

Labor Market Slack in the United Kingdom

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Abstract

This paper examines the amount of slack in the UK labor market. It examines the downward adjustments made by the Monetary Policy Committee (MPC) to both unemployment and underemployment, which in our view are invalid. Without any evidence the MPC in its assessment of the output gap reduces the level of unemployment because of its claim that long-term unemployment has no effect on wages. We produce contrary evidence. The MPC further reduces the level of underemployment in the United Kingdom by half. We present arguments as to why we also think this inappropriate. We set out arguments on why we believe the level of slack is greater than the MPC calibrates. Consistent with that is the fact that real wages in the United Kingdom continue to fall.

JEL codes: J01, J11, J21, J23, J38, J64

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INTRODUCTION

The extent of labor market slack in the UK economy is an ongoing question given the recent unexpectedly rapid fall in the unemployment rate. In the latest data release for February–April, which is referred to as March 2014, it was 6.6 percent, down from 7.9 percent in May 2010 and 7.8 percent in March 2013. However, other measures of labor market slack suggest that the UK economy is still a long way from its full employment level. First, the number of workers in temporary jobs who could not find permanent jobs is up from 565,000 in May 2010 to 601,000 in April 2014. Second, the proportion of workers who are self-employed is up from 12.9 percent in September 2008 to 14.9 percent now. This is a concern given we know that these jobs on average tend to be low paid, and there is no evidence that a higher self-employment rate is correlated with better macroeconomic outcomes (Blanchflower 2004). Third, the number of part-time workers who would like to be full-time is up from a low of 670,000 in April 2008, and up further from 1,072,000 when the coalition was formed, in May 2010, to 1,400,000 in the most recent Office for National Statistics (ONS) *Labour Market Statistics, June 2014*. Long-term unemployment, as measured by those who have been continuously unemployed for at least a year, is up from 381,000 and just under 800,000 both in May 2010 and at the time of writing. The big question is, how far is the UK economy from full employment, when it would be expected that nominal wage increases would start to rise sharply?

Finally nominal wage growth remains benign and if anything appears to be *slowing* once more. In the latest ONS data release for June 2014, the rolling three-month average for February–April 2014 showed annual wage growth of the national statistic average weekly earnings (AWE) of 0.7 percent and 0.6 percent in the private sector. This number was artificially low because of deferred bonuses in April 2013, which markedly raised the base, but there is little sign that nominal wage growth is about to pick up. Indeed the last six months of data show very little change at all.¹ Moreover, the survey from which the AWE is calculated, the Monthly Wages and Salaries Survey (MWSS), excludes all workers in firms with fewer than 20 employees as well as the self-employed, whose earnings are likely to have seen little or no growth over the last year or so. Consumer price index (CPI) inflation is currently at 1.8 percent, below the Monetary Policy Committee’s (MPC’s) 2 percent target, and the retail prices index (RPI) is at 2.5 percent, both of which generate negative real wage growth. Figure 1 plots the average weekly earnings (AWE) deflated by the RPI, which is the most commonly used measure of the cost-of-living for pay-setting purposes. RPI deflated real wages have risen only once in the last 71 months, in April 2013, when impending changes

1. The AWE over the last 14 months was as follows:

February 2013	£469	June 2013	£475	October 2013	£476	February 2014	£478
March 2013	£466	July 2013	£475	November 2013	£476	March 2014	£476
April 2013	£486	August 2013	£475	December 2013	£479	April 2014	£478
May 2013	£476	September 2013	£475	January 2014	£478		

in taxes caused workers to move their bonus payments across tax years. When the CPI was used to deflate there were only three positive months—April 2013, February 2014, and March 2014—which were distorted by the lowering of the base effects because bonuses were moved from February and March 2013 to April 2014, so that lower taxes could be paid.

A number of forecasters, including the MPC and the Office for Budget Responsibility (OBR), is predicting significant wage growth. MPC's *Inflation Report, February 2014* states that “in the central projection, four-quarter growth in real pay turns positive towards the end of 2014, as productivity growth picks up.” MPC's *Inflation Report, May 2014* argues that its “central view implies that whole-economy annual total pay growth should approach 2.5 percent by the end of 2014. A steady rise in productivity is expected to be a key driver of this pickup, alongside a continuing reduction in labor market slack.” This looks wildly optimistic given the current rate of increase of 0.7 percent averaged over the three months, February to April 2014. This is also inconsistent with the evidence that the MPC reports that pay settlements, averaged over the past 12 months, based on monthly data, averaged 2.1 percent from 2010Q3 to 2012Q4, 2.1 percent in 2013, and 2.1 percent in 2014Q1. No evidence of any rising wage pressure there.

The OBR, for example, in December 2013, forecasted real wage growth of 0.3 percent in 2014 and 1.2 percent in 2015, admittedly well below the 2.4 percent in both years it was predicting in its June 2010 budget forecast. As David Blanchflower and Stephen Machin (2014) note, there are reasons to question such an optimistic view. To date, during the start of the recovery, the productivity performance of the economy has been weak and it has not created room for wage rises, even though it has been good news for employment and unemployment. Moreover, because unemployment has not risen by as much as in previous recessions, when and if it falls, there is less scope than in the past for it to boost wage growth through the usual wage curve mechanisms (that is, the reverse of the wage-depressing effects of unemployment in Blanchflower and Oswald 1994a, 1994b). Another factor, which predates the recession, is that the wages of typical UK workers are no longer keeping up with productivity gains made in the economy because increased gross wage inequality leads to average earnings rising faster than median earnings.

The main drivers of wage pressure come from an intricate blend of “insider” and “outsider” forces—people who would like to work and are currently in or out of a job. There is evidence that unemployment has started to fall (although it rose in the most recent ONS release), so outsider pressures pushing down on pay may have weakened a little. But it is quite clear that the economy is still well below full employment and there is a large amount of slack in the labor market. There is little or evidence of widespread skill shortages, which would push up wages; and public-sector pay freezes with continuing redundancies push down on workers' bargaining power in the one part of the economy where there is still a high level of union coverage. Firms have started to grow, so their ability to raise pay levels may have increased slightly, but so far we see no evidence of any change in their willingness to pay. Blanchflower and Machin (2014) suggest this does raise a key question, why, if nothing changes, wouldn't firm owners continue to keep any gains to

themselves? It stretches credulity to believe that in the absence of significant skill shortages bosses will offer pay increases to their workers when they have shown no inclination to do so for several years.

Paul Gregg, Stephen Machin, and Mariña Fernández-Salgado (2014a, R15),² concur that there is little likelihood of rising real wage growth:

For a sustained wage recovery the economy also needs to generate a return to the levels of productivity growth normally seen, but which have been notably absent over the past six years. As labor becomes scarce and more expensive we should expect firms to increase investment, generating productivity improvements. But even this will not be enough for sustained real wage gains to come about unless the distribution of the returns from productivity growth can be channeled back to ordinary workers. This was the historical norm, but it stopped in the early 2000s—importantly before the downturn—with a disproportionate share of productivity gains going to support pension commitments and rapidly rising salaries of very highly paid workers.

Indeed, in a recent speech in Australia, economics Nobel laureate Jim Mirrlees concurred that there is unlikely to be any significant wage growth in the United Kingdom any time soon. Mirrlees argued that one of the implications of the move to economic equilibrium is that owners of capital will get more and workers will get less. “Certainly, if you are looking at this from the point of view of countries like Australia, the United States, Hong Kong, and Britain then that seems to be the way of it. ... Of course, if it is right that wages will get equalized that would mean that wages in China and India will be higher. But it looks to me that they would be much lower in Australia, Britain, and the United States than people are hoping.”

Our concern here is to examine two components of slack in the United Kingdom. The first is long-term unemployment and the second is underemployment. Without adequate explanation, in our view, the MPC, by a swish of its collective pen, is reducing some of its effect so that the level of slack in the UK economy appears smaller than it should be. This seems highly questionable. In each case the MPC has explained these adjustments in a box in its May 2014 *Inflation Report* called “Assessing the Degree of Spare Capacity.”

LONG-TERM UNEMPLOYMENT

The MPC assesses currently that the amount of slack in the economy is “probably in the region of 1-1.5 percent.”³ The vast majority of this spare capacity, it argues, is not inside firms but within the labor market. Its estimate of the medium-term equilibrium unemployment rate reflects changes in the number of people out of work for more than six months: The longer that someone has been out of work, the lower the proba-

2. See also the revised report: Gregg, Machin, and Fernández-Salgado (2014b).

3. External MPC members Ben Broadbent and Martin Weale have argued that the level of slack is approximately 1 percent and 0.9 percent, respectively.

bility of him or her finding a job and hence, MPC asserts, the less downward pressure the individual would tend to put on wages. The composition of unemployment between those out of work for a short period and those out of work for a longer one varies over time, and so, therefore, does MPC's estimate of the medium-term equilibrium unemployment rate. Thus the Bank of England staff estimate of the medium-term equilibrium unemployment rate reflects a judgment that people who have been unemployed for some time put less downward pressure on wages because they are less likely to find jobs. This argument does not seem to be evidence-based and is just guessing. Although it should be said that the MPC does admit it may be wrong in doing this, "the rate at which the long-term unemployed have found work has, however, been around or above its prerecession average in recent years. That suggests the equilibrium unemployment rate, which is based on pre-crisis average transition rates between unemployment and work, may be lower than currently estimated" (*Inflation Report, May 2014*, 44).

In particular, the MPC argues, the equilibrium rate tends to decline when unemployment is falling. Changes in the equilibrium rate are then calculated by weighting together changes in 6–12 month, and more than 12-month, unemployment rates. The weights used are those groups' average transition rates into employment between 2002 and 2007, relative to transition rates for those out of work for fewer than 6 months. For example, those who have been unemployed for more than 12 months are one-third as likely to find a job as those unemployed for fewer than 6 months. So only one-third of any change in the long-term unemployed represents a change in bank staff's measure of labor market slack; two-thirds represents a change in the equilibrium rate. Unfortunately there is no evidence to support the claim that the long-term unemployed have a different impact on wages than the short-term unemployed, or whether the MPC had done any work on the issue or knew of any work for the United Kingdom. In response, a Bank of England spokesman explained to us that "we have not published any empirical work on this, and have no plan to, that I am aware of."⁴

UNDEREMPLOYMENT

The MPC is also making a downward adjustment of the amount of slack in the UK labor market coming from underemployment as explained in the *Inflation Report, May 2014* (30–31). The MPC argues that there is uncertainty about the medium-term equilibrium level of average hours. In contrast with the

4. The Bank of England spokesman went on "but I have been told of these useful references. A recent paper by Bob Gordon (2013) actually argues that you should exclude the long-term unemployed from your measure of slack altogether, as it helps to explain the path of inflation better. The NY Fed have also picked up on this and found a similar result using a different Phillips curve equation (see M. Henry Linder, Richard Peach, and Robert Rich, "The Long and Short of It: The Impact of Unemployment Duration on Compensation Growth," Liberty Street Economics, February 12, 2014, <http://libertystreeteconomics.newyorkfed.org/2014/02/the-long-and-short-of-it-the-impact-of-unemployment-duration-on-compensation-growth-.html> [accessed on June 25, 2014]. If we are looking for more specific evidence of this for the United Kingdom, the ECB estimated the role of the long-term unemployed for a range of countries, and the results for the United Kingdom suggested that the long-term unemployed had a low weight (Llaudes 2005)."

downward trend seen over the previous four decades, it notes that average hours have risen over the past five years. That was accompanied by rises in a measure of the hours that those in employment would, on average, like to work as we have noted in several papers (Bell and Blanchflower 2011, 2013a, 2013b). And the proportion of part-time employees reporting that they would prefer a full-time job—an indicator of the gap between actual and medium-term equilibrium average hours—the MPC rightly notes, has been elevated in recent years. It goes on to argue that “it is, however, impossible to determine how much of the rise in desired hours is a response to the effects of the crisis—such as lower household real income—that is likely to reverse in time, and how much is likely to persist.” Moreover, Labour Force Survey (LFS) data show that, in the past, people who reported working fewer hours than desired subsequently seemed satisfied with smaller increases than they said they wanted. The MPC argues that its “estimate of medium-term equilibrium average hours is consistent with the judgment that only around half of the present gap between actual hours and the estimate of desired hours represents labor market slack.” This judgment seems to be based on a few calculations presented in a recent speech by Martin Weale (2014) based on a longitudinal sample of a few hundred underemployed and overemployed workers observed between 2012 and 2013.

To illustrate the extent of the entirely made-up adjustments—so-called “judgments”—the MPC is making, if we take the most recent data available for 2013Q4, we have an unemployment rate of 7.2 percent and an underemployment rate of an additional 1.8 percent, making an underemployment rate of 9 percent. The MPC’s first adjustment takes half of that away, i.e., 0.9 percent from underemployment. Based on the fact that there were 2,341,511 unemployed, of whom 845,369 had been continuously unemployed for at least a year, or 36.1 percent of the total, the MPC then in its second adjustment reduces the unemployment rate by half of that, i.e., 1.8 percent, which means it lowers the unemployment rate—by guessing—by 1.3 percent. So the underemployment rate according to the MPC is *really* 6.8 percent and the unemployment rate 5.9 percent, hence its forecasts for rising real wage growth despite the fact there is absolutely no sign whatsoever of any. We object to both of these adjustments on the grounds that they are not based on robust evidence. We believe that the scale of slack in the UK economy is consequently greater than the 1 to 1.5 percent of GDP than the MPC asserts. Plus we now present new evidence to support our arguments that the scale of slack in the UK economy is much greater.

EVIDENCE ON LONG-TERM UNEMPLOYMENT AND ITS IMPACT

Figure 2 plots the unemployment rate and the proportion of the unemployed with duration of at least a year. It is observed that as unemployment rises long-term unemployment rises, and as unemployment falls the proportion of the unemployed with long durations also falls. High long-term unemployment is highly correlated with high unemployment so long-term unemployment doesn’t seem that different from short-term unemployment. That is confirmed in figure 3 where four unemployment rates are plotted:

fewer than 6 months; 6 but under 12 months; 12 but under 24 months; and 24 months and over. Each of the four series is expressed as a rate, and collectively they sum to the overall unemployment rate. So, if the unemployment rate was 10 percent with equal amounts in each category, then each would be plotted as 2.5 percent. As noted above, all four rates move closely together, suggesting there is nothing special about the long-term unemployment rate.

Background table 1 reports the incidence of long-term unemployment over time and across major OECD countries from 1988 to 2012. The incidence in the United Kingdom is lower than it was at the end of the 1980s and early 1990s, whereas the United States has seen a marked rise in the incidence of long-term unemployment in the recent recession. Long-term unemployment rates are especially high in the euro area countries that have high unemployment rates and especially so in Greece, Ireland, and Italy. Interestingly the percent of the unemployed with long durations was higher in Germany than in the United Kingdom. Figure 4 plots the proportions of the unemployed with long durations in Canada, France, Germany, the United Kingdom, and the United States and confirms the recent uptick in the United States, along with a recent sharp fall, to more typically European levels.

Of interest is the fact that the number of long-term unemployed in the United Kingdom has been falling as the unemployment rate has fallen. The number of those continuously unemployed for more than a year has fallen from 915,000 in April 2013 to 791,000 in March 2014, or just over one-third of the total fall in unemployment over the same period. In the United States there is a similar story; over the last 12 months from May 2013 to May 2014 unemployment fell by 1,891,000 while those unemployed for 27 weeks or more fell by 979,000 or around a half.

In a recent paper that has gained a lot of attention, Alan B. Krueger, Judd Cramer, and David Cho (2014) examined whether the long-term unemployed in the United States were on the margins of the labor market. They find that the long-term unemployed have about a 1 in 10 chance of moving into employment in any given month and also tend to withdraw from the labor force at higher rates than the short-term unemployed, although they do note that labor force withdrawal rates collapse in a recession. They warn that while “some may wish to draw macroeconomic policy implications from our findings, only time will tell if inflation and real wage growth are more dependent on the short-term unemployment rate than total unemployment rate.” They do not examine whether indeed that was the case, but we do that here.

A new paper by Glenn D. Rudebusch and John C. Williams (2014) from the Federal Reserve Bank of San Francisco creates and estimates a model for the United States in which long-term unemployment varies endogenously over the business cycle but does not affect price inflation. In this new model, an increase in long-term unemployment as a share of total unemployment creates short-term tradeoffs for optimal monetary policy and a wedge in the dual mandate. They estimate the model using quarterly US time series data from 1960Q1 to 2013Q4 that are known to suffer from omitted variable and aggregation

biases of uncertain sign and magnitude. In particular it is hard, if not impossible, to separate out the impact of high unemployment from high long-term unemployment due to the high correlation between the two variables using aggregated time series methods (Blanchflower and Oswald 1994a). Similarly work by Ricardo Llaudes (2005) estimates a time series expectations-augmented Phillips curve that also suffers from omitted variable and aggregation biases. In the case of the United Kingdom there are 20 observations from 1973–2002 in his analysis. This means it tells us nothing about the role of long-term unemployment. Because there are so few degrees of freedom, neither study can distinguish between the impact of high unemployment and high long-term unemployment, which are strongly correlated. Our analysis below concludes that aggregate time series analyses tells us absolutely nothing, as in zero, about the impact of long-term unemployment on wages or prices.

We should note that this issue isn't new, since there was a major debate on this in the 1980s and 1990s. At the time, Europe had high long-term unemployment while the United States did not. Richard Layard and Stephen Nickell (1987), for example, argue that the long-term unemployed imposed much less wage pressure than the short-term unemployed. In a series of annual time series regressions they found evidence that a long-term unemployment term, defined as the number of those who had been unemployed expressed as a proportion of total unemployment, entered positively in a wage equation. David Blanchflower and Andrew Oswald (1990) show using microdata for the United Kingdom that this was not the case and long-term unemployment *did not* play any independent role in wage determination. The problem was that high long-term unemployment was highly correlated with high unemployment. They conclude that “the British evidence does not support the view that long-term unemployment is an important element in the wage determination process.”

Blanchflower and Adam Posen (2014) examine the impact of long-term unemployment in a series of hourly and weekly wage equations using data from the Current Population Survey pooled across state and year cells, for the period 1990–2013. The authors include year and state fixed effects, a lagged dependent variable, and the log of unemployment and inactivity rates, which both entered significantly negative. They also include separate variables for the proportion of the unemployed with durations of 15-plus weeks; 27-plus weeks; and one year and over. No evidence was found that the long-term unemployed had a smaller wage reducing effect than the short-term unemployed, confirming the earlier work in Blanchflower and Oswald (1990). If anything, even evidence was found to suggest long-term unemployment lowers wage growth even more than short-term unemployment.

Similar evidence indicating that long-term unemployment and short-term unemployment have equivalent effects on inflation in the United States has been found using data on prices rather than wages. In a recent paper, Michael T. Kiley (2014) considers this question using cross-section time series data on 24 large metropolitan areas. This approach has the benefit of controlling for both time and area fixed effects that the time series studies mentioned above (which suffer from aggregation and missing variable biases,

and few degrees of freedom) cannot. The dependent variable is the CPI in each metropolitan area by year. Rather than including a variable for the long-term unemployment proportion, Kiley includes short- and long-term unemployment rates, which are functionally similar.

It is notable that Kiley finds that the coefficients in his price change equations on local unemployment rates are similar and precisely estimated; hence, the data do not reject the hypothesis that short- and long-term unemployment rates have identical effects on inflation. Kiley is thus able to conclude that “the results suggest that long-term unemployment has exerted similar downward pressure on inflation to that exerted by short-term unemployment in recent decades.” This finding is consistent with Blanchflower and Posen’s findings using data on wages across US states.

In table 3 we report the results of estimating a series of hourly and weekly wage equations using data from the Labour Force Surveys for the United Kingdom, pooled across 20 regions based on residence, (1993–2013 for hourly pay, and 1992–2013 for weekly pay).⁵ Along with a lagged dependent variable we include the log of the regional unemployment rate plus a long-term unemployment variable, defined as the proportion of the unemployed that have been continuously unemployed for at least a year, which has a mean of 31.1 percent. If the long-term unemployed exert less pressure on wages than the short-term unemployed, this variable should be significant and positive—but it never is. We calculate these variables from the LFS data. In column 1 we include these variables along with a set of year dummies, and for both hourly and weekly wages neither the unemployment rate nor the long-term unemployment rate is significant. Column 2 adds region dummies, and the log unemployment rate is now significant and negative for both hourly and weekly wages.

The wage unemployment elasticity of pay—the wage curve—is calculated as $-.09$ for hourly wages and $-.06$ for weekly. This is done by setting the coefficient on W_{t-1} equal to W_t and solving for the long-run elasticity. In column 3, personal controls are added and the results are largely unchanged. The wage unemployment elasticity of pay—the wage curve—is calculated as $-.05$ for both hourly and weekly wages. Consistent with Blanchflower and Oswald’s (1990) claim, we also find that the UK evidence does not support the view that long-term unemployment is an important element in the wage determination process. We find no evidence that the long-term unemployed have any different impact on wages than the short-term unemployed. Hence, we conclude that it is singularly inappropriate for the MPC to reduce the level of slack due to the number of long-term unemployed. The MPC has produced no evidence for the

5. Gross weekly earnings is available in the LFS from winter 1992, whereas hourly pay is available from spring 1993. In the case of the 1992 data we can use only the winter data. Region of usual residence is defined across these regions: Tyne and Wear; rest of Northern Region; South Yorkshire; West Yorkshire; rest of Yorkshire and Humberside; East Midlands; East Anglia; Inner London; Outer London; rest of South East; South West; West Midlands (metropolitan); rest of West Midlands; Greater Manchester; Merseyside; rest of North West; Wales; Strathclyde; rest of Scotland; Northern Ireland.

United Kingdom to sustain its view that an adjustment should be made, and based on the new evidence presented here we draw exactly the opposite conclusion: No downward adjustment should be made.

EVIDENCE ON UNDEREMPLOYMENT AND ITS IMPACT

In a series of recent papers we have examined the extent of underemployment in the UK economy (Bell and Blanchflower 2011, 2013a, 2013b) based on data from the Labour Force Surveys from 2001Q2 through 2014Q4.⁶ Workers are asked if they would “like to work longer hours, at current basic rate of pay, given the opportunity?” If they respond in the affirmative they are asked for the number of hours they would like to work. A similar set of questions is asked for those who would like *shorter* hours. The responses for each series through 2014Q1 are plotted in figure 5, which shows that until 2008 the two series were essentially equal to each other. With the onset of recession there was a slight drop in the “fewer hours” series and a big jump in the “more hours” series. Figure 6 plots the seasonally adjusted underemployment rate and the unemployment rate. In 2014Q1 the underemployment rate was 8.4 percent and the unemployment rate 6.8 percent; both have dropped from their peaks in 2011Q4.⁷ The MPC in its inflation reports also states the underemployment rate using our methods, although it expresses it as the number of hours the currently employed on average would like to work, which of course is equivalent. In table 3D of its *Inflation Report, May 2014*, it reports the level of underemployment as follows:

	1998–2007	2012	2013H1	2013Q3	2013Q4
Average hours	32.4	31.9	32.0	32.1	32.1
Desired hours	32.1	32.4	32.7	32.7	32.6

Note: Table taken from MPC Inflation Report, May 2014.

Averaged across all workers underemployment amounts to approximately an additional half an hour per worker. Given there are 32.7 million workers in the United Kingdom working an average of 32.1 hours, this would amount to approximately half a million additional workers, which is a lot of additional slack.⁸

6. See David Bell and David Blanchflower, “Underemployment,” <http://bellblanchflowerunderemployment.com/>, February 10, 2014 (accessed on June 25, 2014); see also quarterly releases of the Bell-Blanchflower Underemployment Index, Work Foundation, <http://www.theworkfoundation.com/Datalab/The-BellBlanchflower-Underemployment-Index>.

7. For details on how the underemployment rate is calculated see Bell and Blanchflower (2011, 2013a, 2013b).

8. In the United States there has been little movement in underutilization rates. The broad measure of underutilization, U-6, has moved very closely with the unemployment rate. What has moved is the inactivity rate, which has fallen, which it has not done in the United Kingdom. For example in the United States in 2008Q1 the inactivity rate for 16 to 64 year olds was 25 percent compared with 27 percent in 2013Q4, whereas in the United Kingdom the inactivity rate fell between these two dates from 24 percent to 23 percent. Blanchflower and Posen (2014) show that the inactivity rate along with the unemployment rate pushes down on wages. See also Erceg and Levin (2014).

In table 4 we attempt to determine who the underemployed are using microdata from the LFS from 2001Q1 through 2014Q1. In total there are 2.8 million observations. We set the dependent variable to zero if the worker responds that he or she doesn't want to change the hours; if he or she wants longer hours, then the number of hours wanted is included as a positive number. If the worker says he or she wants fewer hours then that number is included as a negative number. The mean of the variable is negative from 2001–08 and positive after that.⁹ We include controls for region of residence; year dummies and controls for type of public sector organization and schooling (not reported); age, gender, race; whether the respondent was an A8 or A2 migrant; and whether he or she was a full-time worker. Separate estimates are provided for the whole time period and for the recession years of 2012Q1 to 2014Q1. The third and fourth columns are restricted to employees only, adding years of tenure and its square and whether the job was permanent. In the final column the log of hourly pay is included as a control, which reduces the sample size since earnings data are provided only in the first and fifth of the five sample waves.

The main findings are that the young and the least educated and minorities, who have the highest unemployment rates, are especially likely to say they would like more hours.¹⁰ Similarly migrants from the A8 and the A2 accession countries are also especially likely to desire more hours, as are racial minorities. The self-employed also want more hours as do those with temporary or part-time jobs. In the final column, and ignoring issues of endogeneity, it is apparent that low-wage workers want more hours.

In a recent speech Weale (2014) argued that

It is obviously tempting to look at these figures and regard the gap between actual hours and desired hours as a simple additional source of labor market slack. On that basis it might seem that hours worked could rise by around 1½ percent, simply as a result of people finding as much work to do as they would like to do. There are, however, grounds for caution, even before those figures are translated into effective labor supply. ... It may be the case that some of the net underemployment is a response to the state of the economy rather than any indication of genuine extra capacity. For example people whose partners lose their jobs may well say that they would like to work longer. But once their partners find new jobs, they may lose interest in doing so.

Or they may not. To be clear there are no other papers that imply that our underemployment index¹¹ overstates how much underemployment there is in the United Kingdom.

9. The mean of the variable varies by year: 2001 = -0.27; 2002 = -0.29; 2003 = -0.31; 2004 = -0.33; 2005 = -0.25; 2006 = -0.17; 2007 = -0.16; 2008 = -0.04; 2009 = 0.24; 2010 = 0.27; 2011 = 0.37; 2012 = 0.40; 2013 = 0.39.

10. 18–24 year old unemployment rates are 16.5 percent while 16–17 year old rates are 35.4 percent, compared with 6.6 percent overall in March 2014.

11. See Bell-Blanchflower Underemployment Index, Work Foundation, <http://www.theworkfoundation.com/Datalab/The-BellBlanchflower-Underemployment-Index>.

We now turn to an analysis conducted by Weale (2014) where he examined underemployment using LFS data based on a longitudinal sample of individuals observed in the first wave in 2012 and for the fifth time in 2013 that reduces the amount of net underemployment by two-thirds. His findings are reported in table 5, along with the sample sizes in parentheses. Weale finds that those who said they were underemployed said they wanted an average of 11.7 extra hours per week. Those who were underemployed in the first wave but fully employed in the fifth wave increased their hours by 6.5 hours per week. Those who were underemployed in the first wave and were fully employed in the second desired a reduction of 11.3 hours per week but actually achieved a reduction of 4 hours.

Table 6 reports the hourly wages Weale obtained from his sample; those who were underemployed at both waves had wages of £8.74 per hour compared with £9.49 per hour if they were fully employed in 2013. In the case of the overemployed the wage rates were £17.24 and £16.16 per hour. For those fully employed at both sweeps, the average wage was £13.94 per hour. He reports the hourly pay for people underemployed in 2012 and fully employed in 2013 was £9.40 in 2012 and £9.58 in 2013 (2013Q4 £s).

Weale then takes these data to adjust the number of potential underemployed hours downward in a highly arbitrary way as follows:

- There were 3,381,000 underemployed individuals who desired an average of 12.2 *more* hours per week each. This gives 1,284,991 extra workers assuming average hours of 32.1 per week.
- There were 2,031,000 underemployed individuals who desired an average of 11.5 *fewer* hours per week each. This gives 771,324 fewer workers assuming average hours of 32.1 per week.
- Therefore there are the equivalent of 513,667 *net* extra workers being underutilized.
- Weale then multiplies 1,284,991 by the difference between desired and actual hours for the overemployed, i.e., $(6.5/11.7) = 0.56$. So $1,284,991 * 0.56 = 719,595$ worker equivalents.
- This is repeated for the 771,324 underemployed by the difference between their desired and actual hours, i.e., $(4.0/11.3) = 0.35$. So $771,324 * 0.35 = 269,963$ worker equivalents.
- Weale calculates a “productivity adjustment” for the underemployed and the overemployed using the ratio of the wage of those who were underemployed in the first wave and fully employed in the second (£9.49 per hour) compared with the wage of those who were fully employed at both sweeps (£13.94 per hour), i.e., $9.49/13.94 = 0.68$. So $719,595 * 0.68 = 489,324$ worker equivalents higher.
- The productivity adjustment is repeated for the overemployed using the ratio of the wage of those who were overemployed in the first wave and fully employed in the second (£16.16 per hour) compared with the wage of those who were fully employed at both sweeps (£13.94 per hour), i.e., $16.16/13.94 = 1.16$. So $269,963 * 1.16 = 313,158$ worker equivalents lower.
- Deducting the worker equivalents overemployed (313,158) from the number underemployed gives the net amount of underemployed labor market slack, according to Weale. That is 176,167 or

approximately one-third of the 513,667 calculated above. Note that this productivity adjustment implies that a desired reduction of one hour in working time per week is equated to 1.7 ($= 1.16/0.68$) hours of desired increase in working time per week. Our analysis equated a one hour desired increase in working time per week with a one hour desired decrease in working time per week when measuring labor market slack. No surprise that the Weale measure results in a lower measure of labor market slack.

- We did not use wages in deriving our measure precisely because our intention was to derive a measure of labor market slack that was not itself a function of wages. To include wages in a measure of labor market slack, which in turn is to be used to capture aggregate wage pressure, invites criticisms of endogeneity bias.

There are numerous problems with this analysis:

- Weale admits that there are issues of selection bias in his analysis since only 60 percent of those in the survey at the start are still there five quarters later, especially as young people, who want the most extra hours, are the most likely to drop out, along with the least educated. This problem is illustrated in table 7, which reports the overall distribution of labor market status in 2012 and 2013 for five groupings: (a) the inactive; (b) the unemployed; (c) the fully employed, who say they don't want to change their hours; (d) the underemployed, who say they want to increase them; and (e) the underemployed, who want to lower them. In the first two columns we report the distribution for the whole of 2012 and 2013 including all five waves; here the sample sizes are more than 300,000. In column 3 we report the distributions in the first wave in 2012 and in the fourth column from the fifth wave of 2013, with sample sizes of around 70,000 and 55,000, respectively. In the final two columns we report the distributions in Weale's data, which includes individuals who are present in sweep 1 in 2012 and in sweep 5 in 2013, with a sample size for both of 38,842 or around 12 percent of the overall samples. It is clear that the underemployed and the overemployed are markedly underrepresented in Weale's samples. Weale's estimates suffer from selection bias.
- Weale's analysis is based on tiny sample sizes. Desired hours data are available, for example, on only 722 workers who are underemployed in both 2012 and 2013 and 628 overemployed workers in both years in table 5. The sample sizes fall to 395 and 390, respectively, in table 6 when wages are examined. Sample sizes are similar for workers who are underemployed in 2012 and fully employed in 2013 ($n = 769$) or overemployed in 2012 and fully employed in 2013 ($n = 628$). Sample size for wages, for these two groups in table 6, are 402 and 390, respectively. Movers are different from stayers.
- Weale focuses primarily on individuals who were underemployed in 2012, but as can be seen from table 8, of the 2,424 workers who were underemployed in 2013, 177 were inactive in 2012; 190 were unemployed while 1,305 were fully employed. In the case of the 2,105 underemployed: 14 were inactive in 2012; 29 were unemployed, while 1,401 were fully employed.

- Weale's comparison of desired hours with subsequently realized hours requires that the individual is present in wave 1 and wave 5 of the Labour Force Survey. The young, who typically want to work more hours, are less likely to respond in wave 5, conditional on having responded in wave 1, whereas the old, who typically want to work fewer hours, are more likely to respond on both occasions. Weale calculates changes in hours of work for employees who previously wanted to work more hours or fewer hours and who describe themselves as fully employed in wave 5. He finds that those who want to reduce their hours are less successful in doing so than those who want to increase their hours. According to Weale, in assessing labor market slack, one should discount the reduction in hours sought by the overemployed more heavily than the increase in hours sought by the underemployed. This suggests that our measure of underemployment underestimates its true extent, since we treat claims for more or fewer hours by the underemployed or overemployed as equally valid.
- His claim that our measure of underemployment exaggerates the extent of labor market slack is based on another calculation, which relates to productivity. He suggests that because the underemployed who remain underemployed earn less than those who become fully employed, the additional hours that the underemployed desire should be discounted by 32 percent, while the reduction in hours sought by the overemployed should be increased by 16 percent. These adjustments would result in a substantial reduction in our index of underemployment. However, because the sample sizes are relatively small, there is huge uncertainty associated with these adjustments—which are of course magnified when applied to various labor market aggregates. For example, estimates of the hourly wages of the fully employed and underemployed in wave 5 have standard errors of 1.1 and 2.1, respectively. Given that the difference between the means is 2.9, this hardly seems like strong statistical ground on which to argue that our index of underemployment represents a significant overestimate of the true level of slack in the UK labor market.
- The hourly wage data used to calculate productivity adjustment relate only to employees. This excludes all self-employed workers who want more hours than regular employees (see table 4).
- It is well known that longitudinal data analysis creates downward biases due to measurement error biases. Misclassification of a small number of workers will produce a much larger error in longitudinal data than in cross-section analysis and cannot be readily ignored. Richard B. Freeman (1984) points out that the reason for the greater error is twofold. “On the one hand, random misclassification of workers in two periods will produce a larger number of misclassified workers than random misclassification in one period. On the other hand, by obtaining information on underemployment on small numbers of changers, the longitudinal analysis will contain a smaller number of correct observations. As a result the proportion of observations in error will be much larger in the longitudinal analysis than in the cross-section analysis producing a larger *downward* bias.”

- The Weale analysis considers only one form of transition: from underemployment or overemployment to full employment. He does not pick up those who were fully employed in the first instance and subsequently express a desire to increase or decrease their hours. As is clear from table 8 a larger number moved from fully employed to underemployed (n = 1,305) than either stayed underemployed (n = 722) or became fully employed (n = 932).
- The biggest problem for the argument being put forward by Weale and the MPC is that our underemployment index indicates that there was no underemployment when the economy was running close to full employment. As figures 5 and 6 show, there was essentially no underemployment in the United Kingdom from 2000 through 2007 when the average unemployment rate was a mere 5.2 percent. When the recession hit, the difference between the number of extra hours per week that were desired increased, while the corresponding number from people who wanted fewer remained broadly flat. It seems hard to believe the two series won't close back to prerecession equality, if and when the economy returns to full employment.

CONCLUSIONS

Our paper contests the view that the long-term unemployed, because of their supposed greater distance from work, should be treated as a different category when assessing the level of slack in the UK labor market. Microeconomic evidence from the United States and our evidence from the United Kingdom, cannot distinguish any statistically significant difference between long-term unemployment and overall unemployment in their effects on wages. There is zero empirical justification for focusing only on the short-term unemployed when calibrating slack in the UK labor market.

We also argue that there is insufficient evidence to infer that our recent estimates of underemployment tend to exaggerate the extent of labor market slack. Weale argues that responses in the UK Labour Force Survey cannot be taken at face value. When asked whether individuals want to increase or decrease their weekly hours of work, Weale contends that the employed exaggerate the change in working time that they desire—upward or downward. Using data only for 2012, he states that those who wanted to increase or decrease their hours at the beginning of the year and then claimed that they were fully employed at the end of the year did not achieve the increase or reduction in hours that they wanted at the outset.

There are several empirical issues with Weale's analysis (2014). These include sample selection biases and small sample sizes, which inevitably lead to relatively large standard errors and undermine the precision of adjustments to aggregate changes in desired hours. In particular, the productivity adjustments, which are crucial to his argument, are subject to significant uncertainty. These within-sample issues are further amplified by the fall in response rates between wave 1 and wave 5 and the absence of the self-employed from the analysis.

The last time interest rates were raised was in July 2007. At that time the unemployment rate was 5.5 percent while our underemployment index stood at 5.8 percent—a gap of 0.3 percent. For the period February–April 2014, the unemployment rate was 6.6 percent, while the underemployment index in 2014Q1 was 8.4 percent—a gap of 1.8 percent. In July 2007, when interest rates were last raised, the CPI was 1.9 percent and the RPI was 3.4 percent. In May 2014, the CPI was increasing at 1.5 percent and the RPI at 2.4 percent per annum. In our view there is little or no reason to believe the underemployment rate will not return to balance as the economy approaches full employment.

With little or no foundation the MPC is making two arbitrary downward adjustments to labor market slack in the United Kingdom. This paper has argued that these judgments are inappropriate; the UK labor market is much further from full employment than the MPC calculates and in consequence there is much less wage pressure than it is forecasting. We prefer the evidence to guessing.

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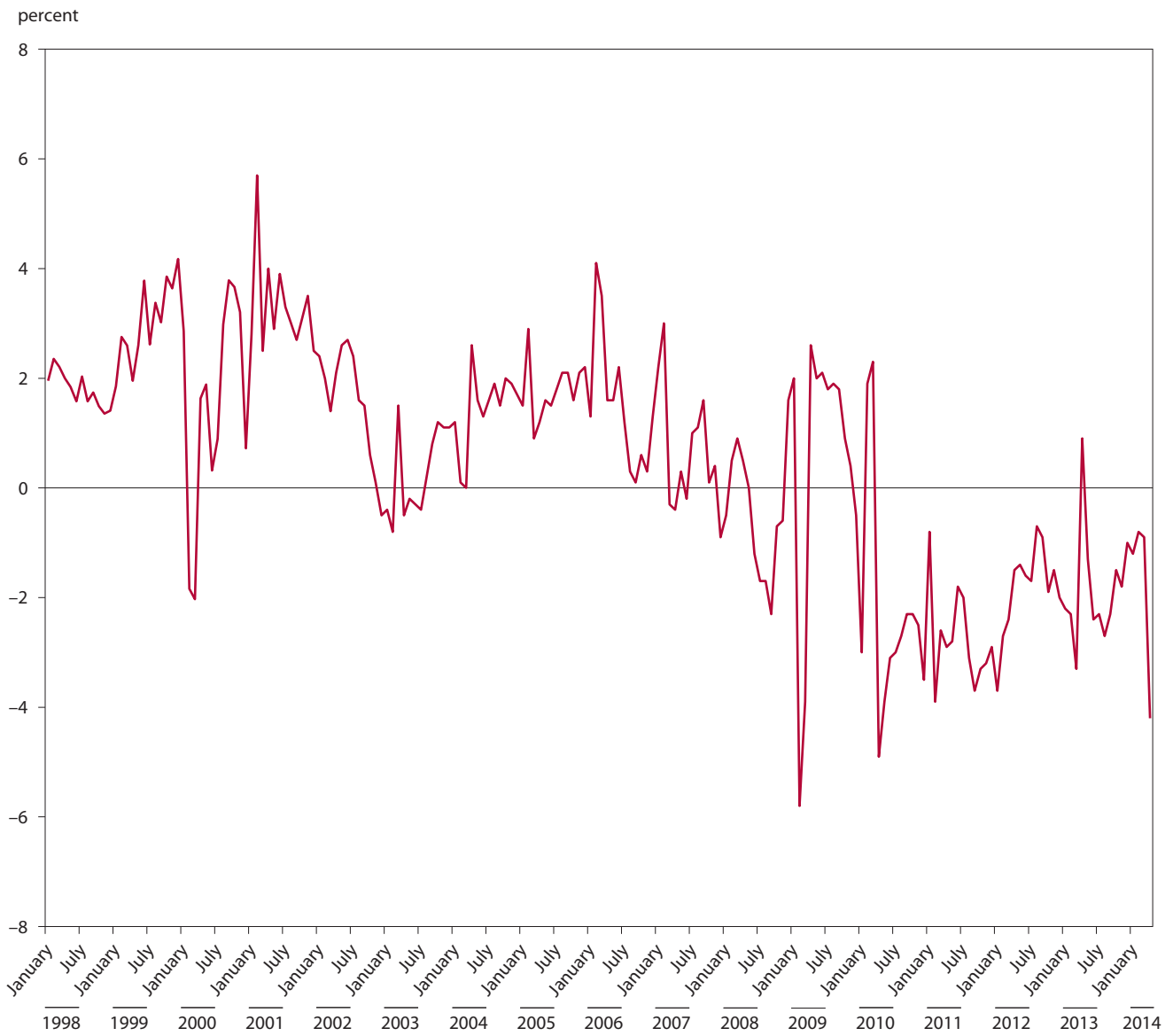
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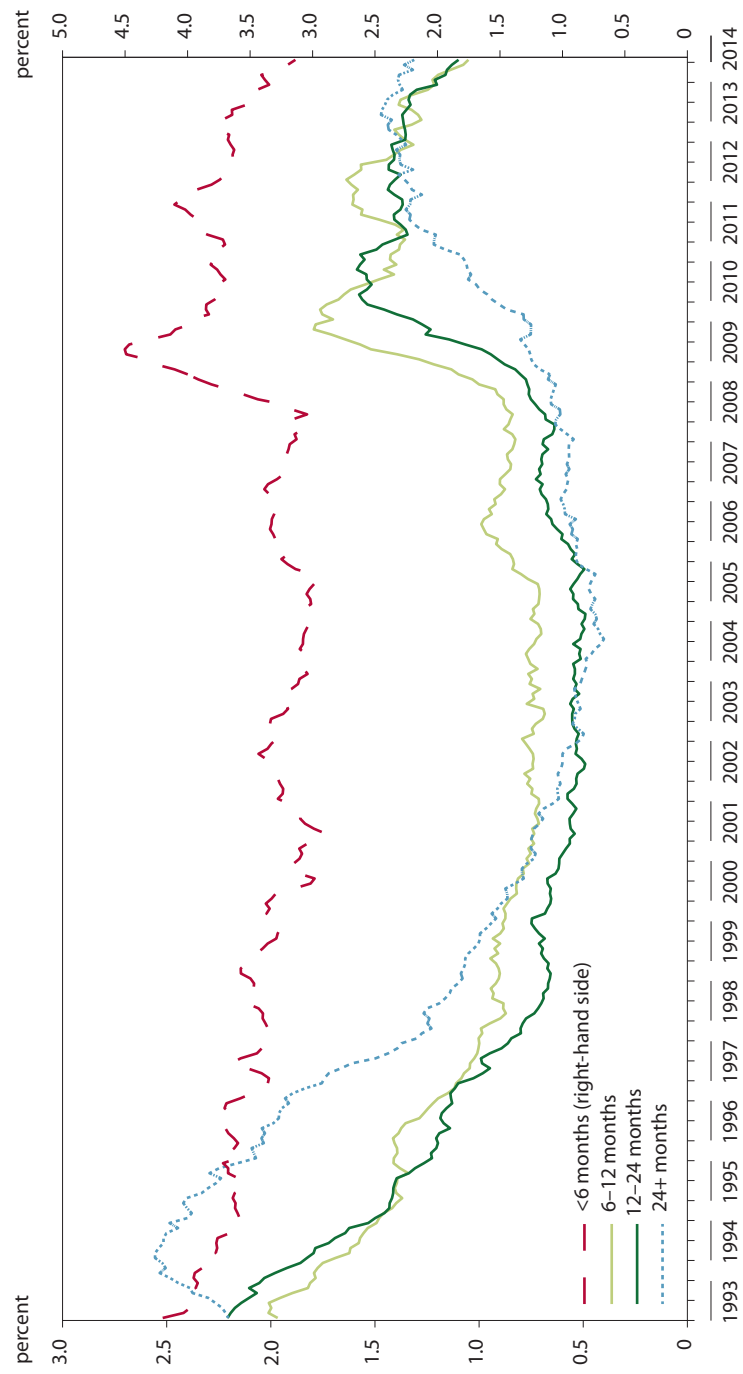
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Figure 1 Annual AWE growth deflated by the RPI



AWE = average weekly earnings; RPI = retail prices index
Source: Office for National Statistics.

Figure 3 Short-term and long-term unemployment rates (percent)



Source: Office for National Statistics.

Table 1 Percent of the unemployed with durations of one year or more

	1988	1993	1998	2008	2012
Australia	28	37	33	15	20
Canada	9	16	14	7	12
Denmark	24	25	27	13	28
France	46	33	42	37	40
Germany	46	40	53	53	45
Greece	46	51	55	48	59
Ireland	64	59	n.a.	27	62
Italy	69	58	60	46	53
Japan	20	16	20	33	38
Netherlands	49	52	48	34	34
New Zealand	13	34	20	4	13
Portugal	48	43	45	47	49
Spain	58	46	50	18	44
Sweden	15	16	34	12	18
United Kingdom	43	43	33	24	35
United States	7	12	8	11	29

n.a. = not applicable

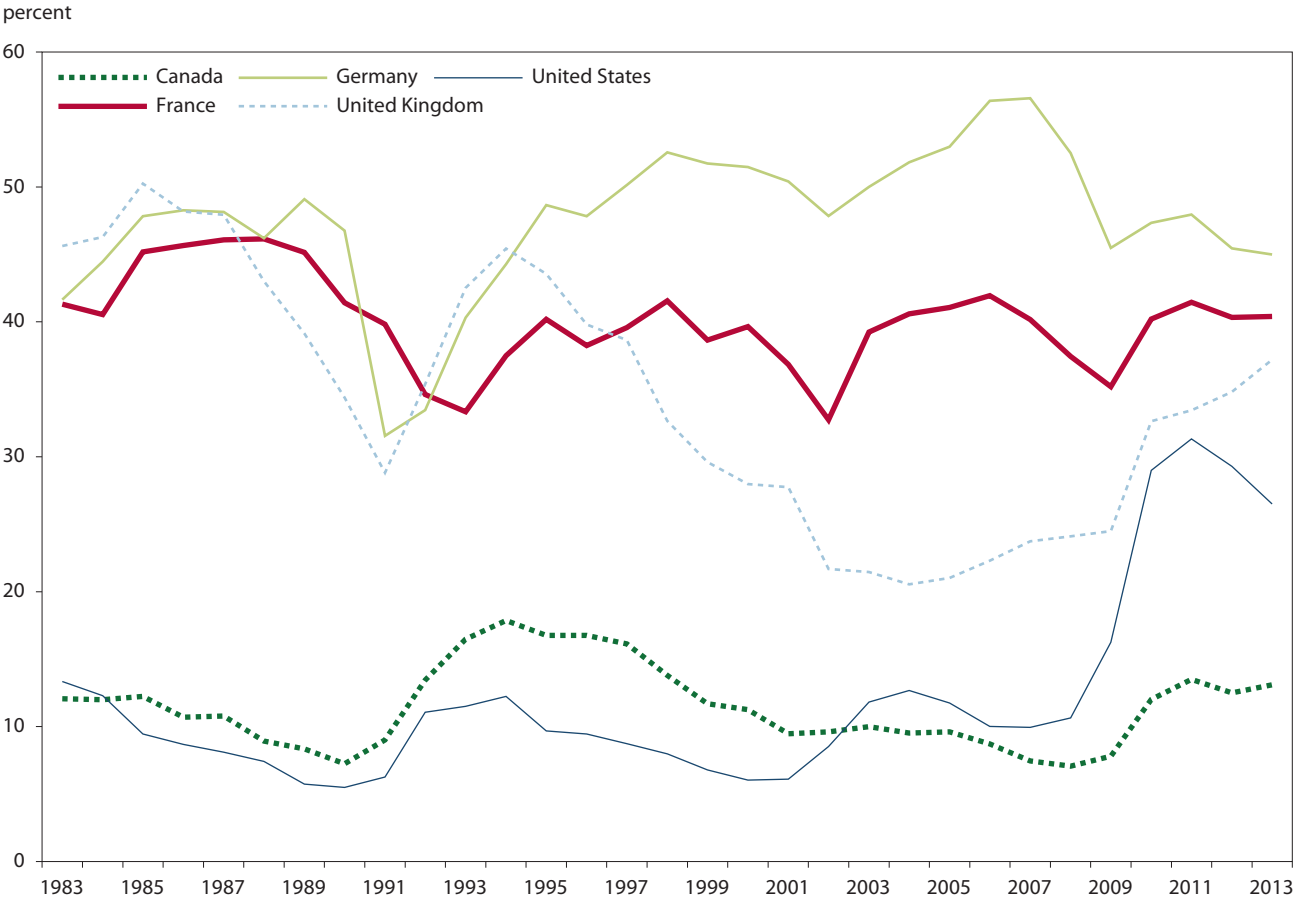
Source: Organization for Economic Development and Cooperation.

Table 2 Long-term unemployment as percent total unemployment, 2011Q4–2013Q4

	2011Q4	2012Q4	2013Q4
European Union (28 countries)	44	46	49
Euro area (18 countries)	46	48	52
Denmark	25	30	25
Finland	26	23	23
France	41	40	42
Germany	48	44	47
Greece	52	64	71
Ireland	63	60	62
Italy	51	55	59
Netherlands	34	33	38
Portugal	47	51	58
Spain	43	47	52
Sweden	20	20	21
United Kingdom	33	36	37

Source: Eurostat.

Figure 4 Long-term (52 weeks+) unemployment proportion, 1983–2013



Source: Organization of Economic Cooperation and Development.

Table 3 Wage equations and long-term unemployment, 1992–2013

a) Hourly (1993–2013)			
Lagged wage _{t-1}	.9625 (59.93)	.1343 (2.72)	.1245 (2.51)
Log unemployment rate _t	-.0025 (0.23)	-.0556 (3.42)	-.0464 (2.79)
Long-term unemployment _t	.0171 (0.39)	.0756 (1.38)	.0402 (0.72)
Year dummies	Yes	Yes	Yes
Region dummies (20)	No	Yes	Yes
Personal controls	No	No	Yes
N	399	399	399
Adjusted R ²	0.977	0.987	0.987
b) Weekly (1992–2013)			
Lagged Wage _{t-1}	.9144 (51.90)	.0573 (1.75)	.0300 (0.92)
Log unemployment rate _t	.0110 (0.84)	-.0550 (3.59)	-.0482 (3.00)
Long-term unemployment _t	-.0240 (0.44)	.0071 (0.14)	-.0176 (0.15)
Year dummies	Yes	Yes	Yes
Region dummies (20)	No	Yes	Yes
Personal controls	No	No	Yes
N	418	418	418
Adjusted R ²	0.977	0.989	0.989

Note: Personal controls include five schooling variables, age, gender, and four race dummies. T-statistics are in parentheses.

Source: Labour Force Surveys.

Figure 5 Number of desired hours



Source: Authors' calculations from the Labour Force Survey.

Figure 6 Underemployment and unemployment rates, seasonally adjusted (percent)

percent



Source: Authors' calculations from the Labour Force Survey.

Table 4 Desired hours, 2001–14

	2001–14		2012–14	
	1	2	3	4
Age 25–29	–.6524 (41.33)	–.8886 (18.56)	–.5037 (32.28)	–.4391 (15.05)
Age 30–34	–1.3005 (86.41)	–1.6092 (34.97)	–1.0375 (68.24)	–.8211 (28.83)
Age 35–39	–1.5279 (105.10)	–1.9401 (42.38)	–1.1409 (76.11)	–.9276 (32.91)
Age 40–44	–1.5830 (110.20)	–1.9573 (44.22)	–1.1128 (74.14)	–.8682 (30.78)
Age 45–49	–1.7047 (116.52)	–2.0798 (47.34)	–1.1920 (77.27)	–1.0124 (35.02)
Age 50–54	–2.1587 (143.60)	–2.5277 (56.40)	–1.6074 (100.41)	–1.4325 (48.04)
Age 55–59	–2.6944 (170.54)	–3.2351 (68.52)	–2.1065 (124.22)	–1.9123 (61.00)
Age 60–64	–3.5527 (189.76)	–4.4464 (83.73)	–2.9184 (143.44)	–2.7428 (73.26)
Age 65–69	–4.4674 (152.81)	–5.6215 (77.31)	–3.7716 (112.21)	–3.5155 (56.73)
Age 70–74	–4.4329 (91.78)	–6.0835 (50.33)	–3.7236 (63.13)	–3.5328 (32.10)
Age 75+	–4.2355 (55.62)	–6.0277 (27.29)	–3.6375 (35.53)	–3.424 (18.21)
Male	1.1722 (149.01)	1.3612 (60.49)	1.1198 (141.34)	1.1562 (80.12)
Self-employed	.0432 (3.98)	.4122 (13.59)	n.a.	n.a.
Degree	–.9532 (65.75)	–1.0255 (21.44)	–1.1011 (72.98)	–.7466 (25.44)
Higher Education	–.6636 (40.14)	–.7781 (14.44)	–.7437 (43.78)	–.4772 (15.22)
A-level	–.5501 (38.74)	–.6384 (13.18)	–.5844 (39.51)	–.4304 (15.78)
O-level	–.3581 (24.79)	–.3245 (6.62)	–.3837 (25.80)	–.2882 (10.61)
Other qualifications	.0810 (5.07)	.1372 (2.47)	.0191 (1.16)	.0643 (2.14)
A8 Accession	1.1696 (24.52)	.9303 (7.57)	.9678 (20.38)	.8201 (9.38)
A2 Accession	2.0563 (16.40)	1.7823 (8.83)	1.7476 (10.58)	1.1678 (3.80)
Mixed	.4625 (9.97)	.2694 (2.31)	.3979 (8.56)	.4468 (5.26)
Asian	.8983 (45.73)	1.0987 (22.27)	1.0182 (50.18)	1.0355 (27.00)
Black	1.3511 (48.08)	1.6573 (22.29)	1.3421 (47.91)	1.2125 (22.85)
Chinese	.4176 (6.13)	–.0987 (0.21)	.4135 (5.81)	.5435 (4.06)
Other race	1.1728 (32.40)	1.1417 (11.91)	1.1136 (29.99)	1.2133 (17.22)
Full-time	–3.7337 (416.87)	–4.6141 (181.65)	–3.4483 (374.53)	–3.2765 (196.20)
Tenure years			–.0853 (67.21)	–.0740 (32.33)
Tenure squared			.0017 (44.98)	.0016 (23.20)
Permanent job			–.8543 (53.77)	–.7565 (25.53)
Log hourly pay				–.5663 (38.98)
Constant	3.828	5.570	4.642	5.224
N	2,805,715	415,120	2,424,768	707,893
Adjusted R ²	0.088	0.107	0.098	0.099

n.a. = not available

Notes: Dependent variable desired change in hours. All equations include a full set of 23 region and 14 year dummies. Excluded categories: wave 1; age 75 and over; white and no qualifications. Region is region of residence. A8 = Poland, Czech Republic, Hungary, Estonia, Latvia, Lithuania, Slovenia, and Slovak Republic are set to 1 only if year > = 2004. A2 = Bulgaria and Romania are set to 1 only if year > = 2007. Controls are also included but not reported for DK A39 and not answered for region, race, and schooling. T-statistics in parentheses.

Source: Labour Force Surveys, 2001–14.

Table 5 Desired and actual changes in hours worked between 2012 and 2013

Labor market status in 2013		Labor market status in 2012		
		Under-employed	Fully employed	Overemployed
Underemployed	Desired	13.5 (722)	0 (1,127)	-8.3 (30)
	Actual	1.2	-2.9	10
Fully employed	Desired	11.7 (769)	0 (12,286)	-11.3 (656)
	Actual	6.5	-0.5	-4
Overemployed	Desired	9.7 (33)	0 (1,224)	-11.3 (628)
	Actual	7.1	1.4	-1.5

Note: Sample sizes in parentheses.

Source: Weale, Martin. Slack and the Labor Market. Paper presented at the Thames Valley Chamber of Commerce, Windsor, UK, March 20, 2014. Available at <http://www.bankofengland.co.uk/publications/Documents/speeches/2014/speech716.pdf> (accessed on June 20, 2014) and private communication with Martin Weale (2014).

Table 6 Hourly rates of pay by employment category (2013Q4 prices)

Labor market status in 2013	Labor market status in 2012		
	Underemployed	Fully employed	Overemployed
Underemployed	£8.74 (395)	£10.09 (571)	£12.65 (14)
Fully employed	£9.49 (402)	£13.94 (6,331)	£16.16 (400)
Overemployed	£10.96 (17)	£15.42 (674)	£17.24 (390)

Note: Sample sizes in parentheses.

Source: Weale, Martin. Slack and the Labor Market. Paper presented at the Thames Valley Chamber of Commerce, Windsor, UK, March 20, 2014. Available at <http://www.bankofengland.co.uk/publications/Documents/speeches/2014/speech716.pdf> (accessed on June 20, 2014) and private communication with Martin Weale (2014).

Table 7 Number of unweighted observations by labor force status (percent)

	All five waves		Wave 1	Wave 5	Wave 1 Weale*	Wave 5 Weale*
	2012	2013	2012	2013	2012	2013
Inactive	35.4	35.3	40.3	35.3	35.7	35.7
Unemployed	4.9	4.6	4.4	4.6	4.2	3.9
Underemployed	7	7.1	5.2	7.8	4.6	6.2
Fully employed	47.4	47.6	46	47.2	51.3	48.7
Overemployed	5.4	5.5	4.2	6.4	4.1	5.4
N	321,429	307,476	69,915	54,836	38,842	38,842

N = sample size; * = Martin Weale (2014).

Source: Labour Force Surveys 2012 and 2013 and private communication with Martin Weale (2014).

Table 8 Transition rates between labor market states, 2012 wave 1 to 2013 wave 5

2013 status	2012 status inactive					Total
	Unemployed	Underemployed	Fully employed	Overemployed		
Inactive	12,503	302	66	909	77	13,857
Unemployed	471	640	53	324	35	1,523
Underemployed	177	190	722	1,305	30	2,424
Fully employed	726	469	932	15,979	827	18,933
Overemployed	14	29	33	1,401	628	2,105
Total	13,891	1,630	1,806	19,918	1,597	38,842

Source: Weale, Martin. Slack and the Labor Market. Paper presented at the Thames Valley Chamber of Commerce, Windsor, UK, March 20, 2014. Available at <http://www.bankofengland.co.uk/publications/Documents/speeches/2014/speech716.pdf> (accessed on June 20, 2014).