# dossiers

The European labour market

Recent studies on employment issues in the European Community

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Recent studies on employment issues in the European Community

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#### Foreword

Research is not a substitute for action. Nevertheless, it is clear that new policies will have to be developed to cope with the enduring problems which the labour market has known for the past five years and that these must be based on a sound knowledge and understanding of labour-market issues. To that end, the Commission has been developing its programme of research and actions for the development of the labour market since 1975.

Studies carried out under the programme have yielded useful results which have already contributed to the development of the new policies we are seeking. Also, and in many ways this is just as important, they have contributed to better understanding and more fruitful discussions between the social partners and the Member States.

This volume presents the results of some of the studies undertaken in readily accessible form. It is my earnest hope that this will contribute to a more active and better informed debate about our labour-market problems, and will contribute to finding the remedies which we need.

H. Vredeling Vice-President of the European Commission

#### Introduction

This volume presents in readily accessible form the principal results of recent research carried out for the Commission of the European Communities under its programme of research and actions for the development of the labour market. This programme has been developed since 1975 to promote a clearer understanding of the working problems, trends and different practices of the Community labour market.

The four articles with which the volume begins present themes which emerged as of particular importance and interest in the early studies, in a period of increasing unemployment when it was becoming clear that a short-term solution to the European Community's labour-market problems would not be found.

There then follows a series of abstracts which presents the main lines of development and the principal conclusions of the studies carried out under the programme. These studies cover a wide range of themes analysing many of the current problems of the labour market.

By 1975, the need for a programme of labour-market research had been recognized by all parties to discussions of labour-market matters at European level. With consultation of the social partners becoming ever more important, with the European Parliament devoting increasing attention to employment matters, with the Council of Ministers seeking to reinforce its actions to improve the situation, and with the Commission developing policy proposals, the absence of a body of research at Community level was an increasing handicap. When the Commission put forward its proposal to establish such a programme in 1975, it consequently received strong support from the European Parliament and the social partners, leading the Council of Ministers to adopt the proposal.

The programme of research and actions for the development of the labour market thus has approached the need for a body or research into the problems of the European labour market in three ways:

- (i) by carrying out surveys of areas of research across the Member States;
- (ii) by developing a body of comparative research between the Member States;
- (iii) by transferring approaches successfully used in one country to others.

The results of this research have already contributed to the enrichment of discussions between the social partners and Community institutions, and have provided much of the basis for continued development of policy guidelines.

In particular the increasing programme of consultation, between governments and social partners developed in the framework of the Standing Employment Committee and the Tripartite

Conference has been strongly reinforced by the exploitation of the results of the research programme in discussion papers and proposals.

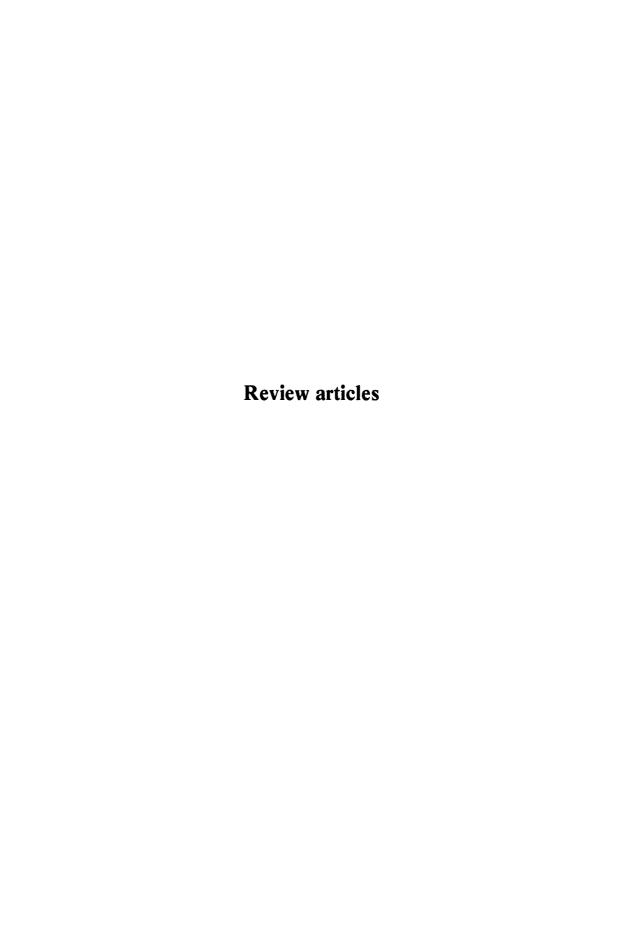
Now in its sixth year, the Commission hopes that the programme will continue to develop a body of knowledge at Community level which will lead to increased understanding of problems common to participants in the labour market of the Community, and will contribute to their eventual resolution.

The programme was developed under the supervision of John Morley and David White of the Commission services.

The articles and summaries presented in this volume have been prepared by Professor Guy Caire of the University of Paris X (Nanterre), on the basis of study reports which are acknowledged in the text. While the intention has been to faithfully reflect the work of the original authors, they cannot be held responsible for any misrepresentations which may have arisen inadvertently.

The studies described here reflect only the views of the authors, and should not be taken to reflect the views of the Commission.

Copies of the original study reports may be obtained, stock permitting, from the Directorate-General for Employment and Social Affairs, Division V/B/3 — Commission of the European Communities — 200 Rue de la Loi — 1049 Brussels — to which all enquiries should be addressed.





## Theories of labour market segmentation <sup>1</sup>

by R. Loveridge and A. Mok

The development of ideas in the field of economic theory has always been influenced by concrete problems of the moment. Theoreticians thus reflect the dominant ideas of their era and at the same time contribute, by their thinking, to the reinforcement of prevailing moral values by expressing them in a 'neutral' way. But from time to time during the last two hundred years the emergence of large-scale, long-term unemployment and the revelation of poverty and economic disadvantage of hitherto unrealized proportions has undermined both the credibility of political regimes and the confidence that economists display in the viability of their conceptual tools.

The pattern of long-term unemployment that has resulted during the 1970s has reaffirmed, rather than disproved, the continuance of differential career opportunities based on discriminatory employment practices. The seriousness of this pattern of discrimination is to be seen in its institutionalization and perpetuation in the investment and employment policies of major national and multinational companies. It is hardly surprising therefore that the current focus of the theoretical critique of orthodox and neo-classical labour economics should be upon its almost total disregard of the firm as the architect as well as the creator of employment opportunities and the most important training in work skills as well as the principal allocator of rewards in society. The theories of segmentation of the labour market, which take into account these observations and adopt this critical point of view and whose basic premises this study attempts to introduce, and the reasoning process and practical conclusions will be better understood if they are first situated in the field of theoretical analyses of the labour market, the empirical evidence is then treated, and finally the practical suggestions that emerge from them are discussed.

# I. Theoretical analysis of the labour market

The theories of segmentation issue directly from the observation of poverty in the black slums of American cities. The marginalization process — seen as a movement by which certain jobs are integrated into a certain segment of the labour force where their full-time functioning is conceivable but where their integration into a permanent form of employment utilizing their whole work potential seems impossible — is therefore inherent to the interpretation of the concept. If, moreover, the labour market is defined as those mechanisms and institutions through which the purchase and sale of labour power are arranged, labour market segmentation can be seen as the process of dividing the labour market into separate submarkets distinguished by different labour market characteristics and behavioural rules, which bring about the marginalization of certain

<sup>&</sup>lt;sup>1</sup> Study No 76/1; Ref. No V/213/78. Published in English by Martinus Nijhoff, Social Sciences Division, 257 pages.

segments of the labour force. The hypotheses underlying this new theoretical approach will be seen all the more clearly as they are first placed in the history of economic thought in this domain and then confronted with those of the now prevailing classical theory.

#### A. Labour market theories in historical perspective

Traditional neo-classical analysis treats the labour market as a unified entity, similar to any product market, in which allocation is regulated by the price mechanism. Neo-classical labour market theory is therefore a theory of markets and market interdependencies without reference to a social context. In this sense it is ahistorical. The following are its main hypotheses:

- (i) employers and workers have fairly accurate knowledge of wages and job opportunities throughout the market;
- (ii) employers and workers are 'rational' in that they try to maximize profits and to maximize satisfaction from real wages;
- (iii) each employer and each worker represent such a small part of the total demand or supply for labour that their individual decisions have no influence on wages;
- (iv) there are no obstacles to the mobility of labour and other factors of production;
- (v) workers and employers act individually and not in concert with other workers or employers in making wage and employment decisions;
- (vi) labour within a particular market is homogeneous and interchangeable.

This lack of reference to a social context runs counter to Marxist theory and to the classical theory in general that connects labour market mechanisms with the power system and the phenomena of social domination. The neo-classical competitive market is an 'ideal type' which can be seen as corresponding to what Marx called the 'middle phase' of capitalism and during which, in order to progress, industrialization needs competitive product markets to be constituted. But afterwards the rise of capitalism leads to the creation and development of more or less monopolistic markets. Marx thinks that in order to attract capital the entrepreneur must offer a sufficient profit rate; he therefore hypothesizes an industrial reserve army applying pressure from the 'external' market on the 'internal' market and maintaining wages at a low level.

Smith for his part had no illusions concerning the balance of powers, and he did not share in the conception that later became so popular of a labour contract freely agreed upon by equal partners. Its developments concerning the dependence of workers and the concerted action of industrialists are well known. But the multi-faceted character of Smith's analyses spawned contradictory hypotheses and conflicting schools of economic thought. The neo-classical critique of Ricardian economics began with Malthus's critique of his theory of accumulation in 1820 in which he developed the concept of effective demand. This criticism developed afterwards along different lines but as a whole all questioned the theory of value, notably when there is a shift in emphasis from production to the theory of consumption.

The neo-classicists tend to believe in the self-balancing of an economic system where labour cost fluctuates according to changes in consumer demand and modifications in the productive process. Unemployment and increase in poverty are purely temporary phenomena, at least as long as the level of real wages remains flexible. Keynes denounced the weakness of this analysis by showing that there was no flexibility and that even if there was, the propensity to invest was regulated by other factors. It is important to note, however, that Keynesian theory says little about the inequality of opportunity in what concerns employment and under-employment, while on the contrary one of the essential themes of the Marxian analysis of capitalism is the continuous relative impoverishment of certain sectors.

After World War II the institutionalist current became prominent. The work of Webbs, Commons, Perlman, Hoxie, Cole, et al, had already stressed the growing power of collective bargaining. The work of Kerr, Dunlop, and Ross has led to a reconsideration of the firm as a unit of analysis and to the discovery of internal markets and segmented labour markets. The institutional economists have demonstrated the advantage, for employers who are faced with variable product market conditions, of the establishment of a core of 'permanent' workers to which are joined for short periods a number of temporary workers. The term 'marginal workers' has become familiar for temporary or part-time workers hired last of all when demand is very high and dismissed first when it declines. They have therefore to be 'available' for temporary employment: this generally implies that the work requires little specific knowledge or training. Potential workers belonging to this outside 'reserve' may have chosen to do so but most of the time their status is determined by their lack of the characteristics desired by all or most of the employers on the local market.

The disparities in wages and working conditions must also be explained between groups whose work is of a temporary nature and those whose work is of a more permanent nature. It is of course obvious, as Smith has pointed out, that financial elements are not the only form of reward for work. It is no less evident, as Mill observed, that the belief that everyone can make a rational choice between different employments and careers has little basis even if this constitutes one of the hypotheses of neo-classical theory. The correlation between earnings and skills appears in many studies comparing the total average income of different trades; this correlation is at the origin of the concept of investment in education. However, the range of income within equally skilled groups is often greater than that of related groups and these variations cannot be explained by differences in productivity or personal choice.

All this leads to the following conclusion: the imperfections of the market are too large to be considered as 'frictional' or cyclical. Ignorance of the market's real possibilities can explain in part certain aspects of the inefficiency of labour distribution, but the statistical profile of employment suggests a systematic discrimination towards some: women, coloured people, immigrants, adolescents, and old people, for example. These durable, marked inequalities in the domain of earnings and employment opportunities between these groups and that of white adults in the prime of life cast doubt on orthodox economics. Assuming that employers have tastes and preferences of an exogenous character, the classical economist offers little explanation for the motivation behind these discriminatory practices and for the sub-optimum functioning that results.

#### B. Hypotheses of the segmentation theoreticians

The theory of segmentation enjoyed a rapid success in the consumption domain where the existence of different demand curves reflects the diversified preferences of consumers and their diversified response to price changes. Producers can take advantage of this situation, with price elasticity becoming an important indicator of monopoly power. This notion of elasticity can also be applied to the labour contract. The theory of labour market segmentation was thus born of the necessity to explain the differentiated needs found in each group of consumers and the differences found on the labour market. Nevertheless, the theory of segmented labour markets is in no way a unified body of theory; it is rather a set of approaches still lacking in unity. This can no doubt be explained in part by the different doctrinal influences this theory has come under, although in the main these influences are on the Marxist and institutionalist side.

The most recent studies in the field of labour economics adopt one or another of the following three viewpoints. The first and most widely used by theoreticians postulates the existence of a continuum of workers and businesses in perfect competition on each side of the market. The second that inspires many empirical studies is that of segmentation models which have a definite

advantage over the preceding theory because they allow a better definition of who is applying for such and such job. Moreover, within the market so defined, hypotheses can be introduced that will be more plausible in what concerns the nature of competition between workers and between enterprises (search for a definition of the conditions of a partial equilibrium within a sub-system). The discovery of a reserve supply of apparently deprived workers has given birth to the third approach which is known as dual labour market. Attention will now be focused on the two latter theories.

In the first perspective, three sorts of divisions may be examined. The first is of a professional nature. Supposing — and this is increasingly doubted at the present time — that the job ladder is based upon the single criterion of skills acquired by persons, through either a formal education or on-the-job training, one might think that this is the domain explored by Gary Becker's 'human capital' theory. For there to be a real segmentation process, it is not enough that there be distinct labour markets — as neo-classical theory considers by 'treating workers of different grades of skill as different factors of production' (Reder), factors between which the cross-elasticity of substitution is low; there must also be reproducible structures of either an economic or a sociological nature. An explanation of the reproducible character of these structures rests on the existence of positive feedback which intensifies over time the disequilibria that have occurred, while the negative feedback invoked by the neo-classicists would on the contrary lead to the attenuation of these initial disequilibria. Six sub-systems can be identified in terms of the different forms occupational mobility may take:

- (1) bridging occupations are those that through work experience provide the conditions and opportunities for movement across occupational frontiers. These occupations develop social relations, interdependency, a high standard of health, ease of contact, and marketable competencies; they develop aptitudes that can be used in other jobs;
- (2) closing occupations entail a low degree of mobility since the skills associated with them are linked to one particular activity and even to one particular place;
- (3) preparatory occupations, usually for young people, are by definition the basis of rising mobility;
- (4) career-step jobs, which are characteristic of advanced industrial societies having hierarchical forms with mounting responsibility, rewards, and status, bring about increased mobility which may be vertical, sideways, or even downward, and may occur without a change of employer;
- (5) jobs of the incremental hierarchy type characteristic of the seniority system have rewards that increase by predictable but small degrees;
- (6) the residual category consists of jobs outside the organized labour market that are irregular and short-term and whose mobility is discontinuous.

Although this division can easily be shown on an organigramme or job ladder, other sub-sets would in likelihood be established in this same perspective and based on the different rules (law, contract, and custom) governing the different levels of the hierarchy or else on the initial conditions of access that permit one for example the distinction between those known as 'professionals' in Anglo-Saxon terminology or yet still on the particularities of labour management that may characterize the different socio-professional categories or their equivalents and which may have been used as the basis of the so-called 'sociological' approach to distribution.

The second division is of a geographical nature. A horizontal partition thus replaces the preceding vertical partition and spatial mobility succeeds occupational mobility in demarcating the boundaries of local markets or 'employment fields'. The social spaces thus marked off are of course of variable size according to occupational categories, being limited at times to one locality

for manual workers, and extending to the entire world for senior executives. This imperfection in the market which the neo-classical theoreticians will be sure to evoke as an explanation for the disparity of observable rewards, may also be studied in terms of available information or of greater or less attachment to place of residence, an attachment that depends on objective factors (finance capital represented by an existing residence, for example) and on subjective ones (feeling of belonging to a community neighbourhood, for example). But, here again, for there to be segmentation, it is not sufficient to specify – possibly with the help of indicators – the outlines of the segments; how they are obtained must also be indicated. Besides the particularities of job search which may lead one to define a local labour market as a market where there is a concentration of labour demand and where workers can change jobs without changing their residence, one can also say that the practices of businesses and trade unions generate inelasticities and market reinforcement mechanisms of a 'manorial' nature. Proceeding further however, and after having defined the labour market as the functional relationship linking labour resources on the one hand to businesses (employment function) and on the other hand to jobs (allocation function), its mode of operation can be defined by distinguishing, for example, models of perfect rigidity, of limited fluidity, and of increased fluidity, and by specifying the formation mechanisms of non-competitive groups through the constitution of patterns on the part of businesses on the one hand and by the allocation of social positions constituted by the labour market on the other hand.

The third division is that of internal and external markets which after Doeringer and Piore we can compare according to administrative rules and procedures governing the price and allocation of labour. If the features characterizing internal markets are itemized the following factors are noted: enterprise-specific skills, informal on-the-job training, customs governing the behaviour of stable groups so constituted, and above all job stability. The institutional rules that govern them are established either by formal agreements or by informal practices resulting from the joint action of businesses, trade unions, and governments. These highly institutionalized markets are in contrast with external markets which are very questionably said to be non-structured. Their characteristics are an absence of union influence, an impersonal relationship between employer and employee, low skill level of workers, payment by unit of product, little use of capital, and above all the fact that the 'ports of entry' from the external market are situated on the lowest level of the job ladder so that competition between workers in the internal market and in the external market is very restricted.

The second perspective indicated — that of the dual labour market — is of a different origin and is less turned toward facts that bring about segmentation than toward the outcome of the processes. The dualist labour market is a market seen as being more or less divided into sectors paying high and low wages; where mobility between the two sectors is limited; where the high-paying jobs are linked to promotion ladders while the low-paying jobs give few chances for vertical mobility; where high-paying jobs are relatively stable while low-paying jobs are unstable. The labour market is divided into two sectors, one characterized by 'good' jobs and known as the primary sector, and the other characterized by 'bad' jobs and known as the secondary sector. A worker who has lost a primary sector job is unemployed in the involuntary, Keynesian sense. He may accept less attractive work temporarily but essentially he is waiting to regain a position equivalent to the one he has lost.

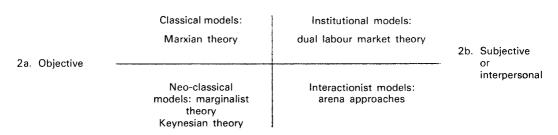
Secondary sector jobs tend to be self-terminating or are basically so unattractive that workers have little incentive to stick with them. It follows that the total employment of the secondary sector is constituted by temporary workers who change jobs frequently (a condition called 'frictional' or self-adjusting by orthodox theory). This dichotomy must be seen as an abstraction of the complex multi-sectoral market. In reality, jobs and careers will be judged in comparison with the conditions considered appropriate within a given trade, region or industry. In this sense, the dual market concept may be seen as a continuum in which the rewards given for certain tasks or jobs demonstrate the absence of competition between workers of the primary and secondary sectors for the same job.

#### C. Confrontation with the neo-classical theory

The diagram constructed by Mok and Bracke situates the different labour market theories that have been discussed so far.

Labour market theories on two dimensions

#### 1a. Collectivism



1h. Individualism

Axis 1a situates theories of the labour market that consider it *sui generis* and see it only in relation to its functioning for society as a whole and for its socio-political consequences (catascopic approach). Axis 1b represents theories that regard the totality of the system and the characteristics of its constituent parts as arising from the aggregation of individual choices (anascopic approach). Axis 2a is that of theories of the labour market that depict the market as an objective reality that obeys fixed rules or laws. Axis 2b is on the contrary that of labour market theories that depict the market as a subjective or intersubjective reality. Thus the main difference between classical and neo-classical theory oan be seen in the importance given to the demand function by the latter and to the supply function in the former. As such, neo-classical theory is atomistic, while classical theory, particularly in its marxian form, is structured by the nature of production.

Neo-classical theory rests on hypotheses of atomicity, perfect knowledge, and rationality, i.e. optimum use of workers, mobility, independent decisions, homogeneous goods, and substitutability of capital for labour. To the extent that these factors are more characteristic of markets in general than of the labour market proper, it can be said that on the latter the demand for labour is governed by the theory of marginal productivity combined with production functions generally postulated as having substitutable factors, while labour supply is determined by the investment in human capital associated with an alternative allocation of time between work and leisure, with the price mechanism governing the allocation of labour, as it does for every other product.

The orthodox theory is based on the existence of individual differences in labour productivity linked to differences in human capital investments and generating differences in rewards. Through the interplay of market mechanisms and the mobility streams that result on the one hand and because of the increase in training programmes on the other hand, the differences in rewards should decrease over time. But no such thing can be observed.

Neo-classicists are certainly aware of the existence of non-competing groups identified by Cairnes but, there again, these must, according to them, be only transitory phenomena. The groups, however, continue. Discrimination and segmentation are thus the two fundamental objections made by the neo-classicists' adversaries to deny the pertinence of orthodox analysis.

If the hard facts are that the labour market is characterized by stability, lack of fluidity, and the diversity of pay rates for similar jobs or else if there coexist on the labour market different sorts of wage-earners, it should be take into account, even if by so doing the neo-classical paradigms are challenged, that of the system's convergence towards equilibrium, and that of the subordination of employment to the rules of market functioning (i.e. the link between productivity and wages). The labour market concept is developed by defining a group of jobs and a group of workers with rules of correspondance between these two groups permitting the definition of the wage structure and the employment structure, wage level and differentials, and mobility flows. When there is a state of equilibrium neo-classical theoreticians maintain that there may be simultaneous determination of salary level and of volume of employment to the extent that the conditions mentioned above (atomicity, mobility, information, etc.) are filled and to the extent that workers are neutral, i.e. do not exercise independent pressure on employment, thus insuring a perfect symmetry between labour supply and demand, with business — and not sources exogenous to the economic system — being the significant category of the labour market structure.

### II. Empirical evidence concerning the labour market

Wage structure and employment structure are, as we have seen, at the heart of the market concept. It is therefore legitimate to review successively the phenomena of discrimination and segmentation, then once the segments have been identified, to seek their genesis in different places. Description and explanation will necessarily be the two phases of the following exposition.

#### A. Description

Suppliers of labour all have personal characteristics that can be labelled as superior or inferior qualities in a given context of the labour process:

- (i) age: on the labour market it is better to be neither too young nor too old; being young means lacking experience and necessary skills, being old implies having physical or social characteristics that are regarded as 'inferior';
- (ii) aptitudes: being physically or mentally handicapped implies occupying an inferior position vis-à-vis 'normal' persons;
- (iii) migrant origin: being an immigrant is an inferior trait on the labour market;
- (iv) sex: women, whose position on the labour market can be understood only by reference to their place in the family and to the sexual division of labour, constitute an important fraction of the 'industrial reserve army';
- (v) industry: old-established labour-intensive industries tend to have a high occupational unemployment coefficient;
- (vi) region: backward regions give people less chance in the labour market.

These different factors to which may be added demand structure and workers' level of expectation and aspiration do not in themselves confine people to certain segments of the labour market but in a cumulative way they may have that effect. There where the neo-classicists see in these forms of discrimination only a discrete source of market imperfections, segmentation theoreticians insist on their character of self-maintenance and mutual reinforcement.

Segmentation implies simultaneously cohesion within the selected segments and divergence among them — which are implied for example by spheres of mobility that are often the basis of

the analysis. The theory should therefore, in principle at least, lend itself easily to a statistical or even econometric demonstration. Three methodological frameworks may be used for this purpose:

- (i) the crude dual market hypotheses: statistical populations belonging to the two markets being compared have homogeneous characteristics within a market and heterogeneous ones between markets: for example such criteria as pay level, career prospects, job security, and working conditions;
- (ii) the job discrimination or pre-entry discrimination hypothesis: the preceding characteristics differentiate populations that otherwise have the same amount of vocational training, which contradicts the basic principles of the human capital theory;
- (iii) the wage discrimination hypothesis: within groups possessing equal skills and occupying similar jobs, individuals possessing the preceding characteristics continue to be victims of discrimination.

Dualists would claim that both forms of discrimination are in operation but might be expected to place more emphasis on pre-entry discrimination than neo-classicists.

That discrimination exists in the crude dual market hypothesis sense is shown by the fact that women and immigrants are over-represented in low-paying jobs in all European countries. Likewise, pre-entry discrimination operates among the same social categories, with employers systematically hiring immigrants for unskilled or temporary jobs or jobs with unfavourable non-wage characteristics; the observable differences in occupational mobility, the returns from investment in education, and earnings profiles in terms of age show also that being a female is a definite disadvantage; women are not only a source of cheap labour considering the skills they have, but they also provide employers with flexibility in the face of male workers seeking security.

Although dualist literature easily identifies deprived groups because of the concentration of persons in low-paying jobs with no chance of promotion, very little job security, and poor working conditions, there are also more elaborate hypotheses. First, as we have seen above, with otherwise equal skills the members of stigmatized groups are overwhelmingly concentrated in inferior jobs and this clearly more than members of non-stigmatized groups. Moreover, a number of more contextual propositions permit a better explanation and a more accurate circumscription of the causes of this particular functioning of the labour market: small businesses and businesses where the capital/labour ratio is low, a number of well-defined industries, and certain job sectors within an industry may all become job sectors with a concentration of stigmatized groups. One can also identify them by the simultaneous existence of a high labour turnover, a low seniority ratio, and a high frequency of dismissals. These contextual propositions are an important part of radical or neo-Marxian thinking on the so-called 'negative feedback' market process. In the history of the institutionalization of labour markets the notion of 'stigma' has progressively become an integral part of the characteristics of such and such job: some trades have been so labelled since time immemorial. When this notion is distinguished by the characteristics inherent to the group whose members occupy the jobs thus defined, one may see a reinforcement of the worker characteristics/job characteristics equivalence. Conventional recruitment and selection for these jobs have made this phenomenon continuous and permanent.

The proposition that workers are influenced by the insecurity of their jobs to become more unstable in their overall work attachments is only part of a larger system of feedback in which workers are influenced by many socio-economic factors including family background. A British right-wing radical, Sir Keith Joseph, described the broad social basis of those who are stigmatized in employment and offered the following explanation: 'Deprivation and inadaptability persist from one generation to another through what I have called a "cycle of deprivation". People who

have been deprived in some way during their childhood become in turn parents of a new generation of deprived children.' In a general review of studies devoted to deprived groups, Rutter and Madge have discovered that 'the persistence over time of high proportions of every sort of socially deprived person can be explained in terms of schools, residence in central cities, social class membership, ethnic group membership, or any other social or cultural situation. This persistence of problems from one generation to another is not necessarily linked to the family but may reflect the influence of a common social background or of factors outside the family'.

The effects of the child's socialization processes, the size of the family with its effect on the lifetime earnings/needs differential as shown in Atkinson's graph, and the reinforcement of social 'labelling' all create a 'culture of poverty' involving economic elements and psycho-sociological behaviour. The life-cycle hypothesis can also be used to support the explanation of the observed phenomena by explaining the particularities of job search and the mobility cycles that result according to sex and age: male workers would thus enter the work-force through low-paying jobs, would devote the first part of their lives to high-paying industries, and then would return to low-paying sectors (Sleeper).

It can be seen from this examination that although the dualism theory is on the whole confirmed, the explanations that could be given are more complex than those devised by Doeringer and Piore. Although pre-entry discrimination on the labour market (job) and post-entry discrimination (wages) indeed operate for certain groups, it is doubtful that the market conditions they face are homogeneous enough for them to be considered to be sharing the same market situation. Life cycle effects also are an important determinant of labour supply. Finally, because of their all-inclusive character, constructions of the 'industrial reserve army' type escape empirical verification and can only be *a posteriori* rationalizations.

#### **B.** Explanations

The dualism concept may be seen as a heuristic model. Each labour market may have pre-entry barriers that are not necessarily linked to potential productivity or to the productive aptitudes of labour, marginal work in a neo-classical sense. But on what bases does this dichotomy occur? The dual market theory offers no clear answer in itself. There are perhaps four main theoretical perspectives:

- (i) that of individual stigmatization,
- (ii) that of the internal labour market used unconsciously,
- (iii) that of the internal market mechanism used consciously, and
- (iv) that of the industrial reserve army.

Stigmatization is a social process by which a dominant group calls certain features of a foreign, subject, or outside group 'unclean'. This implies that young people and newcomers of the ingroup are trained to give correct answers and to have correct behaviour toward the pariahs or untouchables. This is usually the defence of a privileged economic position that one cannot rationally justify. It is usually an internal and often unconscious psychological reaction. Although it results from a group ideology, it operates through the individual's daily actions and unknown to him.

The internal labour market is the description of structured processes by which businesses or other employer organisms distribute work and reward it. These processes are in agreement with the organization's internal order; they are more or less isolated from the competitive pressures of the external market according to the position of the opposition in question with the enterprise. Kerr was the first to create a model of the internal labour market. He has described the structure

of the rules governing the 'entrances and exits' of the internal labour market as well as the seniority ladders and job clusters that define mobility chains. Doeringer and Piore have furnished an explanation of the economic and social phenomena permitting an understanding of the internal labour market. The skills necessary to the enterprise are acquired in such organizations. They provide employers with greater immediate benefits than general vocational training would do. They also permit on-the-job training that is less costly and more clearly oriented towards the specific job that is required. Thus trained, the 'permanent' worker appears to be a member of a work team rather than an individual; if he leaves, the productivity of the whole group declines. To the economic forces tending toward stability and permanence Doeringer and Piore add the social constraints of custom and precedent. On the external labour market the setting-up of an internal labour market (sometimes called the 'house' market) encourages other employers to organize a similar monopsony for a specific supply of rare manpower. Unions encourage the same process in two ways. Within businesses, they institutionalize rules for the protection of their members' labour and reinforce existing regulations thanks to collective bargaining. Outside of businesses they create their own labour market in the manner of trade organizations, whenever they can supervise entrance, training, and/or skills. These are called craft or guild markets.

For Doeringer and Piore, the crucial importance of the internal labour market resides in the fact that it helps to create the widest possible segmentation of the dual market. Kerr had already spoken of the 'Balkanization of labour markets'. All these authors refer to the manner in which employer organisms practise discrimination among workers by their recruitment and training policies, which is reflected, for the entire society, in inequality of opportunity in the choice of a career. Theoretically the importance of the internal labour market concept is linked to the manner in which it has displaced the major and rather abstruse interest that labour economics showed for the limits of regional, industrial, and job markets towards the very point where rewards and jobs are determined. In that very way it causes an evident threat to hang over orthodox economics, which is based, as everyone knows, on business theory.

It may be that the internal labour market operates as a result of the purely local interests of employers, recruiting agents, work teams, and union delegates. But the facts seem to prove abundantly that employers have consciously manipulated the environment to create a 'house' situation. The neo-Marxian economists, called radicals in America, analyze the segmentation of the labour market as resulting from a deliberate search of welfare capitalism. More orthodox Marxians see in subjective and individualized behaviour merely the reflection of 'objective' structural conditions of advanced capitalism. Discrimination toward minorities may take the form of stigmatization. Employers and economists may act individually for their own best interest within the existing socio-political order. Objectively, the result is the same: the concentration of production in several multinational firms produces a monopoly situation on the product market and a monoposonistic situation on the labour market. The obligation to produce an increasingly high plus-value with the help of a constantly expanding capital/labour ratio leads to the formation of an 'industrial reserve army' necessary to the system's survival. This is a fragile argument, theoretically and practically, but it is rarely debated except with the help of the unrealistic allegations of the competition's models.

Placed in one or another of the perspectives that have just been evoked, segmentation has most often been seen as a two-fold one that stresses either demand (internal and external markets) or supply (primary and secondary markets), or the relationship between supply and demand (local markets). In an overall approach some authors have postulated multisectoral models. Lutz and Sengenberger's 'Munich model' combines Kerr's Balkanization of markets, Doeringer and Piore's differentiation of internal markets, and Becker's human capital concept, the latter being the main determinant of the three distinct submarkets: unspecific submarkets, crafts submarkets, and firm-specific submarkets; mobility is encouraged inside each of these but discouraged between them. Piore's model distinguishes within the primary market an upper tier and a lower

tier side by side with behaviour based on 'mobility chains' and specified training processes. The combinative art allows Mok to present a four-part model crossing a vertical axis, which differentiates degrees of job security and reward levels, and a horizontal axis based on the nature of tasks and their relationship to the firm's needs. The axis of industrial relations and that of technical and organizational needs thus demarcate four sub-sets: a primary internal market, a primary external market, a secondary internal market, and a secondary external market. According to this view the external sector is as much inside the firm as on its periphery, thus showing that personnel and labour policies may be faced with a dilemma, because they are simultaneously confronted with economic, technological, and social factors. Organization and technology are not part of the given data but are unceasingly confronted with the dynamics of labour markets and products which means that firms are in a way placed at a crossroads.

Most of the available statistical data concerning discrimination comes from the United States of America, which is to be expected, considering the magnitude in that country of the problem to which they are linked. It is not by chance that the dualist hypothesis first saw the light of day in the US. Nor is it by chance that most elements of information on discrimination concern blacks and women, two important pressure groups that have supporters among university professors. The relative dearth of suitable data on migrant workers and other minority groups in Europe is perhaps as eloquent as the profusion of US studies on this subject. It is, however, possible to demonstrate the existence in most industrialized countries of a contingent of migrant workers. Unemployment is for a large part cyclical in Europe as in the United States and includes an appreciable number of workers of chronic instability. But the differences noted among the different countries are revealing, particularly to the extent that they link migrancy to the behaviour of certain groups on the market. Europe, too, is experiencing the crowding of minority groups into bad occupations, bad industries, and bad regions; but the cultural and institutional structure of this crowding does not seem to be of the same nature in each country. The behaviour diagrams within the various market segments may then differ from one country to another. Concerning labour supply, curves may vary from one group to another, apparently similar one because of differences in education, training, geographical situation, and history of the world of labour (thus in general the structure of organizations in Europe seems less formal than in America, with limits and circuits of the internal labour market being therefore less formal also), while demand curves may vary because of industrial situations, racial or sexual discrimination, or pre-entry barriers set up by different unions. Consequently, there will be a whole series of possible equilibria of wages and jobs for such or such group of workers. In Europe as in America the degree of job security, the ease with which promotions are made and their range, etc., may have greater variations among those defined as primary sector workers than between an ordinary manual worker paid by the hour and those defined as peripheral or marginal. Turning towards a multiple segmentation model, the complexity of ethnic and social class differences among marginal workers will be shown all the better: this could in return permit the development of an analysis and prescriptions that are more precise than those proposed up to now thanks to the rudimentary dual market concept.

# III. Labour market policies

If by labour market disarticulation is understood, both the cleavage in large businesses between socio-professional categories that are more or less useful to the smooth functioning of the productive apparatus and segmentation proper, i.e. the opposition between permanent workers under the contract in large firms and the recommended forms of work, whether an economic recommendation concerning workers in subcontracting firms (speciality subcontracting) or in labour-leasing businesses (capacity subcontracting), the essential thing is to understand the reasons for these practices if action is to be taken on them. It is only in this way, after having seen the different means of influencing the labour market available to the public authorities, that

the different spirit behind the recommendations of the theoreticians of labour market segmentation and those neo-classical theoreticians can be understood.

#### A. Means of intervention on the labour market

The active, conscious, and autonomous behaviour of the public authorities designed to influence the division of labour with a view to greater efficiency, such is the object of a labour market policy. A policy is conscious if it tries through indirect action to modify the skills available on the labour market, and through direct action to change the wage and reward structure with a view to preserving norms, values, and objectives peculiar to a national structure. A policy is active when it is directed towards supply as well as towards demand with a view to goals most often related to growth. A policy is autonomous if it is free from all outside pressure.

A labour policy so defined disposes of many instruments. First, there are employment agencies whose degree of market penetration is low, which seriously limits the achievement of an active policy; these agencies most often deal with the most difficult to employ among the manpower groups and they have not succeeded in imposing a requirement that job openings be made public. There are next training systems which are decentralized and informal in Great Britain but highly centralized on the continent, systems about which the neo-classicists have asked questions concerning the 'annuities' some employers enjoy by not contributing to defray the social cost of training borne by others. There are also social security and unemployment benefit systems, set up on a voluntary basis by labour and management or imposed by public authorities and whose present functioning in a period of important structural unemployment has led the theoreticians more particularly the neo-classicists — to evoke on the one hand the importance of the transfers of the economically active towards inactivity and on the other the influence likely to be exercised by unemployment benefits on job search and therefore on the extent of unemployment. Governments have at their disposal also minimum-wage legislation designed to help deprived groups on the labour market, but the example of the British Wage Councils shows that the expected result has not always been achieved. They can also use the formula of the job-creation programme in which the partisans of segmentation have often seen the creation of peripheral or temporary jobs and therefore a reinforcement of segmentation.

As a matter of fact these measures interfere with the strategy of firms of which Schultz-Wild distinguishes three possible methods: immediate adaptation to cyclical fluctuations in the case of firms operating on the external market, independence from economic cycles for firms operating on the internal market and whose manpower will undergo only the reduction due to its natural evolution, a subtle game consisting in conserving a part of stable manpower and being able to have another flexible part available. But to fully understand the scope of this the level inside firms at which the decisions are made concerning the management of human resources must be known.

This would not be enough, however, to distinguish the neo-classical and segmentarist approaches to employment policy. Indeed, as long as segmentation is seen only under the form of diverse policy measures — social security, apprenticeship, job security, etc. — it may be considered that the conflict is confined within narrow limits. It is therefore fitting to go beyong the mere examination of the methods of application of employment policy and define the spirit of it.

#### B. Spirit of labour market interventions

Two things are at the heart of the fundamental difference between the neo-classical approach to employment problems on the one hand and that of the partisans of segmentation on the other hand. In the first place what is in question is the respective parts played by mechanisms and by

actors. The question is whether segmentation is a strategic process ascribable to the conscious behaviour of the partners and desired at least by some of them or only the result of functional mechanisms and indirect, unpremeditated responses of the structure. In the second place, and connected with the preceding observation, comes the question of power. This latter has no doubt been forgotten by neo-classical analysis but the segmentation theoreticians cannot fail to consider it. Indeed, all forms of intervention on the labour market require a large dose of social supervision and this in turn implies more than technical understanding of market forces and of consumer or community preferences. The reallocation of resources required by an active labour market policy is thus an exercise of power. The neo-classical hypotheses lead to a policy of government intervention aimed at setting up signals to which the forces of free competition can react. In the neo-classical approach there is always the possibility of moving closer to the best or at least the second best on the labour market: mobility may be improved by specific aids to the workers concerned; it is the role of the public authorities, who have the means to do it, to improve information concerning the labour market; an adaptation of the information apparatus can remedy the disparities noted between the skills of labour and those required for jobs; institutional interventions can modify behaviour that does not conform to the competitive market of entrepreneurs in the same way that they can change the restrictive practices of unions.

But beyond these general remarks, it may be useful to see the explanations of segmentation set forth by the neo-classicists and the political recommendations they draw from them. Indeed, for the neo-classicists the economic forces that brought about the formation of monopolistic 'barriers' and 'filters' may also bring about their abatement: it is sufficient for the proposed explanation to mention a delaying or displacing function. If the barriers that prevent free competition do not help the system to function smoothly, market forces will eat away at them or will in time modify their direction. Time and equilibrium are the two pillars of neo-classical analysis. But it may be that market systems do not attain equilibrium during a particular worker's career. This is why, in practice, employers and workers use 'second-rate' solutions to survive, solutions that all originate in orthodox economic analysis. It is thus, for example, that for neo-classical analysis discrimination may be regarded as an external economy; when an employer has no clear idea of applicants' skills, he hires white adults in the prime of life for the 'good' jobs because this demographic group can be expected to have on the average the best training; likewise the internal labour market is the most efficient and least costly solution to the problem of a faulty environment. The employer will possibly find it to his economic advantage to practise a policy of discrimination towards certain groups who have the reputation, well-founded or not, of having few skills, or persons whose service records suggest chronic instability and lack of perseverence. In this neo-classical perspective governmental or judiciary intervention designed to compensate for previous discrimination is seen as potentially disastrous in that on the one hand it keeps the eventual employer from pursuing under the best conditions a profit maximization strategy (by using a 'second-rate' filtering system for example) and in that on the other hand it isolates poor education and primary socialization systems from forces which on a free market, bring them afterwards to the level of those of the primary sector.

By shifting the sources of economic deprivation outside the labour market, the neo-classicist displaces them to the separate and autonomous markets of education, lodging and social services. In each of these domains efficiency is connected with a certain amount of free competition. The arrangements which may be seen as necessary when considered in relation to the consequences they entail on the labour market are subject to a separate analysis which permits their efficacy in the appropriate sector to be determined. While the 'radical' considers the elimination or replacement of institutional barriers as a major priority and tries to reach this goal through a system of institutional reforms accompanied by an appropriate distribution of subsidies (and even by an evaluation of fictitious prices), the neo-classicist pursues the restoration and maintenance of prices within each of the market segments, which for him should finally bring erosion by the same competitive forces of the barriers between markets.

Although Anglo-Saxon policies clarify this neo-classical orientation, the orientations of European economic policy on the contrary permit a better understanding of the nature of the mechanisms operating in segmented markets. According to Jain, these European policies are characterized by:

- (i) the fair employment concept designed to eliminate discrimination at work and in preparation for work;
- (ii) the income distribution focus, in particular in terms of national minimum salary, or the solidarity principle;
- (iii) the job-creation approach to segmented labour markets;
- (iv) the selective underpinning of less competitive groups, such as foreign workers;
- (v) the isolation of specific characteristics, such as physical disability, for special treatment.

Anti-discrimination laws have led to the discovery of current hiring and dismissal practices within firms; training and retraining have been very revealing in what concerns the existence of a double labour market and the usefulness of this concept in terms of political economy.

The dualist perspective leads to a reconsideration of the efficacy of economic policy. If employers practice discrimination in recruitment on the basis of characteristics other than vocational training or previous education, then training and retraining of manpower outside the firm that provides the employment are of only limited interest: they will be accepted only by small businesses that cannot invest in their own human capital due to the lack of resources: workers of the secondary sector have all desired human capital; all they lack is access to valid jobs. Likewise, employment agencies under governmental auspices do not enable a better equivalency between skills and jobs because an increase in information does not bring about an increase in iobs for workers in the secondary sector. Such 'labour exchanges' will consist only of a list of secondary sector jobs. Firms of the secondary sector will tend to develop their own networks inside 'house' job markets. Likewise again non-discriminatory monetary and fiscal policies designed to stimulate overall demand and even the attempts of a more discriminatory nature to 'prime the pump' selectively appear to be condemned by the dualist interpretation. According to the dualists there are indeed more than enough jobs on the secondary market but these are 'bad' jobs that are characterized by poor rewards and working conditions; the cause of heavy unemployment is in a high turnover of manpower due to the fact that neither employers nor workers are incited to maintain stable relationships in work. Employers' preference for temporary solutions (sub-contracting and temporary work) comes from their historic experience of 'up and down' growth. Recessions reduce the demand for employment in the primary sector but bring about no corresponding alleviation of employers' expenses in matters of employment. These expenses often lead to the avoidance of structural adjustments in the internal labour market because they could be irreversible. Inversely the increase in overtime work permits workers of the secondary sector to increase their earnings when the product market is flourishing, all the while keeping unitary marginal costs from climbing; the expansion of overall demand then serves only to aggravate the pre-existing differences between employment sectors.

The essential problem is finally that of knowing whether intervention on the labour market should concern labour supply, as neo-classicists advise, or labour demand as partisans of segmentation theories tend to think. For theoreticians of segmentation the firm is in effect the first place that determines mobility in jobs and it prevails over what would be the reaction of wage-earners if they did not obey the classical laws of the market while seeking to optimize their situation. In other words, since the market is segmented by institutional rules, the rules contribute to maintain the situation as long as they are not changed. For the rules to be changed, there must be a desire to intervene, guided by a clear conception of the nature of segmentation.

The main part of the debates that have opposed neo-classicists and radical economists for the past ten years have had statistical analysis as their basis. The data gathered can be criticized as to its validity, its technicality, and its rudimentary character. Given the distance that separates the aggregate data of the micro-processes they are said to represent, some latitude in their interpretation can be expected. Discussions take place concerning the technical interpretation as well as the factual nature of the problem. The rudimentary character of the data as well as the rarity of the discoveries behind these data have launched a debate on the very nature of the facts. Consequently it seems essential to know in detail about the stocks and the pre-entry, postentry, and post-exit flows of manpower in the employment system, not only for planning available human resources, but also for the formulation of precise explanations with a view to making forecasts. These data which come mostly from work places should allow the integration of allinclusive studies by economists and the analyses in detail by labour sociologists and institutionalists so as to test the logic (and consequently the validity) of the framework used in both cases.

#### It seems therefore that it could be of interest:

- (i) to try to draw up a more rigorous model of the internal labour market thanks to comparisons established on the facts as they have been utilized by organizational sociologists; these would be in particular very useful in analyzing the role of small businesses and multi-national firms in creating labour market segmentation;
- (ii) to study the manner in which public and private employment agencies operate and in what measure government agencies are orientated towards institutional channels other than structured markets;
- (iii) to try to discover the nature of groups of potentially deprived workers and the sort of measures that would permit them to become efficient pressure groups;
- (iv) and more generally to face the necessity of a new type of data for the drawing-up and comparison of national statistics; the propositions for modification of existing methods should be based upon a theoretical analysis of present and future segmentation problems.

The gathering of information is designed to clarify their action and to create real market strategies among marginal workers. It is perhaps a contradiction of terms to speak of a marginal workers' strategy since by definition few of them can have any idea of a possible future other than a continuation of present uncertainty. And yet their strategy consists in resorting to the usual short-term tactics that have insured their survival. They are different from the workers of the primary market essentially in what concerns their ability to obtain an institutionalized response from management. The institutionalization of discrimination created labour market segmentation. Collective bargaining in the broadest sense of the term, is an evident response to institutional barriers, either as a means of getting into the market, or as a means of assuring and maintaining an old or a new discrete segment of the market for others of the same sort. Employers prefer to treat labour market problems on an individual basis as long as they can. To be able to bring about a change in their condition, deprived workers must acquire status and influence. One means to obtain them would be the intervention of the executive and the judiciary with the backing of anti-discrimination legislation. But the latter will be ineffective unless it is supported by organized groups acting as 'counter-powers'. On the basis of a more or less stressed strategic identity four categories can be imagined:

- (i) individually disadvantaged persons: those whose economic handicap is linked to their personal situation;
- (ii) the collectively disadvantaged who conceive of their situation in personal terms and who are unaware of any means to rectify this personal situation; these are the stigmatized group of people upon whom the dualists concentrate their analysis;

- (iii) the collectively disadvantaged who have become aware of their existence as an 'economic community', i.e. aware of the existence of a 'public good', a concept that is central to the theory of welfare;
- (iv) the collectively disadvantaged who have become aware of their existence as a 'political community' or pressure group, one that has become aware of the legal-administrative means to acquiring a 'public good'.

It may therefore be suggested that the public administrators who draw up economic policy should be aware of the indemnities and side-payments these groups may be paid to increase their cohesion, political awareness, and active participation in the allocation of rewards. In other words, it would be fitting for the labour market to be treated as an arena where the deprived should be encouraged to act as an interest group and be taught to be politically effective inside the system. This seems to be the only means of obtaining and maintaining the desired structural changes.

# The relationship between training and employment and its consequences for labour market and training policy

(Die Beziehungen zwischen Bildung und Beschäftigung und ihre Konsequenzen für die Arbeitsmarkt- und Bildungspolitik)

by the Institut für Sozialwissenschaftliche Forschung, Munich, Centre d'Études et de Recherches sur les Qualifications, Paris, and Centre Travail et Société, Paris <sup>1</sup>

#### **Foreword**

At the request of the Commission of the European Communities (Directorate-General for Employment and Social Affairs) during the winter of 1975-76, two French research institutes, the Centre d'Études et de Recherches sur les Qualifications (CEREQ) and the Centre Travail et Société of Dauphine University (CTS) in Paris, and a German institute, the Institut für Sozial-wissenschaftliche Forschung (ISF) in Munich, undertook, on the basis of available empirical material, to analyze the evolution of skills in the Community countries. In spite of heavy expenditures for training, in most countries there is a series of imbalances:

- (i) persistant bottlenecks for certain categories of manpower, while there exist at the same time surpluses for other categories of skills;
- (ii) persistence of social inequalities in access to the different training programmes and professional careers;
- (iii) unsatisfactory use both at work and socially of skills acquired by individuals during their training.

The research work of the three institutes was presented in the form of several dossiers at the Centre pour le Développement de la Formation Professionnelle; it was discussed in May 1977 at a colloquy held in Berlin with the participation of experts and of representatives from the three institutes. The present report is an abbreviated version of these different works, with bibliographical references being given in addition for works published elsewhere.

# 1. Objective of the study and empirical material

The analysis deals with the tasks of industrial workers, the corresponding skills, and the training programmes or vocational careers in which these skills have been acquired. It should be pointed out, however, that vocational training and employment policy requires in addition that sectors of

<sup>&</sup>lt;sup>1</sup> Study No 75/9 (published in six languages by CEDEFOP, Berlin, 60 pages).

activity be situated within a whole consisting of the industrial process, the economic and technological conditions, and the social training conditions. The narrow view which has often prevailed in research work and policy and the isolated treatment of the problems of vocational training and the labour market are indeed inadequate approaches to account for the relationship which is established between training and employment, and they risk leading training and employment policy into difficulties.

The hypothesis selected for this report is therefore that the forms of labour — a term that includes organization of labour, division of labour, and employment structure — play a decisive role in the profit-making capacity of the company as well as in the skills of the labour force or in the efficient functioning of the labour market. The genesis of these forms of labour does not take place, contrary to what is generally thought, by successive jumps from one stable situation to another, but by a continuous evolution, which is, however, difficult to observe and analyse.

The research is based, on the one hand, on macro-economic data (census) as well as on sets of statistics concerning the economically active population and vocational training, and, on the other hand, on surveys in industrial sociology carried out in France and in the Federal Republic of Germany. In this way CEREQ made a series of sectoral studies which permit the analysis of tasks of skilled production workers in mechanical engineering as well as the tasks of production and technical staff (not including engineers) in the chemical industry. Moreover, the data relative to company organization, staff structure, and pay were obtained from a survey made in 1971/72 by the ISF of Munich and the Laboratoire d'Économie et de Sociologie du Travail (LEST) of Aix-en-Provence <sup>2</sup> and permit the comparison, by pairs, of 14 German and French companies whose technical and economic characteristics were approximately the same.

## 2. Organization of labour and utilization of available skills

#### 2.1. Technology and industrial labour

The macro-economic models used to forecast labour needs are based on structural coefficients which classify manpower according to skills and branches of activity. They postulate, therefore, the homogeneity of the employment structure in a given economic sector, with the rival mechanisms leading to a *rapprochement* of the technologies used. The structure of skills then appears as a variable dependent on technical evolution, which is itself determined by the evolution of the product market.

Empirical studies carried out in business firms have shown, however, that the techniques-skills link is not nearly so close: at a given instant, production units belonging to the same sector of activity and having similar characteristics (size, product, and technical equipment) may have very different modes of manpower utilization, with the organization of labour, which may take very different forms, obviously playing an essential role in the explanation of these disparities. The same jobs are thus defined differently not only from one company to another but also from one unit to another within the same company. These disparities do not seem to lead to differences of competitivity in the firms studied.

<sup>&</sup>lt;sup>1</sup> CEREQ: Document collections Nos 16.1-16.9 and 23.1-23.7.

<sup>&</sup>lt;sup>2</sup> Burkart Lutz: Bildungssystem und Beschäftigungsstruktur in Deutschland und Frankreich. Zum Einfluss des Bildungssystems auf die Gestaltung betrieblicher Arbeitskraftestrukturen. In: Institut für Sozialwissenschaftliche Forschung e. v. (ed.) Betrieb - Arbeitsmarkt. Qualifikation I Francfurt/Main Aspekte Verlag 1975, pp. 83-151.

In a more detailed manner, the surveys demonstrate three types of relationship between technical equipment and the organization of labour.

- (i) Particular forms of labour may be associated in a special way with the use of certain techniques. Thus, for example, one sees in chemical industry certain production processes where the worker does not come into direct contact with the product (machine-product type process), in continuous and regular production processes as well as in irregular and discontinuous processes. In both cases, however, the corresponding employments imply only well-defined intermediary or supervisory operations (installation workers) or simple tasks corresponding to strict directions (machine operators and handlers), tasks which correspond only to a low skill profile.
- (ii) Modifications in the techniques used result in changes in employment content and, in particular through increases in productivity, modify the quantities of labour incorporated in manufactured products. Generally, technical evolution brings a sliding of the required skills of knowledge and mastery of the action and the use of machines towards the understanding of the technical principles on which their functioning is based, and from direct social relations towards the capacity to situate oneself in the complex structure of an organization. Consequently, the content of occupational tasks is transformed and requires new and more abstract aptitudes and knowledge.
- (iii) Labour content is also modified in response to the adaptation of the combination of factors following cost variations on the factor market and the variations in productivity of the factors. This modification in the organization of labour according to the calculation of the profitability of companies is of particular interest, i.e. the care taken by companies to make production as independent as possible of the staff employed.

Thus great diversities coexist in jobs in spite of the use of similar techniques. The variations are still greater when the profiles of the employees are considered. These differences may reflect the variations in manpower supply over time and through economic cycles. Thus companies can opt for more severe selection criteria in periods when there is an excess of manpower; likewise they can in the long term take advantage of these selection criteria to allow for their environment, the creation of new training programmes, and the resulting available skills.

These statements, which are based on a great number of observations, are valid not only for industry but also for labour in construction and tertiary sector occupations. The idea of an unequivocal technical determination of forms of labour should therefore be relinquished in favour of the plasticity of occupational tasks and employment structures. This plasticity allows companies to arrange their production processes flexibly in terms of the situation of the moment or of their objectives. But it also allows, in so far as a conscious influence on working conditions is sought, the accomplishment of social policy objectives, such as greater justice or the prevention of tensions in relations between training system and employment system.

#### 2.2. Chain of command and use of manpower in German and French companies

The organization of labour acts as a mediator between technical equipment and the various task profiles which become crystallized as jobs. This organization of labour is itself determined by the skills available on the labour market and therefore, in the medium and long-term, by the influence the training system exercises on the structure of the labour force. Some ideas as to this influence are furnished by the comparison of German and French companies. The research of

the ISF of Munich and the LEST of Aix-en-Provence is based on a survey plan that is almost experimental due to the fact that the objective situations of working conditions (technical and economic characteristics of the companies) were quite similar, although the skills structure of the manpower supply was different in France and the Federal Republic of Germany because of the differences in the training systems and educational traditions of the two countries.

Although the survey was in the main directed towards the study of differentiation and the companies' pay structure, complementary information has also been obtained concerning the structure and skill of the staff and the command line and functional organization inside companies. This shows that the organization of French firms differs from that of German firms in three ways:

(1) The chain of command is much more marked in France than in the Federal Republic of Germany. The proportion of staff charged mainly or exclusively with management or supervisory tasks is always greater in France than in comparable German firms. The differences are even sharper when the production sector is taken alone (manufacture and maintenance) and a 'management and supervisor density' is calculated, that is, the number of workers per management and supervisory job. The following table outlines this.

TABLE 1

Workers per supervisory job in production and maintenance 1

Couple		France	Federal Republic of Germany
Machine-tool	I	11	22
	II	20	16
Steel	I	9	20
	II	9	25
Paper	I	8	17
	II	9	35
Tanners		7	28

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 100.

The differences in this relationship result from two organizational facts. On the one hand, the personnel at the lowest level of management and supervision, that of the foremen, are always less numerous (except for the machine-tool II couple) in German companies than in French companies; a foreman has therefore under his orders a smaller number of workers in France than in the Federal Republic of Germany. On the other hand, there are more levels of command in the French companies studies. The chain of command is therefore more differentiated there, as is clearly shown in Table 2 for production units of the machine-tool I couple.

TABLE 2

Command levels and strength of staff at different levels of management and supervision <sup>1</sup>

Command levels	Strength of staff
German company	
Head of production	1
Head foremen	3
Foremen	17
Workers	452
French company	
Production manager	1
Assistant production manager	1
Head of production	1
Department heads	3
Assistant department heads	2
Head foremen	3
Foremen	5
Superintendents (assistant foremen)	23
Workers	406

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 101.

These differences in the numbers of command levels are also found in sales and management departments, as well as in the companies' engineering and design departments. The result is, in particular in the sales and management departments of small and medium French companies, that at least one sales employee out of three occupies a middle management position (this is the case notably of the paper II couple). The conversations which took place in the companies studied bring out the fact that to these differences of management and supervision correspond also great differences in the latitude for decision-making that is left to management and supervisory staff: 'Under comparable conditions, foremen, department heads, and other managers and supervisors in the Federal Republic of Germany seem to have more responsibility and freedom of decision in their area of competence than their French colleagues, who are often subject to a highly formalized system of rules and regulations. This coincides with the differentiation in pay and with the skills structure. In short, the organization of French firms may be described as closer to the bureaucratic type of organization than is that of German firms.

(2) The division of labour between production and the engineering and design department is much more marked in the French companies studied.

Engineering and design departments that are truly autonomous as to organization are found in only four couples: mechanical engineering (especially in the research and methods study departments) and in the steel industry (mainly in the engineering management, scheduling, and quality-control departments). For the four couples being compared, the engineering and design departments are more fully staffed in France and more strictly separated from production on the organizational level. In the French companies the percentage of persons employed in these departments is 10% of the companies' total staff as against 5% in German firms.

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 102.

These differences may be illustrated by the example of the steel industry (couple I): 'In the two companies, which each have almost 1000 wage-earners and whose manufacturing operation was situated towards the end of steel production, the staffs of the engineering and design departments are not very different in the two cases: about 5% of the total staff in the German company, compared to 7% in the French company. This example permits, however, the clarification of a typical situation. In most of the engineering and design departments, in those in particular that can be grouped under the German category of "technische Betriebswirtschaftsstelle" (engineering management, scheduling, hardware management, energy management, etc.), no significant difference can be detected either in quality or in quantity. There exists, on the other hand, in the French company a relatively well-staffed "engineering and design office" which groups a sizeable proportion of the highly skilled technical staff and for whom there is no equivalent in the German company. The function of this engineering and design office consists in particular in working out, on the basis of detailed analyses of production processes, precise orders concerning the methods to be applied to various installations and types of products, orders which the management and supervisory staff are expected to enforce. The "know-how" implied by these regulations is on the contrary considered in the German firm as a normal component of the technical competence of the production staff (and of its chain of command) not needing any special explanation.

In connection with this relative originality in the two companies' division of labour, it can be seen that:

- in the FR of Germany the engineering and design department is subordinate to the production stage of the line of command, while in France it is on the same level;
- the German firm assigns eight engineers to production, the French firm only four'.

It is evident that the differences in the division of work are accompanied by a different definition of the functions of the engineering and design offices. In the French companies, the latter solve a great many problems explicitly and in advance by working out orders and detailed, compulsory methods; in German firms they are limited to setting up general principles and framework data, leaving it up to skilled workers and foremen to solve a great number of the special problems of production. Consequently, in the French companies, the division of labour is not only more marked vertically (chain of command) but is also more marked horizontally among departments (functions).

(3) These remarks are equally valid for sales and management departments. In German companies, these departments are almost always organized on two levels of command: the person in change of a job (Sachbearbeiter) and the department head. The female workers occupy a lower level than their male colleagues in the collective agreements and are sharply differentiated in the chain of command. In addition, the great majority of the staff concerned are listed in the company's books under the heading 'sales representatives', without any further specification. The situation is different in French companies where the sales and management staff is organized on five or six command levels and is listed in the company's statistics together with precise command line specifications and functions.

#### 2.3. Available skills and use of manpower in German and French companies

Differences in staff structures and skills correspond to the different forms of company organization. The most significant differences are:

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 103 et seq.

- (i) a higher proportion of management and supervisory staff in French companies: top management, middle management, and foremen constitute 11.9% of the staff as against 7.1% in German companies; <sup>1</sup>
- (ii) a lower proportion of unskilled workers in France, about 30% of the staff as against 39.3% in the Federal Republic of Germany, while the corresponding proportions for skilled workers are respectively 37.7% and 40.5%; <sup>2</sup>
- (iii) in the German firm, mixed-sex vocational training (parallel in-plant training and theoretical courses) plays an important part on all levels. Many semi-skilled workers (Angelehrte) in the Federal Republic of Germany have previously benefited from vocational training, most often in a branch other than that in which they serve as semi-skilled workers; in France semi-skilled workers have usually entered professional life without any vocational training at the end of obligatory schooling;
- (iv) in the German companies, the great majority of skilled workers (Facharbeiter) have completed an apprenticeship of 3 to  $3^{1}/_{2}$  years; semi-skilled workers who are promoted to the rank of skilled workers after a long vocational career are rather exceptional. In France, on the contrary, only some of the vocational workers benefit from comparable systematic vocational training; in many companies most of these are workers who have acquired their skill exclusively through experience in the company through a training period of 6 to 10 months in one of the public adult professional training programmes. This results in a strong differentiation in the collective agreements for this category;
- (v) in the German firms, sales representatives and technicians have also benefited from apprenticeship under the mixed system, which is often completed in the case of technicians by training in comprehensive schools or in a commercial school. For this category of staff, general and professional training is much more heterogeneous in France. Most sales representatives have not completed a vocational training course; it is the level of the secondary school diploma that seems most decisive for their professional career. Among the technicians are skilled workers and those with long vocational experience as well as graduates of the public education system's training programme;
- (vi) in the German companies, foremen and middle management who almost always have the same basic skills as the workers under them, differ by their longer vocational experience and their longer time with the company and by skills acquired in vocational development courses. In France, middle-level managers have a higher formal level of general or vocational training; for foremen the choice seems to be made more in terms of personality and criteria such as 'leadership ability' or 'tenacity' than because of particular vocational aptitudes;
- (vii) as concerns training, top managers constitute the most heterogeneous category in the Federal Republic of Germany: they include college graduates, persons who have acquired their skill through a sales apprenticeship or who have attended a technical or engineering

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 110. The comparison of personnel categories in France and the Federal Republic of Germany is difficult because of the problems of demarcation raised: while in France top management have a well-defined status in labour law and in collective agreements, their counterparts in the Federal Republic of Germany are the *leitende Angelstellte* category to which persons belong who do so less for the duties they perform than for their salary status. The *Vorarbeiter* does not usually draw a salary in the Federal Republic, while the French department head is part of the personnel paid by the month. Classification in the *Facharbeiter* category usually implies 3 to 3<sup>1</sup>/<sub>2</sub> years of vocational training in the occupation in question while the French group of skilled workers is, with its minimum of three wage categories, much more heterogeneous; only a part of them can be considered as having completed systematic training similar to German apprenticeship.

<sup>&</sup>lt;sup>2</sup> Cf. Burkart Lutz, op. cit. p. 110.

school after their apprenticeship. In France, on the other hand, top managers constitute, from the training point of view, the most homogeneous group, holding, with few exceptions, a high school diploma and very often a college degree.

In short, in what concerns training, staff structure is more homogeneous in the Federal Republic of Germany, the staff of all command levels and all functions having in common the element of central training that apprenticeship constitutes, but this does not mean that the staff is more homogeneous in the Federal Republic of Germany than in France as to social origin. It is this common stock of training that is at the origin of the lesser bureaucratization of the organization and of the weaker distinction between intellectual labour and physical labour in comparison with French firms. This is reflected in the differences in pay between the various categories of workers which are always greater in France, as may be seen in the following table.

TABLE 3

Pay scale of the different categories of staff in German and French companies <sup>1</sup>

Staff category	Pay scale (index)		
Stan Category	France	Federal Republic of Germany	
Top management	340	215	
Middle management	231	181	
Foremen	181	162	
Technicians and sales representatives	134	118	
Skilled workers	125	115	
Semi-skilled and unskilled workers	100	100	

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 110.

The different uses of the various staff categories and their size, which vary within firms, do not explain the differences of relative prices; the national forms of labour division and the use resulting from them of types of skills are on the contrary attributable to the differences between the educational systems of the two countries and to the different exits from the training apparatus which are the result. These training structures which differ from one country to the other have led to typical forms of interdependence between the training and employment systems.

# 3. Skill as a mediatory element between training and employment

# 3.1. The concept of skill 1

The concept of skill is the mediatory element between the process of training and developing the capacity for work and its use in the production process. There are, however, several sides to this concept. One speaks of skilled manpower (subjects) and skilled jobs (objective conditions of the expenditure of human capacity for work). One relates the concept to apprenticeship processes and to training programmes; one relates it also to certain representations of the use of human

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 110.

resources in the process of production, i.e. products, returns, and income. This concept refers to more or less abstract characteristics which should allow the adjustment of classification systems.

Skills and individuals are linked. Skills are not themselves social objects that can be isolated but rather designate the action potential of individuals; this potential can be described as consisting of the variable aptitudes of individuals to carry out work connected with certain given forms of division of labour. Concerning individual biographies, skill can be described as the aptitude to master more or less well a certain vocational life and its demands. From this point of view, it is about all the active, dynamic quality of the skill, its quality of potential that is clearly revealed; it is a question of aptitudes and knowledge which are always greater than their present observable manifestations, which are subject to change and which, under other conditions, lead to different actions. Skill is therefore related to the idea of education, in opposition to that of training, thus taking the opposite view of the idea of skills conceived as fixed action programmes under the form of constant stimulus-response diagrams.

This active aspect of what is meant by skill makes more difficult the systematic understanding of it and the determination of stable skill and occupation nomenclatures. It is not by chance that the traditional classifications of occupations founded on sets of stable tasks under very similar working conditions have lost their meaning. The permanent changes in employment structures and the demands of action make it more and more difficult to identify the potential for action required at a given moment by different sorts of work. Likewise, the skill-developing processes are not done with at the end of schooling or formal vocational training but continue throughout the working years. A job entails greater or lesser chances to learn and to become skilled according to the existing organization and extent of division of labour. When the division of labour has been carried very far, according to Taylorization principles, jobs lose the greatest part of their training potential, the tasks to be carried out demanding only regulated and mechanical forms of work execution. Easy vocational mobility between different but still limited jobs does not encourage learning either. Inversely, the jobs demanding varied performances give workers the chance to develop their knowledge and aptitudes. Highly specialized vocational activities exercise the same effect in so far as they imply a rather long process of acquisition of complex aptitudes and knowledge which must be applied in their work to situations and problems that cannot be foreseen in detail.

# 3.2. General and vocational training of the labour force in the Federal Republic of Germany and in France

The most recent data on the educational level of the labour force come, in the case of the Federal Republic of Germany, from the April 1971 complementary survey of the micro-census of the Statistisches Bundesamt (Federal Bureau of Statistics) and, for France, from the 1970 INSEE survey on training organization. One notes upon reading the following table that the number of graduates of secondary schools (first and second cycles) is higher in the French than in the German labour force, and particularly so for holders of intermediate-level diplomas: thus, in France at least 55% of the young people entering professional life in 1971-72 were holders of an intermediate-level diploma, while in the Federal Republic of Germany about the same proportion of youth (60%) left the public educational system without having obtained at least one intermediate-level diploma.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Burkart Lutz, op. cit. p. 116. These data were furnished by a special analysis of the INSEE figures made by the CEREQ and by estimates of the ISF that are based on publications of the Federal Ministry of Education and Science.

TABLE 4

German and French labour force by educational level in 1970 and 1971 respectively <sup>1</sup>

		(in %)
End of training	France	Federal Republic of Germany
With a university-level degree	6.2	5.1
With a secondary school or comparable diploma	6.6	4.2
With an intermediate-level diploma	26.7	10.2
With a primary-school diploma or without any certificate	60.5	80.5

<sup>&</sup>lt;sup>1</sup> The figures for France were taken from the INSEE collections (Series D 32, Paris, 1974, p. 116). The figures for the Federal Republic of Germany were furnished by a partial census which was made for a report of the SPES project (J. Handl, K. U. Mayer, W. Muller, Sociology III chair at the University of Mannheim).

Observation of the vocational training level of the two countries' labour forces demonstrates once again in Table 6, where the figures are also those for 1970 and 1971, the outstanding role of mixed vocational training for the German labour force.

TABLE 5

German and French labour force by highest level of vocational training attained <sup>1</sup>

(in %)

	France	Federal Republic of Germany
University education (no short programme)	5.3	5.1
Schools of technology (specialties programme) <sup>2</sup>	3.3	8.4
Apprenticeship (BT etc.) <sup>3</sup>	20.3	55.7
No vocational training	71.1	30.8
of which Only primary school	60.6	27.9
End of 1st cycle-secondary school diploma End of 2nd cycle-secondary school diploma	6.3	2.8
or more <sup>4</sup>	4.3	1.0

<sup>&</sup>lt;sup>1</sup> Cf. Burkart Lutz, op. cit. p. 117.

In the Federal Republic of Germany systematic vocational training means for most of the population training within the 'mixed' system, i.e. combining practical training in the company with theoretical training in part-time vocational courses. Moreover, college and technological institute graduates having often completed an apprenticeship before beginning their studies and having in some cases worked for several years between the end of their apprenticeship and college, it can be estimated that over 60% of the labour force has completed an apprenticeship on graduation from comprehensive high schools.

German 'mixed' apprenticeship is training for occupations said to be 'officially recognized training programmes; provisions regulate its means of application throughout the country and

<sup>&</sup>lt;sup>2</sup> In the Federal Republic of Germany, including secondary school graduates who have completed an apprenticeship in the mixed system at the end of schooling.

<sup>&</sup>lt;sup>3</sup> In France the CAP or BP are comparable to the German apprenticeship. Secondary school graduates having completed an apprenticeship are not included in this category in the Federal Republic of Germany.

<sup>&</sup>lt;sup>4</sup> In France, persons who have made short college studies (short university programme, for example) come into this category.

stipulate the knowledge and skills the apprentice must acquire and which are tested by means of an examination. There are still at the present time more than 500 officially recognized occupations. One notes, however, a definite tendency to concentrate mixed training on a small number of occupations which are highly polyvalent and very widespread.

The homogeneity of the manpower potential is, however, affected by the great differences of quality between the sorts of training offered. This quality varies from one firm to another and from one branch to another. The training, undertaken most often in workshops and then completed by an instruction period for the apprentices in different departments, is usually more thorough in large firms than in small and medium-sized ones. The training is also broader and more thorough in occupations connected with industrial techniques and management and sales occupations, than in craft occupations and the auxiliary occupations of the tertiary sector.

In France only the public educational system gives systematic training that is officially regulated and confirmed by a diploma. The educational system is highly differentiated in what concerns both lines of command and specialities, and the different training programmes are rigidly separated from each other. In all, France trains far fewer skilled industrial workers than the Federal Republic of Germany: if the average success rate is 85 to 90%, then some 130 000 proficiency certificates must be conferred each year in the Federal Republic for occupations involving industrial techniques and for craft occupations as against 80 000 diplomas of the CAP. BT, and BEP levels conferred in France for the corresponding occupations. Moreover, training on this scale is recent in France while it has been going on for at least 20 years in the Federal Republic of Germany. It should be noted however, that the amount of vocational training in France is certainly underestimated. Table 5 is based on training confirmed by a diploma. But 40% of young people who, in France, complete two-year or three-year training periods which normally lead to the CAP do not obtain this proficiency certificate, and apprenticeship, which trains about 23% of the population, is formally regulated by an apprenticeship contract in only 45% of the cases and terminates in formal certification in only 22% of those cases. In addition, the comparison made here does not take into account those who leave public technological and vocational schools without diplomas and whose number is far from negligible.<sup>2</sup>

If, for this reason, the evaluation of French skill potential with the help of statistical data is less sure than for the Federal Republic of Germany, it should be noted that the social guarantee of skills by their certification is something of a quality label on the labour market, serving as a gauge of certain employment possibilities of the labour force by the employer, a gauge that is particularly trustworthy in the case of the *Facharbeiterbrief* (vocational proficiency certificate) in the Federal Republic of Germany, for example.

# 3.3. Typical skill-acquiring processes and their varying importance in the Federal Republic of Germany and in France

The sum of aptitudes and knowledge a person has at a given moment does not depend only on his initial training but also on various stages in his professional career and on the chances for improvement it offers. Different patterns of combinations of the skill-acquiring processes in formal training programmes and in 'on-the-job' apprenticeship can thus be distinguished:

(1) On the one hand, there are occupations and tasks that imply the use of technical knowledge and aptitudes that can be defined in a clear and unambiguous manner; it is relatively easy to

<sup>&</sup>lt;sup>1</sup> CEREQ Dossier A 3, p. 3 et seq.

<sup>&</sup>lt;sup>2</sup> CEREQ Dossier A 3, p. 4: in 1974 80 000 of the 200 000 youths who had completed Level V of the technical training programme had not obtained a secondary school diploma.

make this knowledge and these aptitudes correspond to well-defined formal training programmes where they can be acquired. Recruitment takes place immediately after the initial training period whose level is more important than is professional seniority. Beginners who have completed their vocational training are therefore assigned to jobs corresponding to their training or else to those slightly under it. Long occupational experience may none the less compensate to a certain extent for little training. In these activities, promotion is usually linked to additional special knowledge which is most often acquired in formal apprenticeship courses, such as knowledge of hydraulics or programming for skilled industrial workers. In the Federal Republic of Germany the industrial occupations of metallurgy and electrical engineering as well as tertiary sector training of the industry sales representative type belong to this first pattern.

(2) The second pattern is based more on occupational 'careers' and therefore on specific skills which are acquired by occupational practice. After a short and seldom systematic initial training period the career develops, with fairly well-regulated passages from one job to another which require a broadening of the skill through occupational experience and growing specialization. To this group belong, in France, the occupations of skilled mechanical construction workers and electrical and electronic industry workers. Basic occupational specialities such as milling, fitting, lathe-work, steel-rolling, and boiler-making tasks, and which have corresponding autonomous training programmes, can consequently open the way to foremen's jobs, by way of a rising series of jobs. According to CEREQ drilling is typical beginner's work; ascending specialities are tracing, boring, adjusting, mechanical repair work, and after-sales service. The skills hierarchy is based here on occupational ability which is measured according to aptitude for different jobs, an aptitude which is acquired and tested through practice.

Passing to more complex tasks is done according to criteria which depend on the organization of labour: training careers allow the passage from serial production to individual production, from simple standardized activities to diversified work operations which include other domains and other functions, and from work that is limited to production to tasks in the work preparation, engineering and design departments. It is fitting to stress in this process a pronounced centrifugal tendency which is also to be seen in the Federal Republic of Germany in mechanical engineering, for example, and which, as experience and skill increase, removes workers from production and this even in the engineering, design and auxiliary departments located upstream and downstream from production.

The tasks described here as basic occupations in Franch mechanical engineering are mostly identical to the former occupations of semi-skilled workers in the Federal Republic of Germany (Anlernberufe), where the narrow range of knowledge and aptitudes they permitted workers to acquire were such as to cause them to be stricken from the 1969 list of officially recognized vocational training occupations.

(3) There exist in the third place, occupations and activities for which the relationship between initial training and occupation is still more vague than for the above activities. This is the case, for example, with skilled workers in the processing industries (such as the chemical industry). These tasks demand that the worker be able to find his bearings in a complex and abstract labour system, but they do not require specific training in that branch. Access to these tasks is usually connected with the satisfaction the worker gives in unskilled tasks and with a series of selections on the basis of jobs of increasing skill. This type of skill is stressed by the CEREQ surveys: of the 207 skilled production workers whose jobs have been considered by the sectoral survey on the chemical industry, only a third had received vocational training and only 20% of these had received training in the chemical sector; in the sectors situated upstream and downstream from production, again fewer than one half of the

workers studied had received vocational training. Promotion of production workers in the chemical industry usually takes the route of the whole range of existing skills and tasks and not that of different key jobs as in mechanical engineering. As a general rule, promotions are none the less made in a certain age group: between 25 and 30 when there has been previous vocational training and between 35 and 40 in the opposite case. Recruitment is founded less on formal criteria of technical knowledge and aptitudes than on the proof given of the mastery of specific, typical work situations which are of some importance to the firm; it is done mostly according to the 'trial and error' method.

These three skill patterns can be seen in the Federal Republic of Germany as well as in France, but their relative importance varies from one country to the other. Careers of the second type are seen more often in France than in the Federal Republic, while, inversely, the first type, which characterizes the classical skilled worker in German industry is seldom encountered in French production although one can see him among the technical staff in laboratories in the chemical industry, for example. The third type, that of the semi-skilled and sometimes highly specialized worker with a long occupational experience whom one meets in all branches of French industry, plays on the other hand a minor role in the Federal Republic where his employment is limited in particular to typical processing industries, i.e. to industrial branches for which there is not (yet) any specific workers' training or else the training is very recent and not very widespread.

The different forms of organization of labour and use of personnel revealed by the comparative study of German and French companies thus now appear as a reaction to the specific forms of skills offered by the training programmes, which in return reinforce certain dominant modes of organization of labour and thus lead once again to a corresponding demand. The mechanisms that engender this mutual adaptation are, on the one hand, the companies' strategies and, on the other, the pay structures, which are also revealed by the comparative study and are the expression of forms of personnel utilization. Next come the forms taken by social conflicts in the different countries and by the demands of labour and management. On the whole, we are therefore faced with a network of multiple relationships which acts as a mediator between training and employment and adjusts the latter to each other.

# 4. Vocational training and labour market problems

## 4.1. Segmentation of the labour market and specificity of skills in relation to companies

The acquisition of 'on-the-job' knowledge raises the question of the extent to which this knowledge is transferable to other work situations which are different from those where it has been acquired. This is very important when the worker changes companies because his ability to 'carry away' with him his productive potential determines the strength of his position in negotiating with his new employer. A generalization of forms of division and organization of labour has been seen recently which results in a high specificity of skills with regard to the company. One of the causes of this evolution must be looked for in the decline of traditional production occupations due to the technological changes which have occurred and to the creation of new products: 'The production system of the first industrial revolution had relatively stable characteristics:

- (i) the company was identified by the nature of its products, which was stable and homogeneous;
- (ii) the company's means of production were of a relatively universal nature, and techniques spread slowly enough to ensure the homogeneity of business structures in a single sector;

- (iii) the geographical concentration of the means of production is based on abundant and available local manpower;
- (iv) training programmes are of the occupational type, and the available skills are peculiar to one industry'. 1

With the increase in the number of products, the creation of new techniques and new types of organization of labour, there is an increase in ways to combine the production factors differently. There results from this change a high heterogeneity of the production processes, and this even within a single branch of activity, and also a decreasing universality of the technologies used. To this technical particularity corresponds a 'technical' specificity of skills in relation to the company. 'On-the-job' initiation and acquisition of skills leads to the acquisition of aptitudes and knowledge that can be used productively in the specific context of a company; the corresponding jobs have no equivalent, however, in other companies.

None the less, the 'technical' specificity of skills cannot be explained by technical imperatives. The interactions between training and employment described above also mean that the existence of a relatively constant supply of well-defined but polyvalent occupational skills is in opposition to the advent of these 'technically' specific skills, while, on the contrary, a relatively untrained supply of skills tends to favour the development of specific skills during the worker's professional life.

There exists another cause of the specificity of skills which leads to a 'political' attachment to the firm. H. Marcuse and A. Touraine have shown that social domination in our time takes more and more the form of social integration, especially within the organization where persons work. The chief part of this integration is the reference to a 'company spirit', the abolition of the criteria and norms that allow the comparison of work situations and make companies interchangeable for the worker. 'Many monographs demonstrate that certain companies initiate measures intended to ensure that their staffs will be sufficiently permanent and therefore integrated:

- (i) the specificity of workers' skills which prevents or reduces their chances of getting a new and similar job in other companies;
- (ii) the granting of material benefits: bonuses, salaries, and allowances in kind;
- (iii) the development of chances for internal promotion which ensure that workers will have rising career profiles, which in turn fulfil their desire for social mobility and job security'.<sup>2</sup>

It is when the required aptitudes and knowledge — which may be of a high order — are restricted to a particularly limited sector, that 'company' skills are developed. The latter not being offered on the labour market, there is no chance of establishing socially protected training programmes; companies have therefore all the more tendency to train their staffs according to their own needs and to attach them to the company.

These specific skills lead also to the segmentation of the labour market into the company's internal and external markets. Companies operate on the one hand with a permanent staff who are endowed with 'company' skills and, on the other hand, with changing, part-time, unskilled staff who act as an industrial reserve army. During times of difficult economic conditions, the bulk of unskilled available manpower is dismissed, while permanent personnel are kept whenever possible, which, moreover, is encouraged by labour legislation in force in the Community. The evolution in the field of adult education which has led to the inauguration of short, highly specialized training periods which can be taken advantage of very little strengthens the role

<sup>&</sup>lt;sup>1</sup> CEREQ Dossier, A 2, p. 49.

<sup>&</sup>lt;sup>2</sup> CEREQ Dossier, A 2, p. 36 et seq.

played by internal skills and the correlative segmentations of the labour market. A contrario the importance of the formal sanction of skills is better understood: general recognition by society of training such as the vocational proficiency certificate in the Federal Republic of Germany (Facharbeiterbrief) and the large supply of manpower having this skill lead to a lesser dependence of the workers on a company and to a greater potential for mobility among skilled employees who can easily be rehired by any company.

Changes in the training system may have very important consequences for the organization of industrial labour: thus, in the Federal Republic, a high proportion of young people who might leave the school system without vocational training (due to the development of general secondary education, for example) could lead to the erosion of the pattern and bring it closer to the French pattern, which would lead to greater specificity of skills with all the consequences that could result for individuals and for the economy.

## 4.2. Problem of the entry of youth into professional life

In all countries of the European Community, youth unemployment is a particularly serious problem. The information given above permits a more accurate definition of the reasons for it. The existence of vocational careers for workers, the frequent specificity of skills and their acquisition on the job mean that a number of skilled jobs which require long professional experience are not open to beginners whose general or vocational training is inadequate to allow them to hold skilled jobs. If these young people without vocational training — or who have training in traditional craft occupations or in auxiliary occupations of the tertiary sector which give them only slight skills — find only jobs offering neither the chance to learn nor the prospect of being able to perform a series of training tasks in different jobs of rising demands, they will be condemned to remain regular customers of the unskilled labour market and constantly threatened with unemployment.

This leads to a more precise definition of the value of training. It can only be appreciated in terms of the jobs to which it gives immediate access at the end of the training period. Referring not to a single job but to a series of them, it is measured not only according to the chance it gives to find a first job, but also according to the chance given the worker to acquire skills in his vocational life through a series of more and more highly skilled tasks in different employments. 'Strict vocational training, perfectly adapted to ensure acquisition of a skill in a given job, can constitute a serious handicap from the point of view of transferability. Inversely, general training can be an advantage, which becomes all the greater as access to and advancement in jobs can be made through a succession of training jobs.' The question is thus posed of an evaluation of training programmes not only in terms of traditional classification hierarchies but especially in relation to new criteria: transferability, flexibility, and ability to learn according to the various forms of division of labour.

# Summary

The most significant result of the analyses made above and of the integrated surveys is certainly the recognition that, contrary to widespread belief, there exist between educational and training systems, on the one hand, and employment organizations in firms, on the other, a marked correspondence based on mutual interaction and adaptation processes. The typical interdependent patterns of manpower utilization, organization of labour, company chains of command, and pay structures appear to be the consequence of long-term historic processes of mutual adaptation of employment structures and of the social potential for skill acquisition that are specific to the various countries. It may be said that in the long run, the educational and training system influences, indirectly through skills, the forms of division of labour and organization inside companies. None the less, many other factors seem to intervene strongly in the structuring of

<sup>&</sup>lt;sup>1</sup> CEREQ Dossier, A p. 28.

labour: to say nothing of forms of capital accumulation, living conditions and the struggles between social groups inside and outside of firms as well as the search for certain forms of social cohesion should be a part of it.

Finally, the analysis comes up against the long-time transformation mechanisms of societies. It seems difficult to accept the idea of direct determinism exercised by the production apparatus on the structure of the training mechanism. It seems more apt to admit the principle of interdependence between the constituent elements of societies which would have a certain autonomy and a certain law of internal development. The training mechanism, itself determined, would at the same time determine. In particular, it probably has over a long period of time a strong influence on labour structures through the transformation of populations not only in 'know-how' but above all in attitudes, ideas, acceptance, and refusal of life in general and work life.

The sum of aptitudes and knowledge acquired by a person does not depend only on his initial training, but also on the different stages of his vocational career and on the chances of apprenticeship it offers. Any training that is too narrowly directed towards a certain job to be held at the end of the training period misses its goal: the mastery of different work situations during one's vocational life, and also, to a large extent, the prevention of structural unemployment. The importance of the initial training is none the less considerable: systematic and solid initial vocational training can prevent the development of too specific skills and the segmentation of the labour market into a primary market and a secondary market.

All the employments taken together form a network in which workers move about and which reflect modes of organization of labour, as well as the state of the educational system and the relative pay scales. When imbalances occur at one point in the network it is important, in order to work out a corrective policy, that not only this single point but the stability of the entire network is considered. Three illustrations demonstrate this:

- (1) A qualitative policy of vocational training is indispensable to the reform of company structures. If the training mechanism ensures effective vocational training at the start, the role of the promotion channels remains less important than if the same mechanism sends badly trained workers onto the labour market. In the latter case, to fill highly skilled jobs which are indispensable to them, companies ought to create promotional network profiles which lengthen lines of command and the distances between workers, while in the first case they only create much less numerous and less hierarchized employment categories.
- (2) More generally, a full-employment policy cannot be carried out without multiple specialized policies. These are necessary to limit or cancel the action of many factors which, like employment profiles, existent training programmes, as well as individuals' preferences or the diversity of occupational statutes, tend, in the area of employment demand as well as in that of supply, to split up the functioning of the labour market. These measures may be curative, but it would be better if they were preventive and treated at the same time work and training.
- (3) Conversely, selective measures which would aim at target mechanisms or populations cannot be contemplated without an active employment-creating policy. It is in this way that training policies in favour of youth, as a part of the struggle against unemployment, have only the result, if one excepts the cyclical ones, of leading to an increase in unemployment in other categories of the economically active population due to lay-offs or non-hiring to the benefit of recently trained youth. It is possible to reason in similar fashion about other target populations which are government favourites, whether they be women, elderly workers, or immigrants.

## The concepts of unemployment

by E. Michon, G. Canullo, Th. Van de Klundert, B. Corry, J.A. Nugent 1

# Structural unemployment

by J. Geluck <sup>2</sup>

During the period of exceptional prosperity experienced by the Western countries just after World War II, few studies on unemployment were published. But in the last few years the progressive rise of unemployment has attracted the attention of researchers to this preoccupying problem; the literature devoted to it is increasing at an ever greater rate, even though the debate among economists has not yet reached the amplitude of the one that took place on the same subject in the United States of America during the 1960s. In order to give a better idea of the debates that unemployment gives rise to and more particularly under the lasting form evoked by the expression 'structural unemployment' we shall treat the following three themes: the concept and measurement techniques, the economic analysis of its causes, and the economic policies recommended to remedy the problem.

# I. The concept and measurement techniques

The measurement of unemployment is a controversial subject. Independently of partisan stands, debate arises in part from the many statistical sources consulted by the observer, from the more or less extensive definitions he adopts, and, finally, from the measurement techniques he uses. The differences are still more obvious when international comparisons are involved, because practices vary from country to country.

#### A. Statistical sources

French statisticians and particularly those of the INSEE (National Institute of Statistics and Economic Studies) have adopted the resolution of the Eighth International Conference of Labour Statisticians of the ILO which regards as unemployed any person capable of working, who is not working and is seeking work. This standard definition can be applied in various ways according to the sources used. There are, first, two sources of a statistical nature. General population censuses, whose difficult procedures ensure their infrequency (1954, 1962, 1968, and 1975),

<sup>&</sup>lt;sup>1</sup> Study No 76/8: ref. No V/333/78 (87 pages in English and French).

<sup>&</sup>lt;sup>2</sup> Study No 76/9: ref. No V/1312/77 (78 pages in English and French).

permit the measurement of a population in search of work and available for work PSWAW or those people who declare that they are without a job and in search of a job. The annual employment surveys that constitute, for France, the statistical base of the Community sample survey on labour resources deal with a population that is available for work in the sense used by the census, but an interviewer can obtain more precise information: those who were first classified as economically inactive but who answered affirmatively the question 'Are you looking for a job ?' constitute the marginal available population in search of a job (MAPSJ). Using the single criterion of intention to work, the survey allows us, through the addition of more severe criteria such as immediate availability (readiness to take up a job in less than two weeks from the date of the survey) and effective search (at least one attempt to find a job required during the month preceding the survey), to obtain an estimate of unemployment as defined by the International Labour Office, an estimate that the INSEE has published regularly since the 1975 survey. The results of the employment surveys are used mainly to analyse the structure of unemployment. There are also diverse administrative sources. The requests for work at the end of the month (RWEM) since 1970 concern only the requests for permanent, full-time jobs, requests for other types of work being counted apart. This unemployment stock indicator is corrected monthly by a count of the new registered requests for jobs, which acts as an indicator of the flow of entrants into unemployment, and by that of those satisfactorily placed and those who cancel their requests, which acts as an indicator of the flow of those who cease to be registered as unemployed during the month. The claimants of unemployment benefits give rise to as many statistical series as there are types of benefits, but these indicators deal only with the dismissed unemployed, leaving out most of those who resigned and almost all of the young people seeking their first job. PSWAW and RWEM have come closer together following the establishment of the Agence Nationale pour l'Emploi (National Employment Agency), but not all job seekers registered with the ANPE declare themselves PSWAW or even MAPSJ during a census or a survey on employment; the overlapping of the two groups is only about 70% for each of them.

In Italy for the purposes of the quarterly surveys by ISTAT, there are two categories of people seeking employment: those seeking employment or unemployed, and those seeking employment for the first time. Since January 1977 those officially designated as unemployed are persons who expressly state that they are seeking employment and those who say they are, first, economically inactive and, second, ready to accept a job if it is offered them; the expression 'seeking employment' has been omitted. The Ministry of Labour publishes statistics relative to those listed on the employment registers which constitute a partial estimate of unemployment and of the pattern of the supply and demand for labour. The statistics concerning the beneficiaries of unemployment and partial unemployment benefits are also available. But, as in France, it is difficult to make statistical data and administrative data coincide: in the ISTAT surveys those listed on the employment registers are partially unemployed or economically inactive unemployed, while inversely some unemployed are not on the employment registers. As for the unemployment benefit, a sufficient period of contribution is required, the request must be made on time, the maximum duration of the benefit is six months, and seasonal workers are excluded.

One would find in all the countries of the European Economic Community the same distinction between the economic and the statistical sources. In the United Kingdom the recording of unemployment and the publication of the unemployed count are the responsibility of the Department of Employment (DE). The main employment indicator, the monthly total, is published in the DE Gazette, together with an analysis of the unemployed by age, sex, region, industry, and occupation. Additional indicators are provided quarterly, e.g. duration of unemployment, and a finer analysis of unemployment by occupation, region, etc. But in this country also the statistics concerning the registered unemployed do not coincide with the census and survey data: the 1966 census, for example, revealed some 200 000 people who claimed to be unemployed; of these the great majority (some 120 000) were females. Since 1971 the changes in the level of social security and unemployment benefits and changes in the rules governing entitle-

ment to these benefits may have changed the incentive to register as unemployed. The number of unregistered unemployed can still not be ascertained with any degree of accuracy, since the criteria for defining unemployment used by census and annual survey questionnaires differ from those of the Department of Employment.

This diversity of statistical sources for unemployment can only feed the controversy between labour and management and specialists, as the French and British examples show. In France there is a constant opposition between the economic indicator of labour supply and the social indicator (or recipients of unemployment benefits); the debate can be seen in the choices made by the different administrations. The INSEE response was first to demand that the indicators be diversified; more recently the response has been for the surveys to evaluate the use of a PSWAW in the sense of the International Labour Bureau. The Seventh Plan tackled unemployment by adopting a series of yearly or half-yearly aggregate indicators. The RWEM statistics' significance for real unemployment is also contested. According to the Union of Metallurgical and Mining Industries, a person is unemployed if he 'wants to and is able to work, and he must be capable and available for work without demanding specific terms or conditions. One must distinguish the truly unemployed from the workers in transit between jobs, those seeking work on certain conditions, and those who are not even genuinely looking for a job but who claim benefits. These criticisms have caused the ANPE to adopt new procedures: requests for parttime or temporary employment are excluded from the statistics; the job seekers files are sorted and brought up to date; more attention is given to fraudulent claims for unemployment benefit. In a more theoretical perspective, the social approach which includes only 'voluntary workers' would favour the estimate of cyclical imbalances but would ignore a large part of the structural unemployment. The economic notion of the availability of manpower would, on the contrary, include almost all of the 'erratic workers' and allow better account to be taken of any structural imbalances. It would, however, lead to an indicator which is not very sensitive to cyclical fluctuations of employment.

In the United Kingdom also the critics of official employment statistics fall broadly into two groups. One claim is that the official data overestimate the true extent of unemployment because some individuals recorded as unemployed are either not genuinely seeking work or prefer to prolong their periods of unemployment because of the present benefit level. On the other hand, those who are financially motivated to register do so. The proof that unemployment is underrecorded comes principally from census and survey data. The 1966 census, for example, revealed some 200 000 people who claimed to be unemployed but who were not registered as unemployed. Of these the great majority were females. Given the rules on entitlement to social security or unemployment benefit married women have little incentive to register.

## **B.** Definitions

Traditionally one speaks of different types of unemployment: cyclical, structural, and frictional. The distinction is neither theoretically nor empirically evident, and specialized French research rejects henceforth the splitting up of unemployment into its components and prefers to treat unemployment as a whole. This research denounces as insufficient the macro-economic analyses of the links between work and unemployment and highlights the relative autonomy of the variations in unemployment whose origin is the functioning of the labour market. Even if the distinctions in question are not convenient, it may be useful to try to define the different types. Cyclical unemployment is linked to the variations in economic activity. In its most common definition frictional unemployment is conceived as the sum of individuals who have left a job and are going into another, which, even in a period of full employment, cannot be an instant phenomenon. In a more general way one must then return to a study of mobility. But, as will be seen further on, while the neo-classical concept has retained the traditional hypothesis according to which the

flow of mobility would absorb any maladjustment, the theses of segmentation have more recently led to quite different interpretations. It is, however, the nature of so-called structural unemployment that affects us the most at the moment.

The debate among European economists has not yet reached the scale or the intensity of the one on the same subject that took place in the United States during the 1960s. But the arrival several years ago of massive and apparently durable unemployment has led economists, politicians, trade unionists, the press, and even legislators (the Belgian law of 30 December 1970 on economic expansion cites in Article 11 'the structural shortage of employment, existing or foreseeable') to use widely the term 'structural unemployment' even if the meaning continues to be vague.

A reference to time is rarely absent in the definitions of structural unemployment: structural unemployment would thus be of long duration. This definition conforms perfectly to the usage that associates long period to structure and shorter period to cycle. It is important, however, to know if a certain stock of unemployed people which stays at a particular level is made up of the same people or if there is a rapid turnover. A relatively low unemployment level, e.g. 2%, over a long period, say a year, has a different significance from an unemployment rate of 5% over a period of three months. The latter means simply that 20% of the working population change their jobs during a year and remain unemployed for three months on average. This indicates nothing more than a high degree of worker mobility in a dynamic economy. None the less, in spite of its importance, duration is far from being a satisfactory criterion for determining structural unemployment; it does not offer the means to separate it from the other types since any shortage of available jobs aggravates the difficulty of finding employment and prolongs the average period of unemployment. It also increases the proportion of long-term unemployed. If the definition of structural unemployment on the basis of duration poses problems, the measurement of duration is of great interest. The duration of unemployment indicates the difficulty of job search, and gives valuable information concerning the particular difficulties involved in seeing that certain categories of manpower are rehired. It also indicates the 'employability' of the unemployed and the inequalities of duration of the selections that occur in some cases upon recruitment. Duration is also used along with the rate of entries to characterize, in a cyclical analysis, the rate of flow through unemployment, the functioning of the labour market and the corresponding economic situation. High speeds of entry and short duration, or, on the contrary, low speeds with long duration would indicate markets dominated by structural problems.

The second way of conceiving structural unemployment is to define it by reference to the measures used to fight it or by reference to the measures that prove ineffective. Thus the criterion is not temporal but instrumental. In the major debate of the 1960s in the United States between the proponents of the theory of demand deficiency (cyclical unemployment) and the structuralists, the latter defended the view that traditional full employment policy was inappropriate to the problems posed. In the present discussion in Europe a broad majority believe that Keynesian macro-economic policies, which admittedly produced excellent results in the past, are now ineffective against structural unemployment. The latter has specific causes and therefore requires the implementation of a range of selective measures (labour market policy, sectoral policy, etc.). It can be said that the instrument definition is the best and the most specific. But it also has a major drawback: in the absence of totally reliable criteria for diagnosis, one can only determine the nature of the unemployment a posteriori, when the result of the remedy applied is known.

Another more frequent interpretation is that structural unemployment exists when the supply of a certain type of labour (characterized by profession, skill, sex, age, and geographical location) exceeds demand. There is not therefore an absolute shortage of jobs since unemployment and vacancies coexist, but the profile of the unemployed persons differs from the positions available in such a way as to render them incompatible. Thus there may be at the most as many structurally unemployed people as there are unfilled positions. These local disequilibria can be caused

by changes in technology, final demand, the geographical location of companies, the educational system, etc. But a new equilibrium cannot be established because labour is not sufficiently mobile to move to other sectors or regions or to obtain new qualifications; perhaps also because no effort is made to adapt the jobs to the available labour. In other words, there is a range of segregated labour markets, and the most appropriate instruments to fight this sort of structural unemployment are labour market policy measures (vocational training, retraining, etc.).

According to another interpretation, structural unemployment is due to structural faults in the economy, as a result of which it is not able to create sufficient jobs to absorb the total supply of labour. Leaving aside cyclical and seasonal changes, under this approach each economy has a 'normal' unemployment rate which is determined by structural faults of different types, e.g. too little or too much capital investment, lack of infrastructure, decline in some large sectors, too heavy a burden placed by the public sector on the private sector, etc. The measures that can be taken to fight this sort of unemployment do not come under the heading of labour market policy, but rather under that of industrial policy.

## C. Measurement techniques

Authors do not all have the same concept of structural unemployment and therefore of the most appropriate method for evaluating it. They sometimes simply apply the formulae used widely by statisticians, but they also sometimes use very elaborate and sophisticated econometric models.

Among the empirical measurements are those used by the German Institute for the Study of the Labour Market and those devised by the research department of the National Bank of Belgium. The former has used the variation coefficient and the concentration index. If one looks at the average percentage of the unemployed for all skill groups as an indicator of the economic situation, it can be said that the difference between the norm and the actual distribution by skill indicates the seriousness of the structural disequilibria. The coefficient of variation is arrived at by dividing the standard deviation of the unemployment percentages per skill group by the arithmetic mean. Moreover, where the distribution is uniform the proportion of total unemployment made up by each trade group is equal to its proportion of its total labour force. The Lorenz curve then coincides with the 45° line. It moves away from it increasingly as the distribution becomes more unequal. The degree of inequality can be given by a single number: the Lorenz concentration index. It equals twice the area enclosed between the straight line and the curve. The basic idea of the Belgian experts is that during a period of high economic activity the 'labour' factor of production is used to the maximum such that cyclical unemployment disappears. The graph showing the course of total unemployment over time is then at its minimum point and this level corresponds to structural unemployment. By joining up the successive minimum points, the volume of structural unemployment at any time throughout the period in question can be obtained by interpolation, whereas the distance between the total unemployment curve and the structural unemployment curve represents cyclical unemployment. This method has been applied not only to data on unemployment but also to data on unemployment in each economic sector (each time broken down into male and female unemployment).

If structural unemployment is defined by unemployment of long duration, Cramer's measurement technique can also be used. The basic idea is that if the supply of labour is perfectly homogeneous, all unemployed persons will have an equal chance of (re)finding a job within a specific period of time. One can calculate the composition of the unemployed under this hypothesis (so many percent below one month, so many between one and three months, etc.) and compare this with the true composition. The difference is an indication of the compartmentalization of the labour market, the difference in the conditions that prevail on the sub-markets, and thus of structural unemployment. The application of this method creates several practical pro-

blems, however, arising from the inadequacy of the statistical data available, so one must either accept the shortcomings of the data or find devices for correcting them. But it is also possible to criticize the methodology itself: it is assumed that the likelihood that each person will find employment is independent of the period during which he has been unemployed, which is probably not true. Furthermore, when the calculations do not give the number of structurally unemployed but rather an index, one has to know how to interpret it.

Measures based on the concept of structural unemployment as a qualitative disequilibrium are the most common. They all start from the same basic idea (there are unemployed people who are not suitable for the existing vacancies) but they differ appreciably as to how the data is processed. Van Wickeren starts by constructing a 'labour pyramid'. In this, all workers are included in the diagram on the left of the vertical line and all jobs on the right. Each layer is devoted to a trade category and the corresponding jobs. By subtracting the number of people from the number of jobs a 'balance of labour' is obtained. Unemployment appears on the left, vacancies on the right. If we assume that the diagram reflects a situation in which unemployment and vacancies are not influenced by cyclical and seasonal factors then the balance of labour represents only structural surpluses and deficits. Since the unemployment and vacancies in a particular group are considered to be interchangeable, the pyramids must be drawn from 'real' (geographical) markets. They could be delineated, for example, by reference to data on daily migratory movements of workers. Nentjes uses statistics on unemployment and vacancies for each industrial sector and sub-sector. For each group he works out the surplus - positive and negative - of labour supply by subtracting V (the number of vacancies) from U (the number of unemployed). This surplus is made up of cyclical unemployment (Uc) and the 'non-cyclical' (Unc). The latter is positive if the number of workers attached to a particular branch exceeds the number that it can employ in a situation of economic equilibrium. To separate the two components the moving average method can be used: it is assumed then that Uc gravitates around the 'trend' represented by Unc. Unemployment that can be eliminated by training measures and transfer to another sector is called 'training unemployment', which is given by the smaller of the two sums, that of all the labour surpluses and that of all the deficits. Criticisms that can be made of this method concern mainly the value of the results, which are largely determined by the quality of the statistical material: the number of vacancies does not necessarily correspond to reality to the extent that employers do not inform the authorities of all of them. There may be fewer real possibilities for compensation between unemployment and vacancies than those put forth by the hypothesis of a labour market for each trade over the entire country. For many years the Netherlands Ministry of Social Affairs used a technique based on the idea that there is a normal relationship between employment supply and demand, approximately hyperbolic, with unemployment and vacancies moving systematically in opposite directions. The faults in adjustment on the labour market lead to the coexistence of an equal number of vacancies and unemployed. In the graph this number is determined by the intersection of the 45° line and the hyperbola. Any upward shift in the latter would indicate a worsening of the adjustment difficulty. In practical terms the procedure adopted by the Netherlands Ministry is as follows. Starting with the monthly unemployment and vacancies figures the seasonal component is eliminated. Then the values shown by the two curves at the same point in time are marked on a graph (here vacancies are the vertical axis and unemployment the horizontal axis) and a new curve is drawn with as good a fit as possible to the points obtained.

Clavaux's method of measuring the structural employment deficit is based on the same quantitative relationship between the series of unemployment figures and those of vacancies. It has a vertical axis showing the logarithm of the percentage of the unemployed in the total labour force and on the horizontal axis the percentage of vacancies, also by comparison with the total labour force. The diagram thus constructed shows that the relationship is linear during the 1950s and the first half of the 1960s, but after that there are significant systematic divergences. Therefore the regression equation was only calculated from the data period 1950-64. Thus we have a

formula for working out the theoretical level of employment, given the level of job offers. The difference between that value and the real unemployment figures gives the level of structural unemployment. This method is analogous in many respects to that of the Netherlands Ministry; although it uses percentages and a logarithmic scale on the vertical axis, it is basically the same curve. A source of dissatisfaction, however, is that the method is not founded on any theory, even on an unsophisticated one. Such a criticism could certainly not be made of the research of Den Hartog and Tjan. Their model is built on a very solid theoretical basis of which several parts are borrowed from studies by Solow and Phelps. The main part is played by machinery, categorized by year of installation. The equipment that is still technically sound becomes useless from an economic point of view when the (nominal) revenue from its output is completely absorbed by the wages of the workers involved in that output. The main result of the calculations is that the level of work corresponding to the existing equipment increased continuously from 1959 to 1964 but has levelled off since then.

# II. Economic analysis of the causes of unemployment

The research into the causes of unemployment is marked by national characteristics. First we will discuss the nuances or differences, then the convergence of analysis which is possible.

## A. National analyses

Almost all of the French studies give precedence to an examination of the phenomena of labour supply, stressing inequalities. They reject the splitting-up of unemployment into its components, frictional, cyclical, and structural, preferring to qualify the nature of all unemployment. The socio-demographic analysis highlights inequalities and concentrates on the disadvantaged categories of manpower (youth and women); these studies show that the causes of unemployment cannot be attributed only to job supply but that structural changes in the French productive system play, on the contrary, a decisive role. The search for an explanation of the imbalances leads to an examination of the possible 'structuring' role of the labour market, and, over and above that, of the responsibility of the demand for work in the growth of unemployment. Two explanatory factors in particular are stressed: the modernization of the French productive system would change the employment structure and bring about an accelerated rate of substitution of capital for labour, and stricter management of the labour force by firms, which would mean more stringent selection and higher labour turnover. Macro-economic studies are not primarily interested in analyzing the nature of unemployment. Whether the object be aggregate, sectoral, or regional, the models use the same basic principle in their estimate of unemployment: that is, the examination of a demo-economic equilibrium based on an aggregate balance between manpower resources which are exogenous to the model, and endogenous needs. The most recent relax the principle a little by including various findings from studies in labour economics, for example by using a more flexible and diversified relationship between employment and unemployment (the process of calling on idle reserves and the relationship between unemployment and industrial jobs on the one hand, and jobs in the tertiary sector on the other). Despite these improvements, the principle of the aggregate view remains, and the treatment of unemployment remains incomplete: it can only be an aggregate phenomenon whose components are unknown. The analysis of unemployment opens up the subject of the working of the labour market: it has been observed that the movements of employment in France are less and less able to absorb unemployment and that there exists a direct link between mobility and unemployment. In what concerns mobility, the neo-classical concept according to which the purpose of mobility is to correct maladjustments in the labour market is often replaced by theses dealing with segmentation which introduce the notions of job hierarchy and career choice, of 'false' mobility and 'counter-mobility'. Contemporary research insists on the responsibility of the increase in employment mobility in the creation of unemployment and considers that the duration of unemployment demonstrates the employability of the unemployed and that inequalities of duration are indicative of the selections that may be made by employers.

In Italy the interpretative hypotheses are closely linked to the historic period of their formulation. Early interpretations of development in the 1950s were neo-classical in character, using Lewistype models. In this context, the excessive increase of wages in the modern sector and obstacles limiting geographical mobility were considered responsible for the continuance of a high level of unemployment and under-employment. At the same time other authors, taking a Keynesian view, attribute the weak employment growth to Italy's entry on the international market or to the oligopolistic structure of firms in the industrial sector. The most recent studies take account of the debate in recent years on the decentralization of activities and the development of work at home and 'black' work. In under-developed countries there are greater disparities between the productivity rates of different firms than there are in developed countries; any attempt at alignment of salaries would result either in massive unemployment or endanger many jobs or encourage unofficial employment in the less efficient firms. The beginning of the 1960s was characterized by rapid growth in income and investment and by a sharp decline in recorded unemployment. A number of studies concentrated on analyzing the macro-economic relationship between conditions in the labour market, internal stability, and balance-of-payments equilibrium, using a Phillips curve. Towards the end of the 1960s studies tended to concentrate on the structure of the labour market and its dynamic components. According to some authors primary employment, contrary to secondary employment, was barely influenced by fluctuations in aggregate demand. According to others the industrial reserve forces would include not only the unemployed who register as such and the 'discouraged unemployed' but also all those who have no job security. The most recent studies have demonstrated that two labour markets have been constituted: an 'institutional' market characterized by an increasing rigidity in the use of manpower, in particular in what concerns dismissals and mobility within the firm; and an unofficial or 'black' labour market.

In the Federal Republic of Germany stochastic equilibrium on the labour market has been defined by the following formula: unemployment = rate of turnover × duration of unemployment. The distinction between structural and frictional unemployment is abolished. Another analysis considers that structural unemployment in the Federal Republic is caused by a lack of potential jobs while remaining unemployment results from a shortage of capital equipment. According to another interpretation a market economy can effectively cope with structural change provided that there are no impediments. But during the 1970s the German economy is supposed to have experienced three impediments:

- (i) unexpected government interference, to the confusion of company heads;
- (ii) temporary frictions because the pace of change had accelerated in an unanticipated manner, closely connected with the position of the Deutschmark; and
- (iii) important disturbances in product and factor markets (due in particular to the growing competitiveness of the less-developed countries) which lead to the destruction of capital and of employment potential.

In the Netherlands, the economists of the Central Planning Bureau consider that technical progress takes the form of embodied labour savings. The number of jobs depends on the vintage of capital equipment still in use and on the capital/labour ratio of each vintage; the more recent a vintage the higher the capital/labour ratio will be; equipment will be considered obsolescent when the difference between cost and income from labour becomes negative. Structural unemployment

is conceived as the difference between labour supply and potential employment. There is a close link between structural unemployment and real labour cost. When the real cost of labour rises, the duration of the economic life of machines is reduced. The excessive rise in real labour cost may even lead to a smaller number of new jobs being created. The importance attached to real labour cost by government officials and many economists (and which leads them to conclude that an appreciation of the national currency — which implies an increase in real labour cost — has an unfavourable impact on the employment situation) is challenged by the economists of the 'Amsterdam school'. In the view of these authors unemployment in the Netherlands should be analysed against the background of a worldwide depression, caused by unbalanced growth and over-investment in the past.

In Belgium the now-familiar distinction between a quantitative surplus of labour or a shortage of jobs, on the one hand, and qualitative discrepancies, on the other, holds a central place. The accelerated expansion of the labour supply since 1970 is considered as an important cause of unemployment; in the next ten years this rate of growth will remain high. In addition, a series of factors, in particular new changes in the international division of work, technical progress, and increase in specialization of labour, have contributed to increase the speed with which the structure of production has changed. These changes should be seen in the context of a reduction of labour mobility, especially in what concerns trade/skill. Qualitative maladjustments are thus at the centre of the definition of structural unemployment. The changed nature of investment and its slower growth in volume are held responsible for the unfavourable situation of employment, especially in industry. On the one hand, as the rapid evolution of labour productivity indeed shows, labour-saving investments have grown. On the other hand, the acceleration in wage cost since the end of the 1960s and the fact that the cost of capital was favourably influenced by subsidies and the possibility of subtracting interest charges from taxes have accelerated the substitution of capital for labour.

Structural unemployment is not a well-defined concept in Denmark. The following elements are mentioned: unemployment found in certain regions some years ago during a period of labour shortage, rising unemployment among young people partly caused by qualitative discrepancies, and unemployment in various branches of economic activity. Unemployment is usually seen as a demand-induced phenomenon; the level of prices is too high compared with other industrialized countries, Conditions for import competition are therefore poor. In addition, a rapid rise in wages may lead to a high rate of economic obsolescence and a substantial loss of jobs.

In the United Kingdom and the Republic of Ireland, although many would argue that the current high rate of unemployment is cyclical or 'Keynesian' in nature, it has also been argued that some fundamental changes have taken place in the operation of the labour market. These changes require that we accept permanently higher levels of unemployment than have been acceptable in the past. The classification of unemployment into the conventional components (cyclical, frictional, and structural) is neither theoretically nor empirically obvious. Much of the debate, however, revolves around the question of whether there has been a change in the relative size of these components. The measurement of these components has been conducted almost exclusively by the use of employment-vacancy analysis. We have labour market equilibrium or full employment when aggregate unemployment equals total vacancies. We should expect to observe an inverse relationship between unemployment and vacancies. Expressing both quantities as percentages of the labour force, the curve connecting them indicates, as it shifts outwards from the origin of the axes on the graph, a fundamental change in the nature of the labour market. The rise in unemployment over the last decade is therefore a result both of a shift of the curve and a movement downwards along the curve. The extent of this shift has been disputed because it depends partly on the sub-periods being studied and on the methods of investigation used. It has been claimed that the shift in the relation between the unemployment rate and the vacancy rate could best be explained as a labour supply shift, namely a fall in the effective supply of labour at any given level of labour demand. This fall in labour supply is said to have been brought about by increases in unemployment pay. Recent studies suggest that voluntary unemployment should be seen, at least in part, as a productive use of time. The acquisition of labour market information is a costly and time-consuming activity. The worker consequently becomes unemployed in order better to conduct such activities. The duration of search, i.e. of unemployment, then depends upon the expected benefits relative to current costs, mainly in the form of expected net income. According to the main proponents of this view, any fluctuation in the level of aggregate demand for goods and services will be transmitted to the demand for labour with corresponding fluctuation in the distribution of wage offers faced by workers. If the initial change in the aggregate demand was a deviation from the full employment level, then one can predict an eventual return to the full employment level of unemployment once real wages have adjusted to their appropriate level, and workers have learned of the change. This level of unemployment has been called the 'natural level' of unemployment.

## B. Trial synthesis

Making a synthesis, one can distinguish three sets of causes: first, institutional unemployment, second, a qualitative disequilibrium between supply and demand, and finally, a quantitative disequilibrium.

Legislation and regulation of matters concerning unemployment pay, administrative practices, and even the evolution of attitudes give rise to a special type of unemployment — institutional unemployment — which one could at the limit qualify as structural. Although the criterion of aptitude varies somewhat according to the situation of the labour market, there are generally among the registered unemployed a number of persons whom it would be difficult to employ or who would be suitable only for a few special jobs because of physical or mental deficiencies. A purely statistical increase in unemployment is also caused by the very generous legislation and regulations that came into effect in most countries during the exceptionally prosperous period of the 1960s. The best-known case is that of the provisions that give the young access to benefits. The consequence of such legislation is not only that unemployment is increasing but also that the course it takes in part bears no relationship to the economic situation. At the same time there has been a profound change in attitudes, largely under the influence of the general spread of social security. The unemployed feel less stigmatized by their situation than previously, and they no longer consider it to be humiliating or dishonourable. Moreover, under the influence of full employment and the improvement of workers' position in negotiations, and also because they receive better allowances, labour supply has become more independent of the market situation. Workers are no longer forced to accept the first job they are offered; they can take their time to choose. Thus a new category of unemployment has been created, 'selection unemployment', which helps raise the level of aggregate unemployment. Attempts have been made to measure the number of these 'phony' unemployed who are an additional burden on the social security or on the State budget: Gerard, Glejser, and Vachelin have established that when the benefits (expressed as a percentage of average wages) increase by 1%, unemployment (expressed as a percentage of insured workers) increases by 6%.

Considerable interest has been paid to the factors that might explain the lack of balance between supply and demand on the labour market. Geographic disequilibria are one of these. The constant increase in the proportion of married women in the labour force and the evident difficulty they have to make long trips daily or to move to a region away from where their husbands work cancels out part of the adjustment role of mobility. The authors also attempt to show why workers' special training does not meet the characteristics of available jobs; they blame our educational systems and the mistakes made out of ignorance by the young themselves when they are choosing a trade. The preferences of both young people and women are for tertiary sector activities. This is doubtless a factor that explains several characteristics of the unemployment structure: the high level of unemployment among these two categories, its rate of increase which is higher in the services sector than in industry, and the particularly high growth

of unemployment among employees. The view that is most prevalent concerns the level of training. There is said to be a disequilibrium between workers' skills and the skills required by the productive system. The average level of required skills is surely but slowly increasing, while education is evolving rapidly with an increase in graduates that is relatively greater for the middle level and even more so for the upper level. Henceforth one can legitimately expect that many graduates will not be able to have an occupation corresponding to their level of training and will not put their knowledge to use.

In an explanation of unemployment we can stress the quantitative disequilibrium which can be due either to a surplus on the supply side or to the fact that demand is too low. Supply surplus has several causes. The increase in the number of young people is due to demographic causes, that of women to sociological ones. It is the two groups that are growing the most rapidly that also have the highest percentage of unemployment. Moreover, young people can be disadvantaged by certain measures implemented especially for workers: it has become, if not impossible, then certainly difficult and costly to dismiss workers. Employers are thus strongly encouraged to keep the staff they have and prefer to pay for overtime rather than increase their staff if they are not entirely sure of needing more workers on a permanent basis. Similarly the gradual trend towards equal wages for men and women may have made employers reluctant to hire women for certain jobs. Moreover, unemployment did not go down in the development regions but went up in parallel manner to the employment created. We witnessed a sort of race between unemployment and employment. What was happening in fact was that the creation of a local labour market attracted new categories of active people, a potentially available population, greater in number than the jobs created. A latent under-employment, not suspected previously, was revealed. Finally, in the past it was generally seen that in times of high unemployment the activity rate in certain groups (the young, the old people, and, particularly, women) went down. Discouraged by the vain search, many withdrew from the labour market (discouraged worker effect). The decrease in the demand for labour could therefore influence supply. This cyclical flexibility of activity rates seems to be disappearing. Marginal workers should be counted on less and less to play the role of regulators for there are fewer and fewer of them. The weakness of demand can also have several causes. One explanation which immediately comes to mind is to look for the cause of structural unemployment in the disappearance of many jobs in different sectors as a result of mechanization and the evolution of technology. Other explanations go back to ideas that were very much in vogue in the 1930s and put forth arguments reminiscent of the 'mature economy' theory. The decline in the birth rate is said to be responsible for a drop in demand. The lack of considerable technological developments is said to be the cause of the scarcity of innovations and thus of a fall in investment. Some markets are showing signs of saturation, such as the car industry where demand is mainly for replacement. We are witnessing an exodus from the labour-intensive industrial sector, generally on the initiative of multinational enterprises which prefer to choose low-wage havens or tax havens. The most common explanation is the one that attributes the cause of unemployment to technical progress, modern organization methods, rationalization, and mergers. This means that the accumulation of capital must henceforth be increasingly greater to guarantee the same growth in employment. Enterprises are investing more and more in rationalization rather than in extension. This gives rise to a cumulative phenomenon, for if productivity is increased to compensate for the increase in wages, it also makes possible further wage increases and even encourages workers to demand them. The authors who support the theory of technological development and rationalization as the causes of structural unemployment have often calculated the amount of investment necessary to create a job and have drawn attention to the rate at which it is rising.

# III. Economic policy

Full employment has been one of the main objectives of economic policy since the Great Depression of the 1930s. The measures implemented necessarily reflect their authors' political and

ideological views. For this reason it is likely that they will give rise to controversy. Among the different measures that have been proposed one can distinguish, first, those of a more qualitative nature intended to remedy the inadequacy of labour demand and, second, those of a more quantitative nature intended to resolve a disequilibrium between the two elements.

#### A. Qualitative measures

The first series of measures aims at channelling supply towards existing openings and at trying to increase the employability of labour by constantly adapting its structure to the changing structure of demand. This is the labour policy that has been broadly applied in many countries during the period of prosperity. It presupposes a good job placement service able to offer individual service to job-seekers. Next this policy involves measures to guarantee the geographical and vocational mobility of the unemployed, with workers threatened with redundancy being possibly authorized to benefit from them. Training can also play a part by constantly adapting its resources to real future prospects. This presupposes a prospective study of developments in the demand in each trade and wide dissemination of the resulting information. Labour policy should, however, be more vigorous in times of deficit of workers than when there is a surplus, in which case it would apparently have to play an auxiliary role by meeting specific, limited needs in particular.

The question is then whether instead of simply accepting the employment structure as it is and trying to adapt the work-force to it, it would not be better to consider the structure of the work-force as given and attempt to make the employment structure fit it. This would be a qualitative employment policy rather than a manpower policy. Regional policy was already based on the principle that workers should not always be channelled towards the existing centres of activity, but rather that it would be more effective to stimulate the development of surplus labour regions. In the same fashion many experiments have been carried out with a view to adapting jobs to the specific problems of certain groups (humanization of work, rotation systems to break the monotony, and job enrichment). But those who advocate the adaptation of the demand for labour to the supply very often want to go a lot further. Starting from the idea that work is more than just making a living, they demand for everybody the maximum opportunity to find a job that is humanly enriching, socially meaningful, and bears certain responsibilities. They are aware of the negative effects shown when the content and the level of jobs are clearly below the individual's capabilities, and they want to use human resources fully.

However, one must also take account of the fact that the structure of jobs in a firm is characterized by a certain degree of rigidity which does not allow for much short-term flexibility, and that it is the market that decides what is to be produced. In any case it will be a very long-term task to find a solution to the problem of the quality of work. It would, however, be a lot easier if it were possible to upgrade manual work. One instrument, which is purely of scientific interest at the moment, but which may prove to be of practical value in the future whenever it is a question of deciding how to shape the structure of the production apparatus, is the set of tables showing the equivalent number of hours for different types of labour. It is to be hoped that it will be possible to perfect the technique and to produce from it an instrument that will indicate what composition of the work-force (per type of labour) corresponds to a given composition of the national product (per kind of product). That would make it possible to choose production that will make best use of the available work-force.

#### B. Quantitative measures

To re-establish the quantitative equilibrium between labour supply and demand one can in principle influence either the supply, by attempting to reduce it, or the demand by different means.

The reduction of supply is a policy of Malthusian nature. It is always mentioned, however, when unemployment assumes alarming proportions. Generally the most vulnerable categories, those most affected by unemployment (the young, women, older people, and immigrants), seem the most likely to help such a policy succeed. But the extent to which they can be manipulated varies with time. Nowadays the rapid increase in the activity rate of women is a phenomenon of our civilization and it would be vain to want to revert to a previous situation, either through authoritarian means or by persuasion. It is proposed that all sorts of measures be taken to remove older persons from the labour market (a general reduction of the retirement age, early retirement for older workers who have been unemployed for a certain length of time, flexible systems whereby workers may from a certain age onwards vacate their jobs, reduction of the workday, and parttime work). But all these measures tend, in fact, to transform the unemployment of young people and adults into unemployment of older workers. Also the effectiveness of the measures can be doubted: the jobs vacated by older staff do not always match the qualifications of those who are to replace them. Finally, a general lowering of retirement age would be difficult to reverse. Raising the school-leaving age is a measure that raises few fundamental objections. None the less, it should be decided on in the framework of an overall policy which defines the exact objectives of education. Otherwise, far from solving the problems of employment supply and demand, it could help to aggravate them since a later introduction into the economy could strengthen disaffection from industrial employment. One possible solution is to extend school attendance on a degressive scale which requires the young to go to school only a few days a week during the final years. The system of training periods for the young unemployed may be seen as a mere expedient whose aim is to reduce unemployment statistics. They may also be seen as a means of occupying the young, and if the traineeships are well-planned and well-organized, as a means to improve the operation of the labour market. That leaves the most vulnerable category, the immigrants. We can encourage their departure by offering a bonus to those who agree to return to their country of origin. The most appropriate and most practical measures is to limit or to block almost entirely the recruitment of foreign manpower. Its efficacity depends, however, on the extent to which the jobs falling vacant will be taken by national manpower. It would probably have to be accompanied by a policy of upgrading some jobs, which would doubtless lead to an increase in wages.

It may be more rational and less costly to maintain existing jobs rather than to create new ones or to pay unemployment benefits for which there is no counterpart in terms of production. At any rate, in each case public authorities should hold to one basic principle: aid to firms or sectors can be justified only when their difficulties are temporary and if they have good longterm prospects. So that public authorities could act in time an official institution could be charged with making systematic and ongoing studies of the various sectors and sub-sectors of the economy. The main source of documentation would be periodic information supplied by the firms.

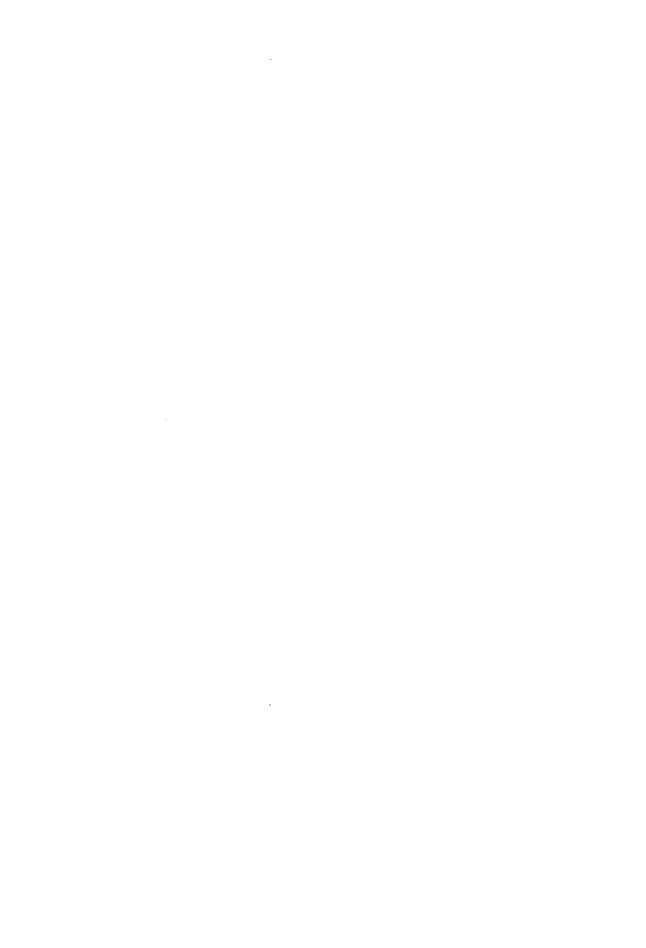
If the level of activity must be considered as given, an attempt can be made to share it out as fairly as possible. This idea already underlies the system of part-time work. One can imagine an application of the same principle on a national scale by reducing working hours. This can take the form of an extension of annual vacations, unpaid vacations for those who want them, and reduction of weekly work. When the working week is 40 hours, a reduction by one hour should, in principle, require an increase 2.5% in the number of workers. But that is a maximum theoretical value. First of all because the productive apparatus will have to be adapted at the same time. Next because although the idea of work-sharing is based on the assumption that the unemployed will be able to take up the extra jobs that fall vacant, this will not necessarily prove to be so. The concentration of unemployment is indeed not the same everywhere, so a general reduction in working hours might not lead to a better equilibrium between supply and demand but rather aggravate the problem in certain sectors, trades, or regions. It would therefore seem better to consider the question of working hours not in the context of the national economy but of the sectors. In practical terms, this course would also imply that the measure not be imposed by the

legislature, but that it be the subject of negotiations between labour and management. Moreover, in the past each reduction in working hours has resulted in an increased effort by entrepreneurs to improve productivity. It is very likely that a further reduction would also cause the employers to adopt defensive tactics which would neutralize, at least in part, the effect of the measure. Calculations by the Belgian Planning Bureau confirm that if the reduction is applied with wages unchanged, the main consequences are a reduction in growth, an aggravation of inflation, and a worsening of the balance of payments. The impact on unemployment is almost non-existent. If, on the other hand, the reduction in working hours is made without wage compensation, it slightly stimulates growth, strongly reduces unemployment, slightly reduces inflation, and slightly improves the competitive position of the country. One measure that is similar to reduction of working hours is the encouragement of part-time or even à la carte working. But it is also possible that the measure would have such success that it would cause a big increase in the rate of activity, which instead of helping to absorb unemployment would aggravate it. Firms often prefer to pay systematically for overtime work rather than to employ new staff. Such a state of affairs must be done away with on principle. One realistic solution, which is neutral as far as production costs are concerned, would be to pay overtime hours in kind, by granting compensatory leave. As for 'black' labour, it is quite simply an abuse that must be combated.

The public authorities have for some time been trying to stimulate the creation of jobs through measures aimed at guaranteeing a higher return from investments. Toward this end they used a whole range of instruments: investment subsidies, interest allowances, fiscal incentives connected with depreciation, etc. It is to be hoped that in return for the advantages granted to them firms will make specific and firm commitments, not only in what concerns the nature and level of investment to be made, but also concerning related questions (such as the quality of work and environmental protection). Next, it is felt that wide publicity should be given to the aid granted and to all provisions of the contracts that are concluded. It is felt also that public authorities should exercise closer control over the use of the aid granted; this control should bear particularly on the effective creation of the planned jobs. Finally, some believe that the public authorities should no longer be satisfied with encouraging all investment indiscriminately but that they should guide it towards new activities, either highly technological or non-polluting ones. All this is obviously fertile ground for discussions between advocates of different economic systems. It appears, however, that rationalization investment is necessary if the competitive capacity of the country is to be maintained. However, to say that capital-intensive investment is necessary does not prevent us from saying at the same time that the subsidies that the public authorities have granted so generously for so long have led to a reduction in the cost of investment and, as a corollary, a relative increase in the cost of labour. The result is an artificial distortion of the use of the two factors of production, a tendency to substitute capital for labour (and consequently a certain degree of over-capitalization). A reform of public aid to investment, which would eliminate the comparatively favourable treatment accorded to capital as a factor at the expense of labour, would seem to be justifiable in principle. The use of temporary employment bonuses is very appropriate, however, when it is a question of saving jobs. Econometric models indicate that the high wage level is responsible for the decision of firms to scrap machinery that is still quite sound from a technological point of view and for the resulting reduction in the number of jobs available. The most appropriate way of fighting unemployment would then be to improve profitability by reducing relative wage costs.

Many think that the State has the responsibility to create jobs. This is one of the most ideological questions possible, since it comes back to the old question of the efficacy of the private sector and the public sector. But it is a measure that should be examined if we intend to fight unemployment. The idea of a third labour circuit is more recent and more original. The 'special temporary framework for the recruitment of the unemployed', set up in Belgium, is the first such achievement. The basic principle is that State administrations and certain private organisms may hire the unemployed on a temporary basis to do work of service to the public. The range of measures

likely to be approved is extremely wide. Wages and social security payments are met by the Ministry of Employment and Labour, but all other costs must be borne by the body concerned. The proposal to set up a third labour circuit is based on two concerns: to give jobs instead of unemployment benefits to the unemployed and by the same token to meet social and cultural needs of the community. Perhaps it is a step towards recognizing the right to work, but it is still far from total recognition. The same thing applies to the new needs to be satisfied. There is a risk that the third labour circuit will become an additional burden for the State budget, which is already largely unbalanced. For this reason it should be limited to work that was not being done beforehand and which would probably not be done without it.



## Survey of the structure of unemployment

W. Daniel, E. Hönekopp and V. Kind <sup>1</sup>

A survey of the nature of unemployment has been carried out for the purpose of analyzing strategies to cope with it. National reports on the United Kingdom and the Federal Republic of Germany have contributed considerable information and permit a comparative approach to the problem. Having described the different sources used, trends can be detected, the specific characteristics of the least-favoured categories of manpower identified, the different costs connected with unemployment studied and the role of the different public manpower services evaluated.

#### I. The sources used

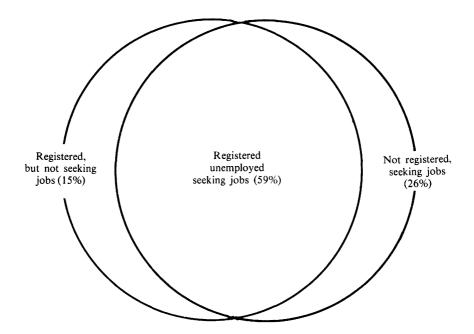
Information concerning the unemployed may be obtained from different sources. This enables the following to be studied:

- (i) the demographic characteristics and occupational experience of the unemployed as revealed by frequent and regular national statistics;
- (ii) the composition of the unemployed according to analyses made on a periodic but less frequent basis;
- (iii) the extent of unregistered unemployment, i.e. people out of work who were seeking jobs but were not registered as unemployed, through the use of labour force surveys;
- (iv) economic status as revealed by census information;
- (v) the nature of particular categories of the unemployed (the frictional unemployed or marginal groups in specific localities) may be shown by sample surveys;
- (vi) the unemployed may also be studied through surveys based on personal interviews or self-completed questionnaires.

Of these sources, the most widely used in economic analysis and in discussions concerning the economic policy to be applied is the administrative one concerning the insured unemployed. Thus, in Great Britain the main source of statistics is the Department of Employment. The information collected is a by-product of the social welfare system. People are effectively designated as unemployed if they qualify for State benefit by virtue of being unemployed and claim it by registering as unemployed.

<sup>&</sup>lt;sup>1</sup> Studies Nos 75/1 and 77/30: Ref. Nos V/1251/76, V/1256/76 and V/234/77 (English report: 68 pages in English; German report: 225 pages in German; Comparative report: 28 pages in English).

The information obtained in this way suffers from a number of weaknesses and limitations. A substantial proportion of people, about 20 to 30% of those out of work and seeking jobs, do not qualify or register. In the same way, some of those registered as unemployed, and who may represent about 15 to 20% of the people included in the Department of Employment statistics, are not really seeking jobs. These two main distortions mean that those who are effectively registered as unemployed and seeking work represent only 59% of all people either registered or seeking jobs. The relationship between the different categories is shown by the following diagram. The overlap is even smaller for the female population alone, since it can be estimated that women registered as unemployed but not seeking jobs represent 18%, those registered and seeking jobs 28%, and those not registered but seeking jobs 54%.



The overall effect of this is that the number of persons registered as unemployed represents only a small part of those who can be considered as such. Moreover, the distortions are not constant over a period of time. Women have effectively been increasing in importance in the British labour force, and the Department of Employment data are increasingly inadequate as a measure of unemployment; likewise the congruence of the different groups shown in the above graph varies according to the amount of unemployment, the overlap appearing to decrease in times of relatively low unemployment.

Sample surveys based on personal interviews can help compensate for the limitations of the statistical data provided by the Department of Employment and, at the same time, contribute a great deal of additional information.

On the one hand, such surveys are the only method available for identifying the people who are presently out of work and who are seeking jobs; they also provide a means of establishing the proportion of the technically unemployed who are in fact economically inactive. The data provided by the Department of Employment is in fact contaminated by the administrative system of which it is a by-product. The role of the Department of Employment is to help those who register to find suitable jobs and to pay them welfare benefits, and so the occupational level and industry of registrants are classified according to jobs for which they are judged suitable rather

than according to their normal or most recent occupations, which means that the recorded occupations will tend to be adjusted in line with changes in demand, thus masking the imbalances between the real occupational backgrounds of the unemployed and available jobs.

In addition, sample surveys contribute a certain amount of complementary information, such as the following:

- (i) the mobility of the unemployed through the labour market; the factors influencing the ease with which they find jobs (age, sex, skill, and occupational level, type of education and training, occupational background, health, marital and family status, benefit incomes in relation to likely earnings; state of the local and occupational labour market, etc.); their job-seeking methods; their experience of the public manpower services and other employment or training agencies; the nature of the jobs they obtain as compared to the ones they held previously;
- (ii) the influence of specific measures of economic policy (it was thus that when the reorganization of the unemployment benefits system in the mid-1960s was followed by an increase in unemployment, questions were asked in the United Kingdom about the influence of unemployment benefits; surveys demonstrated that only a small fraction of the unemployed had received lump-sum redundancy payments and that those receiving weekly unemployment benefits found new jobs more rapidly; hence the hypothesis according to which unemployment benefits would cause a decrease in the motivation of the unemployed to look for new jobs, would make them more selective concerning job offers, would prolong the period of unemployment, and would lead the unemployed to be content to live from these benefits is invalidated);
- (iii) the financial and socio-psychological costs borne by those who have lost their jobs; the familiarity of these people with the unemployment benefits system; the amount of their personal and household income in relation to the length of time they have been working and the consequences for their standard of living;
- (iv) the motivations and priorities in seeking jobs and their consequences for the duration of unemployment and the inflexibility of the labour market;
- (v) the efficiency of the public manpower services giving help in finding employment and retraining opportunities and with geographical transfer.

Surveys of this type were made only in the Federal Republic of Germany, by IAB (Institut für Arbeitsmarkt und Berufsforschung der Bundesamstalt für Arbeit), and in the United Kingdom by PEP (Political and Economic Planning). The two reports are similar in a number of ways: both are based on samples of the unemployed (i.e. those registered as out of work at a given date); both studied unemployment at a time when it was relatively low (2.3% for the United Kingdom in the autumn of 1973, 2.4% for the Federal Republic of Germany in 1974). But there are differences between them: the British survey was based on personal interviews (sample size: 1 479), the German on self-completed questionnaires (sample size: 7 024); the British sample was interviewed twice, four to six weeks and three years after selection, the German sample only once, one year after selection; the German sample contained more women (48%) than the British (15%) and fewer older workers (14%) than the British (25%). In spite of this, there is a striking similarity between their findings. For instance, when the occupational circumstances of the German unemployed one year later were compared with those of the British unemployed one year later, 38% were found to be in work, 34% unemployed and 28% inactive, in each country.

We have mentioned above that the data furnished by the Department of Employment are biased. By using the results of the census and the general household surveys a number of corrections can be made. The census shows that the actual number of unemployed is considerably underestimated:

## Census and DE rates of unemployment compared

	1966 ¹		1971			
	Total	Men	Women	Total	Men	Women
Census 'out of employment' as proportion of all economically active	1.9	1.8	2.1	4.0	4.2	3.7
DE wholly unemployed rate	1.2	1.4	0.8	2.8	3.7	1.2
Proportion of those 'out of employment' registered as unemployed	64.9	83.3	36.6	70.2	89.1	32.8

<sup>1 10%</sup> sample census.

The very great underestimation of women (3.7% in 1971 instead of 1.2%) was confirmed by the general household survey which is carried out each year and covers about 15 000 economically active people over the age of 15. The proportion of people seeking work who were not registered as unemployed is the following:

	1971	1972	1973
Total (%)	22.8	20.9	30.4
Men (%)	7.6	9.4	16.3
Women (%)	53.7	52.0	66.3

The same sources also indicate the causes of job loss: among men the most common reason was that they had been made redundant or dismissed; this was followed in frequency by reasons associated with ill health; women were most likely to have left their last job for reasons associated with family or domestic circumstances or because they had become dissatisfied with the job.

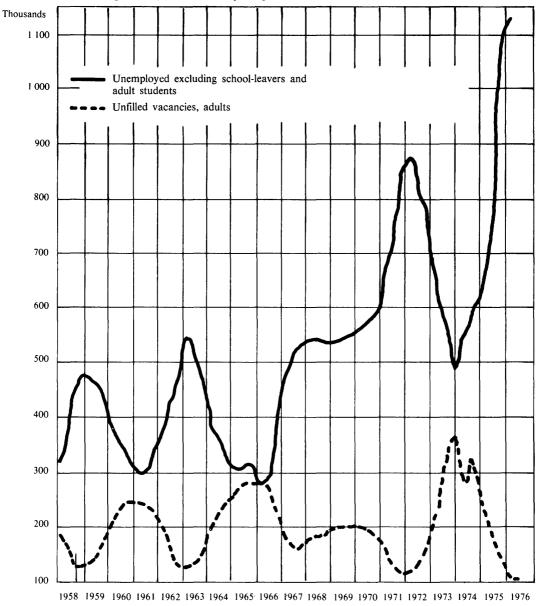
#### II. General trends

The observations made in the Federal Republic of Germany and in the United Kingdom must be placed in their secular context. The role of personal or background variations in the explanation of the characteristics of the unemployed and consequently in the structure of unemployment can then be identified.

When the observations are placed in their secular context it is seen that German unemployment was no problem in the 1960s. Except for the 1966-67 recession, its reduced volume was not an incitement to research on unemployment. However, the growth of unemployment is obvious in the autumn of 1973: the number of registered unemployed is three times that of September 1973; in January 1975 it is five times as great, remains in the neighbourhood of a million during 1975, climbs to 1.35 million in January 1976, and goes down again to 900 000 in September 1976. In the United Kingdom, the data gathered by the Department of Employment were the basis for the graph below. Vacancies reported to the Department of Employment substantially understate the actual number of vacancies because employers do not give the Department details of many of the vacancies they have; however, reported vacancies do provide a measure of variation in the demand for labour over time, on the assumption that the under-reporting is consistent. It is then evident that the number of vacancies is in inverse relation to that of the unemployed; at the same time the graph shows that there has been a longer-term upward trend in the number of unemployed since the mid-1960s and that each new period of economic recovery has been associated with a higher level of unemployment than the last. The Department of Employment data also

show a slight increase in the duration of unemployment. Although these statistics give only an indirect means of measuring the variation in the time necessary for the unemployed to find jobs, the available data show a correlation between the variations of the level of demand and duration of unemployment: it is possible that as demand for labour increases marginal groups, such as married women, become more conscious of the possibility of working and thus more interested in seeking work; as demand falls these women are more likely to see themselves as 'housewives' or 'retired' from the labour market instead of unemployed or seeking work. In the Federal Republic of Germany between September 1973 and September 1975 there is a downward trend in unemployment of less than six months' duration, an upward trend in that of six months' to two years' duration.

Great Britain: Unemployed and vacancies, 1958-76. Three-month moving average: seasonally adjusted



Some commentators have attributed the growth in the number of unemployed to the increase in 'voluntary' unemployment following upon the enhanced financial benefits for the unemployed. In their opinion this system of payments has reduced the level of urgency among those out of work to find new jobs, made them more selective, and prolonged periods of unemployment. But, as the surveys which will be studied further on show, these hypotheses are apparently not confirmed by observation. An alternative explanation is that there has been an increase in structural unemployment, connected with the mismatch between the jobs available and those sought. Unfortunately it is impossible to verify this hypothesis. There has always been a geographical mismatch between vacancies and the unemployed, but there has apparently been no marked increase over a period of time. It seems possible that the rising level of skills and qualifications required by the economy has meant that employers have increasingly wanted abilities that those losing their jobs have not had; the increase in the proportion of young workers and unskilled workers on the register could be an indirect indication of this.

In the Federal Republic of Germany and the United Kingdom the unemployed have a number of characteristics in common. <sup>1</sup>

Sex is one of these. In the Federal Republic of Germany male unemployment reached a peak in May 1975, then again in February 1976, while female unemployment increased constantly during 1975; only in the spring of 1976 did unemployment begin to decline for the two categories. In the United Kingdom female unemployment has constantly been one-third that of male unemployment, but it is difficult to draw any conclusions from this due to the differences in the social-benefits system as it affects men and women respectively. If, instead of measuring only the registered unemployed, one considers people seeking a job (a number of women — about one half — seeking jobs are not registered as unemployed) the male and female rates are more similar.

Age is another differential factor: in the United Kingdom 60% of the men aged 20-24 have a job, as against 25% of those aged 60-64; in the Federal Republic of Germany the corresponding proportions are 46 and 11% for the 19-24 and over-55 age groups. Among the unemployed population, those aged 60-64 are consistently over-represented in the United Kingdom; if in the Federal Republic the rate of increase of unemployment is lower among older people than among younger people (because they benefit from a more efficient system of protection), it is still true that the problem of those over 45 (who constitute 25% of the whole) are a source of concern because of the difficulty these workers have in finding new jobs. The main characteristic is, however, the increasing tendency for people under 25 to be over-represented among the unemployed. They usually lack occupational skills (which is the case for half of them in the United Kingdom), have frequent periods of unemployment, hold their jobs the shortest time and often quit them of their own free will, and are relatively unconcerned about losing their job since they think they can find another one quite easily. It is possible that the explanation for this behaviour is to be found in a lack of skills, in a decline in parental authority which generates increased mobility or else in a combination of the ease with which they find jobs a relatively advantageous system of social benefits, but the information is such that we can only speculate.

Nationality is also a factor. In the Federal Republic of Germany foreigners are affected more by unemployment than German citizens; the phenomenon would be still more accentuated if one took into account the large number of foreigners returning home; the duration of unemployment is also longer for foreigners; similar differences can be seen among women. These characteristics may be due to the lower lovel of qualification of foreign workers. Since foreign workers constitu-

<sup>&</sup>lt;sup>1</sup> The amplitude of the discussions inspired by the different characteristics is not always in proportion to the size of the category concerned. The problem of university graduates has received excessive attention, considering their propor tion in the total number of unemployed and of their specific rate of unemployment. Inversely, other groups (the handicapped and older workers) have received much less attention: unemployment problems of foreigners and especially of young foreigners, have rarely been debated among the general public or by specialists.

ted 10.1% of the work-force in September 1975, their replacement by German citizens was not without problems to the extent that corresponding jobs often did not come up to the vocational and social expectations of German workers. In the United Kingdom 2.5% of the work-force is made up of racial minorities originating from the Indian sub-continent, the West Indies, and Africa. From 1963 to 1969 unemployment was high although decreasing, but higher still among racial minorities, and since 1970 there has been a very strong tendency for the proportion of racial minorities among the unemployed to increase, a fact which contributes to raise the general level of unemployment. Young people of West Indian origin and women from all the main minority groups are particularly prone to unemployment.

In both countries people suffering from poor health or lack of fitness have great difficulty finding work. Both handicaps were often associated with ageing, but even within similar age groups the less fit and less healthy were less likely to find jobs; however, among these workers the registered unemployed seem able to find work more easily than those who are not registered — which can be due either to the efficiency of the special services available to the registered disabled, combined with statutory requirements relating to their employment, or alternatively, that their registration represented an acceptance of lower expectations.

When people of similar age are compared, the higher the level of skills is, the lower the level of unemployment. In the United Kingdom the unskilled represent, according to the census, only 7% of all working persons, but they constitute about one half of the unemployed over the past 15 vears. The comparison of the two figures raises some difficulties. The classification of the Department of Employment is dependent on both the classification level of the unemployed and the type of industry they work in and does not allow as precise an identification as that allowed by the census; in addition, the classification of the Department of Employment can be made in terms of the usual occupation of the person concerned, of the last job held, or of the job for which he is judged most apt when out of work. None the less, the comparison of the two figures gives an idea of the over-representation of the unskilled among the unemployed population. The observations made in the Federal Republic of Germany confirm these tendencies: 57.5% of the unemployed had not completed any vocational training in 1973, while those who had completed vocational training constituted only 42.5% of the unemployed; in the latter category those with the lowest qualifications constituted 33.1% and those with the highest qualifications only 4.6%. Moreover, while the number of the unemployed increases in the group having completed vocational training, the most highly qualified segment decreases; among those who have not completed any vocational training, those who have the most years of schooling are the least affected by unemployment. The risk of job loss is much slighter for the most highly qualified. There is indeed a tendency among the most qualified for the duration of unemployment to increase, but the duration of unemployment is always shorter for them than for the less qualified.

Young people leaving full-time education must be studied separately. In the United Kingdom unemployment for this category is above the general average. Moreover, while the unemployment rate among young adults has grown independently of the level of demand, unemployment among school-leavers has been very definitely cyclical, reacting more violently to changes in the general level of unemployment. In the Federal Republic of Germany the skilled unemployed are composed in a high proportion (33.7% in September 1973) of young school-leavers.

There are also strong regional variations in unemployment. In the United Kingdom unemployment in Scotland, Wales, and the North of England has remained higher than the level it has reached during the worst times in the South-East. The South-East has remained consistently below the national average level, but previously favoured regions including the West Midlands, South-West, and East Midlands have now reached average or above average levels; at the same time the relative level of Scotland has fallen to a point where it meets the West Midlands. Regional variations do not appear to have worsened and give no sign of contributing to the secular rise in unemployment.

The British data also show the differences in unemployment related to industrial structure. As is the case for regional variations there is also some convergence towards the average unemployment rates of the different sectors of the economy. However, unemployment among construction workers is particularly and consistently high; after having been particularly high in the early 1960s the level in shipbuilding and marine engineering has now fallen below average, and unemployment in mining and quarrying is now relatively low.

# III. Categories having poor employment prospects

An examination of the tendencies studied above leads to the question of the characteristics of categories having poor employment prospects and to an analysis, with the help of data obtained from different sources, of the specificities of these 'problem groups'.

On three separate occasions, in 1961, 1964 and 1973, the British Department of Employment has carried out special surveys of the characteristics of large samples in the register of the unemployed which make it possible so determine the reasons why certain segments of the labour force are difficult to place. Surveys carried out between September 1973 and September 1975 in the Federal Republic of Germany by the Federal Institute of Labour have likewise made possible similar research. One can thus get some idea of the difficulty each category has to find work and at the same time their real degree of motivation to seek work, and thus establish some measure of the proportion of the unemployed that could be judged difficult to place.

Women compose the first group that should be studied. In the Federal Republic of Germany the three sectors most touched by unemployment are manufacturing industry (except for construction), commerce, and services. Available data show that women are affected by the economic difficulties of these sectors to an extent out of proportion to the place they occupy. Another handicap to the employment of women is their low level of qualification: between September 1973 and September 1975, 64.5 to 70.3% of unemployed women had not completed any vocational training as against 48.4 to 56.1% of men. Their low level of qualification together with their employee status explains their high level of unemployment. Long-term unemployment (from one to two years and over two years) is higher among women than among men, while the decrease in short-term unemployment (less than six months) is equally higher among women than among men. In all occupations women are in a much more unfavourable situation than men, and in September 1975 the unemployment rate for women (5.5%) was higher than the rate for men (3.8%). In the United Kingdom women in every age group also seem to have much more difficulty finding work than men do; a PEP survey appears to impute this fact less to particular difficulties than to the lower motivation of women to seek jobs.

The second problem group is that of handicapped workers. Two empirical surveys made in the Federal Republic demonstrate that handicapped persons with an officially established reduced earning capacity are less often unemployed than handicapped workers whose reduced earning capacity has not been officially established, the latter being unemployed almost twice as often as the average. An explanation of this marked difference is that the former predominantly take jobs for the seriously handicapped and are therefore protected against dismissal while this is not true of the latter. Moreover, the handicapped, and especially those without official recognition of their handicap, stay unemployed longer than people who are not handicapped. This upswing of long-term unemployment is shown also by a lower reintegration rate (22%) than that of other unemployed persons (45%). Poor health concerned only 13% of workers under 35 but 45% of those over 55. Poor health together with age limit the chances for reintegration into the labour market.

The third category is that of incompletely trained workers. This group is over-represented among the unemployed. As the German statistics show, the rate of increase of unemployment of those

who have been to college or university but have not completed their vocational training is particularly high. The higher risk of becoming unemployed among the untrained can be explained by the fact that during a depression, they are the first to be dismissed and they can easily be replaced by measures of rationalization or else because they can be dismissed (and rehired if needed) at a lower cost than trained workers. As for the second and more paradoxical observation, two factors were responsible for this situation: the limitation of admission to colleges and universities and the shortage of apprenticeships. The unemployed who have not completed any vocational training push down those who have left school without acquiring diplomas and who are above them as regards their relative level of qualification, in the competition for the few apprenticeships available. Other surveys show the different opportunities for re-entering the labour market according to qualifications; one year after having been registered as unemployed 32% of those without any vocational training had found work while the corresponding proportions were 44% for those who had completed their vocational training on the job and 53% for those who had completed their vocational training at school. Those who undertake vocational training find jobs more easily than those who do not since 52% of those who have participated in a training programme during the preceding five years find a new job compared with 34% of the unemployed who have not taken part in such programmes. Additional proof of the influence of skills is given by the IAB survey of the unemployment of university graduates; it shows that the risk of unemployment is much lower for this category than for others. Among these graduates whose unemployment rate from September 1973 to September 1974 was only 0.6 to 1%, unemployment was highest for architects and construction engineers — which can be explained by the fact that the construction industry was hit hard by the recession - and for chemists and social scientists.

A closer examination of the situation of young people leaving secondary school, college, or the university is necessary. The proportion of unemployed is also lower for this category than for the general population. Their situation is very significant in the public eye. Among the main fields affected is that of teachers, many of whom are without a job because of the financial difficulties inherent to a period of crisis, while there is a shortage of professors. Economy and the social sciences are the largest category among the different academic specializations; in the Federal Republic of Germany there is an increase in unemployment among people in these disciplines, a circumstance which is related to the fact that employers hesitate to recruit during periods of crisis. Among engineers, the third largest group of academics, the proportion of those unemployed for less than six months has not increased to the same extent but, on the other hand, they are the largest contingent of university graduates who have been unemployed for from one to two years, and it is among them that the increase in long-term unemployment (over two years) is highest. Although among women it is those under 25 who are most often found among the university graduates who are unemployed, among men, due to their military service, it is the 25-45 age group that is in the majority. Similar characteristics as to disciplines and age groups are to be found among college graduates.

The fourth category is made up of employees. Until 1970 studies by the IAB have shown that in their case unemployment was below average; on the other hand, the number of unemployed increased faster afterwards in this category than the number of employed. This is no doubt due to the fact that over half of the people entering the labour force wish to find a job of this type and join the persons whose status is changing as they pass from the category of manual workers to that of employees. In case of recovery, there is always a delay in the reduction of the unemployment of employees in comparison to the decrease in the number of unemployed manual workers. The corresponding jobs have been considerably affected by rationalization measures, in particular for occupations such as those of secretaries, salesmen, accountants, and cashiers. Contrary to what has been observed for the other categories of workers, during the recession of 1973-75, it was for older workers that the unemployment rate was the highest, the duration of unemployment the longest, and the subsequent chances of re-employment the lowest.

In the fifth category, that of older workers, long-term unemployment is higher and short-term unemployment lower than for other categories. If, during the recession, there is a certain reduction in the proportion of unemployed persons over 45, it is a consequence of the protection against dismissal that they enjoy at the same time as a purely statistical phenomenon linked to the great increase of unemployment in the other age groups. Inversely, the chances for re-employment of older persons are very slight; about two-thirds of those over 60 therefore quit the labour market by retiring, so that during a period of high unemployment the age limit of employment is in fact lowered.

The last category which has attracted considerable attention is that of young people. In the Federal Republic of Germany the proportion of young people among the unemployed has more than doubled, thus transforming their former under-representation into over-representation; the phenomenon strikes the 18-20 age group more than the under-18 group which enjoys legal protection. This situation would be even more marked if one added to the unemployed the young workers who, for lack of a job, have joined the army. Young people do not remain unemployed as long as older people, but the duration of unemployment has nonetheless increased for them too. Those who have only a little vocational training tend to be unemployed more often; moreover, in a sort of vertical competition, the most highly skilled tend to be most favoured concerning employment. This competition also operates in what concerns training, thus leading holders of the *Abitur*, for example, to compete with graduates of secondary modern schools for access to the apprenticeship system. There is thus a progressive hierarchical pressure from the top toward the bottom, disadvantaging those who are at the bottom of the hierarchy. The following factors are usually the ones given to explain the reduction in the number of places in the training system:

- (i) the pressure of costs exercised on companies by legal measures: the improvement of equipment, which is required by the law on vocational training, has led a number of unprepared firms to withdraw from the training process;
- (ii) the existence of alternative sources of apprenticeship for firms that require skilled workers, as for example the training dispensed by the Bundesamstalt für Arbeit;
- (iii) the requirement for those under 18 to benefit from vocational training and the legal protection of young workers which lessens the possibility that they can be profitably employed in the company.

This phenomenon, which is hidden during periods of prosperity, appears clearly in periods of depression. There is, in addition, first, the trend towards greater standardization of the work process which makes vocational training less indispensable for certain companies, and also a certain reticence to recruit young workers whether they are skilled or unskilled.

That there is among the unemployed so high a proportion as 28.5% who have completed their vocational training may be explained by a number of factors. First, the lack of vocational experience and working experience makes the employment of young people less productive than that of older workers. Then, the turnover rate is higher for young people than for workers that are more attached to the firm. In addition, the protection against dismissal which older workers enjoy transfers to young people the burden of any reduction in activity while the legal measures that protect them can work against their being hired. Expectation of military service is an additional obstacle. Lastly, too many young people are trained for activities that have no future.

It is, however, the unskilled segment that constitutes the greatest part of unemployed young people. The factors that could explain this situation should first be looked for in the fact that when there is an excess of manpower it is the least skilled that are dismissed first, being replaced by workers who are more highly skilled. It is then the vocational-training requirement that makes unavailable for productive work within the firm one or two days a week the unskilled

young workers whose productivity is thus inferior to that of older workers. It is also a fact that those under 18 and/or who have not been in the firm for at least six months, are not protected by the rules against dismissal. Finally, the young people who leave school and want to go to work at once find that they can do so only in a few sectors. In short, the cause of unemployment among young people who are wholly unskilled or modestly skilled is the refusal of firms to employ those without skills. The question of the unemployment of young people cannot, however, be considered separately from that of employment in general for, except for demographic factors, the same causes operate for both.

# IV. The costs of unemployment

Besides the quantitative studies which have just been discussed, a number of pieces of more qualitative research on the unemployed population have been made. This research shows the importance of financial and psychological costs that the victims of unemployment must bear. There is a relative convergence between the results recorded in the United Kingdom and in the Federal Republic of Germany, as the following table shows:

(in %)

Federal Republic of Germany		United Kingdom	
Monetary problems only	32	Lack of money	45
Monetary and other problems	13	Boredom	36
Non-financial costs	55	Depression, shame	9
- (boredom)	(20)	Feeling of uselessness	8
- (problems with civil servants)	(10)	Social isolation	5
<ul> <li>(problems specific to searching for a job)</li> </ul>	(7)	At home all day	4
- (depression)	(5)	Asking for unemployment benefits	4
- (uncertainty)	(5)	Social rejection	2
- (social rejection)	(3)	Nothing	4
- (isolation)	(2)	Others	1
- (others)	(3)	No answer	1
	100		100
All answers = 4 636		All job-seekers = 1 313	

It is evident that the answers are remarkably similar. In both cases 45% of the persons questioned mention in first position financial difficulties, while in second position comes boredom, followed by a series of elements mentioned by much smaller numbers of the unemployed. Nonetheless, if one regroups all the answers, the socio-psychological costs surpass the financial ones. The German survey thus mentions that the former dominates among 74% of the men and 53.7% of the women. But the British survey, which included a measure of the feeling of being deprived of a job, shows that among those who are more concerned, financial problems are mentioned more often than socio-psychological ones and that they are all the more so as the feeling of being out of a job is stronger.

The financial costs are important in both cases, even if they seem to be put forward more in the United Kingdom than in the Federal Republic. In the former country the survey made by Political and Economic Planning on the basis of a sample of 1 479 unemployed shows that family budgets had been reduced by one-fifth, and that a third of those who had bought goods on credit

while they were working were unable to meet their payments.¹ In the latter country, with the exception of workers situated at the bottom of the pay scale, the reduction of household income was about DM 400; nonetheless, in spite of the decrease 40% of family heads consider this limitation as secondary, since their savings permit them to maintain their standard of living in the expectation of their next job. The nature of the financial difficulties encountered is the following in the German study:

Cut down on personal spending	73%
Did not buy planned goods	53%
Savings partially or wholly used	44%
Got into debt/had to borrow	15%
Could not meet	
<ul> <li>HP payments</li> </ul>	14%
<ul><li>savings contracts</li></ul>	13%
<ul> <li>insurance payments</li> </ul>	11%
Got into arrears with rent	9%
Other	8%
Hardly any financial difficulties	18%

The British study confirms these findings: in the United Kingdom the financial difficulties most often mentioned are in fact those involving daily expenses: lack of money for outings or extras, problems paying gas or electric bills or life insurance premiums, inability to buy clothing or shoes for oneself or one's children; problems paying the rent or meeting mortgage payments.

The psychological costs are considerable also. The German survey evaluates them as follows:

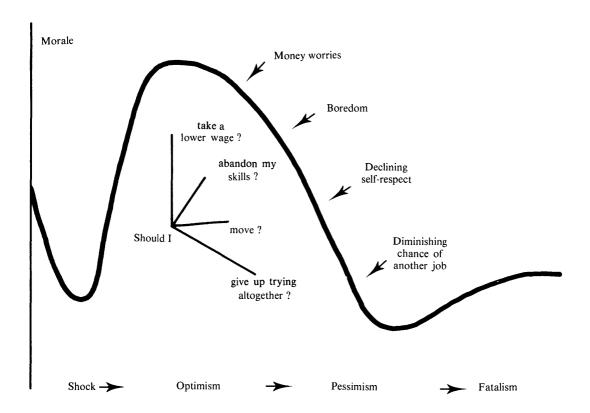
<ul> <li>Personally very disturbed about being out of work</li> </ul>	71%
<ul> <li>Felt useless/unwanted/superfluous</li> </ul>	55%
<ul> <li>Being at home got on my nerves</li> </ul>	55%
<ul> <li>Missed the company of colleagues</li> </ul>	53%
<ul> <li>Felt unable to talk about the problem</li> </ul>	45%
<ul> <li>More friction in the family</li> </ul>	32%
<ul> <li>Didn't visit friends so often</li> </ul>	32%
<ul> <li>Often asked whether it wasn't own fault</li> </ul>	17%

Most of the unemployed turn against themselves at first; they feel their unemployment as a sort of personal disgrace, which in extreme cases leads them to hide their situation from their families and friends or not to register at an employment office. There may result for some of them difficulties with their social environment: the feeling of uselessness can lead to such resignation that the considerable time they have at their disposal is not used to try actively to improve their situation. Although the reasons for unemployment are not to be found primarily in the characteristics of the unemployed person himself but rather in the economic situation and in the companies' manpower policy, many young people experience their out-of-work situation as a series of failures and personal weaknesses; having entered into vocational training or the search for a job with a positive view of their vocation, their attitude changes to frustration which either makes them give up the idea they had of their work in order to adapt themselves to the available jobs or makes them give up the idea of vocational training; this attitude may lead in extreme cases to alcoholism, criminality, or political protest.

<sup>&</sup>lt;sup>1</sup> 1% of workers receive benefits superior to their former wages, 6% benefits equal to them, and 93% benefits inferior to them or no benefits at all.

Among the socio-psychological costs the British survey puts in first position boredom and inactivity, followed by shame, depression, feelings of uselessness, rejection, and social isolation; the general impression gained from this study is very similar to that obtained from studies on unemployment made during the depression of the 1930s.

The implicit model of the effects of unemployment may be represented by the following graph taken from a publication of the British Department of Employment.



The more or less implicit hypotheses of this model are that the unemployed are composed of young men at the beginning of their economically active lives who have had stable work, lose their jobs, and suffer from long-term unemployment which is demoralizing and destructive to their motivations and personalities; all these hypotheses, although they correspond closely to the characteristics of the Depression, conform much less to the peculiarities of employment in Great Britain in the post-war period. As a matter of fact, even in particularly depressed regions, the young unemployed found new jobs in the months following their dismissal and only older workers who were in bad health suffered from long-term unemployment, which generates the psychological state indicated in the last part of the graph, but they entered the long-term unemployed category only after longer and longer periods of unemployment. If the model applies to workers of 50 to 60 years of age (and even to those of 45 to 50 in the very depressed regions), it takes much less into account the situation of the young, unmarried, and unskilled who have experienced a series of short periods of unemployment, interrupted by jobs of short duration, the situation of married women who when unemployed can benefit from their husbands' financial

security, the situation of the young economically active who find new jobs relatively fast, and the situation of the unemployed who can be distinguished from the retired or the ill only because of a technical definition.

The differential variations in the costs of unemployment should therefore be specified. The German as well as the British studies show that those who suffer most from being out of work are men from 25 to 54, particularly when they have a wife and children. The older group of those who are near retirement are relatively less affected financially and the younger persons, those 18 to 24, appear relatively less upset to be without work. These differences according to age appear clearly in the following table:

(in %)

	All	20-24 yrs.	25-34 yrs.	35-44 yrs.	45-54 yrs.	55 yrs. +
Federal Republic of Germany					-	•
No financial problems	18	19	18	14	18	25
Being without work	1					
is not too bad	30	30	30	26	28	25
United Kingdom						
Very bad	48	38	56	59	57	36
Fairly bad	23	29	21	18	22	23
Not too bad	28	32	22	22	21	40
No answer	1	1	1	1	_	1

It is known that one of the most marked tendencies of the last fifteen years is the increase in the number of unemployed young people. Of course, they find work more easily than people of other age groups, but they stay in a given job for a shorter time and usually leave it of their own will. This is connected with the fact that they are at the beginning of their economically active lives, have no dependants, and often live with their parents. Less affected than other categories at being without work, they are, however, subdivided into two categories. The more active group are oriented towards promotion and are prepared to adapt themselves, considering that training protects them against unemployment, at least as long as they are not at the top of the skill hierarchy. The other group, who are more passive and resigned, try to make money above all, and, for them, unemployment is mainly a financial problem, while it was for the former group above all a personal and social burden. Girls, for whom skills are less important than they are for boys, consider work less as a means of personal accomplishment than as a contribution to family finances; thus the problem of unemployment is considered by them much more in relation to their families and their free time, falling back, once they are out of the labour market, on their 'real' woman's role.

# V. The role of the public manpower services

The German and British research examines the expectations and behaviour of the unemployed and the way in which the public manpower services can respond to these expectations and help those who are seeking a job to find work.

The attitudes of the unemployed can be studied from different points of view, in particular that of their behaviour with regard to their reintegration into the labour market and that of their position on vocational training, the objective of which is, in principle, to ease their social reintegration.

If we consider first of all the attitudes towards vocational training, which is seen by the unemployed as a means to obtain a job, perhaps an even better one, German research shows that 70% of the unemployed say that they are ready to begin vocational training, but there is a drop to 60% when the question concerns their immediate willingness to make this effort. The connections between duration of unemployment and availability for vocational training are ambivalent: availability is greatest among those who have been out of work for less than three months; it then declines among those who have been out of work longer and among whom resignation, apathy, and withdrawal into oneself dominate.

In second place, if the attitudes towards re-entry into the labour market are considered, besides the available job supply, there is also the question of the acceptation by the unemployed of the jobs available to them. Thus the German survey asked a number of questions concerning whether those being interviewed were ready to accept jobs that pay less, are less interesting as to the work performed, imply a schedule that is less agreeable or requires geographical mobility, etc. The acceptance of such jobs differs according to sex, age, and occupational skills: thus, men are readier to make concessions concerning length of the workday or the necessity for mobility than women, who must meet the dual requirement of their work life and their family life; thus too, young people are much more flexible in their attitudes than older people, and unskilled or modestly skilled workers are readier to make concessions than employees or skilled workers. All workers are in fact ready to accept jobs leading to a considerable reduction in their socioeconomic position, in what concerns income as well as social status. If there is reticence among them as to mobility (in the Federal Republic 18.8% would accept to move and 57.8% to change jobs), on the other hand, three-quarters of them would adapt themselves to the content of available jobs. The duration of the unemployment period does not incline people to make more concessions; it does, however, increase somewhat the acceptance of a move (7.5% for those that have been out of work 1 to 4 weeks, 25.4% for those that have been out of work 9 to 16 weeks) and in less clear fashion the acceptance of a longer workday (54.5% of those out of work 1 to 4 weeks, 70.5% of those out of work 17 to 25 weeks).

Questions of this sort were not included in the British survey, but the more general questions that were asked lead one to think that there is the same degree of open-mindedness there. Three-fourths of the unemployed that were interviewed consider it important to find work as soon as possible but are incapable of finding it in less than a month; half attach great importance to finding another job but must in fact wait three months. Only a minority (12%) indicate explicitly that they are not interested in finding work and a smaller minority (10%) that it is not very important for them. This minority is made up of older people near retirement, people in ill health, and married women with familial duties that make full-time employment difficult for them; in this way the disinclination for work reflects in fact the lack of occasions for employment.

Opinions are expressed, of course, which are nonetheless consistent with the actual behaviour observed. There is a great difference between jobs formerly held and new jobs: for example, in the German survey, 44% of the unemployed have changed jobs; the British survey shows a change of jobs of similar amplitude. Above all there is a marked tendency for the situation of those concerned to be lowered, which is shown in the level of skills and that of pay. The main factor in the disparities among the unemployed in this respect is age: it is mainly older workers who experience downward mobility and a decline in income, once they find a new job.

The role of the public manpower services can now be specified from two points of view: on the one hand, in the financial aid they can bring to the unemployed and which may have a number of consequences on their propensity for work, and on the other hand, in the service they can furnish the unemployed to help them find a new job.

One of the phenomena elucidated by the British research is the statistical link between the chances for a married adult to be working and the number of dependants he has: unemployed

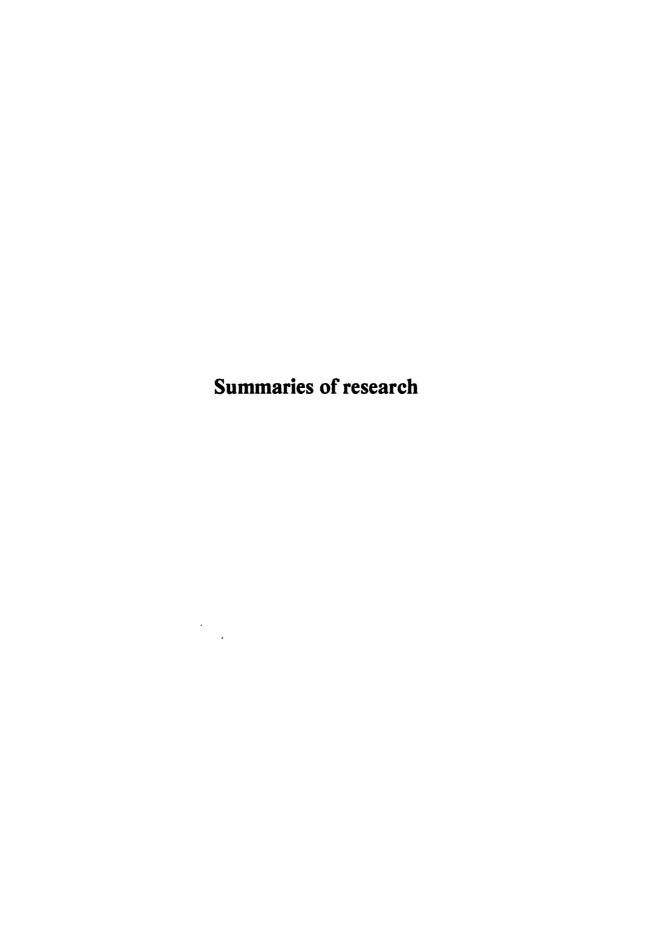
men who have a dependent wife have many fewer chances to have a job than those whose wives work; those who have several dependent children have many fewer chances to have a job than those who have none. 80% of the men 25 to 39 whose wives work have a job as compared to 41% of those of the same age whose wives do not work; 61% of married men in the same age group who have one dependent child have a job as compared to 30% of those who have four children or more. The analysis suggests that the British family payment system for the unemployed and more particularly the family supplement system are responsible for these differences. It seems that the family supplement system encourages women who have a part-time job to give it up when their husbands are unemployed. These conclusions are reinforced by the fact that in the Federal Republic of Germany where the unemployment-insurance and family payments system does not include child bounties, such variations according to the number of dependants are not found, but rather links in the opposite direction: for example, married men whose wives do not work are more likely to work.

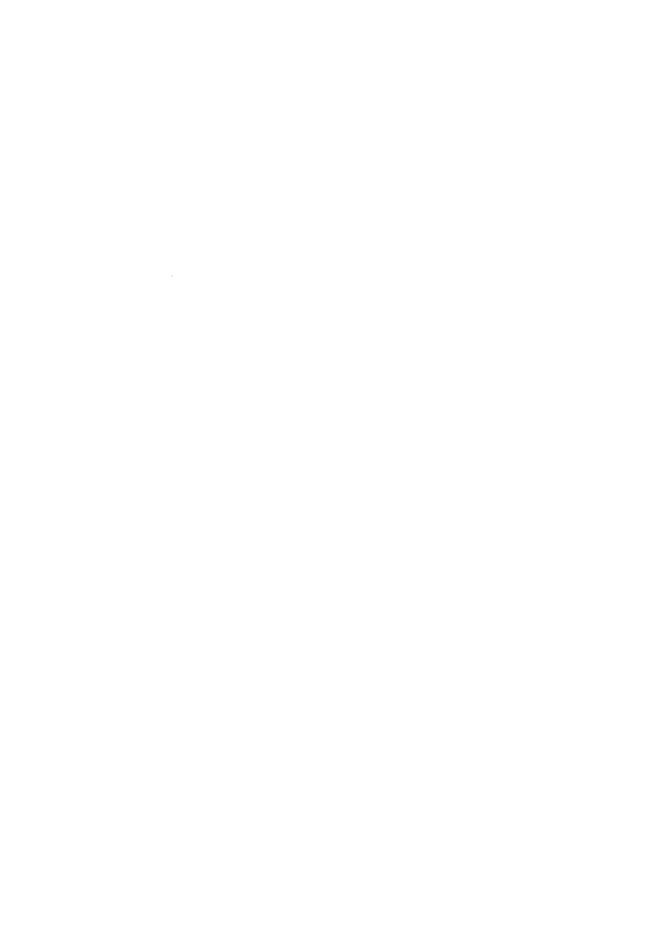
The British study concludes that the family-payments system influences the social categories that compose the unemployed more than the level of unemployment does. If these effects are debatable it is because the system makes unemployment weigh on heads of large families among the least-qualified segments of the workforce rather than because it causes a high rate of unemployment which would have come about anyway. In the same way, the Germany study stresses the categories that are the most touched by unemployment rather than the unemployment rate.

The three main services the unemployed expect from public manpower services are help and advice to find a new job, help for vocational training, and possibly help in moving house. The proportion of people who say they have found a job thanks to the employment services is remarkably similar in the two countries: 27% for the United Kingdom and 28% for the Federal Republic of Germany. Officers of the public manpower services are generally considered very useful; there are, however, several complaints, particularly among young people and the unskilled, concerning pressure exercised against them to oblige them to take jobs against their will. Thus in the Federal Republic of Germany, 18% are very satisfied and 45% rather satisfied with the service rendered. The British study shows, however, that the employment services are more often used by and are more efficient for those who are seeking their first job than for those who have been laid off or for job changers in general; they are also more particularly useful to those who are very hard to place, such as older persons and unskilled persons.

The two studies give comparative indications of the role played by vocational training. The German study indicates that 17% of the sample had participated in training programmes during the last five years and that 5% had done so since being dismissed during the year in question; the British survey shows that a third of the unemployed show interest in vocational training but only 4% occupied the places offered in the corresponding centres or expected to do so and, three years later only 9% had started training. The lack of places, the distance from home, the length of waiting time, and the rejection of requests to participate are the main factors responsible for such a situation.

Both studies reveal important differences in the occupational mobility of the unemployed. One year after having been selected for the survey, 16% of the German unemployed had accepted to move while in the general population the annual proportion of mobile persons is only 6%; among the unemployed who accepted to move 6% say that they did it to find a new job. There is less mobility in the United Kingdom since three years after having been selected for the survey and the interviews only 20% of the persons concerned had moved, and among these only 2% did so for reasons concerning their work, and even if the low rate of response is considered, the corresponding proportion should not be above 4%. In both countries the tendency among those who have benefited from public assistance transfer grants is to indicate that they would have accepted the move anyway. Geographic mobility for occupational reasons is in fact largely concentrated in the young age groups.





# A survey of the unemployed

by R. C. Geary and M. Dempsey

The Economic and Social Research Institute 1

This survey was made in Ireland to assess the characteristics of the longer-term male unemployed, the difficulties they have in coping with unemployment, and how they overcome such difficulties. The sample comprises 300 individual cases including 100 in Dublin; the employment offices and men were selected at random. Its limitations are due to the small size of the sample, which is itself due to the fact that only the aided unemployed were selected even though the social legislation criteria already eliminate a certain number of the unemployed. The survey, which was made in 1975, shows that unemployment more often strikes construction workers and older workers in small businesses (over one-fourth had been in the same job for five years). Their age range and marital status do not differ from those of the rest of the economically active population; on the other hand the unskilled unemployed having only a primary school education are over-represented. 87% of them are ready to take whatever jobs are available; the difficulties they experience are linked less to a decrease in income than to psychology; the way they spend their money is, however, affected by unemployment (increase in purchases of low-quality goods, decrease in clothing purchases and leisure spending) and, paradoxically, bachelors are obliged to reduce their expenses more than married men, even if the latter say they have more difficulty coping with their situation than the former. The main lesson of this survey is that it destroys the too-prevalent image which depicts the unemployed as relatively well-paid members of society. Besides the difficulties they say they encounter, it is clear that all do indeed desire to find work and search for it actively. There is no evidence that unemployment benefits discourage the search for employment.

<sup>&</sup>lt;sup>1</sup> Study No 75/2 (27 pages, English).

# Comparative international study of unemployment rates

(Internationaler Vergleich der Arbeitslosenquoten)

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The international comparison of unemployment rates is made difficult by the use of different definitions for the unemployed and the economically active and of different methods to demarcate unemployment and employment and to collect relevant data, more especially as these differences are not constant over a period of time. Thus, for example, differences in employment rates of certain groups and the intervention of official employment agencies seem to vary according to the situation of the labour market. Three methods can be used to determine the number of unemployed: using sample surveys to develop the idea of economic unemployment; using recorded unemployment figures which are subject to social legislation; trying to combine the two sources. The study compares the three criteria of lack of a work contract, immediate availability, and intensive job-search. The comparison is then made in three phases, which often lead to considerable adjustment of the unemployment figures published by the different countries to make them conform to the ILQ definition. Thus the greatest differences between national statistics are due to the way each category is treated: the uninsured unemployed, applicants for their first job or first apprenticeship, applicants for a job after a period of inactivity, applicants for home employment, for part-time employment, and for summer jobs, freelancers looking for a salaried job, the temporarily ill, the semi-unemployed, persons undergoing training or adult education, applicants who are temporarily unavailable, etc. They are due also to the age categories and period of reference used. Moreover, for some categories (the economically active unemployed, the economically inactive who are employed or looking for a job, the unemployed who are no longer looking for a job), the relationship between employment, unemployment, and economic inactivity remains uncertain. The means of checking the validity of incomplete statistics are still very limited. Lastly, social legislation undeniably has a disturbing effect since it is above all the hope of obtaining financial benefits that drives people to register. Because of this, certain job applicants do not register because they are not eligible for unemployment benefits while special social benefits (of the early retirement sort) reduce the numbers of the registered unemployed.

<sup>&</sup>lt;sup>1</sup> Study No 75/3: Ref. No V/780/77 (41 pages, German, English and French).

## Redundancy, job creation and job search

by D. I. Mackay, R. R. Elliott, and J. C. Fallick 1

Two sources on redundancies exist in the United Kingdom: the first counts redundancies affecting 20 or more workers, the second, payments connected with redundancies. The first takes into account the initial intentions of the employers who may change their minds; the second generally excludes workers under 18 or those with less than 2 years' seniority. Both underestimate the actual number of redundancies. None the less by analysing them it is possible to ascertain that redundancies are markedly cyclical, with peaks in 1971 and 1975, that they are relatively less important in the service sector and in the South-West of England, and that they are only one of the means used by employers to reduce their workforce — another is not to replace workers who have voluntarily left the firm. To maintain employment, Labour and Conservative governments have enforced a Keynesian policy at the same time as a policy of town and country planning. This latter, which identifies four series of zones according to the scale of labour problems posed in each of them (Town and Country Planning Act of 1947), used physical controls and financial incentives simultaneously. This system, which over a period of time has become more and more complex, seems to have had a positive effect on employment and investment in the depressed regions. With the increasing deterioration of employment since 1974, other more specific measures operating in the areas of job supply (training programmes) and job demand (trimming of labour costs) have been applied in collaboration with labour and management. Industrial training agencies have thus been set up, but nationalized firms, the public sector, and small industrial firms do not participate. Although it is difficult to estimate the exact cost of these measures and their net influence on unemployment, it appears likely that they have played a positive role. Comparison with European countries does not show any great difference in what concerns regional or training policy, but on the other hand counter-cyclical actions or those on behalf of particular segments of the labour force seem to have been more highly developed on the continent. The search for employment has been the object of empirical studies and has given rise to the construction of theoretical models. The first group takes into consideration many elements but does not evaluate their relative importance; the second group, coherent as it is, is not concerned with empirical verification. Three studies made by Professor Mackay, as well as demonstrating that the characteristics of dismissed workers differ from those of other persons without a job (greater age, former stability in employment, and greater difficulty to obtain a new job), suggest that informal methods are the most efficient for finding a job, contrary to the opinion of certain British economists and the OECD. The fact that family and social connections are more efficient than employment offices, whatever measure is used, shows that the information dispensed by official agencies is not sufficient to fulfill the workers' expectations. The improvement of the image of official agencies thus depends on an increase in the flow of information they can provide, in particular concerning job offers.

<sup>&</sup>lt;sup>1</sup> Study No 75/4: Ref. No V/410/78 (118 pages, English).

## Sectoral employment in the European Community

by G. Jenkins and Partners Limited 1

Using the Box-Jenkins approach to time series analysis, the study shows past employment trends from 1960 and forecasts for the 1980-85 period in ten sectors for the nine Member States of the European Community. The approach does not establish an a priori model but demonstrates the trends and cyclical patterns in each sector; in so far as a residual remains to be explained, the influence of the growth of GDP is examined using transfer-function analysis. National classifications have been adopted despite possible drawbacks, since for the time being it is impractical to use the general nomenclature for economic activities in the European Communities (NACE). Thus agriculture, mining, manufacturing, public utilities, construction, transport and communication, commerce, banking and insurance, other services, and public administration services are analysed. The principal past trends are: decline of employment in agriculture and mining, a small growth of employment in manufacturing, rapid growth in the public sector, commerce, and transport and communication, no marked trend in construction but quite volatile employment from year to year. Sectors are generally either growing or declining in all countries at the same time. The manufacturing sector is heavily subject to the business cycle, as are public services and construction, while transport and communication are somewhat less affected, and agriculture, mining, and public utilities seem little affected. The cycle, with a period of about five years, affects France and the United Kingdom strongly, but touches the Federal Republic of Germany and the Netherlands much less. The inclusion of the gross domestic product substantially reduces the random component in the case of the Federal Republic, and to a much smaller extent in the case of France, the United Kingdom, and Belgium, but does not improve the explanation of employment changes in the case of Ireland, Luxembourg, and the Netherlands. It is concluded that employment in agriculture will continue to decline; this will also be the case in mining, whatever variables are used (tendentious, optimistic, or pessimistic); in a manner varying according to the country, employment in manufacturing is unlikely to increase more than slightly; it will stay just about stable, except for France, in construction; it will increase in France, Ireland, and the Netherlands in public utilities; it should be the same for transport and communication; generally positive forecasts are, however, less certain for commerce; employment should continue to increase in public administration services and banking as well as in the other services.

<sup>&</sup>lt;sup>1</sup> Study No 75/6: Ref. No V/878/77 (122 pages, English).

## Labour problems of the automobile industry in the new economic situation

(Problèmes de main-d'œuvre de l'industrie automobile dans la nouvelle conjuncture économique)

by B. Lutz and G. Ducray 1

For 25 years the car industry has been the driving force in the economic development of France, having contributed 5.8% to the GNP and carried along industries upstream and downstream from it. Mass motorization entailed very rapid growth of the sector until 1973; since then the market has begun to show signs of saturation. The motor industry is concentrated, with huge investments, earning average profits, burdened with heavy debts, and its production is being increasingly internationalized. Technical progress has continually modified the production process. Factories have swarmed to new regions due partly to labour and partly to the incitements of public authorities. Employment underwent rapid growth until 1973; since then it has experienced marked variations. The concentration of personnel is very high among constructors and a little less so among equipment manufacturers; the sector's share in the total employment of the regions is growing rapidly except in the Paris region; because of absenteeism recruitment has been larger than net job creation. In spite of recent experiments in the restructuration, work is still marked by assembly-line production in shifts with only partial automation. The proportion of manual jobs is diminishing, while that of technicians is increasing; a trend towards less skilled jobs was evident until 1970, but since then the reverse seems to be the case. The pay range is wider and the average level of pay is higher in the motor industry than in other manufacturing sectors. Age and the importance of immigrant or female labour cause disparities between regions, thus giving an important place to company policies. An analysis of the structure of the labour force and its promotion opportunities ought thus to take into account differences between workers (productive workers, production workers, skilled workers, and adjusters) and other professional categories (foremen, technicians, engineers, and executives), as much as between regions. The sector's outlook depends on demand, which, in European markets, will be linked more and more to the renewal of productivity, growth, made necessary by intense competition between firms on the duration of work which will probably be reduced in the medium term, and on localizations which will probably change very little. Thus there is a risk that employment will decline or at best stay at its present level and undergo more pronounced cyclical fluctuations.

<sup>&</sup>lt;sup>1</sup> Study No 75/10 (196 pages, French).

# Part-time employment in the European Community

by O. Robinson, University of Bath 1

Confirming the previous observations of Caire and the ILO, both the 1973 and the 1975 surveys of the European Communities demonstrate the growth of part-time employment. Definitions may vary, of course, and the problems of including workers who have a second job, those who work at home, or family helpers may be solved in different ways, but in 1975 there were nevertheless 9.3 million persons with a permanent part-time job and 1.7 million having one occasionally in the Community. The proportion of women is high, but this form of work is also increasing among men, particularly among the oldest. Part-time work mainly concerns the services and hourly pay is generally lower for part-time workers than for full-time workers. With 43.5% of the total, the United Kingdom has the highest proportion of part-time workers; low incomes and reduced working hours keep many part-time workers from making insurance contributions or paying income taxes. Denmark is in second place, followed by the Federal Republic of Germany. From one country to another, total part-time work varies greatly and may represent from 4 to 17% of the labour force. Although part-time work is defined by shorter working hours than those of full-time workers, additional distinctions may be added: in the United Kingdom, a work load of 8 hours a week is the level at which employment protection laws are applied; in Denmark a distinction is made between primary part-time employment (15-30 hours) and secondary (less than 15 hours). Working conditions may constitute another criterion of distinction. The fact that part-time employment concerns mainly married women has caused it to be considered as a marginal or supplementary segment of the labour force or as dependent on the secondary market in a dualist view of the labour market. Part-time employment should not be analysed only from the point of view of labour supply; to justify this one should also introduce hypotheses on labour demand and its fluctuations. Moreover, the reduction in working hours and the increasing dispersion of the work-load reduce the opposition between full-time and part-time work and should lead to the replacement of the concept of the work week by that of hours worked. Finally, it would be desirable for statistical definitions to be harmonized and for legislation to organize the working conditions and payment of part-time workers.

<sup>&</sup>lt;sup>1</sup> Study No 76/2: Ref. No V/1280/77 (175 pages, English).

## Marginal employment in Italy

by ISFOL, Rome 1

The increasing selectivity of the labour market tends to drive ever larger segments of the labour force into marginal occupations. In Italy there have been many surveys of the characteristics of this sort of labour, which demonstrate the influence of the different phases of development of the Italian economy and corporate practice as well as the influence of the collective bargaining system. These surveys were made on the basis of existing statistical material or on that of more qualitative pilot surveys; they have helped isolate a constant 'primary' segment of the labour force and a 'secondary' segment, which is much more subject to the vagaries of demand and which is found in the industrial, service, and agricultural sectors. There are, however, two rather different meanings of the concept of marginal worker: for some, workers who have no labour contract and those who work at home fall into this category; for others, marginal workers are those under normal contract to small enterprises where employment is precarious. Among the different forms of marginal employment, three seem to be more common than others. First there is the cottage industry which produces semi-finished goods for sub-contractors. This allows the entrepreneur to avoid making social security contributions and fulfilling other obligations, to pay lower wages, to fragmentize the labour force, thus lessening its bargaining power, and to minimize investment and so to reduce his risks. Next, there is part-time labour in agriculture, which concerns small-holders; the small size of their farms leads them to enter the labour market, to work in industry during periods of seasonal unemployment in agriculture, and to sell the services of part of the family work-force on the labour market. Finally, in the production area there are 'decentralization' operations which are linked to the desire to reduce labour costs and to avoid conforming with the obligations of union legilsation and collective agreements. As for the social classes it concerns, marginal employment is most characteristic of women, youths, and older people.

<sup>&</sup>lt;sup>1</sup> Study No 76/3: Ref. No V/248/76 (69 pages, English and Italian).

# The size and determinants of the marginal labour force in Northern Ireland and in the Republic of Ireland

by J.A. Jackson, Trinity College, Dublin, and R.L. Miller, Queen's University, Belfast 1

The survey is based on 2 416 interviews made in Northern Ireland and 2 291 made in the Republic of Ireland. It permits the study of the marginal labour force concept in its different aspects (part-time workers, the unemployed, family workers, workers 'retired' from the labour market, holders of a second job, workers over-qualified by their education or apprenticeship, and the downwardly mobile - particularly the first three), following, whenever possible, the development of workers' careers. In spite of emigration, the unemployment rate remains high in both countries. In the Republic of Ireland, working hours are long and there is a tendency to late retirement which is associated with the high proportion of workers in agriculture. 30% of the males aged between 18 and 64 could be classified as marginal. There is a definite tendency for certain types of marginality to be associated with lower status and to become a cumulative process. The results do not appear to suggest a clear-cut connection between marginality and awareness of marginality except among the downwardly mobile. Although the marginal labour force is important, it cannot be treated as a homogeneous whole because of variations between the different categories. In Northern Ireland where the definition of 'marginal' is characterized as much by expectation of regular employment, of receiving a regular income, by being very mobile or even by a subjective perception of marginality, unemployment is also very high; agricultural structures are less predominant than in the Republic of Ireland. The first job often determines the subsequent professional itinerary. There is also often a strong correlation between educational qualification, income, job status, and social class of marginal workers and their wives. Most policies directed at the stimulation and mobilization of the marginal groups in the labour force are more relevant to countries which already approach full employment than to those far from it, and specific measures (for example, subsidies to employers) aimed at this labour category risk reinforcing their utilization.

<sup>&</sup>lt;sup>1</sup> Study No 76/4: Ref. No V/332/78 (main report: 63 pages, statistical annex: 158 pages, English).

## Studies on youth employment in France

(Bilan des travaux sur les jeunes et l'emploi en France)

by G. Balazs, J.P. Faguer and F. Laroche, Centre d'Études de l'Emploi, Paris 1

Since 1968 there have been two shifts in the interest shown in youth. From 1960 to 1968, as a result of the extension of the average period of school attendance which helps create the illusion of an age group among adolescents, interest was shown in the crisis in values on the one hand, and due to the development of leisure-time activities, in ethics and culture on the other hand. But the surveys made since 1968 essentially concern living conditions and employment problems, with the studies devoted initially to working youth being addressed little by little to an entire generation with changed career prospects and social outlook. Although this report includes a bibliography with the items classified by themes (youth, education, employment of youth and operation of the labour market) of the works devoted to youth, it analyses mainly the contents of some 125 surveys in this field made between 1960 and 1975. The first group of surveys deals with young workers and emphasizes three essential aspects: (a) unemployment, with two preferred research trends - the social aspect and the statistical or economic aspect of regional and cyclical unemployment; (b) motivations and attitudes towards work, studying the views and career plans of young people, their ideas of the future and their opinions on the real world of labour; (c) labour and employment conditions, a theme treated from the point of view of living conditions and life styles (housing, leisure, and consumption habits) but almost never in terms of standard of living. The second group of surveys concerns the questions of vocational guidance and the employment of students, grouping the problems of (a) career plans seen from a psychosociological point of view, starting with the motivations of the adolescent and his educational and professional aims; (b) the labour market of secondary school students and apprentices, treated descriptively and by regions for the most part and by considering a diploma or degree as the main condition for getting a job and for weeding out the labour market; (c) the students' labour market, these studies being the almost exclusive domain of the Ministry of Education. The third group of surveys studies the conditions of entry into professional life, on the one hand by reconstructing the educational channels and curricula preceding the diploma or degree and entry into professional life, and on the other hand by studying educational and employment channels through the technique of the longitudinal survey and then by analysing occupational integration; and lastly by seeing how economically active youth are treated by the institutions charged with welcoming them, guiding them, and putting them to work.

<sup>&</sup>lt;sup>1</sup> Study No 76/5: Ref. No V/409/78 (90 pages, French).

## Redundancy practices in France and Great Britain

by Centre d'Études de l'Emploi, Paris, and Political and Economic Planning, London 1

The studies and surveys carried out in parallel fashion in France and Great Britain bring to light similarities and differences in three fields. In the first case, concerning the legislative framework, the English provisions (Redundancy Payments Act of 1965) are older than the French ones and correspond to both economic and social objectives; on the other hand, the recession has brought a tendency to protect employment rather than to promote mobility. Although in both countries the employer must notify the public employment authority of his redundancy plans and consult personnel representatives, France requires in addition that the redundancy be justified, that the redundant worker receive severance pay amounting to 90% of his wages for the preceding year, and that redundant workers over 60 have the benefit of an early retirement plan. In the second case, concerning business practices, out of fear of union reactions, employers hesitate to prescribe redundancy and resort to stoppage of recruitment, internal redeployment, short-time working, work sharing, and part-time work; financial encouragement of voluntary redundancy is more widely used in Great Britain, where there is no early-retirement plan. In the third case, concerning the effects of legislation, in Great Britain, contrary to the situation in France, there is no sign of greater reserve on the part of employers in hiring workers, even by the terms of a different statute (temporary work or term contracts); on the other hand, the English attribute more impact to union presence in the plant than to redundancy regulations. Finally, the payment of a lump sum at leaving time (voluntary redundancy) is more attractive to English wage-earners than the maintenance of income during a one-year period of unemployment which was set up by the French apparatus, thus allowing British firms and trade unions to be better prepared for personnel reduction.

<sup>&</sup>lt;sup>1</sup> Study No 76/10: Ref. No V/80/78 (English report: 78 pages in English; French report: 83 pages in French; comparative study: 12 pages in French and English, 13 pages in German).

# Labour content of a given production and social accounting in terms of labour time

by F. Catz, M. Hollard, and J. Freyssinet 1

Studies carried out in order to measure the total quantity of labour contained in various products, have as their objective to furnish a tool for forecasting employment or to permit a structural analysis of productive systems. Into the first group fall the studies made in the United States by the Bureau of Labour Statistics to evaluate jobs dependent on exports, those connected with national defence, with construction expenses, or with different objectives of economic policy, as well as the studies effected in France by Magaud and the Centre d'Études de l'Emploi and the projections on the basis of socio-demographic counts made by Stone. Into the second category, and different because they take time into account, fall the works on social accounting whose objective is to measure the value of commodities (USSR) and productivity (Carter and Evans), to analyze international trade relations, and to compare national productive systems. The elaboration of social accounting in terms of labour time poses a number of problems. One can discern three categories here. First, a number of choices must be made concerning the nature of the labour taken into account (productive labour in the sense of national accounting), concerning the labour contained in imports which may be treated in various ways, and concerning the definition of the branches and products on which the calculations are to be made. Next is the question of data: although the basic data concern intersectoral exchanges, which can be specified by an input-output table, and estimates of the depreciation of the capital used and the sectoral breakdown of the economically active employed population, complementary data are also necessary (commercial activities and household consumption which both incorporate quantities of labour). Finally, it must be emphasized that the model used will of course depend upon the available data and the conventions adopted. To illustrate the different sorts of problems raised, the report compares the results for France for 1967 and 1971 and analyses the 1967 labour transfers between branches. It seems possible to apply social accounting in terms of labour time to the European Economic Community, which groups together countries whose labour forces are quite similar in nature and whose use of them is likewise similar. The European System of Integrated Accounts (SEC) is easily adapted to the calculation of quantities of labour contained in the products of different branches. There are still, however, some difficulties due to lack of necessary data, particularly with regard to employment and to job evaluation structures in each branch.

<sup>&</sup>lt;sup>1</sup> Study No 76/12: Ref. No V/105/78 (Main report: 156 pages; bibliography: 32 pages; French and English).

# The potential for substituting manpower for energy

by G. Reday and W. R. Stahel, Battelle, Geneva 1

The aim of this study is to identify the significance of the manpower-for-energy substitution as regards the creation of jobs for qualified workers, regional development, and the reduction of energy costs in industry. Past economic growth has been linked with increasing consumption of energy, although the situation may differ from one country to another; it has been accompanied by the substitution of capital and energy for labour, with a progressive move of employment from the primary sector to the secondary and then to the tertiary. The growing consumption of energy during recent years has been due to its low price, which has almost led to its being considered a free commodity; energy can thus be considered as a factor of production whose elasticity of substitution for labour is about 0.65. To study the possibilities of a reversal of this trend and specify the consequences that may result from it, the construction and automobile sectors have been selected, since the French data in these fields can with some justice be considered as representative of the general evolution of the European Communities. Since 1968 France has been converting at an ever-increasing rate to highly capitalistic production methods and at the same time to growing energy consumption. There has been an important increase of productivity in the automobile industry as well as in the construction materials, construction, and public works industries. At the same time, the number of unskilled workers has increased, the use of shift work has spread in the automobile industry, and the construction industry has had to use more and more foreign workers. Growth oriented towards quality more than quantity should allow a simultaneous reduction in the consumption of energy and raw materials, which would improve the environment by reducing pollution, create jobs that are professionally more attractive, and produce goods that improve the quality of life. In the automobile industry the substitution of labour for energy should be made possible by increasing the life span of vehicles and by recycling the materials used; this should lead to an increase in maintenance work which requires skilled labour, a decrease in repetitive tasks, and the decentralization of activities. In the construction-materials industry, the modernization of existing housing can lead to the rise of a new market which will ensure a constant amount of work; in the construction industry proper, modernization would call for a greater number of skilled jobs which would be more evenly distributed throughout the country. Parallel to energy savings, there could also be an improvement in the quality of life of the under-privileged segment of the population (elderly persons living in housing without modern conveniences), the preservation of the community's national heritage (renovation of urban centres), and a reduction in the environmental costs that too often go with modern construction (demolition and removal of construction materials) which economics is taking more and more into consideration.

<sup>&</sup>lt;sup>1</sup> Study No 76/13: Ref. No V/343/78 (113 pages, English).

# Some examples showing the presentation of sample survey results on the working population in the EEC

(Quelques exemples de présentation de résultats des enquêtes par sondage sur les forces de travail dans la CEE)

by J. A. Zighera 1

The Statistical Office of the European Communities carries out a regular series of surveys of the labour force of the Community. The use of various statistical techniques enables a rapid and clear view of interesting developments in employment to be presented. Graphical analysis of activity rates and ages illustrates the great range of male activity rates in the United Kingdom, the slow, progressive entry of young Germans into the labour force, the differences of female activity rates between countries, and the decrease in activity that accompanies the birth of children. By plotting on one graph the data from three surveys, the transformation of female activity rates over a period of time can be illustrated and the differences between regions and the evolution over time of these differences is demonstrated. Employment by branches of activity is analysed by histograms showing to what extent a branch in a given country is relatively more important than the Community average, while the regional specialization and the relative importance of branches of activity in a given region are also shown. Hours worked per week in six member countries of the Community are compared with the aid of a graph, including their distribution. The time taken to find employment is analysed using Gauss logarithmic paper, comparing the situation of the member countries at a given date and the evolution of a single country over a given period.

<sup>&</sup>lt;sup>1</sup> Study No 76/14: Ref. No V/1257/75 (19 pages, French, English and German).

# Effective workloads in the countries of the Community in 1975 by branch, status and sex: national typologies

(Durée effective du travail dans les pays de la communauté en 1975 par branche, statut et sexe: typologies nationales)

by J. A. Zighera and N. Bouscarle 1

The traditional approach calculates average working time and its standard deviation for each sub-class; since this appraoch is not justified when the histograms have irregular shapes, correspondence analysis is used here. In selecting the eleven branches of NACE, and subdividing according to status and sex and using the same aggregates for all countries, comparisons thus become easy. By studying different graphs a certain number of characteristics can be clarified. In agriculture, a large majority of male independent workers work more than 55 hours per week. with the exception of Italy. The heavy workloads of independent workers are also found, to a lesser degree, in all other branches. Among female independent workers, the distribution of working time is flatter, with both heavy and light workloads for women, unmarried and married. For employees, agriculture, construction, commerce, and transportation are distinguished by heavy workloads for men and unmarried women, and by more heterogeneous ones in the case of married women. The second group of activities, energy and water, metal extraction and processing, and chemicals, is distinguished by lighter workloads which are grouped around the 40-hour mode with more widely dispersed working hours. The metal processing and precision-mechanics industry have more dispersed working hours, while other manufacturing industries have slightly longer working hours. In these branches, women's workloads are both shorter and more dispersed, especially in the case of married women. The third group has shorter working hours: this is the field of administration and especially of credit and insurance where working hours are, in addition, very widely dispersed.

<sup>&</sup>lt;sup>1</sup> Study No 76/14: Ref. No V/26/78 (30 pages, French).

# Preliminary evaluation of employment forecasts made in the Benelux countries before 1977

(Évaluation préliminaire des prévisions d'emploi réalisées dans les pays du Benelux jusqu'en 1977)

by M. Vessière, European University Institute, Florence

The inflation in the number of forecasts is a result of the economic crisis which focuses concern on employment, the craze for integrated econometric models and, in the case of Belgium, the decentralization of State structures. Twelve forecasts have thus been numbered for Belgium, one for Benelux, one for Luxembourg, and three for the Netherlands; the review made of them gives information concerning the organism responsible for the work, the techniques used, and the evaluation researchers make of their own work. A synthetical study of these works permits one to draw a certain number of conclusions. In what concerns overall forecasts made by the Centraal Planbureau in the Netherlands, the Bureau du Plan in Belgium, and the Statec in Luxembourg, the margins of error are acceptable, except for unemployment, for which the distortions observed are probably due to the method of calculation used (difference between economically active population and employment). Broken-down forecasts can be generally used to test the coherence of the overall forecasts. Regional forecasts can be made using national forecasts broken down by districts, as for example in Belgium, or else can be made directly at the regional level by authorities charged with promoting employment and economic development; both techniques have drawbacks, since they appear to be either estimates of employment and the labour force that are too sweeping to throw any light on the economic policy, or else a forecast of situations that are too unusual to be explanatory. Forecasts based on degrees of skill come up against the difficulty of defining the very concept of skill, which may depend upon the occupation, the demands of the position, or the educational level, and which may have a positive correlation with all the criteria of social differentiation. Finally, either the Forecasting methods are based more or less on extrapolation techniques implying stable behaviour, which is never the case, or else they are derived from the use of econometric models which, although they have brought better knowledge of the functioning of the economy, transfer the difficulties of forecasting to each of the explanatory factors used. The institutions that produce forecasts therefore turn more and more, in this time of crisis, to alternative variants and let the government decide the question.

<sup>&</sup>lt;sup>1</sup> Study No 76/15: Ref. No V/1402/77 (60 pages, French).

## Swedish, Swiss and Austrian manpower policy: its relevance for the EEC

by Economists Advisory Group SA, Luxembourg 1

Sweden, Switzerland, and Austria have recorded lower unemployment rates than those of Community countries. By examining the policies that have led to this result a number of lessons may be learned. Sweden depends to a great extent on international trade; the volatility in its balance of payments during the 1970s is in stark contrast to its former stability; three devaluations have not permitted a return to a competitive economy, since they were offset by salary increases; the rise in productivity has been very weak since 1974, although there is a substantial element of under-utilized labour. The economically active population and activity rates are on the rise; the number of foreign workers has not been affected by the worsening of the economic situation; job offers are declining. The unemployment rate has, however, been maintained at a low level, but duration of unemployment appears to be long. In Sweden there is a very close relationship between the government and labour-market organizations which are associated in the application of labour policy within the Labour Market Board and the local agencies. A broad consensus exists concerning the priority given to full employment over other policy objectives, even though employers plead for general measures while workers prefer selective measures. Labour-market-policy measures utilized can be divided into two categories. The purpose of the first group is to attempt to prevent unemployment. Into this category come the stipulation of a minimum period of notice, which leads to a transformation of labour into a fixed factor of production; investment reserve funds; stock-building subsidies; grants for in-plant training; and subsidies for keeping textile and clothing workers employed. The second category is composed of measures to aid the unemployed: occupational training; public works of seasonal character; measures in favour of handicapped workers (re-employment or creation of employment for this group); grants to aid in the recruiting of young people or workers replacing trainees; special aid to regions with severe unemployment problems; aid to encourage mobility and to anti-pollution measures; and lowering of the retirement age from 67 to 65. Switzerland and Austria are similar to Sweden in area, in the magnitude of their foreign trade, and in the size of their foreign labour force; their earlier economic performances are similar. To cope with the crisis, Switzerland has mainly brought its manpower policy to bear on the limitation of foreign immigration; Austrian policy is more like that of Sweden, since it is based on a counter-cyclical incomes policy. It may be that in the medium term the results of the Swedish policy will be less favourable than in the short term. It seems possible, however, to recommend the creation of marginal jobs rather than the giving of grants to preserve existing jobs and, in short, the adoption of an array of measures rather than one or two isolated policies.

<sup>&</sup>lt;sup>1</sup> Study No 77/6: Ref. No V/219/78 (175 pages, English).

# The division of labour and the employment strategy of large economic groups

(La division du travail et la stratégie de l'emploi des grands groupes industriels)

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This is the report of the first phase of a project studying the role of the 'employment' variable in the strategy of the major industrial groups; the levels at which this strategy is defined and carried out; and the means of employment structuring used. The information comes from an INSEE survey of 1 000 very large corporations, from a CGT (trade union) survey of 500 large corporations, and from a direct survey of three industrial groups (Creusot-Loire, DMC, and Rhône-Poulenc) which were formed or largely reorganized during the 1960s. Three significant trends are evident: first, a decrease in the share of wages in the value added and at the same time a lower earning capacity than the average for the sector; second, the stoppage of employment creation before the crisis; finally, a more highly skilled labour force and less disparity in salaries according to skill. The goal of the employment strategy is to reduce the number of surplus staff and to regulate mobility within the group. There are different means (interim labour, contract work within the production unit, sub-contracting, and subsidization) which lead to the exteriorization and increased insecurity of labour. Three main trends can be detected: the unified management of forms of employment which is meant to reduce the number of statutes but which maintains, for both technical and social reasons, differentiation of forms of employment; utilization of the opportunities offered by present legislation (limited work contracts for example) to bring labour back into the sphere of variable costs; and reduction in staff without layoffs by various means (stoppage of hiring, acceleration of turnover by financial and psychological incitements to voluntary departures, early retirement, and increase in mobility within the group).

<sup>&</sup>lt;sup>1</sup> Study No 77/25: Ref. No V/232/78 (89 pages, French and English).

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<sup>&</sup>lt;sup>1</sup> In preparation.

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