hours worked

- Recent policy changes, such as raising the retirement age (eg. in the UK) in line with rises in (healthy) life expectancy, should improve growth. However, to some extent this increase in hours, through extending the working life, will be partially offset by the worsening demographics, whereby more of the population falls outside the statutory working age limit[35].
- Lower unemployment and reductions in other forms of non economic participation (eg. long term sickness) will be needed. This could involve a raft of potential policy areas, including some relating to labour quality mentioned above, as well as greater income related incentives.

Clearly these are issues that have been around for some time and in relation to which past policy responses may have been inadequate or unworkable. For this reason current policy makers need to better understand and address the growth challenges and not simply rely on variations of the old policy measures used.

Without such improved policy formulation, advanced economies risk further slowing in their economic growth rates. For example, in the case of the US, a recent paper by Robert Gordon[36] estimated a 1.5% growth rate for GDP per capita over the next 20 years (2007 – 2027) This estimate is: well short of its historical achievement of 2.2% (1929 – 2007); around the same as was seen in the 00s up to 2007; and above the US experience in the 00s as a whole.

In looking at possible policies to encourage higher future growth rates it is also important to remember that there is no 'one size fits all' policy agenda. The right policies will depend on a good understanding of our own relative strengths and weaknesses.

---

[35] Even 'emerging market economies' may have a problem with falling total hours worked in the future. China, for example, is expected to experience one of the most rapid increases in the 65 and older population, with the UN predicting 28% of the population to be over 65 by 2040.

[36] Robert Gordon, 'Revisiting U.S. Productivity Growth over the Past Century with a View of the Future', NBER Working Paper No. 15834, March 2010. A similar growth rate is implied in recent work by Jorgenson et al (2008) and Maddison (2009).

Part 4 – SUMMARY

This article has looked at:

- how slow the current bounce-back in economic growth has been following the 'Great Recession', especially in comparison to previous recessions;

- to what extent this has been caused by a slowing in the growth rate of GDP per capita over recent decades;

- the economic and financial implications of any slowing of growth in the future;

- some of the key policy measures that might be introduced in order to help push up the future growth rate in the UK and Scotland in coming years. Discussion here points the way towards the variety of routes that might be followed in order to reinvigorate future economic growth.

At present the economic debate is dominated by the need for, and potential impact of, further fiscal stimulus in order to restart growth. This is an important issue that needs to continue to be looked at. However, an equally fundamental issue is what sort of growth are we seeking to restart. What has caused the slowdown over recent decades and can this slowdown be reversed or at least halted? This question has received much less attention of late but it is crucial in determining what we might expect from further stimulus programmes.