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Employment and Unemployment Transcript

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Employment and Unemployment

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"When you see the unemployment figures quoted at two millions, it is fatally easy to take this as meaning that two million people are out of work and the rest of the population is comparatively comfortable. I admit that till recently I was in the habit of doing so myself. I used to calculate that if you put the registered unemployed at round about two millions and threw in the destitute and those who for one reason and another were not registered, you might take the number of underfed people in England (for everyone on the dole or thereabouts is underfed) as being, at the very most, five millions. This is an enormous under-estimate, because, in the first place, the only people shown on unemployment figures are those actually drawing the dole --- that is, in general, heads of families. An unemployed man's dependants do not figure on the list unless they too are drawing a separate allowance. A Labour Exchange officer told me that to get at the real number of people living on (not drawing) the dole, you have got to multiply the official figures by something over three. This alone brings the number of unemployed to round about six millions. But in addition there are great numbers of people who are in work but who, from a financial point of view, might equally well be unemployed, because they are not drawing anything that can be described as a living wage."

George Orwell, *The Road to Wigan Pier*, 1937.

Introduction

William Beveridge (1942) identified five Giant Evils in society of squalor, ignorance, want, idleness, and disease and, of course, this led to the establishment of the system of social welfare we largely still have in place today. I cannot help but think that unemployment, or less than full employment, is the dominant cause of these Evils. That much was almost certainly recognised by Beveridge himself as he shortly thereafter wrote about the need for Full Employment in a Free Society. Indeed he proposed a notional unemployment target of 3%. Whilst written during World War II, it was clear that the move to a peacetime economy would require a considerable emphasis on creating the right conditions for people to find a satisfying life of work. It is still an important objective in a post-industrial economy.

Indeed high inter-war levels of unemployment had heightened the need to address the question of full employment once the war was over. From 1929 to 1932 unemployment went from some 10% to 22% and at the same time real wages rose by over 10%. Such a powerful joint move would suggest that real wages were moving above their market-clearing level and creating high levels of involuntary unemployment, which is where people could not find work at the prevailing wage rate. Of course the increase in the real wage was closely related to the fall in the aggregate price level in the late 1920s and suggests that there was a degree of downward nominal wage rigidity. The subsequent fall in unemployment alongside stable real wages suggests that the demand for labour shifted out in the 1930s. I do not undertake a formal analysis as clearly wage-setting institutions and unemployment insurance also matter (Hatton and Thomas, 2010) but we can begin to understand how labour market developments are closely linked to notions of national well-being.

George Orwell's famous text on what he found in a Northern town is worth re-reading. This is not only because he makes the link between male unemployment and household welfare but also because he realises that the basic numbers alone do not measure the misery caused by high levels of unemployment. It is this set of points that made unemployment and employment not so much a state of nature to be borne but an obligation of government to correct with both demand-side policies, structural reform and institutional capabilities. In this lecture I will outline the standard macroeconomic approach to thinking about employment and unemployment and then try to understand why many were surprised by the response of labour markets to the two recent events: the introduction of a minimum wage and developments following the financial crisis.

Stylised Facts on the Labour Market

Macroeconomists tend to build models from a small number of stylised facts. The basic idea is to write-down models that conform to these stylised facts and then use these models for some form of policy analysis (see Chadha et al, 2016). So let me try, rather heroically, and help you enter the mindset of a macroeconomist faced with modelling the labour market.

I refer to the work by King and Rebelo (1999) on business cycle theory. They state that total hours worked has about the same variance as output, which implies that households switch into work from leisure as the economy runs into an expansion and reverse this behaviour in a contraction. We can think about total hours as comprising two components: the quantity of the employed and the hours they work on average. The former is typically called the extensive margin of labour supply and the latter is the intensive margin.

It is generally found that employment has a similar variance as output and thus susceptible to business cycle shocks. But hours per worker has less variance than output. Taken together these two observations imply that the cyclical variation in total hours worked stems from changes in employment rather than average hours. Labour productivity, which is the primary determinant of real wages has less variance than output. In fact, real wages are more stable than output and are broadly acyclical over many business cycles. Chadha and Nolan (2002) confirm the acyclicity on long run UK data but note there are clear periods of pro- and counter-cyclicity that suggest different shocks may dominate at different times. This is because labour productivity shocks will tend to induce pro-cyclical real wages and labour supply, or preferences for work over leisure, will tend to produce counter-cyclical real wages. Finally, the labour share of income, compared to capital or land, is around 60% and relatively stable.

The Basic Labour Market Model

The basic model of labour markets provides a helpful starting point. We start with some view on the overall labour force, which might be slightly upward sloping suggesting a higher rate of labour market participation at higher real wages. The supply of labour is upward sloping with respect to higher real wages because households or workers will substitute into hours of work compared to leisure. We draw this as a linear aggregate relationship although it is quite clear that this assumption can be questioned. Indeed even the original Phillips curve suggesting a relationship between the growth in money wages and capacity or unemployment was convex.

The demand for labour is downward sloping, as the marginal productivity of an additional worker falls and so the firm is prepared to pay a lower real wage to employee him or her. The market clears at $(w/p)^*$ and $N1$, with U voluntary employment with frictions or search in play. As explained in the previous section, shifts in demand for labour will induce increases in real wages, increases in employment and falls in unemployment. Whilst increases in preferences to work will do the same expect they will reduce real wages. If real wages are broadly acyclical but employment is procyclical then we would expect both productivity and preferences to be important drivers of the business cycle.

One aspect of labour markets as well is their observed asymmetry whereby negative shocks may have more persistent or a larger impact than a positive shock. Let us consider the impact of a permanent fall in labour productivity that shifts the labour demand function to the left. If real wages could adjust immediately with a fall in nominal wages and/or an increase in the price level then the economy could jump from $N1$ to $N4$. But if nominal prices are sticky because of frictions then employment will fall to $N3$ with two types of unemployment, $U1$ and $U2$, the former being involuntary and the latter voluntary. If there are substantial nominal rigidities we may observe limited falls in the real wage when there are recessions but as a consequence larger falls in employment and increases in unemployment than would otherwise be the case. A point to which we will return.

An Application to Minimum Wages

In the UK a national minimum wage was introduced in 1999 and the evidence from the first few years of its operation (Metcalfe, 2007) suggests against the expectation of the simple model applied that it helped equity, the distribution of income, and improved efficiency, by offsetting labour market frictions.

Before going on let me outline the simple model's predictions. Given a market clearing wage of (w/p) and a level of employment at $N1$, an increase in the minimum wage above the market clearing level, providing it is enforced, will lead to a fall in the total employed and an increase in overall unemployment. Once this model is in your mind it is hard to see any advantage from a minimum wage other than for those households lucky enough to belong to the set N_{min} .

And yet the evidence after its introduction suggests that the minimum wage may have raised real wages and the relative wages of the poor. There would also seem to have been little or no evidence of a significant effect on employment. Some of the arguments in support of these results that are particularly attractive are the dynamic ones. First that workers may have used jobs as a stepping stone to the labour market entry. And secondly that firms may have, faced with higher costs per worker, altered their work practices and raised human capital investment.

I now want you to imagine a form of labour market friction that means the effective cost of hiring a marginal worker is higher than his or her real wage, which might, for example, result from having to pay all workers the same wage. We combine this friction with the observation that the hiring firm has some local, regional or even national power and is one buyer amongst many sellers (a monopsonist). Because the cost curve faced by the firm is above the supply curve the firm will pick a point at which the costs it faces are equal to the returns per employee, VF . But the wage the firm is willing to pay to the employee here is only (w/p) , which implies $N2$ employed and an unemployment level of U (see, for example, Ashenfelter et al, 2010). If we impose a minimum wage in this market of $(w/p)_{min}$ both employment will rise and unemployment will fall.

Overall it is rather hard to understand exactly what the impact was of a minimum wage because there was so much else going on! An important question that I largely side-step is that of migration, which broadly speaking will tend to lower real wages if migrants are close substitutes to existing labour supply. But to the extent that

migrant labour is a complement to the existing labour supply it can just as easily increase the demand for labour, as it might increase labour productivity and thereby increase wages. In the long run the implication for real wages also depends on the firm choice of capital-labour in production. If following an initial increase in labour, firms decide to increase capital to restore the original capital-labour mix then real wages must return to their original level if returns to scale are constant (Borjas, 1995).

Metcalf (2007) concludes with a number of observations on the impact of the minimum wage. First that the relative price of minimum wage-produced consumer services rose relative to the RPI. Secondly, that profits in firms employing low wage workers fell relative to other firms. Next, that the overall share of profit in national income has been lower since the introduction of the national minimum wage. And, if anything, firms tended to adjust hours rather than the number of workers employed. But although the work is convincing it does seem quite hard to unpick the exact impact in the midst of a long expansion in activity. We will wait to see what happens with future innovations in the national minimum or living wage.

But the results do suggest that labour market frictions -- imperfect information, mobility costs and tastes -- give the employer some market power and if the extent of this market power is reined in by appropriate legislation social welfare can be improved.

After the Recession

The large recession following the financial crisis was explored in the previous lecture. And given the size of the fall in activity one might have expected a large increase in the rate of unemployment. Indeed economists posit a stable relationship between GDP, or the output gap, and unemployment, which is called Okun's Law. A traditional view was that a 2-3% move in the output gap would be associated with a 1% deviation in unemployment from its natural level. Indeed one might go even further and say, if we believe the relationship is stable and that we can measure unemployment but not the output gap, we might be able to use the deviation in unemployment to gauge the extent of the output gap, or spare capacity in the economy. The IMF (2011) estimated that the 3% increase in unemployment implied a change in spare capacity of some 6-7% i.e. from a negative output gap of around 3% to a positive one of around 3-4%. But if you thought that the change in spare capacity was more like 10-15% following the Great Recession then you might have expected unemployment to have increased by something nearer to 6% than 3% and that is the puzzle.

But the UK employment experience after financial crisis can be explained by labour market flexibility. The labour market reforms in the last three decades of the twentieth century created the conditions for a flexible response to the recession. These reforms shifted incentives to employers with reductions in tax and made unemployment (and non-participation) support less generous. There was also an increase in the institutional flexibility of the labour market with some reform of trade union powers and employment protection legislation. Trade union power also diminished because of the decline in both traditional manufacturing industry and of large public sector monopolies.

Economic policy under the coalition from 2010 was focussed on reducing public sector expenditure and employment to create space for the private sector to create employment. Pissarides (2013) goes on to argue that "this was not to be, partly because the public sector spending cuts had an impact on aggregate demand which checked the expansion of the private sector but also because of the debt crisis in the Eurozone, which reduced export demand. The result was a replacement of the lost public sector jobs by new private sector jobs but no job creation over and above this level, with the economy remaining at the initial depressed state".

These developments can be examined in the context of labour market tightness, which plots the vacancy rate against the unemployment rate and is called the Beveridge Curve. If there is a flow of people searching for jobs at any one time, then an increase in vacancies ought to increase the probability of match. Conversely if the vacancy rate is low, those in search will have a lower probability of finding a match and the unemployment rate will rise and so the curve is a schedule not unlike the Phillips curve. Where we lie on the Beveridge curve will depend on the aggregate function relating firm demand for employees and overall macroeconomic conditions, which might be represented by capacity. The Beveridge curve will tend to shift in or out depending on structural factors in the labour market and also on the state of external demand. But what we can see in the UK case is that following the financial market shock the vacancy rate fell by around half a percentage point and unemployment rose by some 3%. Note also that there has also been a shift out in the curve since 2010 meaning that the vacancy rate in 2014 was consistent with a higher level of unemployment than previously.

So even if we make the case that unemployment and employment surprised us in the right way in the aftermath of the recession there are still major issues of concern. What we can observe is that the real output per hour has not recovered especially well after the recession. Blundell et al (2014) ascribe this result to both an increase in the overall supply of labour hours but also to a fall in the capital-labour mix, which tends to reduce labour productivity. The fall in median real wages and the unemployment faced by younger members of the workforce remains a particular concern looking ahead.

Conclusion

The labour market is the key interface between macroeconomic fluctuations and household income. Simple labour market models look flawed as they do not treat very well the institutional and informational frictions that dominate labour markets. Standard macroeconomic models allow for some business cycle variation in the number of people employed, the so-called extensive margin, and in hours, the so-called intensive margin. But macroeconomics mostly lacked a theory of unemployment and search until there was incorporation of a matching function in which the tightness of the labour market was key, which is expressed by the ratio of vacancies to the unemployed - the Beveridge Curve.

In the UK two recent events tell us about the importance of labour market frictions. First the introduction of the minimum wage did not simply increase wages, lower employment and increase unemployment. The evidence from the first decade of its operation tells us that labour market frictions are substantively important as wages seemed to have risen across the income distribution with little or no negative impact on the extensive margin.

In the aftermath of the large recession in 2008-9, we might have expected a similarly large increase in unemployment if some kind of aggregate Okun Law were in place. But unemployment increased by barely 3% or so. The post-recession fall in real wages suggests that there was both an increase in labour supply and fall in the capital-output ratio, as firms hoarded labour rather than invested in new capital machinery in the face of financial constraints (Blundell et al, 2014). Pissarides (2013) goes on to argue that the movements along the Beveridge curve represented a reasonably efficient response to the shocks suffered. The real answer will be some improvement in productivity and it is that to which we turn next.

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