Non-employment and labour availability

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According to the Labour Force Survey, about 20% (approximately 7.5 million) of the non-student working-age population were not in paid employment in 2002. Of these people about one in five were classified as unemployed, with the remainder labelled as 'inactive'. Despite this categorisation, however, some groups in the so-called inactive population are as likely to move into employment as those classified as unemployed, so any comprehensive measure of labour availability needs to incorporate information on the characteristics of the non-employed pool as a whole. This paper describes the key trends in the demographic and skill structure of the non-employed population since the mid-1980s and contrasts them with those in employment. It also attempts to draw out the implications of these trends for overall labour availability, building on recent Bank research which models individual transition rates from non-employment into employment.

Introduction

Although the UK unemployment rate has fallen over recent years to levels last seen over two decades ago, wage inflation has remained remarkably subdued by historical standards. This coincidence of low and falling unemployment and stable wage inflation has often been thought of as a 'puzzle' requiring explanation. Economists typically explain this phenomenon by pointing to reasons why the equilibrium or natural rate of unemployment may have fallen.[1] For example, Nickell (2001) suggests that the main factors behind the fall in equilibrium unemployment over the past 20 years have been the declining role of trade unions in wage bargaining and the tightening of the benefit system. But one other factor that may also be relevant to explaining the lack of response of wage inflation to an apparently tighter labour market is that the unemployment rate itself may be too restrictive a measure of labour availability.

The definition of unemployment used in the Labour Force Survey (LFS) only includes people without a job, who have actively sought work in the past four weeks and are available to start work in the next two weeks, and people out of work, who have found a job and are

waiting to start it in the next two weeks.[2] According to the LFS, about 7.5 million of the non-student working-age population were not in paid employment in 2002. Of these people, only about one in five satisfied the criteria for unemployment, with the remaining six million labelled as 'inactive', or out of the labour force.

The working-age inactive population is diverse and includes students, those who are sick and disabled, those taking care of family members and those taking early retirement. Most of these groups are less likely to start working than people recently made unemployed, but analysis of longitudinal data on employment flows suggests that some groups in the inactive population are as likely to move into employment as some categories of the unemployed.[3] And, even though the likelihood of moving into employment from inactivity is lower on average than it is from unemployment, the large size of the inactive population means that these transitions can still make a substantial contribution to employment growth, particularly during economic expansions when unemployment falls. One implication is that focusing solely on unemployment as a measure of labour slack in the economy may be misleading, and that any comprehensive measure of labour availability needs to

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(1) The underlying assumption is that the degree of labour market imbalance, or 'tightness', is best measured by the gap between unemployment and its equilibrium or natural rate. For a discussion of the concept of labour market tightness in theory, see Brigden and Thomas (2003).

(2) This is the definition of unemployment recommended by the International Labour Organisation (see Office for National Statistics (2001)).

(3) This point was first brought out in a number of papers by Gregg and Wadsworth (1998, 1999).

take into account the size and composition of the non-employed population as a whole.[1]

There is, however, no generally accepted way of combining information on the non-employed to measure labour availability (or labour slack). The usual practice is to look at an extended definition of unemployment. For example, the Employment Policy Institute (1999) in the United Kingdom used to report several alternative measures, which included some categories of inactivity, drawing on earlier work by Gregg and Wadsworth (1998) which had highlighted the relatively high employment transitions of some groups of the inactive population. Influenced by this work, the *Bank of England Inflation Report* has occasionally reported a weighted index of non-employment, which combines the different categories of the unemployed and inactive populations according to their relative transition rates into employment (Bank of England (1999)). More recent research at the Bank by Schweitzer (2003) extends this idea by modelling employment transitions from non-employment using individual-level data on labour force status and other characteristics, in order to generate a comprehensive measure of labour availability.

The aim of this article is twofold: first, to provide a brief review of the key trends in non-employment since the mid-1980s; and second, to draw out the implications for labour availability, using a model-based approach explaining individual transitions into employment. Unless indicated otherwise, all the analysis refers to those of working age and not in full-time education, and uses annual LFS data from 1984 onwards.[2] We exclude students[3] from our descriptive analysis, to abstract from the large expansion in higher education over the period, though we include them in one of the measures of labour availability that we report below. It should also be kept in mind that, since the data we report have been aggregated from the underlying individual responses in the LFS, they are not consistent with the Census 2001 results.[4] For this reason, our analysis is expressed mainly in terms of rates (for the most part, relative to the relevant non-student, working-age population), which should be less sensitive to any revisions associated with the latest Census results.

The structure of the article is as follows. The second section describes the main trends in working-age non-employment since the mid-1980s and assesses the main demographic and skill differences between the inactive and the unemployed. The third section makes comparisons with the employed population. In the fourth section we describe trends in both aggregate and disaggregated employment transition rates. The fifth section explains a method of combining this information with information on the structure of non-employment to derive an overall measure of labour availability, drawing on recent research at the Bank. We also extend this measure back to the mid-1980s using 'recall' data on transitions from the LFS, in order to assess longer-run trends in labour availability. The last section presents conclusions.

Trends in the structure of non-employment

In this section we begin by briefly reviewing the main aggregate trends in working-age non-employment (excluding students), before going on to examine trends by gender, age and education qualifications. We also set out the reasons behind the trends in inactivity, using the responses given by respondents to the LFS. (For a fuller analysis of inactivity trends, see eg Nickell (2001) and Gregg and Wadsworth (1998, 1999).)

Aggregate trends

Abstracting from obvious cyclical movements, the trend in the aggregate working-age non-employment rate (excluding students)[5] shows a clear downward path over the period since 1984 (see Chart 1). This decline has overwhelmingly reflected declining unemployment, which fell by 1.5 million or nearly 5 percentage points from 1984 to 4.0% in 2002, with most of this fall occurring after 1992. Though this comparison is probably distorted by the different cyclical positions in 1984 and 2002, the comparison between 1990 and 2001 (the past two troughs in the unemployment rate) suggests that a large part of the decline is structural.

In contrast to unemployment, the inactivity rate since the mid-1980s has remained remarkably stable at a little under 20%. As a result, the share of inactivity in total working-age non-employment has increased significantly

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(1) More generally, as Nickell (2001) has most recently pointed out, inactivity is one of the key elements affecting potential output.
(2) The annual figures refer to the spring quarter of each year.
(3) Students are defined as working-age individuals who are in full-time education; individuals receiving job-related training while employed, such as nurses, are not counted as students. On this definition, there were 1.3 million students in 1984, rising steadily to 1.8 million in 2002.
(4) The ONS plans to regross the micro LFS data in line with the results from the 2001 Census later in 2003.
(5) The denominator for all rates is the working-age population excluding full-time students.

over the period, from around 70% in the mid-1980s to just over 80%. This increase was concentrated in the period after 1992 (see Chart 2), during which working-age inactivity rose by about 300,000 while unemployment fell by 1.3 million.

Gender differences

The aggregate picture conceals very different trends for men and women. While the non-employment rate for men has remained little changed, the female non-employment rate has declined consistently since the mid-1980s. As can be seen from Charts 3 and 4, the rates of both male and female unemployment have both declined, so this largely reflects diverging trends in inactivity. While the female inactivity rate has fallen, the male inactivity rate has shown a consistent upward trend. This rise in male inactivity has been large enough to raise the share of men in non-employment by around 5 percentage points since the mid-1980s to over 40%.

Inactivity trends

As highlighted by a number of authors (see eg Gregg and Wadsworth (1999) and Nickell (2001)), the rise in male inactivity since the mid-1980s has coincided with a similar rise in men reporting long-term sickness or disability (see Chart 5). From a little under 40% in 1986, the proportion of inactive men citing sickness and disability rose to a peak of nearly 60% in 1998, from which it has declined only slightly, despite a large expansion in employment. This rise has been concentrated among low-skilled, older men (see below). Perhaps surprisingly, the rise in inactivity has very little to do with early retirement. Among the 'other reasons' cited for inactivity (shown in Chart 5), the main downward influence has come from the proportion of those who believed no job was available—which fell from 14% in 1984 to 1% in 2002.

The breakdown of inactivity by reason (see Chart 6) suggests that the main downward trend for women since the mid-1980s has come from those reporting that they are 'looking after family/home', which has fallen fairly steadily over the period from nearly 70% in 1984 to 55% in 2002. But, interestingly, the percentage citing sickness or disability has also increased among women, rising from just under 9% in 1984 to nearly 25% in 2002. The main driver of the downward trend in the 'other reasons' category for women (shown in Chart 6) is

the proportion of those who 'do not want/need employment', which fell from 11% of total inactivity to 3% between 1984 and 2002.

Age breakdown

There has been little change in relative age-related unemployment rates since 1984 (see Chart 7). Youth unemployment rates remain much higher than those for the prime age groups. Indeed, comparing 1990 and 2001 (the two troughs), the difference between the rate for the 16–24 age group and that for the 25–34 and the 35–44 age groups has actually increased. However, given the general ageing of the population over this period, the unemployed population has got relatively older. For example, the percentage of the unemployed who are over 45 was 24% in 2002 compared with 20% in 1984.

Among the age-related inactivity rates, the clearest developments are the downward trend among the 25–34 age group and the rise for the 16–24 age group since the beginning of the 1990s. It should be borne in mind, however, that the broad stability of age-related inactivity rates at the aggregate level conceals rising inactivity rates among men broadly offset by declining inactivity rates among women. The over-45s have the highest inactivity rate, which has remained close to, or above, 25% for most of the period since 1984. Not surprisingly, the share of the over-45s in the inactive population has also risen over the period—from 43% in 1984 to slightly over 50% in 2002—and by more than the ageing in the population as a whole.

Skills

Non-employment tends to be much higher for those with low skill levels. Charts 9 and 10 distinguish four educational groups, defined on the basis of highest attained academic qualification (or its notional vocational equivalent): degree, A Level, GCSE grade C or equivalent, and below GCSE grade C or equivalent, indicated as 'other or no qualifications' in Charts 9 and 10.[1] Male inactivity rates across each of these educational groups have all risen over the period, with much the largest rise among the low skilled (those with less than the GCSE qualification), where rates have risen by nearly 10 percentage points since the end of the 1980s to 23% (see Chart 9). Despite this upward trend, the share of the low skilled in total inactivity has declined, reflecting the general rise in educational

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(1) See Annex A for more detail. For the remainder of this article, the two lowest skill levels will be referred to as GCSE and below GCSE.
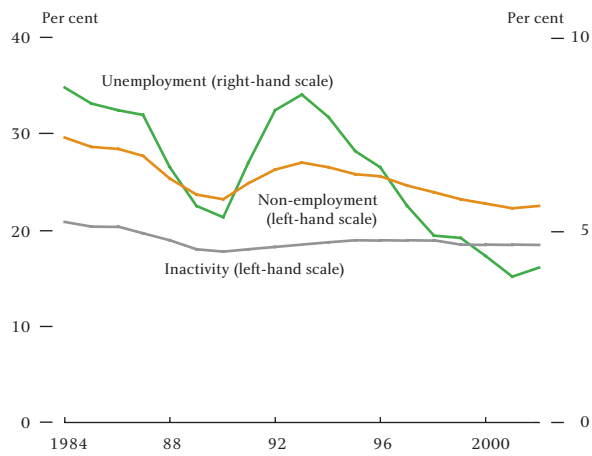
Chart 1
Non-employment, unemployment and inactivity rates
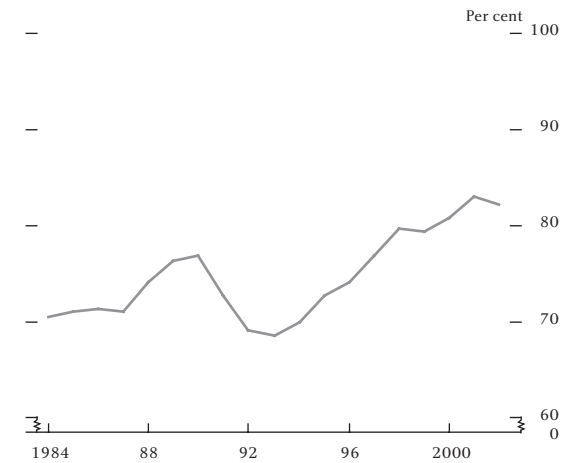
Per cent — Per cent

Unemployment (right-hand scale)

Non-employment (left-hand scale)

Inactivity (left-hand scale)

Chart 2
Inactivity share of non-employment

Per cent

Chart 3
Non-employment, unemployment and inactivity rates: men

Per cent — Per cent

Unemployment (right-hand scale)

Non-employment (left-hand scale)

Inactivity (left-hand scale)
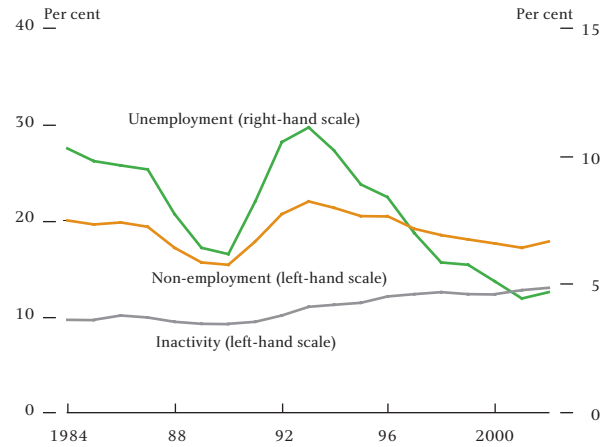
Chart 4
Non-employment, unemployment and inactivity rates: women

Per cent — Per cent

Non-employment (left-hand scale)

Inactivity (left-hand scale)

Unemployment (right-hand scale)
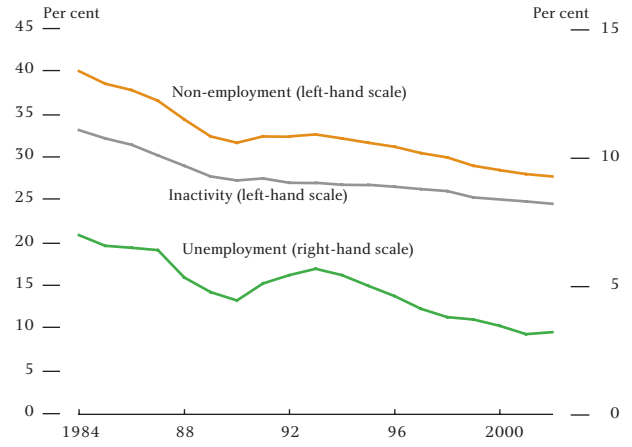
Chart 5
Inactivity by reason: men

Per cent

Long-term sick or disabled

Other inactivity

Retired

Looking after family
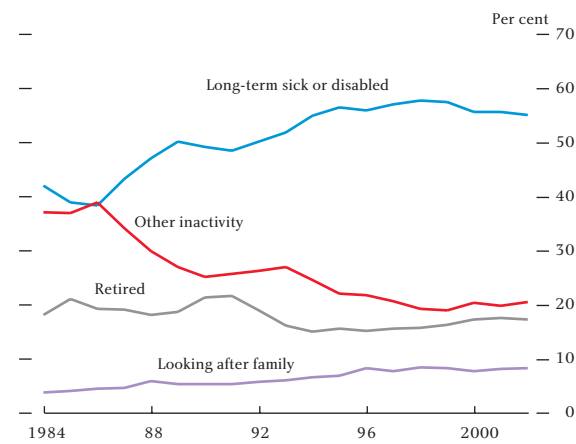
Chart 6
Inactivity by reason: women

Per cent

Looking after family

Other inactivity

Long-term sick or disabled

Retired
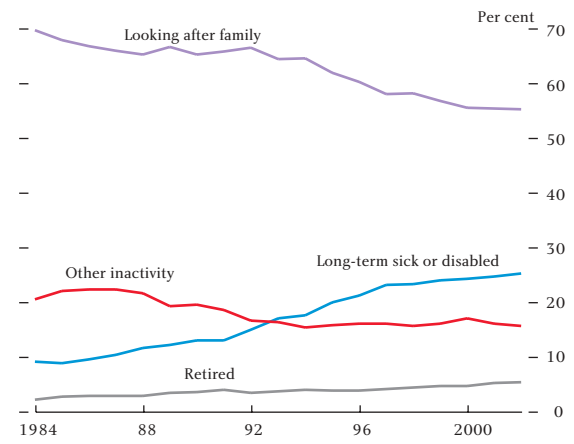
Chart 7
Unemployment rates by age

Per cent

16–24

25–34

35–44

45+

1984   88   92   96   2000
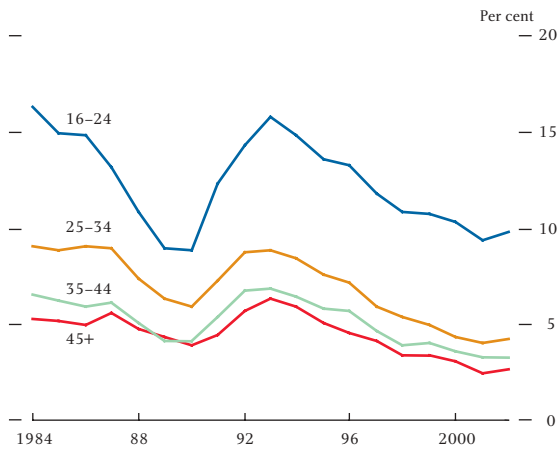
Chart 8
Inactivity rates by age

Per cent

45+

25–34

35–44

16–24

1984   88   92   96   2000
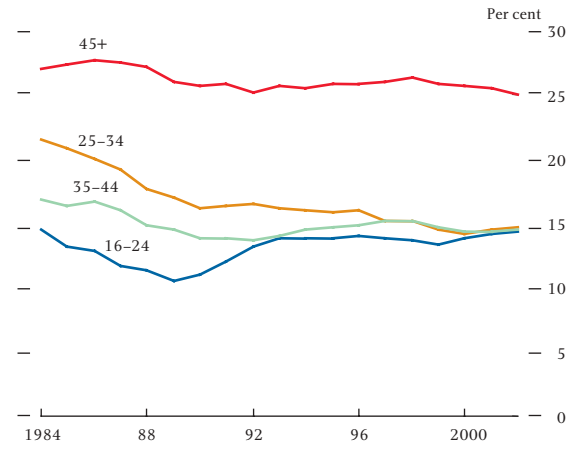
Chart 9
Inactivity rates by educational attainment: men

Per cent

Other or no qualifications

GCSE

A Level

Degree

1984   88   92   96   2000
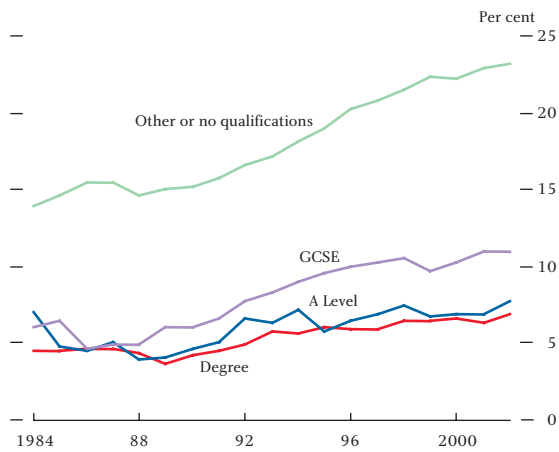
Chart 10
Inactivity rates by educational attainment: women

Per cent

Other or no qualifications

GCSE

A Level

Degree

1984   88   92   96   2000
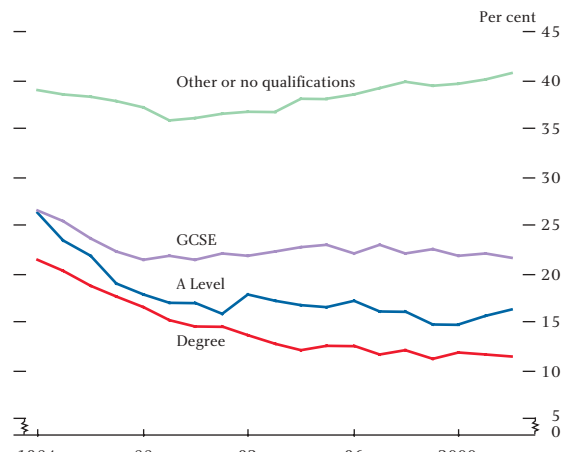
Chart 11
Unemployment rates by educational attainment: men

Per cent

Other or no qualifications

GCSE

A Level

Degree

1984   88   92   96   2000
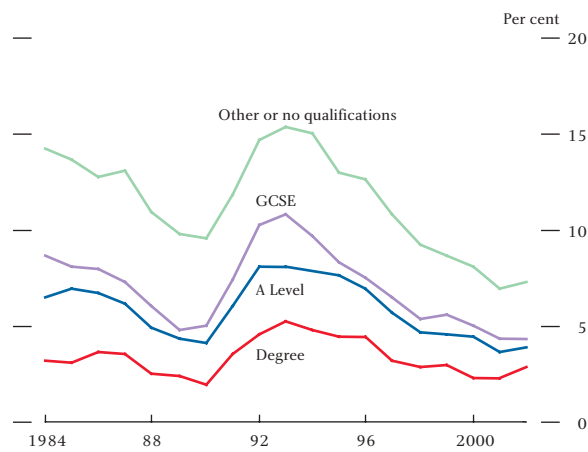
Chart 12
Unemployment rates by educational attainment: women

Per cent

GCSE

Other or no qualifications

A Level

Degree

1984   88   92   96   2000
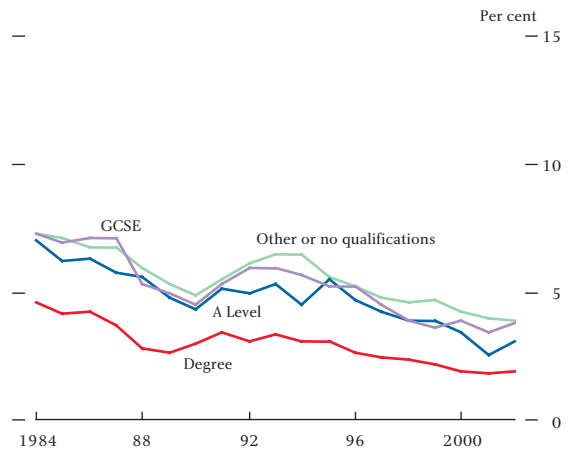
attainment in the population. In contrast, inactivity rates by educational qualification for women have all fallen, with the single exception of the low-skilled group where they have also shown a rise, albeit a much smaller one than for men (see Chart 10).

Breaking down male unemployment by educational attainment in the same way shows that the unemployment rate for those without GCSE qualifications has fallen by far the most over the period (see Chart 11). This does not mean that this group explains the fall in the male unemployment rate at the aggregate level, because there has been a large compositional shift in educational qualifications since the mid-1980s towards the higher-educated groups who have lower unemployment rates. By contrast, female unemployment rates by educational qualification have all fallen by broadly similar amounts over the period (see Chart 12).

Charts 13 and 14 provide a convenient summary of some of the key trends brought out in this section. Overall, the pool of non-employed workers has become increasingly male, older (especially among the inactive) and better qualified since the mid-1980s.

How do the working and non-working populations compare?

The question we ask in this section is whether the employed and non-employed working-age non-student populations have become more or less alike since the mid-1980s. If they have become less similar over time, a given pool of non-employed might represent a lower level of potential labour supply.

Chart 13
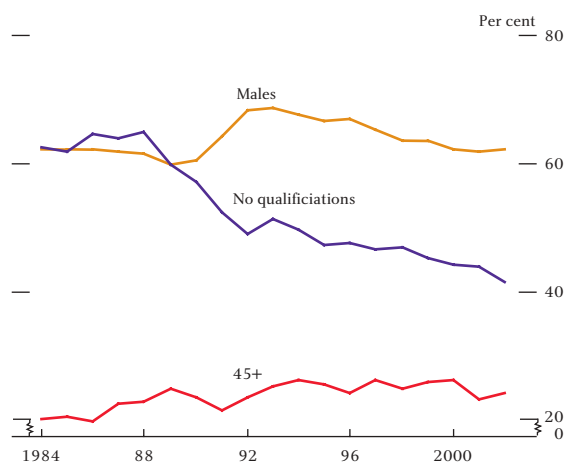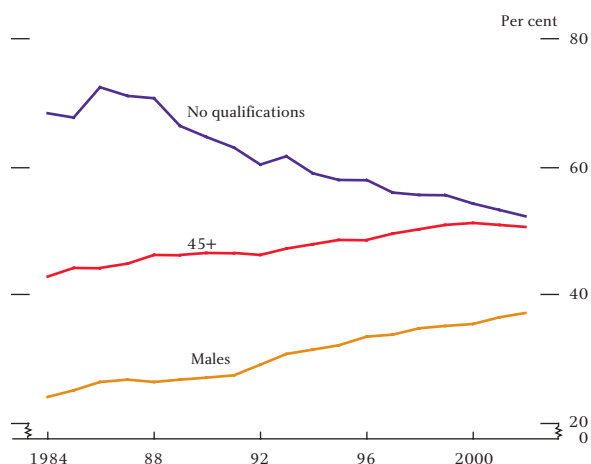**Unemployment composition—percentage shares of 45+, those with no qualifications, and males**

Chart 14
Inactivity composition—percentage shares of 45+, those with no qualifications, and males

Gender

As we have already seen, the proportion of men among the non-employed has increased, so it is hardly surprising that, as Charts 15 and 16 show, the male share in total employment has fallen (the gender ratio in the population of working age has shown little change since 1984). This reflects the large rise in the participation rate of women in the labour market, as well as the smaller decline in male participation. These developments have helped to narrow the gender differences in employment and non-employment, though substantial differences remain—in 2002 the employment rate for men was some 10 percentage points higher than for women compared with 20 percentage points higher in 1984.

Age

Given the increase in the average age of the population over the past two decades, the employed and non-employed have also both increased in average age since the mid-1980s (see Charts 17 and 18). However, it is apparent that the non-employed population has aged rather more. Non-employment has shifted decisively towards the over-45 age group, which now forms 46% of all the non-employed, compared with 35% of the employed—a rise in the difference of around 7 percentage points since 1984.

Education

There has been a dramatic improvement in the educational attainment of both the non-employed and the employed groups, which is most evident in the
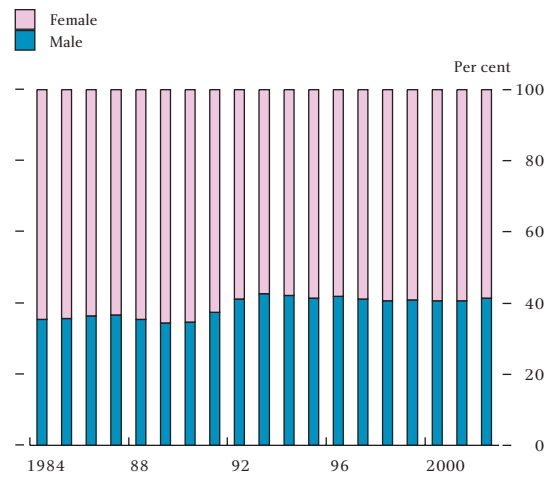
Chart 15
Gender shares of non-employment

Female
Male

Per cent

1984　88　92　96　2000

Chart 16
Gender shares of employment

Female
Male

Per cent

1984　88　92　96　2000
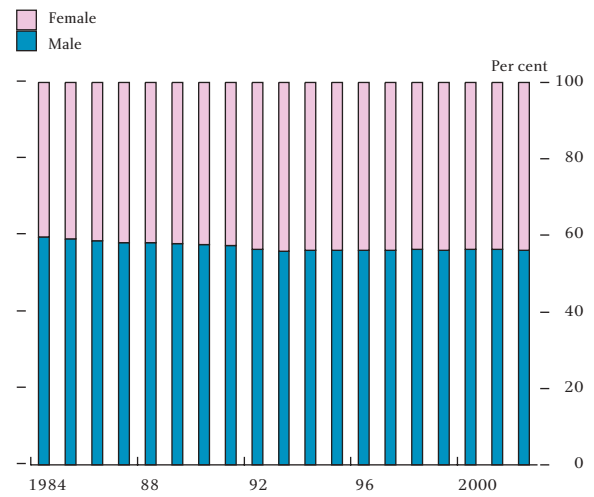
Chart 17
Age shares of total non-employment

16–24　25–34　35–44　45+

Per cent

1984　88　92　96　2000
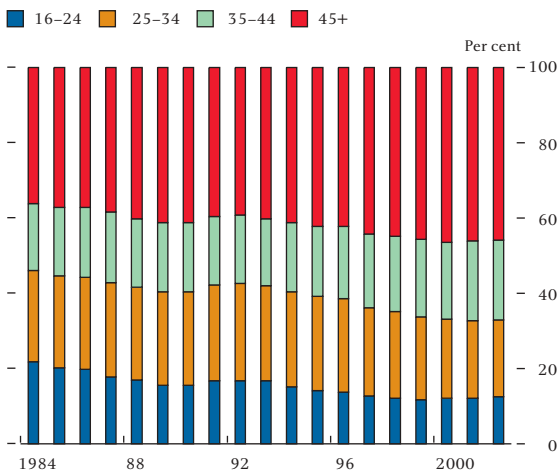
Chart 18
Age shares of employment

16–24　25–34　35–44　45+

Per cent

1984　88　92　96　2000
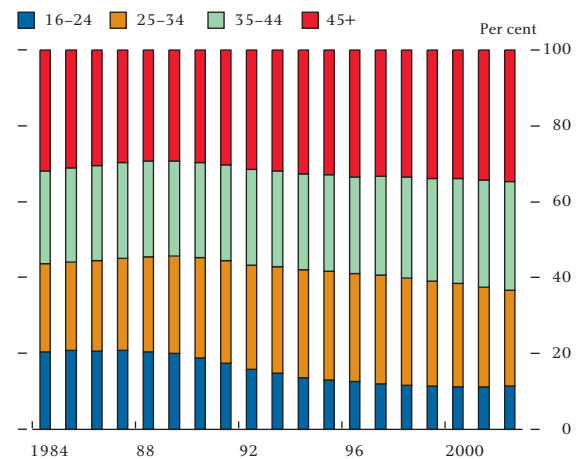
Chart 19
Education shares of non-employment

Degree　A Level　GCSE　Other or no qualifications

Per cent

1984　88　92　96　2000

Chart 20
Education shares of employment

Degree　A Level　GCSE　Other or no qualifications

Per cent

1984　88　92　96　2000

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declining share of those with less than GCSE qualifications and the rising share of those with degrees (see Charts 19 and 20).[1] But it is also evident that the improvement has been more marked for those in employment. Between 1984 and 2002, the percentage of low skilled in employment almost halved, to under 25%, while their percentage share in non-employment fell from two thirds to a half.

From these comparisons it seems that the non-employed have become older and less qualified relative to the employed, though the gender mix in the two states has become more si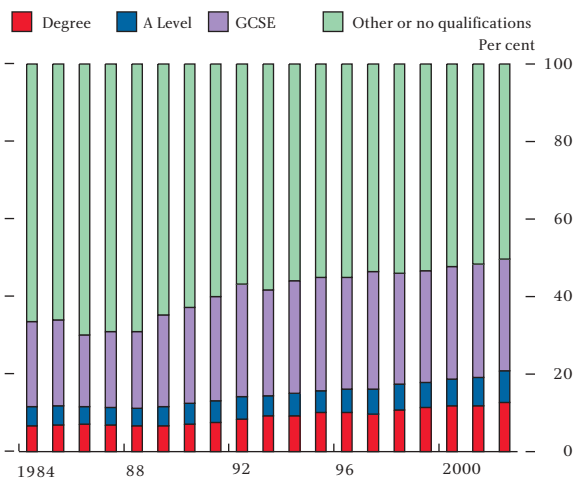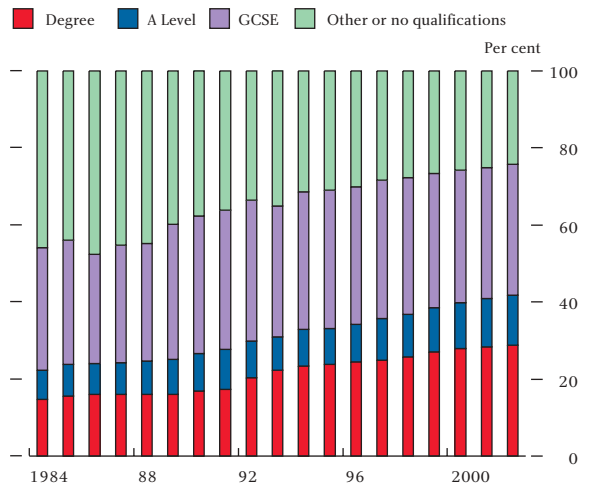milar. If older and less qualified individuals are less attached to the labour market, then these developments might imply less labour slack than otherwise.[2]

Evidence on employment transitions

An obvious way of looking at the labour force attachment of the non-employed is to look at the extent to which they subsequently move into employment. Using information from a question in the LFS which asks respondents about their labour force status twelve months before the date of the survey, it is possible to construct annual employment transition rates (ie the flow into employment from non-employment relative to the size of the non-employed population).[3] These transition rates are shown in Table A for various categories of non-employment.[4]

It is clear from the table that employment transitions among the non-employed vary considerably across different demographic and education categories. For example, the average transition rate of 16–24 year olds is over three times higher than that of those aged 45–64, while those non-employed individuals who have at least an A-Level qualification are twice as likely to move to a job within a year as those without GCSEs.

Among the different non-employment states, it is not surprising that the unemployed have the highest average

Table A
Transition rates from non-employment to employment

	1985	1990	1996	2002	Average 1985–2002
Male	0.19	0.20	0.19	0.17	0.19
Female	0.14	0.17	0.16	0.16	0.16
16–24	0.27	0.30	0.29	0.31	0.29
25–34	0.19	0.25	0.22	0.23	0.23
35–44	0.18	0.21	0.20	0.19	0.20
45–64	0.07	0.08	0.10	0.09	0.09
Degree	0.21	0.24	0.28	0.25	0.26
A Level	0.25	0.27	0.27	0.26	0.26
GCSE	0.21	0.23	0.22	0.19	0.22
Below GCSE	0.13	0.15	0.11	0.11	0.13
Unemployed	0.31	0.41	0.36	0.44	0.38
Inactive–sick/disabled	0.02	0.03	0.06	0.05	0.05
Inactive–retired	0.01	0.02	0.03	0.04	0.03
Inactive–family	0.11	0.14	0.11	0.12	0.12
Inactive–other reason	0.18	0.29	0.39	0.48	0.34
Memo:					
Inactive–students	0.35	0.41	0.35	0.36	0.37

transition rate into work. More interesting perhaps is the fact that the gap between the unemployed and those who are inactive for reasons other than sickness, looking after the family, and retirement has closed over the past two decades. On the face of it, this 'other reason' group appears to be more akin to the LFS unemployed than the other inactive categories, in terms of its transition rate into employment.

The other non-employed group whose employment transition rate is comparable to that of the unemployed is students. Up to now we have excluded students from our analysis, because the large expansion in their numbers over the period would otherwise have distorted our analysis of trends in non-employment. Given their high transition rates, students may add significantly to the pool of available labour, though it is important to note that the classification of students in the LFS data is problematic. In particular, the 'recall' question does not allow us to determine whether people who say they were full-time students a year ago were actually working or looking for work. As a result, the implied flows from 'student' to 'employment' appear to be seriously biased upwards.[5]

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(1) Despite this increase in educational attainment, it has been outstripped by a rise in the demand for educated labour over the past two decades. Consequently, the skill balance has deteriorated (see Burriel-Llombart and Thomas (2001)).

(2) Since older cohorts typically have lower educational attainment, it is possible that the relative deterioration of educational qualifications among the non-employed could have been entirely driven by the fact that the non-employed have also become relatively older. However, this does not seem to be the case, as this deterioration has occurred in each of the four age groups we consider.

(3) We use these data, rather than matched data, because they are available over a longer span of time (back to 1985, rather than 1993). But it is important to recognise that since these transition rate data are based on the recollections of survey respondents they may be subject to recall bias (for evidence on this, see Bell and Smith (2002)). However, there is no reason to think this leads to any systematic biases in our resulting estimates of labour availability.

(4) Note that our analysis of transition rates (here and in the following sections) is based on a subsample of the LFS, which we restricted to include only those individuals for whom we have information on all of our chosen characteristics.

(5) A comparison of the student numbers from the recall questions with the information from actual labour market status in the same year suggests that the stock of students may be overestimated by up to 50%. One problem seems to be that many part-time students who are working classify themselves as full-time students when asked about their labour force status one year ago.

At the aggregate level (but again excluding students), Chart 21 shows that the average transition rate from unemployment into employment is much higher than the corresponding transition rate from inactivity and shows much more variation over time. However, given the much larger number of inactive people, the aggregate transition rate into employment is much more stable than the transition rate from unemployment would suggest. As Chart 22 shows, the size of employment inflows from inactivity has been broadly equal to the inflows from unemployment over 1985–2000. Indeed, since the end of the 1990s, flows from inactivity have been larger than those from unemployment, reflecting the falling level of unemployment.

Chart 21
Non-employment to employment transition rates

Chart 22
Non-employment to employment flows as a percentage of population
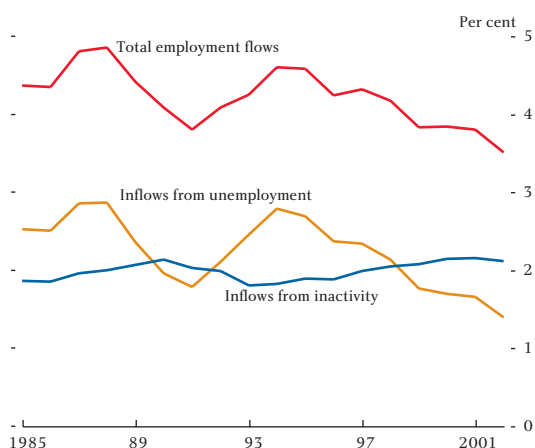
Measures of labour availability

In this section we combine information on changes in the structure of non-employment with information on disaggregated transition rates, in order to measure overall labour force availability over the period 1984–2002.

A model-based approach

As already explained in the introduction, there are broadly two methods that have been used to measure labour availability. One approach is to use the information on transition rates to identify groups of the inactive population that appear to be similar to the unemployed, in order to generate various extended measures of unemployment. Another approach is to weight together different subcategories of the non-employed by their average transition rates, to form a fixed-weight non-employment index.

Drawing on recent research at the Bank of England (see Schweitzer (2003)), we instead focus here on a model-based measure of labour availability. This method involves estimating the probability of a non-employed individual entering employment in the next period, while controlling for their initial non-employment status (eg unemployed, looking after the family, retired) and other individual characteristics, including age, gender and education. This framework can be used to calculate the probability of each individual in the sample being in work one year later, which can serve as an indicator of their labour market attachment. By aggregating these probabilities, we can then derive a measure of the labour market attachment of the non-employed population as a whole.

Of course, whether or not a given individual does in fact move out of non-employment will depend on cyclical influences, as well as a range of unobserved idiosyncratic factors such as the motivation to seek work. By estimating the model over a reasonably long time period we hope that any cyclical factors will average out. Provided any unobserved individual factors are offsetting, our estimates should be unbiased.

One of the key advantages of this approach is that it is possible to test which indicators of labour force status and other characteristics are most important in explaining transitions into employment. If the structure of the inactive population matters for potential labour supply, then including controls for different types of inactivity should improve the fit of the model. Allowing for demographic factors also controls for the changing gender, age and skill structure of the non-working population.

Schweitzer (2003) estimates models of this kind using the longitudinal version of the LFS data set, which contains detailed matched individual data for consecutive quarters. His results suggest that models based on a straightforward unemployment/inactivity distinction are inferior to those that explicitly allow for the reasons for inactivity, highlighting the important differences in labour market attachment among the inactive. He shows that those models that ignore the transitions made by the inactive predict a sharp decline in labour availability over the 1990s, in line with the fall in unemployment, while allowing for differences in inactivity suggests a smaller decline. The implication is that available labour supply has not fallen as sharply as unemployment alone would suggest.

While the longitudinal data used by Schweitzer (2003) have many advantages, these data are only available back to Spring 1993. In order to look at labour availability back to the mid-1980s, we have applied the same approach to the available annual recall data. Extending the analysis in this way imposes some limitations on the model, in that we have a more restricted data set of individual characteristics: the form of some of the questions asked in the LFS has changed over time. Nevertheless, the available data allow us to include up to six non-employed states in our model of individual employment transitions, as well as dummy variables for gender, age and education. The six non-employed states allow us to distinguish whether the individual is unemployed, sick/disabled, looking after family, retired, student or other inactive. Given the problems with the student transition data already mentioned in the fourth section above, we experimented with models which both included and excluded this category. On the whole, the models produced broadly similar predictions, but for completeness we show both below. As a benchmark, we also estimated a model on the same data, with all the same demographic and education controls, but including only unemployment as a measure of labour market status.

Empirical results

The full estimation results from the inactivity-reasons model (including students) and the unemployment benchmark model are shown in Annex B. The unemployment model implies that the unemployed have higher transition rates than the 'inactive' category. The

other parameter estimates are generally consistent with the analysis in the fourth section. In particular, men and older workers have significantly lower average transition rates than women and the youngest age group respectively, while higher educational attainment is associated with higher transitions. However, conventional indicators show that the inactivity reasons model fits the data better.
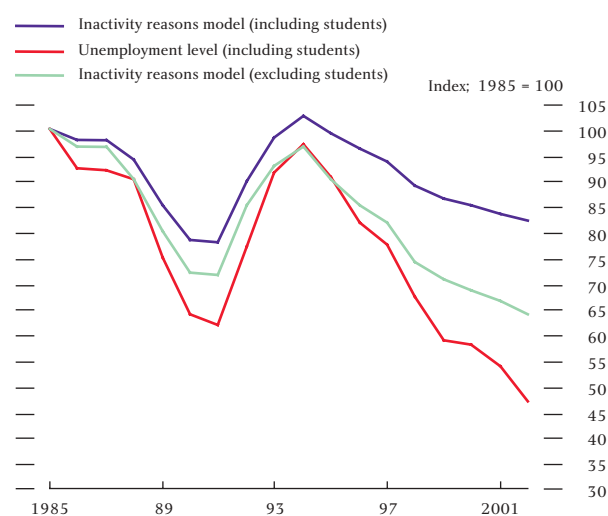
Chart 23 plots the predicted transition rate from the two inactivity reasons models (with and without students). The variant that includes students shows a higher predicted employment transition rate throughout the sample period, but otherwise movements in the two models follow each other quite closely, with the exception that the students model indicates a smaller decline in availability since the end of the 1990s. Chart 24 scales the stock of non-employment by the predicted transition rates from the two models to produce two indices of overall labour availability. For comparison, these measures are plotted against an index of unemployment. As might have been expected, labour availability implied by the inactivity reasons models has declined by much less over the 1990s than movements in unemployment would imply. However, the key point to emphasise from the comparisons with unemployment is that labour availability is—according to the model measures—currently little different from the previous trough in availability in 1990. This is obviously a very different picture from that suggested by unemployment, and one that seems much easier to reconcile with the subdued pattern of wage inflation over the 1990s noted in the introduction.[1]

Chart 23
Predicted transition rate from inactivity reasons model

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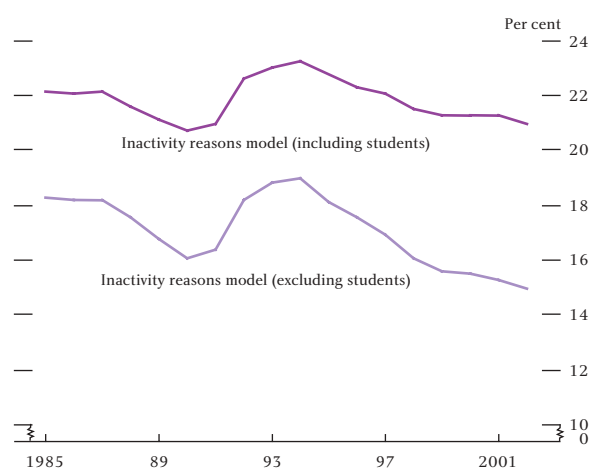
[1] Of course, it need not follow that this explains the puzzle mentioned in the introduction, since we have not addressed the issue of determining the equilibrium level of labour availability. For an attempt to test the inflation-forecasting properties of various labour market tightness indicators, see Cassino and Joyce (2003).

Chart 24
Labour availability measures

Inactivity reasons model (including students)
Unemployment level (including students)
Inactivity reasons model (excluding students)

Index; 1985 = 100

Conclusions

Most commentary on the labour market tends to focus on the unemployment rate as being the most relevant criterion to judge the degree of imbalance, or 'tightness', in the market. This ignores the large contribution to effective labour supply of those classified as inactive in the labour market statistics. This article shows how misleading this may be.

Since the mid-1980s the rate of non-employment has shown a clear downward trend, mainly driven by falls in unemployment. At the same time, the non-employed population has become older and less well-qualified relative to those in work. However, at the aggregate level, transition rates from non-employment into employment have shown no clear trend over time.

Drawing on recent research at the Bank by Schweitzer (2003), we show that it is possible to generate a measure of labour availability by modelling individual employment transitions. Measures of availability generated using this method suggest that the inactive population has played an important role in adding to effective labour supply since the mid-1980s; and that overall availability is currently little different from the previous cyclical peak in the market, contrary to the implication of historically low levels of unemployment. The picture of labour availability trends that emerges from this analysis therefore seems easier to reconcile with the subdued pattern of wage growth over the past few years.

Annex A
Education classifications

Using Labour Force Survey data, we allocated individuals into one of four skill groups based upon information on their highest formal qualification. These groups were:

Degree or equivalent: Undergraduate or higher degree, nursing or other medical qualification, high vocational qualifications (NVQ levels 4–5, HNC, HND, BTEC higher, Royal Society of Arts higher diploma, and other higher education).

A Level or equivalent: A Level, Scottish 6th year Certificate, AS Level, SCE highers, mid-vocational qualifications (NVQ level 3, GNVQ advanced, RSA advanced diploma, ONC, OND, BTEC, and SCOTVEC national).

GCSE grade C or equivalent: O Level, GCSE grade A–C and low vocational (NVQ level 2, GNVQ intermediate, RSA diploma, City & Guilds advanced & craft, BTEC/SCOTVEC general diploma, and completed apprenticeship).

Below GCSE grade C or equivalent: CSE below grade 1, GCSE below grade C, NVQ level 1, GNVQ/GSVQ foundation level, BTEC/SCOTVEC general certificate, SCOTVEC modules, RSA other qualification (including stage I–III), City & Guilds other, Youth Training certificate, other vocational qualifications, and no qualifications.

Annex B
Logit estimates of non-employment to employment transitions

(standard errors in parentheses)

	Unemployment model		Inactivity-reasons model	
Constant	-1.244	(0.009)	-2.910	(0.040)
Unemployed	1.128	(0.091)	2.441	(0.039)
Looking after family			0.886	(0.039)
Sick/disabled			0.329	(0.041)
Student			2.081	(0.040)
Other reasons			2.255	(0.042)
Male	-0.038	(0.008)	-0.177	(0.009)
Age 25–34	-0.674	(0.009)	-0.066	(0.012)
Age 35–44	-0.826	(0.011)	-0.123	(0.014)
Age 45–59/64	-1.722	(0.011)	-0.834	(0.014)
Degree	1.325	(0.012)	1.113	(0.012)
A Level	0.440	(0.012)	0.204	(0.013)
GCSE	0.629	(0.009)	0.565	(0.009)
Log L	-226377.65		-219036.42	
Pseudo R^2	0.118		0.147	
Sample size	488714		488714	

The logit specification models the probability of an individual moving from non-employment into employment. It can be interpreted within a regression framework, so that a positive parameter estimate indicates that an individual with this characteristic has a higher probability of moving into employment. Pseudo R^2 is a goodness-of-fit measure, where a higher value signifies a better fit. It is constructed as $1 - (\text{Log L}/\text{Log L}_0)$, where Log L_0 is the value of the log-likelihood when the model only contains a constant. In the unemployment model, the unemployment parameter indicates the probability of an unemployed individual moving into employment compared with an inactive person (the default category). In the inactivity-reasons model, the default category is those who have retired. The default gender, age and education categories are females, 16–24, and those with below GCSE qualifications respectively.

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