
Age structure and the UK unemployment rate

Working Paper No. 124

Richard Barwell⁽¹⁾

According to conventional textbook analysis, when unemployment falls below its natural or equilibrium rate wage inflation starts to rise. However, over the past few years UK unemployment has fallen well below what was thought to have been its natural rate and yet wage inflation has remained subdued. One possible explanation for this is that the natural rate of unemployment itself has fallen. Explanations for such a fall have included a decline in union bargaining power, reduced generosity of unemployment benefits, and deregulation of labour markets. This paper investigates a further explanation, namely that the fall in equilibrium unemployment is due to the changing age structure of the workforce. In particular, the paper investigates the hypothesis that a decline in the proportion of youths in the labour force has reduced the equilibrium unemployment rate.

Two key stylised facts provide the springboard for the subsequent analysis. First, youths, defined as workers aged between 16 and 24, have a higher equilibrium unemployment rate than older workers. The paper argues that the youth unemployment problem is caused either by higher quit rates among younger workers, or by firms discriminating against their younger employees when they need to lay off workers. The second stylised fact is that the proportion of youths in the workforce almost halved between the early 1980s and mid-1990s. This was partly due to an echo effect from the sharp fall in the birth rate between the mid-1960s and mid-1970s, and partly to a substantial rise in the proportion of youths in full-time higher education during the 1990s.

The core of the paper produces a range of estimates of how much of the fall in UK unemployment can be

explained by the changing age distribution of the workforce. The method adopted for investigating this issue is a 'shift-share' analysis of the UK workforce during the years 1984 to 1998. The analysis is complicated by having to make an allowance for changing participation rates among different age groups. Using data from the Labour Force Survey, it is estimated that about 55 basis points of the 565 basis point fall in the UK unemployment rate between 1984 and 1998 can be accounted for by changes in the age structure of the labour force with given participation rates. Even after controlling for changing labour force participation rates by age, demographically driven shifts in the age composition of the labour force still explain about 40 basis points of the fall in unemployment. An attempt is also made to assess whether shifts in the composition of the labour force have had any effect on the youth and adult unemployment rates, such as through generational crowding effects. But no clear evidence of such effects was found.

Finally, the paper takes some projections of the evolution of the composition of the labour force up to 2007, in order to assess whether any further impact on equilibrium unemployment might be expected from demographic change. It is estimated that such changes as could be anticipated would have a negligible further impact.

In summary, this paper provides evidence that the falling proportion of youths has made a significant contribution to the fall in UK unemployment between the mid-1980s and late 1990s, but no further contribution from this factor is expected over the successive decade.

(1) The paper was written while the author was working at the Bank of England. An extended non-technical version of this working paper was published in the August 2000 *Quarterly Bulletin*, pages 257–65.