



The United Kingdom productivity paradox: Myth or reality



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ABSTRACT

The stagnation in full time employment and increasing numbers of part time and self-employed workers pose a significant challenge to the UK economy. However, the key to the paradox might actually lie in a long term evaluation of all these factors of production. Whilst economists, politicians and the media puzzle over the UK paradox of rising employment and falling output, this paper attempts to evaluate the relationship between output hours, productivity hours and employment together with the continuing rise of the UK population, an increasing dependency on services and a tendency to increasing unemployment.

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1. Introduction

The 2008 financial crisis had a devastating effect on the global economy particularly in the UK given its position in world financial markets and the predominant role of the investment banking sector in the disaster. The ensuing recession continues to impact markets and the UK is no exception. As Oulton and Sebastia-Barriel (2013) point out, labour productivity has illustrated a puzzling behaviour following the onset of the 2008 recession. “Despite some modest improvements in 2013, whole-economy output per hour remains around 16% below the level implied by its pre-crisis trend” (Barnett et al., 2014). Rising levels of employment, allied to a decline in labour productivity, has led to speculation that forces are at work in the UK which are contrary to economic theory.

The two most popular hypotheses explaining the productivity paradox are labour hoarding and damage to capacity. The former is strongly argued in Martin and Rowthorn (2012) which states that output remains well below the potential as labour whilst being cheap, fails to work to potential and that the production of more output in itself might not convert into increased sales as a result of demand failure, under-utilization of labour and high unemployment. The latter, damage to capacity is heavily argued in Reinhart and Rogoff (2009) which states the financial crisis has left long lasting effects on employment, output and asset prices with declining house prices and rising unemployment being a key feature. Favouring the latter, a paper by Oulton and Sebastia-Barriel (2013) argues that the financial crisis will have a long term effect on the British economy, justifying their hypothesis on studies of previous financial crises by Reinhart and Rogoff, also Barrell et al. (2010) together with their own paper Long and Short-Term Effects of the Financial Crisis on Labour Productivity, Capital and Output (Oulton & Sebastia-Barriel, 2013). Clearly, considerable academic work has been conducted on the subject

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and this paper is not designed to match the depth of analysis and the academic rigour deployed. There is also universal agreement that the financial crisis has created a long term effect on the global economy, particularly in the UK as a result of the prominence of the City of London and the importance of the banking sector. However, this study does pose the question whether the financial crisis has brought to a head an underlying issue in the UK economy relating to the long run decline of output against the hours of work employed. It is inconceivable that, over the long term, UK companies have been operating with more labour than necessary and there is no evidence of a real lack of productive investment (Oulton & Sebastia-Barriel, 2013). It should be noted that output grew quickly post the 1991 recession whilst productivity hours and employment grew at a steadier pace. Since the model demonstrates that increased output came from factors other than hours worked, it is not unreasonable to look for other reasons to explain its rapid rise.

Solving this puzzle continues to be work in progress amongst economists and this paper is designed to investigate the dynamics of the labour market over a 25 year period. A number of published papers seek to examine the productivity paradox over a short term period examining data from immediately before the financial crisis and the post crisis period to date. Here we use output as the dependent variable and the indices of productivity hours, defined as labour input as a measure of hours worked and LFS employment, an ONS survey of households which collects employment information on a headcount basis, as the independent variables. This paper will seek to establish whether a four year investigative cycle is too short a period to draw any positive conclusions. The dependent variable output per hour is derived by dividing measures of output by some measure of labour input, in this case hours. Most of the output measures used in the Labour Productivity statistical outputs are taken directly from the ONS National Accounts system, and are measures of real (inflation-adjusted) GVA, for the whole economy (Office for National Statistics, 2012).

At the same time, this paper seeks to look at trends in employment and unemployment in the entire economy from 1971, and ally that data to trends in output, employment and productivity hours in the manufacturing, production and services sector from 1997 to 2012; the timescale when information became available. The models, including time series analysis, will also explore the relationship between the plateauing of growth in output in all sectors in 2005–2006, allied to a similar pattern in employment and productivity hours which coincided with a significant increase in government expenditure. This poses the question whether the possibility of the crowding out of private investment was the real catalyst for the ensuing drop in output, exacerbated by the financial crisis.

The remainder of this paper is organized as follows. Section 2 presents the methodology and hypothesis underlying the analysis whilst Section 3 provides a brief analysis of the data used in this study. Section 4 reports the results along with a discussion, and the paper ends with some conclusions in Section 5.

2. Methodology

2.1. Linear regression model

The methodology adopted for this paper is a linear regression model. Two multiple regression models were created, the first spanning the period 1987 to 2012 with data collected on a quarterly basis and output per labour hour selected as the dependent variable, since this represents the most accurate measure of labour productivity. The model with the index of labour output per hour as the dependent variable and the indices of labour survey employment and labour productivity hours as the independent variables was predicated using multiple linear regression model. The second model has been constructed with the 16–64 years age group population as the dependent variable and with full time, part time, self-employment and unemployment as the independent variables. The time series is from quarter 2, 1992, which is when records began to report all the required data. The data has been indexed with a reference point of 2009 as 100.

2.2. Hypothesis

Reference to the Office of National Statistics Handbook published in 2007 bears testament to the complexity of any study of productivity. However, the current paradox of increasing employment against a background of reducing output is challenging economists in this field. The models appear to demonstrate that, over the last 25 years, increasing labour hours productivity is accompanied by a fall in output, remedied by an increase in headcount. There are several implications to this trend ranging from the influence of increasing numbers of part time and self-employed workers to the movement away from manufacturing to the more labour intensive and less productive service sector and could be allied to possible inadequate investment and the gradual reduction in national capacity. Fig. 1 indicates the rising trend of part time and self-employment and the slowing of full employment, particularly since quarter 1, 2006 and notably before the financial crisis. It also shows the inexorable rise of services as the driving force behind the increase in total employment and the rapid decline of manufacturing jobs. It can also be observed that, after the 1991 recession, the gap between total employment growth and the growth of service sector jobs began to narrow and continue to do so. If the service sector employment potential is slowing over the long term, it is inevitable that part time or self-employment will be the options for work seekers. This trend in the rise of services and decline of manufacturing has accelerated since the structural changes to the UK economy during the conservative government 1979 to 1997 and the Labour government between 1997 and 2010 did nothing to change it. In fact it could be argued that further deregulation and privatisation, together with a significant increase in government expenditure, maintained an increasing trend towards an unbalanced economy. This trend, illustrated

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