

Young people and recession. A lost generation?

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Sunday, June 6, 2010

Summary

We review the effects of the current recession on youth labour markets. We argue that young people aged 16-24 continue to suffer suffered disproportionately. Using the USA and UK as case studies, we analyse youth unemployment using micro-data. We argue that there is convincing evidence that the young are particularly susceptible to the negative effects of spells of unemployment well after their initial experience of worklessness. Because the current youth cohort is relatively large, the longer-term outlook for youth unemployment is quite good, but there is a strong case for policy intervention now to address the difficulties that the current cohort is having in finding access to work.

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

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1. Introduction

Youth joblessness has been a problem in most OECD countries for several decades. It has been the subject of a massive range of policy interventions. Hundreds of different policies for dealing with youth unemployment have been designed and implemented: many have been carefully evaluated using control groups and natural experiments

Yet the accumulated wealth of policy experience has failed to prevent a rapid rise in youth unemployment during the current recession. This must surely raise serious questions about the relevance of past policy lessons to the present predicament of the youth labour market. Should we discount these past lessons, and what can we learn about future policy formation from the experience of the 2008 recession?

These issues are the subject of this paper. We also discuss the longer term implications of youth unemployment and its effects on the well-being of the young. We begin by setting the background context of longer-run trends in youth unemployment. Using evidence across a range of developed countries, we then describe the dynamics of youth unemployment during the current recession; we then discuss some micro-econometric evidence from the UK and the USA spanning the period before and during the recession; finally we take a controversial line on policy, arguing that the conventional wisdom on youth employment policy has turned out to be largely irrelevant during this recession. The solution to the youth unemployment problem is simply put – more jobs for young people.

2. Background

The ages between 16 and 24 are generally associated with transition from school to work. Individuals make these transitions at different ages in this age group, usually conditional on the level of education that they attain. Some may transit more than once. At any point in time, individuals occupy one of a number of states based on the combination of education and labour market status that they currently select. They may combine work with study, or may concentrate exclusively on one or the other. A broad definition of youth unemployment includes students that express a desire to find work as well as those that seek work and have finished their education. This is the definition that we largely work with in this paper.

Note however, that in a number of countries, including the UK and USA, interest has recently focused on a somewhat narrower group - those who are neither seeking work nor studying for a qualification. In the US, these are described as "disconnected" youth. In the UK, they are described as NEETs (Not in Employment Education or Training). How individuals select into these categories is conditional on a wide range of economic and social factors. The growth in their number has been associated with supply-side concerns about their "employability", which in turn has been linked to social and cultural factors as well as the quality of educational provision.

Youth unemployment rates that are higher than adult rates have been common in most developed countries since the 1970s. One way of calibrating differentials across countries is to calculate the ratio of youth to adult unemployment rates. [Table 1](#) contains

estimates of this ratio for each decade since the 1970s and for a set of ten industrial countries. The estimates are harmonised to US unemployment rate concepts through time and across countries by the Bureau of Labor Statistics (BLS).

Thus **Table 1** shows that between 1970 and 2008, across the range of countries selected, youth unemployment rates were, on average, 2.8 times higher than adult rates. Young workers are consistently more likely to be unemployed than adults. Some countries, such as Sweden and Italy, have youth-adult ratios that are well above the international average, while others, such as Germany, Netherland, Canada and Japan, have kept youth-adult ratios relatively low throughout the period. The youth-adult ratios in some countries, such as Italy, Australia and France, have fallen over time, while in others, such as the UK and Sweden, the young have tended to comprise an increasing proportion of total unemployment.

Figure 1 illustrates the variation in youth unemployment rates in a single country, the UK, from 1975 to 2009. It shows that youth rates have been consistently above the overall unemployment rate since at least the mid-1970s. It also shows the relative deterioration in the labour market situation of the young over the period: while the overall unemployment rate in the UK has not risen above its 1984 peak in the current recession, the youth rate rose to an historic high in 2009. **Figure 1** illustrates that youth unemployment is affected by cyclical movements in the labour market, but there are also structural, or long-run trend, influences underlying the relative deterioration of the youth labour market.

Given its longstanding and pervasive nature, youth unemployment has attracted a range of research and policy interest. As early as 1982, Freeman and Wise (1982) were offering perspectives on the issue, while an early overview of the literature is provided by Rees (1986). International organisations such as the OECD, ILO and UNESCO are also heavily involved in research and policy advice relating to youth unemployment. One of the main rationales for the OECD Jobs Study (1994) was the desire to improve the working of the labour market and so reduce high levels of youth unemployment. Youth unemployment is monitored on a regular basis by the ILO, particularly in developing countries. UNESCO (2004) provides an annotated bibliography of research on youth labour market issues across the world.

The OECD has recently undertaken studies of youth labour markets in sixteen countries: Australia, Belgium, Canada, Denmark, France, Greece, Japan, Korea, the Netherlands, New Zealand, Norway, Poland, the Slovak Republic, Spain, the United Kingdom and the United States.¹ Its main recommendations relate to improvements in the school to work transition and improved training and apprenticeship programs as well as lowering the cost of hiring the young and reduced job protection (Scarpetta, Sonnet and Manfredi 2010). 2010). These are of course relevant, but we do not think address the main issue in relation to youth unemployment which is the lack of jobs. Before we discuss policy, however, we describe the current state of the youth labour market.

¹ http://www.oecd.org/document/59/0,3343,en_2649_37457_38019131_1_1_1_1,00.html

3. Youth Labour Markets in the Current Recession

This section concentrates on the plight of young people in the present recession. **Table 2** shows how youth unemployment increased in OECD countries between 2007Q1 and 2009Q4. This is a period which spans the beginning of the recession in most countries to the most recently available observation. There was substantial variation in youth unemployment rates before recession commenced, from 6.5% in the Netherlands to 24.4% in Poland. Once the recession commenced and demand fell rapidly, youth unemployment rates increased substantially. Some countries in particular experienced very significant increases in youth unemployment: in Spain the youth unemployment rate rose from 17.5% to 39.6%; in Ireland from 8.8% to 27.8%. At the end of 2009, more than half of OECD countries had youth unemployment rates in excess of 20%. The US narrowly missed: its youth unemployment rate increased from 10% to 19.1%. Only in Austria, the Netherlands and Norway were youth unemployment rates in single digits at the end of 2009 and only Germany experienced a reduction in the rate of youth unemployment between 2007 and 2009.

Given the substantial falls in output that occurred in countries such as Spain and Ireland, it also appears that the inter-country variation in youth unemployment rates may be related to the severity of the recession. However, the relationship is not straightforward: German output fell by 6.7% between 2008Q1 and 2009Q1 but its unemployment rate was virtually unchanged over the same period. The output fall in the UK was double that of the United States and the increases in youth unemployment are comparable but the overall increase in unemployment rates was smaller. Thus, with some exceptions, the wide range of strategies intended to reduce youth unemployment failed to contain the recession-driven increase in youth unemployment in the OECD. The prima facie evidence is therefore not favourable to these policies, though one might reasonably argue that the counterfactual is difficult to identify.

In the USA, the increase in youth unemployment has been more concentrated among young men. Data from BLS indicate that, the unemployment rate for males aged 16 to 24 in the USA increased from 12.7% in 2008Q1 to 22.0% in 2009Q4: for females the equivalent increase was only from 10.2% to 15.9%. In the EU, the increase has been more balanced across the sexes, with Eurostat data indicating an increase from 15% to 21.1% for men, and from 14.8% to 19.5% for women, aged 15 to 24 from 2008Q1 to 2009Q3.

In **Table 2** we also provide the latest EU data for April 2010. Youth unemployment rates continue to rise in most countries. Rates are especially high in countries that have been subject to sovereign debt crisis including Greece (28%), Ireland (27%), Italy (30%), Hungary (27%), Portugal (22%), and Spain (40%). Fiscal retrenchment in these countries will likely impact the young especially hard. It may also be difficult to alleviate the youth unemployment problem in the UK, given that the new government has also started to cut public spending and youth unemployment rates exceed 20%.

Another dimension of youth unemployment is the extent to which it is correlated with educational attainment. **Table 3** contains information on changes in youth unemployment by educational qualification in the EU. Three categories of education are defined: those with primary or more secondary qualifications; those with upper secondary or some form of nontertiary education and those with tertiary level qualifications. Where available, data are shown for 2008 Q1 and 2009 Q3.

A more complex picture emerges. First, it is not clear that increases in youth unemployment have been concentrated on the poorly educated. In the EU as a whole, rates of unemployment among those with a tertiary education qualification have risen more sharply than have those with primary or secondary qualifications, albeit from a lower base. Thus in Belgium, Italy and a number of eastern European states, unemployment rates among graduates are higher than those with a secondary qualification. One possible explanation is a genuine oversupply of graduates with relatively high reservation wages. But an alternative relates to differences in labour market experience. Within the 16-24 age group, graduates have less experience of full-time work due to their longer period of study. If employers' immediate reaction to a recession is to stop hiring, then graduates may be in a more difficult position than those with lower qualifications, who already have jobs in which they have built up some experience.

When considering the position across *all* age groups, those with higher qualifications do experience lower unemployment rates. According to the *Eurobarometer* #70.1, which surveyed respondents in the EU27 between October and November 2008, the weighted EU27 average unemployment rates by education attainment suggested unemployment rates of 4.7% for individuals who left school at age 20 or higher and 9.0% for those who left school at a younger age. Unemployment rates were 7.6% for the indigenous populations and 11.1% for immigrants.

Many policy debates on youth employment focus on supply-side issues and pay little attention to the demand side of the labour market. Our contention is that much of the difficulties that youth now face has to do with a lack of employment opportunities and, in particular, with a labour market in which opportunities for young workers are declining more rapidly than those for older employees. To illustrate, consider **Table 4**, which shows how employment by age group changed since the start of the recession. We consider three age groups: those between 15 and 24; those of prime working age between 25 and 49 and older workers aged 50 and above. Eurostat data on employment by age are available for the period 2008Q1 to 2009Q3 for most EU countries.

There is a clear contrast in almost all countries between the experience of younger and older workers in this recession. Youth employment has fallen sharply in many countries but especially in Estonia, Ireland, Latvia, Lithuania and Spain. The experience of older workers has been quite different: in many countries there has been an *increase* in the employment of older workers during this recession. This is a dramatic shift. Thus, for example, in Germany, employment among young people fell by 5.6%, while the employment of workers aged 50 and over increased by 6.5%. In Spain employment of the

young fell by 23.9%, of the middle-aged by 7.6%, but there was no change in employment of older workers. This pattern was replicated in several other countries including the UK, Italy, Poland, Portugal, and Ireland. For the European Union as a whole, employment of the young fell by 5% while there was a 3.9% increase in older workers' employment.

Employment among younger workers has dropped much more rapidly than that of older workers during this recession. Given the short period over which the change has taken place, it is unlikely that movements in relative wages or productivity can provide a convincing explanation. It may be that industries with a high concentration of younger workers have suffered disproportionately or that younger workers are more likely to have been selected for redundancy, perhaps because they have lower productivity or because the costs of severance are lower for this group.

Table 5 shows how employment changed by country and industry in the pre-recession period from 2000 to 2007. This was a period of considerable growth in employment throughout Europe. Substantial increases of 53.8% and 53.3% occurred in Ireland and Spain respectively. Most other countries enjoyed growth of at least 10%, though the UK (8.9%) and Germany (8.2%) were major exceptions.

Within some industries, there was astonishing growth. In Ireland and Estonia, construction employment more than tripled, while in Spain, it more than doubled. It increased in most other countries, with growth of more than 50% in Greece and Hungary. In contrast, construction employment *fell* by 23% in Germany. Employment in real estate, renting and business activities increased in all countries, while employment in public administration, health and education also grew rapidly, particularly in Ireland, Greece and Spain. The overall picture is one of substantial change in the labour market, that must have, at least partly, reflected changes in the structure of final demand.

Now consider employment changes following the onset of recession. Table 6 highlights two industries – manufacturing and construction. It shows how employment changed in these industries in the seven quarters between 2008Q1 and 2009Q3. Employment changes are again broken down by age group.

Both industries suffered significant overall job losses over this period. Between 2008Q1 and 2009Q3, employment in the EU had fallen by 7.8% in manufacturing and 5.9% in construction - a very substantial loss of employment in a short period. And in both sectors, there was a clear age pattern to the job losses. In the EU, employment of those aged 15-24 in manufacturing fell by 18.8%, while the reduction in employment of workers aged 50+ was a mere 1.8%. In construction, a similar age pattern emerged, with a fall in employment of younger workers of 13.4%, while the number of workers aged 50+ actually increased by almost 1%.

There were huge contrasts by country. In Ireland, youth employment in manufacturing declined by 47.4% and in construction by 63.6%. In Spain, the equivalent reductions

were 45.3% and 49.3%. These are massive job losses in a very short period of time. They cannot be explained by low-frequency changes in policy or supply conditions.

Germany, which is an outlier in the sense of having a relatively small increase in youth unemployment, experienced only modest reductions in manufacturing employment, while in construction, employment actually increased by 2%. Nevertheless, Germany did share the same pattern of changes in employment by age group with the rest of Europe. In its case, the employment of older workers increased, while younger workers suffered a significant fall in employment.

Tables 5 and 6 do suggest that the countries which experienced rapid increases in employment in the early part of last decade also suffered large reductions in employment following the onset of recession. The differing labour market outcomes may have been linked to countries' macroeconomic and credit policy. Thus, for example, the rapid increase in employment in Ireland, Greece and Spain was followed by a rapid decline, mirroring the behaviour of output in these countries, which in turn reflected their respective (non-labour market) policy environments. Labour is a derived demand.

Yet supply conditions should not be ignored: unfortunately the recession began just when there was a relatively large youth cohort in most EU countries. **Table 7** illustrates for a number of countries. We report the ratio of the number of twenty year olds to the number of ten year olds in column 1 and to the number of thirty year olds in column 2. In Russia and many former Soviet bloc countries, the size of the youth cohort will decline rapidly over the next decade. Indeed, there will be half as many twenty year olds in 2018 as there were in 2008 in Russia and Latvia. The decline is not as stark in most western countries but large reductions are likely, for example to 87% in the UK and to 82% in Sweden.

Table 8 pursues further the issue of the characteristics of the jobless young in the United States. Columns 1 and 2 report the results of estimating a regression model with a dummy dependent variable where the coefficients reflect the marginal effects of a unit change in the regressors (a dprobit). In this case the dependent variable is set to one if the individual is unemployed, and to zero if he/she is employed. Columns 3 and 4 estimate the probability an individual is employed with the dependent variable set to zero if employed and zero if either unemployed or out of the labour force (OLF). Modeling the employed as a share of the population (EPOP) is useful as the sample includes individuals in education who are excluded from the first two columns where the sample is the labour force. The table uses micro data from the Outgoing Rotation Group files of the Current Population Survey for 2005-2009 pooled. Both samples are restricted to young people between the ages of sixteen and twenty four. Controls include race, gender, schooling, state of residence, age and year. In each case we report results for 2005-2007 and 2008 and 2009 pooled.

The probability of being jobless is highest for those ages 16-19 and for men and the least educated. The results are broadly equivalent when the probability of being employed is modeled. The recent increase in youth unemployment has fallen especially hard on

young men and the least educated, based on differences in the size of the coefficients in the two time periods. Somewhat surprisingly the race coefficients change little, with young blacks especially impacted by joblessness in both periods.

For purposes of comparison **Table 9** presents equivalent results for the UK using data from the 2005-2009 Labour Force Surveys. Results are similar to those in the US. Young men and the least educated have fared worse in 2008 and 2009 than in the previous period as measured by the change in the size of the coefficients. In contrast to the US, the performance of young blacks in the UK worsened during the recession. In both countries those under the age of twenty, males, minorities and the least educated are especially likely to be jobless.

The worry is that the youth labour market problem will continue to worsen. Firms have not been hiring and this has especially impacted the young. In combination with the very large cohort this does not augur well for the immediate future. Nevertheless, although the current recession may be presenting challenges of a different order in respect of youth unemployment, past lessons may continue to be relevant. In the next section, we review some of these.

5. What Do We Know About Youth Unemployment?

There is a large literature on youth unemployment. In what follows we attempt to answer seven questions regarding the workings of the youth labour market.

1) Is youth unemployment cyclical or structural?

Clark and Summers (1982), in their classic study of the dynamics of youth joblessness argue that the problem of teenage unemployment arises from a shortage of jobs. "Aggregate demand has a potent impact on the job prospects and market experience of teenagers" (1982, p.230). Freeman and Wise (1982), for example, found in their study of youth joblessness in the 1970s that it was concentrated, by and large, among a small group who lacked work for extended periods of time. Over half of the male teenage unemployment they examined was among those who were out of work for over six months, a group constituting less than 10% of the youth labor force and only 7% of the youth population. Freeman and Wise reported that the youths who make up the relatively small group that was chronically without work had distinctive characteristics, They were disproportionately black; disproportionately high school dropouts, and disproportionately residents of poverty areas.

Blanchflower and Freeman (2000) identified one basic pattern in the job market for young workers: the disproportionately large response of youth employment or unemployment to changes in overall unemployment. They argued that the sensitivity of youth employment and unemployment to the overall rate of unemployment dominate sizable demographic and structural changes favorable to youth in determining how youths fare in the job market. Recently OECD (2008a) confirmed this conclusion "Youth unemployment rates are more sensitive to business-cycle conditions than the adult unemployment rate and this high-sensitivity tends to decline progressively with age".

There is also evidence that young people do especially well in booms. Freeman and

Rodgers (1999/2000), who analyzed the 1990s boom in the United States found that it substantially improved the position of non-college educated young men, especially young African Americans who are the most disadvantaged and troubled group in the US. Young men in tight labor markets experienced a substantial boost in both employment and earnings. Adult men had no gains and their earnings barely changed even in areas where unemployment rates were below 4%.

There is evidence of state dependence in youth unemployment. In this context, state dependence means that the experience of one spell of unemployment of itself increases the probability of further spells. This may be because on the demand side, employers are less willing to hire those with a record of unemployment or that, on the supply side, the experience of unemployment discourages individuals from job search activity.

State dependence would imply extended or repeated unemployment spells. These might attenuate the apparent cyclical sensitivity of youth unemployment in aggregate data, leading to the conclusion that youth unemployment is partially structural. And it is clear that some aggregate changes in youth unemployment are not directly linked to cyclical movements. Thus the ILO (2008) noted that recently there had been a *declining trend* in youth unemployment, suggesting that the world rate of youth unemployment rose from 10.9% in 1999 to a peak in 2004 of 12.6% and subsequently declined to 11.9 per cent by 2007. This is not a very large reduction and came at a time when there was a substantial policy effort to combat youth unemployment. This relatively small improvement was swiftly overtaken by events after the onset of recession.

2) *How has changed school enrolment impacted on youth unemployment?*

Most OECD countries have tried to extend the duration of formal schooling in recent decades. This delays entrance into full-time employment, but not necessarily part-time work. For example, the proportion of the young in the UK in full-time education increased from 26% in 1993 to 38% in 2007. Recent OECD data suggests that the proportion of the young who are in school is considerably higher in, for example, Belgium (60%); Finland (56%); France (61%), Italy (57%); Luxembourg (69%) and Sweden (57%). These increases reflect a common belief in most industrial countries that greater investment in human capital is required to maintain competitiveness, but also may reflect lowering costs of education as average family sizes fall. Yet again, it may be a defensive strategy, with enrollment increasing when the labour market deteriorates. For example, in 2010, applications to UK universities increased by 22 per cent over the previous year², reflecting the fall in labour market opportunities for youth.

One effect of the increased participation in further education is that the 16-24 cohort are now better qualified than in previous recessions. The UK Labour Force Survey indicates that 5.8 per cent of 16-24 year olds were graduates in 1993, while that share had risen to 13.2 per cent by 2008. The improvement in qualifications is more concentrated among

² See UCAS (UK Universities Admission Service)
http://wwwucas.ac.uk/about_us/media_enquiries/media_releases/2010/080210

females than males. By 2008, the proportion of females aged 18-24 with no qualifications had fallen to 4.6 per cent, but for males was still over 7 per cent.

Changes in attainment by gender, reflect changes in schooling rates. For example, in the US, the proportion of 16 to 19 year old enrolled in either high school or college increased by 8.9% between 1979 and 2003. But female enrolment increased by 14.1%, much more rapidly (Congressional Budget Office 2004).

Increased schooling affects youth unemployment in two ways. First, so long as increased educational attainment is increasing the “employability” of the young, it should increase the success rate of their job search activity. On the other hand, delayed entry to the jobs market caused by additional schooling may reduce the average “employability” of those that are economically active, since those selected into additional schooling are likely to be more able. This effect may be difficult to disentangle within aggregate statistics, since many of those taking additional schooling may also be seeking work and thus are still be classified as unemployed.

3) Has youth unemployment increased because of competition from migrants?

One potential cause of increases in youth unemployment is competition from migrants. In the UK, there is some evidence that suggests that the influx of immigrants from the A8 Accession countries from 2004 onward had some negative impact on the employment of the least skilled young people (Blanchflower and Shadforth 2009). But these effects are usually insignificant or when significant, quite small. Card (2009) can find no compelling evidence of a causal impact running from immigration to youth unemployment, though he does argue that competition between unskilled youth and immigrants in the lower tail of the earnings distribution may have increased inequality. There is little empirical support for the notion that increased migration is a root cause of higher rates of youth unemployment.

4) Are co-habitation decisions influenced by youth unemployment?

The time when older children leave home is influenced by, and influences, labour market status. Children who remain with their parents gain from intra-household transfers and reduced housing costs. The decision to cohabit is also a form of insurance against unemployment risk. This may affect labour supply decisions. Card and Lemieux (2000) find that when the labour market is performing poorly, the fraction of youth living with parents increases. But in addition to labour market effects, cohabitation decisions are also significantly affected by welfare systems, housing markets and culture (Chiuri and Del Boca 2008). The welfare costs of high youth unemployment may be lower in cultures where there is widespread social acceptance of children staying with their parents well beyond completion of high school. This may be an important effect in Mediterranean countries, where cohabitation with adult children is more common than in Northern Europe. But though this effect might suggest that the personal costs of youth unemployment vary spatially, it does not explain why the level of youth unemployment should change dramatically in a short period, as in the current recession.

5) Have youth wages been too high, so increasing youth unemployment?

High levels of unionisation among younger workers might raise their pay, but reduce their employment prospects. Unions generally operate rates for the job, which would have the effect of raising the relative wage of the young, making them relatively less attractive to employers. But, although the UK has relatively high youth unemployment rates, it has especially low union membership rates among the young. Blanchflower (2007) shows, using data from the UK Labour Force Survey, that union density rates for 16-19 year olds in 2004 were 4.3%. In 2007 the union density rate for 16-24 year olds was 9.8% (Mercer and Notley, 2008, Table 25). It does not appear that youths are pricing themselves out of work, unless their relative productivity is falling especially sharply, but there is no evidence to suggest this.

A more specific possibility is that legislated minimum wages have increased youth unemployment. Clearly the answer to this question depends on the level of the minimum wage. For example, these were introduced to the UK in 1997 but there is little or no evidence to sustain the argument that they have had an adverse effect on employment (see e.g. Metcalf, 2008). Again, even if this effect were strong, it could not explain the behavior of youth unemployment during this recession.

6) Have young workers been adversely affected by changes in the demand for skills?

The changing structure of *labour* demand may also be adversely affect young people's labour market prospects. A common explanation put forward to support this view is that of *skill biased technical change*. Technical change increased the skill requirements of production, leaving the unskilled, and particularly the young unskilled, at a significant disadvantage in the labour market (see e.g. Berman et al. 1994).

In the US, it is argued that industrial change has led to a significant change in the demand for skills (Autor, Levy, and Murnane 2003). Rather than additions to labour demand being entirely focused on high-skilled jobs, there has been some increase in demand for low-skilled workers. Many such jobs involve non-routine, or interactive, tasks that cannot be easily automated. In contrast, the demand for skilled workers whose work can be routinized (and therefore automated) has fallen, mainly as a result of automation. Such workers might typically have expected to earn wages close to the central deciles of the earnings distribution. The loss of these jobs means that the earnings distribution has been "hollowed out", making the progression from low to high skilled work more difficult.

Machin (2008) surveys this literature and argues that there is evidence of the "hollowing out" of the wage structure in countries such as Germany where this phenomenon has not been previously observed. Although one might expect that such changes in the structure of employment would affect the demand for youth employment in the medium to long term, we have already shown that there have been quite dramatic changes in employment structure in some European countries over the last decade.

7) Do youth employment policies work?

We have already discussed our scepticism around the suitability of existing youth employment policies in the context of the current recession. But there was already a body of evidence relating to these policies. Such policies are described as "passive" if they

provide automatic benefits to the unemployed or those in danger of becoming unemployed. These would include forms of unemployment insurance, unemployment benefit and tax credit. “Active” policies, comprise labour market interventions that are aimed at reducing unemployment and/or inactivity. Collectively, these comprise “Active Labour Market Programmes” (ALMPs). It is ALMPs that have attracted the bulk of detailed evaluation.

The general assessment of ALMPs is negative. Grubb and Martin (2001) define “special measures” as public training programmes, wage subsidy measures and public sector job creation. They argue that “almost all evaluations show that special measures are not effective for disadvantaged youths”. Boone and van Ours (2004), using aggregate data, suggest that spending on labour market training is the most effective form of intervention. They argue that the contrast between their result and those of micro studies result from increased training reducing the *inflow* into unemployment. This is an important point because most evaluations are partial in the sense that they focus solely on *outflows* from unemployment. Kluge (2006) conducts a meta-analysis of some 95 European evaluations studies and concludes that private sector incentive programs and policies that enhance job search, with possible sanctions for non-compliance, are the most effective forms of intervention. Nevertheless, his general argument is that, although there has been a great deal of policy experimentation and evaluation, no universally applicable policies to promote youth employment have been found.

In the US, the conclusions are similar. Heckman et al. (1999) argue that “neither the experimental or non-experimental literatures provide much evidence that employment and training programs improve US youths’ labor market prospects” (p.2068). The experimental impact studies of schemes operating under the Job Training programs in the USA, showed that the schemes had either no impact at all – or even more worryingly, they scarred participants. The experiment found negative and statistically significant impacts on the earnings of male youth in the 18 months after random assignment and negligible impacts on the earnings of female youth (Bloom et al, 1993). Heckman and Smith (1999a, 1999b) re-examined these results, but still concluded that their results for youth “fit comfortably into the pattern of several decades of research that finds very limited earnings effects for the types of services offered by JTPA”.

Past research has provided valuable lessons in relation to policy interventions to alleviate youth unemployment. The general assessment of these largely supply-side policies is negative. Further, most evaluations were conducted outside periods where there was a rapid decline in the demand for labour. It is difficult to see why they would fare any better when the demand for youth labour is in significant decline and unemployment is high.

In the next section, we investigate the effects of youth unemployment, both at the personal and societal level.

3. What impact does youth unemployment have?

There is a wealth of literature showing that unemployment is a stressful life event that

directly makes reduces individual well-being. This applies not just to the unemployed, but also may affect the employed due to increased anxiety over job security. Unemployment increases susceptibility to malnutrition, illness, mental stress, and loss of self-esteem, and increases the risk of depression. The unemployed also appear to be at higher risk of committing suicide, and of poor physical health outcomes later in life. Youth unemployment also has adverse social impacts. Higher unemployment is associated with increases in burglaries, thefts and drug offences. Unemployment is often part of the cycle where involvement in crime reduces subsequent employment prospects which in turn increases the probability of participating in crime.

There is new evidence that even youngsters who choose to go to college or university are hurt if they enter the labour market during a recession. Lisa Kahn (2010) has recently shown that the labour market consequences of graduating from college in a bad economy have large, negative and *persistent* effects on wages. Lifetime earnings are substantially lower than they would have been if the graduate had entered the labour market in good times. Furthermore, cohorts who graduate in worse national economies tend to end up in lower-level occupations.

Work by Giuliano and Spilimbergo (2009) suggests that the period of early adulthood (between 18 and 25) seems to be the age range during which people are more sensitive to macroeconomic conditions. They found that being exposed to a recession before age 17 or after age 25 has no impact on beliefs about life chances. However, youngsters growing up during recessions tend to believe that success in life depends more on luck than on effort; they support more government redistribution, but have less confidence in public institutions. Recessions seem to adversely effect youngsters' beliefs.

There is also recent evidence on the consequences of rising unemployment on young people from the UK. The Prince's Trust, which was established by the Prince of Wales, conducted a survey of two thousand young people in December 2009. In comparison with other young people the young unemployed were found to be significantly more likely to feel ashamed, rejected, lost, anxious, insecure, down and depressed, isolated and unloved. They were also significantly less happy with their health, friendships and family life than those in work or studying, much less confident of the future and more likely to say that they had turned to drugs, that they had nothing to look forward to and that their life had no direction. And many reported having suicidal thoughts.

Worryingly, unemployment while young, especially of long duration, is associated with permanent scars rather than the temporary blemishes that result for older workers. The majority of older workers get over spells of unemployment reasonably quickly while youngsters do not as they struggle to find a toe-hold in the labour market. The scarring effect of youth unemployment has two components: first, for the young, a spell of unemployment does not end with that spell; it raises the probability of being unemployed in later years. Second early spells of unemployment also carry a wage penalty. These effects are much larger than for older people experiencing unemployment. Arulampalam (2001) finds that a spell of unemployment carries a wage penalty of 6% on re-entry, rising after three years to 14%. Mroz and Savage (2006) find that a six month spell of

unemployment at age 22 results in an 8 per cent lower wage at 23 and even at ages 30 and 31, wages are 2-3 per cent lower than they otherwise would have been.

We can now update the evidence on the scarring effects of youth unemployment in the UK. We find new evidence that spells of youth unemployment have harmful impacts on a number of outcomes - happiness, job satisfaction, wages and health - many years later.

In order to explore the impact of unemployment while young on subsequent outcomes we examined data from the 1958 birth cohort, the National Child Development Study (NCDS). The NCDS has followed a cohort of people who were born in one week - the 3rd to the 9th March 1958. The National Child Development Study (NCDS) is a continuing longitudinal study that seeks to follow the lives of all those living in Great Britain who were born in one particular week in 1958.

To date there have been seven attempts to trace all members of the birth cohort in order to monitor their physical, educational and social development. The first three sweeps were carried out by the National Children's Bureau, in 1965, when respondents were aged 7, in 1969 (NCDS1), aged 11 (NCDS2), in 1974, aged 16 (NCDS3). The fourth sweep, NCDS4, was conducted in 1981, when respondents were aged 23. The fifth sweep was carried out in 1991, when respondents were aged 33 (NCDS5). For the sixth wave, conducted in 1999-2000, when respondents were aged 41-42 (NCDS6), fieldwork was combined with the 1999-2000 wave of the 1970 Birth Cohort Study (BCS70). The seventh sweep of NCDS was conducted in 2004-2005, when respondents were aged 46-47 years (NCDS7). It was conducted by telephone, and aimed to update the information gathered at NCDS6 in 1999-2000.

We have information available to us at age 23 in 1981 on 12537 respondents whether a) the respondent had ever been unemployed since the age of 16. Unemployment rates in the UK had risen from 5.4% in 1979 to 6.8% in 1980 and 9.6% in 1981, when the UK had moved into recession. Unemployment would eventually peak at 11.4% in the spring of 1984. In the sample, 44% reported that at some time in their working lives they had been unemployed. The question is whether unemployment when young impacts outcomes later in life and whether the effect an unemployment spell when young is greater than when older.

Here we examine four outcomes in 2004/5 when the respondents were aged 46-47 years a) life satisfaction b) self-reported health status and two for workers only c) job satisfaction and d) (log of) gross weekly wages in 2004/5 in NCDS7. We also make use of data on whether the respondent was unemployed at age 33 in NCDS5 in 1991. The issue is whether a period of unemployment when young has lasting effects; it turns out that it does. We also include a unique set of controls identifying father's social class when the respondent was born (and reported in the PMS 1958) as well as '11-plus', verbal and non-verbal test scores reported at age 11 in NCDS2 in 1969 - tests at the local level called 11-plus were given at that time to determine entry to grammar school. We are also able to include an indicator variable on health at age 23 measured by the malaise score (indicating a tendency towards depression), which is highly significant. For a study

using the NCDS Malaise scores at ages 23 and 33 see Cheung and Buchanan (1997). For an analysis of unemployment before the age of 23 and work histories of the NCDS birth cohort see Elias and Blanchflower (1989).

We additionally include controls for marital status (5), highest qualification (7), region (8) labour force status (11) home ownership (5), registered disability and gender. In the job satisfaction equations we only include three labour force status dummies, exclude the marital status and home ownership dummies and include 58 industry dummies. In the wage equation the sample is limited to employees and hence only has a part-time employee dummy. The results show that youth unemployment continues to hurt two decades later for the four 2004/5 outcome variables listed above, while unemployment in one's early thirties has little effect. As we will see, there are permanent scars from youth unemployment.

Results are reported in **Table 10**. We look at the four outcomes in turn.

i) **Life satisfaction.** Respondents in NCDS7 were asked "*On a scale from 0 to 10, where '0' means that you are completely dissatisfied and '10' means that you are completely satisfied, what number corresponds with how satisfied or dissatisfied you are with the way life has turned out so far?*" The mean life satisfaction score was 7.57 and 7.71 if the respondent had not been unemployed at age 23 or before and 7.42 if they had. Column 1 reports the results of estimating an ordered logit. Most of the results are standard; life satisfaction is higher for married people, the educated, workers, especially those who work full-time, those from higher social classes home owners and those who are not disabled or sick or depressed (a low malaise score). Those currently unemployed are less happy; there are enduring effects from spells of unemployment while young, which continues to lower happiness more than two decades later. Clark et al (2001) also found, using panel data for Germany from the GSOEP that past unemployment lowers life satisfaction.

In column 1 it is apparent that, as is consistently found in all happiness equations, the current unemployed are less happy. Also, if the individual had experienced any spell of unemployment before the age of twenty-three, this lowers happiness over twenty years later at age 46. In contrast, a spell of unemployment at age 33 has no effect on current happiness. In column 2 it is notable from the significance of the interaction term between having had a spell of unemployment up to and including age 23 and present unemployment in column 2, that the impact of past unemployment on wellbeing is greatest for those currently unemployed. This contrasts with the findings of Clark et al who found that "the negative well being effect of current unemployment is weaker for those who have been unemployed more often in the past" (2001, p. 221). The main difference though is that their measure of past unemployment relates to the proportion of the preceding three years that had been spent in unemployment, whereas in Table 9 it refers to an unemployment spell over twenty years earlier.

ii) **Health status.** Respondents in NCDS7 were asked "*Please think back over the last 12 months about how your health has been. Compared to people of your own age, would you*

say that your health has on the whole been' - 1=excellent; 2=good; 3=fair; 4=poor or 5= very poor?" Of those who had been unemployed in NCDS4 27.8% said they were in excellent health compared with 34.3% of those who had not been unemployed. Column 3 of **Table 10** estimates an ordered logit with self-reported health as the dependent variable. Once again the youth unemployment variable enters significantly and negative, whereas being unemployed at age 33 did not have a significant impact on health. The Malaise score is strongly negative also. Social status of father at birth matters for health nearly fifty years later. The currently unemployed are not less healthy than full-time employees.

iii) **Job satisfaction.** Workers were asked for their degree of satisfaction with their current job. Possible answers were “very dissatisfied; somewhat dissatisfied; neither; somewhat satisfied and very satisfied”. Column 3 reports the results of estimating an ordered logit. Youth unemployment lowered job satisfaction whereas middle-age unemployment did not.

iv) **Log of gross weekly wages.** Column 5 of the table estimates a log wage equation. Past unemployment is also significantly negative. Those with more education earn more, as would be expected. High IQ score at 11 continues to raise wages two decades later.

People are impacted adversely, in terms of reduced wellbeing, by increases in unemployment. The unemployed themselves lose their jobs but there is a much wider loss of wellbeing. High national unemployment lowers wellbeing especially of the unemployed. It turns out that spells of unemployment are especially harmful to the individual - and to society - when young people become unemployed. A spell of unemployment when young continues to have a negative impact in later life.

Youth unemployment is especially harmful. As we noted above there is scant evidence to suggest that increases in unemployment are attributable to the introduction of the minimum wage or to the presence of temporary workers from Eastern Europe or that the young have priced themselves out of work. The onset of recession, at a time when the size of the youth cohort has temporarily increased, has made matters considerably worse as youths are especially vulnerable to movements in the business cycle.

The danger is that the biggest fall-out from the credit crisis is the creation of a lost generation of young people, who never successfully make the transition from school-to-work. That would be bad for every one.

To summarise, there is now a convincing range of evidence on the negative personal and social impacts of unemployment. We have shown that the negative impacts on the young may persist for long periods and include life satisfaction, health, job satisfaction and earnings.

8. Conclusion

We have presented evidence that suggests that the young have been especially impacted by the current recession. We have also added to the evidence on the harmful effects that

unemployment has on the young, even well after the initial spell of unemployment. We presented evidence that it affects their job and life satisfaction, health and wages.

Two further key findings have emerged. First, one outcome of the current recession is that older employees have fared rather better than younger ones. In almost all developed countries, there has been a relative decline in the number of younger workers and a relative increase in the employment of those aged 50+. This change has taken place very quickly and therefore is unlikely to be a response to factors that evolve slowly – such as relative wages or technological change. This may have come about because industries where output has dropped most rapidly were industries with an above average share of young workers. Nevertheless, even within industries that have experienced sharp declines in output, such as manufacturing and construction, we have found that young workers have fared badly.

The large set of policy interventions in place before the recession appear to have been largely ineffectual in preventing the rise in youth unemployment. Fiscal tightening that cuts education and training budgets may exacerbate the problem.

So what can be done about the problem of rising youth unemployment? Based on the research evidence we rule out the introduction of any large scale labour market programs which are expensive and do not appear to work. There may be a place for narrowly targeted policies that will vary from place to place depending on local circumstances, but rates of return to these programs must be monitored closely to ensure they are value for money.

We have four main recommendations regarding policies to improve the workings of the youth labour market.

First of all, *increase the number of university and college places as well as encourage young people to remain in school.* Given the decline in alternative opportunities available, education is a more attractive alternative than previously. In the UK, for example, the numbers of applications to university increased by 23% between 2009 and 2010. Perhaps as many as 100,000 qualified applicants did not obtain places. The present UK government has cut tertiary education, which makes little sense against this background.

Second, provide subsidies to private sector firms for training programs such as apprenticeships that teach skills and are likely to lead to jobs on completion of the training. It is better to have a young person in training than on the dole.

Third, weight payroll taxes in favour of young workers. This might involve giving firms job subsidies for net hiring of young people thereby reducing labour demand barriers to the hiring of youth. And on the firing side of the labour market, reduce the seniority weighting of redundancy schemes. One of the reasons that young workers may be selected for job cuts is that the statutory costs of removing them are much lower than for

more experienced workers. Even if there is no skill gradient with experience, it will make sense to operate a last in first out policy to reduce redundancy costs.

Fourth, give priority to the hiring of the young in the public sector.

Austerity measures being implemented by countries such as the UK, Spain, Greece and Ireland will inevitably impact the young the most. The societal consequences of that, including increases in crime, depression, unhappiness and feelings of hopelessness, despair and isolation are likely to be a major issue. Of particular concern will be the growing numbers of youngsters who may never make the successful transition from school to work through no fault of their own. There were just no jobs for them. They didn't take out sub-prime mortgages or take on too much credit. It was just their misfortune to come of age in the midst of a terrible recession.

The solutions are more jobs or more alternatives to jobs including education and training, which essentially means buying time until the recession is over and more jobs become available.

Spells of unemployment while young create permanent scars. Unemployment is higher in the years ahead if a young person doesn't gain a successful toe-hold in the labour market early in their lives. Solving youth unemployment is one of the most pressing problems governments are facing today. Not dealing with the problem of high, and rising levels of youth unemployment hurts the youngsters themselves and has potentially severe social consequences for many years to come on the rest of us. This is a particular concern given the very large cohort size: the situation is worsened by the fact that there are lots of them. Youth must be the priority. Don't give up on them now because there is a very real danger that they will become a lost generation. And that would be bad for all of us.

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Table 1: Ratio of Youth Unemployment Rate to Adult Unemployment Rate

	1970-1979	1980-1989	1990-1999	2000-2008	Mean	Standard Deviation
Australia	3.29	2.75	2.37	2.73	2.66	0.31
Canada	2.40	1.98	1.94	2.29	2.10	0.26
France	2.99	3.28	2.68	2.58	2.89	0.39
Germany	1.30	1.42	1.01	1.29	1.25	0.27
Italy	7.93	6.92	4.09	3.65	5.70	2.00
Japan	2.01	2.07	2.33	2.16	2.14	0.17
Netherlands	2.13	2.24	1.98	2.19	2.14	0.36
Sweden	3.00	3.08	2.85	3.52	3.10	0.56
United States	3.07	2.53	2.72	2.81	2.78	0.30
United Kingdom	n/a	1.81	2.23	3.52	2.59	0.80

Source: Bureau of Labor Statistics

<http://www.bls.gov/fls/flscomparelf/unemployment.htm#box1>

Table 2. OECD Quarterly Unemployment Rates for 15-24 year olds, 2007-2009³

	2007	2007	2007	2007	2008	2008	2008	2008	2009	2009	2009	2009	2010
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	April
Australia	9.5	9.0	9.3	9.7	8.6	9.1	8.5	9.3	11.2	12.0	11.9		
Austria	8.3	9.2	9.4	7.8	8.3	7.2	7.5	9.2	9.4	10.5	10.5	9.5	10.5
Belgium	19.6	19.7	18.4	17.8	17.3	17.3	18.8	18.9	21.0	21.3	22.3	23.2	23.8
Canada	11.3	11.2	11.1	11.2	11.2	11.9	11.1	12.5	13.9	15.0	15.9	15.8	
Czech Republic	11.9	11.5	10.0	9.5	10.0	9.7	9.6	10.3	12.8	15.7	17.8	20.3	21.4
Denmark	7.8	7.4	8.7	7.1	7.3	7.4	8.1	8.3	9.1	11.3	11.5	13.1	12.7
Finland	17.7	16.8	16.4	16.4	15.9	15.9	16.7	17.4	18.9	21.1	22.5	23.1	23.5
France	21.1	19.9	18.8	18.6	17.9	18.7	19.3	20.5	22.8	23.6	23.6	23.3	22.2
Germany	11.4	11.0	11.1	10.9	10.2	9.9	9.4	9.7	10.2	10.7	10.6	10.3	9.5
Greece	24.1	23.0	22.9	21.8	22.5	21.5	22.2	22.2	24.5	25.5	25.7	27.5	27.5
Hungary	17.7	16.9	17.9	19.6	19.6	19.7	20.1	20.0	24.5	26.0	27.1	28.3	26.6
Iceland	7.5	7.1	7.9	6.6	6.3	7.5	8.3	11.9	11.8	15.7	21.5		
Ireland	8.8	9.1	8.5	9.2	10.1	11.4	14.6	17.7	20.5	24.0	25.4	27.8	26.6
Italy	20.2	20.0	20.2	21.0	20.7	21.0	21.6	23.0	24.3	24.8	25.5	26.5	29.5
Japan	8.4	7.2	7.5	7.6	7.0	7.1	7.7	7.3	8.7	9.1	9.4		
Korea	8.8	9.3	9.0	8.2	8.5	9.5	10.0	9.3	9.9	9.8	9.5	10.2	
Luxembourg	15.9	15.4	15.5	15.4	15.5	17.2	18.0	18.7	18.6	17.7	17.1	17.8	16.9
Mexico	7.3	7.4	7.5	7.4	7.3	7.4	7.5	7.9	8.3	9.0	9.9		
Netherlands	6.5	6.1	5.7	5.4	5.2	5.6	5.2	5.2	6.0	6.3	6.9	7.3	8.0
New Zealand	10.7	10.2	10.0	9.3	9.5	11.5	11.1	13.3	12.6	17.0	17.4		
Norway	8.3	7.3	6.8	6.7	6.8	6.7	7.2	8.1	8.6	8.8	9.2	9.1	9.0
Poland	24.4	22.1	21.0	18.9	17.9	17.5	16.4	17.4	18.2	19.7	22.0	22.7	23.1
Portugal	17.2	16.9	15.9	16.1	15.8	15.9	17.2	17.5	19.1	19.5	20.2	21.1	22.2
Slovak Republic	21.0	20.1	20.5	19.9	19.1	19.4	18.7	19.3	22.5	25.6	28.1	31.8	34.1
Spain	17.5	17.8	18.6	19.1	20.8	23.3	25.2	29.6	34.7	37.2	39.9	39.6	40.3
Sweden	19.8	18.4	18.7	19.5	19.1	20.1	20.0	21.0	22.8	24.7	26.7	25.8	26.7
Turkey	16.4	17.3	17.7	17.3	17.2	16.9	18.7	21.0	23.1	23.8	22.4	21.4	
United Kingdom	14.5	14.5	14.2	13.8	13.8	14.3	15.3	16.5	18.0	19.0	19.7	19.6	19.8
United States	10.0	10.3	10.8	11.1	11.5	12.2	13.4	14.2	15.7	17.4	18.2	19.1	19.6

³ Source: http://www.oecd.org/document/49/0,3343,en_2649_33927_45008113_1_1_1_37457,00.html and EU for April 2010

Table 3. Youth Unemployment and Educational Attainment: Percent Deviation from Overall Unemployment Rate by Level of Education

	Isced Levels 0-2		Isced Levels 3-4		Isced Levels 5-6	
	2008Q1	2009Q3	2008Q1	2009Q3	2008Q1	2009Q3
European Union	34.9	30.0	-15.4	-15.3	-34.9	-8.9
Austria	63.0	55.8	-38.3	-34.5		
Belgium	86.1	30.8	-20.6	-18.8	-44.2	11.3
Czech Republic	271.3	136.6	-31.7	-17.5	-12.9	-5.5
Denmark	17.4	5.3	-23.2	-4.4		
Finland	60.8	38.7	-26.3	-17.2	-35.7	
France	63.2	61.7	-12.6	-11.3	-54.6	-41.0
Germany	21.9	30.3	-16.2	-21.0		
Greece	-17.5	-14.2	8.1	1.2	11.1	32.4
Hungary	66.7	65.7	-11.9	-13.7	-41.3	-25.3
Ireland	96.7	56.7	-11.1	-6.9	-51.1	-23.8
Italy	9.4	14.0	-6.6	-8.5	13.6	6.0
Netherlands	38.6	39.4	-31.6	-37.9	-59.6	-15.2
Poland	20.1	15.1	0.5	-3.7	-25.4	6.9
Portugal	-1.2	-6.3	-13.4	0.0	49.4	43.2
Romania	10.6	-22.4	-3.5	4.5	-26.8	48.9
Slovakia	257.9	119.8	-26.3	-12.6	-42.1	14.0
Slovenia	-7.0	46.1	-5.5	-14.1	122.7	
Spain	21.1	16.6	-21.6	-18.4	-38.0	-22.0
Sweden	71.2	46.4	-35.1	-28.8	-36.6	-51.4
United Kingdom	90.2	61.4	-23.3	-19.0	-47.4	-18.1

Source: Eurostat

Notes: International Standard Classification of Education (ISCED) levels are as follows: Isced 0: pre-primary education; Isced 1: primary education. Isced 2; lower-secondary education; Isced 3; upper-secondary education; Isced 4: post-secondary non-tertiary level of education; Isced 5: tertiary education; Isced 6: second stage of tertiary education.

Table 4 – Change in Employment by Age Group 2008Q1 to 2009Q3

	Between 15 and 24 years	Between 25 and 49 years	50 years and over
European Union	-5.0%	-1.6%	3.9%
Austria	3.8%	1.5%	5.0%
Belgium	-6.4%	-2.4%	6.2%
Bulgaria	-2.3%	-0.9%	1.8%
Cyprus	-12.8%	0.0%	6.8%
Czech Republic	-2.5%	-0.2%	-1.5%
Denmark	6.9%	-3.4%	1.0%
Estonia	-16.5%	-8.5%	-6.8%
Finland	6.6%	-1.3%	0.7%
France	4.8%	-1.3%	3.8%
Germany	-5.6%	-0.2%	6.5%
Greece	0.3%	-0.6%	4.1%
Hungary	-7.0%	-1.6%	-0.2%
Ireland	-29.7%	-8.6%	-3.4%
Italy	-7.7%	-2.0%	5.0%
Latvia	-30.6%	-10.4%	-21.7%
Lithuania	-23.2%	-4.8%	-1.7%
Malta	-1.5%	2.9%	7.0%
Netherlands	2.3%	-2.2%	7.6%
Poland	-4.1%	1.7%	11.1%
Portugal	-13.1%	-3.4%	-0.4%
Romania	8.4%	2.4%	8.6%
Slovakia	-19.0%	-0.9%	6.4%
Slovenia	18.6%	-3.1%	15.1%
Spain	-23.9%	-7.6%	0.0%
Sweden	9.6%	-1.3%	1.1%
United Kingdom	-6.4%	-1.4%	1.2%

Source: Eurostat

Table 5: Percent Change in Employment EU Countries 1997-2007

	Belgium	Czech Republic	Denmark	Germany	Estonia	Ireland	Greece	Spain	France	Italy	Hungary	Netherlands	Austria	Portugal	Finland	Sweden	United Kingdom
All NACE branches - Total	14.1	0.3	4.8	8.2	8.6	53.8	17.0	53.3	16.4	15.1	9.7	17.8	11.6	14.3	17.5	15.9	8.9
Agriculture, hunting and forestry	-20.5	-38.3	-14.4	-17.4	-46.2	-17.6	-32.8	-13.7	-12.2	-22.4	-36.0	-2.0	-7.2	0.1	-30.7	-18.7	-19.6
Industry	1.2	-2.9	-7.0	-6.9	14.4	46.7	17.3	50.1	1.8	6.4	7.8	1.3	2.7	12.5	10.4	-2.0	-10.1
Mining and quarrying	-18.8	-38.6		-50.2		64.1	6.4	-15.5	-51.9	-33.6	-45.0	-2.5	-4.3	16.3	35.3	-8.4	19.3
Manufacturing	-4.4	1.6	-13.3	0.0	-8.2	2.7	0.3	23.7	-3.8	1.9	2.1	-5.5	-1.7	0.7	5.2	-12.9	-25.9
Electricity, gas and water supply	2.1	-23.4	-14.0	1.9	-37.9	8.2	2.9	32.9	-1.9	-29.4	-33.5	-5.7	-22.8	-11.1	-35.2	-21.9	19.5
Construction	18.8	-5.1	11.1	-22.7	154.4	154.4	58.5	104.7	19.8	26.2	56.7	19.8	18.1	42.2	35.8	41.1	27.6
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	7.3	-7.4	16.9	5.6	8.4	56.1	24.5	42.4	19.8	8.9	21.2	8.3	13.8	15.6	26.6	14.9	1.3
Hotels and restaurants	16.4	13.2	4.5	23.0	48.1	66.5	35.6	75.3	22.4	69.0	32.6	59.7	25.9	32.2	39.4	37.2	4.3
Transport, storage and communication	10.7	-5.4	-8.3	13.0	0.5	88.0	7.7	49.5	15.2	13.8	-5.3	25.0	6.5	26.2	9.4	9.4	13.7
Financial intermediation	3.7	8.0	-3.8	3.6	46.9	83.7	18.4	39.5	19.4	-1.2	2.2	14.1	-4.1	-22.2	-10.1	-0.2	7.7
Real estate, renting and business activities	66.7	40.5	28.4	60.7	58.1	132.6	85.3	142.3	40.9	119.4	97.2	54.7	52.4	46.8	81.9	69.4	32.9
Public administration and defence; compulsory social security	15.0	15.7	-1.0	-8.0	22.5	48.7	38.0	42.5	25.9	-19.0	12.3	5.3	14.0	8.8	5.3	21.0	27.8
Other services	24.7	10.7	12.8	26.4	6.2	63.2	41.0	67.4	22.8	24.5	7.5	33.5	16.3	18.1	21.5	16.6	22.2
Education	9.5	-7.6	8.0	19.8	-2.3	52.0	40.1	40.9	5.0	8.6	3.7	28.7	-0.8	-1.2	12.8	70.8	31.9
Health and social work	28.6	25.1	12.8	32.4	9.3	84.0	42.0	66.9	36.3	26.1	16.7	37.7	23.0	64.3	21.0	-5.8	19.5
Other community, social, personal service activities	24.9	22.2	20.1	19.4	20.9	32.2	29.9	72.5	23.8	37.5	5.5	37.2	33.3	-20.5	32.3	24.6	19.7

Source: Eurostat

Table 6: Percent Change in Employment by Age Group : Manufacturing and Construction
2008Q1 to 2009Q3

	Manufacturing				Construction			
	Total	15-24	25-49	50+	Total	15-24	25-49	50+
European Union	-7.8	-18.8	-8.3	-1.8	-5.9	-13.4	-6.8	0.9
Austria	-4.7	-7.9	-6.1	3.6	2.2	3.8	3.0	-2.5
Belgium	-9.0	-30.6	-7.2	-6.2	-0.7	-16.6	2.9	-2.6
Bulgaria	-7.7	-30.4	-7.1	-2.1	2.2	-8.3	6.4	-4.5
Cyprus	-2.8	-6.7	-10.9	15.0	-2.8	-27.1	0.4	1.7
Czech Republic	-11.7	-21.9	-11.0	-9.8	6.4	9.2	4.2	11.8
Denmark	-10.5	-32.2	-11.2	0.1	-9.6	9.6	-16.3	-4.8
Estonia	-17.0	-45.0	-14.8	-7.9	-27.5	-100.0	-21.4	-24.3
Finland	-7.5	-26.8	-7.4	-1.7	3.2	23.5	0.2	1.8
France	-4.4	-3.0	-6.4	1.2	3.1	-7.1	4.4	7.2
Germany	-1.7	-9.6	-2.9	4.9	2.0	1.1	-0.3	9.0
Greece	-4.9	-5.7	-6.8	1.5	-4.7	-0.9	-6.4	-0.9
Hungary	-8.0	-27.3	-6.8	-5.1	-3.6	-8.1	-0.9	-11.0
Ireland	-13.2	-47.4	-8.9	-10.1	-43.1	-63.6	-40.5	-29.4
Italy	-3.9	-20.6	-3.7	1.9	-0.3	-2.5	-3.0	10.7
Latvia	-29.2	-52.0	-20.3	-36.1	-46.3	-64.3	-44.2	-36.4
Lithuania	-15.4	-25.7	-12.8	-19.0	-31.3	-53.2	-31.2	-14.9
Malta	0.0	-27.3	7.2	10.2	-8.3	-28.6	-4.3	-9.7
Netherlands	-10.0	-15.7	-13.0	-0.2	-4.1	-6.9	-6.2	3.2
Poland	-3.6	-14.2	-5.2	8.7	13.9	19.7	13.3	12.9
Portugal	-6.6	-20.3	-7.2	3.6	-10.4	-25.0	-12.2	5.1
Romania	-10.2	-13.8	-12.7	0.9	12.0	17.8	14.3	0.4
Slovakia	-14.2	-37.4	-12.9	-5.3	5.1	12.6	0.6	16.2
Slovenia	-8.7	-15.7	-10.2	-1.0	0.3	16.4	-11.4	35.8
Spain	-19.6	-45.3	-18.5	-12.0	-30.7	-49.3	-30.8	-17.8
Sweden	-9.3	-15.5	-12.0	-1.7	1.5	8.0	-0.8	3.5
United Kingdom	-18.1	-28.0	-17.4	-16.1	-11.7	-24.5	-11.7	-4.8

Source: Eurostat

Table 7. Relative Size of Youth Cohort in 2008

	Cohort Size Age 10/Age 20	Cohort size Age 20/Age 30
European Union	83%	91%
Armenia	70%	133%
Austria	88%	97%
Azerbaijan	68%	141%
Belarus	54%	116%
Belgium	95%	93%
Bulgaria	57%	88%
Croatia	93%	90%
Czech Republic	67%	74%
Denmark	112%	91%
Estonia	55%	116%
Finland	97%	92%
France	93%	107%
Georgia	74%	116%
Germany	83%	103%
Greece	88%	69%
Hungary	78%	74%
Ireland	98%	78%
Italy	93%	72%
Latvia	49%	121%
Lithuania	66%	126%
Luxembourg	110%	79%
Netherlands	98%	101%
Norway	107%	98%
Poland	70%	96%
Portugal	88%	71%
Romania	62%	98%
Russian Federation	50%	119%
Serbia	78%	92%
Slovakia	70%	87%
Slovenia	72%	85%
Spain	82%	62%
Sweden	82%	104%
Switzerland	92%	89%
Turkey	106%	103%
Ukraine	57%	113%
United Kingdom	87%	112%
USA	93%	105%

Source: Eurostat Chronos database and US Census Bureau

Table 8. Probability of unemployment and of being in employment (EPOP) in the United States, 2005-2009 – dprobits

	Unemployment		Employment/population	
	2005-2007	2008-2009	2005-2007	2008-2009
Ages 16-19	.0305 (12.76)	.0352 (10.05)	-.1911 (56.00)	-.1962 (46.30)
Male	.0145 (7.52)	.0302 (10.54)	.0394 (14.19)	.0175 (5.05)
Black	.1133 (28.56)	.1150 (20.61)	-.1555 (33.19)	-.1512 (26.33)
Native American	.1012 (9.83)	.0789 (5.35)	-.1954 (16.29)	-.1640 (11.05)
Asian/Pacific Islander	.0023 (0.37)	-.0014 (0.17)	-.1701 (23.08)	-.1448 (16.52)
Other race	.0336 (5.29)	.0456 (4.61)	-.0489 (5.70)	-.0583 (5.20)
Hispanic	.0030 (0.94)	.0164 (3.57)	-.0182 (4.06)	-.0187 (3.43)
1st - 4th grade	.0027 (0.07)	-.0386 (0.85)	.1656 (3.99)	.0832 (1.48)
5th or 6th grade	-.0082 (0.24)	-.0219 (0.55)	.2379 (6.76)	.1844 (3.87)
7th or 8th grade	.1474 (2.92)	.0575 (1.21)	-.0453 (1.21)	-.0830 (1.81)
9th grade	.1599 (3.19)	.1129 (2.26)	-.0808 (2.22)	-.1652 (3.79)
10th grade	.1098 (2.44)	.0666 (1.47)	.0067 (0.19)	-.0840 (1.91)
11th grade	.0705 (1.71)	.0268 (0.64)	.1172 (3.33)	.0201 (0.46)
12th grade no diploma	.0593 (1.42)	.0417 (0.94)	.1278 (3.62)	.0375 (0.84)
High school graduate	.0459 (1.25)	.0077 (0.19)	.2566 (7.56)	.1896 (4.38)
Some college	-.0010 (0.03)	-.0532 (1.43)	.2187 (6.35)	.1759 (4.05)
Associate - vocational	-.0106 (0.32)	-.0592 (1.77)	.3297 (10.89)	.3183 (7.76)
Associate - academic	-.0177 (0.55)	-.0709 (2.24)	.2826 (8.82)	.2741 (6.53)
Bachelor's degree	-.0139 (0.43)	-.0665 (2.01)	.3302 (10.90)	.3069 (7.56)
Master's degree	-.0264 (0.76)	-.0825 (2.52)	.3017 (8.24)	.3122 (6.82)
Professional degree	-.0508 (0.92)	-.1018 (1.78)	.1959 (3.04)	.1349 (1.77)
2006	-.0092 (4.03)		.0055 (1.63)	
2007	-.0078 (3.40)		-.0088 (2.61)	
2008		-.0479 (1.21)		.0529 (15.29)
N	87,931	55,206	144,221	94,318
Pseudo R ²	.0623	.0691	.1251	.1365

Source: Merged Outgoing Rotation Group files of the Current Population Survey.

Notes: excluded categories 2005 and 2009, less than 1st grade and white. All equations also include 50 state dummies. Sample consists of individuals under the age of 25. Columns 1 and 2 the sample is the workforce - employed plus the unemployed while columns 3 and 4 the sample is the population. T-statistics in parentheses.

Table 9: Probability of unemployment and of being in employment (EPOP) in the United Kingdom, 2005-2009 – dprobits

	Unemployment		Employment/population	
	2005-2007	2008-2009	2005-2007	2008-2009
Age 16-19	.078 (31.63)	.089 (25.75)	-.155 (52.35)	-.176 (47.44)
Male	.023 (12.04)	.040 (14.75)	.019 (7.16)	.002 (0.59)
Mixed	.075 (7.07)	.070 (5.12)	-.090 (7.71)	-.117 (8.51)
Asian or Asian British	.097 (14.91)	.089 (1.88)	-.232 (38.46)	-.196 (26.91)
Black or Black British	.151 (14.16)	.169 (12.00)	-.184 (19.09)	-.230 (21.23)
Chinese	.118 (5.48)	.069 (2.66)	-.372 (27.80)	-.348 (23.09)
Other ethnic group	.048 (4.66)	.038 (2.91)	-.161 (14.47)	-.182 (14.44)
Higher Degree	-.088 (35.10)	-.110 (29.37)	.308 (58.31)	.333 (46.93)
First Degree	-.092 (43.66)	-.112 (34.56)	.311 (83.24)	.327 (63.21)
HNC/HND equivalent	-.090 (44.25)	-.108 (33.00)	.285 (62.28)	.289 (43.88)
NVQ Level 3	-.117 (45.54)	-.141 (37.11)	.223 (48.92)	.232 (38.37)
Trade Apprenticeship	-.087 (37.23)	-.100 (24.32)	.259 (41.39)	.273 (31.67)
O Level or equivalent	-.085 (31.30)	-.099 (24.58)	.233 (51.71)	.235 (38.74)
Other Qualification	-.042 (13.77)	-.045 (9.62)	.149 (28.15)	.142 (19.74)
2006	.011 (4.67)		-.007 (2.07)	
2007	.012 (4.89)		-.015 (4.57)	
2008		-.041 (15.11)		.050 (14.61)
N	101,137	64,134	138,586	90,517
Pseudo R ²	.0696	.0690	.0714	.0761

Source: Labour Force Surveys, 2005-2009

Notes: excluded categories 2005 and 2009, no qualifications and white. All equations also include 19 region and 3 quarterly dummies. Sample consists of individuals under the age of 25. Column 1 the sample is the employed plus the unemployed while column 2 is the population. T-statistics in parentheses.

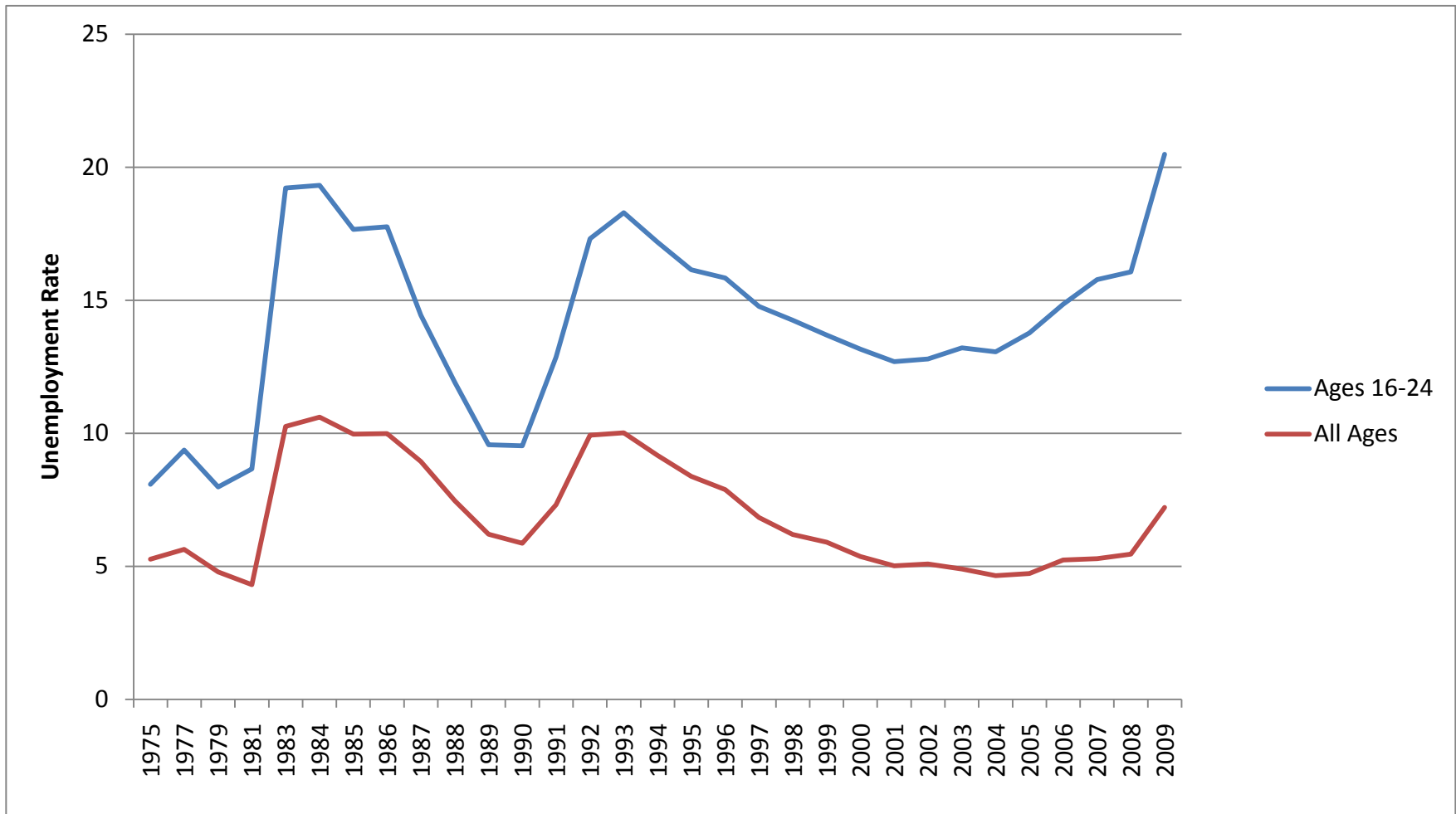
Table 10. Impact of youth unemployment < age 24 on adult outcomes two decades later at age 46 in 2004/5 (NCDS)

	Life satisfaction Ordered logit	Life satisfaction Ordered logit	Health status Ordered logit	Job satisfaction Ordered logit	Log weekly wage OLS
Unemployed age≤23	-.1270 (2.62)	-.1169 (2.40)	-.1534 (3.05)	-.1965 (3.65)	-.0770 (3.82)
Unemployed age 33	.0440 (0.31)	.0620 (0.44)	-.0689 (0.48)	-.1182 (0.69)	-.2256 (3.52)
Unempd*Unemp≤23		-.9090 (2.17)			
Male	-.4474 (7.94)	-.4446 (7.89)	-.0648 (1.11)	-.4094 (5.90)	.3674 (14.32)
PT employee	-.0878 (1.22)	-.0857 (1.19)	-.1152 (1.54)	-.0860 (1.12)	-.7876 (29.18)
FT self-employed	.2211 (2.86)	.2208 (2.86)	-.0061 (0.08)	.5117 (5.76)	
PT self-employed	-.2716 (1.56)	-.2687 (1.54)	.0489 (0.28)	.3987 (2.07)	
Unemployed	-.7668 (3.62)	-.2938 (0.97)	-.8126 (3.93)		
Student	-.5316 (1.24)	-.5310 (1.24)	-.2219 (0.54)		
Govt. scheme	-.1702 (0.19)	-.1819 (0.20)	-.9344 (0.86)		
Temporary sick	.3544 (0.70)	.3478 (0.68)	-2.2099 (4.13)		
Permanent sick	1.4352 (9.85)	-1.4431 (9.90)	-3.2899 (1.72)		
Home maker	-.2506 (2.15)	-.2503 (2.15)	-.4910 (4.15)		
Retired	-.2715 (0.54)	-.2728 (0.54)	-1.7514 (3.41)		
Married	1.1321 (11.66)	1.1272 (11.62)	.1543 (11.56)		
Living together	.6872 (5.83)	.6888 (5.84)	.2507 (2.07)		
Separated	-.2207 (1.32)	-.2352 (1.40)	.2174 (1.27)		
Divorced	-.0020 (0.02)	-.0085 (0.07)	.1341 (1.09)		
Widowed	-.6509 (2.34)	-.6742 (2.42)	.2870 (1.02)		
Yorks & Humber	.1673 (1.36)	.1679 (1.37)	-.2394 (1.90)	.0783 (0.57)	.0463 (0.92)
East Midlands	.0946 (0.75)	.0937 (0.74)	-.2073 (1.62)	.2620 (1.88)	.0664 (1.29)
East Anglia	-.0579 (0.40)	-.0600 (0.42)	-.1961 (1.32)	.0228 (0.14)	-.0503 (0.85)
South East	.0000 (0.00)	.0004 (0.00)	-.1926 (1.79)	.0383 (0.33)	.1682 (3.95)
South West	.1476 (1.20)	.1493 (1.22)	-.2075 (1.65)	.1825 (1.35)	.0460 (0.92)
West Midlands	.1787 (1.45)	.1793 (1.46)	-.1990 (1.59)	.1748 (1.29)	.0929 (1.87)
North West	.0469 (0.39)	.0486 (0.40)	.0191 (0.15)	.1047 (0.78)	.0203 (0.41)
Wales	.1570 (1.17)	.1643 (1.23)	.0518 (0.37)	.4009 (2.63)	.0101 (0.18)
Scotland	.0460 (0.38)	.0484 (0.40)	-.3379 (2.70)	-.0056 (0.04)	.0555 (1.12)

CSE's grade 2-5	-1.800 (1.99)	-1.854 (2.05)	-.0274 (0.30)	-.0092 (0.09)	.0283 (0.74)
GCSE A-C	-.2520 (3.08)	-.2581 (3.15)	.1820 (2.19)	-.0972 (1.04)	.1301 (3.71)
AS levels (1)	-1.1583 (2.85)	-1.1620 (2.86)	-.2951 (0.72)	-.2452 (0.54)	.1545 (0.99)
A-levels (>=2)	-.3435 (3.14)	-.3482 (3.18)	.3449 (3.02)	.0799 (0.64)	.3549 (7.60)
Diploma	-.1251 (0.93)	-.1263 (0.94)	.3107 (2.22)	-.1866 (1.22)	.3438 (16.16)
Degree	-.2082 (2.04)	-.2145 (2.10)	.2620 (2.48)	-.1448 (1.22)	.5988 (13.70)
Higher degree	-.0229 (0.15)	-.0244 (0.16)	.2920 (1.75)	.1570 (0.89)	.72901.14
House mortgage	-.2995 (4.32)	-.3025 (4.36)	-.0116 (0.16)		
Rent	-.7285 (7.11)	-.7323 (7.15)	-.1058 (1.02)		
Social class i PMS	.2101 (1.05)	.2197 (1.10)	.2459 (1.19)	.1868 (0.83)	.0124 (0.15)
Social class ii PMS	.1868 (1.05)	.1938 (1.09)	.0231 (0.13)	.0510 (0.25)	-.0884 (1.20)
Social class iii PMS	.3132 (1.86)	.3198 (1.90)	-.0088 (0.05)	.2167 (1.12)	-.1288 (1.85)
Social class iv PMS	.3237 (1.81)	.3308 (1.85)	-.1051 (0.57)	.2440 (1.19)	-.1751 (2.35)
Social class v PMS	.2357 (1.25)	.2434 (1.29)	-.2590 (1.33)	.1888 (0.88)	-.1417 (1.82)
IQ score NCDS2	-.0023 (1.22)	-.0023 (1.24)	.0018 (0.93)	-.0004 (0.19)	.0024 (3.01)
Malaise NCDS4	-.1250 (13.39)	-.1245 (13.33)	-.1424 (15.05)	-.0557 (5.31)	-.0148 (3.78)
Industry dummies	No	No	No	58	58
cut1	-6.4392	-6.4424	-5.1878	-3.8119	6.0671
cut2	-5.9477	-5.9509	-3.4554	-2.8358	
cut3	-5.2196	-5.2224	-1.8254	-2.4125	
cut4	-4.6091	-4.6112	.4221	-.4425	
cut5	-3.8722	-3.8736			
cut6	-2.6808	-2.6812			
cut7	-1.9470	-1.9465			
cut8	-.5206	-.5189			
cut9	1.3464	1.3481			
cut10	2.6866	2.6884			
N	6187	6187	6196	5503	3755
Pseudo R ² /R ²	.0470	.0472	.0751	.0196	.4991

Notes: excluded categories: North; no qualifications; own house outright: FT employee; no husband. Workers only columns 4 & 5
Source: National Child Development Study, 1958-2004/5. Outcomes measured at NCDS7

Figure 1: UK Youth and Total Unemployment Rates 1975-2009



Source: Labour Force Surveys 1975 to 2009 (note estimates for 1975-1979 are unweighted)