

# United Kingdom

## Business surveys place question mark over ‘productivity puzzle’

- Business survey data point to far weaker job creation than suggested by the Office for National Statistics over the past three years.
- The data go some way to explain the ‘productivity puzzle’ and bring productivity growth more closely into line with that experienced by the UK’s peers.
- The analysis suggests that employment growth is likely to accelerate as economic growth revives; something which is already evident in some indicators.

### Overview

Over the past three years, the Office for National Statistics has recorded a steep upturn in employment at a time when the economy has shown very modest growth. The resulting ‘productivity puzzle’ has been the source of much speculation, and is especially important in relation to monetary policy, having implications for how much spare capacity exists in the UK economy and its long-term growth rate.

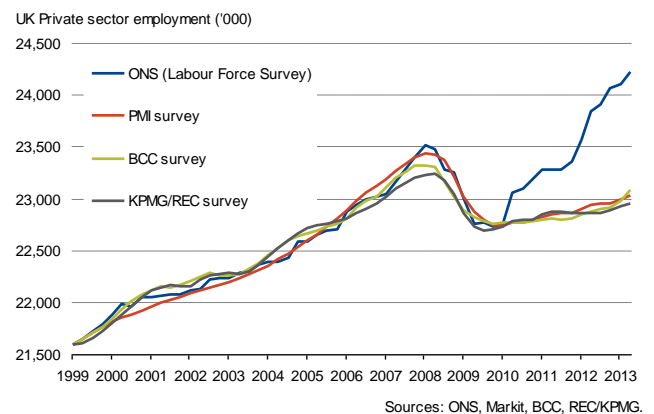
However, analysis based on three entirely different business surveys sends a consistent message that the ONS data may have substantially overstated employment growth in the private sector over the past three years.

The analysis therefore suggests that productivity since the financial crisis has not deteriorated as markedly as indicated by the official data. In particular there is no evidence that firms have been hoarding labour, as many have speculated.

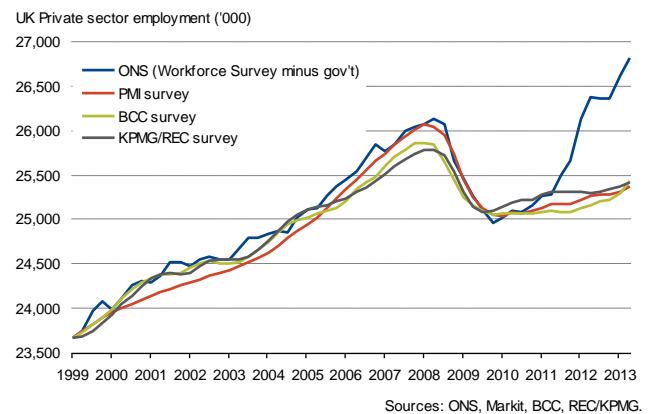
The business survey evidence suggesting that there is in fact no excess operating capacity, as indicated by official data, also helps explain why (to the surprise of many) employment growth is currently picking up markedly as the economic recovery gathers momentum.

The business survey data also help explain why employee earnings growth has sunk to record lows in recent years, and why the renewed – genuine – upturn in job creation means pay growth is likewise starting to revive.

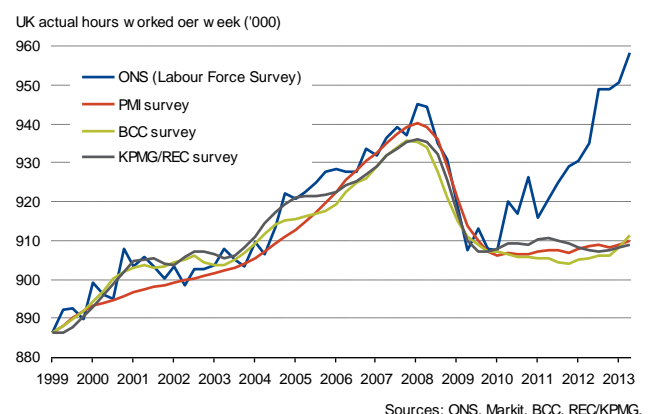
**Chart 1: Surveys modelled against ONS Labour Force Survey measure of private sector employment**



**Chart 2: Surveys modelled against ONS Workforce Survey measure of private sector employment**



**Chart 3: Surveys modelled against ONS actual hours worked (whole economy)**



## Productivity puzzle

Over the three-year period between the second quarter of 2010 and the second quarter of 2013, the ONS recorded a 1.17m (5.1%) net increase in private sector employment, according to its household-based “Labour Force Survey”. The ONS’s alternative, employer-based, “Workforce” survey showed a 1.53m (6.0%) increase in private sector employment over the same period.

Over these three years, the economy grew by a total of just 2.2% after allowing for inflation. With the exception of the height of the financial crisis in 2008-2009, the resulting drop in worker productivity since mid-2010 has been the largest recorded since data were first available in 1971 (see chart 4).

The drop in productivity cannot simply be explained by a fall in the numbers of hours worked by each employee, or a switch from full-time to part-time work. Over the past three years, the number of hours worked in the UK has risen by 38 million, a 4.1% increase.

The increase in employment is not confined to brief spells of job creation: both the LFS and Workforce surveys have shown net job creation by the private sector in every quarter over the past three years. But perhaps most puzzling is the fact that *the ONS data show a record rate of job creation in early 2012; a time when the economy was shrinking*. Over the whole of 2012, official LFS data show private sector employment rising by 711k (or 3.0%) when the economy shrank in real terms by 0.2%.

## Modelling the official data using surveys

Analysis of business survey data, using regression analysis to derive implied changes in the official data, suggests that employment growth over the past three years has been significantly lower than estimated by the ONS.

We look at the Markit/CIPS Purchasing managers’ Index (PMI) surveys, the British Chambers of Commerce surveys and the KPMG/REC survey of the recruitment industry, which is also conducted by Markit.

Importantly, the three surveys have all accurately tracked official data prior to 2010. Since 1999, for example, the PMI survey’s indicator of employment growth across manufacturing, services and construction has exhibited a correlation of 94% against the ONS Labour Force Survey estimates and 92% against the ONS Workforce survey estimates (table 1).

The PMI data also show an 88% correlation against the official working hours data prior to 2010.

Chart 4: Long-run ONS productivity trend

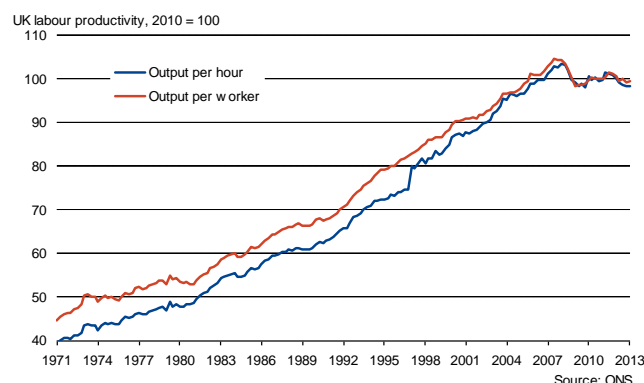


Table 1: Key labour market statistics and implied changes from business surveys

	Change between 2010 Q2 & 2013 Q2		Correlation pre-2010
	'000 people	% change	
<b>Private sector employment</b>			
<b>ONS Labour Force Survey</b> (household survey est.)	<b>1,168</b>	<b>5.1</b>	--
change implied by ....			
Markit/CIPSPMI business surveys	258	1.1	0.94
British Chambers of Commerce survey	308	1.4	0.86
KPMG/REC recruitment industry survey	174	0.8	0.76
<b>Private sector employment</b>			
<b>ONS Workforce Survey</b> (employer survey est.)	<b>1,526</b>	<b>6.0</b>	--
change implied by ....			
Markit/CIPSPMI business surveys	295	1.2	0.92
British Chambers of Commerce survey	363	1.5	0.79
KPMG/REC recruitment industry survey	224	0.9	0.87
<b>Actual hours worked</b>			
		Change between 2010 Q2 & 2013 Q2	
		Million hours	% change
<b>ONS Labour Force Survey</b> (household survey est.)	<b>38</b>	<b>4.1</b>	--
change implied by ....			
Markit/CIPSPMI business surveys	3	0.3	0.88
British Chambers of Commerce survey	5	0.6	0.81
KPMG/REC recruitment industry survey	0	0.0	0.90
<b>GDP (excluding government)</b>			
		Change between 2010 Q2 & 2013 Q2	
		£m	% change
Constant prices	6,435	2.1	--
Current prices	25,756	8.4	--

Notes:

We have calculated equivalent changes in ONS data by using regression analysis to model the relationship between the relevant survey data and ONS data between 1998 and 2009. This model is then applied to the survey data post-2009 to derive a comparable, survey-based estimate of the official series.

ONS data on private sector employment include an appropriate adjustment for the reclassification of financial sector workers to the public sector since the financial crisis and the reclassification of education workers from the public to the private sectors in 2012.

Correlations are based on survey data against the centred three months average of the quarterly change in official data, which is used to remove volatility in the official data.

For the PMI survey we use a weighted average of the Employment Indices from the manufacturing, services and construction surveys.

For the BCC survey we use a weighted average of the employment net balances relating to hiring in the previous three months from the manufacturing and services surveys.

The KPMG/REC survey analysis uses the reported demand for temp/contract staff at employers. The survey is conducted by Markit.

Regression statistics (based on quarterly data between 1999-2009 inclusive)

	PMI	BCC	KPMG/REC
<b>ONS LFS regression statistics</b>			
Adjusted r-square	0.88	0.74	0.77
Standard error	23.5	34.5	33.1
<b>ONS workforce regression statistics</b>			
Adjusted r-square	0.89	0.72	0.64
Standard error	30.9	50.4	56.1
<b>ONS hours worked regression statistics</b>			
Adjusted r-square	0.77	0.65	0.80
Standard error	1.4	1.8	1.3

**However, since 2010, the relationships between the ONS data and all three surveys have broken down.**

In this analysis we create a scenario in which we assume employment had followed the pre-2010 trend signalled by the business survey rather than the ONS data over the past three years. To do this, we use regression analysis based on the close pre-2010 relationships to derive survey based estimates of employment growth.

The survey data are modelled against both the ONS's household-survey and employer-based surveys (charts 1 and 2 respectively), as well as the ONS data on the number of hours worked by employees.

The results (table 1) show that the ONS's LFS estimate of a 1,168k increase is 921k higher than the average of the survey based estimates. The Markit/CIPS PMI surveys have signalled a net increase of just 258k jobs between the second quarter of 2010 and the second quarter of 2013, while the British Chambers of Commerce survey is meanwhile consistent with a similar net gain of 308k over the same period. The KPMG/REC survey of the recruitment industry, which also covers the government sector, has signalled a mere 174k rise.

The comparisons of survey data against ONS Workforce-based estimates show an even larger discrepancy, with the ONS estimate of private sector employment some 1.2 million higher than the survey averages.

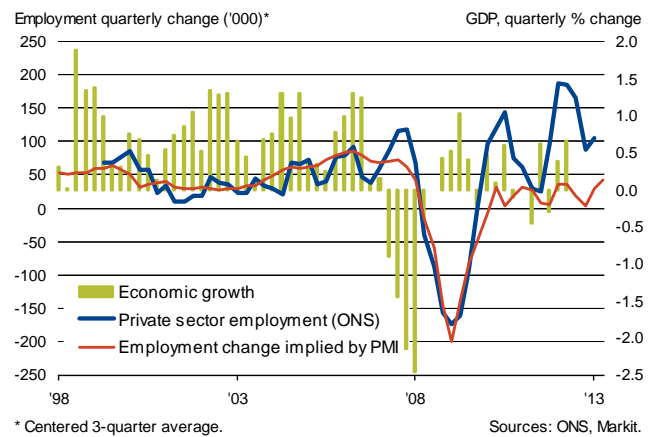
The three surveys also send a similar and consistent message that the number of hours worked has barely changed over the past three years, rather than the 4.1% increase suggested by the ONS.

The difference between the ONS and survey data has an important bearing on productivity. Simply comparing the PMI-derived data with private sector employment and non-government GDP suggests that the productivity gap (in current price terms) is currently just 7% compared to the 12% gap indicated by comparable ONS data (see chart 7).

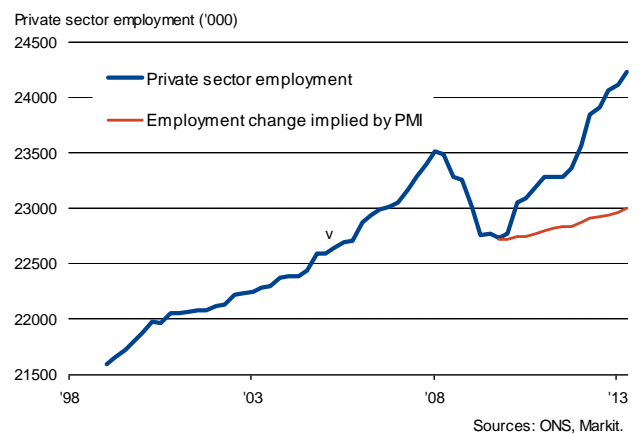
### Causes of the divergence

Such buoyant job creation as signalled by the ONS over the past three years cannot be explained by theories such as labour hoarding, which would imply a mere stagnation of employment, not active recruitment on a record scale.

**Chart 5: ONS (LFS) data on private sector employment and (regression-derived) PMI-implied employment growth\***

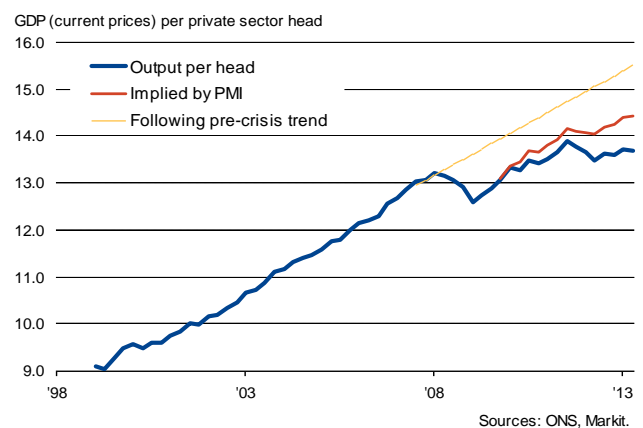


**Chart 6: ONS (LFS) level of employment and (regression-derived) PMI-implied trend\***



**Chart 7: Implications for productivity\***

**GDP excl. gov't. per head measured in current prices**



\* Notes:

The above charts use PMI data to compare against official data on private sector employment growth and GDP per head. We have selected the PMI due to the fact it has historically exhibited the highest correlation with ONS data. However, near-identical charts can be replicated using the BCC survey and KPMG Report on Jobs, available on request.

We have used ONS Labour Force Survey data in these comparisons as the ONS uses the LFS data as its headline (and most reliable) indicators of employment trends.

Nor, as we have shown, can a shift to part-time work of fewer hours being worked explain the divergence (because hours worked also rose sharply).

The growing trend towards self-employment may account for some of the divergence. Consultants and out-sourced labour would most likely be excluded from the business survey responses on employment levels but are included in the ONS measures. However, over the past three years, the ONS estimates that self-employment numbers have merely risen by 297k, thereby accounting for only one-third of the discrepancy between the ONS and survey-based estimates. Moreover, many of these self-employed workers are likely to operate in the public sector.

A possible explanation is that the divergence between the ONS and both PMI and BCC survey data occurred after the new coalition government introduced a severe clampdown on tax evasion, tax avoidance and welfare benefit abuse. This may have encouraged more companies that were already in existence to join the PAYE and VAT registers, effectively boosting the universe numbers with which estimates from official employer surveys are grossed-up from. More individuals may have also elected to register as employees due to the crack-down on benefit claimants.

We note in this respect that there was an 86,720 increase in the number of PAYE and VAT registered companies on the government's [Inter-Departmental Business Register](#), as used by the ONS, between 2011 and 2013. There was a particularly large upward revision to the number of companies known to be in existence at the start of 2012. According to the ONS: "Approximately 31,000 of the change between 2011 and 2012 was caused by improvements to HMRC computer systems leading to previously excluded businesses being added to the IDBR". It is possible, though speculation at this point in time, that this increase in the number of registered companies has given the misleading impression of strong employment, as depicted in official data. With [ONS data](#) suggesting the average size of UK companies is 11.4 employees, these 86,720 extra firms would in theory have accounted for 989k additional jobs.

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## Employment and pay growth on the rise

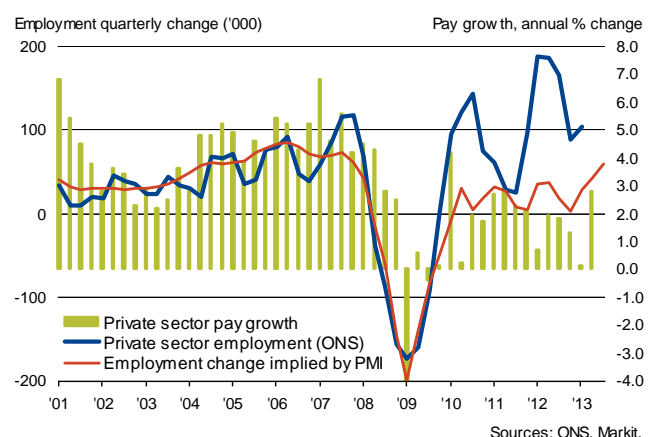
Importantly, irrespective of the cause, this analysis indicates that companies have not been hoarding labour since the financial crisis, as the official data have suggested. Instead, the additional employees recorded by the ONS since 2010 may to a large extent have already been employed but 'hidden' from the official data in previous years.

The more downbeat picture of employment growth presented by the business surveys in recent years is also more consistent with the benign data on employee earnings, growth of which has fallen in recent years, sliding to a record low in early 2013.

The implication is that, if economic growth picks up sharply, employment will likewise need to increase markedly, and the unemployment rate will fall commensurately and wage growth will also start to revive.

Such a scenario of resurgent employment growth is already apparent. Business surveys and official data are both signalling a marked upturn in the pace of economic growth in 2013. In the third quarter of 2013, the PMI has signalled its strongest rate of job creation since late-2007, and the [KPMG/REC recruitment industry survey](#) is likewise indicating that the demand for staff from employers is currently rising at a rate not seen since 2007, which is in turn pushing up pay growth to the fastest for over five years.

**Chart 8: Employee earnings compared to ONS (LFS) and PMI-implied employment growth**



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