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Philippe DE VREYER, Richard LAYTE, Azhar HUSSAIN & Maarten WOLBERS

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Philippe De Vreyer, Richard Layte, Azhar Hussain and Maarten Wolbers[1]

Introduction.

Are young workers that first participate to the labour market in times of high aggregate unemployment permanently disadvantaged, compared to other workers that entered in more favourable periods, or do they catch up later ? In this chapter we address this issue by looking at the career paths of several generations of workers, focusing on their relative risk of unemployment in relation with the level of aggregate unemployment when they first participated to the labour market. Our maintained hypothesis will be that a first participation at a time of high aggregate unemployment can be detrimental to the future working careers of young workers, if they experience difficulties in getting into a stable job and if, by this process, they become outsiders in a segmented labour market. Our study uses data from Denmark, England, France, Italy and the Netherlands. These countries have experienced high levels of unemployment since the mid-seventies, but at different degrees and have adopted different labour market regulations. In what follows, after a brief presentation of the insiders/outsiders theory, which predicts a dichotomy of the labour market that could explain a potential permanent handicap of the kind we are looking for, we present the features of the sampled countries labour markets that we think are likely to reinforce such a dichotomy. We then examine the effect of unemployment at the time of labour market entry on the current probability of being unemployed, using a pseudo-panel built from a time-series of cross sectional labour force surveys.

Unemployment persistence: macro-economic, institutional and sociological explanations.

The recent macroeconomic literature has been very much concerned with the degree of persistence of aggregate unemployment in the European labour markets. Why unemployment did not decrease in Europe in the 1980s and why is it still very high in some European countries, whereas it decreased nearly continuously in the United States since 1982 ? Part of the answer to this question is given in table 1 below, where statistics are reported that shed light on the differences in the structure of unemployment in the USA and in the EC.

Table 1: The structure of unemployment in the USA and in five EC countries.

	Years	Unemployment rate	Monthly Inflows	Monthly Outflows	Long-term unemployment as a proportion of total unemployment
Denmark	1985	9.0	0.29	6.3	44.3[a]
	1993	12.2	1.75	21.4	25.2
Great Britain	1985	11.0	0.51	6.1	45.6[a]
	1993	10.2	0.67	9.3	42.5
France	1985	10.2	0.32	3.7	42.2[a]
	1993	11.7	0.34	3.4	34.2
Italy	1985	10.2	0.14	1.8	58.2[a]
	1993	10.3	0.41	9.5	57.7
Netherlands	1985	9.2	0.28	6.8	48.8[a]
	1993	6.5	0.24	6.4	52.3
USA	1985	7.2	2.45	41.4	13.3[a]
	1993	6.8	2.06	37.4	11.7

(a) Figure for 1983. Source: OCDE, Perspectives de l'emploi, Juillet 1995. Monthly inflows are defined as the percentage of the working age population (from 15 to 64) minus unemployed, whereas outflows are expressed as a percentage of total unemployment. Long-term unemployment is defined by a duration of unemployment of one year or over.

As this table makes clear, the rise of unemployment in the European Community does not result from an increase in the rate of inflow into unemployment, indeed this rate is much lower in the EC than in the USA, but rather from a sharp decrease of the rate of outflow out of unemployment, that translated into an increase of the average duration of unemployment spells. In other words, higher unemployment in the EC countries is not so much the result of people frequently loosing jobs, but rather the result of a lower probability of finding a job when unemployed. Note that this does not mean that the EC economies do not destroy and create jobs. Rather workers that go from one job to another without passing through unemployment take the newly created jobs. Hence, if one wants to explain European unemployment, one has to answer why EC unemployed workers have a low probability of finding a new job.

Natural rate of unemployment, hysteresis and the insiders/outsiders theory of wage setting.

The question of the persistence of unemployment in Europe has received much attention from the macro-economists. It is not difficult to show that under some reasonable hypotheses concerning the speed of adjustment of nominal wages to changes in the level of prices and to the current level of unemployment, there should exist a so-called "natural rate of unemployment" which level depends upon structural characteristics of the economy and towards which the economy tends in the long term. In such a case only structural changes in

the economy can modify the long-term unemployment rate. The so-called "hysteresis" hypothesis (Blanchard and Summers 1986) challenges this conclusion in raising the possibility that a temporary increase in the level of current unemployment could result into an increase in the natural rate of unemployment. Several theoretical explanations have been put forward to explain why a raise in unemployment, that one might think as being temporary, could turn permanent. One of them relies on the distinction between "insider" and "outsider" workers (Lindbeck and Snower 1988). In the insiders/outsiders theory, wages are set by a process of bargaining between employed workers (the so-called insiders) and employers. Unemployed workers (the so-called outsiders) play no role in this process. Of course insiders are concerned with maintaining their job and with their wage level and the employment of outsiders is not their prime priority. As long as the economy is not submitted to any external shock, insiders negotiate so as to obtain the highest possible wage level compatible with their maintained employment. Nothing changes and outsiders remain unemployed. Suppose now that the economy is submitted to an exogenous shock that makes some insiders loosing their job. Once the economy recovers, the remaining insiders negotiate their wage so as to maintain this new lower level of unemployment. In this case unemployment shows no tendency to return to its previous level. Such a process of wage bargaining, could also induce a segmentation of the labour market (Cahuc and Zylberberg 1996). Insiders, belonging to the primary segment of the labour market, can, for instance, benefit from a specific human capital or from their position of insiders if redundancy payments or hiring costs are important. Outsiders are either constrained to accept low-paid and/or unstable jobs or are unemployed.

The insiders/outsiders theory has interesting developments, in that it stresses the potential role of the wage bargaining process in explaining unemployment and the importance of the institutional setting in which this negotiation takes place. In the remaining paragraphs of this section we shall first examine, for the five countries that are included in this survey, the institutional features that we think are likely to reinforce the insiders/outsiders dichotomy. Then we shall look at the individual characteristics that are likely to determine the probability of being an outsider.

Institutional setting and unemployment persistence.

Calmfors and Driffill (1988), and later Soskice (1990), have argued that the degree of centralisation of the wage bargaining process plays an important role in explaining the level

of unemployment. They claim there exists a inverse U-shaped relationship between the degree of centralisation and unemployment: countries with either very centralised negotiation systems or completely decentralised ones doing better than those with mixed systems. The argument is that a centralised system allows to avoid the lack of coordination between the agents involved in the bargaining process. For instance, if individual bargaining units acted sequentially to obtain real pay increases, they might achieve an increase in aggregate pay but also, at the same time, an increase in price inflation, with consequential negative implications for employment (and reduced purchasing power of wages). However, in a fully decentralised system (firm level bargaining), employers are limited in their ability to give satisfaction to the employees' claim by the rules of free market: a too high price of labour would reduce their profitability and threaten their business. On the opposite, in a fully centralised system (national level bargaining), agents (employers and unions) are aware of the macroeconomic consequences of their decisions and this leads to set wages at a lower level, thus increasing the level of employment. Mixed systems (branch level bargaining) work badly, accordingly because at the branch level unions do not take account of the price inflation increase that could result from a general increase in wages, and firms are more inclined to give way to unions' demands, because the demand price elasticity is lower at the branch than at the firm level. The following table confirms this intuition, in suggesting that, in the mid-to-late eighties, unemployment performance was indeed strongly related with the degree of coordination.

Table 2: Economy-wide bargaining coordination in mid-to-late 1980s.

Country	Degree of coordination (from 0 to 4)	Average unemployment rate (1985 to 1990)
USA	Zero employer and union coordination (0)	6.1
UK	Zero employer and union coordination (0)	8.6
France	Tacit government coordination via public services and large nationalised industry sector (1.5)	9.9
Italy	Informal employer coordination via big employers, especially Fiat, IRI and some regional employer associations; some help from union confederations (2)	11.5
Netherlands	Strong employer organisations and informal coordination between giant companies ; occasional differences between giants and industry organisations; medium union coordination (3)	7.7
Germany	Strong employer organisations with considerable coordination across industries ; medium–strong coordination (3.5)	7.3
Scandinavia	Powerful centralised employers' organisation ; generally strong coordination across industries, with some divergence of interests ; centralised union confederations with some internal conflicts (4)	2.1 (Sweden) 8.7 (Denmark)

Source: Soskice (1990) and, for unemployment rates, OCDE (1995a).

However, and this is certainly no surprise, the degree of centralisation is clearly not sufficient to resume the role of wage bargaining in the determination of unemployment. The model cannot explain the relatively high unemployment rate in Denmark, neither the rise in unemployment levels that has been observed in Sweden since the early 1990s. It is thus necessary to look at other factors that might interfere with the institutional setting of wage bargaining and could reinforce the insiders/outsiders dichotomy.

Among those, the length and replacement ratio of unemployment benefits, because they improve the fall-back position of insider workers in their wage negotiation with firms, are also likely to increase the dichotomy between insiders and outsiders. From the point of view of the generosity of unemployment benefits the British system is probably the least favourable to the unemployed, since it provides only low coverage and for a limited duration (one year before 1996, six months since then). At the opposite the Danish, French and Dutch systems are much more generous, with a higher coverage and a much longer duration for benefits (up to five years in France and the Netherlands, eventually followed by a social assistance scheme). Italy is a particular case, since the "Cassa Integrazione" together with the "Lista di Mobilità" systems, even though very limited in their coverage of unemployed workers make dismissal very difficult and guarantee their potential beneficiaries with very generous unemployment benefits in case of dismissal. There is no doubt that such a system is likely to reinforce the position of insiders (see also the chapter by Bernardi and al. in this volume).

Finally the existence of high hiring and firing costs, induced by restrictive labour legislation and/or the costs supported by firms in their search for suitable workers are also potential candidates for explaining unemployment persistence and a potential dualism of the labour market. In a study conducted at OECD in 1993, David Grubb and William Wells have ranked European countries according to the degree of employment protection and strictness of labour legislation. In table 3 we reproduce some of the results they obtained for the five countries that we consider in this chapter. The countries which have the least restrictive legislation receive the lowest rank. The table also includes results of surveys conducted for the EC and the Employers International Organisation in 1985 and 1989 and reproduced in the same study. According to these data Great Britain is by far the least restrictive country in terms of labour legislation and this is confirmed by the perception of employers. On the opposite Italy and, to a lesser extent, France appear the most restrictive. Denmark and the Netherlands lie somewhere in the middle. Denmark being closer to Great Britain (with few restrictions on

hiring and dismissal procedures, but a very restrictive legislation on normal weekly hours) and the Netherlands closer to France, with the same degree of legal restrictions for dismissal, but a larger ability to employ workers on fixed term contracts. In this country the perception of legal restrictions presents some degree of contradiction between sources, since labour legislation is perceived as being very strict by employers and, at the same time, only 50% of them think that unemployment would be reduced by more flexible procedures on hiring and dismissal (against 81% in France) and about a third think that a less restrictive legislation on fixed term contracts would have the same effect (against 53% in France).

Table 3: Measures of the strictness of employment legislation.

	Denmark	France	Great Britain	Italy	Netherlands
Legal requirements and procedures for dismissal	2	5.5	1	9	5.5
Ability to employ workers on fixed term contracts	2	8	2	10	4.5
Restrictions on normal weekly hours	11	7	1	6	8.5
Restrictions on overtime, week-end or night work	2	7.5	1	3.5	7.5
Perception of labour legislation strictness by employers (scale from 0 to 3)[a]					
- Dismissal	1	3	0	3	3
- Fixed term contracts	1	2	1	3	3
Proportion of employers thinking that unemployment would be reduced if:[a]					
- Hiring and dismissal were made easier	-	81	26	83	51
- Required notice for dismissal were reduced and legal procedures were simplified	-	48	28	88	47
- Required compensation for dismissal were reduced	-	22	23	78	12
- Hiring on fixed term contracts were made easier	-	53	27	63	32
Proportion of employers mentioning restrictions in legal procedures for hiring and dismissal as reasons for not employing more personnel[b]	-	53	27	62	58

Source: Grubb and Wells 1993. (a): Survey conducted in 1985 (b): Survey conducted in 1989.

How to be an outsider.

By definition outsiders are due to remain outsiders, unless they can benefit from exceptionally favourable circumstances or all the insiders loose their status. Of course, the process of wage bargaining is likely to be only one dimension of this exclusion process. The negative effect that unemployment exerts on the accumulation of human capital is likely to play a role as well. Indeed, since those that are unemployed loose the opportunity to maintain and update their skills by working, the longer is their unemployment spell the lower is their probability of

finding a job, everything else equal. However if this can explain why long-term unemployed do not succeed in finding new jobs, this does not help in explaining why newly unemployed workers become long-term unemployed. The same line of argument invokes biased technological shocks that reduce the demand for unqualified labour to explain the rise of unemployment. Recent studies show that the structure of employment has shifted in the disfavour of low qualified workers (Drèze, Malinvaud *et alli* 1993, Sneessens and Shadman-Mehta 1995, Lescure and L'Horty 1997) and this effect is the prime justification for the retraining programmes that have been developed throughout Europe in the 1980s.

Finally, as sociological research has underlined, labour market precariousness is often linked with a process of resource deprivation and desocialization, that can translate into a weakening of family and social ties and reduces the probability of finding a stable job. The intensity of this process depends upon several factors that vary widely between countries. First, unemployment is not always associated with a weakening of family and social ties: in France and England unemployed workers have been found to have less intensive family and social activities than employed ones, but the opposite has been found in Italy and the Netherlands (see De Vreyer & al. 1996 for a survey of this and other related issues in Europe and Paugam and Russell in this volume). Second, labour market policies that keep individuals on the labour market and efficient retraining programmes can help counteract this process. Third, the nature and extent of unemployment insurance and assistance benefits, can help unemployed workers to sustain a decent standard of living and make their search for a job more efficient (see the chapter by Nolan, Hauser and Zoyem in this volume). Unfortunately, labour market policies and the various sorts of benefits that unemployed workers may receive can have adverse effects on their future employability. For instance, one might think of generous unemployment benefits as being disincentive to finding a job. However, the large number of micro-econometric surveys that have been done of this subject have not pointed to a strong effect of this sort (see De Vreyer & al. 1996 and the chapters by Gallie and Alm, and Stenberg and Samuelsson in this volume). Active labour market policies, that provide unemployed workers with subsidised jobs, are criticised when they fail in promoting to full-time and stable jobs (see Grubb 1994 for a survey of active labour market policies in OECD countries). Surveys in France (Bonnal, Fougère and Sérandon 1994, Fougère and Kamionka 1992, Florens and Fougère 1993) and Sweden (Korpi 1995), for instance, have pointed to the risk borne by such policies, since a significant proportion of workers permanently alternate between unemployment and unstable jobs.

Research hypotheses.

It is clear that most young workers that participate for the first time to the labour market are, *de facto*, outsiders. The likelihood that they remain durably on the secondary part of the labour market will depend upon such characteristics as education, social capital and sex. It should also depend upon the level of unemployment at the time they participate for the first time on the labour market, since it increases the average duration of their first job search and reduces their chances that this job will be a stable one. The question here is whether this initial handicap could turn into a permanent one. In what precedes we have identified several mechanisms by which this could occur: loss of human capital, the potential perverse effects of active labour market policies, the stigma that unemployed workers carry with them when unemployment has been too long and the process of de-socialisation are among them. Our maintained hypothesis is that such an exclusion process is more likely to take place in some particular countries, either because of a particular form of the welfare state and of social organisation or because the institutional setting of the labour market is unfavourable to outsiders.

The classification of countries according to these two criteria is not clear cut. On the one hand, the process of wage bargaining and the strictness of labour market legislation point to France and Italy as prime candidates for unemployment persistence. Great Britain and Denmark faring very well from this point of view. On the other hand, the welfare system is not very efficient in protecting unemployed workers in Great Britain. Of course one could expect this to decrease the likelihood of unemployment persistence, if one believes that labour supply is sensitive to unemployment and social assistance benefits. But, as mentioned before, micro-economic surveys have not pointed to any strong effect of this sort. However it is true that today unemployment rate is low in Great Britain, but at the same time the number of working poors is very large. Thus it is possible that in this country the process of social exclusion does not translate in persistent unemployment, but rather in increasing poverty. The protection provided by the welfare state is not better in Italy than in Great Britain. But this country is characterised by a 'familistic' model of welfare state, in which family support to the unemployed provides adequate welfare in terms of living conditions, though not in terms of income (see the chapter by Bison and Esping-Andersen in this volume). In the other three

countries, the welfare state appears to protect rather efficiently unemployed individuals from poverty, thus counteracting the process of social exclusion. Among these factors, one can expect the institutional organisation of the labour market to dominate in the determination of unemployment, since the prime reason for which unemployed workers do not find jobs is that they are not hired by firms. The process of social exclusion and the problems created by poverty come later, with increasing unemployment duration. As a result we expect France and Italy to be the two countries in which the effect of early unemployment on the further risk of being unemployed should be the strongest. At the opposite Denmark and Great Britain are the countries in which we expect these effects to be the lowest. The Netherlands should be in an intermediate position.

Looking for the insiders/outsiders dichotomy.

In this section, we are going to examine whether the initial handicap of workers that participate for the first time to the labour market at a time when the unemployment rate is high, is likely to be permanent or not. We will do so by looking at the career path of several generation of workers to see if the level of unemployment at the time of labour market first participation has an effect on the future probability of being unemployed.

Methodology.

The identification of cohort effects cannot be realised with cross-sectional data, since it does not allow to distinguish age from cohort effects. Panel data provide the ideal information set to perform such an analysis, however such data sets are scarcely available and are not indispensable in this matter. One can use a time series of cross-sectional data sets and create a pseudo-panel by way of aggregation over individuals having a given time-invariant characteristic. This is the solution that has been adopted in this chapter.

In what follows we call 'labour market cohort', a group of individuals having the following characteristics:

      - first participation to the labour market in the same year

      - of the same sex

      - of the same education level

We assume that once an individual has left school and entered the labour market, he/she does not go back to school, so that its education level remains the same throughout its working career. With this assumption, the combination of date of entry, sex and education level is time invariant and can be used to define cohorts. There are as many cohorts as there are combinations of those three criteria. For each country a pseudo-panel is thus created in the following way: for each year of observation, we grouped all individuals belonging to a given labour market cohort and created a data set having the representative individual of each cohort as unit of observation. In order to keep a large enough number of observations in each so-defined cell, we restrict to 4 the number of education levels: Primary or no education - Junior Secondary - Senior Secondary and Tertiary.

Data.

The data we use are from several cross-sectional surveys and have been collected in Denmark, Great Britain, France, Italy and the Netherlands. The following table gives the main characteristics of each data set used.

Country	Survey years	Number of individuals in each year (included in sample)
Denmark	1984, 1986, 1988, 1992, 1994	About 100000
France	From 1978 to 1996	About 50000
Great-Britain	1979, 1981, 1984 and from 1985 to 1991	About 60000
Italy	From 1985 to 1997	About 95000
Netherlands	1973, 1977, 1985 and 1991	About 40000

For each country our analysis only concerns active men and women aged between 16 and 55. The labour market cohorts that are considered in the sample are all those that first participated to the labour market since 1960.

Model specification and estimation methods.

Let $u_{c,t}$ be the labour market cohort c unemployment rate in year t. It is always possible to write:

$$u_{c,t} = E(u_{c,t}) + u_{c,t} - E(u_{c,t})$$

We assume that $u_{c,t} - E(u_{c,t}) = \varepsilon_{c,t}$ is randomly distributed and that $E(u_{c,t}) = u_t + z'_{c,t}.\gamma$ where u_t is aggregate unemployment rate in year t, $z'_{c,t}$ is a set of cohort specific variables and γ is a vector of parameters to estimate. Thus the econometric model is written:

$$u_{c,t} = u_t + z'_{c,t}.\gamma + \varepsilon_{c,t}$$

However in this model we cannot exclude the occurrence of unobservable random shocks, that could be correlated both with the cohort and the aggregate unemployment rates and that would bias the estimate of γ. One simple way of avoiding this problem is to transform the model in order to make the difference between the cohort and aggregate unemployment rates the dependant variable:

$$\Delta u_{c,t} = u_{c,t} - u_t = z'_{c,t}.\gamma + \varepsilon_{c,t}$$

The set of cohort specific variables that can explain the relative probability of being unemployed when belonging to a particular cohort is assumed to include sex, education level and labour market experience and, if the level of unemployment when entering the labour market matters, aggregate unemployment rate during the year of labour market entry.[2] Experience on the labour market is computed by the difference between current age and age when leaving school. This last variable is only observed for France. For other countries the year of labour market entry is estimated using the normal age for leaving school, given the education level. As a result, the precise date of labour market entry is imprecisely observed and measurement error is likely to occur in the year of labour market entry unemployment rate variable. For this reason we substituted this variable with a moving average of order 3. Experimentation showed that this significantly improved results in most cases. To these variables, in order to control for pure cohort effects that have nothing to do with unemployment rates, we add 5-years band cohort dummies as explanatory variables as well. Such pure cohort effects could result from the labour force composition at the date of entry or from the structure of the labour demand. For instance, if a given cohort enters the labour market at a time one particular sector of the economy is expanding, then the proportion of this cohort's workers working in this particular sector is likely to be higher. Depending upon whether this sector has been expanding or contracting afterwards, the proportion of unemployed in that cohort will change.

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[2] The time series of unemployment rates have been taken from OECD economic perspectives.

We have been experimenting with several variations of this model[3], one of which included among explanatory variables, the point increase in the unemployment rate during the year of labour market entry, instead of the aggregate measure of unemployment. One would expect this variable to have a significant positive impact on the current cohort proportion of unemployed, if young workers unemployment is very sensitive to changes (either good or bad) in the aggregate level of unemployment. This experiment proved fruitful, so we decided to present the results that we got with this variable, together with those obtained with the aggregate unemployment rate at the time of first participation as an explanatory variable.

In this model, one could expect the residuals to be serially correlated when the data include consecutive years of observation, even though the number of controls that we add in the list of explanatory variables is likely to reduce the extent of serial correlation. Given the nature of our data sets this problem is likely to occur for the French and Italian data only. As a rough way to control for this, we removed first order serial correlation by first estimating the residuals correlation coefficient and then by transforming the data in creating quasi-first differences between successive observations. Finally, in order to account for the possible heteroscedasticity of residuals between different cohorts, White standard errors are computed for the OLS estimates.

Results.

These are presented in tables 4a to 4e and 5. Estimations have been performed on the total sample, and on the male and the female samples separately. For each sample a series of four models has been estimated. Model 1 and 2 do not include the controls for pure cohort effects, in contrary to models 3 and 4. In model 1 and 3 the aggregate measure of unemployment at the time of entry is used as an explanatory variable, whereas in model 2 and 4 it is the point increase in unemployment during the year of first participation that is used. In table 5 partial results of the estimations conducted by education level are presented[4].

One of the prime difficulties in estimating such models is the potentially high level of multicolinearity that can occur between the explanatory variables. Indeed, experience, cohort

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[3] In particular we also estimated a model in which the dependant variable is the Box-Cox transformation of the ratio between $u_{c,t}$ and u_t , using Stata Boxcox command. This did not improve the results.
[4] The regressions from which these estimates have been obtained included cohort dummies as explanatory variables and where conducted on samples including both male and female workers.

dummies and the unemployment rate variables are likely to be more or less correlated together. This is the reason why we decided to estimate different specifications of the same model. There are good reasons to believe that, *a priori*, the least parsimonious model (either model 3 or 4) should be the preferred one, since it makes the least restrictive assumptions. But it is also the model in which multicolinearity is likely to be the most severe. However if, in this model, we find a significant effect of the aggregate unemployment rate at the time of first participation (or an effect of the point increase in aggregate unemployment), we can be confident of the reality of such an effect. If not, then we have to determine whether the cohort dummies are significant. In the affirmative, this would mean that the measure of unemployment at the time of first participation captures other cohort effects that we must control for. If not then one can turn to the estimation results of models 1 and 2.

<u>Effects of sex, education and experience.</u>

In all countries but the Netherlands and Great Britain, the percentage of unemployed is lower in the male cohorts than in the female ones. For Great Britain and the Netherlands this is at odds with what could have been expected from the national figures, but this could result from the fact that such figures do not hold account of the populations' composition. As for education, we find, in all five countries, that it significantly reduces the odds of being unemployed. Such an effect of education is expected if the structure of employment has shifted in the disfavour of low-qualified workers. A shift of this kind could occur in case of a biased technological shock, as already mentioned, or if companies screen among workers using the level of education as a screening device. The experience and experience squared variables are included in the models in order to control for the labour market experience unemployment risk profile that can be observed in the working population. As expected the risk of unemployment decreases with the time spent on the labour market, which confirms the high incidence of unemployment in the youth population in all five countries.

<u>Effects of unemployment rate at the time of first participation.</u>

We start by examining estimates reported in tables 4a to 4e. As expected the results for France and Italy display a strongly significant, positive and robust effect of the level of unemployment during the year of first participation. Indeed this effect is quite sizeable, since a 1% increase in the rate of unemployment at the time of first participation, can translate in up

to a 1.6% increase in the cohort current unemployment rate (France, female sample). However, the coefficient of the point increase in unemployment during the year of first participation is not found significant, apart in the French results, for which it is found small. This might result from the likely relatively large measurement error in this variable, since the year of labour market entry is not always correctly observed and the level of unemployment fluctuates much less than the increase in unemployment.

Opposite to France and Italy are Great Britain and the Netherlands. In these two countries, we do not find any significant effect of aggregate unemployment (neither in level nor in difference) at the time of first participation. For both countries, for model 1, we find a well determined effect of the year of first participation unemployment rate on the cohort proportion of unemployed, but this does not hold once pure cohort effects are controlled for (model 3). As for the point increase in the aggregate unemployment during the year of labour market entry, it is not found to have any significant effect in Great Britain, whereas the effect is found very small and not robust to the inclusion of cohort dummies for the Netherlands. For Great Britain this corresponds to what was expected from the above discussion. As for the Netherlands, the results are a bit more surprising, considering that from an institutional point of view this country is not far from France, the main difference being in a larger ability to employ workers on fixed term contracts in the Netherlands than in France. The Danish results are mixed. On the one hand, in the male sample we find a positive and very significant coefficient of the point increase in aggregate unemployment, that holds when cohort dummies are included. On the other hand, the results obtained with the female sample display a negative and significant effect of the level of unemployment at the time of first participation.

One could expect the effect of aggregate unemployment rate at the time of first entry on the labour market to differ between education levels. Indeed, if firms use education as a screening device then the low qualified workers have lower probabilities of being unemployed, and the gap between low and highly qualified workers is likely to increase in times of high unemployment. For this reason we have run separate regressions for each of the four education levels. Results are presented in table 5. For France the results confirm what we find when all education levels are pooled together. As expected the coefficient of the unemployment rate during the year of first participation is found positive and significant for the primary and the secondary levels of education, but not significantly different from zero for the tertiary level. Moreover, the coefficient for the primary level is found more than two times

larger than the coefficients for the secondary levels. It is true that the results obtained with the point increase in unemployment rate as an explanatory variable are not so clear cut since, in particular, the coefficient for the tertiary level appears to be positive. But it is only marginally significant. In Italy the results are a little bit at odds with what has been obtained with the pooled sample, since only the unemployment rate at the time of first participation appears significant and the highest value is obtained for the tertiary level. For other levels the coefficients are found quite large and decreasing with the level of education, but they are insignificant so that we cannot reject the possibility that they are equal to zero. The Dutch results are interesting. The aggregate unemployment rate at the time of first participation is found to have a positive effect on the current cohort proportion of unemployed for the primary level and a negative one for the tertiary level. Such a pattern is consistent with what can be expected if workers are screened by education levels and if the labour market is divided between insiders and outsiders. Indeed in such a case when unemployment is high, young workers with high credentials have a higher comparative advantage than is usually the case, and this initial advantage can result in a lower than average probability of being unemployed later in the working career. Note also that these differences in the results obtained with each education level can explain why we do not find any significant effect with the pooled sample. The British results, on the other hand, confirm what has been obtained when the sample is not split since, as expected, no coefficient is found significant. Finally, as with the pooled sample, the Danish results are puzzling since for the tertiary level of education we find a negative effect of the aggregate unemployment rate when measured in level, but a positive one once this variable is entered in difference. These results are difficult to explain.

Conclusion.

In this chapter we have examined whether first participation on the labour market at a time of high aggregate unemployment increases the probability of being unemployed later. We have found that this is indeed the case in France and Italy, and to a lesser extent in the Netherlands, an effect that we attribute to a segmented labour market. In these countries, handicaps seem to be built very early in the working career and do not depend only on individual characteristics that might result from individual choices, but also upon exogenous characteristics, such as birth date and the particular state of the labour market when first participation occurs. Our analysis suggests that this could partly result from the institutional features of the labour

market, in the sense that the countries in which it is most flexible do fare better in terms of their unemployment rate. However, the fact that Great Britain succeeds better than any of the other four countries in reducing the effects for later unemployment of people's early experiences of the labour market does not mean that the average level of welfare is higher in this country, given the large number of working poor. Denmark combines a labour market legislation that does not appear much more restrictive than in Great Britain, together with the features of the social-democratic welfare state that provides extended social protection, thus reducing the extent of poverty. Among the five countries included in this survey, Denmark is probably the one in which the process of "decommodification" (Esping-Andersen 1990), that is to say the detachment of the individual's status from the logic of the market, is most advanced. This probably contributes to explain the pattern of unemployment in this country, characterised by an unemployment rate that results from a high rate of job destruction and not from a low probability of leaving unemployment. Consequently, in Denmark the proportion of long term unemployed is much lower than in any of the other four EC countries included in this survey. This underlines the limits of the present study, which is based on an evaluation of the risk of unemployment, and indicates the direction in which the analysis should be extended. The description of a segmented labour market as opposing employed and unemployed workers is certainly too restrictive. It would be of considerable interest to see whether the ranking of countries would remain the same if the analysis were carried out not just on the probability of being unemployed, but on the likelihood of holding either a low-paid precarious job *or* of being unemployed.

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Table 4a: Determinants of LMC unemployment rates – Denmark (1984-1994)

	Total sample				Male sample				Female Sample			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variable												
Male	-0.024[***]	-0.024[***]	-0.024[***]	-0.024[***]	-	-	-	-	-	-	-	-
Education:												
- Primary or less	ref	ref	ref	ref	Ref	ref	ref	ref	ref	ref	Ref	ref
- Junior secondary	-0.047[***]	-0.050[***]	-0.048[***]	-0.049[***]	-0.086[***]	-0.090[***]	-0.086[***]	-0.084[***]	-0.009	-0.009	-0.011	-0.013
- Senior secondary	-0.134[***]	-0.136[***]	-0.135[***]	-0.135[***]	-0.162[***]	-0.166[***]	-0.162[***]	-0.160[***]	-0.107[***]	-0.107[***]	-0.108[***]	-0.111[***]
- Tertiary	-0.224[***]	-0.226[***]	-0.225[***]	-0.225[***]	-0250[***]	-0254[***]	-0251[***]	-0249[***]	-0.198[***]	-0.198[***]	-0.200[***]	-0.202[***]
Experience ($\beta*10$)	-0.055[***]	-0.039[***]	-0.077[***]	-0.076[**]	-0.057[***]	-0.020	-0.066[***]	-0.074[***]	-0.053[**]	-0.057[**]	-0.089[***]	-0.077[***]
Experience² ($\beta*100$)	-0.008[*]	-0.010[**]	0.000	0.000	-0.007	-0.013[**]	-0.004	-0.002	-0.009	-0.007	0.004	0.001
Year of 1st participation Unemployment Rate	-0.281[*]	-	-0.418	-	-0.588[***]	-	0.632	-	0.026	-	-1.468[**]	-
Year of 1st participation Point increase in U.R.	-	0.016[**]	-	0.012[*]	-	0.019[**]	-	0.029[***]	-	0.014[*]	-	-0.004
Labour Market Cohort:												
- 1960-64	-	-	0.007	0.052[**]	-	-	0.109[*]	0.079[**]	-	-	-0.096	0.024
- 1965-69	-	-	0.001	0.045[*]	-	-	0.101[*]	0.065[**]	-	-	-0.098	0.024
- 1970-74	-	-	0.032	0.072[***]	-	-	0.128[**]	0.091[***]	-	-	-0.065	0.053
- 1975-79	-	-	0.046	0.063[***]	-	-	0.066[*]	0.036	-	-	0.026	0.089[***]
- 1980-84	-	-	0.031	0.037[*]	-	-	0.023	0.017	-	-	0.039	0.058[**]
- 1985-89	-	-	0.006	0.026	-	-	0.012	0.028	-	-	0.000	0.025
- 1990-94	ref	ref	ref	ref	Ref	ref	ref	ref	ref	ref	Ref	ref
Intercept	0.353[***]	0.318[***]	0.348[***]	0.295[***]	0.368[***]	0.300[***]	0.239[***]	0.286[***]	0.314[***]	0.311[***]	0.433[***]	0.280[***]
R² (adjusted)	0.4620	0.4640	0.4689	0.4699	0.4938	0.4928	0.4985	0.5052	0.4519	0.4541	0.4690	0.4655
Number of cohorts	1412	1412	1412	1412	706	706	706	706	706	706	706	706

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

Table 4b: Determinants of LMC unemployment rates – France (1978-1996)

	Total sample				Male sample				Female Sample			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variable												
Male	-0.053***	-0.053***	-0.053***	-0.053***	-	-	-	-	-	-	-	-
Education:												
- Primary or less	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	Ref	ref
- Junior secondary	-0.088***	-0.088***	-0.088***	-0.088***	-0.078***	-0.078***	-0.078***	-0.078***	-0.098***	-0.098***	-0.098***	-0.098***
- Senior secondary	-0.126***	-0.126***	-0.126***	-0.126***	-0.103***	-0.103***	-0.103***	-0.103***	-0.150***	-0.150***	-0.150***	-0.150***
- Tertiary	-0.162***	-0.162***	-0.162***	-0.162***	-0.124***	-0.124***	-0.124***	-0.124***	-0.199***	-0.200***	-0.199***	-0.199***
Experience (β*10)	-0.194***	-0.208***	-0.197***	-0.200***	-0.173***	-0.179***	-0.179***	-0.181***	-0.211***	-0.234***	-0.211***	-0.215***
Experience² (β*100)	0.043***	0.046***	0.044***	0.044***	0.039***	0.041***	0.041***	0.041***	0.047***	0.050***	0.047***	0.047***
Year of 1st participation Unemployment Rate	0.313***	-	1.186**	-	0.129	-	0.725**	-	0.508***	-	1.566***	-
Year of 1st participation Point increase in U.R.	-	0.016***	-	0.010**	-	0.015***	-	0.013**	-	0.015***	-	0.006
Labour Market Cohort:												
- 1960-64	-	-	0.087***	-0.015	-	-	0.079**	0.020	-	-	0.083**	-0.054***
- 1965-69	-	-	0.087***	-0.011	-	-	0.077**	0.019	-	-	0.085**	-0.045***
- 1970-74	-	-	0.074***	-0.014	-	-	0.077**	0.014	-	-	0.072**	-0.046***
- 1975-79	-	-	0.055***	-0.013	-	-	0.066**	0.009	-	-	0.049*	-0.039***
- 1980-84	-	-	0.047***	0.014*	-	-	0.052***	0.034***	-	-	0.030*	-0.011
- 1985-89	-	-	-0.005	-0.005	-	-	0.057*	0.021**	-	-	-0.030**	-0.032***
- 1990-96	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
Intercept	0.274***	0.298***	0.175***	0.299***	0.194***	0.201***	0.112***	0.186***	0.296***	0.339***	0.192***	0.359***
R² (adjusted)	0.4631	0.4581	0.4694	0.4668	0.4228	0.4237	0.4331	0.4324	0.5527	0.5395	0.5597	0.5553
Number of cohorts	3812	3812	3812	3812	1906	1906	1906	1906	1906	1906	1906	1906

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

Table 4c: Determinants of LMC unemployment rates – Great Britain (1979-1991)

	Total sample				Male sample				Female Sample			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variable												
Male	-0.000	-0.000	-0.000	-0.000	-	-	-	-	-	-	-	-
Education:												
- Primary or less	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
- Junior secondary	-0.092***	-0.092***	-0.092***	-0.092***	-0.112***	-0.112***	-0.112***	-0.112***	-0.073***	-0.072***	-0.073***	-0.073***
- Senior secondary	-0.121***	-0.121***	-0.121***	-0.121***	-0.137***	-0.137***	-0.138***	-0.138***	-0.105***	-0.105***	-0.105***	-0.105***
- Tertiary	-0.118***	-0.117***	-0.118***	-0.118***	-0.138***	-0.137***	-0.138***	-0.138***	-0.098***	-0.097***	-0.098***	-0.098***
Experience	-0.073***	-0.090***	-0.077***	-0.075***	-0.112***	-0.130***	-0.118***	-0.113***	-0.033**	-0.049**	-0.036***	-0.037***
Experience²	0.015***	0.018***	0.021***	0.020***	0.027***	0.031***	0.034***	0.033***	0.003	0.006**	0.008**	0.007**
Year of 1st participation Unemployment Rate	0.201***	-	0.092	-	0.210***	-	0.050	-	0.192**	-	0.135	-
Year of 1st participation point increase in U.R.	-	0.070	-	-0.408	-	0.072	-	-0.817*	-	0.069	-	0.001
Labour Market Cohort:												
- 1960-64	-	-	-0.046***	-0.053***	-	-	-0.052***	-0.054***	-	-	-0.040**	-0.053***
- 1965-69	-	-	-0.020	-0.027***	-	-	-0.024	-0.026**	-	-	-0.017	-0.029**
- 1970-74	-	-	-0.017	-0.022***	-	-	-0.019	-0.019*	-	-	-0.015	-0.025**
- 1975-79	-	-	-0.006	-0.007	-	-	-0.004	0.002	-	-	-0.009	-0.016
- 1980-84	-	-	-0.007	0.000	-	-	-0.003	0.011	-	-	-0.011	-0.011
- 1985-91	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
Intercept	0.135***	0.162***	0.152***	0.160***	0.172***	0.200***	0.193***	0.192***	0.098***	0.124***	0.112***	0.129***
R² (adjusted)	0.5246	0.5217	0.5322	0.3253	0.6132	0.6104	0.6207	0.6219	0.4468	0.4435	0.4531	0.4527
Number of cohorts	2124	2124	2124	2124	1062	1062	1062	1062	1062	1062	1062	1062

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

Table 4d: Determinants of LMC unemployment rates – Italy (1985-1997)

	Total sample				Male sample				Female Sample			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variable												
Male	-0.052***	-0.052***	-0.052***	-0.052***	-	-	-	-	-	-	-	-
Education:												
- Primary or less	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
- Junior secondary	-0.086***	-0.087***	-0.085***	-0.085***	-0.071***	-0.072***	-0.069***	-0.069***	-0.099***	-0.100***	-0.098***	-0.098***
- Senior secondary	-0.127***	-0.129***	-0.125***	-0.125***	-0.098***	-0.100***	-0.094***	-0.094***	-0.152***	-0.154***	-0.151***	-0.151***
- Tertiary	-0.166***	-0.167***	-0.165***	-0.165***	-0.123***	-0.124***	-0.121***	-0.121***	-0.204***	-0.205***	-0.203***	-0.203***
Experience (β*10)	-0.122***	-0.208***	-0.100***	-0.112***	-0.130***	-0.209***	-0.115***	-0.125***	-0.126***	-0.211***	-0.101***	-0.113***
Experience² (β*100)	0.019***	0.034***	0.013***	0.015***	0.024***	0.037***	0.017***	0.019***	0.017***	0.033***	0.012***	0.015***
Year of 1st participation Unemployment Rate	2.035***	-	1.050***	-	1.861***	-	0.895**	-	2.087***	-	1.076***	-
Year of 1st participation Point increase in U.R.	-	0.001	-	-0.002	-	-0.003	-	-0.004	-	0.004	-	0.004
Labour Market Cohort:												
- 1960-64	-	-	-0.103***	-0.152***	-	-	-0.078***	-0.121***	-	-	-0.124***	-0.172***
- 1965-69	-	-	-0.109***	-0.150***	-	-	-0.086***	-0.121***	-	-	-0.125***	-0.167***
- 1970-74	-	-	-0.110***	-0.152***	-	-	-0.094***	-0.131***	-	-	-0.120***	-0.162***
- 1975-79	-	-	-0.108***	-0.145***	-	-	-0.104***	-0.135***	-	-	-0.107***	-0.145***
- 1980-84	-	-	-0.107***	-0.132***	-	-	-0.104***	-0.127***	-	-	-0.102***	-0.128***
- 1985-89	-	-	-0.082***	-0.088***	-	-	-0.076***	-0.081***	-	-	-0.081***	-0.088***
- 1990-97	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
Intercept	0.175***	0.363***	0.303***	0.395***	0.104***	0.280***	0.234***	0.313***	0.207***	0.393***	0.332***	0.424***
R² (adjusted)	0.4960	0.4550	0.5408	0.5374	0.4548	0.4066	0.5428	0.5390	0.6074	0.5836	0.6512	0.6484
Number of cohorts	2884	2884	2884	2884	1442	1442	1442	1442	1442	1442	1442	1442

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

Table 4e: Determinants of LMC unemployment rates – Netherlands (1973-1991)

	Total sample				Male sample				Female Sample			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variable												
Male	0.015***	0.015***	0.015***	0.015***	-	-	-	-	-	-	-	-
Education:												
- Primary or less	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
- Junior secondary	-0.068***	-0.068***	-0.068***	-0.068***	-0.077***	-0.077***	-0.077***	-0.077***	-0.058***	-0.058***	-0.058***	-0.058***
- Senior secondary	-0.089***	-0.089***	-0.089***	-0.089***	-0.102***	-0.102***	-0.102***	-0.102***	-0.077***	-0.077***	-0.077***	-0.077***
- Tertiary	-0.088***	-0.088***	-0.088***	-0.088***	-0.102***	-0.102***	-0.102***	-0.102***	-0.075***	-0.075***	-0.075***	-0.075***
Experience	-0.071***	-0.089***	-0.073***	-0.074***	-0.070***	-0.087***	-0.073***	-0.074***	-0.072***	-0.092***	-0.074***	-0.074***
Experience²	0.015***	0.019***	0.016***	0.016***	0.015***	0.019***	0.016***	0.017***	0.015***	0.020***	0.016***	0.016***
Year of 1st participation Unemployment Rate	0.453***	-	0.032	-	0.421***	-	0.153	-	0.485***	-	-0.088	-
Year of 1st participation Point increase in U.R.	-	0.008***	-	-0.003	-	0.007*	-	-0.007	-	0.010**	-	0.001
Labour Market Cohort :												
- 1960-64	-	-	-0.022	-0.022**	-	-	-0.010	-0.015	-	-	-0.034	-0.029**
- 1965-69	-	-	-0.021	-0.020**	-	-	-0.010	-0.013	-	-	-0.032	-0.027**
- 1970-74	-	-	-0.020	-0.019*	-	-	-0.007	-0.008	-	-	-0.033*	-0.030**
- 1975-79	-	-	-0.010	-0.008	-	-	0.000	0.002	-	-	-0.020	-0.018
- 1980-84	-	-	0.020**	0.027**	-	-	0.019*	0.036*	-	-	0.021*	0.018
- 1985-91	ref	ref	ref	ref	ref	ref	ref	Ref	ref	ref	ref	ref
Intercept	0.098***	0.124***	0.125***	0.125***	0.121***	0.146***	0.135***	0.141***	0.089***	0.117***	0.130***	0.124***
R² (adjusted)	0.5425	0.5219	0.5471	0.5473	0.4975	0.5611	0.5783	0.5791	0.4975	0.4739	0.5042	0.5041
Number of cohorts	720	720	720	720	360	360	360	360	360	360	360	360

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

Table 5: Results by education level.

		Year of 1st participation Unemployment Rate	Year of 1st participation point increase in U.R.
Denmark	*Primary*	0.079	0.018
	Junior Secondary	0.641	-0.003
	Senior Secondary	0.312	0.008
	Tertiary	-0.857**	0.014***
France	*Primary*	1.705***	0.007
	Junior Secondary	0.717***	0.010
	Senior Secondary	0.590**	0.011**
	Tertiary	0.324	0.006*
Great Britain	*Primary*	0.197	0.158
	Junior Secondary	0.013	-0.113
	Senior Secondary	-0.035	-0.492
	Tertiary	0.109	-0.694
Italy	*Primary*	0.706	-0.012
	Junior Secondary	0.533*	-0.001
	Senior Secondary	0.486	0.001
	Tertiary	0.942***	-0.002
Netherlands	*Primary*	0.929*	0.001
	Junior Secondary	-0.092	-0.007
	Senior Secondary	-0.246	-0.001
	Tertiary	-0.462*	-0.005

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

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01 - 09   **Indeterminacy and Endogenous Fluctuations**
with Arbitrarily Small Liquidity Constraint
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01 - 10   **Financial Effects of Privatizing the Production of Investment Goods**
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