



Automotive manufacturing leads the UK economy in productivity growth

We are used to the idea that the UK economy has exhibited a ‘productivity puzzle’ since the crisis of 2008 – with employment remaining strong while output has been weak.

The trend in business investment which has failed to recover from the 2008 crash has helped reinforce the ‘productivity puzzle’ image. ONS have just published some new business investment figures for the economy as a whole.

UK Business Investment

£m										
2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
122003	121444	139487	119380	135765	141255	119774	121853	120263	124910	123637

(these are chained volume figures with a reference year of 2010)

We can see that for about a decade UK business investment has bounced around in the region - £119bn to £124bn. The exceptions were 2005, 2007 and 2008 when investment was over £135bn. Since 2008 there has been little to suggest that the economy is about to return to those peak years.

So the picture that emerges is that the UK economy is maintaining employment and investment at constant levels – and productivity isn’t improving. There is a certain consistency about this.

However is now possible to further examine the ‘puzzle’ by drilling down within the two thirds of jobs which are in the ‘non financial business economy’ thanks to recently published detailed data covering the 5 years 2008-12 from ONS.





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Looking at employment, in 2008 this segment of the economy represented 22.1m jobs – out of a total number in the economy around 30m. By 2012 this had fallen less than 2% to 21.7m – with the lowest employment level occurring in 2010. Over the same period (2008-12) gross value added (GVA) increased by 2.9%. So productivity increased between 2008 and 2012 by 4.8% - a CAGR of around 1.2% pa. This is a rather more encouraging picture than has been painted by those who think UK economy exhibits a 'productivity puzzle'. Employment didn't fall far but productivity has increased at a decent rate in two thirds of the economy – especially considering the tough overall conditions in the economy.

Manufacturing is part of this broad aggregate under consideration here and it shows a rather different pattern. Employment fell by about 8.5% in 2009 but over the next three years declined much more slowly so that the total drop between 2008 and 2012 is just under 11%. As has so often been the case there has been little change in manufacturing gross value added (apart from a dip in 2009) and by 2012 manufacturing GVA was less than 1% down on 2008. It follows that productivity has increased by just under 11% between 2008 and 2012 - a respectable CAGR of 2.7% pa. But this has been achieved via a loss of jobs – the continuation of a trend that has been evident for at least 15 years.



We know from other sources that 2012 was a year when the world economy did not progress as well as expected – so the achievement of manufacturing output close to the 2008 peak in that year is a quite reasonable. There are other signs that growth in manufacturing has taken place in 2013 and 2014.

There have been fears that a stagnant level of investment might mean that the economy may not be able to increase output as global demand recovers. In fact, while the non-financial business economy saw capital investment 13% down in 2009 and 2010 relative to 2008, but in 2011 it recovered to just under the 2008 peak and in 2012 was around 8% ahead. This suggests that as economic conditions have improved in 2013 and 2014 this segment

of the UK economy will have been able to expand to meet rising demand thanks to a gradual recovery in capital investment.

The manufacturing picture is even more encouraging. Capital expenditure in manufacturing followed the same time profile as the aggregate non-financial business sector but in 2012 was nearly 10% up on 2008.

The recently released statistics make it possible to drill down into individual sectors. In vehicle manufacturing (which includes a major portion of the supply chain) there were falls in 2009 and 2010 in capital investment but a very strong recovery in 2011 and 2012 with both years 32% up on 2008.

In contrast the 2012 employment level in vehicle manufacturing was over 20% down on 2008 (although 2012 shows a slight recovery on 2010 and 2011). Output fell very sharply in 2009 with a strong recovery in 2010. The adverse global situation pulled 2012 output back but it is still about 7% ahead of 2008 and we know that in 2013 and 2014 further growth has taken place.

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With capital investment and falling labour levels vehicle manufacturing has seen dramatic productivity growth. In the period 2010-12 relative to 2008 – average productivity was over 35% up. Productivity achievements on that scale should help ensure the continued flow of inward investment into the sector.

These figures for vehicles apply to the whole sector in ONS terms – not just vehicle assembly. However it is important to stress that the actual automotive supply chain is larger than the ONS classification. Vehicle manufacturers buy in services, particularly business services, and no services are included in the vehicle sector supply chain figures. There are also parts of the automotive manufacturing supply chain which are counted in other manufacturing sectors by ONS such as metals, plastics, chemicals, textiles, etc.

However, the ONS data does cover vehicle manufacturers' purchases. Relative to 2008, VMs' purchases were 13% higher in 2011 and 16.5% higher in 2012. These results are very much in line with the strategic vision of the Automotive Council - a strengthened UK supply chain is needed to support ambitious VM expansion strategies and make the most of the new opportunities.

Within the ONS figures there is a section termed 'manufacture of parts and accessories for motor vehicles'. In 2008 this sub-sector employed as many people as vehicle manufacturing. Sadly by 2011, the sub-sector employment was only 75% of vehicle manufacturing. The employment fall in the vehicle manufacturing sector has been concentrated in the supply chain.



But is not all bad news. In 2008 this subsector invested £132m and this fell to £14m in 2009. Since then the increased investment by vehicle manufacturers has spurred a capital investment surge in the component sub-sector which has risen to £243m in 2011 and £354m in 2012. These figures suggest there is a radical shift to more capital intensive modes of production in the supply chain.

Looking at the productivity figures for the ONS defined vehicle manufacturing sector with the VMs' figures excluded, we find that, between 2008 and 2011, productivity increased by CAGR of 15.1% pa – again these gains suggest radical changes in the organisation of the supply chain – with a substitution of capital for labour yielding dramatic productivity increases.

Purchases by the VMs totalled £40.6bn in 2008 and by 2011 had risen to £43.5bn and on to £45.0bn in 2012. However the total turnover of vehicle sector excluding the VMs was £14.0bn in 2008 and in 2011 and 2012 had only recovered to just over £13bn. So the increase in volume of production in the VMs has driven increased buying but this has not yet been reflected in supply chain turnover increases. Clearly the Automotive Council strategy of strengthening the supply chain needs to be followed through vigorously.

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However, within these reduced turnover levels, there has been in an absolute increase in value added. Against a 2008 figure of £3.61bn, valued added, in 2011 the figure was £3.84bn and then £3.7bn in 2012. The failure of the supply chain to increase its turnover is disappointing but the capex, productivity and value added improvements suggest that supply chain competitiveness is increasing. The Automotive Council plans still have some years to run and it may well be the case that the productive transformation that it shown in the shift to more capital intensive methods will lead to higher turnover as well.

The best indicator of productivity is output per hour work – any job might either be on short-time working, overtime or somewhere in between. ONS issued some data on this basis in July. It is based on an index where 2010 is 100 and breaks down manufacturing into 10 sectors. The time series goes up to Q1 2014:

Sector	£ output per hour 2010	Q1 2014 index (2010=100)
Transport Equipment	30.4	128.4
Computers & Electrical	33.3	110.0
Rubber & Plastics	23.9	104.9
Basic Metals	22.4	102.6
Food	29.0	102.5
Textiles & Clothing	22.8	101.7
Paper & Printing	22.3	95.2
Machinery	28.3	94.3
Petroleum & Other	25.5	90.6
Pharma & Chemicals	77.7	86.6



Transport Equipment includes automotive as the largest subsector and aerospace as the second largest. The CAGR productivity rate for this sector is in excess of 6% p.a. Rubber & plastics, computers & electrical and basic metals are all in the supply chain for transport equipment manufacture.

The analysis shows that the Coalition's growth strategy is working through in some sectors – most clearly in automotive (and also in aerospace.) The analysis also shows that different manufacturing sectors are experiencing very different trajectories. The Coalition's segmented approach to strategy makes a great deal of sense against that background.



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The latest ONS statistics also throw more light on the 'productivity puzzle' with an analysis of output per hour worked for the whole service sector. Finance and Insurance at index 90.2 in Q1 2014 and Real Estate at 87.4. This suggests that one aspect of the 'puzzle' may be the past reliance of the UK economy on finance and property for superficial growth and that the goal of rebalancing the economy may be a suitable response.

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