

(Issued - 28th May 2020)

## Analysis and implications of Scottish economic growth patterns over the past two decades

Due to the impact of coronavirus and the related lockdown, the latest official figures for Scottish Gross Domestic Product (GDP) - onshore and in 'real' terms - are likely to be the last properly comparable ones available for some time to come. As we enter this period of thick statistical fog, now seems like a good time to reflect back on the performance of the Scottish economy over the past twenty years, both in absolute terms, including looking across different industrial sectors, and relative to the UK's performance.

### Key points

- Over the full time period available, 1998 to 2019, the latest data shows that **Scottish growth slowed noticeably post the 2008-09 recession and** that, even after adjusting for population change, Scotland has **grown more slowly than the UK**. Furthermore, this slower relative growth has worsened post 2008;
- The **fastest growth sectors** of the Scottish economy were **Information & Communications** and **Business services**. However, these were **also** the sectors where **the biggest, negative, growth gaps** existed between Scotland and the UK. In the case of Business services this gap has largely emerged since 2014;
- The main areas where Scotland outgrew the UK were **Manufacturing** and **Financial services**;
- In real terms, and adjusted for population change, the **Hospitality sector** (Accommodation & Catering) recorded no growth in output over the past two decades. In contrast, at the UK level the sector grew by around 35%;
- The **Health and Social Work** sector in Scotland has consistently grown more slowly than is seen for the UK, leading to an increase in output (e.g. number of operations) of less than half the 60% experienced at the UK level;
- In the past, such underperformance idiosyncrasies may have seemed academic to many people. However, now that **the Scottish Budget is highly dependent on the Scottish growth rate**, via Income Tax, then such failures have tangible consequences. So, for example, it becomes much more pressing to understand why **Business services** have stopped growing in the past 5 years in Scotland, but continue to surge ahead at the UK level;
- Some of the more recent underperformance in private sector services is likely to be down to reduced **North Sea related activity**. If so then this is both an economic and fiscal worry as the North Sea again enters a period of lower activity due to the collapse in the oil price;
- Even before the current pandemic, **growing pressures from an ageing population** meant that annual rises in **Health and Social Work** capacity were vital. However, output has not grown for 7 years in Scotland and over the past 20 years has been consistently lower than seen for the UK.

## Total Scottish growth over time and in comparison to the UK

Table 1 shows that growth in Scottish GDP was much faster before the financial crisis than after it. It also shows Scotland growing consistently more slowly than the UK.

Once changes in population are taken into account, i.e. using GDP per capita, then the negative growth differential compared to the UK is roughly halved. Table 1 also shows that while the relative growth differential is about the same in each time period (-4%), the post 2008 underperformance amounts to half the overall growth seen for the UK, while the pre crisis underperformance amounts to only a sixth.

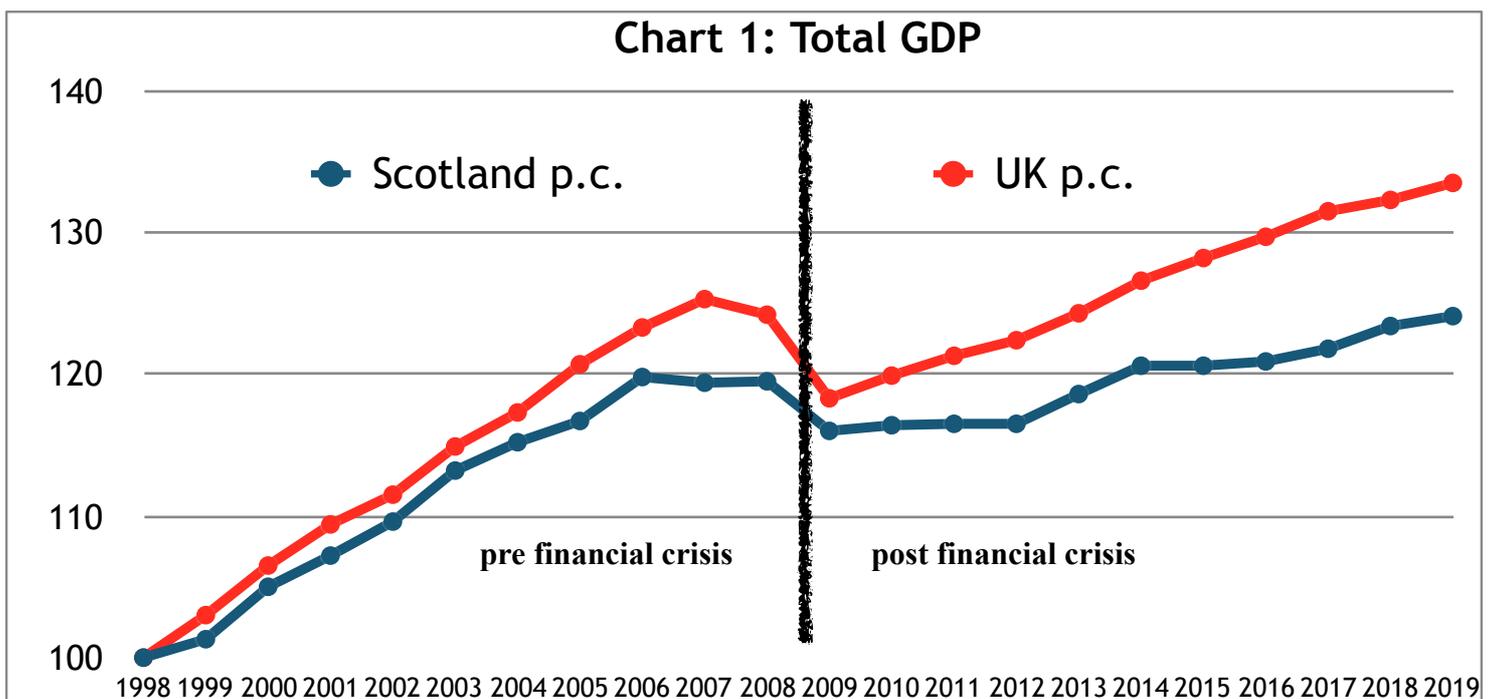
**Table 1: Scottish and UK (onshore) GDP growth, %: 1998 to 2019**

Input	1998 - 2019			1998 - 2008			2008 - 2019		
	Scotland	UK	Diff	Scotland	UK	Diff	Scotland	UK	Diff
GDP	33	53	-20	23	31	-8	9	16	-7
GDP, per capita	24	34	-10	20	24	-4	4	8	-4

Source: Scottish Government, Scotland's GDP Q4 2019, April 2020.

*(Note: As North Sea related activity is allocated to the UK as a whole, and not on a regional basis, the UK GDP measure shown throughout this analysis excludes it in order to make overall UK GDP growth more comparable with the Scottish figure. Hence both effectively refer to 'onshore' GDP growth.)*

Chart 1 shows the actual GDP growth profiles across the full time period for Scotland and the UK. As can be seen, Scotland's performance, in per capita terms, has been particularly poor over two periods since 2008. The first period was immediately post financial crisis (2009 - 2012), which may be related to a stronger bounce-back given the UK's deeper recession in 2008 and 2009, and the second period has been since 2014, which is in part due to a downturn in North Sea related activity.



To understand these trends better the following section disaggregates growth across the economy.

## Scottish sectoral growth over time and in comparison to the UK

The following analysis looks at real terms (i.e. after adjusting for inflation) growth across industrial sectors. Where comparing Scotland with the UK then growth has also been adjusted for population change, in order to highlight real growth in per capita terms i.e. how much output has increased per head of population, which is a better measure of improving living standards.

The analysis also looks at the total growth over periods rather than the annualised growth rates, as the latter can disguise the impact of small annual differences compounded over time.

Table 2 shows sectoral growth for the whole Scottish time series (1998 to 2019) and split between pre financial crisis (1998 to 2008) and post crisis (2008 to 2019).

**Table 2: Scotland industrial sector growth comparisons, % growth, real terms**

Sector	Weight (2016)	1998 to 2019	1998 to 2008	2008 to 2019	2014 to 2019
Information & Communication	35	114	71	25	16
Administration & Support	39	94	72	13	1
Professional, Scientific & Technical	66	93	73	11	2
Financial & Insurance	68	69	62	5	13
Real Estate Activities	124	55	34	16	5
Retail & Wholesale	98	43	26	13	7
Health & Social Work	97	37	27	8	2
GDP overall	1000	33	23	9	5
Other Services	37	32	15	14	6
Transport & Storage	44	19	17	2	1
Construction	58	15	12	3	11
Accommodation & Food	33	7	4	4	10
Manufacturing	105	6	-4	10	3
Public Administration & Defence	65	2	13	-9	0
Education	57	0	-5	5	4
Population change (%)	-	8	3	5	2

Source: Scottish Government, Scotland's GDP Q4 2019, April 2020.

*(Note: Real Estate Activities are excluded from the analysis below as this sector largely refers to imputed rental costs from owner occupied housing, which explains its high weight, over 10%, in the overall composition of GDP.)*

Table 2 shows that:

- Over the full period (1998-2019), private service sectors were the fastest growing areas of the Scottish economy, in particular **IT related** (Information and Communications) and **Business services** ('Professional, Scientific and Technical' and 'Administration and Support').
- The slowest growing sectors were largely as expected: **Public Services** (excluding Health & Social Work), where austerity cuts and demographics have impacted; **Manufacturing**, which continues to diminish in importance, relative to services; and **Hospitality** (e.g. Hotels & Restaurants) services, which is a more unlikely laggard;
- As expected, pre crisis growth far outstrips that seen post crisis, with only **Manufacturing** and **Education** performing significantly better over the latter period;

- The biggest slowdowns across the two periods were seen in **Business** and in **Financial services**;
- The final column of Table 2 illustrates the sources of Scottish growth since 2014, highlighting the lack of contribution from Business services and Health & Social Work.

Table 3 shows compares Scottish sectoral growth with that seen for the UK as a whole.

**Table 3: Scotland vs UK sectoral growth comparisons, per capita % growth, in real terms**

Sector	1998 to 2019			1998 to 2008			2008 to 2019		
	Sc	UK	Diff	Sc	UK	Diff	Sc	UK	Diff
<b>Financial &amp; Insurance</b>	57	30	27	58	57	1	-1	-17	16
<b>Manufacturing</b>	-2	-13	11	-6	-6	0	5	-8	13
<b>Other Services</b>	22	13	9	12	8	4	9	4	5
<b>Public Administration &amp; Defence</b>	-5	-10	5	10	9	1	-14	-16	2
<b>Real Estate Activities</b>	44	40	4	31	24	7	11	13	-2
<b>Retail &amp; Wholesale</b>	33	32	1	23	13	10	8	17	-9
<b>Transport &amp; Storage</b>	11	15	-4	14	21	-7	-3	-5	2
<b>GDP overall</b>	24	34	-10	20	24	-4	4	8	-4
<b>Education</b>	-7	4	-11	-7	2	-9	0	2	-2
<b>Construction</b>	7	21	-14	9	12	-3	-2	8	-10
<b>Accommodation &amp; Food</b>	0	35	-35	1	26	-25	-2	7	-9
<b>Health &amp; Social Work</b>	27	62	-35	24	37	-13	2	19	-17
<b>Professional, Scientific &amp; Technical</b>	79	116	-37	69	64	5	6	31	-25
<b>Administration &amp; Support</b>	81	139	-58	68	63	5	8	47	-39
<b>Information &amp; Communication</b>	99	169	-70	67	101	-34	19	34	-15

Source: Scottish Government, Scotland's GDP Q4 2019, April 2020; ONS UK National Accounts.

Note: national accounts estimates are not available for England, Wales or Northern Ireland.

The most striking thing about Table 3 is how the best performing Scottish sectors (as shown in Table 2) turn out to be the worst performing sectors relative to growth in the UK economy as a whole. Hence, whilst **IT** and **Business services** growth were relatively strong in a Scottish context, they were relatively weak when compared to the UK. In the case of Business services this underperformance has only emerged in recent years.

Furthermore:

- Scottish growth notably outstripped that seen for the UK in two sectors **Financial services** and **Manufacturing**. In both cases the positive differential occurred during the post financial crisis time period;
- The **Hospitality sector**, after adjusting for population change, showed no real growth in Scotland over the two decade data span, compared to UK growth on a par with the economy as a whole (35%);
- Growth in Scottish **Health & Social Work** output, at under 30%, was well below half that seen for the UK, at over 60%. In addition, growth in this sector has largely disappeared in Scotland post the financial crisis but remains strong at the UK level.

The remainder of this paper will look at some of these findings in more detail.

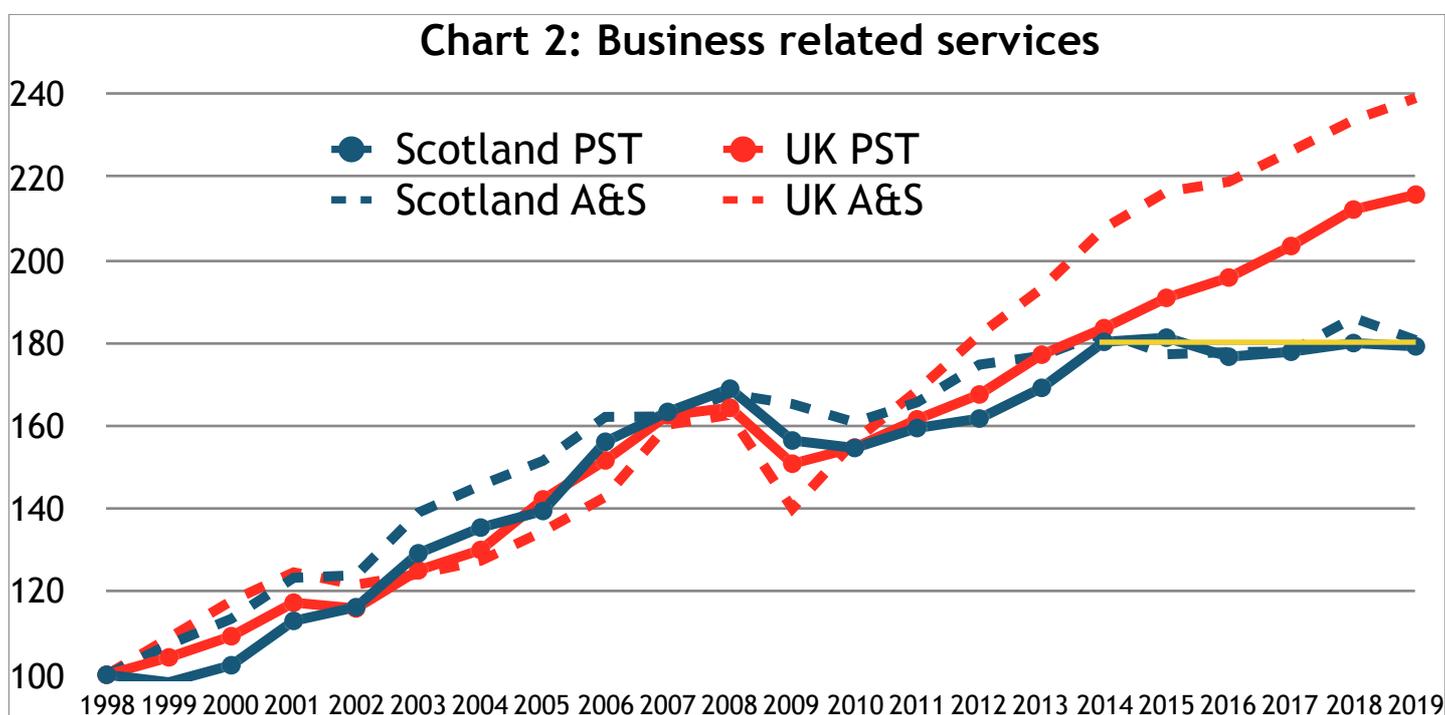
## Sectoral growth anomalies in the Scottish economy over the past twenty years

### Business services

*(Note: this sector covers ‘Professional, Scientific and Technical’ (i.e. Legal and Accounting activities, Architectural and Engineering activities, Management Consultancy, R&D, Advertising and Market Research etc) and ‘Administration and Support’ (i.e. Rental & Leasing activities, Employment activities, Office Support etc))*

While Business services have grown relatively quickly in Scotland since 1998, this sector has failed to keep pace with the growth seen at the UK level. Chart 2 shows that it is only post 2014 that this relative underperformance has arisen, as Scottish growth ground to a halt.

*(Note: in Chart 2 and in the following charts, the data has been re-indexed from 2016 = 100 to 1998 = 100 in order to better present the differences in growth seen since 1998.)*



Alternative data sources provide contrasting pictures of this sectors recent performance:

- **ONS workforce jobs by industry** (1998 to 2019): suggest an increase of 5% in the Business services workforce, 2014 to 2019, which, given the output profile, implies a drop in labour productivity. However, the workforce statistics can be highly erratic in this, and other, sectors and so it would be rash to draw such a conclusion;
- **ABS, Number of Business Units and Employment** (2008 to 2017): the ABS data has employment up by around 5%, 2014 to 2017, and the number of business units up by close to 10%. However, much of the latter comes from an unlikely increase of over 20% in A&S alone in 2016, which brings into question the veracity of the data;
- **Business in Scotland (BiS), Number of Businesses (registered and unregistered) and Number of Employees** (2010 to 2019): shows a small fall in ‘Professional, Scientific and Technical’ (PST) number of businesses between 2014 and 2019. However, this source of data can also be highly erratic, with a recorded increase of over 35% in PST businesses between 2010 and 2012;

- **Regional GVA (1998 to 2018):** the ONS publish regional GVA, broken down to more than 80 industries across all 12 UK economic regions (and countries), including Scotland. However, the derivation of regional sector output is mainly top down, rather than bottom up, and there are significant differences in the data for Scotland compared to the official Scottish Government series. For example, between 2016 and 2018, PST real terms output rose by 8.3% using the regional GVA data but only by 2.5% using the Scottish Government data.

Overall, there are **reservations over the quality and consistency of each of the alternative data sources** mentioned above, which make it difficult to draw any conclusions from them, compared to what the more robust Scottish Government GDP data is telling us. *(Note: due to these reservations the above sources are largely omitted from discussion in other output sectors below.)*

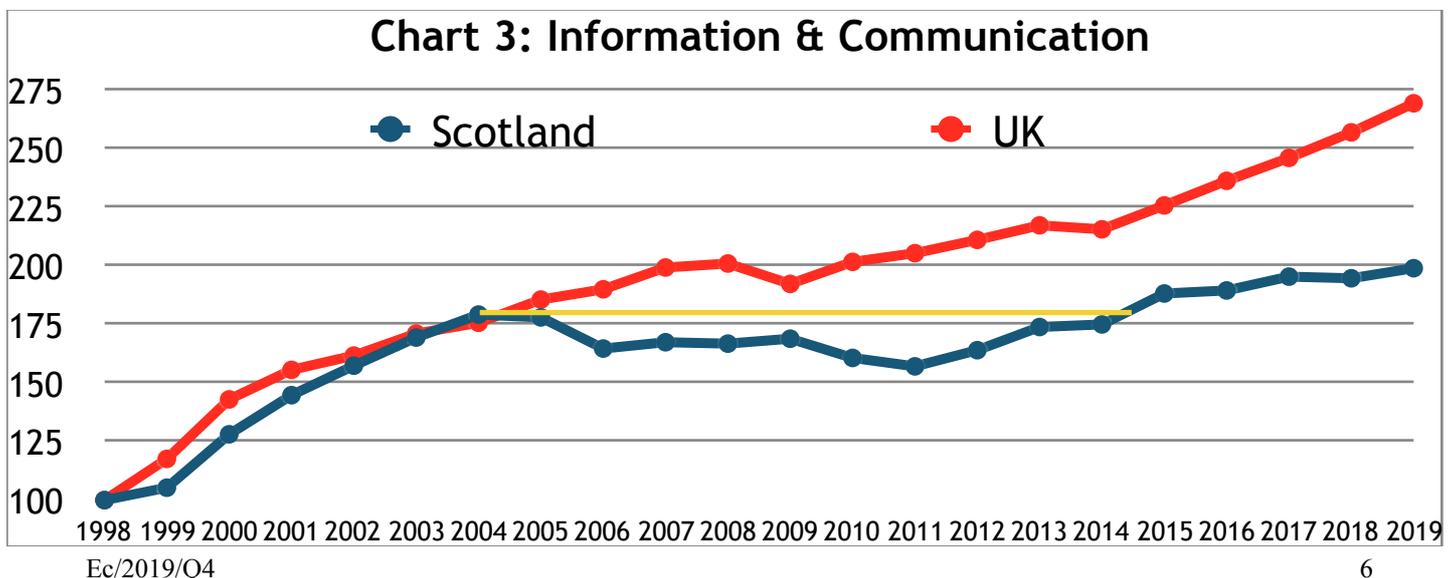
Part of the explanation for Scotland poor Business services performance of late may be to do with the fall in **North Sea related activity**, due to the oil price slump in 2014-15, as Business Services account for more than a quarter of North Sea related indirect employment. (See later discussion.)

Overall, the lack of growth in what is normally a dynamic sector is worrying, especially as it is not replicated at the UK level. In particular, this is a large (10%) sector and the PFT sub sector in particular is relatively high wage, so that lacklustre growth will in turn impact on the growth of, devolved, income tax receipts.

### Information and Communications (I&C)

I&C is both the fastest growing Scottish industry sector since 1998 and the biggest laggard in terms of how much more slowly it has grown relative to the UK's performance. That the I&C sector should be fast growing is unsurprising, given that it includes the likes of: publishing; broadcasting; telecommunications; IT services; and computer services. The sectors much slower growth performance than is seen for the UK is more perplexing.

As Chart 3 shows, up to 2004 Scotland and the UK grew in a similar fashion. However, from 2004 to 2011 the Scottish I&C sector contracted while the UK sector continued to grow. Post 2011 the Scottish sector started to grow again but, especially post 2015, at nothing like the rate seen for the UK, or for Scotland in the period to 2004. It is not obvious what the causes of the Scottish I&C underperformance might be.

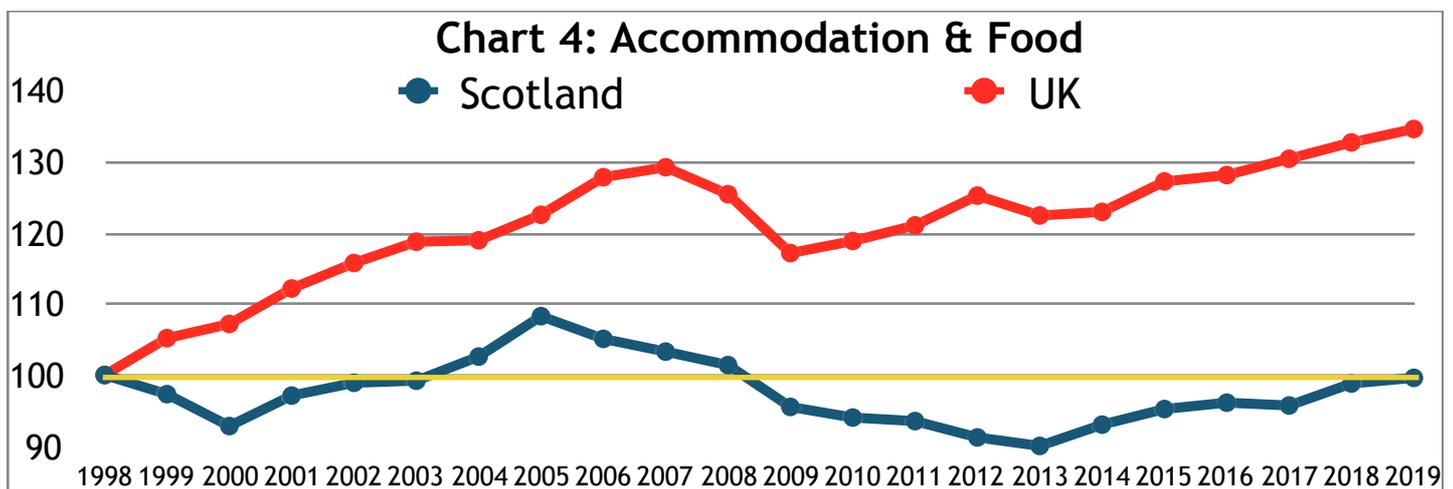


## Accommodation and Food

This sector, which incorporates Hotels & Restaurants (i.e. Scottish hospitality sector), has seen no real terms, population adjusted, growth in over 20 years, while at the UK level it has grown by almost 35% (see Chart 4). In particular, Scottish output fell by close to 20% from 2005 to 2013, while UK output was unchanged, despite the recession. Since 2013 Scotland and the UK have grown at similar rates.

The Scottish figures are difficult to reconcile with the general perception of this being of an expanding sector, as the number of hotels and restaurants and employment rises. Indeed ONS workforce data for Scotland shows employment in this sector to have risen by around 20% since 1998. This suggest that there may be longstanding data problem in this sector.

However, if the data is accurate then it suggests very poor productivity in this sector and brings into question the success of Scotland's tourism performance and strategy.



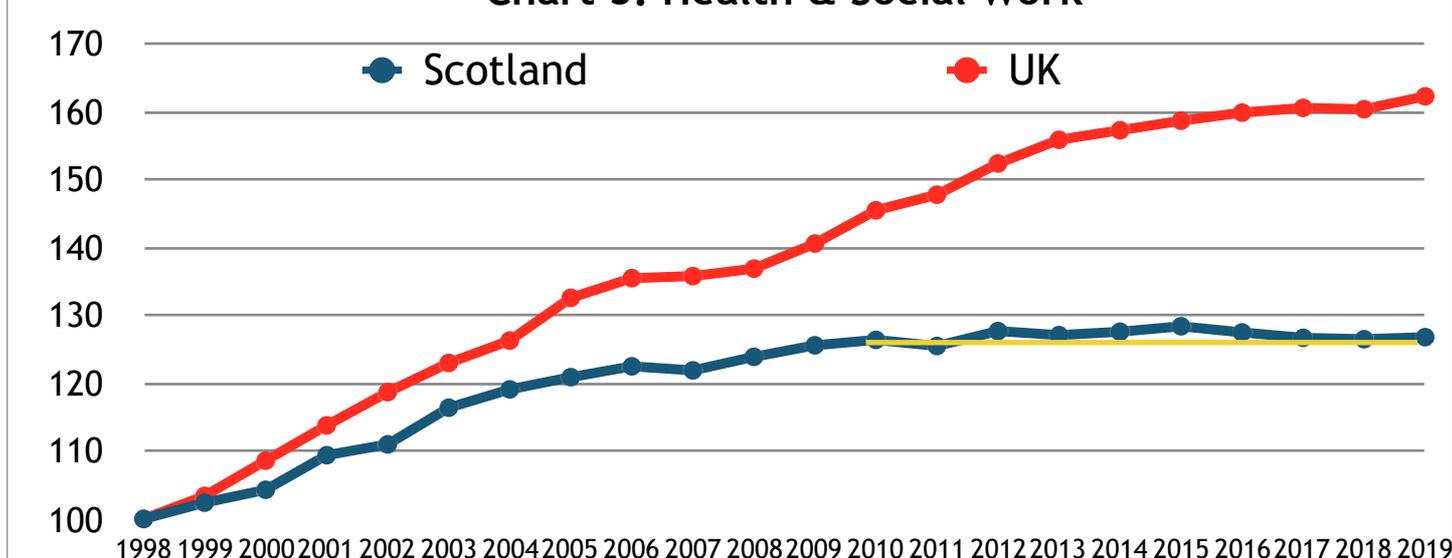
## Health and Social Work (H&SW)

While the output of public services like the NHS are difficult to measure there have been improvements over time, by increasingly looking at outputs (e.g. number of operations) rather than inputs (e.g. staff levels).

Over the full time period (1998 to 2019), H&SW output for Scotland (up less than 30%) has increased at less than half the rate seen for the UK (up over 60%), when looked at in real terms and adjusted for population growth (see Chart 5). Furthermore, Scottish H&SW output has flatlined since 2010, while the UK continues to grow, although also at a slower pace than before.

Why might such a persistently slower growth rate have arisen in Scotland? Table 3 highlights some relevant 'input' statistics which suggest that, even after adjusting for population growth, the Scottish H&SW sector has experienced lower increases in funding and employment than at the UK level.

**Chart 5: Health & Social Work**



**Table 3: Supplementary Health and Social Work related inputs data, % growth**

Input	Scotland	England	UK
1) Health spending, real terms & per capita (2009-10 to 2015-16)	10%	30%	25%
2) (2015-16 to 2018-19)	6%	8%	8%
3) NHS employment, FTE - 2009 to 2019	4%	11%	-
- 2015 to 2019	3%	10%	-
4) Health and Social Workforce - 1998 to 2019	35%	-	53%
- 2009 to 2019	5%	-	17%
- 2015 to 2019	-5%	-	5%

Sources: 1) IFS ‘Does the NHS need more money and how could we pay for it?’, June 2018; 2) HM Treasury Country & Regional Analysis, November 2019; 3) Scottish Government Public Sector Employment series and English NHS workforce statistics; 4) ONS Labour Market statistics.

Poor productivity growth may also be contributing to Scotland’s slow growth in output although such calculations are difficult to make and no data exists for Scotland.

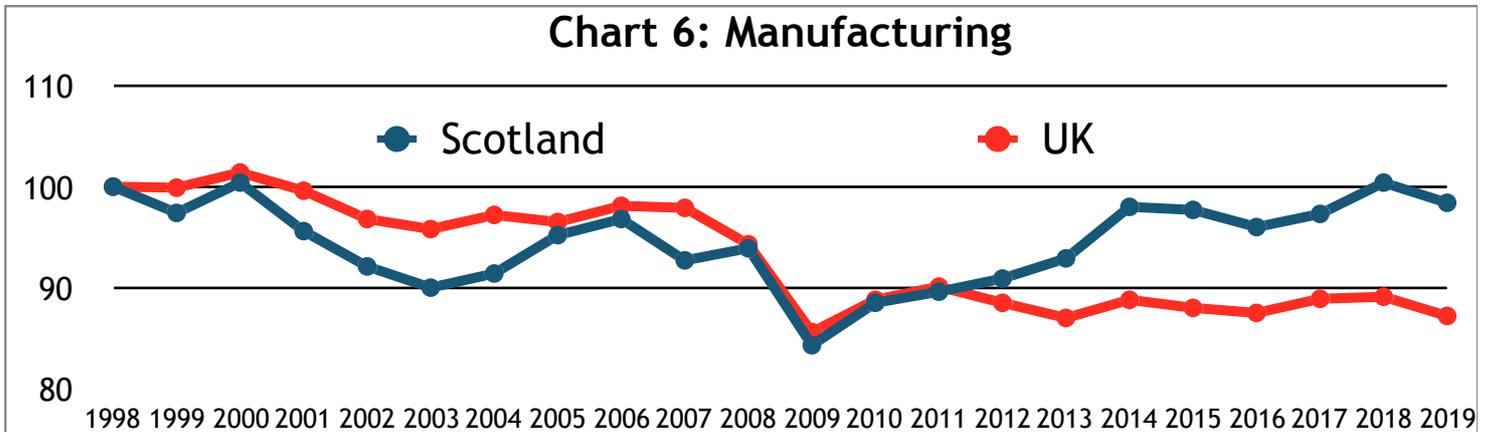
It can be difficult to think of the NHS as a key contributor to GDP. However, it is clearly a large employer and provider of incomes. The fact that most health services are provided free, or heavily subsidised, simply means that it is more difficult to calculate its contribution to GDP. Nevertheless, attempting to do so and judging its ability to increase output i.e. its capacity to undertake operations etc, is vital in order to meet ever increasing demand and policy targets like waiting times.

The Scottish shortfall in H&SW growth is very concerning as the data suggests that increased activity, to improve health related outcomes in Scotland, would have been much higher than at present, by around 30%, if Scottish growth had followed the pattern seen for the UK (i.e England) since 1998.

Very little analysis is undertaken of the Scottish health system, unlike in England, where a number of well funded think tanks analyse the performance of NHS England (e.g. IFS, Nuffield Trust, Kings Fund etc). Indeed this lack of analysis and challenge - by Parliament, the press, academics and think tanks - may itself play some part in slowing the growth of this, and other, sectors.

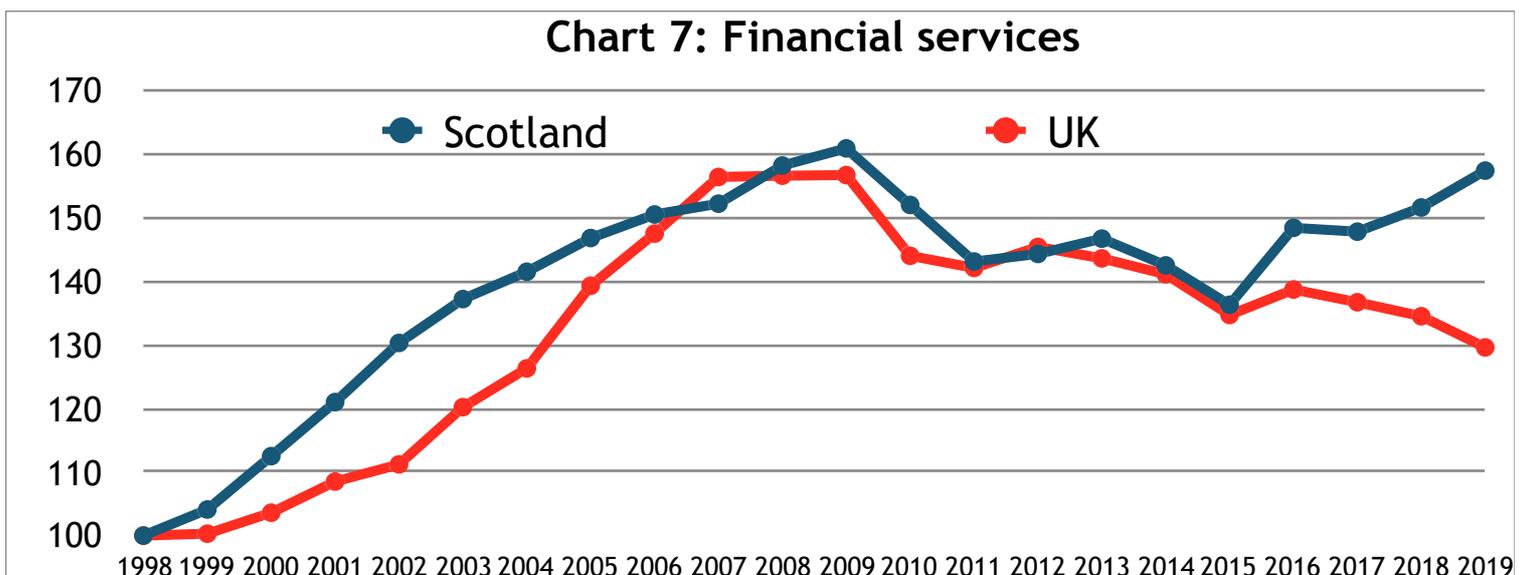
## Manufacturing

Scotland's more recent **Manufacturing** performance has been relatively good. Since 2009 it has grown by over 20%, compared to under 10% for the UK, with the differential largely emerging between 2011 and 2014, see Chart 6. The source of this differential was fairly widespread across different Manufacturing sub sectors.



## Financial services

In terms of **Financial services**, another sector where 'output' is difficult to measure, then Scotland's relatively better performance, post the financial crisis, has not been much explored. In fact, this relative over performance started in 2015, since when Scottish output (in real, per capita, terms) has risen by over 15% while the UK's fell by around 4% (*note: this includes a 10% rise in Scottish output in 2016, the highest recorded annual change in this series*) (see Chart 7). It remains unclear why this sector has performed so well of late, especially when compared to the UK.



## Potential Explanations for Scotland's Performance

In most cases, as discussed above, it is not immediately obvious why Scotland should have performed so much better, or so much worse, over particular time frames than the same sector at the UK level. However, there are a few factors that may have been influential.

### Data Reliability

In some cases it may be that the data itself is suspect, especially for Scotland, given the smaller sample sizes typically used. *(Note: problems with the UK data cannot be ruled out as these have been observed in the past e.g. over Construction.)*

Some of the data, for example in relation to IT, Hospitality and Financial services, look very peculiar in comparison to what might have been expected to occur. In other sectors, data issues may be less obvious but are still worthy of greater consideration.

It will be difficult to resolve these issues for past data but we should at least set out to ensure that they do not continue in the future. In sectoral terms this could be done by increasing survey sample sizes. In 'total' GDP terms then fuller development of expenditure and income based measures of GDP would help.

It is particularly disappointing that we do not appear to have a reliable set of employment data, by sector. All current sources incorporate significant shifts over short periods of time that make their robustness questionable. Given that jobs are easier to measure than GDP then one would have hoped for a higher quality dataset here, which would then allow for a better comparator by which to judge sectoral GDP trends.

### North Sea

The fall in **North Sea activity** will undoubtedly have played some role in Scotland's poor performance of late. For example, data published by Oil & Gas UK (covering onshore and offshore - i.e. direct, indirect and induced - jobs) suggests that total employment supported by the oil and gas industry fell by over 40% (or 203,000 jobs) between 2014 and 2018, before an estimated small recovery (by 9,000 jobs) in 2019.

For 2018 OGUK estimate that Scotland benefited from almost 40% of these oil and gas related jobs and so might be expected to have lost the same proportion in this period of down-sizing. While Scotland's employment situation has remained healthy despite this loss, it may be that the oil and gas related jobs were of a higher quality and so any replacement jobs could still have led to a slowing of GDP growth over this period. The onshore areas of greatest dependency on oil and gas are Manufacturing and Business Services. While the former does not seem to have been strongly impacted the latter most likely has.

Looking forward, initial estimates by OGUK, in light of the lockdown and the oil price collapse, suggest that a further 25,000 to 30,000 direct and indirect North Sea oil and gas related jobs could be lost in the coming 12 to 18 months.

In addition, recent work by Alex Kemp and Linda Stephen at Aberdeen University found that low prices could lead to more oil being left in the ground. The authors also warned that “*life will be very tough for the supply chain*”.

Given the potential importance of the impact of the offshore sector on the Scottish economy then more research needs to be undertaken in order to understand the links, in both sectoral and geographic terms, with onshore activities.

### **The role of deflators**

As no official regional deflators are available the same UK wide deflators are used to convert Scottish data from current price to constant (real terms) prices. For some sectors such deflators may vary significantly across regions and this could potentially explain some of the growth differentials. However, where such output growth differentials are very large this source seems unlikely to provide a full explanation.

The Bean ‘Review of UK Economic Statistics’ from 2016, suggested that regional inflation figures may be too expensive to justify. However, generating such indices for the four constituent nations may be a worthwhile exploratory step.

### **Political differences**

While Brexit has dominated our ideas of political risk and uncertainty in recent years, such uncertainty goes further back for Scotland, at least to 2013 when the referendum on Independence was agreed.

Furthermore, in recent years Scotland has received increased taxation powers, in particular with respect to Income Tax. In general, it has used these powers to increase taxation, compared to the rest of the UK, in particular for wealthier tax payers.

The result of these political choices could, potentially, have had a dampening effect on economic investment and activity, in particular in the area of Business services. As with Brexit, we will never know the counterfactual and so what damage may have been done. Thus any such impact will always be conjectural. Nevertheless, as a potential source for slower growth, it should not be ignored.

### **Further work needed**

Where possible this analysis has attempted to explain why Scotland’s sectoral growth rates lag or lead those seen for the UK as a whole. However, due to the dearth of information and questions over the reliability of what data does exist, then it has been difficult to make progress in understanding why such differentials came about.

Much more in the way of resources and research needs to be employed and encouraged in order to gain a better grasp on what has been occurring.

## In Summary

It will be some time, at least two years, before economic data starts to settle down and become more easily interpretable again. Furthermore, in that period the economy may change significantly in shape, due to market led decisions, remaining restrictions or deliberate government policy as a result of the pandemic. In that sense, understanding the past may be of limited use in trying to influence the future.

Nevertheless, given the economic issues that were already apparent pre the pandemic then a better understanding of the past is also a crucial step in helping us negotiate the future. In particular:

- The long term dismal performance of the Hospitality sector in Scotland, and its implications for tourism strategy;
- The lack of growth in Business services of late, which is normally a sector that drives the economy forward;
- The implications of another downturn in North Sea fortunes on the onshore economy;
- The long term poor growth seen in the Health and Social Work sector, compared to the UK, and lack of any growth in recent years. This is especially worrying in a sector that will be facing even higher demand pressures going forward due to COVID-19 and demographic shifts.

While such sectoral growth differences may have been dismissed in the past as largely of academic interest they are not so easy to ignore now. For example, a continuing failure for the Business sector to grow will impact directly on the Scottish public funding, due to Income Tax being largely devolved and a significant contributor to the Scottish Budget.

Overall, a combination of : the pandemic lockdown; the existing post financial crisis slowdown, in both absolute and relative (to the UK) terms; and another looming North Sea slowdown, means that Scotland's economic prospects are far from bright.

Better understanding the root causes of some of the worrying past trends may put us on a firmer footing to improve the growth potential of the Scottish economy as we tentatively move towards a post pandemic economy.

### Quotes:

*“As economic statistics become more difficult to interpret, now is a good time to reflect back over the last two decades of Scottish economic growth.*

*Doing so shows some relative success stories for Scotland but even more areas that are of concern, especially relating to the recent past. The lack of any real growth over the past five years in key areas of economic and social importance, like Business services and Health should be a worry to politicians and citizens alike.*

*Without more time and money being spent on understanding such a dearth of progress in these key areas then we will face even more challenges, post pandemic crisis, than we need to. Rather than be dry and simply for enthusiasts, this type of work has practical importance in helping improve future economic growth and to avoid tightening budgets.”*

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